UNITED STATES AIR FORCE

GRIFFISS AIR FORCE BASE
NEW YORK

FINAL REPORT
CONFIRMATORY SAMPLING AT
INDUSTRIAL SOILS PAD

FEBRUARY 1994

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FINAL REPORT

CONFIRMATORY SAMPLING AT INDUSTRIAL SOILS PAD

GRIFFISS AIR FORCE BASE, NEW YORK

Prepared For:

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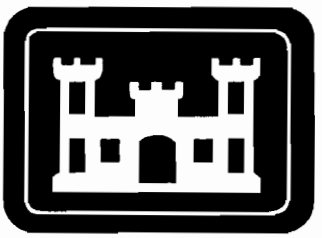

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FEBRUARY 1994

PURPOSE OF DOCUMENT

The purpose of this report is to present the results of the February and June, 1993 sampling of soils present at the Industrial Soils Pad Site at Griffiss Air Force Base, New York. Information regarding the site background, data acquisition activities, data quality evaluation procedures, and an interpretation of the data are discussed. Positive analytical results tables that summarize the analytes detected are presented. In addition, Annotated Analytical Data Summary Tables and hard copies of the laboratory data reports are presented as appendices to this report.

The investigation was conducted in accordance with the terms of the 31 March 1992 agreement under the Federal Facility Agreement (FFA) Resolution of Disputes pertaining to this site. Under the FFA, the U.S. Air Force agreed to collect samples at the Industrial Soils Pad to determine the presence of heavy metals, benzene, toluene, ethylbenzene xylenes, and total recoverable petroleum hydrocarbons to collect data to evaluate whether the previous storage of soils staged at the site had resulted in the runoff of contamination from the site to the nearby surrounding area In accordance with the additional request of the New York State Department of Environmental Conservation, the soil sample from the northern underground vault at the site was analyzed for the Target Compound List organic compounds, Target Analyte List inorganic compounds, TCL pesticides and polychlorinated biphenyls.

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1.0 INTRODUCTION

This report presents the results of the February and June, 1993 sampling of soils present at the Industrial Soils Pad Site at Griffiss Air Force Base (AFB), New York. The sampling and analysis was performed according to the guidelines set forth in the Sampling and Analysis Plan (SAP) for the Confirmatory Sampling at the Industrial Soils Pad at Griffiss Air Force Base (AFB) (Law, 1993a). Information regarding the site background, data acquisition activities, data quality evaluation procedures, and an interpretation of the data are discussed. Positive analytical results tables that summarize the analytes detected are presented. In addition, Annotated Analytical Data Summary Tables and hard copies of the laboratory data reports are presented as appendices to this report.

1.1 PURPOSE

The purpose of this investigation was to collect data to evaluate whether the previous storage of soils staged at the site had resulted in the runoff of contamination from the site to the nearby surrounding area. In February and June 1993, sampling and analysis of soils at the Industrial Soils Pad at Griffiss AFB was conducted to meet the requirements of the Federal Facility Agreement Resolution of Disputes (FFA) pertaining to this site. Under the FFA, the U.S. Air Force agreed to collect samples at the Industrial Soils Pad to determine the presence of heavy metals, benzene, toluene, ethylbenzene xylenes, and total recoverable petroleum hydrocarbons (TRPH) (FFA, 1992). In accordance with the additional request of the New York State Department of Environmental Conservation (NYSDEC), the soil sample from the northern underground vault at the site was analyzed for the Target Compound List (TCL) organic compounds, Target Analyte List inorganic compounds, TCL pesticides and polychlorinated biphenyls (PCBs).

1.2 ORGANIZATION OF REPORT

This report is organized into eight sections as follows:

- Section 1.0: Introduction
- Section 2.0: Site Background
- Section 3.0: Data Acquisition Activities
- Section 4.0: Laboratory Analytical Procedures
- Section 5.0: Data Quality Evaluation
- Section 6.0: Analytical Data Results and Discussion
- Section 7.0: Summary and Conclusions
- Section 8.0: References

2.0 SITE BACKGROUND

The Industrial Soils Pad is located in the northern portion of Griffiss AFB, southeast of the Confidence Course and between Sixmile Creek and the Small Arms Firing Range (Figure 2-1). The site, designated as Department of Defense (DOD) Installation Restoration Program (IRP) Site SS-45, is situated on a flat topographic high relative to Sixmile Creek and the surrounding areas. The contiguous areas consist of woodlands to the east and west, the landscaped Confidence Course and access road to the northwest, and the highly disturbed and regraded hardfill disposal area (IRP Site LF-49b) to the southeast. Site runoff would be anticipated to occur in all directions from the site towards the areas of lower elevation that surround the site. There are no storm drains present at the site to collect or control drainage.

The Industrial Soils Pad Site was used as a vehicle and equipment storage area during the operation of Landfill 1. The storage area contained a building and possible vertical tanks located in the northeast area of the site (USEPA, 1989). Reference to the 1957 Base Mission Plan indicates that the tanks were present but were indicated to be "not usable" at that time (GAFB, 1957). In 1960, the area was reported to have been converted to "...some other function, possibly a fueling area with a possible underground tank(s)" (USEPA, 1989). The presence of the possible underground tank(s) is noted in subsequent aerial photographs from 1966, 1971, and 1983 (USEPA, 1989).

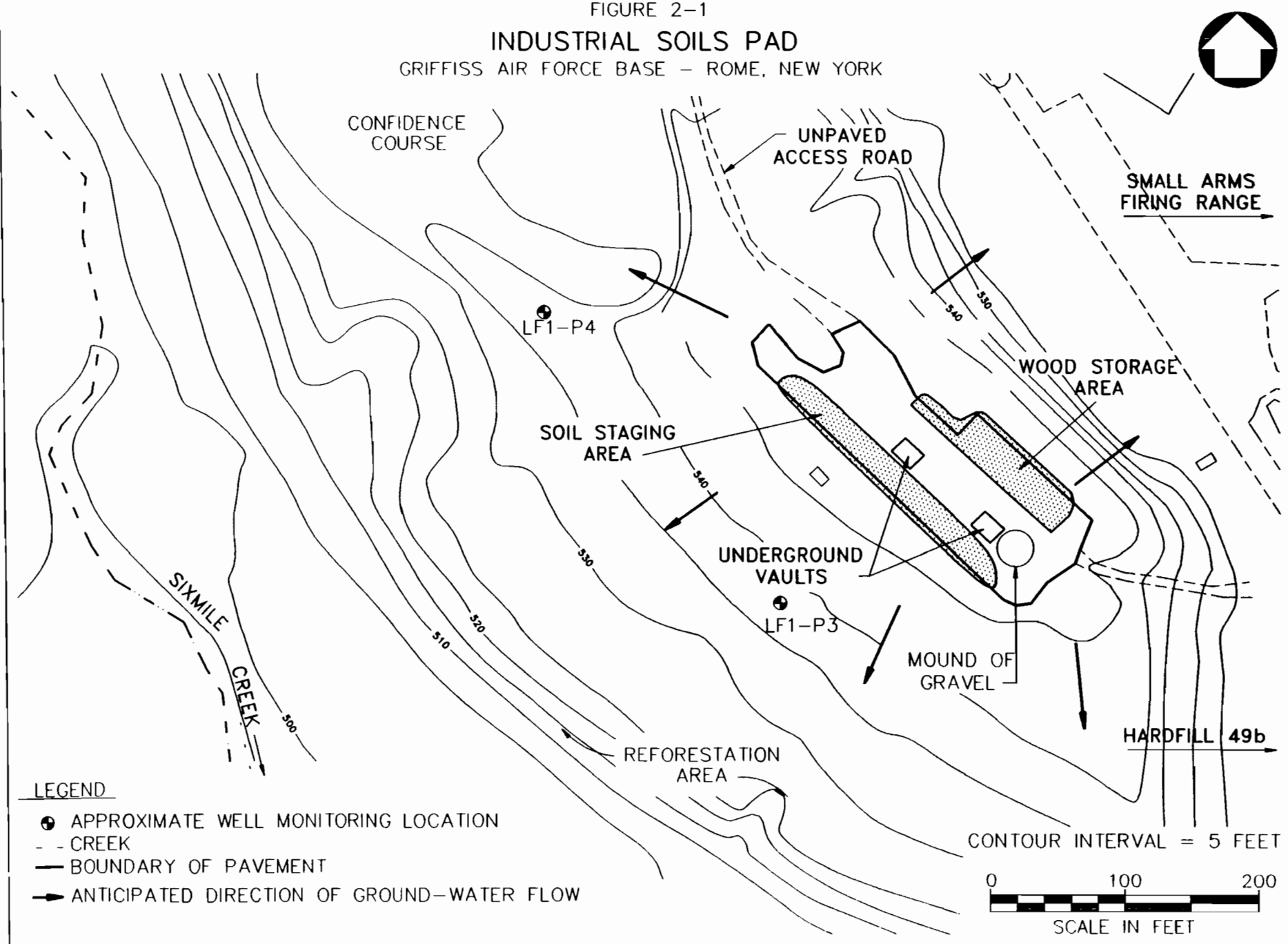
The site has been used by Griffiss AFB since 1987 for the staging of contaminated soils excavated from installation areas pending disposal. The soils typically have been stored by placement on and covering by plastic sheeting. Firewood derived from base clearing activities is stored at the site for sale to base personnel, and mounds of gravel are also stored at the site pending use. In September 1993, it was reported by Griffiss AFB that a structure had been constructed at the site for the storage of future soils generated during base construction activities pending disposal (GAFB, 1993).

A visual reconnaissance of the site was conducted in May 1992 by Law Environmental, Inc. (Law). The site was accessed by a dirt road that originates at Perimeter Road and proceeds east of the Confidence Course. The Industrial Soils Pad consisted of an asphaltic concrete paved area approximately 240 feet in length and 105 feet in width. Mounds of soil covered by plastic sheeting were observed along the southwestern area of the site, and stacks of firewood were observed along the northeastern edge of the paved area. A mound of gravel was present

FIGURE 2-1

INDUSTRIAL SOILS PAD

GRIFFISS AIR FORCE BASE – ROME, NEW YORK



at the southern end of the site. Two abandoned underground concrete vaults were present at the site. Each vault was approximately 9 feet by 9 feet in areal dimension and approximately 6 feet deep. At the time of the site visit, the northern vault was found to be partially filled by soil. The second vault was empty.

The nearest monitoring wells to the site are LF1-P3 and LF1-P4, located between 300 and 500 feet to the west and northwest, between the Industrial Soils Pad and Sixmile Creek. These wells were installed and sampled in 1982 by Roy F. Weston, Inc. (Weston) as part of the quantification stage monitoring wells installed at Landfill 1. These samples were collected approximately 5 years prior to the reported initial use of the Industrial Soils Pad for contaminated soil staging. Monitoring well LF1-P3 was indicated to be hydraulically downgradient from the Industrial Soils Pad, while LF1-P4 appears to be situated lateral to ground-water flow. Ground-water samples were analyzed by Weston for total organic carbon (TOC), volatile organic analytes (Priority Pollutant List), three dissolved metals (chromium, iron, and zinc), and total phenols. Dissolved zinc was detected in well LF1-P4 at 0.04 milligrams per liter (mg/L). Phenols were detected in these samples at 46.4 and 54.1 mg/L, respectively, in wells LF1-P3 and LF1-P4, and TOC was identified in well LF1-P3 at 24.4 mg/L. No other analytes were detected in these two wells (Weston, 1982).

3.0 DATA ACQUISITION ACTIVITIES

Shallow soil samples were collected in February 1993 from eleven borings along the perimeter of the Industrial Soils Pad, and one sample of soil was collected from a vault located in the northern section of the site for chemical in May and June 1993. Ground-water samples were collected from the two monitoring wells, LFIP-3 and LFI-P4, located in the vicinity of the site during sampling activities for another project. The details of soil and ground-water data acquisition activities for the Industrial Soils Pad are discussed in the following subsections.

3.1 SOILS

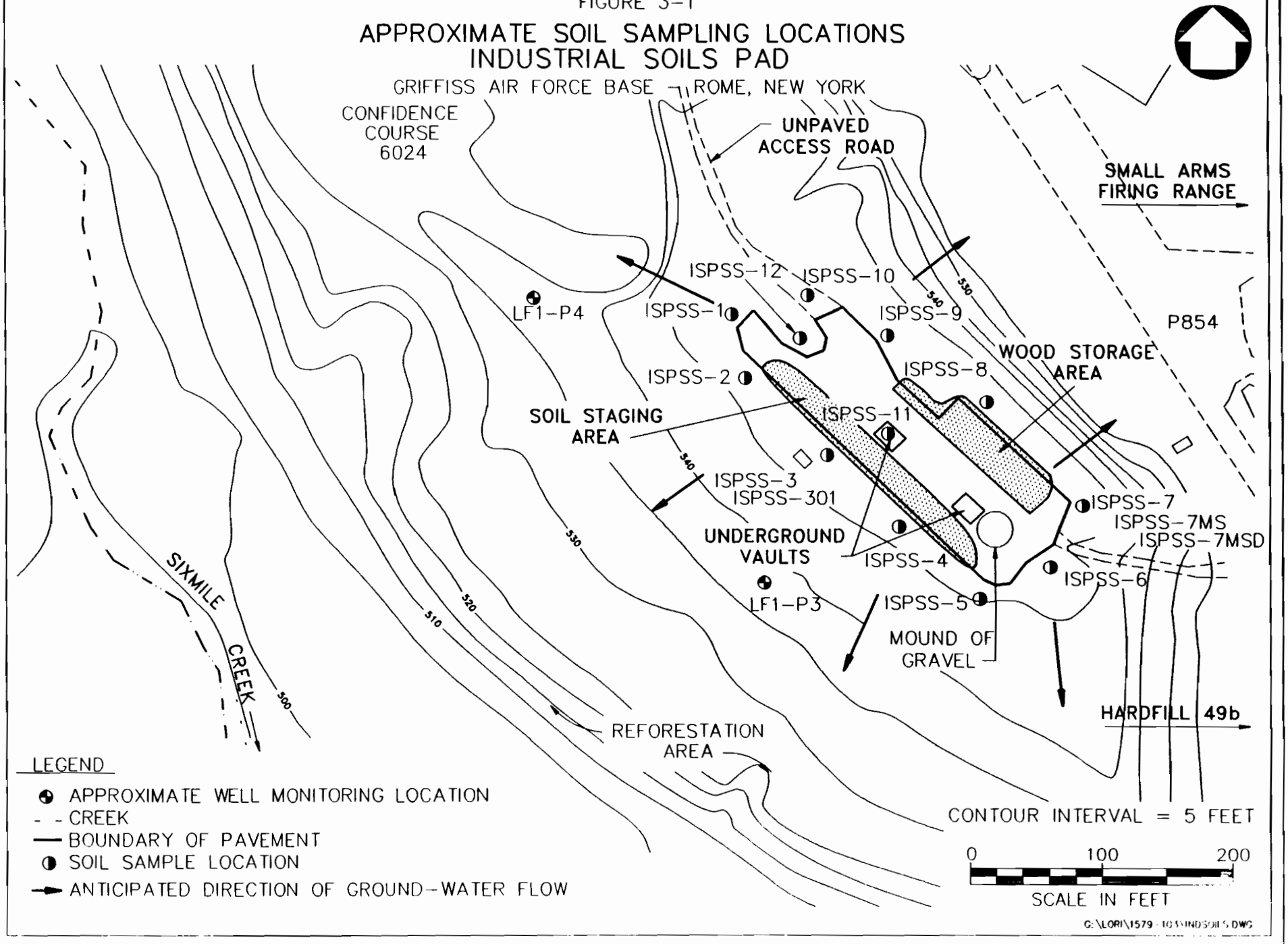
The field activities for the data acquisition consisted of collection and analyses of soil samples from the perimeter of the paved area of the site and from the underground vault. The sampling activities were performed in February, and June 1993. Sampling was performed following the protocols outlined in the SAP (Law, 1993). A total of twelve soil samples were collected from the site (Figure 3-1). Eleven soil samples were collected from the perimeter of the paved area of the site used for the staging of soils. Ten of these samples were collected from the 0 to 6-inch depth interval and the eleventh sample (ISPSS-3) was collected from depth of 0 to 2 feet below grade. Samples were obtained using a chisel and mallet because of the hard-frozen soil at the time of sampling (February, 1993). All sampling equipment was decontaminated prior to sample collection.

The twelfth sample, ISPSS-11, was a grab sample collected from an underground vault located in the northern area of the site in which a quantity of soil of uncertain origin was observed in May 1992 during the visual reconnaissance of the site. The soil sample from the underground vault was collected using a stainless steel hand auger with an extension device. The soil sample from the underground storage vault was first collected in May 1993. The sample was recollected in June 1993 because the original chemical analysis did not include all of the Target Analyte List (TAL) metals.

The quality assurance and quality control samples were collected at the locations specified in the SAP (Law, 1992). The duplicate and split samples were collected from location ISPSS-3 and the Matrix Spike/Matrix Spike Duplicate (MS/MSD) sample set was collected from sample location ISPSS-7. The split sample was submitted to the U.S. Army Corps of Engineers, Missouri River Division Laboratory (CEMRD). A split sample for the New York State Department of Health (NYSDOH) was also collected from location ISPSS-3 and was provided to Mr. Jonathan Greco of the NYSDEC at the time of field collection.

FIGURE 3-1

APPROXIMATE SOIL SAMPLING LOCATIONS
INDUSTRIAL SOILS PAD



3.2 GROUND WATER

A ground-water investigation was not included in the scope of work for the investigations at the Industrial Soils Pad; however, the preliminary ground-water data acquired for monitoring wells LF1P-3 and LF1P-4 as part of the Quarterly Sampling at Griffiss AFB conducted under Contract DACW-41-92-8001, D. O. 0001 were available and used to evaluate the potential impact of site soil contamination on ground water in the vicinity of the site. These two wells are located between 300 and 500 feet west and northwest of the site, respectively (Figure 3-1). Well LFIP-3 is anticipated to be downgradient from the site based on site topography; LFIP-4 appears to be situated lateral with respect to the expected direction of ground-water flow from the site.

The ground-water samples were collected using well-specific dedicated sampling equipment during November 1992 (First Quarter), March 1993 (Second Quarter) and June 1993 (Third Quarter) as part of the Quarterly Ground-Water Sampling for the Baseline Investigation. The ground-water sampling was performed following the protocols outlined in the Baseline Investigation Chemical Data Acquisition Plan (CDAP) (Law, 1991), and the samples were delivered to the laboratory following the specified protocols (Law, 1993). Sample integrity was maintained during shipment and analysis. The ground-water data obtained are to be considered preliminary pending the receipt of the CEMRD data evaluation report for this project.

4.0 LABORATORY ANALYTICAL PROCEDURES

The laboratories used on this project and the analytical procedures applied in the analyses of soil and ground-water samples are described in this section. A change in the scope of analyses for the soil sample collected from the vault was implemented during the project at the request of the NYSDEC and the direction of the U. S. Army Corps of Engineers (USACE).

4.1 SOIL SAMPLES

Soil samples were analyzed by the Law Environmental National Laboratory (LENL) facility located in Kennesaw, Georgia. Soil samples ISPSS-1 through ISPSS-10 and ISPSS-12 were analyzed for benzene, toluene, ethylene, and xylenes (BTEX), TRPH, and eight metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). At the direction of the USACE, the soil sample collected from the underground vault (ISPSS-11) was additionally analyzed for TCL volatile and semi-volatile organics, TCL pesticides and polychlorinated biphenyls (PCBs), and TAL metals. The analytical results for this sample are reported under sample identification number ISP1 in the laboratory reports. The analyses conducted on the soil samples and the methodologies used by the laboratory are summarized in Table 4-1.

4.2 GROUND-WATER SAMPLES

Ground-water samples collected during the quarterly sampling were analyzed by the Princeton Testing Laboratory facility located in Princeton, New Jersey, and CTM Analytical Laboratories facility, located in Latham, New York.

The ground-water samples, LF1-P3 and LF1-P4, were analyzed for TCL volatile and semi-volatile organics, TCL pesticides/PCBs, hexavalent chromium, TAL metals, and total glycols. A detailed discussion on methodologies used in the analyses of ground-water samples will be contained in the Quality Control Summary Report (QCSR) for Quarterly Ground-Water Sampling for the Baseline Investigation (QCSR). This report will be prepared and submitted to USACE following the fourth quarter of ground-water sampling and data quality evaluation. The ground-water analytical data presented in this document should be considered as draft, as the Quality Assurance Report from the CEMRD laboratory has not been received at this time.

TABLE 4-1

SUMMARY OF ANALYTICAL PARAMETERS
Confirmatory Sampling - Industrial Soils Pad
Griffiss AFB, New York

Sample I.D.	Date Collected	TCL VOA EPA 8240	TCL BNA EPA 8270	TCL P/PCBs EPA 8080	Metals(a) EPA 6/7000	Metals(b) EPA 6/7000	BTEX EPA 8020	TRPH EPA 9073
ISPSS-1	17 Feb 93				1		1	1
ISPSS-2	17 Feb 93				1		1	1
ISPSS-3	17 Feb 93				1		1	1
ISPSS-3 Split(c)	17 Feb 93				1		1	1
ISPSS-301(d)	17 Feb 93				1		1	1
ISPSS-4	17 Feb 93				1		1	1
ISPSS-5	17 Feb 93				1		1	1
ISPSS-6	17 Feb 93				1		1	1
ISPSS-7 ISPSS-7 MS ISPSS-7 MSD	17 Feb 93 17 Feb 93 17 Feb 93				1 1 1		1 1 1	1 1 1
ISPSS-8	17 Feb 93				1		1	1
ISPSS-9	17 Feb 93				1		1	1
ISPSS10	17 Feb 93				1		1	1
ISPSS11* Vault	11 June 93	1	1	1		1		
ISPSS12	17 Feb 93				1		1	1
TOTAL FIELD SAMPLES		1	1	1	11	1	11	11
TOTAL QA/QC SAMPLES		0	0	0	4	0	4	4

* Sample identified as ISP1 in the laboratory reports

(a) Includes arsenic, barium, cadmium, chromium, selenium, silver, lead and mercury.
(b) Includes Target Analyte List (TAL) Metals: aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, zinc
(c) Field split sample was submitted to the U.S. Army Corps of Engineers, Missouri River Division Laboratory.
(d) A field split sample was provided to the New York State Department of Health from sample location ISPSS-3.

TCL Target Compound List
VOA Volatile Organics Analysis
BNA Base Neutral/Acid Extractable Organics
P/PCBs Pesticides/Polychlorinated Biphenyls
BTEX Benzene, Toluene, Ethylbenzene and Xylenes
TRPH Total Recoverable Petroleum Hydrocarbons
QA/QC Quality Assurance/Quality Control

0635.96

5.0 DATA QUALITY EVALUATION

The data acquired for the investigation were evaluated against the criteria established for the laboratory and field activities. Based on the results of the data quality evaluation, the data are either accepted as reported by the laboratory or accepted with a qualifier. The following sections describe the data quality evaluation procedures used.

5.1 DATA QUALITY EVALUATION PROCEDURES

The laboratory data were evaluated to assess completeness, adherence to holding times, method blank contamination, surrogate recoveries (where applicable), and MS/MSD recoveries and relative percent differences (RPDs) in accordance with the guidelines presented by the United States Environmental Protection Agency (USEPA) in the documents "Laboratory Data Validation Functional Guidelines for Evaluating Organic Analyses (USEPA, 1988a) and Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses (USEPA, 1988b). These criteria were used to evaluate the bias and precision of the data generated by the laboratory.

To assess the quality of the field sampling activities, Quality Control (QC) and Quality Assurance (QA) samples were collected. These samples consisted of one duplicate sample, collected at sample location ISPSS-3, and one MS/MSD sample set, collected at location ISPSS-7 (Table 4-1). These samples were required under CEMRD protocols (USACE, 1988) and by the project Scope of Work. The QA samples were collected at the same time as the field sample at the designated location. Evaluation of field QC consisted of investigations of completeness and field duplicate RPDs. The results of the data quality evaluation and the data interpretation are discussed below.

5.2 DATA QUALITY EVALUATION RESULTS

The results of the data evaluation indicated that the analyses were performed according to the methodologies specified and within the method-specified holding times. Except as noted below for sample ISP1 (vault sample), all data met the QC criteria specified by the method. The observed values, RPDs, and the control limits are summarized in Table 5-1.

TABLE 5-1

SUMMARY OF DUPLICATE RESULTS
Confirmatory Sampling – Industrial Soils Pad
Griffiss AFB, New York

PARAMETER	ISPSS-3 (mg/kg)	ISPSS-301 (mg/kg)	RELATIVE PERCENT DIFFERENCE (%)	CONTROL LIMIT (%)
Barium	88	60	37.8	25
Cadmium	0.39	0.4	2.5	25
Chromium	9.9	12	19.2	25
Arsenic	5.6	5.3	5.5	25
Lead	28	28	0	25
Selenium	ND	0.21	NC	25
TRPH	63	71	12	25

mg/kg = milligrams per kilogram
ND = Not Detected
TRPH = Total Recoverable Petroleum Hydrocarbons
NC = Not Calculated

- The method blank for sample ISP1 contained calcium at a concentration 3.3 milligrams per kilogram (mg/kg). The field sample concentration (6,800 mg/kg) was over ten times the method blank concentration. Therefore, the datum for calcium in sample ISP1 was not qualified.

- The RPD between field duplicate samples ISPSS-3 and ISPSS-301 were within the control limits of less than 25 percent RPD for all metals except barium. An RPD of 37.8 percent, outside the control limit of 25 percent RPD was indicated. The deviation in RPDs can be attributed to the non-homogeneous nature of the soil matrix, which makes it difficult to obtain a reproducible sample. Therefore, the data for barium for samples ISPSS-1 through ISPSS-10 and sample ISPSS-12 are qualified with a "J" annotation, indicating an estimated concentration.

The data for soils generated by the laboratory were of acceptable quality. While some QC problems were encountered as noted above, the data are of sufficient quality to be useful with respect to meeting the project Data Quality Objectives.

The ground-water data acquired during the quarterly sampling project will be evaluated and interpreted in the Quality Control Summary Report to be published after the Quarterly Sampling for the Baseline Investigation is complete. The ground-water data presented, although validated, should be considered draft data, pending the receipt of the CEMRD QC report.

The results of the chemical analyses of soil and ground-water analyses at the site are discussed in the following section.

6.0 ANALYTICAL DATA RESULTS AND DISCUSSION

The purpose of this investigation was to evaluate whether runoff of contaminants from soils stored at the Industrial Soils Pad site has occurred and impacted on soils surrounding the areas used for soil storage. In addition, data previously gathered from monitoring wells in the vicinity of the site were evaluated with respect to the project objectives. The data acquired are presented in this section and the concentrations of constituents detected in soil and ground water at and in the vicinity of the Industrial Soils Pad Site are compared to existing and proposed federal and state regulatory standards applicable to these matrices.

6.1 SOILS ADJACENT TO PAD

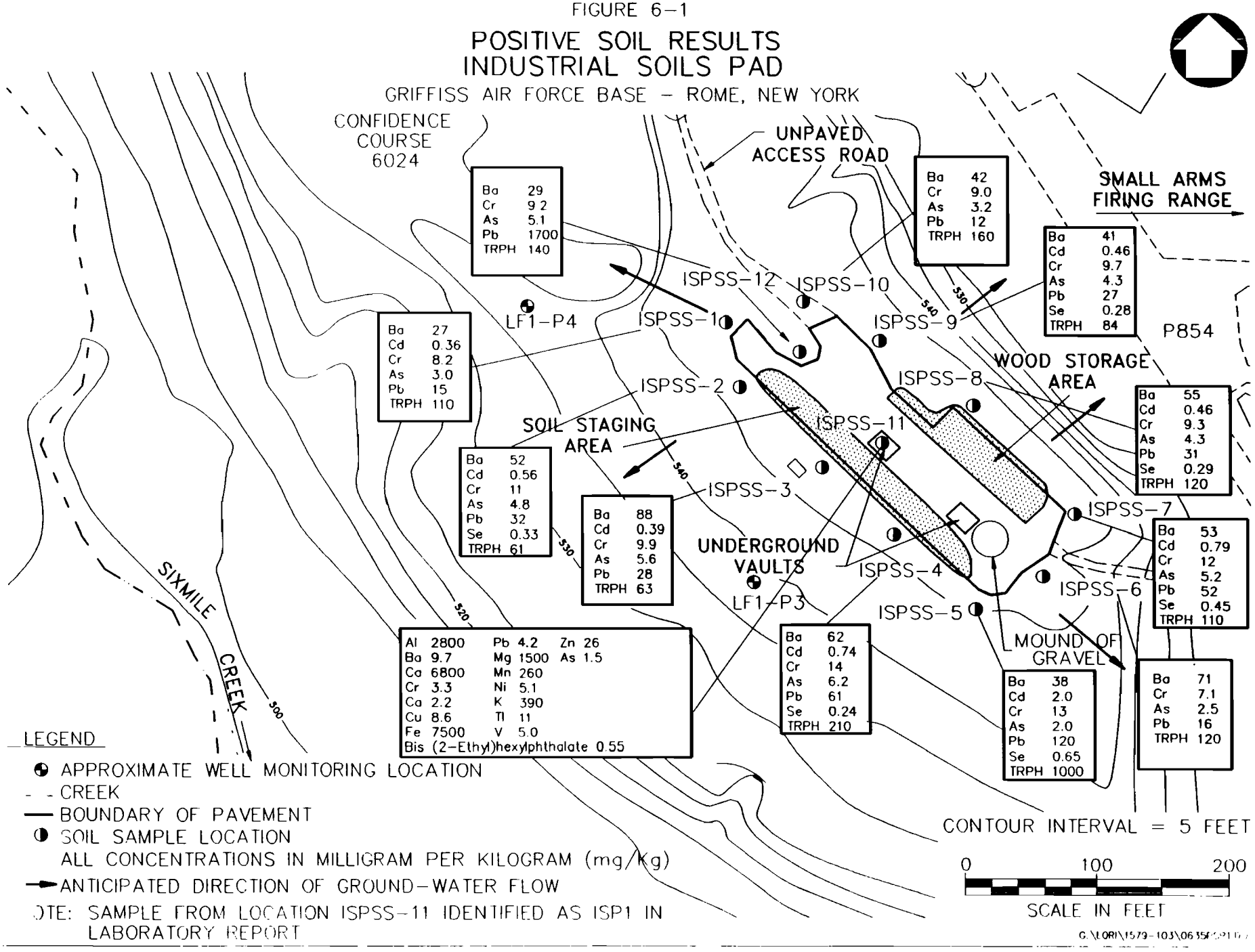
Eleven soil samples collected from the area in the perimeter of the paved portion of the Industrial Soils Pad were analyzed for eight Resource Conservation and Recovery Act (RCRA) metals, BTEX, and TRPH. All soil samples collected were found to contain metals at various concentrations (Figure 6-1 and Table 6-1). Four metals, barium, chromium, arsenic and lead, were detected in all samples. Cadmium and selenium were detected in eight and seven sampling locations, respectively. Cadmium was identified at locations ISPSS-1 through ISPSS-5, and ISPSS-7 through ISPSS-9, with concentrations ranging from 0.36 milligrams per kilogram (mg/kg) to 2.0 mg/kg. Selenium, detected at locations ISPSS-2, ISPSS-4, ISPSS-5, and ISPSS-7 through ISPSS-9, was found at levels between 0.24 mg/kg and 0.65 mg/kg. Silver and mercury were not detected above detection limits in any of the soil samples. Lead was detected at a concentration of 1,700 mg/kg in soil sample ISPSS-12 collected from a location north of the soil storage area. Lead concentrations at other locations sampled ranged from 4.8 mg/kg to 120 mg/kg. The presence of lead at the concentration noted at location ISPSS-12, which was situated north of the soil storage area, may be associated runoff of soils from the site.

