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FINAL SUMMARY REPORT ON SECOND PHASE OF SOLID WASTE MANAGEMENT UNIT 62 INVESTIGATION NAS FORT WORTH TX

5/21/1996

ENSAFE, ALLEN AND HOSHALL

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NAVAL AIR STATION
FORT WORTH JRB
CARSWELL FIELD
TEXAS

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 377

File: 17A-36
A.F.

377

FINAL SUMMARY REPORT SECOND PHASE OF SWMU 62 INVESTIGATION

NAS FORT WORTH, JRB
FORT WORTH, TEXAS
Contract Number: N62467-89-D-0318
CTO-103

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May 21, 1996

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1

1.0 INTRODUCTION

A Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Work Plan for Solid Waste Management Unit (SWMU) 62 at Naval Air Station (NAS) Fort Worth Joint Reserve Base has been completed and reviewed by the Texas Natural Resource Conservation Commission (TNRCC). SWMU 62, the site of the former Landfill 6, is the area designated as LF-06 in the base's Installation Restoration Program.

The U.S. Navy has designed and awarded a construction contract for a liquid oxygen storage (LOX) facility to be built within the SWMU 62 boundaries. This summary describes the second phase of investigative work that the U.S. Navy conducted in this area in support of the construction project.

A plan for investigating of a portion of SWMU 62, *Draft Summary of Work, Second Phase of SWMU 62 Investigation,* September 1, 1995, was submitted to the TNRCC for approval. This document was approved with modifications on October 26, 1996. Due to the relocation of a van pad complex originally proposed for another portion of SWMU 62, only the portion of the proposed work in the area of the LOX facility was actually implemented.

This work is not a part of the RFI and is intended only to answer questions regarding the suitability of a portion of the SWMU for future construction. However, it is hoped that work performed during this investigation may be used in the RFI.

TAB

2

2.0 SITE DESCRIPTION AND SETTING

The SWMU 62 site was originally used as a gravel pit. Following removal of the gravel, the site was used as a landfill from approximately 1975 until 1978. Materials disposed of in the landfill reportedly included construction rubble, trees, and miscellaneous trash. Several drums of hydraulic fluid are also reported to have been disposed of in the landfill.

The limits of SWMU 62 originally encompassed only the former landfill. However, the SWMU was expanded in 1993 to its present size (Figure 1) by the Air Force Base Conversion Agency. Additional information regarding the site is available in the RFI Work Plan for SWMU 62 that was prepared by the U.S. Army Corps of Engineers (COE).

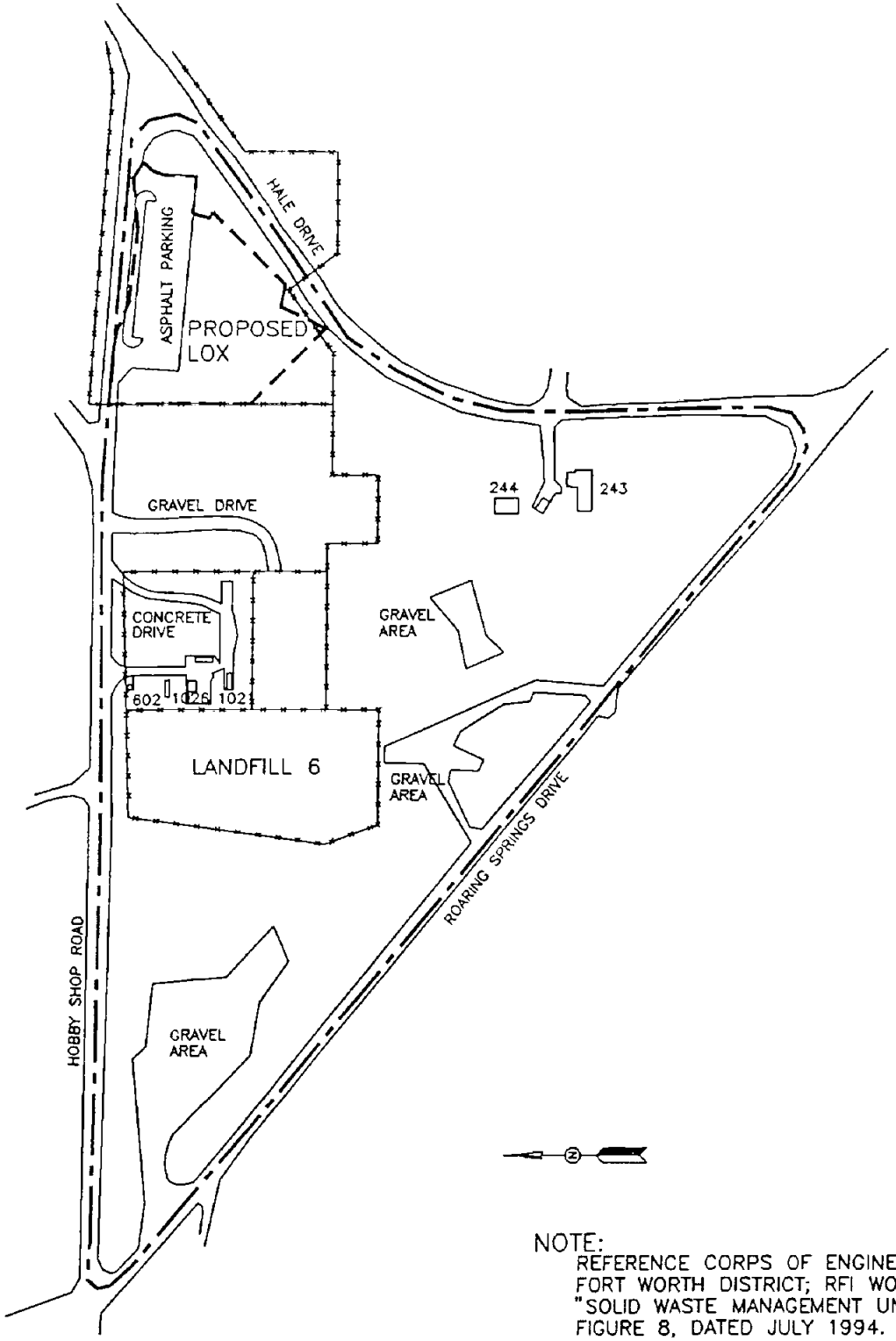
2.1 Proposed Land Use

The extreme eastern portion of SWMU 62 has been selected by the Navy as the site for constructing a LOX facility. The proposed LOX facility encompasses approximately 64,000 square feet.

2.2 Previous Investigations

Previous environmental investigations have been conducted at SWMU 62 on behalf of the Air Force by the COE and on behalf of the Navy by EnSafe/Allen & Hoshall (E/A&H). As previously stated, the work performed by the COE is summarized in the RFI Work Plan for SWMU 62. The portion of NAS Fort Worth that encompasses SWMU 62 has also been included in both the Phase I and II investigations of the trichloroethylene (TCE) groundwater plume originating from Air Force Plant 4. However, groundwater is outside the scope of this investigation and the results of previous groundwater investigations will not be discussed here.

In addition to previous environmental investigations, two geotechnical borings were drilled within the SWMU, but outside the area of the proposed LOX facility.



NOTE:
REFERENCE CORPS OF ENGINEERS FORT WORTH DISTRICT; RFI WORK PLAN "SOLID WASTE MANAGEMENT UNIT NO.62" FIGURE 8, DATED JULY 1994.

LEGEND

FENCE LINE LOCATION