Total Recoverable Petroleum Hydrocarbons (TRPH) were detected in all but one of the soil samples, with levels ranging from 61 mg/kg (ISPSS-2) to 1,000 mg/kg (ISPSS-5). The highest concentration of TRPH was detected near the southwestern corner of the pavement at sampling location ISPSS-5. This location was in proximity of the area along the western section of the site at which stored soils were observed in the past. Potential releases of petroleum hydrocarbons from the soils stored at this location, or contamination arising from other unknown past activities at this site may have resulted in the local area of contamination indicated. Benzene, ethylbenzene, toluene, and xylenes were not detected in the sampled soils.

FIGURE 6-1

POSITIVE SOIL RESULTS
INDUSTRIAL SOILS PAD

GRIFFISS AIR FORCE BASE – ROME, NEW YORK



LEGEND

- APPROXIMATE WELL MONITORING LOCATION
- CREEK
- BOUNDARY OF PAVEMENT
- SOIL SAMPLE LOCATION

ALL CONCENTRATIONS IN MILLIGRAM PER KILOGRAM (mg/kg)

- ANTICIPATED DIRECTION OF GROUND-WATER FLOW

NOTE: SAMPLE FROM LOCATION ISPSS-11 IDENTIFIED AS ISP1 IN LABORATORY REPORT

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TABLE 6-1

POSITIVE ANALYTICAL RESULTS
INDUSTRIAL SOILS PAD INSTALLATION RESTORATION PROGRAM SITE
Griffiss AFB, New York

PARAMETER		UNITS	ISP-1	ISPSS-1	ISPSS-2	ISPSS-3	ISPSS301	ISPSS-4	ISPSS-5
20122	Moisture (Oven Dried @ 105C)	%	13	24	27	25	30	32	46
30205	Aluminum, Total	mg/kg	2800	--	--	--	--	--	--
30213	Barium, Total	mg/kg	9.7	27 J	52 J	88 J	60 J	62 J	38 J
30221	Cadmium, Total	mg/kg	<0.31	0.36	0.56	0.39	0.40	0.74	2.0
30225	Calcium, Total	mg/kg	6800	--	--	--	--	--	--
30229	Chromium, Total	mg/kg	3.3	8.2	11	9.9	12	14	13
30231	Cobalt, Total	mg/kg	2.2	--	--	--	--	--	--
30233	Copper, Total	mg/kg	8.6	--	--	--	--	--	--
30237	Iron, Total	mg/kg	7500	--	--	--	--	--	--
30239	Lead, Total	mg/kg	4.2	--	--	--	--	--	--
30241	Magnesium, Total	mg/kg	1500	--	--	--	--	--	--
30245	Manganese, Total	mg/kg	260	--	--	--	--	--	--
30253	Nickel, Total	mg/kg	5.1	--	--	--	--	--	--
30257	Potassium, Total	mg/kg	390	--	--	--	--	--	--
30279	Thallium, Total	mg/kg	11	--	--	--	--	--	--
30289	Vanadium, Total	mg/kg	5.0	--	--	--	--	--	--
30293	Zinc, Total	mg/kg	26	--	--	--	--	--	--
30577	Arsenic, Total	mg/kg	1.5	3.0	4.8	5.6	5.3	6.2	2.0
30601	Lead, Total	mg/kg	--	15	32	28	28	61	120
30609	Selenium, Total	mg/kg	<0.21	<0.21	0.33	<0.21	0.21	0.24	0.65
64347	bis(2-ethylhexyl)phthalate	ug/kg	550	--	--	--	--	--	--
78001	TRPH-IR	mg/kg	--	110	61	63	71	210	1000

J - Estimated quantitation based upon QC data.
-- - Not required.

TABLE 6-1

POSITIVE ANALYTICAL RESULTS
INDUSTRIAL SOILS PAD INSTALLATION RESTORATION PROGRAM SITE
Griffiss AFB, New York

PARAMETER		UNITS	ISPSS-6	ISPSS-7	ISPSS-8	ISPSS-9	ISPSS-10	ISPSS-11	ISPSS-12
20122	Moisture (Oven Dried @ 105C)	%	16	31	32	24	28	18	31
30205	Aluminum, Total	mg/kg	--	--	--	--	--	--	--
30213	Barium, Total	mg/kg	71 J	53 J	55 J	41 J	42 J	10 J	29 J
30221	Cadmium, Total	mg/kg	<0.31	0.79	0.46	0.46	<0.31	<0.31	<0.31
30225	Calcium, Total	mg/kg	--	--	--	--	--	--	--
30229	Chromium, Total	mg/kg	7.1	12	9.3	9.7	9.0	4.0	9.2
30231	Cobalt, Total	mg/kg	--	--	--	--	--	--	--
30233	Copper, Total	mg/kg	--	--	--	--	--	--	--
30237	Iron, Total	mg/kg	--	--	--	--	--	--	--
30239	Lead, Total	mg/kg	--	--	--	--	--	--	--
30241	Magnesium, Total	mg/kg	--	--	--	--	--	--	--
30245	Manganese, Total	mg/kg	--	--	--	--	--	--	--
30253	Nickel, Total	mg/kg	--	--	--	--	--	--	--
30257	Potassium, Total	mg/kg	--	--	--	--	--	--	--
30279	Thallium, Total	mg/kg	--	--	--	--	--	--	--
30289	Vanadium, Total	mg/kg	--	--	--	--	--	--	--
30293	Zinc, Total	mg/kg	--	--	--	--	--	--	--
30577	Arsenic, Total	mg/kg	2.5	5.2	4.3	4.3	3.2	2.0	5.1
30601	Lead, Total	mg/kg	16	52	31	27	12	4.8	1700
30609	Selenium, Total	mg/kg	<0.21	0.45	0.29	0.28	<0.21	<0.21	<0.21
64347	bis(2-ethylhexyl)phthalate	ug/kg	--	--	--	--	--	--	--
78001	TRPH-IR	mg/kg	120	110	120	84	160	--	140

J - Estimated quantitation based upon QC data.
-- - Not required.

There are currently no enforceable federal or state regulations concerning constituent concentrations in soils. However, human-health based criteria were developed under the Resource Conservation and Recovery Act (RCRA) corrective action program for carcinogens and systemic toxicants in soils. The proposed RCRA Corrective Action Levels (CALs) for soils serve as an indicator as to whether corrective measures may be warranted (Federal Register, 1990). New York State has also developed Soil Action Levels for both carcinogens and systemic toxicants (NYSDEC, 1992). The state and federal soil action levels provide an estimate of the daily exposure individuals (including sensitive receptors) can experience without appreciable risk of health effects (or cancer, in the case of carcinogens) during a lifetime through incidental ingestion.

Table 6-2 presents a comparison of the maximum detected contaminant concentrations in the soils sampled to the proposed RCRA Soil CALs and the New York Soil Action Levels. Only lead, detected at 1,700 mg/kg, at sampling location ISPSS-12, exceeded the proposed RCRA CALS and the New York State Cleanup Levels. Soil criteria are not available for TRPH.

In the past, petroleum fuels frequently contained lead. Therefore, lead detected at concentrations exceeding the proposed soil criteria at one sampling location may have originated from fuel contaminated soils previously stored at this site, or from other unknown historical site use(s). Similarly, TRPH, detected at a significantly higher concentration at sampling location ISPSS-5 with respect to the other locations sampled, may be indicative of runoff from stored soils.

6.2 UNDERGROUND VAULT

A sample collected from the underground vault was analyzed for the TCL organic compounds, TAL inorganic compounds, pesticides and PCBs (Figure 6-1 and Table 6-1). Sixteen metals were detected in the sample collected from the vault. In addition, the semi-volatile organic compound, bis(2-ethylhexyl)phthalate was detected in this sample at a concentration of 550 micrograms per kilogram (μg/kg). A comparison of the maximum detected concentrations of constituents in the soil sample collected from the vault to proposed RCRA Soil CALS and the New York State Soil Action Levels is presented in Table 6-2. Thallium, detected at a concentration of 11 mg/kg, was the only compound which exceeded current state and federal soil criteria. (State and federal soil criteria were not available for seven of the compounds detected in the vault sample). Major releases of thallium to the environment occur from processes such as coal burning, in which thallium is a trace constituent of the raw materials. Thallium compounds have also been used in the semiconductor industry, manufacture of electronic devices, switches and closures. It is also used in the production of low melting glass, photocells, fireworks and as an oxidizing agent in organic syntheses. Up until 1972, thallium was used as a pesticide for control of rodents

TABLE 6-2

COMPARISON OF MAXIMUM DETECTED SOIL CONCENTRATIONS TO REGULATORY CRITERIA INDUSTRIAL SOILS PAD CONFIRMATORY SAMPLING
Griffiss AFB, New York

Constituent	Maximum Soil Concentrations (mg/kg)	Sample ID	Proposed RCRA Corrective Action Levels (CAL) for Soils (mg/kg)	Proposed New York State Soil Action Levels (mg/kg)
Metals (total):				
Aluminum	2,800	ISP-1 (vault)	NA	NA
Arsenic	6.2	ISPSS-4	80	80
Barium	88 T	ISPSS-3	4,000	4,000
Cadmium	2.0	ISPSS-5	40	80
Calcium	6,800	ISP-1 (vault)	NA	NA
Chromium	14	ISP-1 (vault)	400 (a)/80,000 (b)(d)	400 (a)/80,000 (b)
Cobalt	2.2	ISP-1 (vault)	NA	NA
Copper	8.6	ISP-1 (vault)	NA	NA
Iron	7,500	ISP-1 (vault)	NA	NA
Lead	1,700	ISPSS-12	1,000 (c)	500
Magnesium	1,500	ISP-1 (vault)	NA	NA
Manganese	260	ISP-1 (vault)	8,000 (d)	20,000
Nickel	5.1	ISP-1 (vault)	2,000	2,000
Potassium	390	ISP-1 (vault)	NA	NA
Selenium	0.65	ISPSS-5	400 (d)	NA
Thallium	11	ISP-1 (vault)	5.6 (d)	6.0
Vanadium	5.0	ISPSS-1 (vault)	560 (d)	600
Zinc	26	ISP-1 (vault)	24,000 (d)	20,000
Semi-Volatile Organics:				
bis(2-ethylhexyl)phthalate	0.55	ISP-1 (vault)	50	NA
TRPH	1,000	ISPSS-5	NA	NA

[ ] Exceeds regulatory criterion
NA - Not Available
J = Estimated concentration based on QC data

(a) Data is for hexavalent chromium
(b) Data is for trivalent chromium
(c) Interim Guidance on Establishing Soil Cleanup Levels for Superfund Sites. USEPA 9355.4-02
(d) Calculated values using equation from Proposed Subpart S, 40 CFR 264 and Toxicity Values from EPA's Integrated Risk Information System (IRIS)

Reference:
Federal Register, 1990. Proposed Rules. FR 55 (143): 30865-30870. July 27, 1990.

NYSDEC. Division of Hazardous Substances Regulation. Bureau of Technical Support. Technical Administrative Guidance Memorandum, No. 3028. November 30, 1992.

and insects; its use for this purpose was banned in 1972 by federal regulation (USDHHS, 1990; USEPA, 1985). Land disposal restrictions for thallium were implemented by EPA in 1987.

6.3 GROUND WATER

Ground-water investigations were not included in the scope of the site investigations at the Industrial Soils Pad. However, chemical data were available for ground-water samples collected from two wells located near the site that have been sampled during three rounds of based quarterly ground-water monitoring since November 1992. These draft data were included in this report in order to evaluate whether the contaminants indicated in soils at this site may have impacted on ground-water quality.

Ground water samples collected from the two wells located in the vicinity of the site were analyzed for TAL metals, BTEX, PCBs and pesticides, TCL VOA and base neutral/acid extractables (BNA) and TRPH during three rounds of basewide quarterly ground-water monitoring. The positive analytical ground-water results are presented in Table 6-3. Eight metals were detected in the two wells from three sampling events. Calcium, sodium, and manganese were detected at greatest concentrations. Total glycols, the only organic compounds detected in ground water, were found at a concentration of 0.06 μg/L in well LF1P-3 during the second round of quarterly sampling. Two other organic compounds identified in the field samples, acetone and methylene chloride, are likely to comprise laboratory-introduced contaminants, because the detected concentrations did not significantly exceed the concentrations found in method and trip blanks associated with these samples (Law, 1993).

Standards potentially applicable to ground-water quality at the Industrial Soils Pad include Federal and New York State Maximum Contaminant Levels (MCLs) for drinking water and the New York Ground-Water Standards. MCLs are enforceable standards set under Safe Drinking Act for ground water or surface waters currently or potentially used as a drinking water source. MCLs establish the maximum contaminant concentration permitted in a source of potable water which is protective of human health and is technologically feasible. State MCLs are equal to or more stringent than federally promulgated standards (40 CFR Part 141.11).

The State of New York has promulgated regulations for ground-water quality based on the regulatory classification of the ground water. Since ground water in the vicinity of Griffiss AFB could potentially be utilized as a source of potable water, the standards for Class GA waters are applied. New York Class GA waters are defined as fresh ground waters found in the saturated zone of unconsolidated deposits and consolidated rock or bed rock. The best usage of Class GA waters is as a source of potable water (NYCRR Title 6 Part 703.5).

TABLE 6-3

POSITIVE ANALYTICAL RESULTS IN GROUND WATER
Confirmatory Sampling – Industrial Soils Pad
Griffiss AFB, New York

CONSTITUENT	LFIP-3 Quarter 1	LFIP-3 Quarter 2	LFIP-3 Quarter 3	LFIP-4 Quarter 1	LFIP-4 Quarter 2	LFIP-4 Quarter 3
METALS (mg/L)						
Barium	<0.02	0.07	0.07	<0.02	<0.02	<0.02
Calcium	91	103	94.9	77.6	115	79.7
Iron	<0.02	<0.02	0.086	0.94	1.03	0.80
Magnesium	18.2	16.0	17.5	3.8	5.12	4.31
Manganese	0.076	0.077	0.075	0.14	0.179	0.183
Potassium	3.08	2.37 J	2.77	1.83	1.88 J	2.07
Sodium	20.0	16.3	19.3	10.4	11.3	14.9
Zinc	0.18	0.076	0.205	0.10	0.115	0.144
VOLATILE ORGANIC COMPOUNDS (µg/L)						
Acetone	<5	<5	13.0 JB	2.5 B	<5	14.0 JB
Glycols (total)	<0.04	0.06 J	<0.04	<0.04	<0.04	<0.04
Methylene Chloride	16 B	4.1 JB	6.6 JB	5.9 B	4.7 JB	7.7 JB

Data obtained from Basewide Quarterly Ground-Water Sampling performed by Law Environmental

J = Estimated Quantitation Based on QC Data
B = False Positive Based on Trip Blank Data
JB = Estimated Quantitation, Possible Based High or False Positive Based on QC Data

Table 6-4 presents a comparison of the maximum detected concentrations of compounds detected in ground water from three sampling events to ground water standards. Only two metals, iron and manganese, exceeded federal and state standards. The maximum concentrations of iron detected in well LF1P-4 from the second quarter of sampling exceeded secondary federal and state MCLs and secondary state ground-water standards. Secondary drinking water standards are set to protect aesthetic qualities of drinking water rather than human health effects. The secondary regulations are not federally enforceable but are intended as guidelines for the states (CFR 40 Part 143.3). Manganese was detected at 0.183 mg/L in a sample recovered from the same well, in the Third Quarter, a concentration which exceeded secondary federal MCLs. The well in which these metals were detected at concentrations exceeding ground-water standards is situated lateral to the anticipated flow of ground water from the site. Both iron and manganese are inorganics that can occur in ground-water through natural processes. Based on the limited ground-water data from these two wells, there is no indication that ground-water quality in the downgradient well, LF1P-3 has been impacted by the Industrial Soils Pad Site.

TABLE 6-4

COMPARISON OF
MAXIMUM DETECTED GROUND-WATER CONCENTRATIONS
TO REGULATORY CRITERIA
INDUSTRIAL SOILS PAD CONFIRMATORY SAMPLING
Griffiss AFB, New York

Constituent	Maximum Ground-Water Concentrations (mg/L)	Sample ID	Federal Maximum Contaminant Levels (MCLs) (mg/L)	New York State Maximum Contaminant Levels (MCLs) (mg/L)	New York State Ground-Water Standards (mg/L)
Metals (total):					
Barium	0.07	LF1P-3 Quarter 2 & 3	2	1	1
Calcium	115	LF1P-4 Quarter 2	NA	NA	NA
Iron	1.03	LF1P-4 Quarter 2	0.3 (b)	0.3 (b)	0.3 (b)
Magnesium	18.2	LF1P-3 Quarter 1	NA	NA	NA
Manganese	0.183	LF1P-4 Quarter 3	0.05 (b)	0.3 (b)	0.3
Potassium	3.08	LF1P-3 Quarter 1	NA	NA	NA
Sodium	20.0	LF1P-3 Quarter 1	NA	NA	20
Zinc	0.205	LF1P-3 Quarter 3	5 (b)	5 (b)	0.3
Semi-Volatile Organics:					
Glycols (total):	0.0006 J	LF1P-3 Quarter 2	NA	NA	0.05

☐ Exceeds regulatory criterion
NA - Not Available
J - Estimated concentration based on QC data
mg/L = milligrams per liter
(a) Data is for for ethylene glycol
(b) Secondary MCLs

References:
USEPA. Office of Water. Drinking Water Regulations, May, 1993
New York State Water Quality Standards. New York Codes, Rules and Regulations, Title 6 Part 703.5
New York State Sanitary Code. Subpart 5-1 of Public Water Systems, May, 1992

7.0 SUMMARY AND CONCLUSIONS

The purpose of this investigation was to evaluate whether the soils in the vicinity of the Industrial Soils Pad site have been impacted by runoff from soils stored at the site. Analytical testing for volatile petroleum constituents (BTEX) and TRPH was conducted at eleven locations along the perimeter of the paved area at the Industrial Soils Pad at Griffiss AFB, New York. In addition, one sample was collected from an open, concrete underground vault located in the northern portion of the site in which soils were observed to be present in May 1992. This sample was analyzed for the Full Target Compound List organics, Target Analyte List inorganics, pesticides and PCBs. In addition, preliminary ground-water data from two wells located near the site were evaluated with respect to whether ground water downgradient from the site has been impacted by site activities.

Benzene, toluene, ethylbenzene and xylenes were not detected in any sample collected from the perimeter of the site. Concentrations of TRPH were detected at higher concentrations (1,000 mg/kg) at one location when compared with the other locations sampled at which TRPH concentrations ranged from 61 to 210 mg/kg. This location, ISPSS-5, was located southwest of the paved area. In addition, total lead, a common additive to petroleum fuels in the past, was detected at a concentration of 7,500 mg/kg north of the paved area, exceeding the proposed RCRA Soil CAL of 1,000 mg/kg. Based on the data gathered during this investigation, there appear to be two locations at which petroleum hydrocarbon-associated contamination is present, one based on the TRPH data, and the second based on lead concentrations. Further investigation of the areas in the vicinity of these sample location is recommended to determine the vertical and lateral extent of soil contamination and to evaluate whether a removal action is warranted.

The soil sample from the underground vault was found to contain levels of thallium exceeding the proposed RCRA Soil CALs. The source of the soils in the vault, as well as the source of the thallium in the soils, are unknown. Removal of the soils from the vault and disposal of the soils from the vault at an EPA-approved facility off-site is recommended. In addition, restricting access to both vaults is recommended, either by closure of the vaults, installation of fencing and warning signs around the vaults or other appropriate means. These vaults pose a physical safety hazard to personnel that may traverse the site.

Data available from three recent rounds of basewide quarterly ground-water sampling from two ground-water monitoring wells adjacent to the site were evaluated. Since the two wells are located in the vicinity of the site, one lateral to the path of ground-water flow from the site, and the second downgradient, the results were considered to provide site-related data. Two metals, iron and manganese, were detected in the well (LFIP-4) located lateral to local ground-water flow at concentrations exceeding secondary state and federal MCLs. These metals are commonly observed in ground-water due to natural processes. No constituents measured in the anticipated downgradient well, LF1P-3, exceeded applicable standards. The data from the downgradient well LFIP-3, therefore, do not suggest an impact from the Industrial Soils Pad.

8.0 REFERENCES

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APPENDIX A

ANNOTATED ANALYTICAL DATA SUMMARY TABLES

APPENDIX 1
ANNOTATED ANALYTICAL DATA SUMMARY
INDUSTRIAL SOILS PAD INSTALLATION RESTORATION PROGRAM SITE
GRIFFISS AIR FORCE BASE, ROME, NEW YORK

PARAMETER		UNITS	ISP---1	ISPSS-1	ISPSS-2	ISPSS-3	ISPSS-3-01	ISPSS-4
20122	Moisture (Oven Dried @ 105C)	%	13	24	27	25	30	32
30204	Antimony, Total	mg/kg	<4.0	--	--	--	--	--
30205	Aluminum, Total	mg/kg	2800	--	--	--	--	--
30213	Barium, Total	mg/kg	9.7	27 J	52 J	88 J	60 J	62 J
30217	Beryllium, Total	mg/kg	<2.1	--	--	--	--	--
30221	Cadmium, Total	mg/kg	<0.31	0.36	0.56	0.39	0.40	0.74
30225	Calcium, Total	mg/kg	6800	--	--	--	--	--
30229	Chromium, Total	mg/kg	3.3	8.2	11	9.9	12	14
30231	Cobalt, Total	mg/kg	2.2	--	--	--	--	--
30233	Copper, Total	mg/kg	8.6	--	--	--	--	--
30237	Iron, Total	mg/kg	7500	--	--	--	--	--
30239	Lead, Total	mg/kg	4.2	--	--	--	--	--
30241	Magnesium, Total	mg/kg	1500	--	--	--	--	--
30245	Manganese, Total	mg/kg	260	--	--	--	--	--
30253	Nickel, Total	mg/kg	5.1	--	--	--	--	--
30257	Potassium, Total	mg/kg	390	--	--	--	--	--
30265	Silver, Total	mg/kg	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69
30269	Sodium, Total	mg/kg	<34	--	--	--	--	--
30279	Thallium, Total	mg/kg	11	--	--	--	--	--
30289	Vanadium, Total	mg/kg	5.0	--	--	--	--	--
30293	Zinc, Total	mg/kg	26	--	--	--	--	--
30421	Mercury, Total	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11
30577	Arsenic, Total	mg/kg	1.5	3.0	4.8	5.6	5.3	6.2
30601	Lead, Total	mg/kg	--	15	32	28	28	61
30609	Selenium, Total	mg/kg	<0.21	<0.21	0.33	<0.21	0.21	0.24
52035	Benzene	ug/kg	--	<1.1	<1.3	<1.3	<1.3	<1.4
52038	Toluene	ug/kg	--	<1.1	<1.3	<1.3	<1.3	<1.4
52041	Ethylbenzene	ug/kg	--	<1.1	<1.3	<1.3	<1.3	<1.4
52042	Xylene, Total	ug/kg	--	<1.7	<2.0	<2.0	<2.0	<2.1
63104	Chloromethane	ug/kg	<10	--	--	--	--	--
63105	Bromomethane	ug/kg	<10	--	--	--	--	--

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PARAMETER		UNITS	ISP---1	ISPSS-1	ISPSS-2	ISPSS-3	ISPSS-3-01	ISPSS-4
63106	Vinyl chloride	ug/kg	<10	--	--	--	--	--
63107	Chloroethane	ug/kg	<10	--	--	--	--	--
63108	Methylene chloride	ug/kg	<5	--	--	--	--	--
63109	Acetone	ug/kg	<100	--	--	--	--	--
63112	Carbon disulfide	ug/kg	<5	--	--	--	--	--
63114	1,1-Dichloroethene	ug/kg	<5	--	--	--	--	--
63115	1,1-Dichloroethane	ug/kg	<5	--	--	--	--	--
63116	1,2-Dichloroethene, Total	ug/kg	<5	--	--	--	--	--
63117	Chloroform	ug/kg	<5	--	--	--	--	--
63118	1,2-Dichloroethane	ug/kg	<5	--	--	--	--	--
63119	2-Butanone (MEK)	ug/kg	<100	--	--	--	--	--
63120	1,1,1-Trichloroethane	ug/kg	<5	--	--	--	--	--
63121	Carbon tetrachloride	ug/kg	<5	--	--	--	--	--
63123	Bromodichloromethane	ug/kg	<5	--	--	--	--	--
63124	1,2-Dichloropropane	ug/kg	<5	--	--	--	--	--
63125	trans-1,3-Dichloropropene	ug/kg	<5	--	--	--	--	--
63126	Trichloroethene	ug/kg	<5	--	--	--	--	--
63127	Dibromochloromethane	ug/kg	<5	--	--	--	--	--
63128	1,1,2-Trichloroethane	ug/kg	<5	--	--	--	--	--
63129	Benzene	ug/kg	<5	--	--	--	--	--
63130	cis-1,3-Dichloropropene	ug/kg	<5	--	--	--	--	--
63132	Bromoform	ug/kg	<5	--	--	--	--	--
63133	4-Methyl-2-pentanone	ug/kg	<50	--	--	--	--	--
63134	2-Hexanone	ug/kg	<50	--	--	--	--	--
63135	1,1,2,2-Tetrachloroethane	ug/kg	<5	--	--	--	--	--
63136	Tetrachloroethene	ug/kg	<5	--	--	--	--	--
63137	Toluene	ug/kg	<5	--	--	--	--	--
63138	Chlorobenzene	ug/kg	<5	--	--	--	--	--
63139	Ethylbenzene	ug/kg	<5	--	--	--	--	--
63140	Styrene	ug/kg	<5	--	--	--	--	--
63141	Xylene, Total	ug/kg	<5	--	--	--	--	--
64201	Phenol	ug/kg	<330	--	--	--	--	--
64202	2-Chlorophenol	ug/kg	<330	--	--	--	--	--
64203	2-Methylphenol	ug/kg	<330	--	--	--	--	--
64204	4-Methylphenol	ug/kg	<330	--	--	--	--	--
64205	2-Nitrophenol	ug/kg	<330	--	--	--	--	--

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PARAMETER		UNITS	ISP---1	ISPSS-1	ISPSS-2	ISPSS-3	ISPSS-3-01	ISPSS-4
64206	2,4-Dimethylphenol	ug/kg	<330	--	--	--	--	--
64208	2,4-Dichlorophenol	ug/kg	<330	--	--	--	--	--
64209	4-Chloro-3-methylphenol	ug/kg	<660	--	--	--	--	--
64210	2,4,6-Trichlorophenol	ug/kg	<330	--	--	--	--	--
64211	2,4,5-Trichlorophenol	ug/kg	<330	--	--	--	--	--
64212	2,4-Dinitrophenol	ug/kg	<1650	--	--	--	--	--
64213	4-Nitrophenol	ug/kg	<1650	--	--	--	--	--
64214	4,6-Dinitro-2-methylphenol	ug/kg	<1650	--	--	--	--	--
64215	Pentachlorophenol	ug/kg	<1650	--	--	--	--	--
64303	bis(2-Chloroethyl) ether	ug/kg	<330	--	--	--	--	--
64304	1,3-Dichlorobenzene	ug/kg	<330	--	--	--	--	--
64305	1,4-Dichlorobenzene	ug/kg	<330	--	--	--	--	--
64306	1,2-Dichlorobenzene	ug/kg	<330	--	--	--	--	--
64309	bis(2-Chloroisopropyl) ether	ug/kg	<330	--	--	--	--	--
64310	Hexachloroethane	ug/kg	<330	--	--	--	--	--
64311	N-Nitrosodi-N-propylamine	ug/kg	<330	--	--	--	--	--
64312	Nitrobenzene	ug/kg	<330	--	--	--	--	--
64313	Isophorone	ug/kg	<330	--	--	--	--	--
64314	bis(2-Chloroethoxy) methane	ug/kg	<330	--	--	--	--	--
64315	1,2,4-Trichlorobenzene	ug/kg	<330	--	--	--	--	--
64316	Naphthalene	ug/kg	<330	--	--	--	--	--
64317	4-Chloroaniline	ug/kg	<660	--	--	--	--	--
64318	Hexachlorobutadiene	ug/kg	<330	--	--	--	--	--
64319	2-Methylnaphthalene	ug/kg	<330	--	--	--	--	--
64320	Hexachlorocyclopentadiene	ug/kg	<330	--	--	--	--	--
64321	2-Chloronaphthalene	ug/kg	<330	--	--	--	--	--
64322	2-Nitroaniline	ug/kg	<660	--	--	--	--	--
64323	Dimethyl phthalate	ug/kg	<330	--	--	--	--	--
64324	Acenaphthylene	ug/kg	<330	--	--	--	--	--
64325	3-Nitroaniline	ug/kg	<1650	--	--	--	--	--
64326	Acenaphthene	ug/kg	<330	--	--	--	--	--
64327	Dibenzofuran	ug/kg	<330	--	--	--	--	--
64328	2,4-Dinitrotoluene	ug/kg	<330	--	--	--	--	--
64329	2,6-Dinitrotoluene	ug/kg	<330	--	--	--	--	--
64330	Diethyl phthalate	ug/kg	<1650	--	--	--	--	--
64331	Fluorene	ug/kg	<330	--	--	--	--	--

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INDUSTRIAL SOILS PAD INSTALLATION RESTORATION PROGRAM SITE
GRIFFISS AIR FORCE BASE, ROME, NEW YORK

PARAMETER		UNITS	ISP---1	ISPSS-1	ISPSS-2	ISPSS-3	ISPSS-3-01	ISPSS-4
64332	4-Chlorophenylphenyl ether	ug/kg	<330	--	--	--	--	--
64333	4-Nitroaniline	ug/kg	<330	--	--	--	--	--
64334	N-Nitrosodiphenylamine	ug/kg	<330	--	--	--	--	--
64336	4-Bromophenylphenyl ether	ug/kg	<330	--	--	--	--	--
64337	Hexachlorobenzene	ug/kg	<330	--	--	--	--	--
64338	Phenanthrene	ug/kg	<330	--	--	--	--	--
64339	Anthracene	ug/kg	<330	--	--	--	--	--
64340	Di-n-butyl phthalate	ug/kg	<330	--	--	--	--	--
64341	Fluoranthene	ug/kg	<330	--	--	--	--	--
64342	Pyrene	ug/kg	<330	--	--	--	--	--
64343	Butylbenzyl phthalate	ug/kg	<330	--	--	--	--	--
64344	Benzo(a)anthracene	ug/kg	<330	--	--	--	--	--
64345	3,3'Dichlorobenzidine	ug/kg	<660	--	--	--	--	--
64346	Chrysene	ug/kg	<330	--	--	--	--	--
64347	bis(2-Ethylhexyl) phthalate	ug/kg	550	--	--	--	--	--
64348	Di-n-octyl phthalate	ug/kg	<330	--	--	--	--	--
64349	Benzo(b)fluoranthene	ug/kg	<330	--	--	--	--	--
64350	Benzo(k)fluoranthene	ug/kg	<330	--	--	--	--	--
64351	Benzo(a)pyrene	ug/kg	<330	--	--	--	--	--
64352	Indeno(1,2,3-cd)pyrene	ug/kg	<330	--	--	--	--	--
64353	Dibenzo(a,h)anthracene	ug/kg	<330	--	--	--	--	--
64354	Benzo(g,h,i)perylene	ug/kg	<330	--	--	--	--	--
64361	Carbazole	ug/kg	<330	--	--	--	--	--
78001	TRPH-IR	mg/kg	--	110	61	63	71	210
78001	alpha-BHC	ug/kg	<5.0	--	--	--	--	--
78002	gamma-BHC (Lindane)	ug/kg	<5.0	--	--	--	--	--
78003	beta-BHC	ug/kg	<5.0	--	--	--	--	--
78004	Heptachlor	ug/kg	<5.0	--	--	--	--	--
78005	delta-BHC	ug/kg	<5.0	--	--	--	--	--
78006	Aldrin	ug/kg	<5.0	--	--	--	--	--
78007	Heptachlor epoxide	ug/kg	<5.0	--	--	--	--	--
78008	Endosulfan I	ug/kg	<5.0	--	--	--	--	--
78009	4,4'DDE	ug/kg	<10	--	--	--	--	--
78010	Dieldrin	ug/kg	<10	--	--	--	--	--
78011	Endrin	ug/kg	<10	--	--	--	--	--
78012	4,4'DDD	ug/kg	<10	--	--	--	--	--

APPENDIX 1
ANNOTATED ANALYTICAL DATA SUMMARY
INDUSTRIAL SOILS PAD INSTALLATION RESTORATION PROGRAM SITE
GRIFFISS AIR FORCE BASE, ROME, NEW YORK

PARAMETER		UNITS	ISP---1	ISPSS-1	ISPSS-2	ISPSS-3	ISPSS-3-01	ISPSS-4
78013	Endosulfan II	ug/kg	<10	--	--	--	--	--
78014	4,4'DDT	ug/kg	<10	--	--	--	--	--
78015	Endrin aldehyde	ug/kg	<10	--	--	--	--	--
78016	Endosulfan sulfate	ug/kg	<10	--	--	--	--	--
78017	Methoxychlor	ug/kg	<50	--	--	--	--	--
78018	Endrin Ketone	ug/kg	<10	--	--	--	--	--
78019	Toxaphene	ug/kg	<200	--	--	--	--	--
78020	alpha-Chlordane	ug/kg	<5.0	--	--	--	--	--
78021	gamma-Chlordane	ug/kg	<5.0	--	--	--	--	--
78022	PCB-1016	ug/kg	<80	--	--	--	--	--
78023	PCB-1221	ug/kg	<160	--	--	--	--	--
78024	PCB-1232	ug/kg	<80	--	--	--	--	--
78025	PCB-1242	ug/kg	<80	--	--	--	--	--
78026	PCB-1248	ug/kg	<80	--	--	--	--	--
78027	PCB-1254	ug/kg	<80	--	--	--	--	--
78028	PCB-1260	ug/kg	<80	--	--	--	--	--

J - Estimated quantitation based upon QC data.
-- - Not required.

APPENDIX 1
ANNOTATED ANALYTICAL DATA SUMMARY
INDUSTRIAL SOILS PAD INSTALLATION RESTORATION PROGRAM SITE
GRIFFISS AIR FORCE BASE, ROME, NEW YORK

PARAMETER		UNITS	ISPSS-5	ISPSS-6	ISPSS-7	ISPSS-8	ISPSS-9	ISPSS-10	ISPSS-12
20122	Moisture (Oven Dried @ 105C)	%	46	16	31	32	24	28	31
30204	Antimony, Total	mg/kg	--	--	--	--	--	--	--
30205	Aluminum, Total	mg/kg	--	--	--	--	--	--	--
30213	Barium, Total	mg/kg	38 J	71 J	53 J	55 J	41 J	42 J	29 J
30217	Beryllium, Total	mg/kg	--	--	--	--	--	--	--
30221	Cadmium, Total	mg/kg	2.0	<0.31	0.79	0.46	0.46	<0.31	<0.31
30225	Calcium, Total	mg/kg	--	--	--	--	--	--	--
30229	Chromium, Total	mg/kg	13	7.1	12	9.3	9.7	9.0	9.2
30231	Cobalt, Total	mg/kg	--	--	--	--	--	--	--
30233	Copper, Total	mg/kg	--	--	--	--	--	--	--
30237	Iron, Total	mg/kg	--	--	--	--	--	--	--
30239	Lead, Total	mg/kg	--	--	--	--	--	--	--
30241	Magnesium, Total	mg/kg	--	--	--	--	--	--	--
30245	Manganese, Total	mg/kg	--	--	--	--	--	--	--
30253	Nickel, Total	mg/kg	--	--	--	--	--	--	--
30257	Potassium, Total	mg/kg	--	--	--	--	--	--	--
30265	Silver, Total	mg/kg	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69
30269	Sodium, Total	mg/kg	--	--	--	--	--	--	--
30279	Thallium, Total	mg/kg	--	--	--	--	--	--	--
30289	Vanadium, Total	mg/kg	--	--	--	--	--	--	--
30293	Zinc, Total	mg/kg	--	--	--	--	--	--	--
30421	Mercury, Total	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11
30577	Arsenic, Total	mg/kg	2.0	2.5	5.2	4.3	4.3	3.2	5.1
30601	Lead, Total	mg/kg	120	16	52	31	27	12	1700
30609	Selenium, Total	mg/kg	0.65	<0.21	0.45	0.29	0.28	<0.21	<0.21
52035	Benzene	ug/kg	<1.8	<1.0	<1.4	<1.3	<1.1	<1.3	<1.2
52038	Toluene	ug/kg	<1.8	<1.0	<1.4	<1.3	<1.1	<1.3	<1.2
52041	Ethylbenzene	ug/kg	<1.8	<1.0	<1.4	<1.3	<1.1	<1.3	<1.2
52042	Xylene, Total	ug/kg	<2.7	<1.5	<2.1	<2.0	<1.7	<2.0	<1.8
63104	Chloromethane	ug/kg	--	--	--	--	--	--	--
63105	Bromomethane	ug/kg	--	--	--	--	--	--	--

APPENDIX 1
ANNOTATED ANALYTICAL DATA SUMMARY
INDUSTRIAL SOILS PAD INSTALLATION RESTORATION PROGRAM SITE
GRIFFISS AIR FORCE BASE, ROME, NEW YORK

PARAMETER		UNITS	ISPSS-5	ISPSS-6	ISPSS-7	ISPSS-8	ISPSS-9	ISPSS-10	ISPSS-12
63106	Vinyl chloride	ug/kg	--	--	--	--	--	--	--
63107	Chloroethane	ug/kg	--	--	--	--	--	--	--
63108	Methylene chloride	ug/kg	--	--	--	--	--	--	--
63109	Acetone	ug/kg	--	--	--	--	--	--	--
63112	Carbon disulfide	ug/kg	--	--	--	--	--	--	--
63114	1,1-Dichloroethene	ug/kg	--	--	--	--	--	--	--
63115	1,1-Dichloroethane	ug/kg	--	--	--	--	--	--	--
63116	1,2-Dichloroethene, Total	ug/kg	--	--	--	--	--	--	--
63117	Chloroform	ug/kg	--	--	--	--	--	--	--
63118	1,2-Dichloroethane	ug/kg	--	--	--	--	--	--	--
63119	2-Butanone (MEK)	ug/kg	--	--	--	--	--	--	--
63120	1,1,1-Trichloroethane	ug/kg	--	--	--	--	--	--	--
63121	Carbon tetrachloride	ug/kg	--	--	--	--	--	--	--
63123	Bromodichloromethane	ug/kg	--	--	--	--	--	--	--
63124	1,2-Dichloropropane	ug/kg	--	--	--	--	--	--	--
63125	trans-1,3-Dichloropropene	ug/kg	--	--	--	--	--	--	--
63126	Trichloroethene	ug/kg	--	--	--	--	--	--	--
63127	Dibromochloromethane	ug/kg	--	--	--	--	--	--	--
63128	1,1,2-Trichloroethane	ug/kg	--	--	--	--	--	--	--
63129	Benzene	ug/kg	--	--	--	--	--	--	--
63130	cis-1,3-Dichloropropene	ug/kg	--	--	--	--	--	--	--
63132	Bromoform	ug/kg	--	--	--	--	--	--	--
63133	4-Methyl-2-pentanone	ug/kg	--	--	--	--	--	--	--
63134	2-Hexanone	ug/kg	--	--	--	--	--	--	--
63135	1,1,2,2-Tetrachloroethane	ug/kg	--	--	--	--	--	--	--
63136	Tetrachloroethene	ug/kg	--	--	--	--	--	--	--
63137	Toluene	ug/kg	--	--	--	--	--	--	--
63138	Chlorobenzene	ug/kg	--	--	--	--	--	--	--
63139	Ethylbenzene	ug/kg	--	--	--	--	--	--	--
63140	Styrene	ug/kg	--	--	--	--	--	--	--
63141	Xylene, Total	ug/kg	--	--	--	--	--	--	--
64201	Phenol	ug/kg	--	--	--	--	--	--	--
64202	2-Chlorophenol	ug/kg	--	--	--	--	--	--	--
64203	2-Methylphenol	ug/kg	--	--	--	--	--	--	--
64204	4-Methylphenol	ug/kg	--	--	--	--	--	--	--
64205	2-Nitrophenol	ug/kg	--	--	--	--	--	--	--

APPENDIX 1
ANNOTATED ANALYTICAL DATA SUMMARY
INDUSTRIAL SOILS PAD INSTALLATION RESTORATION PROGRAM SITE
GRIFFISS AIR FORCE BASE, ROME, NEW YORK

PARAMETER		UNITS	ISPSS-5	ISPSS-6	ISPSS-7	ISPSS-8	ISPSS-9	ISPSS-10	ISPSS-12
64206	2,4-Dimethylphenol	ug/kg	--	--	--	--	--	--	--
64208	2,4-Dichlorophenol	ug/kg	--	--	--	--	--	--	--
64209	4-Chloro-3-methylphenol	ug/kg	--	--	--	--	--	--	--
64210	2,4,6-Trichlorophenol	ug/kg	--	--	--	--	--	--	--
64211	2,4,5-Trichlorophenol	ug/kg	--	--	--	--	--	--	--
64212	2,4-Dinitrophenol	ug/kg	--	--	--	--	--	--	--
64213	4-Nitrophenol	ug/kg	--	--	--	--	--	--	--
64214	4,6-Dinitro-2-methylphenol	ug/kg	--	--	--	--	--	--	--
64215	Pentachlorophenol	ug/kg	--	--	--	--	--	--	--
64303	bis(2-Chloroethyl) ether	ug/kg	--	--	--	--	--	--	--
64304	1,3-Dichlorobenzene	ug/kg	--	--	--	--	--	--	--
64305	1,4-Dichlorobenzene	ug/kg	--	--	--	--	--	--	--
64306	1,2-Dichlorobenzene	ug/kg	--	--	--	--	--	--	--
64309	bis(2-Chloroisopropyl) ether	ug/kg	--	--	--	--	--	--	--
64310	Hexachloroethane	ug/kg	--	--	--	--	--	--	--
64311	N-Nitrosodi-N-propylamine	ug/kg	--	--	--	--	--	--	--
64312	Nitrobenzene	ug/kg	--	--	--	--	--	--	--
64313	Isophorone	ug/kg	--	--	--	--	--	--	--
64314	bis(2-Chloroethoxy) methane	ug/kg	--	--	--	--	--	--	--
64315	1,2,4-Trichlorobenzene	ug/kg	--	--	--	--	--	--	--
64316	Naphthalene	ug/kg	--	--	--	--	--	--	--
64317	4-Chloroaniline	ug/kg	--	--	--	--	--	--	--
64318	Hexachlorobutadiene	ug/kg	--	--	--	--	--	--	--
64319	2-Methylnaphthalene	ug/kg	--	--	--	--	--	--	--
64320	Hexachlorocyclopentadiene	ug/kg	--	--	--	--	--	--	--
64321	2-Chloronaphthalene	ug/kg	--	--	--	--	--	--	--
64322	2-Nitroaniline	ug/kg	--	--	--	--	--	--	--
64323	Dimethyl phthalate	ug/kg	--	--	--	--	--	--	--
64324	Acenaphthylene	ug/kg	--	--	--	--	--	--	--
64325	3-Nitroaniline	ug/kg	--	--	--	--	--	--	--
64326	Acenaphthene	ug/kg	--	--	--	--	--	--	--
64327	Dibenzofuran	ug/kg	--	--	--	--	--	--	--
64328	2,4-Dinitrotoluene	ug/kg	--	--	--	--	--	--	--
64329	2,6-Dinitrotoluene	ug/kg	--	--	--	--	--	--	--
64330	Diethyl phthalate	ug/kg	--	--	--	--	--	--	--
64331	Fluorene	ug/kg	--	--	--	--	--	--	--

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PARAMETER		UNITS	ISPSS-5	ISPSS-6	ISPSS-7	ISPSS-8	ISPSS-9	ISPSS-10	ISPSS-12
64332	4-Chlorophenylphenyl ether	ug/kg	--	--	--	--	--	--	--
64333	4-Nitroaniline	ug/kg	--	--	--	--	--	--	--
64334	N-Nitrosodiphenylamine	ug/kg	--	--	--	--	--	--	--
64336	4-Bromophenylphenyl ether	ug/kg	--	--	--	--	--	--	--
64337	Hexachlorobenzene	ug/kg	--	--	--	--	--	--	--
64338	Phenanthrene	ug/kg	--	--	--	--	--	--	--
64339	Anthracene	ug/kg	--	--	--	--	--	--	--
64340	Di-n-butyl phthalate	ug/kg	--	--	--	--	--	--	--
64341	Fluoranthene	ug/kg	--	--	--	--	--	--	--
64342	Pyrene	ug/kg	--	--	--	--	--	--	--
64343	Butylbenzyl phthalate	ug/kg	--	--	--	--	--	--	--
64344	Benzo(a)anthracene	ug/kg	--	--	--	--	--	--	--
64345	3,3'Dichlorobenzidine	ug/kg	--	--	--	--	--	--	--
64346	Chrysene	ug/kg	--	--	--	--	--	--	--
64347	bis(2-Ethylhexyl) phthalate	ug/kg	--	--	--	--	--	--	--
64348	Di-n-octyl phthalate	ug/kg	--	--	--	--	--	--	--
64349	Benzo(b)fluoranthene	ug/kg	--	--	--	--	--	--	--
64350	Benzo(k)fluoranthene	ug/kg	--	--	--	--	--	--	--
64351	Benzo(a)pyrene	ug/kg	--	--	--	--	--	--	--
64352	Indeno(1,2,3-cd)pyrene	ug/kg	--	--	--	--	--	--	--
64353	Dibenzo(a,h)anthracene	ug/kg	--	--	--	--	--	--	--
64354	Benzo(g,h,i)perylene	ug/kg	--	--	--	--	--	--	--
64361	Carbazole	ug/kg	--	--	--	--	--	--	--
78001	TRPH-IR	mg/kg	1000	120	110	120	84	160	140
78001	alpha-BHC	ug/kg	--	--	--	--	--	--	--
78002	gamma-BHC (Lindane)	ug/kg	--	--	--	--	--	--	--
78003	beta-BHC	ug/kg	--	--	--	--	--	--	--
78004	Heptachlor	ug/kg	--	--	--	--	--	--	--
78005	delta-BHC	ug/kg	--	--	--	--	--	--	--
78006	Aldrin	ug/kg	--	--	--	--	--	--	--
78007	Heptachlor epoxide	ug/kg	--	--	--	--	--	--	--
78008	Endosulfan I	ug/kg	--	--	--	--	--	--	--
78009	4,4'DDE	ug/kg	--	--	--	--	--	--	--
78010	Dieldrin	ug/kg	--	--	--	--	--	--	--
78011	Endrin	ug/kg	--	--	--	--	--	--	--
78012	4,4'DDD	ug/kg	--	--	--	--	--	--	--

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INDUSTRIAL SOILS PAD INSTALLATION RESTORATION PROGRAM SITE
GRIFFISS AIR FORCE BASE, ROME, NEW YORK

PARAMETER		UNITS	ISPSS-5	ISPSS-6	ISPSS-7	ISPSS-8	ISPSS-9	ISPSS-10	ISPSS-12
78013	Endosulfan II	ug/kg	--	--	--	--	--	--	--
78014	4,4'DDT	ug/kg	--	--	--	--	--	--	--
78015	Endrin aldehyde	ug/kg	--	--	--	--	--	--	--
78016	Endosulfan sulfate	ug/kg	--	--	--	--	--	--	--
78017	Methoxychlor	ug/kg	--	--	--	--	--	--	--
78018	Endrin Ketone	ug/kg	--	--	--	--	--	--	--
78019	Toxaphene	ug/kg	--	--	--	--	--	--	--
78020	alpha-Chlordane	ug/kg	--	--	--	--	--	--	--
78021	gamma-Chlordane	ug/kg	--	--	--	--	--	--	--
78022	PCB-1016	ug/kg	--	--	--	--	--	--	--
78023	PCB-1221	ug/kg	--	--	--	--	--	--	--
78024	PCB-1232	ug/kg	--	--	--	--	--	--	--
78025	PCB-1242	ug/kg	--	--	--	--	--	--	--
78026	PCB-1248	ug/kg	--	--	--	--	--	--	--
78027	PCB-1254	ug/kg	--	--	--	--	--	--	--
78028	PCB-1260	ug/kg	--	--	--	--	--	--	--

J - Estimated quantitation based upon QC data.
-- - Not required.

APPENDIX B

ANALYTICAL DATA REPORTS
LAW ENVIRONMENTAL NATIONAL LABORATORIES

LAW ENVIRONMENTAL, INC.
112 TOWNPARK DRIVE
KENNESAW, GEORGIA 30144-5599
404-421-3400

March 9, 1993

Original → [redacted]
Copy → SSP

Law Environmental Govt. Services.
114 TownPark Drive
Kennesaw, GA 30144

Attention: Katy Allen

Job Number: 11-0635

Subject: Chemical analysis of samples received on 02/18/93.

Dear Ms. Allen:

Law Environmental National Laboratories has completed its analysis of your samples and reports the results on the following pages. These results relate only to the contents of the samples as submitted. This report shall not be reproduced except in full without the approval of Law Environmental National Laboratories.

If there are any questions, please do not hesitate to contact us.

Sincerely,

LAW ENVIRONMENTAL NATL LABS

W. Paul Brafford, Jr.

Clifford H. McBride
QC Coordinator

Attachment: Data Report
Invoice

CASE NARRATIVE
PROJECT NUMBER 11-0635

Station ID and Corresponding Lab Number

93-4958-01	ISPSS-1	GRIFFISS AIR FORCE B
93-4958-02	ISPSS-2	GRIFFISS AIR FORCE B
93-4958-03	ISPSS-301	GRIFFISS AIR FORCE B
93-4958-04	ISPSS-3	GRIFFISS AIR FORCE B
93-4958-05	ISPSS-4	GRIFFISS AIR FORCE B
93-4958-06	ISPSS-5	GRIFFISS AIR FORCE B
93-4958-07	ISPSS-6	GRIFFISS AIR FORCE B
93-4958-08	ISPSS-8	GRIFFISS AIR FORCE B
93-4958-09	ISPSS-9	GRIFFISS AIR FORCE B
93-4958-10	ISPSS-10	GRIFFISS AIR FORCE B
93-4958-11	ISPSS-12	GRIFFISS AIR FORCE B
93-4958-12	ISPSS-7	GRIFFISS AIR FORCE B
93-4958-13	ISPSS-7 MATRIX SPIKE	GRIFFISS AIR FORCE B
93-4958-14	ISPSS-7 MATRIX SPIKE DUP.	GRIFFISS AIR FORCE B
93-4958-15	METHOD BLANK	GRIFFISS AIR FORCE B
93-4958-16	QCCS	GRIFFISS AIR FORCE B
93-4958-17	METHOD BLANK	GRIFFISS AIR FORCE B
93-4958-18	QCCS	GRIFFISS AIR FORCE B

No quality control problems were encountered with this sample set.

This data has been approved for release.

W. Paul Brafford
Laboratory Manager

LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

ıte 03/05/93
ıge 1

--- Project Information ---

Lab Number : 93-4958-01
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : ISPSS-1 Sampled Date/Time : 02/17/93 13:30
Matrix : SO Received Date/Time : 02/18/93 11:00
Type : GRAB Received From/By : SP/BS
Collector : SP Chain of Custody : 2976
Number of Containers : 4

ırameter	Method	Units	DL	Results	Test Date	Analy
- INORGANIC CHEMISTRY RESULTS --						
ɔisture (Oven Dried @ 105C)	EPA 160.3M	%	1.0	24	02/22/93	RM
- METALS ANALYSIS - METALS PREP RESULTS --						
ırium, Total	EPA 6010	mg/kg	0.89	27	02/24/93	JST
admium, Total	EPA 6010	mg/kg	0.31	0.36	02/24/93	JST
hromium, Total	EPA 6010	mg/kg	0.52	8.2	02/24/93	JST
ilver, Total	EPA 6010	mg/kg	0.69	ND	02/24/93	JST
ercury, Total	EPA 7471	mg/kg	0.11	ND	03/02/93	CW
rsenic, Total	EPA 7060	mg/kg	0.17	3.0	03/01/93	DF
ead, Total	EPA 7421	mg/kg	0.28	15	03/01/93	DF
elenium, Total	EPA 7740	mg/kg	0.21	ND	03/01/93	DF
-- SERIES 35000						
. Metals Prep: Solid ICP/Flame	EPA 3050			N/A	02/23/93	HH
. Metals Prep: Solid Furnace	EPA 3050			N/A	02/25/93	HH
. Metals Prep: Solid, Hg	EPA 7471			N/A	03/01/93	HH
- GC ORGANIC ANALYSIS RESULTS --						
enzene	EPA 8020	ug/kg	1.1	ND	02/21/93	BM
oluene	EPA 8020	ug/kg	1.1	ND	02/21/93	BM
thylbenzene	EPA 8020	ug/kg	1.1	ND	02/21/93	BM
ylene, Total	EPA 8020	ug/kg	1.7	ND	02/21/93	BM
- ORGANIC PREP RESULTS RESULTS --						
xt/TRPH/SO/Sox	9071/9073			N/A	02/22/93	JMK
-- SERIES 78000						
RPH-IR	EPA 9073	mg/kg	10	110	02/23/93	JSB

emarks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

signed Paul Bradford

LAW ENVIRONMENTAL NATIONAL LABORATORIES
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--- Project Information ---

Lab Number : 93-4958-02
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : ISPSS-2 Sampled Date/Time : 02/17/93 13:15
Matrix : SO Received Date/Time : 02/18/93 11:00
Type : GRAB Received From/By : SP/BS
Collector : SP Chain of Custody : 2976
Number of Containers : 4

arameter.....	Method....	Units	DL.....	Results...	Test Date	Analy
- INORGANIC CHEMISTRY RESULTS --						
oisture (Oven Dried @ 105C)	EPA 160.3M	%	1.0	27	02/22/93	RM
- METALS ANALYSIS - METALS PREP RESULTS --						
arium, Total	EPA 6010	mg/kg	0.89	52	02/24/93	JST
admium, Total	EPA 6010	mg/kg	0.31	0.56	02/24/93	JST
hromium, Total	EPA 6010	mg/kg	0.52	11	02/24/93	JST
ilver, Total	EPA 6010	mg/kg	0.69	ND	02/24/93	JST
ercury, Total	EPA 7471	mg/kg	0.11	ND	03/02/93	CW
rsenic, Total	EPA 7060	mg/kg	0.17	4.8	03/01/93	DF
ead, Total	EPA 7421	mg/kg	0.28	32	03/01/93	DF
elenium, Total	EPA 7740	mg/kg	0.21	0.33	03/01/93	DF
-- SERIES 35000						
Metals Prep: Solid ICP/Flame	EPA 3050			N/A	02/23/93	HH
Metals Prep: Solid Furnace	EPA 3050			N/A	02/25/93	HH
Metals Prep: Solid, Hg	EPA 7471			N/A	03/01/93	HH
GC ORGANIC ANALYSIS RESULTS --						
enzene	EPA 8020	ug/kg	1.3	ND	02/21/93	BM
oluene	EPA 8020	ug/kg	1.3	ND	02/21/93	BM
hylbenzene	EPA 8020	ug/kg	1.3	ND	02/21/93	BM
ylene, Total	EPA 8020	ug/kg	2.0	ND	02/21/93	BM
ORGANIC PREP RESULTS RESULTS --						
xt/TRPH/SO/Sox	9071/9073			N/A	02/22/93	JMK
- SERIES 78000						
RPH-IR	EPA 9073	mg/kg	10	61	02/23/93	JSB

marks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

Signed

LAW ENVIRONMENTAL NATIONAL LABORATORIES
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--- Project Information ---

Lab Number : 93-4958-03
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : ISPSS-301 Sampled Date/Time : 02/17/93 13:00
Matrix : SO Received Date/Time : 02/18/93 11:00
Type : GRAB Received From/By : SP/BS
Collector : SP Chain of Custody : 2976
Number of Containers : 4

arameter	Method	Units	DL	Results	Test Date	Analy
- INORGANIC CHEMISTRY RESULTS --						
oisture (Oven Dried @ 105C)	EPA 160.3M	%	1.0	30	02/22/93	RM
- METALS ANALYSIS - METALS PREP RESULTS --						
arium, Total	EPA 6010	mg/kg	0.89	60	02/24/93	JST
admium, Total	EPA 6010	mg/kg	0.31	0.40	02/24/93	JST
hromium, Total	EPA 6010	mg/kg	0.52	12	02/24/93	JST
ilver, Total	EPA 6010	mg/kg	0.69	ND	02/24/93	JST
ercury, Total	EPA 7471	mg/kg	0.11	ND	03/02/93	CW
rsenic, Total	EPA 7060	mg/kg	0.17	5.3	03/01/93	DF
ead, Total	EPA 7421	mg/kg	0.28	28	03/01/93	DF
elenium, Total	EPA 7740	mg/kg	0.21	0.21	03/01/93	DF
-- SERIES 35000						
Metals Prep: Solid ICP/Flame	EPA 3050			N/A	02/23/93	HH
Metals Prep: Solid Furnace	EPA 3050			N/A	02/25/93	HH
Metals Prep: Solid, Hg	EPA 7471			N/A	03/01/93	HH
- GC ORGANIC ANALYSIS RESULTS --						
enzene	EPA 8020	ug/kg	1.3	ND	02/21/93	BM
oluene	EPA 8020	ug/kg	1.3	ND	02/21/93	BM
thylbenzene	EPA 8020	ug/kg	1.3	ND	02/21/93	BM
ylene, Total	EPA 8020	ug/kg	2.0	ND	02/21/93	BM
ORGANIC PREP RESULTS RESULTS --						
xt/TRPH/SO/Sox	9071/9073			N/A	02/22/93	JMK
- SERIES 78000						
RPH-IR	EPA 9073	mg/kg	10	71	02/23/93	JSB

marks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

Signed Paul Griffiths

LAW ENVIRONMENTAL NATIONAL LABORATORIES
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--- Project Information ---

Lab Number : 93-4958-04
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : ISPSS-3 Sampled Date/Time : 02/17/93 13:00
Matrix : SO Received Date/Time : 02/18/93 11:00
Type : GRAB Received From/By : SP/BS
Collector : SP Chain of Custody : 2976
Number of Containers : 4

arameter	Method	Units	DL	Results	Test Date	Analy
- INORGANIC CHEMISTRY RESULTS --						
oisture (Oven Dried @ 105C)	EPA 160.3M	%	1.0	25	02/22/93	RM
- METALS ANALYSIS - METALS PREP RESULTS --						
arium, Total	EPA 6010	mg/kg	0.89	88	02/24/93	JST
admium, Total	EPA 6010	mg/kg	0.31	0.39	02/24/93	JST
hromium, Total	EPA 6010	mg/kg	0.52	9.9	02/24/93	JST
ilver, Total	EPA 6010	mg/kg	0.69	ND	02/24/93	JST
ercury, Total	EPA 7471	mg/kg	0.11	ND	03/02/93	CW
rsenic, Total	EPA 7060	mg/kg	0.17	5.6	03/01/93	DF
ead, Total	EPA 7421	mg/kg	0.28	28	03/01/93	DF
elenium, Total	EPA 7740	mg/kg	0.21	ND	03/01/93	DF
-- SERIES 35000						
. Metals Prep: Solid ICP/Flame	EPA 3050			N/A	02/23/93	HH
. Metals Prep: Solid Furnace	EPA 3050			N/A	02/25/93	HH
. Metals Prep: Solid, Hg	EPA 7471			N/A	03/01/93	HH
- GC ORGANIC ANALYSIS RESULTS --						
enzene	EPA 8020	ug/kg	1.3	ND	02/21/93	BM
oluene	EPA 8020	ug/kg	1.3	ND	02/21/93	BM
thylbenzene	EPA 8020	ug/kg	1.3	ND	02/21/93	BM
ylene, Total	EPA 8020	ug/kg	2.0	ND	02/21/93	BM
- ORGANIC PREP RESULTS RESULTS --						
xt/TRPH/SO/Sox	9071/9073			N/A	02/22/93	JMK
-- SERIES 78000						
RPH-IR	EPA 9073	mg/kg	10	63	02/23/93	JSB

emarks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

Signed Paul Bradford

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--- Project Information ---

Lab Number : 93-4958-05
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : ISPSS-4 Sampled Date/Time : 02/17/93 12:50
Matrix : SO Received Date/Time : 02/18/93 11:00
Type : GRAB Received From/By : SP/BS
Collector : SP Chain of Custody : 2976
Number of Containers : 4

arameter	Method	Units	DL	Results	Test Date	Analy
- INORGANIC CHEMISTRY RESULTS --						
oisture (Oven Dried @ 105C)	EPA 160.3M	%	1.0	32	02/22/93	RM
- METALS ANALYSIS - METALS PREP RESULTS --						
arium, Total	EPA 6010	mg/kg	0.89	62	02/24/93	JST
admium, Total	EPA 6010	mg/kg	0.31	0.74	02/24/93	JST
hromium, Total	EPA 6010	mg/kg	0.52	14	02/24/93	JST
.lver, Total	EPA 6010	mg/kg	0.69	ND	02/24/93	JST
ercury, Total	EPA 7471	mg/kg	0.11	ND	03/02/93	CW
rsenic, Total	EPA 7060	mg/kg	0.17	6.2	03/01/93	DF
ead, Total	EPA 7421	mg/kg	0.28	61	03/01/93	DF
lenium, Total	EPA 7740	mg/kg	0.21	0.24	03/01/93	DF
-- SERIES 35000						
Metals Prep: Solid ICP/Flame	EPA 3050			N/A	02/23/93	HH
Metals Prep: Solid Furnace	EPA 3050			N/A	02/25/93	HH
Metals Prep: Solid, Hg	EPA 7471			N/A	03/01/93	HH
GC ORGANIC ANALYSIS RESULTS --						
enzene	EPA 8020	ug/kg	1.4	ND	02/21/93	BM
luene	EPA 8020	ug/kg	1.4	ND	02/21/93	BM
hylbenzene	EPA 8020	ug/kg	1.4	ND	02/21/93	BM
ylene, Total	EPA 8020	ug/kg	2.1	ND	02/21/93	BM
ORGANIC PREP RESULTS RESULTS --						
xt/TRPH/SO/Sox	9071/9073			N/A	02/22/93	JMK
- SERIES 78000						
PH-IR	EPA 9073	mg/kg	10	210	02/23/93	JSB

marks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

Signed

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--- Project Information ---

Lab Number : 93-4958-06
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : ISPSS-5 Sampled Date/Time : 02/17/93 12:45
Matrix : SO Received Date/Time : 02/18/93 11:00
Type : GRAB Received From/By : SP/BS
Collector : SP Chain of Custody : 2976
Number of Containers : 4

arameter	Method	Units	DL	Results	Test Date	Analy
- INORGANIC CHEMISTRY RESULTS --						
oisture (Oven Dried @ 105C)	EPA 160.3M	%	1.0	46	02/22/93	RM
- METALS ANALYSIS - METALS PREP RESULTS --						
arium, Total	EPA 6010	mg/kg	0.89	38	02/24/93	JST
admium, Total	EPA 6010	mg/kg	0.31	2.0	02/24/93	JST
hromium, Total	EPA 6010	mg/kg	0.52	13	02/24/93	JST
ilver, Total	EPA 6010	mg/kg	0.69	ND	02/24/93	JST
ercury, Total	EPA 7471	mg/kg	0.11	ND	03/02/93	CW
rsenic, Total	EPA 7060	mg/kg	0.17	2.0	03/01/93	DF
ead, Total	EPA 7421	mg/kg	0.28	120	03/01/93	DF
elenium, Total	EPA 7740	mg/kg	0.21	0.65	03/01/93	DF
-- SERIES 35000						
. Metals Prep: Solid ICP/Flame	EPA 3050			N/A	02/23/93	HH
. Metals Prep: Solid Furnace	EPA 3050			N/A	02/25/93	HH
. Metals Prep: Solid, Hg	EPA 7471			N/A	03/01/93	HH
- GC ORGANIC ANALYSIS RESULTS --						
enzene	EPA 8020	ug/kg	1.8	ND	02/21/93	BM
oluene	EPA 8020	ug/kg	1.8	ND	02/21/93	BM
thylbenzene	EPA 8020	ug/kg	1.8	ND	02/21/93	BM
ylene, Total	EPA 8020	ug/kg	2.7	ND	02/21/93	BM
- ORGANIC PREP RESULTS RESULTS --						
xt/TRPH/SO/Sox	9071/9073			N/A	02/22/93	JMK
-- SERIES 78000						
RPH-IR	EPA 9073	mg/kg	10	1000	02/23/93	JSB

emarks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

Signed Paul Bradford

LAW ENVIRONMENTAL NATIONAL LABORATORIES
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--- Project Information ---

Lab Number : 93-4958-07
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : ISPSS-6 Sampled Date/Time : 02/17/93 12:35
Matrix : SO Received Date/Time : 02/18/93 11:00
Type : GRAB Received From/By : SP/BS
Collector : SP Chain of Custody : 2976
Number of Containers : 4

arameter	Method	Units	DL	Results	Test Date	Analy
- INORGANIC CHEMISTRY RESULTS --						
oisture (Oven Dried @ 105C)	EPA 160.3M	%	1.0	16	02/22/93	RM
- METALS ANALYSIS - METALS PREP RESULTS --						
arium, Total	EPA 6010	mg/kg	0.89	71	02/24/93	JST
admium, Total	EPA 6010	mg/kg	0.31	ND	02/24/93	JST
hromium, Total	EPA 6010	mg/kg	0.52	7.1	02/24/93	JST
ilver, Total	EPA 6010	mg/kg	0.69	ND	02/24/93	JST
ercury, Total	EPA 7471	mg/kg	0.11	ND	03/02/93	CW
rsenic, Total	EPA 7060	mg/kg	0.17	2.5	03/01/93	DF
ead, Total	EPA 7421	mg/kg	0.28	16	03/01/93	DF
elenium, Total	EPA 7740	mg/kg	0.21	ND	03/01/93	DF
-- SERIES 35000						
. Metals Prep: Solid ICP/Flame	EPA 3050			N/A	02/23/93	HH
. Metals Prep: Solid Furnace	EPA 3050			N/A	02/25/93	HH
. Metals Prep: Solid, Hg	EPA 7471			N/A	03/01/93	HH
- GC ORGANIC ANALYSIS RESULTS --						
enzene	EPA 8020	ug/kg	1.0	ND	02/21/93	BM
oluene	EPA 8020	ug/kg	1.0	ND	02/21/93	BM
thylbenzene	EPA 8020	ug/kg	1.0	ND	02/21/93	BM
ylene, Total	EPA 8020	ug/kg	1.5	ND	02/21/93	BM
- ORGANIC PREP RESULTS RESULTS --						
xt/TRPH/SO/Sox	9071/9073			N/A	02/22/93	JMK
-- SERIES 78000						
RPH-IR	EPA 9073	mg/kg	10	120	02/23/93	JSB

emarks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

B-9 Signed Paul Bradford

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--- Project Information ---

Lab Number : 93-4958-08
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : ISPSS-8 Sampled Date/Time : 02/17/93 12:05
Matrix : SO Received Date/Time : 02/18/93 11:00
Type : GRAB Received From/By : SP/BS
Collector : SP Chain of Custody : 2976
Number of Containers : 4

rameter	Method	Units	DL	Results	Test Date	Analy
- INORGANIC CHEMISTRY RESULTS --						
isture (Oven Dried @ 105C)	EPA 160.3M	%	1.0	32	02/22/93	RM
- METALS ANALYSIS - METALS PREP RESULTS --						
arium, Total	EPA 6010	mg/kg	0.89	55	02/24/93	JST
dmium, Total	EPA 6010	mg/kg	0.31	0.46	02/24/93	JST
romium, Total	EPA 6010	mg/kg	0.52	9.3	02/24/93	JST
ilver, Total	EPA 6010	mg/kg	0.69	ND	02/24/93	JST
rcury, Total	EPA 7471	mg/kg	0.11	ND	03/02/93	CW
senic, Total	EPA 7060	mg/kg	0.17	4.3	03/01/93	DF
ead, Total	EPA 7421	mg/kg	0.28	31	03/01/93	DF
lenium, Total	EPA 7740	mg/kg	0.21	0.29	03/01/93	DF
-- SERIES 35000						
Metals Prep: Solid ICP/Flame	EPA 3050			N/A	02/23/93	HH
Metals Prep: Solid Furnace	EPA 3050			N/A	02/25/93	HH
Metals Prep: Solid, Hg	EPA 7471			N/A	03/01/93	HH
GC ORGANIC ANALYSIS RESULTS --						
nzene	EPA 8020	ug/kg	1.3	ND	02/21/93	BM
oluene	EPA 8020	ug/kg	1.3	ND	02/21/93	BM
hylbenzene	EPA 8020	ug/kg	1.3	ND	02/21/93	BM
lene, Total	EPA 8020	ug/kg	2.0	ND	02/21/93	BM
- ORGANIC PREP RESULTS RESULTS --						
:/TRPH/SO/Sox	9071/9073			N/A	02/22/93	JMK
-- SERIES 78000						
PH-IR	EPA 9073	mg/kg	10	120	02/23/93	JSB

emarks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

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Signed

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--- Project Information ---

Lab Number : 93-4958-09
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : ISPSS-9 Sampled Date/Time : 02/17/93 12:00
Matrix : SO Received Date/Time : 02/18/93 11:00
Type : GRAB Received From/By : SP/BS
Collector : SP Chain of Custody : 2976
Number of Containers : 4

arameter	Method	Units	DL	Results	Test Date	Analy
- INORGANIC CHEMISTRY RESULTS --						
isture (Oven Dried @ 105C)	EPA 160.3M	%	1.0	24	02/22/93	RM
- METALS ANALYSIS - METALS PREP RESULTS --						
arium, Total	EPA 6010	mg/kg	0.89	41	02/24/93	JST
admium, Total	EPA 6010	mg/kg	0.31	0.46	02/24/93	JST
hromium, Total	EPA 6010	mg/kg	0.[illegible]	9.7	02/24/93	JST
ilver, Total	EPA 6010	mg/kg	0.6[illegible]	ND	02/24/93	JST
ercury, Total	EPA 7471	mg/kg	0.11	ND	03/02/93	CW
rsenic, Total	EPA 7060	mg/kg	0.17	4.3	03/01/93	DF
ead, Total	EPA 7421	mg/kg	0.28	27	03/01/93	DF
elenium, Total	EPA 7740	mg/kg	0.21	0.28	03/01/93	DF
-- SERIES 35000						
Metals Prep: Solid ICP/Flame	EPA 3050			N/A	02/23/93	HH
Metals Prep: Solid Furnace	EPA 3050			N/A	02/25/93	HH
Metals Prep: Solid, Hg	EPA 7471			N/A	03/01/93	HH
- GC ORGANIC ANALYSIS RESULTS --						
enzene	EPA 8020	ug/kg	1.1	ND	02/21/93	BM
oluene	EPA 8020	ug/kg	1.1	ND	02/21/93	BM
thylbenzene	EPA 8020	ug/kg	1.1	ND	02/21/93	BM
ylene, Total	EPA 8020	ug/kg	1.7	ND	02/21/93	BM
- ORGANIC PREP RESULTS RESULTS --						
t/TRPH/SO/Sox	9071/9073			N/A	02/22/93	JMK
-- SERIES 78000						
PH-IR	EPA 9073	mg/kg	10	84	02/23/93	JSB

emarks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

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Signed Paul Gifford

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--- Project Information ---

Lab Number : 93-4958-10
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : ISPSS-10 Sampled Date/Time : 02/17/93 11:50
Matrix : SO Received Date/Time : 02/18/93 11:00
Type : GRAB Received From/By : SP/BS
Collector : SP Chain of Custody : 2978
Number of Containers : 4

arameter	Method	Units	DL	Results	Test Date	Analy
- INORGANIC CHEMISTRY RESULTS --						
oisture (Oven Dried @ 105C)	EPA 160.3M	%	1.0	28	02/22/93	RM
- METALS ANALYSIS - METALS PREP RESULTS --						
arium, Total	EPA 6010	mg/kg	0.89	42	02/24/93	JST
admium, Total	EPA 6010	mg/kg	0.31	ND	02/24/93	JST
hromium, Total	EPA 6010	mg/kg	0.52	9.0	02/24/93	JST
ilver, Total	EPA 6010	mg/kg	0.69	ND	02/24/93	JST
ercury, Total	EPA 7471	mg/kg	0.11	ND	03/02/93	CW
rsenic, Total	EPA 7060	mg/kg	0.17	3.2	03/01/93	DF
ead, Total	EPA 7421	mg/kg	0.28	12	03/01/93	DF
elenium, Total	EPA 7740	mg/kg	0.21	ND	03/01/93	DF
-- SERIES 35000						
. Metals Prep: Solid ICP/Flame	EPA 3050			N/A	02/23/93	HH
. Metals Prep: Solid Furnace	EPA 3050			N/A	02/25/93	HH
. Metals Prep: Solid, Hg	EPA 7471			N/A	03/01/93	HH
- GC ORGANIC ANALYSIS RESULTS --						
enzene	EPA 8020	ug/kg	1.3	ND	02/21/93	BM
oluene	EPA 8020	ug/kg	1.3	ND	02/21/93	BM
thylbenzene	EPA 8020	ug/kg	1.3	ND	02/21/93	BM
ylene, Total	EPA 8020	ug/kg	2.0	ND	02/21/93	BM
- ORGANIC PREP RESULTS RESULTS --						
xt/TRPH/SO/Sox	9071/9073			N/A	02/22/93	JMK
-- SERIES 78000						
RPH-IR	EPA 9073	mg/kg	10	160	02/23/93	JSB

emarks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

12 Signed Paul Bradford

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--- Project Information ---

Lab Number : 93-4958-11
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : ISPSS-12 Sampled Date/Time : 02/17/93 13:45
Matrix : SO Received Date/Time : 02/18/93 11:00
Type : GRAB Received From/By : SP/BS
Collector : SP Chain of Custody : 2978
Number of Containers : 4

arameter	Method	Units	DL	Results	Test Date	Analy
- INORGANIC CHEMISTRY RESULTS --						
oisture (Oven Dried @ 105C)	EPA 160.3M	%	1.0	31	02/22/93	RM
- METALS ANALYSIS - METALS PREP RESULTS --						
arium, Total	EPA 6010	mg/kg	0.89	29	02/24/93	JST
admium, Total	EPA 6010	mg/kg	0.31	ND	02/24/93	JST
hromium, Total	EPA 6010	mg/kg	0.52	9.2	02/24/93	JST
ilver, Total	EPA 6010	mg/kg	0.69	ND	02/24/93	JST
ercury, Total	EPA 7471	mg/kg	0.11	ND	03/02/93	CW
rsenic, Total	EPA 7060	mg/kg	0.17	5.1	03/01/93	DF
ead, Total	EPA 7421	mg/kg	0.28	1700	03/01/93	DF
elenium, Total	EPA 7740	mg/kg	0.21	ND	03/01/93	DF
-- SERIES 35000						
. Metals Prep: Solid ICP/Flame	EPA 3050			N/A	02/23/93	HH
. Metals Prep: Solid Furnace	EPA 3050			N/A	02/25/93	HH
. Metals Prep: Solid, Hg	EPA 7471			N/A	03/01/93	HH
- GC ORGANIC ANALYSIS RESULTS --						
enzene	EPA 8020	ug/kg	1.2	ND	02/21/93	BM
oluene	EPA 8020	ug/kg	1.2	ND	02/21/93	BM
thylbenzene	EPA 8020	ug/kg	1.2	ND	02/21/93	BM
ylene, Total	EPA 8020	ug/kg	1.8	ND	02/21/93	BM
- ORGANIC PREP RESULTS RESULTS --						
t/TRPH/SO/Sox	9071/9073			N/A	02/22/93	JMK
-- SERIES 78000						
PH-IR	EPA 9073	mg/kg	10	140	02/23/93	JSB

emarks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

13 Signed Paul B. Hyberd

LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

ate 03/05/93
age 1

--- Project Information ---

Lab Number : 93-4958-12
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : ISPSS-7
Matrix : SO
Type : GRAB
Collector : SP

Sampled Date/Time : 02/17/93 12:15
Received Date/Time : 02/18/93 11:00
Received From/By : SP/BS
Chain of Custody : 2976
Number of Containers : 4

arameter.....	Method....	Units	DL.....	Results...	Test Date	Analy
- INORGANIC CHEMISTRY RESULTS --						
oisture (Oven Dried @ 105C)	EPA 160.3M	%	1.0	31	02/22/93	RM
- METALS ANALYSIS - METALS PREP RESULTS --						
arium, Total	EPA 6010	mg/kg	0.89	53	02/24/93	JST
admium, Total	EPA 6010	mg/kg	0.31	0.79	02/24/93	JST
hromium, otal	EPA 6010	mg/kg	0.52	12	02/24/93	JST
ilver, Total	EPA 6010	mg/kg	0.69	ND	02/24/93	JST
ercury, Total	EPA 7471	mg/kg	0.11	ND	03/02/93	CW
rsenic, Total	EPA 7060	mg/kg	0.17	5.2	03/01/93	DF
ead, Total	EPA 7421	mg/kg	0.28	52	03/01/93	DF
elenium, Total	EPA 7740	mg/kg	0.21	0.45	03/01/93	DF
-- SERIES 35000						
. Metals Prep: Solid ICP/Flame	EPA 3050			N/A	02/23/93	HH
. Metals Prep: Solid Furnace	EPA 3050			N/A	02/25/93	HH
. Metals Prep: Solid, Hg	EPA 7471			N/A	03/01/93	HH
- GC ORGANIC ANALYSIS RESULTS --						
enzene	EPA 8020	ug/kg	1.4	ND	02/21/93	BM
oluene	EPA 8020	ug/kg	1.4	ND	02/21/93	BM
thylbenzene	EPA 8020	ug/kg	1.4	ND	02/21/93	BM
ylene, Total	EPA 8020	ug/kg	2.1	ND	02/21/93	BM
- ORGANIC PREP RESULTS RESULTS --						
xt/TRPH/SO/Sox	9071/9073			N/A	02/22/93	JMK
-- SERIES 78000						
RPH-IR	EPA 9073	mg/kg	10	110	02/23/93	JSB

emarks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

Signed

LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

ıte 03/05/93
ıge 1

--- Project Information ---

Lab Number : 93-4958-13
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : ISPSS-7 MATRIX SPIKE
Matrix : SO
Type : GRAB
Collector : SP

Sampled Date/Time : 02/17/93 12:15
Received Date/Time : 02/18/93 11:00
Received From/By : SP/BS
Chain of Custody : 2976
Number of Containers : 4

ıarameter	Method	Units	DL	Results	Test Date	Analy
- INORGANIC CHEMISTRY RESULTS --						
ɔisture (Oven Dried @ 105C)	EPA 160.3M	%	1.0	34	02/22/93	RM
- METALS ANALYSIS - METALS PREP RESULTS --						
ıarium, Total	EPA 6010	mg/kg	0.89	152	02/24/93	JST
ıdmium, Total	EPA 6010	mg/kg	0.31	96	02/24/93	JST
ıromium, Total	EPA 6010	mg/kg	0.52	109	02/24/93	JST
ilver, Total	EPA 6010	mg/kg	0.69	96	02/24/93	JST
ercury, Total	EPA 7471	mg/kg	0.11	1.8	03/02/93	CW
ɛsenic, Total	EPA 7060	mg/kg	0.17	11	03/01/93	DF
ıad, Total	EPA 7421	mg/kg	0.28	71	03/01/93	DF
ılenium, Total	EPA 7740	mg/kg	0.21	4.9	03/01/93	DF
-- SERIES 35000						
. Metals Prep: Solid ICP/Flame	EPA 3050			N/A	02/23/93	HH
. Metals Prep: Solid Furnace	EPA 3050			N/A	02/25/93	HH
. Metals Prep: Solid, Hg	EPA 7471			N/A	03/01/93	HH
- GC ORGANIC ANALYSIS RESULTS --						
ɛnzene	EPA 8020	ug/kg	1.8	29	02/20/93	BM
ɔluene	EPA 8020	ug/kg	1.8	27	02/20/93	BM
thylbenzene	EPA 8020	ug/kg	1.8	29	02/20/93	BM
ylene, Total	EPA 8020	ug/kg	2.7	70	02/20/93	BM
- ORGANIC PREP RESULTS RESULTS --						
xt/TRPH/SO/Sox	9071/9073			N/A	02/22/93	JMK
-- SERIES 78000						
RPH-IR	EPA 9073	mg/kg	10	720	02/23/93	JSB

ɛmarks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

15 Signed Paul Bradford

LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

ate 03/05/93
age 1

--- Project Information ---

Lab Number : 93-4958-14
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : ISPSS-7 MATRIX SPIKE DUPLICATE Sampled Date/Time : 02/17/93 12:15
Matrix : SO Received Date/Time : 02/18/93 11:00
Type : GRAB Received From/By : SP/BS
Collector : SP Chain of Custody : 2976
Number of Containers : 4

arameter	Method	Units	DL	Results	Test Date	Analy
- INORGANIC CHEMISTRY RESULTS --						
oisture (Oven Dried @ 105C)	EPA 160.3M	%	1.0	34	02/22/93	RM
- METALS ANALYSIS - METALS PREP RESULTS --						
arium, Total	EPA 6010	mg/kg	0.89	150	02/24/93	JST
admium, Total	EPA 6010	mg/kg	0.31	95	02/24/93	JST
hromium, Total	EPA 6010	mg/kg	0.52	107	02/24/93	JST
ilver, Total	EPA 6010	mg/kg	0.69	94	02/24/93	JST
ercury, Total	EPA 7471	mg/kg	0.11	1.8	03/02/93	CW
rsenic, Total	EPA 7060	mg/kg	0.17	11	03/01/93	DF
ead, Total	EPA 7421	mg/kg	0.28	74	03/01/93	DF
elenium, Total	EPA 7740	mg/kg	0.21	4.0	03/01/93	DF
-- SERIES 35000						
. Metals Prep: Solid ICP/Flame	EPA 3050			N/A	02/23/93	HH
. Metals Prep: Solid Furnace	EPA 3050			N/A	02/25/93	HH
. Metals Prep: Solid, Hg	EPA 7471			N/A	03/01/93	HH
- GC ORGANIC ANALYSIS RESULTS --						
enzene	EPA 8020	ug/kg	1.5	23	02/20/93	BM
oluene	EPA 8020	ug/kg	1.5	22	02/20/93	BM
thylbenzene	EPA 8020	ug/kg	1.5	23	02/20/93	BM
ylene, Total	EPA 8020	ug/kg	2.3	56	02/20/93	BM
- ORGANIC PREP RESULTS RESULTS --						
kt/TRPH/SO/Sox	9071/9073			N/A	02/22/93	JMK
-- SERIES 78000						
RPH-IR	EPA 9073	mg/kg	10	730	02/23/93	JSB

emarks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

Ex 16 Signed Paul Bischof

LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

ate 03/03/93
age 1

--- Project Information ---

Lab Number : 93-4958-15
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : METHOD BLANK Sampled Date/Time : / / :
Matrix : SO Received Date/Time : / / :
Type : Received From/By : /
Collector : Chain of Custody : 0
Number of Containers : 0

arameter	Method	Units	DL	Results	Test Date	Analy
- INORGANIC CHEMISTRY RESULTS --						
oisture (Oven Dried @ 105C)	EPA 160.3M	%	1.0	ND	02/22/93	RM
- METALS ANALYSIS - METALS PREP RESULTS --						
arium, Total	EPA 6010	mg/kg	0.89	ND	02/24/93	JST
admium, Total	EPA 6010	mg/kg	0.31	ND	02/24/93	JST
hromium, Total	EPA 6010	mg/kg	0.52	ND	02, /93	JST
ilver, Total	EPA 6010	mg/kg	0.69	ND	02/24/93	JST
ercury, Total	EPA 7471	mg/kg	0.11	ND	03/02/93	CW
rsenic, Total	EPA 7060	mg/kg	0.17	ND	03/01/93	DF
ead, Total	EPA 7421	mg/kg	0.28	ND	03/01/93	DF
elenium, Total	EPA 7740	mg/kg	0.21	ND	03/01/93	DF
-- SERIES 35000						
. Metals Prep: Solid ICP/Flame	EPA 3050			N/A	02/23/93	HH
. Metals Prep: Solid Furnace	EPA 3050			N/A	02/25/93	HH
. Metals Prep: Solid, Hg	EPA 7471			N/A	03/01/93	HH
- GC ORGANIC ANALYSIS RESULTS --						
enzene	EPA 8020	ug/kg	1.0	ND	02/20/93	BM
oluene	EPA 8020	ug/kg	1.0	ND	02/20/93	BM
thylbenzene	EPA 8020	ug/kg	1.0	ND	02/20/93	BM
ylene, Total	EPA 8020	ug/kg	1.5	ND	02/20/93	BM
- ORGANIC PREP RESULTS RESULTS --						
t/TRPH/SO/Sox	9071/9073			N/A	02/22/93	JMK
-- SERIES 78000						
PH-IR	EPA 9073	mg/kg	10	ND	02/23/93	JSB

emarks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

17 Signed

LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

ate 03/11/93
age 1

--- Project Information ---

Lab Number : 93-4958-16
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : QCCS Sampled Date/Time : / / :
Matrix : SO Received Date/Time : / / :
Type : Received From/By : /
Collector : Chain of Custody : 0
Number of Containers : 0

arameter	Method	Units	DL	Results	Test Date	Analy
- METALS ANALYSIS - METALS PREP RESULTS --						
arium, Total	EPA 6010	mg/kg	0.89	67	02/24/93	JST
admium, Total	EPA 6010	mg/kg	0.31	69	02/24/93	JST
hromium, Total	EPA 6010	mg/kg	0.52	69	02/24/93	JST
ilver, Total	EPA 6010	mg/kg	0.69	69	02/24/93	JST
ercury, Total	EPA 7471	mg/kg	0.11	1.2	03/02/93	CW
rsenic, Total	EPA 7060	mg/kg	0.17	3.4	03/01/93	DF
ead, Total	EPA 7421	mg/kg	0.28	13	03/01/93	DF
elenium, Total	EPA 7740	mg/kg	0.21	3.4	03/01/93	DF
-- SERIES 35000						
. Metals Prep: Solid ICP/Flame	EPA 3050			N/A	02/23/93	HH
. Metals Prep: Solid Furnace	EPA 3050			N/A	02/25/93	HH
. Metals Prep: Solid, Hg	EPA 7471			N/A	03/01/93	HH
- GC ORGANIC ANALYSIS RESULTS --						
enzene	EPA 8020	ug/kg	1.0	20	02/20/93	BM
oluene	EPA 8020	ug/kg	1.0	20	02/20/93	BM
thylbenzene	EPA 8020	ug/kg	1.0	19	02/20/93	BM
ylene, Total	EPA 8020	ug/kg	1.5	55	02/20/93	BM
- ORGANIC PREP RESULTS RESULTS --						
xt/TRPH/SO/Sox	9071/9073			N/A	02/22/93	JMK
-- SERIES 78000						
RPH-IR	EPA 9073	mg/kg	10	410	02/23/93	JSB

emarks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

18 Signed

LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

ate 03/05/93
age 1

--- Project Information ---

Lab Number : 93-4958-17
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : METHOD BLANK Sampled Date/Time : / /
Matrix : SO Received Date/Time : / /
Type : Received From/By : /
Collector : Chain of Custody : 0
Number of Containers : 0

rameter	Method	Units	DL	Results	Test Date	Analy
- GC ORGANIC ANALYSIS RESULTS --						
nzene	EPA 8020	ug/kg	1.0	ND	02/21/93	BM
luene	EPA 8020	ug/kg	1.0	ND	02/21/93	BM
hylbenzene	EPA 8020	ug/kg	1.0	ND	02/21/93	BM
lene, Total	EPA 8020	ug/kg	1.5	ND	02/21/93	BM

emarks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

19 signed

LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

ate 03/03/93
age 1

--- Project Information ---

Lab Number : 93-4958-18
Project No. : 11-0635 Cust. No. :
Project Name : GRIFFISS AIR FORCE BASE

Manager: KATY ALLEN

--- Sample Information ---

Station ID : QCCS Sampled Date/Time : / /
Matrix : SO Received Date/Time : / /
Type : Received From/By : /
Collector : Chain of Custody : 0
Number of Containers : 0

arameter	Method	Units	DL	Results	Test Date	Analy
- GC ORGANIC ANALYSIS RESULTS --						
enzene	EPA 8020	ug/kg	1.0	20	02/21/93	BM
oluene	EPA 8020	ug/kg	1.0	19	02/21/93	BM
thylbenzene	EPA 8020	ug/kg	1.0	18	02/21/93	BM
vlene, Total	EPA 8020	ug/kg	1.5	53	02/21/93	BM

emarks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

20 Signed

Law Environmental National Laboratories
Metals Method Blank Summary
ICP

Project Name :	Griffiss AFB	**Project # :**	11-0635
Lab Sample ID:	93-4958-15	**Date Prepared :**	02/23/93
		Matrix:	**Aq** ____ **Soil** x

	Client Sample ID	Lab Sample ID
1	ISPSS-1	93-4958-01
2	ISPSS-2	93-4958-02
3	ISPSS-301	93-4958-03
4	ISPSS-3	93-4958-04
5	ISPSS-4	93-4958-05
6	ISPSS-5	93-4958-06
7	ISPSS-6	93-4958-07
8	ISPSS-8	93-4958-08
9	ISPSS-9	93-4958-09
10	ISPSS-10	93-4958-10
11	ISPSS-12	93-4958-11
12	ISPSS-7	93-4958-12
13	ISPSS-7 MS	93-4958-13
14	ISPSS-7 MSD	93-4958-14
15	QCCS	93-4958-16
16		
17		
18		
19		
20		

COMMENTS:

APPROVED BY: Paul Bradford

Law Environmental National Laboratories
Soil Metals Matrix Spike/Matrix Spike Duplicate Recovery

Project Name:	Griffiss AFB	Project #:	11-0635
Lab Sample ID:	93-4958-13(MS), 93-4958-14 (MSD)	Instrument ID#:	ICP 22
Units:	mg/kg		

MS/MSD Data Apply to the following samples:

93-4958-01	93-4958-06	93-4958-11	
93-4958-02	93-4958-07	93-4958-12	
93-4958-03	93-4958-08	93-4958-15	
93-4958-04	93-4958-09	93-4958-16	
93-4958-05	93-4958-10		

	ELEMENT	SPIKE ADDED	SAMPLE CONC.	MS CONC.	%MS	MSD CONC.	%MSD	RPD	CONTROL LIMITS		FLAG
1	Aluminum								50-150	20	
2	Antimony								15-112	20	
3	Arsenic								84-98	13	
4	Barium	91	53	152	105	150	100	5	80-116	9	
5	Beryllium								87-103	4	
6	Cadmium	91	0.79	96	102	95	100	1	86-100	8	
7	Calcium								50-150	20	
8	Chromium	91	12	109	104	107	100	2	77-112	5	
9	Cobalt								85-102	9	
10	Copper								80-108	10	
11	Iron								50-150	20	
12	Lead								68-118	20	
13	Manganese								50-150	20	
14	Magnesium								50-150	20	
15	Nickel								81-108	20	
16	Potassium								50-150	20	
17	Selenium								78-103	11	
18	Silver	91	ND	96	102	94	100	2	51-112	20	
19	Sodium								74-126	20	
20	Thallium								74-109	9	
21	Zinc								67-124	20	

VALUES OUTSIDE OF QC LIMITS
* Recovery Outside of Control Limits
** Precision Outside of Control Limits
D - Spike Diluted Out

COMMENTS: _____

~~23~~ APPROVED BY: Paul Fitzgerald

(REVISED 01/26/93)

Law Environmental National Laboratories
Metals in Soil QCCS Summary

Project Name:	Griffiss AFB	**Project #:**	11-0635
Lab Sample ID:	93-4958-16	**Instrument ID#:**	ICP 22
Units:	mg/kg		

QCCS Data Apply to the following samples:

93-4958-01	93-4958-06	93-4958-11	
93-4958-02	93-4958-07	93-4958-12	
93-4958-03	93-4958-08	93-4958-13	
93-4958-04	93-4958-09	93-4958-14	
93-4958-05	93-4958-10	93-4958-15	

	ELEMENT	SPIKE ADDED	QCCS CONC.	% QCCS	CONTROL LIMITS
1	Aluminum				50-150
2	Antimony				15-112
3	Arsenic				84-98
4	Barium	65.8	66.9	102	80-116
5	Beryllium				87-103
6	Cadmium	65.8	69.1	105	86-100
7	Calcium				50-150
8	Chromium	65.8	69.3	105	77-112
9	Cobalt				85-102
10	Copper				80-108
11	Iron				50-150
12	Lead				68-118
13	Manganese				50-150
14	Magnesium				50-150
15	Nickel				81-108
16	Potassium				50-150
17	Selenium				78-103
18	Silver	65.8	69.2	105	51-112
19	Sodium				74-126
20	Thallium				74-109
21	Zinc				67-124

VALUES OUTSIDE OF QC LIMITS

QCCS Recovery: 0 out of outside of limits.

MMENTS:

REVISED 02/26/93

23 **APPROVED BY:**

Law Environmental National Laboratories
Metals Method Blank Summary
FURNACE

Project Name :	Griffiss AFB	**Project # :**	11-0635
Lab Sample ID:	93-4958-15	**Date Prepared :**	02/25/93
		Matrix:	**Aq** ____ **Soil** x

	Client Sample ID	Lab Sample ID
1	ISPSS-1	93-4958-01
2	ISPSS-2	93-4958-02
3	ISPSS-301	93-4958-03
4	ISPSS-3	93-4958-04
5	ISPSS-4	93-4958-05
6	ISPSS-5	93-4958-06
7	ISPSS-6	93-4958-07
8	ISPSS-8	93-4958-08
9	ISPSS-9	93-4958-09
10	ISPSS-10	93-4958-10
11	ISPSS-12	93-4958-11
12	ISPSS-7	93-4958-12
13	ISPSS-7 MS	93-4958-13
14	ISPSS-7 MSD	93-4958-14
15	QCCS	93-4958-16
16		
17		
18		
19		
20		

OMMENTS: _____

Law Environmental National Laboratories
Soil Metals Matrix Spike/Matrix Spike Duplicate Recovery

Project Name:	Griffis AFB	Project #:	11-0635
Lab Sample ID:	93-4958-13 (MS), 93-4958-14 (MSD)	Instrument ID#:	Furnace 17
Units:	mg/kg		

MS/MSD Data Apply to the following samples:

93-4958-01	93-4958-06	93-4958-11	
93-4958-02	93-4958-07	93-4958-12	
93-4958-03	93-4958-08	93-4958-15	
93-4958-04	93-4958-09	93-4958-16	
93-4958-05	93-4958-10		

	ELEMENT	MS ADDED	MSD ADDED	SAMPLE CONC.	MS CONC.	% MS	MSD CONC.	% MSD	RPD	CONTROL LIMITS		FLAG
1	Antimony									50-150	20	
2	Beryllium									59-131	20	
3	Cadmium									51-139	20	
4	Chromium									50-150	20	
5	Lead	20.8	20.6	51.8	71.2	94.0	74.7	111	5	50-150	20	
6	Silver									59-114	11	
7	Thallium									42-133	20	

VALUES OUTSIDE OF QC LIMITS
* Recovery Outside of Control Limits
** Precision Outside of Control Limits
D - Spike Diluted Out

COMMENTS: _____

25 APPROVED BY: Paul Bradford

REVISED 01/16/92

Law Environmental National Laboratories
Soil Metals QCCS Summary

Project Name:	Griffiss AFB	**Project #:**	11-0635
Lab Sample ID:	93-4958-16	**Instrument ID#:**	Furnace 16
Units:	mg/kg		

QCCS Data Apply to the following samples:

93-4958-01	93-4958-06	93-4958-11	
93-4958-02	93-4958-07	93-4958-12	
93-4958-03	93-4958-08	93-4958-13	
93-4958-04	93-4958-09	93-4958-14	
93-4958-05	93-4958-10	93-4958-15	

	ELEMENT	SPIKE ADDED	QCCS CONC.	%QCCS	CONTROL LIMITS
1	Antimony				50-150
2	Arsenic	4.05	3.36	83.0	50-150
3	Beryllium				50-150
4	Cadmium				62-122
5	Chromium				50-150
6	Lead				50-150
7	Nickel				50-150
8	Selenium	4.05	3.35	83.0	38-110
9	Thallium				50-150
0	Tin				50-150

VALUES OUTSIDE OF QC LIMITS

QCCS Recovery: 0 outside limits.

AMENTS:

29

APPROVED BY: Paul Bradford

REVISED 02/26/93

Law Environmental National Laboratories
Soil Metals Matrix Spike/Matrix Spike Duplicate Recovery

roject Name:	Griffiss AFB	Project #:	11-0635
ab Sample ID:	93-4958-13 (MS), 93-4958-14 (MSD)	Instrument ID#:	Mercury Analyzer 21
Units:	mg/kg		

MS/MSD Data Apply to the following samples:

93-4958-01	93-4958-06	93-4958-11	
93-4958-02	93-4958-07	93-4958-12	
93-4958-03	93-4958-08	93-4958-15	
93-4958-04	93-4958-09	93-4958-16	
93-4958-05	93-4958-10		

	ELEMENT	SPIKE ADDED	SAMPLE CONC.	MS CONC.	%MS	MSD CONC.	%MSD	RPD	CONTROL LIMITS		FLAG
1	Mercury	1.92	ND	1.82	95.0	1.82	95.0	0	73-107	16	

VALUES OUTSIDE OF QC LIMITS

* Recovery Outside of Control Limits
** Precision Outside of Control Limits
D - Spike Diluted Out

MMENTS:

APPROVED BY: Paul Bradford

Law Environmental National Laboratories
Metals in Soil QCCS Summary

Project Name:	Griffiss AFB	**Project #:**	11-0635
Lab Sample ID:	93-4958-16	**Instrument ID#:**	Mercury Analyzer 21
Units:	mg/kg		

QCCS Data Apply to the following samples:

93-4958-01	93-4958-06	93-4958-11	
93-4958-02	93-4958-07	93-4958-12	
93-4958-03	93-4958-03	93-4958-13	
93-4958-04	93-4958-09	93-4958-14	
93-4958-05	93-4958-10	93-4958-15	

	ELEMENT	SPIKE ADDED	QCCS Conc.	% QCCS	CONTROL LIMITS
1	Mercury	1.25	1.21	97.0	73-107

VALUES OUTSIDE OF QC LIMITS

QCCS Recovery: 0 outside limits.

VMENTS:

31

APPROVED BY: Paul Bradford

REVISED 02/26/93

Law Environmental National Laboratories
Method Blank Summary
EPA 8020

Project Name :	Griffiss AFB	Project # :	11-0635
Lab Sample ID :	93-4958-15	Lab File ID :	AZF205
Date Analyzed :	02/20/93	Matrix :	Aq ____ Soil x
Time Analyzed :	15:01		

	Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed
1	ISPSS-1	93-4958-01	02/21/96	02:22
2	ISPSS-2	93-4958-02	02/21/93	03:29
3	ISPSS-301	93-4958-03	02/21/93	04:36
4	ISPSS-3	93-4958-04	02/21/93	05:44
5	ISPSS-4	93-4958-05	02/21/93	06:52
6	ISPSS-5	93-4958-06	02/21/93	08:10
7	ISPSS-6	93-4958-07	02/21/93	09:54
8	ISPSS-8	93-4958-08	02/21/93	11:17
9	ISPSS-9	93-4958-09	02/21/93	12:23
10	ISPSS-7	93-4958-12	02/21/93	01:14
11	ISPSS-7 MS	93-4958-13	02/20/93	23:47
12	ISPSS-7 MSD	93-4958-14	02/20/93	22:38
13	QCSS	93-4958-16	02/20/93	20:23
14				
15				
16				
17				
18				
19				
20				

COMMENTS: _____

32 APPROVED BY: Paul Bradford

Law Environmental National Laboratories
Method Blank Summary
EPA 8020

Project Name :	Griffiss AFB	**Project # :**	11-0635
Lab Sample ID :	93-4958-17	**Lab File ID :**	AZF224
Date Analyzed :	02/21/93	**Matrix :**	**Aq** ____ **Soil** x
Time Analyzed :	15:02		

	Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed
1	ISPSS-10	93-4958-10	02/21/93	19:55
2	ISPSS-12	93-4958-11	02/21/93	20:56
3	QCCS	93-4958-18	02/21/93	18:55
4				
5				
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20				

COMMENTS: _____

APPROVED BY: _____

GC REVISED 12/17/92

Law Environmental National Laboratories
GC Volatile Surrogate Summary Report
EPA 8020

Project Name: Griffiss AFB

Project #: 11-0635 **Matrix:** Aq ____ Soil x

	LAB SAMPLE ID	Fluorobenzene		
		Surrogate Added (µg/kg)	Surrogate Conc. (µg/kg)	Surrogate % Recovery
1	93-4958-01	57.2	46.3	80.0
2	93-4958-02	66.5	49.1	73.8
3	93-4958-03	64.9	50.5	77.8
4	93-4958-04	59.5	43.4	72.9
5	93-4958-05	70.0	46.1	65.8
6	93-4958-06	90.9	62.8	69.1
7	93-4958-07	48.0	33.3	69.3
8	93-4958-08	62.8	38.2	60.8
9	93-4958-09	57.2	43.1	75.3
10	93-4958-10	63.1	47.2	74.7
11	93-4958-11	61.9	42.1	68.1
12	93-4958-12	67.8	53.6	79.2
13	93-4958-13	96.5	70.5	73.1
14	93-4958-14	80.6	57.2	70.9
15	93-4958-15	50.0	46.9	94.0

QC LIMITS

(FB) = Fluorobenzene (54-120)

* - Values outside of QC Limits

Surrogates: 0 out of 15 ; outside of QC limits

OMMENTS:

3.1 APPROVED BY: [signature]

Law Environmental National Laboratories
GC Volatile Surrogate Summary Report
EPA 8020

Project Name: Griffiss AFB

Project #: 11-0635 Matrix: Aq _____ Soil x

	LAB SAMPLE ID	Fluorobenzene		
		Surrogate Added (µg/kg)	Surrogate Conc. (µg/kg)	Surrogate % Recovery
1	93-4958-16	52.1	45.0	86.3
2	93-4958-17	50.0	47.0	94.1
3	93-4958-18	52.1	42.4	81.4
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

QC LIMITS

(FB) = Fluorobenzene (54-120)

* - Values outside of QC Limits

Surrogates: 0 out of 3 ; outside of QC limits

COMMENTS: _____

35 APPROVED BY: [signature]

Law Environmental National Laboratories
Soil GC Volatile Matrix Spike/Matrix Spike Duplicate Recovery

Project Name :	Griffiss AFB	Project # :	11-0635
Lab Sample ID :	93-4958-13MS, 93-4958-14MSD	Date of Analysis:	02/20/93

MS/MSD Data Apply to the following samples:

93-4958-01	93-4958-06	93-4958-11	93-4958-18
93-4958-02	93-4958-07	93-4958-12	
93-4958-03	93-4958-08	93-4958-15	
93-4958-04	93-4958-09	93-4958-16	
93-4958-05	93-4958-10	93-4958-17	

COMPOUND	SPIKE ADDED (µg/kg)	SAMPLE CONCENTRATION (µg/kg)	MS CONCENTRATION (µg/kg)	MS % REC #	QC LIMITS REC.
Benzene	36.9	ND	28.9.	78.3	39-150
Toluene	36.9	ND	26.8	72.6	46-148
Ethylbenzene	36.9	ND	28.7	77.8	34-121
Xylenes	111	ND	69.8	62.8	31-117

COMPOUND	SPIKE ADDED (µg/kg)	MSD CONCENTRATION (µg/kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Benzene	30.8	23.4	76.0	3.0	22	39-150
Toluene	30.8	21.8	70.8	2.5	23	46-148
Ethylbenzene	30.8	23.3	75.6	2.9	42	34-121
Xylenes	92.5	56.5	61.1	2.7	46	31-117

Column to be used to flag recovery and RPD values with an asterisk.
* Values outside of QC Limits

RPD: 0 out of 4 outside limits
Spike Recovery: 0 out of 8 outside limits

36 APPROVED BY: [signature]

Law Environmental National Laboratories
GC Volatiles in Soil QCCS Summary

Project Name:	Griffiss AFB	**Project # :**	11-0635
Lab Sample ID:	93-4958-16	**Lab File ID:**	AZF209
Date Analyzed:	02/20/93	**Instrument ID #:**	2

COMPOUND	SPIKE ADDED (µg/kg)	QCCS CONC. (µg/kg)	% QCCS	QC LIMITS REC
lenzene	18.7	18.8	101	39-150
oluene	18.7	18.4	98.4	46-148
thylbenzene	18.7	17.9	95.7	34-121
(ylenes	56.1	51.6	92.0	31-117

* - VALUE OUTSIDE OF QC LIMITS. D - Detected.
QCCS Recovery: 0 out of 4 outside limits

MMENTS: _____

Law Environmental National Laboratories

APPROVED BY: _____

GC Volatiles in Soil QCCS Summary

Project Name:	Griffiss AFB	Project # :	11-0635
Lab Sample ID:	93-4958-18	Lab File ID:	AZF209
Date Analyzed:	02/21/93	Instrument ID #:	2

COMPOUND	SPIKE ADDED (ug/kg)	QCCS CONC. (ug/kg)	% QCCS	QC LIMITS REC
Benzene	20.0	19.5	97.5	39-150
Toluene	20.0	19.0	95.0	46-148
Ethylbenzene	20.0	18.3	91.5	34-121
Xylenes	60.0	53.1	88.5	31-117

* - VALUE OUTSIDE OF QC LIMITS. D - Detected.
QCCS Recovery: 0 out of 4 outside limits

COMMENTS: _____

Paul Bigford

Law Environmental National Laboratories
Method Blank Summary

EPA 9073

Project Name :	Griffis AFB	Project Number:	11-0635
Lab Sample ID :	93-4958-15	Extraction ID :	SOXA-0222-S
Date Analyzed :	02/23/93	Date Extracted:	02/22/93
Time Analyzed :	N/A	Matrix :	Aq ____ Soil x

	Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed
1	ISPSS-1	93-4958-01	02/23/93	N/A
2	ISPSS-2	93-4958-02	02/23/93	N/A
3	ISPSS-301	93-4958-03	02/23/93	N/A
4	ISPSS-3	93-4958-04	02/23/93	N/A
5	ISPSS-4	93-4958-05	02/23/93	N/A
6	ISPSS-5	93-4958-06	02/23/93	N/A
7	ISPSS-6	93-4958-07	02/23/93	N/A
8	ISPSS-8	93-4958-08	02/23/93	N/A
9	ISPSS-9	93-4958-09	02/23/93	N/A
10	ISPSS-10	93-4958-10	02/23/93	N/A
11	ISPSS-12	93-4958-11	02/23/93	N/A
12	ISPSS-7	93-4958-12	02/23/93	N/A
13	ISPSS-7 MS	93-4958-13	02/23/93	N/A
14	ISPSS-7 MSD	93-4958-14	02/23/93	N/A
15	QCCS	93-4958-16	02/23/93	N/A

COMMENTS:_____

APPROVED BY: Paul Bridges

Law Environmental National Laboratories
Soil Matrix Spike/Matrix Spike Duplicate Recovery

Project Name:	Griffis AFB	Project #:	11-0635		
Lab Sample ID:	93-4958-13 MS, 93-4958-14 MSD	Matrix:	Aq		Soil x
Date Extracted:	02/22/93				

MS/MSD Data Apply to the following samples:

93-4958-01	93-4958-06	93-4958-11	
93-4958-02	93-4958-07	93-4958-12	
93-4958-03	93-4958-08	93-4958-16	
93-4958-04	93-4958-09	93-4958-15	
93-4958-05	93-4958-10		

COMPOUND	SPIKE ADDED (mg/kg)	SAMPLE CONCENTRATION (mg/kg)	MS CONCENTRATION (mg/kg)	MS % REC #	QC LIMITS % REC.
TPH-IR	699	110	720	87.3	55-105

COMPOUND	SPIKE ADDED (mg/kg)	MSD CONCENTRATION (mg/kg)	MSD % REC #	% RPD #	QC LIMITS %RPD	QC LIMITS % REC.
TPH-IR	693	731	89.6	2.6	16	55-105

Column to be used to flag recovery and RPD values with an asterisk.
* Values outside of QC Limits

RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS:

APPROVED BY:

Law Environmental National Laboratories

EPA 9073 QCCS Recovery

Project Name:	Griffis AFB	Project # :	11-0635
Lab Sample ID:	93-4958-16	Matrix:	Aq x Soil
Date Extracted:	02/22/93		

QCCS Data apply to the following samples:

93-4958-01	93-4958-06	93-4958-11	
93-4958-02	93-4958-07	93-4958-12	
93-4958-03	93-4958-08	93-4958-13	
93-4958-04	93-4958-09	93-4958-14	
93-4958-05	96-4958-10	93-4958-15	

COMPOUND	SPIKE ADDED (mg/kg)	SAMPLE CONC. (mg/kg)	QCCS CONC. (mg/kg)	QCCS %REC	QC LIMITS RECOVERY
TPH-IR	438	ND	414	94.5	55-105

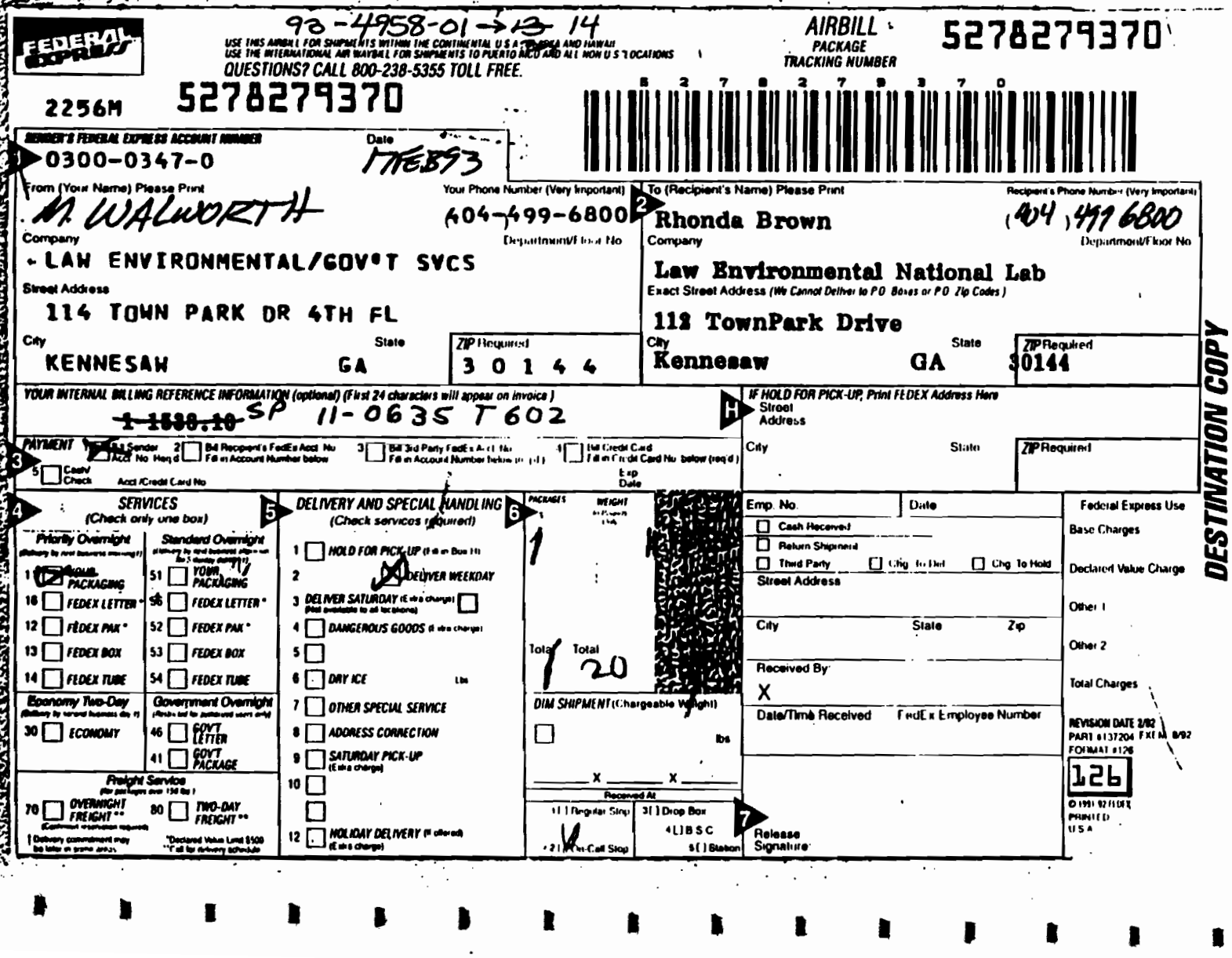
* VALUES ARE OUTSIDE OF QC LIMITS

D - Detected.

Spike Recovery: 0 out of 1 outside limits

COMMENTS: _____

41 APPROVED BY: Paul Englund



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46 [ ] GOVT LETTER
41 [ ] GOVT PACKAGE

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80 [ ] TWO-DAY FREIGHT**
† Delivery commitment may be later in some areas
*Declared Value Limit $500
**Call for delivery schedule

5 DELIVERY AND SPECIAL HANDLING (Check services required)
1 [ ] HOLD FOR PICK-UP (Fill in Box H)
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[ ]
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14

93-4958-01 → ~~3~~ 365

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7215 PINE FOREST ROAD
PENSACOLA, FLORIDA 32526
(904) 944-9772

93-4958-01 → 14 BCs

SAMPLING INFORMATION
NPDES NUMBER

NAME OF FACILITY: GRIFFISS AFB
STREET ADDRESS: ROME, NY

PROJECT NAME	JOB NO.
GRIFFISS AFB	11-0635

SAMPLERS (SIGNATURE): S. Parangope

SAMPLING DATE: 17FEB97

TIME	GRAB	COMP.	*SOURCE CODE	SAMPLE STATION DESCRIPTION	TOTAL NO. OF CONTAINERS	40 ml G VOA HCl	1 L G - AMBER	8 oz. G. W/M	2 oz. G. W/M	1 L G (H2SO4)	500 ml - AMBER	1 L. PL (HNO3)	1 L. PL (H2SO4)	1L. PL (NaOH+Ascorbic Acid)	1 L. PL (Zn Acetate + NaOH)	1 L. PL	4 oz. PL W/M	250 ml PL	1 L. TEFLON	125 mL 4/00				LENL LAB NO.
1330	X		SO	ISPSS-1	4			2	1										1					93-4958-01
1315	X		SO	ISPSS-2	4			2	1										1					-02
1300	X		SO	ISPSS-301	4			2	1										1					-03
1300	X		SO	ISPSS-3	4			2	1										1					-04
1250	X		SO	ISPSS-4	4			2	1										1					-05
1245	X		SO	ISPSS-5	4			2	1										1					-06
1235	X		SO	ISPSS-6	4			2	1										1					-07 ~~07~~
1215	X		SO	ISPSS-7	4			2	1										1					-12 ~~08~~
1215	X		SO	ISPSS-7MS/MSD	4			2	1										1					-13+14 ~~09~~
1205	X		SO	ISPSS-8	4			2	1										1					08 ~~10~~
1200	X		SO	ISPSS-9	4			2	1										1					09 ~~11~~

RELINQUISHED BY: (SIGNATURE)	DATE / TIME	RECEIVED BY: (SIGNATURE)	DATE / TIME	RELINQUISHED BY: (SIGNATURE)	RECEIVED BY LABORATORY: (SIGNATURE)	DATE / TIME
S Parangope	17FEB 97 1800					2/18/97 1100

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REMARKS

FEDERAL EXPRESS 527827937O

LENL-K

***SOURCE CODES**

RECOVERY WELL - RW	NPDES DISCHARGE - ND
RCRA MONITORING WELL - MW	DRINKING WATER - DW
SOIL / SEDIMENT - SO	HAZARDOUS WASTE - HW
SLUDGE - SL	SURFACE WATER - SW
	NON-AQUEOUS - NA

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CHAIN OF CUSTODY RECORD

'93 - 4958-01 → ~~13~~ 14

2 of 2

SAMPLING INFORMATION

NAME OF FACILITY: GRIFFISS AFB
STREET ADDRESS: ROME, NY
NPDES NUMBER:

PROJECT NAME: GRIFFISS AFB
JOB NO.: 11-0635
SAMPLERS (SIGNATURE): S. Paranjape
SAMPLING DATE: 17FEB93

TIME	GRAB	COMP.	*SOURCE CODE	SAMPLE STATION DESCRIPTION	TOTAL NO. OF CONTAINERS	40 ml G VOA HCl	1 L G - AMBER	8 oz. G. W/M	2 oz. G. W/M	1 L G (H_2SO_4)	500 ml - AMBER	1 L. PL (HNO_3)	1 L. PL (H_2SO_4)	1 L. PL (NaOH+Ascorbic Acid)	1 L. PL (Zn Acetate + NaOH)	1 L. PL	4 oz. PL W/M	250 ml PL	1 L. TEFLON	125 ml G W/M				LENL LAB NO.
1150	X		SO	ISPSS-10	4			2	1											1				'93-4958-~~12~~ 10
1345	X		SO	ISPSS-12	4			2	1											1				~~13~~ 11

45

RELINQUISHED BY:	DATE / TIME	RECEIVED BY:	DATE / TIME	RELINQUISHED BY:	RECEIVED BY LABORATORY:	DATE / TIME
S. Paranjape (SIGNATURE)	17FEB93 1800	(SIGNATURE)		(SIGNATURE)	[signature] (SIGNATURE)	2-18-93 1100

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REMARKS
FEDERAL EXPRESS 5278279370
LENL-K

***SOURCE CODES**

RECOVERY WELL - RW
RCRA MONITORING WELL - MW
SOIL / SEDIMENT - SO
SLUDGE - SL
NPDES DISCHARGE - ND
DRINKING WATER - DW
HAZARDOUS WASTE - HW
SURFACE WATER - SW
NON-AQUEOUS - NA

93-4558-01 → 14 ~~13~~

LAW ENVIRONMENTAL, INC.

GOVERNMENT SERVICES BRANCH
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404-499-6800

REQUEST FOR ANALYSIS FORM LENL–K

Project #: 11–0635
Project: Griffiss AFB – Industrial Soils Pad
Project Manager: Ms. Katy Allen
Project Chemist: Ms. Sushama Paranjape
Matrix: Shallow Soils ISPSS-1
(Sample I.D.)

ANALYTICAL REQUEST

CONTAINER	NO.	PRESERVATION	PARAMETER	METHOD
2 oz. VOA vial 4 oz. jar	~~2~~ 1	Cool to 4°C	BTEX *	EPA 8020
8 oz. glass jar	1	Cool to 4°C	TRPH	EPA 9071/9073
8 oz. glass jar	1	Cool to 4°C	Total Metals:	
			Arsenic	EPA 3050/7060
			Barium	EPA 3050/6010
			Cadmium	EPA 3050/6010
			Chromium	EPA 3050/6010
			Lead	EPA 3050/7421
			Mercury	EPA 3050/7471
			Selenium	EPA 3050/7740
			Silver	EPA 3050/6010

7/93

Remarks: * Please use 2 oz jar first.
Turn–around Time:

[Please reurn a copy of this form with the data package]

96

93-4958-01 → 14 / ~~13~~ 365

LAW ENVIRONMENTAL, INC.

GOVERNMENT SERVICES BRANCH
114 TOWNPARK DRIVE, 4TH FLOOR
KENNESAW, GEORGIA 30144-5508
404-499-6800

REQUEST FOR ANALYSIS FORM

LENL–K

Project #: 11–0635
Project: Griffiss AFB – Industrial Soils Pad
Project Manager: Ms. Katy Allen
Project Chemist: Ms. Sushama Paranjape
Matrix: Shallow Soils ISPSS-2
(Sample I.D.)

ANALYTICAL REQUEST

CONTAINER	NO.	PRESERVATION	PARAMETER	METHOD
2 oz. VOA vial 4 oz g. jar	~~2~~ / 1	Cool to 4°C	BTEX *	EPA 8020
8 oz. glass jar	1	Cool to 4°C	TRPH	EPA 9071/9073
8 oz. glass jar	1	Cool to 4°C	Total Metals: Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver	 EPA 3050/7060 EPA 3050/6010 EPA 3050/6010 EPA 3050/6010 EPA 3050/7421 EPA 3050/7471 EPA 3050/7740 EPA 3050/6010

193

Remarks: * Please use 2 oz jar first
Turn–around Time:

[Please reurn a copy of this form with the data package]

93-4958-01 → 14 → 3 Bes

LAW ENVIRONMENTAL INC.

GOVERNMENT SERVICES BRANCH
114 TOWNPARK DRIVE, 4TH FLOOR
KENNESAW, GEORGIA 30144-5508
404-499-6800

REQUEST FOR ANALYSIS FORM LENL–K

Project #: 11–0635
Project: Griffiss AFB – Industrial Soils Pad
Project Manager: Ms. Katy Allen
Project Chemist: Ms. Sushama Paranjape
Matrix: Shallow Soils ISPSS-301 (Sample I.D.)

ANALYTICAL REQUEST

CONTAINER	NO.	PRESERVATION	PARAMETER	METHOD
2 oz. VOA vial 4 oz g. jar	2 → 1	Cool to 4°C	BTEX *	EPA 8020
8 oz. glass jar	1	Cool to 4°C	TRPH	EPA 9071/9073
8 oz. glass jar	1	Cool to 4°C	Total Metals:	
			Arsenic	EPA 3050/7060
			Barium	EPA 3050/6010
			Cadmium	EPA 3050/6010
			Chromium	EPA 3050/6010
			Lead	EPA 3050/7421
			Mercury	EPA 3050/7471
			Selenium	EPA 3050/7740
			Silver	EPA 3050/6010

Remarks: * Please use 2 oz jar first
Turn–around Time:

[Please reurn a copy of this form with the data package]

93-4958-01 → 14 → 13 3cs

LAW ENVIRONMENTAL, INC.

GOVERNMENT SERVICES BRANCH
114 TOWNPARK DRIVE, 4TH FLOOR
KENNESAW, GEORGIA 30144-5508
404-499-6800

REQUEST FOR ANALYSIS FORM LENL–K

Project #: 11–0635
Project: Griffiss AFB – Industrial Soils Pad
Project Manager: Ms. Katy Allen
Project Chemist: Ms. Sushama Paranjape
Matrix: Shallow Soils ISPSS-3
(Sample I.D.)

ANALYTICAL REQUEST

CONTAINER	NO.	PRESERVATION	PARAMETER	METHOD
2 oz. VOA vial 4 oz 9 Jar	~~2~~ 1	Cool to 4°C	BTEX *	EPA 8020
8 oz. glass jar	1	Cool to 4°C	TRPH	EPA 9071/9073
8 oz. glass jar	1	Cool to 4°C	Total Metals:	
			Arsenic	EPA 3050/7060
			Barium	EPA 3050/6010
			Cadmium	EPA 3050/6010
			Chromium	EPA 3050/6010
			Lead	EPA 3050/7421
			Mercury	EPA 3050/7471
			Selenium	EPA 3050/7740
			Silver	EPA 3050/6010

Remarks: * Please use 2 oz Jar first
Turn–around Time:

[Please reurn a copy of this form with the data package]

49

93-4958-01 → 14 13 3<

LAW ENVIRONMENTAL, INC.

GOVERNMENT SERVICES BRANCH
114 TOWNPARK DRIVE, 4TH FLOOR
KENNESAW, GEORGIA 30144-5508
404-499-6800

REQUEST FOR ANALYSIS FORM LENL–K

Project #: 11–0635
Project: Griffiss AFB – Industrial Soils Pad
Project Manager: Ms. Katy Allen
Project Chemist: Ms. Sushama Paranjape
Matrix: Shallow Soils ISPSS-4 (Sample I.D.)

ANALYTICAL REQUEST

CONTAINER	NO.	PRESERVATION	PARAMETER	METHOD
2 oz. VOA vial 4 oz. g. jar	~~2~~ 1	Cool to 4°C	BTEX *	EPA 8020
8 oz. glass jar	1	Cool to 4°C	TRPH	EPA 9071/9073
8 oz. glass jar	1	Cool to 4°C	Total Metals:	
			Arsenic	EPA 3050/7060
			Barium	EPA 3050/6010
			Cadmium	EPA 3050/6010
			Chromium	EPA 3050/6010
			Lead	EPA 3050/7421
			Mercury	EPA 3050/7471
			Selenium	EPA 3050/7740
			Silver	EPA 3050/6010

Remarks: * Please use 2 oz jar first
Turn–around Time:

[Please reurn a copy of this form with the data package]

50

93-4958-01 → 14 Box

LAW ENVIRONMENTAL, INC.

GOVERNMENT SERVICES BRANCH
114 TOWNPARK DRIVE, 4TH FLOOR
KENNESAW, GEORGIA 30144-5508
404-499-6800

REQUEST FOR ANALYSIS FORM LENL–K

Project #: 11–0635
Project: Griffiss AFB – Industrial Soils Pad
Project Manager: Ms. Katy Allen
Project Chemist: Ms. Sushama Paranjape
Matrix: Shallow Soils ISPSS-5 (Sample I.D.)

ANALYTICAL REQUEST

CONTAINER	NO.	PRESERVATION	PARAMETER	METHOD
2 oz. VOA vial 4 oz. jar	2	Cool to 4°C	BTEX *	EPA 8020
8 oz. glass jar	1	Cool to 4°C	TRPH	EPA 9071/9073
8 oz. glass jar	1	Cool to 4°C	Total Metals:	
			Arsenic	EPA 3050/7060
			Barium	EPA 3050/6010
			Cadmium	EPA 3050/6010
			Chromium	EPA 3050/6010
			Lead	EPA 3050/7421
			Mercury	EPA 3050/7471
			Selenium	EPA 3050/7740
			Silver	EPA 3050/6010

Remarks: * Please use 2 oz. jar first.
Turn–around Time:

[Please reurn a copy of this form with the data package]

51

93-4958-01 → 14 ~~13~~

LAW ENVIRONMENTAL, INC.

GOVERNMENT SERVICES BRANCH
114 TOWNPARK DRIVE, 4TH FLOOR
KENNESAW, GEORGIA 30144-5508
404-499-6800

REQUEST FOR ANALYSIS FORM LENL–K

Project #: 11–0635
Project: Griffiss AFB – Industrial Soils Pad
Project Manager: Ms. Katy Allen
Project Chemist: Ms. Sushama Paranjape
Matrix: Shallow Soils ISPSS-6
(Sample I.D.)

ANALYTICAL REQUEST

CONTAINER	NO.	PRESERVATION	PARAMETER	METHOD
2 oz. VOA vial 4 oz G. Jar	~~2~~ 1	Cool to 4°C	BTEX *	EPA 8020
8 oz. glass jar	1	Cool to 4°C	TRPH	EPA 9071/9073
8 oz. glass jar	1	Cool to 4°C	Total Metals:	
			Arsenic	EPA 3050/7060
			Barium	EPA 3050/6010
			Cadmium	EPA 3050/6010
			Chromium	EPA 3050/6010
			Lead	EPA 3050/7421
			Mercury	EPA 3050/7471
			Selenium	EPA 3050/7740
			Silver	EPA 3050/6010

Remarks: * Please use 2 oz. Jar first.
Turn–around Time:

[Please reum a copy of this form with the data package]

52

93-4958-01 → ~~13~~ 14 30s

LAW ENVIRONMENTAL, INC.

GOVERNMENT SERVICES BRANCH
114 TOWNPARK DRIVE, 4TH FLOOR
KENNESAW, GEORGIA 30144-5508
404-499-6800

REQUEST FOR ANALYSIS FORM LENL-K

Project #: 11-0635
Project: Griffiss AFB - Industrial Soils Pad
Project Manager: Ms. Katy Allen
Project Chemist: Ms. Sushama Paranjape
Matrix: Shallow Soils

ISPSS-7
(Sample I.D.)

ANALYTICAL REQUEST

CONTAINER	NO.	PRESERVATION	PARAMETER	METHOD
~~2~~ oz. VOA vial 1 4 oz G...	~~2~~ 1 1	Cool to 4°C	BTEX *	EPA 8020
8 oz. glass jar	1	Cool to 4°C	TRPH	EPA 9071/9073
8 oz. glass jar	1	Cool to 4°C	Total Metals: Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver	 EPA 3050/7060 EPA 3050/6010 EPA 3050/6010 EPA 3050/6010 EPA 3050/7421 EPA 3050/7471 EPA 3050/7740 EPA 3050/6010

193

Remarks: * please use 2 oz jar first for VOA analysis
Turn-around Time:

[Please reurn a copy of this form with the data package]

53

93-4958-01 → 14 → 13 exs

LAW ENVIRONMENTAL, INC.

GOVERNMENT SERVICES BRANCH
114 TOWNPARK DRIVE, 4TH FLOOR
KENNESAW, GEORGIA 30144-5508
404-499-6800

REQUEST FOR ANALYSIS FORM LENL-K

Project #: 11-0635
Project: Griffiss AFB – Industrial Soils Pad
Project Manager: Ms. Katy Allen
Project Chemist: Ms. Sushama Paranjape
Matrix: Shallow Soils ISPSS-8
(Sample I.D.)

ANALYTICAL REQUEST

CONTAINER	NO.	PRESERVATION	PARAMETER	METHOD
2 oz. VOA vial 40 = glass Jar	~~2~~ 1	Cool to 4°C	BTEX *	EPA 8020
8 oz. glass jar	1	Cool to 4°C	TRPH	EPA 9071/9073
8 oz. glass jar	1	Cool to 4°C	Total Metals:	
			Arsenic	EPA 3050/7060
			Barium	EPA 3050/6010
			Cadmium	EPA 3050/6010
			Chromium	EPA 3050/6010
			Lead	EPA 3050/7421
			Mercury	EPA 3050/7471
			Selenium	EPA 3050/7740
			Silver	EPA 3050/6010

ID 7143

Remarks: * Please use 2 oz Jar first for VOA analysis.
Turn-around Time:

[Please reurn a copy of this form with the data package]

93-4958-01 → ~~13~~ 14
305

LAW ENVIRONMENTAL, INC.

GOVERNMENT SERVICES BRANCH
114 TOWNPARK DRIVE, 4TH FLOOR
KENNESAW, GEORGIA 30144-5508
404-499-6800

REQUEST FOR ANALYSIS FORM

LENL-K

Project #: 11-0635
Project: Griffiss AFB – Industrial Soils Pad
Project Manager: Ms. Katy Allen
Project Chemist: Ms. Sushama Paranjape
Matrix: Shallow Soils

ISPSS-9
(Sample I.D.)

ANALYTICAL REQUEST

CONTAINER	NO.	PRESERVATION	PARAMETER	METHOD
2 oz. VOA vial 4 oz glass jar	~~2~~ 1 1	Cool to 4°C	BTEX *	EPA 8020
8 oz. glass jar	1	Cool to 4°C	TRPH	EPA 9071/9073
8 oz. glass jar	1	Cool to 4°C	Total Metals: Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver	 EPA 3050/7060 EPA 3050/6010 EPA 3050/6010 EPA 3050/6010 EPA 3050/7421 EPA 3050/7471 EPA 3050/7740 EPA 3050/6010

143

Remarks: * Please use 2 oz. jar first for VOA analysis.
Turn-around Time:

[Please reurn a copy of this form with the data package]

93-4958-01 → ~~15~~ 14
365

LAW ENVIRONMENTAL INC.
GOVERNMENT SERVICES BRANCH
114 TOWNPARK DRIVE, 4TH FLOOR
KENNESAW, GEORGIA 30144-5508
404-499-6800

REQUEST FOR ANALYSIS FORM LENL-K

Project #: 11-0635
Project: Griffiss AFB – Industrial Soils Pad
Project Manager: Ms. Katy Allen
Project Chemist: Ms. Sushama Paranjape
Matrix: Shallow Soils ISPSS-10
(Sample I.D.)

ANALYTICAL REQUEST

CONTAINER	NO.	PRESERVATION	PARAMETER	METHOD
2 oz. VOA vial	1	Cool to 4°C	BTEX *	EPA 8020
4 oz. ~~VOA~~ glass Jar	1			
8 oz. glass jar	1	Cool to 4°C	TRPH	EPA 9071/9073
8 oz. glass jar	1	Cool to 4°C	Total Metals:	
			Arsenic	EPA 3050/7060
			Barium	EPA 3050/6010
			Cadmium	EPA 3050/6010
			Chromium	EPA 3050/6010
			Lead	EPA 3050/7421
			Mercury	EPA 3050/7471
			Selenium	EPA 3050/7740
			Silver	EPA 3050/6010

SP 2/17/93

Remarks: * Please use 2 oz VOA Jar for VOA analysis
Turn-around Time: first

[Please reurn a copy of this form with the data package]

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93-4958-01 → ~~3~~ 14

LAW ENVIRONMENTAL, INC.

GOVERNMENT SERVICES BRANCH
114 TOWNPARK DRIVE, 4TH FLOOR
KENNESAW, GEORGIA 30144-5508
404-499-6800

REQUEST FOR ANALYSIS FORM LENL-K

Project #: 11-0635
Project: Griffiss AFB – Industrial Soils Pad
Project Manager: Ms. Katy Allen
Project Chemist: Ms. Sushama Paranjape
Matrix: Shallow Soils ISPSS-12
(Sample I.D.)

ANALYTICAL REQUEST

CONTAINER	NO.	PRESERVATION	PARAMETER	METHOD
2 oz. VOA vial 4 oz Glass Jar	~~2~~ 1	Cool to 4°C	BTEX	EPA 8020
8 oz. glass jar	1	Cool to 4°C	TRPH	EPA 9071/9073
8 oz. glass jar	1	Cool to 4°C	Total Metals:	
			Arsenic	EPA 3050/7060
			Barium	EPA 3050/6010
			Cadmium	EPA 3050/6010
			Chromium	EPA 3050/6010
			Lead	EPA 3050/7421
			Mercury	EPA 3050/7471
			Selenium	EPA 3050/7740
			Silver	EPA 3050/6010

Remarks: # Please use 2 oz Jar first for VOA
Turn-around Time:

[Please reurn a copy of this form with the data package]

93-4958-01 → 14 → 13

LAW ENVIRONMENTAL, INC.
GOVERNMENT SERVICES BRANCH
114 TOWNPARK DRIVE, 4TH FLOOR
KENNESAW, GEORGIA 30144-5508
404-499-6800

REQUEST FOR ANALYSIS FORM LENL-K

Project #: 11-0635
Project: Griffiss AFB – Industrial Soils Pad
Project Manager: Ms. Katy Allen
Project Chemist: Ms. Sushama Paranjape
Matrix: Shallow Soils ISPSS-7MS /msd
(Sample I.D.)

ANALYTICAL REQUEST

CONTAINER	NO.	PRESERVATION	PARAMETER	METHOD
2 oz. VOA vial	2	Cool to 4°C	BTEX +	EPA 8020
4 oz glass jar	2			
8 oz. glass jar	1	Cool to 4°C	TRPH	EPA 9071/9073
8 oz. glass jar	1	Cool to 4°C	Total Metals:	
			Arsenic	EPA 3050/7060
			Barium	EPA 3050/6010
			Cadmium	EPA 3050/6010
			Chromium	EPA 3050/6010
			Lead	EPA 3050/7421
			Mercury	EPA 3050/7471
			Selenium	EPA 3050/7740
			Silver	EPA 3050/6010

D 7/93

Remarks: + Extra sample for ms, msd analysis.
Turn-around Time:

[Please reurn a copy of this form with the data package]

58

93-4958-01 → ~~13~~ 14

SAMPLE RECEIPT/SHIPPER INSPECTION FORM

LENL # 93-4958-01 → ~~13~~ 14	DATE: 02-19-93
PROJECT NAME: GRIFFISS AFB	PROJECT # 11-0635

A: PRELIMINARY EXAMINATION: Date shipment was opened: 02-19-93

1. Did shipment come with a shipping air bill?	(Y)	N	N/A
2. If YES, document carrier and air bill number. Fx # 5278279370			
3. Were custody seals present on samples?	Y	(N)	–
4. Were custody seals intact?	Y	N	(NA)
5. Were custody papers filled out properly?	(Y)	N	NA
6. Were custody papers signed?	(Y)	N	NA
7. Sampling time(s) present?	(Y)	N	NA
8. Sampling date(s) present?	(Y)	N	NA
9. Type of packing and ice used. BUBBLE WRAP, ZIPLOCK w/WET ICE			

B. LOG-IN PHASE Date samples were logged in: 02-19-93

1. Did all bottles arrive intact?	(Y)	N	NA
2. Did all bottle labels agree with custody papers?	(Y)	N	NA
3. Were proper containers used for requested test?	(Y)	N	NA
4. Were correct preservatives added for requested test?	(Y)	N	NA
5. Was sufficient sample received for requested test?	(Y)	N	NA
6. Were air bubbles present in VOA samples?	Y	N	(NA)

COMMENTS: _____

TEMP: _____ PROCESSED BY: _____

C. CORRECTIVE ACTION:

1. Client notified verbally. Date:	Time:		
2. Samples processed as received.	(Y)	N	–

COMMENTS: _____

SAMPLE CONTROL COORDINATOR		2/19/93
SAMPLE CONTROL SUPERVISOR		3/5/93
	INITIAL	DATE

COOLER RECEIPT FORM

93-4958-01 → +3 14 3GS

LENE K

LIMS# _____

Contractor Cooler V

MRD Cooler # _____

Number of Coolers _____

PROJECT: Industrial soils Pad Griffiss AFB Date received: _____

Law Proj. No 11-0635 Task 602

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS.

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 02-19-93

by (print) BRANDON SIMS (sign) [signature]

1. Did cooler come with a shipping slip (air bill, etc.)? ..... (YES) NO

If YES, enter carrier name & air bill number here: FX# 5278279370

2. Were custody seals on outside of cooler? ..... (YES) NO

How many & where: 2 (FRONT + BACK), seal date: 02-19-93, seal name 3GS

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (YES) NO

4. Did you screen samples for radioactivity using the Geiger Counter..... YES (NO)

5. Were custody papers sealed in a plastic bag & taped inside to the lid? ..... (YES) NO

6. Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO

7. Did you sign custody papers in the appropriate place? ..... (YES) NO

8. Was project identifiable from custody papers? If YES, enter project name at the top of this form. (YES) NO

9. If required, was enough ice used? ..... Type of ice: ZIPLOCK W/WET ICE ..... (YES) NO

10. Have designated person initial here to acknowledge receipt of cooler: 3GS (date) 02-19-93

8. LOG-IN PHASE: Date samples were logged-in: 02-

by (print) _____ (sign) _____

11. Describe type of packing in cooler: BUBBLE WRAP ZIPLOCK W/WET ICE

12. Were all bottles sealed in separate plastic bags? ..... (YES) NO

13. Did all bottles arrive unbroken & were labels in good condition? ..... (YES) NO

14. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... (YES) NO

15. Did all bottle labels agree with custody papers? ..... (YES) NO

16. Were correct containers used for the tests indicated? ..... (YES) NO

17. Were correct preservatives added to samples? ..... (YES) NO

18. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO

19. Were bubbles absent in VOA samples? If NO, list by QA#: NO VOAS SENT YES NO

20. Was the project manager called and status discussed? If YES, give details on the back of this form. YES NO

21. Who was called ? _____ By whom ? _____ (date) _____

93-5873

COOLER RECEIPT FORM

Contractor Cooler _____

LIMS# _____

MRD Cooler # _____

Number of Coolers _____

PROJECT: Griffiss AFB-3rd Quarter Sampling 11-2588-0201 Date received 6/12/93

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 6/12/93

by (print) GERALD PITTMAN (sign) Gerald Pittman

1. Did cooler come with a shipping slip (air bill, etc.)? ..... (YES) NO

If YES, enter carrier name & air bill number here: Federal Express # 6976810105

2. Were custody seals on outside of cooler? ..... (YES) NO

How many & where: 2 Between lid & body, seal date: 6/11/93, seal name D JOHNSON

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (YES) NO

4. Did you screen samples for radioactivity using the Geiger Counter? ..... YES (NO)

5. Were custody papers sealed in a plastic bag & taped inside to the lid? ..... (YES) NO

6. Were custody papers filled out properly (ink, signed, etc.)? ..... YES (NO)

7. Did you sign custody papers in the appropriate place? ..... (YES) NO

8. Was project identifiable from custody papers? If YES, enter projects name at the top of this form. (YES) NO

9. If required, was enough ice used? Yes ..... Type of ice: WET ICE ..... (YES) NO

10. Have designated person initial here to acknowledge receipt of cooler: GP (date) 6/12/93

B. LOG-IN PHASE: Date samples were logged-in: 6/12/93

by (print) GERALD PITTMAN (sign) Gerald Pittman

11. Describe type of packing in cooler: Bubble wrap, zip lock bags, metal can (contained)

12. Were all bottles sealed in separate plastic bags? ..... (YES) NO

13. Did all bottles arrive unbroken & were labels in good condition? ..... (YES) NO

14. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... (YES) NO

15. Did all bottle labels agree with custody papers? ..... (YES) NO

16. Were correct containers used for the tests indicated? ..... (YES) NO

17. Were correct preservatives added to samples? ..... (YES) NO

18. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO

19. Were bubbles absent in VOA samples? If NO, list by QA# _____ (YES) NO

20. Was the project manager called and status discussed? If YES, give details on the back of this form. YES NO

21. Who was called? _____ by whom? _____ (date) _____

HF

Original 11-0635 (ESP)
copy SSP

LAW
ENGINEERING AND ENVIRONMENTAL SERVICES

July 2, 1993

Law Environmental Govt. Services.
114 TownPark Drive
Kennesaw, GA 30144

Attention: Katie Allen

Job Number: 11-0635 T602

Subject: Chemical analysis of samples received on 6/12/93.

Dear Ms. Allen:

Law Environmental National Laboratories has completed its analysis of your samples and reports the results on the following pages. These results relate only to the contents of the samples as submitted. This report shall not be reproduced except in full without the approval of Law Environmental National Laboratories.

If there are any questions, please do not hesitate to contact us.

Sincerely,

LAW ENVIRONMENTAL NATL LABS

W. Clifford McBride, Jr.

Clifford H. McBride
QC Coordinator

Attachment: Data Report
Invoice

LAW ENVIRONMENTAL, INC.
NATIONAL LABORATORIES
112 TOWNPARK DRIVE
KENNESAW, GA 30144

404-421-3300
FAX 404-421-3301
ONE OF THE LAW COMPANIES

CASE NARRATIVE

Project Name: Griffiss AFB Date: July 2, 1993

Project Number: 11-0635 T602

This narrative pertains to the following sample submitted to Law Environmental National Labs on June 12, 1993.

CLIENT ID.:	LABORATORY NUMBER:
ISP-1	93-5873-01

I. Metals Analysis
Spike analytes were diluted out in the matrix spike/matrix spike duplicate samples for aluminum, calcium, and iron. These metals were recovered within appropriate quality control ranges in the Quality Control Check Standard (QCCS), which demonstrates that the process was in control.

II. Pesticide/PCB Analysis
One surrogate was recovered outside QC limits in each of the method blank, matrix spike and matrix spike duplicate; however, the applicable surrogates for the sample were recovered within acceptable limits. Since all spike analytes were recovered within applicable ranges in the MS/MSD, no corrective action was warranted.

III. Volatile Organics Analysis
No problems were encountered.

IV. Base Neutral/Acid Extractible Analysis
No problems were encountered.

Signed: W. Paul Brafford

W. Paul Brafford

LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

Date 07/06/93
Page 1

--- Project Information ---

Lab Number : 93-5873-01
Project No. : 11-0635 T602
Project Name : GRIFFISS AFB
Cust. No. :

Manager: KATIE ALLEN

--- Sample Information ---

Station ID : 1SP-1
Matrix : SO
Type : GRAB
Collector : WC

Sampled Date/Time : 06/11/93 15:00
Received Date/Time : 06/12/93 11:00
Received From/By : WC/GP
Chain of Custody : 20392
Number of Containers : 7

Parameter............................	Method....	Units	DL........	Results...	Test Date	Ana
-- INORGANIC CHEMISTRY RESULTS --						
Moisture (Oven Dried @ 105C)	EPA 160.3M	%	1.0	13	06/16/93	TP
-- METALS ANALYSIS - METALS PREP RESULTS --						
Antimony, Total	EPA 6010	mg/kg	4.0	ND	06/21/93	JST
Aluminum, Total	EPA 6010	mg/kg	5.2	2800	06/24/93	JST
Barium, Total	EPA 6010	mg/kg	0.89	9.7	06/21/93	JST
Beryllium, Total	EPA 6010	mg/kg	2.1	ND	06/21/93	JST
Cadmium, Total	EPA 6010	mg/kg	0.31	ND	06/21/93	JST
Calcium, Total	EPA 6010	mg/kg	2.4	6800	06/24/93	JST
Chromium, Total	EPA 6010	mg/kg	0.52	3.3	06/21/93	JST
Cobalt, Total	EPA 6010	mg/kg	0.81	2.2	06/21/93	JST
Copper, Total	EPA 6010	mg/kg	0.90	8.6	06/21/93	JST
Iron, Total	EPA 6010	mg/kg	1.1	7500	06/24/93	JST
Lead, Total	EPA 6010	mg/kg	1.4	4.2	06/21/93	JST
Magnesium, Total	EPA 6010	mg/kg	2.5	1500	06/21/93	JST
Manganese, Total	EPA 6010	mg/kg	1.2	260	06/21/93	JST
Nickel, Total	EPA 6010	mg/kg	0.82	5.1	06/21/93	JST
Potassium, Total	EPA 6010	mg/kg	110	390	06/21/93	JST
Silver, Total	EPA 6010	mg/kg	0.69	ND	06/21/93	JST
Sodium, Total	EPA 6010	mg/kg	34	ND	06/24/93	JST
Thallium, Total	EPA 6010	mg/kg	2.6	11	06/21/93	JST
Vanadium, Total	EPA 6010	mg/kg	0.69	5.0	06/21/93	JST
Zinc, Total	EPA 6010	mg/kg	3.5	26	06/21/93	JST
Mercury, Total	EPA 7471	mg/kg	0.11	ND	06/23/93	CW
Arsenic, Total	EPA 7060	mg/kg	0.17	1.5	06/23/93	DF
Selenium, Total	EPA 7740	mg/kg	0.21	ND	06/23/93	DF
--- SERIES 35000						
T. Metals Prep: Solid ICP/Flame	EPA 3050			N/A	06/17/93	ER
T. Metals Prep: Solid Furnace	EPA 3050			N/A	06/17/93	ER
T. Metals Prep: Solid, Hg	EPA 7471			N/A	06/22/93	CW

Remarks:
DL = Detection Limit
ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

Signed Wendy A Walton

LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

Date 07/06/93
Page 2

Lab Number : 93-5873-01
Project No. : 11-0635 T602

Parameter	Method	Units	DL	Results	Test Date	Ana
-- ORGANIC PREP RESULTS --						
Ext/Acid/SO	3550/8270			N/A	06/16/93	CSH
Ext/Base Neutral/SO	3550/8270			N/A	06/16/93	CSH
Ext/Pest-PCB/SO/Son	3550/8080			N/A	06/16/93	CSH
--- SERIES 63000						
Chloromethane	EPA 8240	ug/kg	10	ND	06/21/93	MM
Bromomethane	EPA 8240	ug/kg	10	ND	06/21/93	MM
Vinyl chloride	EPA 8240	ug/kg	10	ND	06/21/93	MM
Chloroethane	EPA 8240	ug/kg	10	ND	06/21/93	MM
Methylene chloride	EPA 8240	ug/kg	5	ND	06/21/93	MM
Acetone	EPA 8240	ug/kg	100	ND	06/21/93	MM
Carbon disulfide	EPA 8240	ug/kg	5	ND	06/21/93	MM
1,1-Dichloroethene	EPA 8240	ug/kg	5	ND	06/21/93	MM
1,1-Dichloroethane	EPA 8240	ug/kg	5	ND	06/21/93	MM
1,2-Dichloroethene, Total	EPA 8240	ug/kg	5	ND	06/21/93	MM
Chloroform	EPA 8240	ug/kg	5	ND	06/21/93	MM
1,2-Dichloroethane	EPA 8240	ug/kg	5	ND	06/21/93	MM
2-Butanone (MEK)	EPA 8240	ug/kg	100	ND	06/21/93	MM
1,1,1-Trichloroethane	EPA 8240	ug/kg	5	ND	06/21/93	MM
Carbon tetrachloride	EPA 8240	ug/kg	5	ND	06/21/93	MM
Bromodichloromethane	EPA 8240	ug/kg	5	ND	06/21/93	MM
1,2-Dichloropropane	EPA 8240	ug/kg	5	ND	06/21/93	MM
trans-1,3-Dichloropropene	EPA 8240	ug/kg	5	ND	06/21/93	MM
Trichloroethene	EPA 8240	ug/kg	5	ND	06/21/93	MM
Dibromochloromethane	EPA 8240	ug/kg	5	ND	06/21/93	MM
1,1,2-Trichloroethane	EPA 8240	ug/kg	5	ND	06/21/93	MM
Benzene	EPA 8240	ug/kg	5	ND	06/21/93	MM
cis-1,3-Dichloropropene	EPA 8240	ug/kg	5	ND	06/21/93	MM
Bromoform	EPA 8240	ug/kg	5	ND	06/21/93	MM
4-Methyl-2-pentanone	EPA 8240	ug/kg	50	ND	06/21/93	MM
2-Hexanone	EPA 8240	ug/kg	50	ND	06/21/93	MM
1,1,2,2-Tetrachloroethane	EPA 8240	ug/kg	5	ND	06/21/93	MM
Tetrachloroethene	EPA 8240	ug/kg	5	ND	06/21/93	MM
Toluene	EPA 8240	ug/kg	5	ND	06/21/93	MM
Chlorobenzene	EPA 8240	ug/kg	5	ND	06/21/93	MM
Ethylbenzene	EPA 8240	ug/kg	5	ND	06/21/93	MM
Styrene	EPA 8240	ug/kg	5	ND	06/21/93	MM
Xylene, Total	EPA 8240	ug/kg	5	ND	06/21/93	MM
-- GC/MS ORGANIC ANALYSIS (A) RESULTS --						
Phenol	EPA 8270	ug/kg	330	ND	06/18/93	JBP
2-Chlorophenol	EPA 8270	ug/kg	330	ND	06/18/93	JBP
2-Methylphenol	EPA 8270	ug/kg	330	ND	06/18/93	JBP
4-Methylphenol	EPA 8270	ug/kg	330	ND	06/18/93	JBP
2-Nitrophenol	EPA 8270	ug/kg	330	ND	06/18/93	JBP
2,4-Dimethylphenol	EPA 8270	ug/kg	330	ND	06/18/93	JBP
2,4-Dichlorophenol	EPA 8270	ug/kg	330	ND	06/18/93	JBP
4-Chloro-3-methylphenol	EPA 8270	ug/kg	660	ND	06/18/93	JBP

Signed Wendy A Wafa

LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

Date 07/06/93
Page 3

Lab Number : 93-5873-01
Project No. : 11-0635 T602

Parameter	Method	Units	DL	Results	Test Date	Ana
-- GC/MS ORGANIC ANALYSIS (A) RESULTS --						
2,4,6-Trichlorophenol	EPA 8270	ug/kg	330	ND	06/18/93	JBP
2,4,5-Trichlorophenol	EPA 8270	ug/kg	330	ND	06/18/93	JBP
2,4-Dinitrophenol	EPA 8270	ug/kg	1650	ND	06/18/93	JBP
4-Nitrophenol	EPA 8270	ug/kg	1650	ND	06/18/93	JBP
4,6-Dinitro-2-methylphenol	EPA 8270	ug/kg	1650	ND	06/18/93	JBP
Pentachlorophenol	EPA 8270	ug/kg	1650	ND	06/18/93	JBP
bis(2-Chloroethyl) ether	EPA 8270	ug/kg	330	ND	06/18/93	JBP
1,3-Dichlorobenzene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
1,4-Dichlorobenzene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
1,2-Dichlorobenzene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
bis(2-Chloroisopropyl) ether	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Hexachloroethane	EPA 8270	ug/kg	330	ND	06/18/93	JBP
N-Nitrosodi-N-propylamine	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Nitrobenzene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Isophorone	EPA 8270	ug/kg	330	ND	06/18/93	JBP
bis(2-Chloroethoxy) methane	EPA 8270	ug/kg	330	ND	06/18/93	JBP
1,2,4-Trichlorobenzene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Naphthalene	EPA 8270	ug/kg	3?^	ND	06/18/93	JBP
4-Chloroaniline	EPA 8270	ug/kg	66.	ND	06/18/93	JBP
Hexachlorobutadiene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
2-Methylnaphthalene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Hexachlorocyclopentadiene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
2-Chloronaphthalene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
2-Nitroaniline	EPA 8270	ug/kg	660	ND	06/18/93	JBP
Dimethyl phthalate	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Acenaphthylene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
3-Nitroaniline	EPA 8270	ug/kg	1650	ND	06/18/93	JBP
Acenaphthene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Dibenzofuran	EPA 8270	ug/kg	330	ND	06/18/93	JBP
2,4-Dinitrotoluene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
2,6-Dinitrotoluene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Diethyl phthalate	EPA 8270	ug/kg	1650	ND	06/18/93	JBP
Fluorene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
4-Chlorophenylphenyl ether	EPA 8270	ug/kg	330	ND	06/18/93	JBP
4-Nitroaniline	EPA 8270	ug/kg	330	ND	06/18/93	JBP
N-Nitrosodiphenylamine	EPA 8270	ug/kg	330	ND	06/18/93	JBP
4-Bromophenylphenyl ether	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Hexachlorobenzene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Phenanthrene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Anthracene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Di-n-butyl phthalate	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Fluoranthene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Pyrene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Butylbenzyl phthalate	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Benzo(a)anthracene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
3,3'Dichlorobenzidine	EPA 8270	ug/kg	660	ND	06/18/93	JBP
Chrysene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
bis(2-Ethylhexyl) phthalate	EPA 8270	ug/kg	330	550	06/18/93	JBP

Signed Wendy A Wagner

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LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

Date 07/06/93
Page 4

Lab Number : 93-5873-01
Project No. : 11-0635 T602

Parameter	Method	Units	DL	Results	Test Date	Anal
-- GC/MS ORGANIC ANALYSIS (A) RESULTS --						
Di-n-octyl phthalate	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Benzo(b)fluoranthene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Benzo(k)fluoranthene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Benzo(a)pyrene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Indeno(1,2,3-cd)pyrene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Dibenzo(a,h)anthracene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Benzo(g,h,i)perylene	EPA 8270	ug/kg	330	ND	06/18/93	JBP
Carbazole	EPA 8270	ug/kg	330	ND	06/18/93	JBP
-- RESULTS --						
alpha-BHC	EPA 8080	ug/kg	5.0	ND	06/19/93	SW
gamma-BHC (Lindane)	EPA 8080	ug/kg	5.0	ND	06/19/93	SW
beta-BHC	EPA 8080	ug/kg	5.0	ND	06/19/93	SW
Heptachlor	EPA 8080	ug/kg	5.0	ND	06/19/93	SW
delta-BHC	EPA 8080	ug/kg	5.0	ND	06/19/93	SW
Aldrin	EPA 8080	ug/kg	5.0	ND	06/19/93	SW
Heptachlor epoxide	EPA 8080	ug/kg	5.0	ND	06/19/93	SW
Endosulfan I	EPA 8080	ug/kg	5.0	ND	06/19/93	SW
4,4'DDE	EPA 8080	ug/kg	10	ND	06/19/93	SW
Dieldrin	EPA 8080	ug/kg	10	ND	06/19/93	SW
Endrin	EPA 8080	ug/kg	10	ND	06/19/93	SW
4,4'DDD	EPA 8080	ug/kg	10	ND	06/19/93	SW
Endosulfan II	EPA 8080	ug/kg	10	ND	06/19/93	SW
4,4'DDT	EPA 8080	ug/kg	10	ND	06/19/93	SW
Endrin aldehyde	EPA 8080	ug/kg	10	ND	06/19/93	SW
Endosulfan sulfate	EPA 8080	ug/kg	10	ND	06/19/93	SW
Methoxychlor	EPA 8080	ug/kg	50	ND	06/19/93	SW
Endrin Ketone	EPA 8080	ug/kg	10	ND	06/19/93	SW
Toxaphene	EPA 8080	ug/kg	200	ND	06/19/93	SW
alpha-Chlordane	EPA 8080	ug/kg	5.0	ND	06/19/93	SW
gamma-Chlordane	EPA 8080	ug/kg	5.0	ND	06/19/93	SW
PCB-1016	EPA 8080	ug/kg	80	ND	06/19/93	SW
PCB-1221	EPA 8080	ug/kg	160	ND	06/19/93	SW
PCB-1232	EPA 8080	ug/kg	80	ND	06/19/93	SW
PCB-1242	EPA 8080	ug/kg	80	ND	06/19/93	SW
PCB-1248	EPA 8080	ug/kg	80	ND	06/19/93	SW
PCB-1254	EPA 8080	ug/kg	80	ND	06/19/93	SW
PCB-1260	EPA 8080	ug/kg	80	ND	06/19/93	SW

Signed Wendy A Wagner

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LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

Date 07/06/93
Page 1

--- Project Information ---

Lab Number : 93-5873-02
Project No. : 11-0635 T602 Cust. No. :
Project Name : GRIFFISS AFB

Manager: KATIE ALLEN

--- Sample Information ---

Station ID : METHOD BLANK Sampled Date/Time : / / :
Matrix : SO Received Date/Time : / / :
Type : Received From/By : /
Collector : Chain of Custody : 0
Number of Containers : 0

Parameter	Method	Units	DL	Results	Test Date	Ana
-- METALS ANALYSIS - METALS PREP RESULTS --						
Antimony, Total	EPA 6010	mg/kg	4.0	ND	06/21/93	JST
Aluminum, Total	EPA 6010	mg/kg	5.2	ND	06/24/93	JST
Barium, Total	EPA 6010	mg/kg	0.89	ND	06/21/93	JST
Beryllium, Total	EPA 6010	mg/kg	2.1	ND	06/21/93	JST
Cadmium, Total	EPA 6010	mg/kg	0.31	ND	06/21/93	JST
Calcium, Total	EPA 6010	mg/kg	2.4	4.3	06/24/93	JST
Chromium, Total	EPA 6010	mg/kg	0.52	ND	06/21/93	JST
Cobalt, Total	EPA 6010	mg/kg	0.81	ND	06/21/93	JST
Copper, Total	EPA 6010	mg/kg	0.90	ND	06/21/93	JST
Iron, Total	EPA 6010	mg/kg	1.1	ND	06/24/93	JST
Lead, Total	EPA 6010	mg/kg	1.4	ND	06/21/93	JST
Magnesium, Total	EPA 6010	mg/kg	2.5	ND	06/21/93	JST
Manganese, Total	EPA 6010	mg/kg	1.2	ND	06/21/93	JST
Nickel, Total	EPA 6010	mg/kg	0.82	ND	06/21/93	JST
Potassium, Total	EPA 6010	mg/kg	110	ND	06/21/93	JST
Silver, Total	EPA 6010	mg/kg	0.69	ND	06/21/93	JST
Sodium, Total	EPA 6010	mg/kg	34	ND	06/24/93	JST
Thallium, Total	EPA 6010	mg/kg	2.6	ND	06/21/93	JST
Vanadium, Total	EPA 6010	mg/kg	0.69	ND	06/21/93	JST
Zinc, Total	EPA 6010	mg/kg	3.5	ND	06/21/93	JST
Mercury, Total	EPA 7471	mg/kg	0.11	ND	06/23/93	CW
Arsenic, Total	EPA 7060	mg/kg	0.17	ND	06/23/93	DF
Selenium, Total	EPA 7740	mg/kg	0.21	ND	06/23/93	DF
--- SERIES 35000						
T. Metals Prep: Solid ICP/Flame	EPA 3050			N/A	06/17/93	ER
T. Metals Prep: Solid Furnace	EPA 3050			N/A	06/17/93	ER
T. Metals Prep: Solid, Hg	EPA 7471			N/A	06/22/93	CW
-- ORGANIC PREP RESULTS --						
Ext/Acid/SO	3550/8270			N/A	06/16/93	CSH

Remarks:
DL = Detection Limit ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

Signed Wendy A Wagner

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LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

Date 07/06/93
Page 2

Lab Number : 93-5873-02
Project No. : 11-0635 T602

Parameter	Method	Units	DL	Results	Test Date	Anal
-- ORGANIC PREP RESULTS --						
Ext/Base Neutral/SO	3550/8270			N/A	06/16/93	CSH
Ext/Pest-PCB/SO/Son	3550/8080			N/A	06/16/93	CSH
--- SERIES 63000						
Chloromethane	EPA 8240	ug/kg	10	ND	06/21/93	MM
Bromomethane	EPA 8240	ug/kg	10	ND	06/21/93	MM
Vinyl chloride	EPA 8240	ug/kg	10	ND	06/21/93	MM
Chloroethane	EPA 8240	ug/kg	10	ND	06/21/93	MM
Methylene chloride	EPA 8240	ug/kg	5	ND	06/21/93	MM
Acetone	EPA 8240	ug/kg	100	ND	06/21/93	MM
Carbon disulfide	EPA 8240	ug/kg	5	ND	06/21/93	MM
1,1-Dichloroethene	EPA 8240	ug/kg	5	ND	06/21/93	MM
1,1-Dichloroethane	EPA 8240	ug/kg	5	ND	06/21/93	MM
1,2-Dichloroethene, Total	EPA 8240	ug/kg	5	ND	06/21/93	MM
Chloroform	EPA 8240	ug/kg	5	ND	06/21/93	MM
1,2-Dichloroethane	EPA 8240	ug/kg	5	ND	06/21/93	MM
2-Butanone (MEK)	EPA 8240	ug/kg	100	ND	06/21/93	MM
1,1,1-Trichloroethane	EPA 8240	ug/kg	5	ND	06/21/93	MM
Carbon tetrachloride	EPA 8240	ug/kg	5	ND	06/21/93	MM
Bromodichloromethane	EPA 8240	ug/kg	5	ND	06/21/93	MM
1,2-Dichloropropane	EPA 8240	ug/kg	5	ND	06/21/93	MM
trans-1,3-Dichloropropene	EPA 8240	ug/kg	5	ND	06/21/93	MM
Trichloroethene	EPA 8240	ug/kg	5	ND	06/21/93	MM
Dibromochloromethane	EPA 8240	ug/kg	5	ND	06/21/93	MM
1,1,2-Trichloroethane	EPA 8240	ug/kg	5	ND	06/21/93	MM
Benzene	EPA 8240	ug/kg	5	ND	06/21/93	MM
cis-1,3-Dichloropropene	EPA 8240	ug/kg	5	ND	06/21/93	MM
Bromoform	EPA 8240	ug/kg	5	ND	06/21/93	MM
4-Methyl-2-pentanone	EPA 8240	ug/kg	50	ND	06/21/93	MM
2-Hexanone	EPA 8240	ug/kg	50	ND	06/21/93	MM
1,1,2,2-Tetrachloroethane	EPA 8240	ug/kg	5	ND	06/21/93	MM
Tetrachloroethene	EPA 8240	ug/kg	5	ND	06/21/93	MM
Toluene	EPA 8240	ug/kg	5	ND	06/21/93	MM
Chlorobenzene	EPA 8240	ug/kg	5	ND	06/21/93	MM
Ethylbenzene	EPA 8240	ug/kg	5	ND	06/21/93	MM
Styrene	EPA 8240	ug/kg	5	ND	06/21/93	MM
Xylene, Total	EPA 8240	ug/kg	5	ND	06/21/93	MM
-- GC/MS ORGANIC ANALYSIS (A) RESULTS --						
Phenol	EPA 8270	ug/kg	330	ND	06/17/93	JBP
2-Chlorophenol	EPA 8270	ug/kg	330	ND	06/17/93	JBP
2-Methylphenol	EPA 8270	ug/kg	330	ND	06/17/93	JBP
4-Methylphenol	EPA 8270	ug/kg	330	ND	06/17/93	JBP
2-Nitrophenol	EPA 8270	ug/kg	330	ND	06/17/93	JBP
2,4-Dimethylphenol	EPA 8270	ug/kg	330	ND	06/17/93	JBP
2,4-Dichlorophenol	EPA 8270	ug/kg	330	ND	06/17/93	JBP
4-Chloro-3-methylphenol	EPA 8270	ug/kg	660	ND	06/17/93	JBP
2,4,6-Trichlorophenol	EPA 8270	ug/kg	330	ND	06/17/93	JBP

Signed Wendy A Weeks

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LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

Date 07/06/93
Page 3

Lab Number : 93-5873-02
Project No. : 11-0635 T602

Parameter	Method	Units	DL	Results	Test Date	An
-- GC/MS ORGANIC ANALYSIS (A) RESULTS --						
2,4,5-Trichlorophenol	EPA 8270	ug/kg	330	ND	06/17/93	JBI
2,4-Dinitrophenol	EPA 8270	ug/kg	1650	ND	06/17/93	JBI
4-Nitrophenol	EPA 8270	ug/kg	1650	ND	06/17/93	JBI
4,6-Dinitro-2-methylphenol	EPA 8270	ug/kg	1650	ND	06/17/93	JBI
Pentachlorophenol	EPA 8270	ug/kg	1650	ND	06/17/93	JBI
bis(2-Chloroethyl) ether	EPA 8270	ug/kg	330	ND	06/17/93	JBI
1,3-Dichlorobenzene	EPA 8270	ug/kg	330	ND	06/17/93	JBI
1,4-Dichlorobenzene	EPA 8270	ug/kg	330	ND	06/17/93	JBI
1,2-Dichlorobenzene	EPA 8270	ug/kg	330	ND	06/17/93	JBI
bis(2-Chloroisopropyl) ether	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Hexachloroethane	EPA 8270	ug/kg	330	ND	06/17/93	JBP
N-Nitrosodi-N-propylamine	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Nitrobenzene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Isophorone	EPA 8270	ug/kg	330	ND	06/17/93	JBP
bis(2-Chloroethoxy) methane	EPA 8270	ug/kg	330	ND	06/17/93	JBP
1,2,4-Trichlorobenzene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Naphthalene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
4-Chloroaniline	EPA 8270	ug/kg	660	ND	06/17/93	JBP
Hexachlorobutadiene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
2-Methylnaphthalene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Hexachlorocyclopentadiene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
2-Chloronaphthalene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
2-Nitroaniline	EPA 8270	ug/kg	660	ND	06/17/93	JBP
Dimethyl phthalate	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Acenaphthylene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
3-Nitroaniline	EPA 8270	ug/kg	1650	ND	06/17/93	JBP
Acenaphthene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Dibenzofuran	EPA 8270	ug/kg	330	ND	06/17/93	JBP
2,4-Dinitrotoluene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
2,6-Dinitrotoluene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Diethyl phthalate	EPA 8270	ug/kg	1650	ND	06/17/93	JBP
Fluorene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
4-Chlorophenylphenyl ether	EPA 8270	ug/kg	330	ND	06/17/93	JBP
4-Nitroaniline	EPA 8270	ug/kg	330	ND	06/17/93	JBP
N-Nitrosodiphenylamine	EPA 8270	ug/kg	330	ND	06/17/93	JBP
4-Bromophenylphenyl ether	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Hexachlorobenzene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Phenanthrene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Anthracene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Di-n-butyl phthalate	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Fluoranthene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Pyrene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Butylbenzyl phthalate	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Benzo(a)anthracene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
3,3'Dichlorobenzidine	EPA 8270	ug/kg	660	ND	06/17/93	JBP
Chrysene	EPA 8270	ug/kg	330	ND	06/17/93	JBP
bis(2-Ethylhexyl) phthalate	EPA 8270	ug/kg	330	ND	06/17/93	JBP
Di-n-octyl phthalate	EPA 8270	ug/kg	330	ND	06/17/93	JBP

Signed Wendy A Wagner

09

LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

Date 07/06/93
Page 4

Lab Number : 93-5873-02
Project No. : 11-0635 T602

Parameter	Method	Units	DL	Results	Test Date	An
-- GC/MS ORGANIC ANALYSIS (A) RESULTS --						
Benzo(b)fluoranthene	EPA 8270	ug/kg	330	ND	06/17/93	JBI
Benzo(k)fluoranthene	EPA 8270	ug/kg	330	ND	06/17/93	JBI
Benzo(a)pyrene	EPA 8270	ug/kg	330	ND	06/17/93	JBI
Indeno(1,2,3-cd)pyrene	EPA 8270	ug/kg	330	ND	06/17/93	JBI
Dibenzo(a,h)anthracene	EPA 8270	ug/kg	330	ND	06/17/93	JBI
Benzo(g,h,i)perylene	EPA 8270	ug/kg	330	ND	06/17/93	JBI
Carbazole	EPA 8270	ug/kg	330	ND	06/17/93	JBI
-- RESULTS --						
alpha-BHC	EPA 8080	ug/kg	5.0	ND	06/18/93	SW
gamma-BHC (Lindane)	EPA 8080	ug/kg	5.0	ND	06/18/93	SW
beta-BHC	EPA 8080	ug/kg	5.0	ND	06/18/93	SW
Heptachlor	EPA 8080	ug/kg	5.0	ND	06/18/93	SW
delta-BHC	EPA 8080	ug/kg	5.0	ND	06/18/93	SW
Aldrin	EPA 8080	ug/kg	5.0	ND	06/18/93	SW
Heptachlor epoxide	EPA 8080	ug/kg	5.0	ND	06/18/93	SW
Endosulfan I	EPA 8080	ug/kg	5.0	ND	06/18/93	SW
4,4'DDE	EPA 8080	ug/kg	10	ND	06/18/93	SW
Dieldrin	EPA 8080	ug/kg	10	ND	06/18/93	SW
Endrin	EPA 8080	ug/kg	10	ND	06/18/93	SW
4,4'DDD	EPA 8080	ug/kg	10	ND	06/18/93	SW
Endosulfan II	EPA 8080	ug/kg	10	ND	06/18/93	SW
4,4'DDT	EPA 8080	ug/kg	10	ND	06/18/93	SW
Endrin aldehyde	EPA 8080	ug/kg	10	ND	06/18/93	SW
Endosulfan sulfate	EPA 8080	ug/kg	10	ND	06/18/93	SW
Methoxychlor	EPA 8080	ug/kg	50	ND	06/18/93	SW
Endrin Ketone	EPA 8080	ug/kg	10	ND	06/18/93	SW
Toxaphene	EPA 8080	ug/kg	200	ND	06/18/93	SW
alpha-Chlordane	EPA 8080	ug/kg	5.0	ND	06/18/93	SW
gamma-Chlordane	EPA 8080	ug/kg	5.0	ND	06/18/93	SW
PCB-1016	EPA 8080	ug/kg	80	ND	06/18/93	SW
PCB-1221	EPA 8080	ug/kg	160	ND	06/18/93	SW
PCB-1232	EPA 8080	ug/kg	80	ND	06/18/93	SW
PCB-1242	EPA 8080	ug/kg	80	ND	06/18/93	SW
PCB-1248	EPA 8080	ug/kg	80	ND	06/18/93	SW
PCB-1254	EPA 8080	ug/kg	80	ND	06/18/93	SW
PCB-1260	EPA 8080	ug/kg	80	ND	06/18/93	SW

Signed Wendy A Wagner

D1dr

LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

Date 07/06/93
Page 1

--- Project Information ---

Lab Number : 93-5873-03
Project No. : 11-0635 T602
Project Name : GRIFFISS AFB
Cust. No. :

Manager: KATIE ALLEN

--- Sample Information ---

Station ID : METHOD BLANK
Matrix : SO
Type :
Collector :

Sampled Date/Time : / /
Received Date/Time : / /
Received From/By : /
Chain of Custody : 0
Number of Containers : 0

Parameter	Method	Units	DL	Results	Test Date	Anal
-- GC/MS ORGANIC ANALYSIS (A) RESULTS --						
Phenol	EPA 8270	ug/kg	330	ND	06/21/93	JBP
2-Chlorophenol	EPA 8270	ug/kg	330	ND	06/21/93	JBP
2-Methylphenol	EPA 8270	ug/kg	330	ND	06/21/93	JBP
4-Methylphenol	EPA 8270	ug/kg	330	ND	06/21/93	JBP
2-Nitrophenol	EPA 8270	ug/kg	330	ND	06/ 1/93	JBP
2,4-Dimethylphenol	EPA 8270	ug/kg	330	ND	06/21/93	JBP
2,4-Dichlorophenol	EPA 8270	ug/kg	330	ND	06/21/93	JBP
4-Chloro-3-methylphenol	EPA 8270	ug/kg	660	ND	06/21/93	JBP
2,4,6-Trichlorophenol	EPA 8270	ug/kg	330	ND	06/21/93	JBP
2,4,5-Trichlorophenol	EPA 8270	ug/kg	330	ND	06/21/93	JBP
2,4-Dinitrophenol	EPA 8270	ug/kg	1650	ND	06/21/93	JBP
4-Nitrophenol	EPA 8270	ug/kg	1650	ND	06/21/93	JBP
4,6-Dinitro-2-methylphenol	EPA 8270	ug/kg	1650	ND	06/21/93	JBP
Pentachlorophenol	EPA 8270	ug/kg	1650	ND	06/21/93	JBP
bis(2-Chloroethyl) ether	EPA 8270	ug/kg	330	ND	06/21/93	JBP
1,3-Dichlorobenzene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
1,4-Dichlorobenzene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
1,2-Dichlorobenzene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
bis(2-Chloroisopropyl) ether	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Hexachloroethane	EPA 8270	ug/kg	330	ND	06/21/93	JBP
N-Nitrosodi-N-propylamine	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Nitrobenzene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Isophorone	EPA 8270	ug/kg	330	ND	06/21/93	JBP
bis(2-Chloroethoxy) methane	EPA 8270	ug/kg	330	ND	06/21/93	JBP
1,2,4-Trichlorobenzene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Naphthalene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
4-Chloroaniline	EPA 8270	ug/kg	660	ND	06/21/93	JBP
Hexachlorobutadiene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
2-Methylnaphthalene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Hexachlorocyclopentadiene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
2-Chloronaphthalene	EPA 8270	ug/kg	330	ND	06/21/93	JBP

Remarks:
DL = Detection Limit
ND = Not Detected at the DL
Unless otherwise noted, all soil test results are calculated based on dry weight.

Signed Wendy A Wolfe

LAW ENVIRONMENTAL NATIONAL LABORATORIES
TEST DATA REPORT

Date 07/06/93
Page 2

Lab Number : 93-5873-03
Project No. : 11-0635 T602

Parameter	Method	Units	DL	Results	Test Date	Ana
-- GC/MS ORGANIC ANALYSIS (A) RESULTS --						
2-Nitroaniline	EPA 8270	ug/kg	660	ND	06/21/93	JBP
Dimethyl phthalate	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Acenaphthylene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
3-Nitroaniline	EPA 8270	ug/kg	1650	ND	06/21/93	JBP
Acenaphthene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Dibenzofuran	EPA 8270	ug/kg	330	ND	06/21/93	JBP
2,4-Dinitrotoluene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
2,6-Dinitrotoluene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Diethyl phthalate	EPA 8270	ug/kg	1650	ND	06/21/93	JBP
Fluorene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
4-Chlorophenylphenyl ether	EPA 8270	ug/kg	330	ND	06/21/93	JBP
4-Nitroaniline	EPA 8270	ug/kg	330	ND	06/21/93	JBP
N-Nitrosodiphenylamine	EPA 8270	ug/kg	330	ND	06/21/93	JBP
4-Bromophenylphenyl ether	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Hexachlorobenzene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Phenanthrene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Anthracene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Di-n-butyl phthalate	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Fluoranthene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Pyrene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Butylbenzyl phthalate	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Benzo(a)anthracene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
3,3'Dichlorobenzidine	EPA 8270	ug/kg	660	ND	06/21/93	JBP
Chrysene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
bis(2-Ethylhexyl) phthalate	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Di-n-octyl phthalate	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Benzo(b)fluoranthene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Benzo(k)fluoranthene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Benzo(a)pyrene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Indeno(1,2,3-cd)pyrene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Dibenzo(a,h)anthracene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Benzo(g,h,i)perylene	EPA 8270	ug/kg	330	ND	06/21/93	JBP
Carbazole	EPA 8270	ug/kg	330	ND	06/21/93	JBP

Signed Wendy A Wolfe

Law Environmental National Laboratories
Metals Method Blank Summary

Project Name :	Griffis AFB	**Project # :**	11-0635 T602
Lab Sample ID:	93-5873-02	**Date Prepared :**	06/17/93
		Matrix:	**AQ** ____ **SO** x **NA** ____

	Client Sample ID	Lab Sample ID
1	ISP-1	93-5873-01
2	ISP-1	93-5873-01 MS
3	ISP-1	93-5873-01 MSD
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

COMMENTS:_____

_____

_____

Law Environmental National Laboratories
Soil Metals Matrix Spike/Matrix Spike Duplicate Recovery

Project Name:	Griffis AFB	**Project #:**	11-0635-T602
Lab Sample ID:	93-5873-01 MS/MSD	**Instrument ID#:**	Furnace 16
Date prepared:	06/17/93	**Units:**	mg/kg

MS/MSD Data Apply to the following:

93-5873-01
93-5873-02

	ELEMENT	SPIKE ADDED	SAMPLE CONC.	MS CONC.	%MS	MSD CONC.	%MSD	RPD	CONTROL LIMITS		FLAG
1	Antimony								50-150	20	
2	Arsenic	2.54	1.50	3.86	92.5	3.69	85.8	4.5	50-150	20	
3	Beryllium								50-150	20	
4	Cadmium								62-122	8	
5	Chromium								50-150	20	
6	Lead								50-150	20	
7	Nickel								50-150	20	
8	Selenium	2.54	ND	2.64	104	2.48	97.9	6.2	50-150	18	
9	Thallium								50-150	20	
10	Tin								50-150	20	

VALUES OUTSIDE OF QC LIMITS
* Recovery Outside of Control Limits
** Precision Outside of Control Limits
D - Spike Diluted Out

COMMENTS:

SMS.16 (REVISED 01/18/93)

APPROVED BY: Paul Bufford

Law Environmental National Laboratories
Mercury Method Blank Summary

Project Name :	Griffis AFB	**Project # :**	11-0635 T602
Lab Sample ID:	93-5873-02	**Date Prepared :**	06/22/93
		Matrix:	AQ ____ SO x NA ____

	Client Sample ID	Lab Sample ID
1	ISP-1	93-5873-01
2	ISP-1	93-5873-01 MS
3	ISP-1	93-5873-01 MSD
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

COMMENTS:

MB.MET (REVISED 6/25/93)

015

APPROVED BY: Paul Bufford

Law Environmental National Laboratories
Soil Metals Matrix Spike/Matrix Spike Duplicate Recovery

Project Name:	Griffis AFB	**Project #:**	11-0635 T602
Lab Sample ID:	93-5873-01 MS/MSD	**Instrument ID#:**	Mercury Analyzer 21
Date prepared:	06/22/93	**Units:**	mg/kg

MS/MSD Data Apply to the following:

93-5873-01
93-5873-02

	ELEMENT	SPIKE ADDED	SAMPLE CONC.	MS CONC.	%MS	MSD CONC.	%MSD	RPD	CONTROL LIMITS		FLAG
1	Mercury	3.79	ND	3.68	97.1	3.67	96.8	0.27	73-107	16	

VALUES OUTSIDE OF QC LIMITS

* Recovery Outside of Control Limits
** Precision Outside of Control Limits
D - Spike Diluted Out

COMMENTS:

SMS.21 (REVISED 01/18/93)

APPROVED BY: Paul Bufford

Law Environmental National Laboratories
Soil Metals Matrix Spike/Matrix Spike Duplicate Recovery

Project Name:	Griffis AFB	**Project #:**	11-0635 T602
Lab Sample ID:	93-5873-01 MS/MSD	**Instrument ID#:**	ICP 22
Date prepared:	06/17/93	**Units:**	mg/kg

MS/MSD Data Apply to the following:

93-5873-01
93-5873-02

	ELEMENT	SPIKE ADDED	SAMPLE CONC.	MS CONC.	%MS	MSD CONC.	%MSD	RPD	CONTROL LIMITS		FLAG
1	Aluminum	410	2870	3570		3460			50-150	20	D
2	Antimony								15-112	20	
3	Arsenic	164							80-103	8	
4	Barium	82.0	9.70	87.8	95.3	88.0	95.5	0.20	80-116	9	
5	Beryllium	82.0	ND	77.7	94.8	77.8	94.9	0.10	87-103	4	
6	Cadmium	82.0	ND	76.7	93.6	77.5	94.5	0.90	86-100	8	
7	Calcium	410	6960	12500		6790			50-150	20	D
8	Chromium	82.0	3.30	81.3	95.2	81.9	95.9	0.70	77-112	5	
9	Cobalt	82.0	2.20	79.1	93.8	79.8	94.6	0.80	85-102	9	
10	Copper	82.0	8.63	88.1	97.0	87.8	96.6	0.40	80-108	10	
11	Iron	164	7670	8100		7760			50-150	20	D
12	Lead	82.0	4.25	79.7	92.0	82.1	95.0	3.0	68-118	20	
13	Manganese	82.0	260	339	96.6	330	85.1	12	50-150	20	
14	Magnesium	410	1470	1960	119	1920	109	10	50-150	20	
15	Nickel	82.0	5.08	81.8	93.6	83.1	95.2	1.6	81-108	20	
16	Potassium	410	386	68.8	68.9	811	104	19	50-150	20	
17	Selenium								78-103	11	
18	Silver	8.20	ND	7.19	88.7	7.40	90.3	1.6	51-112	20	
19	Sodium	410	ND	379	92.0	379	92.0	0.0	74-126	20	
20	Thallium	82.0	11.5	89.1	94.7	88.8	94.3	0.40	74-109	9	
21	Zinc	82.0	25.8	115	109	112	105	10	67-124	20	
22	Vanadium	82.0	5.04	83.0	95.0	83.8	96.0	1.0	79-115	11	
23											

VALUES OUTSIDE OF QC LIMITS
* Recovery Outside of Control Limits
** Precision Outside of Control Limits
D - Spike Diluted Out

COMMENTS:

SMS.22 (REVISED 01/28/93)

APPROVED BY:

Law Environmental National Laboratories
Soil Metals QCCS Recovery

Project Name:	Griffis AFB	**Project #:**	11-0635 T602
Lab Sample ID:	QCCS 6-17-01 Soil	**Instrument ID#:**	ICP 22
Date Prepared:	06/17/93	**Units:**	mg/kg

QCCS Data Apply to the following samples:

93-5873-01
93-5873-02

	ELEMENT	SPIKE ADDED	QCCS CONC.	%QCCS	QC LIMITS RECOVERY
1	Aluminum	500	528	106	50-150
2	Antimony				15-112
3	Arsenic				80-103
4	Barium				80-116
5	Beryllium				87-103
6	Cadmium				86-100
7	Calcium	500	494	98.8	50-150
8	Chromium				77-112
9	Cobalt				85-102
10	Copper				80-108
11	Iron	200	198	99.0	50-150
12	Lead				68-118
13	Manganese				50-150
14	Magnesium				50-150
15	Nickel				81-108
16	Potassium				50-150
17	Selenium				78-103
18	Silver				51-112
19	Sodium				74-126
20	Thallium				74-109
21	Zinc				67-124

***VALUES OUTSIDE OF QC LIMITS**
D - Spike Diluted Out
Spike Recovery: 0 out of 3 outside limits

COMMENTS:

SOCCS.22

APPROVED BY: Paul Bradford

Law Environmental National Laboratories
Method Blank Summary
EPA 8080

Project Name :	Griffis AFB	**Project # :**	11-0635 T602
Lab Sample ID :	93-5873-02	**Extraction ID :**	P/PA 0616-S
Date Analyzed :	06/18/93	**Date Extracted:**	06/16/93
Time Analyzed :	20:06:21	**Matrix :**	AQ ___ SO X NA ___

	Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed
1	ISP-1	93-5873-01 MS	06/18/93	23:44:36
2	ISP-1	93-5873-01 MSD	06/19/93	00:20:56
3	ISP-1	93-5873-01	06/19/93	01:33:46
4				
5				
6				
7				
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9				
10				
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12				
13				
14				
15				
16				
17				
18				
19				
20				

COMMENTS:

MBSV.GC (REVISED 12/17/92)

APPROVED BY: Paul Hafford

Law Environmental National Laboratories
Soil Pesticide/PCB Surrogate Percent Recovery Summary

Project Name: Griffis AFB **Project #:** 11-0635 T602

	SAMPLE NO.	DBC	TCMX
1	93-5873-01	79.6	88.9
2	93-5873-01 MS	71.0	151*
3	93-5873-01 MSD	68.6	147*
4	93-5873-02	28.0*	85.0
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

	QC LIMITS
(DBC = Dibutylchlorendate	(40-180)
(TCMX) = 2,4,5,6-Tetrachloro-meta-xylene	(57-115)

 # Column to be used to flag recovery values
* Values outside of QC Limits
D Surrogate diluted out

Surrogates: 3 out of 8 ; outside of QC limits

COMMENTS: _____

APPROVED BY: Paul Bradford

SPPSPR.GC (REVISED 02/24/93)

Law Environmental National Laboratories
Soil Pesticide/PCB Matrix Spike/Matrix Spike Duplicate Recovery

Project Name:	Griffis AFB	**Project #:**	11-0635 T602
Lab Sample ID:	93-5873-01 MS/MSD	**Lab File ID:**	J141 93/94
Date Extracted:	06/16/93	**Instrument ID #:**	14-5

MS/MSD Data apply to the following samples:

93-5873-01
93-5873-02

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONC. (ug/kg)	MS CONC. (ug/kg)	MS %REC	MSD CONC. (ug/kg)	MSD %REC	RPD	QC LIMITS REC	QC LIMITS RPD
Alpha BHC	40.0	ND	30.7	76.7	29.3	73.2	4.7	37-134	28
Beta BHC	40.0	ND	26.5	66.2	24.7	61.7	7.0	17-147	45
Gamma BHC	40.0	ND	29.6	74.0	27.9	69.7	5.9	32-127	25
Delta BHC	40.0	ND	21.3	53.2	20.0	50.0	6.3	19-140	37
Heptachlor	40.0	ND	35.4	88.5	34.2	85.5	3.4	34-111	11
Aldrin	40.0	ND	34.7	86.7	34.1	85.2	1.7	42-122	32
Heptachlor epoxide	40.0	ND	31.3	78.2	29.6	74.0	5.6	37-142	40
g-Chlordane	40.0	ND	34.2	85.5	32.8	82.0	4.2	45-119	66
Endosulfan I	40.0	ND	31.9	79.7	29.9	74.7	6.5	45-153	25
a-Chlordane	40.0	ND	34.7	86.7	33.5	83.7	3.5	45-119	66
DDE	80.0	ND	69.0	86.2	65.7	82.1	4.9	30-145	28
Dieldrin	80.0	ND	69.0	86.2	65.7	82.1	4.9	36-146	28
Endrin	80.0	ND	62.3	77.9	58.3	72.9	6.6	30-147	45
Endosulfan II	80.0	ND	46.4	58.0	45.1	56.4	2.8	D-202	95
DDD	80.0	ND	65.5	81.9	62.6	78.2	4.5	31-141	42
Endrin aldehyde	80.0	ND	23.6	29.5	23.7	29.6	0.4	D-200	50
Endosulfan sulfate	80.0	ND	31.8	39.7	31.9	39.9	0.3	26-144	30
DDT	80.0	ND	74.1	92.6	70.9	88.6	4.4	25-160	41
Endrin ketone	80.0	ND	36.5	45.6	35.4	44.2	3.1	D-200	50
Methoxychlor	400	ND	232	58.0	220	54.9	5.5	D-200	50
PCB									

* VALUES ARE OUTSIDE OF QC LIMITS
D - Detected.
Spike Recovery: 0 out of 40 outside limits
RPD: 0 out of 20 outside limits

COMMENTS:

APPROVED BY: Paul Bradford

Law Environmental National Laboratories
Method Blank Summary
EPA 8240

Project Name :	Griffis AFB	**Project #:**	11-0635 T602
Lab Sample ID :	93-5873-02	**Lab File ID:**	VBLK0621
Date Analyzed :	06/21/93	**Matrix:**	AQ ___ SO X NA ___
Time Analyzed :	15:35:00		

	Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed
1	ISP-1	93-5873-01	06/21/93	18:00
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

COMMENTS: _____

APPROVED BY: Paul Guffood

Law Environmental National Laboratories
Soil GC/MS Volatile Surrogate Summary Report

Project Name: Griffis AFB **Project #:** 11-0635 T602

	LAB SAMPLE ID	S1 DCA #	S2 TOL #	S3 BFB #	TOT OUT
1	93-5873-01	106	100	102	0
2	93-5873-02	112	96.2	96.3	0
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

	QC LIMITS
S1 - (DCA) = 1,2-Dichloroethane-d4	(70-121)
S2 - (TOL) = Toluene-d8	(71-117)
S3 - (BFB) = 4-Bromofluorobenzene	(74-121)

 # Column to be used to flag recovery values
D - System Monitoring Compound diluted out
*** - Value outside of QC limits**

Surrogates: 0 **out of** 6 **; outside of QC limits**

COMMENTS:

T23 **APPROVED BY:** Paul Bufford

Law Environmental National Laboratories
Soil GC/MS Volatile Matrix Spike/Matrix Spike Duplicate Recovery

Project Name :	Griffis AFB	Project # :	11-0635 T602
Lab Sample ID :	93-5873-01 MS/MSD	Instrument ID :	Incos XL (34)
Date Analyzed:	06/21/93		

MS/MSD Data Apply to the following samples:

93-5873-01
93-5873-02

COMPOUND	SPIKE ADDED (µg/kg)	SAMPLE CONCENTRATION (µg/kg)	MS CONCENTRATION (µg/kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50.0	ND	55.5	110	51-122
Trichloroethene	50.0	ND	44.2	88.3	67-118
Benzene	50.0	ND	44.8	89.5	56-111
Toluene	50.0	ND	48.7	97.3	55-119
Chlorobenzene	50.0	ND	50.0	99.9	60-108

COMPOUND	SPIKE ADDED (µg/kg)	MSD CONCENTRATION (µg/kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1 Dichloroethene	50.0	53.1	106	4.4	16	51-122
Trichloroethene	50.0	45.4	90.7	2.7	23	67-118
Benzene	50.0	45.3	90.6	1.2	11	56-111
Toluene	50.0	52.1	104	6.8	13	55-119
Chlorobenzene	50.0	51.9	104	3.7	11	60-108

 # Column to be used to flag recovery and RPD values with an asterisk.
* - Value outside of QC Limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

SEVOLMS.34 (REVISED 01/12/93)

024 APPROVED BY: Paul Bradford

Law Environmental National Laboratories
Method Blank Summary
EPA 8270

Project Name :	Griffis AFB	**Project # :**	11-0635 T602
Lab Sample ID :	93-5873-02	**Extraction ID:**	SBLA 0616S
Date Analyzed :	06/17/93	**Date Extracted:**	06/16/93
Time Analyzed :	18:35	**Matrix :**	AQ ___ SO X NA ___

	Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed
1	ISP-1	93-5873-01	06/18/93	15:34
2	Matrix Spike	93-5883-01 MS	06/17/93	21:59
3	Matrix Spike Duplicate	93-5883-01 MSD	06/17/93	23:06
4		QCCS 0616S	06/17/93	19:43
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

COMMENTS: _____

APPROVED BY: Paul Griffard

Law Environmental National Laboratories
Soil GC/MS Semi-Volatile Matrix Spike/Matrix Spike Duplicate Recovery

Project Name:	Griffis AFB	**Project # :**	11-0635 T602
Lab Sample ID:	93-5883-01 MS/MSD	**Instrument ID:**	Incos XL (40)
Date Extracted:	06/16/93		

MS/MSD Data apply to the following samples:

93-5873-01
93-5873-02

COMPOUND	SPIKE ADDED (µg/kg)	SAMPLE CONCENTRATION (µg/kg)	MS CONCENTRATION (µg/kg)	MS % REC #	QC LIMITS REC.
Phenol	7100	ND	6560	92.4	5-112
2-Chlorophenol	7100	ND	6900	97.2	23-134
1,4-Dichlorobenzene	3550	ND	3080	86.9	20-124
N-Nitroso-di-n-propylamine	3550	ND	3540	99.7	17-122
1,2,4-Trichlorobenzene	3550	ND	3120	87.7	44-142
4-Chloro-3-methylphenol	7100	ND	6740	94.9	22-147
Acenaphthene	3550	ND	3190	89.9	47-145
4-Nitrophenol	7100	ND	5490	77.3	D-132
2,4-Dinitrotoluene	3550	ND	2820	79.4	39-139
Pentachlorophenol	7100	ND	5980	84.2	14-176
Pyrene	3550	ND	3420	96.3	52-115

COMPOUND	SPIKE ADDED (µg/kg)	MSD CONCENTRATION (µg/kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	7010	6110	87.2	5.2	31	5-112
2-Chlorophenol	7010	6220	88.7	9.1	39	23-134
1,4-Dichlorobenzene	3500	2730	78.0	11	41	20-124
N-Nitroso-di-n-propylamine	3500	3270	93.5	6.4	57	17-122
1,2,4-Trichlorobenzene	3500	2760	78.7	11	37	44-142
4-Chloro-3-methylphenol	7010	6230	88.9	6.5	51	22-147
Acenaphthene	3500	2910	83.2	7.7	39	47-145
4-Nitrophenol	7010	5290	75.5	2.4	52	D-132
2,4-Dinitrotoluene	3500	2620	74.8	6.0	29	39-139
Pentachlorophenol	7010	5740	81.9	2.8	50	14-176
Pyrene	3500	3090	88.2	8.8	34	52-115

Column to be used to flag recovery and RPD values with an asterisk.
* - Value outside of QC Limits

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

APPROVED BY: Paul Bradford

Law Environmental National Laboratories
Method Blank Summary
EPA 8270

Project Name :	Griffis AFB	**Project # :**	11-0635 T602
Lab Sample ID :	93-5873-03	**Extraction ID:**	SBLA 0618S
Date Analyzed :	06/21/93	**Date Extracted:**	06/18/93
Time Analyzed :	11:24	**Matrix :**	AQ ___ SO X NA ___

	Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed
1	ISP-1	93-5873-01 MS	06/21/93	13:39
2	ISP-1	93-5873-02 MSD	06/21/93	14:47
3		QCCS 0618S	06/21/93	12:32
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

COMMENTS: ___

MBSV.360 (REVISED 12/17/92)

#27

APPROVED BY: Paul Bufford

Law Environmental National Laboratories
Soil GC/MS Semi-Volatile Matrix Spike/Matrix Spike Duplicate Recovery

Project Name:	Griffis AFB	**Project # :**	11-0635 T602
Lab Sample ID:	93-5873-01 MS/MSD	**Instrument ID:**	Incos XL (40)
Date Extracted:	06/18/93		

MS/MSD Data apply to the following samples:

93-5873-01
93-5873-03

COMPOUND	SPIKE ADDED (µg/kg)	SAMPLE CONCENTRATION (µg/kg)	MS CONCENTRATION (µg/kg)	MS % REC #	QC LIMITS REC.
Phenol	6490	ND	4200	64.8	5-112
2-Chlorophenol	6490	ND	4390	67.7	23-134
1,4-Dichlorobenzene	3240	ND	2100	64.7	20-124
N-Nitroso-di-n-propylamine	3240	ND	2270	69.9	17-122
1,2,4-Trichlorobenzene	3240	ND	2350	72.5	44-142
4-Chloro-3-methylphenol	6490	ND	4390	67.7	22-147
Acenaphthene	3240	ND	2220	68.5	47-145
4-Nitrophenol	6490	ND	2880	44.5	D-132
2,4-Dinitrotoluene	3240	ND	1960	60.3	39-139
Pentachlorophenol	6490	ND	3030	46.6	14-176
Pyrene	3240	ND	2080	64.0	52-115

COMPOUND	SPIKE ADDED (µg/kg)	MSD CONCENTRATION (µg/kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	6450	5020	77.8	18	31	5-112
2-Chlorophenol	6450	5140	79.6	16	39	23-134
1,4-Dichlorobenzene	3230	2470	76.5	17	41	20-124
N-Nitroso-di-n-propylamine	3230	2670	82.7	17	57	17-122
1,2,4-Trichlorobenzene	3230	2670	82.8	13	37	44-142
4-Chloro-3-methylphenol	6450	5080	78.7	15	51	22-147
Acenaphthene	3230	2560	79.4	15	39	47-145
4-Nitrophenol	6450	3620	56.2	23	52	D-132
2,4-Dinitrotoluene	3230	2340	72.6	19	29	39-139
Pentachlorophenol	6450	4520	70.1	40	50	14-176
Pyrene	3230	2360	73.3	14	34	52-115

Column to be used to flag recovery and RPD values with an asterisk.
* - Value outside of QC Limits

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

02? APPROVED BY: Paul Griffiths

Law Environmental National Laboratories
Soil GC/MS Semivolatile Surrogate Recovery
EPA Method 8270

Project Name: Griffis AFB Project #: 11-0635 T602

	LAB SAMPLE ID	S1 NBZ #	S2 FBP #	S3 TPH #	S4 PHL #	S5 2FP #	S6 TBP #	TOT OUT
1	93-5873-01	68.1	64.2	55.7	67.0	72.7	61.5	0
2	93-5873-02	82.9	81.6	72.6	84.7	89.2	90.7	0
3	93-5873-03	87.7	86.0	77.2	86.4	93.3	88.5	0
4	93-5873-01 MS	47.5	45.7	45.2	49.6	50.8	55.5	0
5	93-5873-01 MSD	78.5	77.7	75.5	84.7	86.4	95.1	0
6	QCCS 0616S	83.3	77.8	70.7	85.3	88.2	89.1	0
7	QCCS 0618S	81.1	81.6	78.0	83.3	88.1	93.1	0
8	93-5883-01	82.5	88.6	87.7	89.7	95.2	92.7	0
9	93-5883-01 MS	93.1	93.8	92.4	103	109	103	0
10	93-5883-01 MSD	83.2	81.2	85.8	90.7	98.0	94.4	0
11								
12								
13								
14								
15								

	QC LIMITS
S1 (NBZ) = Nitrobenzene-d5	(23-120)
S2 (FBP) = 2-Fluorobiphenyl	(30-115)
S3 (TPH) = Terphenyl-d14	(18-137)
S4 (PHL) = Phenol-d5	(24-113)
S5 (2FP) = 2-Fluorophenol	(25-121)
S6 (TBP) = 2,4,6-Tribromophenol	(19-122)

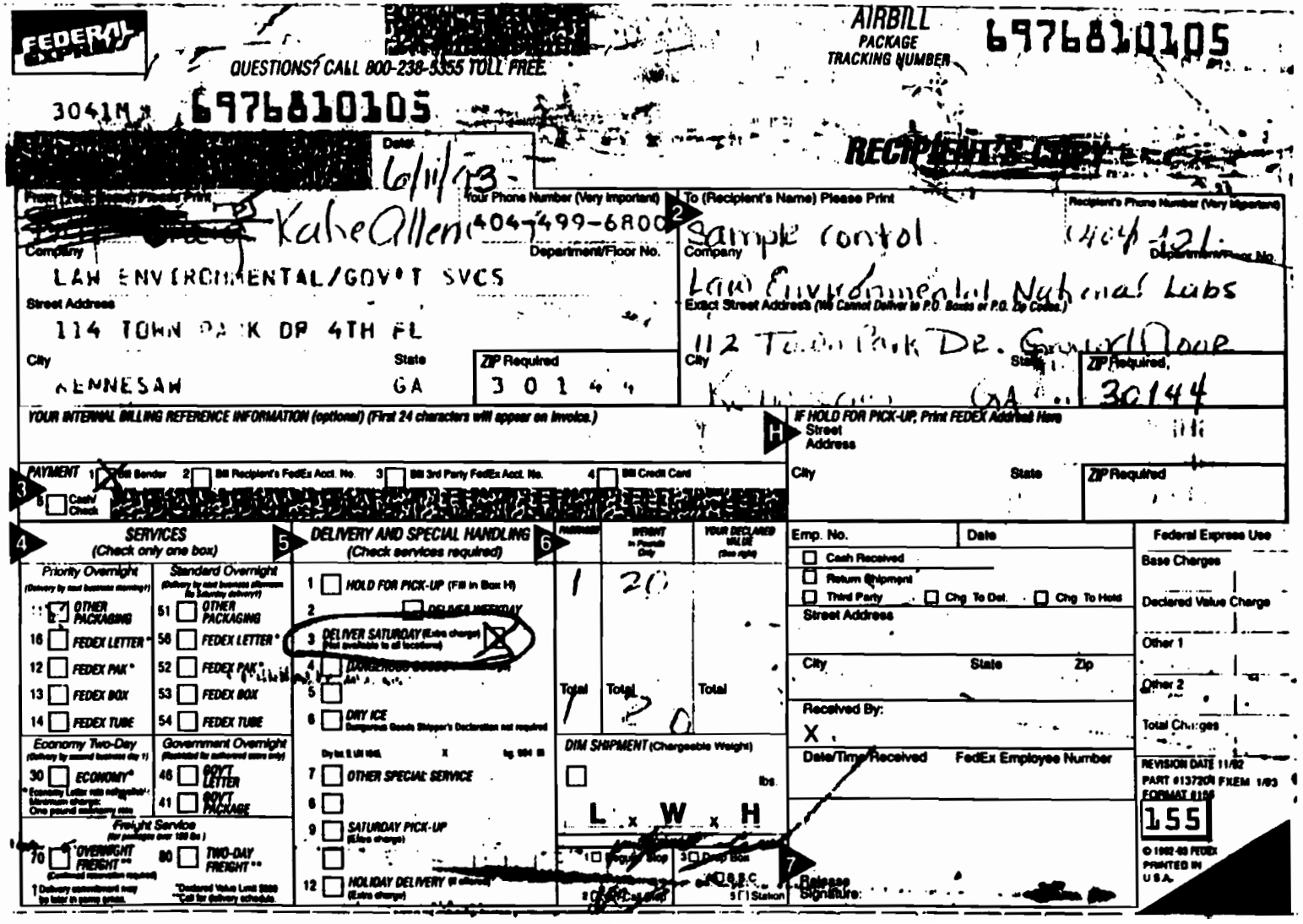
Column to be used to flag recovery values
* - Value outside of QC limits
D - Surrogate diluted out

Surrogates: 0 out of 60 ; outside of QC limits

COMMENTS: _____

029 APPROVED BY: Paul Bradford

93-5873



FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 6976810105

3041M 6976810105

RECIPIENT'S COPY

Date 6/11/93

From (Your Name) Please Print: Kate Allen

Your Phone Number (Very Important): 404-499-6800

Company: LAW ENVIRONMENTAL/GOVT SVCS

Department/Floor No.:

Street Address: 114 TOWN PARK DR 4TH FL

City: KENNESAW State: GA ZIP Required: 30144

2 To (Recipient's Name) Please Print: Sample control

Recipient's Phone Number (Very Important): (404) 421-

Company: Law Environmental Natonal Labs

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 112 Town Park Dr. Kennesaw

City: Kennesaw State: GA ZIP Required: 30144

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.)

H IF HOLD FOR PICK-UP, Print FEDEX Address Here

Street Address:

City: State: ZIP Required:

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card

5 [ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning.†)
- [X] OTHER PACKAGING
- 16 [ ] FEDEX LETTER*
- 12 [ ] FEDEX PAK*
- 13 [ ] FEDEX BOX
- 14 [ ] FEDEX TUBE

Standard Overnight (Delivery by next business afternoon. No Saturday delivery.†)
- 51 [ ] OTHER PACKAGING
- 56 [ ] FEDEX LETTER*
- 52 [ ] FEDEX PAK*
- 53 [ ] FEDEX BOX
- 54 [ ] FEDEX TUBE

Economy Two-Day (Delivery by second business day.†)
- 30 [ ] ECONOMY*

* Economy Letter rate not applicable. Minimum charge: One pound economy rate.

Government Overnight (Restricted to authorized users only)
- 46 [ ] GOVT LETTER
- 41 [ ] GOVT PACKAGE

Freight Service (for packages over 150 lbs.)
- 70 [ ] OVERNIGHT FREIGHT** (Additional reservation required.)
- 80 [ ] TWO-DAY FREIGHT**

† Delivery commitment may be later in some areas.

**Declared Value Limit $500. Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)
- 1 [ ] HOLD FOR PICK-UP (Fill in Box H)
- 2 [ ] DELIVER WEEKDAY
- 3 [X] DELIVER SATURDAY (Extra charge) (Not available to all locations.)
- 4 [ ] DANGEROUS GOODS
- 5 [ ]
- 6 [ ] DRY ICE (Dangerous Goods Shipper's Declaration not required) Dry Ice, 9, UN 1845 X kg, 954 III
- 7 [ ] OTHER SPECIAL SERVICE
- 8 [ ]
- 9 [ ] SATURDAY PICK-UP (Extra charge)
- 10 [ ]
- 12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See rate)
1	20	
Total	Total 20	Total

DIM SHIPMENT (Chargeable Weight)

[ ] lbs.

L x W x H

1 [ ] Regular Stop 3 [ ] Drop Box 2 [ ] Charge Card 5 [ ] Station

7 Release Signature:

Emp. No. Date

- [ ] Cash Received
- [ ] Return Shipment
- [ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold

Street Address

City State Zip

Received By: X

Date/Time Received FedEx Employee Number

Federal Express Use

Base Charges

Declared Value Charge

Other 1

Other 2

Total Charges

REVISION DATE 11/92
PART #13720R FXEM 1/93
FORMAT #1150

155

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B-88

0316

CHAIN OF CUSTODY RECORD

LAW ENVIRONMENTAL, INC.
NATIONAL LABORATORY
112 TOWNPARK DRIVE
KENNESAW, GEORGIA 30144
(404) 421-3306

93-5873

SAMPLING INFORMATION

NAME OF FACILITY: GAFB
STREET ADDRESS:
CITY / STATE: GAFB NY ZIP: 13341

PROJECT NAME: Industrial Soils Pad
JOB NO.:
SAMPLERS (SIGNATURE): William Craig
SAMPLERS INITIALS (PRINT): BC
SAMPLING DATE: 6/11/93

TIME	GRAB	COMP.	* MATRIX	SAMPLE STATION DESCRIPTION	TOTAL NO. OF CONTAINERS	CONTAINER TYPE G = GLASS PL = PLASTIC: 40 ml G VOA Vial (HCl)	40 ml G VOA Vial	1 L G Amber Bottle	1 L G Amber Bottle (H_2SO_4)	1 L PL Bottle	1 L PL Bottle (HNO_3)	1 L PL Bottle (H_2SO_4)	1 L PL Bottle (Ascorbic Acid + NaOH)	1 L PL Bottle (Zn Acetate + NaOH)	250 ml PL Bottle	Teflon Bottle	32 oz. G Jar	8 oz. G Jar	4 oz. G Jar	2 oz. G SEPTA Jar	4 oz. PL Jar	FOR LAB USE ONLY
15:00			Soil	ISP-1	7		3									4						

RELINQUISHED BY: (SIGNATURE)	DATE / TIME	RECEIVED BY: (SIGNATURE)	DATE / TIME	RELINQUISHED BY: (SIGNATURE)	RECEIVED BY LABORATORY: (SIGNATURE)	DATE / TIME
William Craig	6-11-93 1700				Gerald Potts	6/12/93 1100

*MATRIX

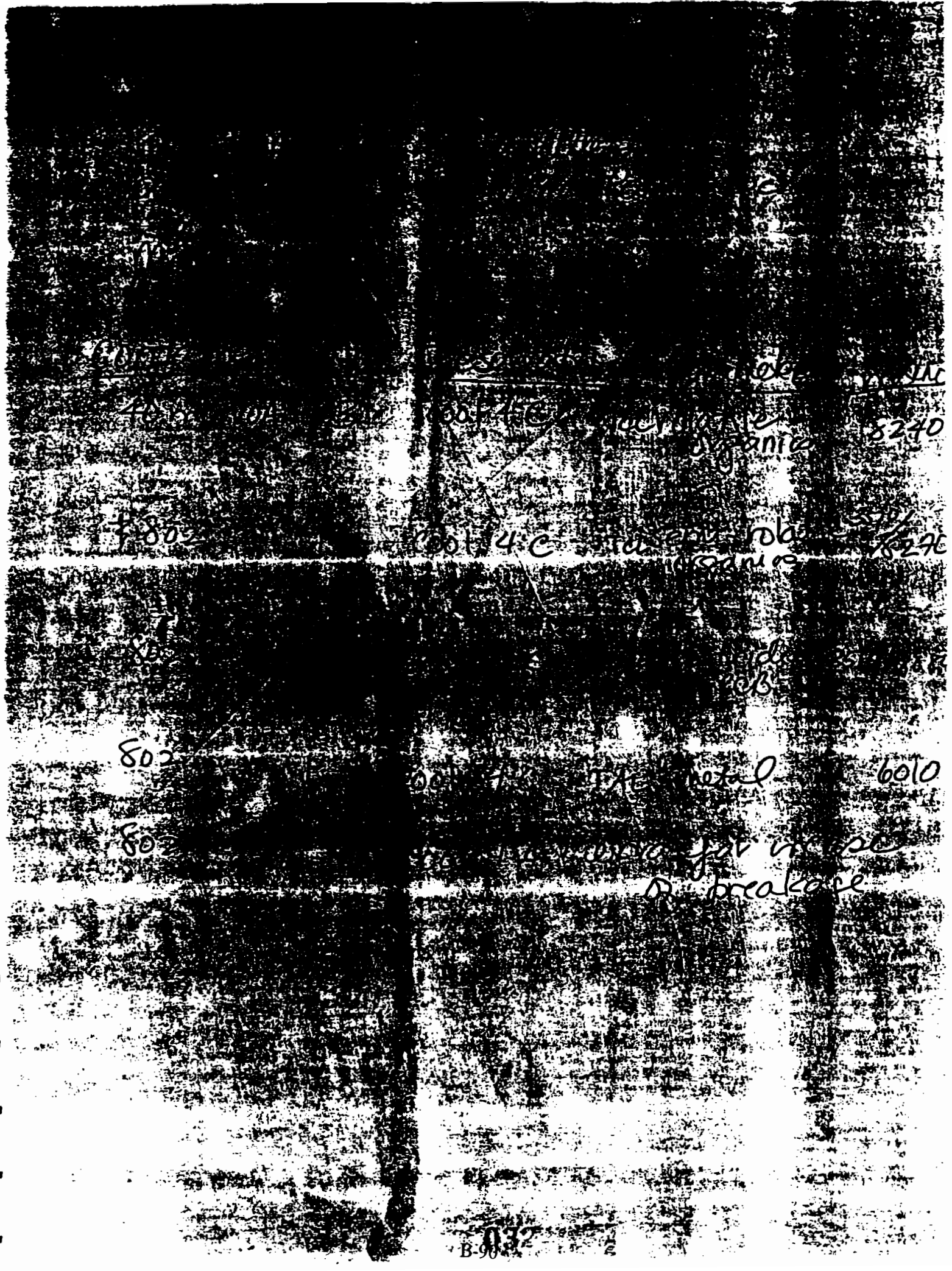
WATER - W SLUDGE - SL
SOIL / SEDIMENT - SO OTHER - NA

DISTRIBUTION: ORIGINAL AND YELLOW COPIES ACCOMPANY SAMPLE SHIPMENT TO LABORATORY. PINK COPY RETAINED BY SAMPLERS. YELLOW COPY RETAINED BY LABORATORY.

REMARKS FED-EX 6976810094 DS
6976810105

For Law Environmental National Lab Use Only:

Were Custody Seals Present? Yes ☑ No ☐ N/A ☐ Were Custody Seals Intact? Yes ☑ No ☐ N/A ☐ Inspected By: [signature] Date: 6/12/93



LAW ENVIRONMENTAL, INC.
a professional engineering and earth science consulting firm

JOB NO. _____ SHEET _____ OF _____

JOB NAME _____

BY _____ DATE _____

CHECKED BY _____ DATE _____

100 COC's

GRIFFIS AFB 11-2588-0201 / TASK 030

30

LAW ENVIRONMENTAL INC.
GOVERNMENT SERVICES DIVISION
FACSIMILE TRANSMITTAL LETTER

	SENDER	RECEIVER
NAME:	Ms. Sushama Paranjape	Mr. P. Bradford
COMPANY:	Law Environmental, Inc. Government Services Division	LENL-K
LOCATION:	Kennesaw, GA	Kennesaw, GA
FAX #	404/421-3593	(404) 421-3301
TEL #	404/499-6800	(404) 421-3300

THE TOTAL NUMBER OF PAGES OF THIS MESSAGE INCLUDING THIS PAGE IS: _____

OPERATOR: _____ TIME: _____ DATE: _____

NOTES: The lab will receive one sample from Industrial Soil Pad at Griffiss AFB during the week of June 7, 1993. The analysis to be performed will be TCL VOA, TCL BN TCL Pesticide/PCBs and TAL metals + CN.

Work order is same as issued on Feb 4, 1993. Project NO 11-0635 Task 602.

Please contact S Paranjape at 499-6813 if you have any questions!

SAMPLE RECEIPT/SHIPPER INSPECTION FORM

LENL # 93-5873 DATE: 6/12/93

PROJECT NAME: GRIFFISS AFB PROJECT #

A: PRELIMINARY EXAMINATION: Date shipment was opened: 6/12/93

1. Did shipment come with a shipping air bill?	(Y)	N	N/A
2. If YES, document carrier and air bill number. Federal Express # 6971681 0105			
3. Were custody seals present on samples?	Y	(N)	–
4. Were custody seals intact?	Y	N	(NA)
5. Were custody papers filled out properly?	(Y)	(N)	NA
6. Were custody papers signed?	(Y)	N	NA
7. Sampling time(s) present?	(Y)	N	NA
8. Sampling date(s) present?	(Y)	N	NA
9. Type of packing and ice used. Bubble wrap, ziploc bags & wet ice.			

B. LOG-IN PHASE Date samples were logged in: 6/12/93

1. Did all bottles arrive intact?	(Y)	N	NA
2. Did all bottle labels agree with custody papers?	(Y)	N	NA
3. Were proper containers used for requested test?	(Y)	N	NA
4. Were correct preservatives added for requested test?	(Y)	N	NA
5. Was sufficient sample received for requested test?	(Y)	N	NA
6. Were air bubbles present in VOA samples?	Y	N	(NA)

COMMENTS: Sample types (GRAB - COMP) not indicated on COC.
Containers were not supplied by LENL - RECEIVED.

Samples were received cold, still on ice, in excellent condition.
Shipment was very well packed to avoid breakage.

TEMP: PROCESSED BY: Sandel Bell

C. CORRECTIVE ACTION:

1. Client notified verbally. Date: Time:			
2. Samples processed as received.	Y	N	–

COMMENTS:

	INITIAL	DATE
SAMPLE CONTROL COORDINATOR		
SAMPLE CONTROL SUPERVISOR		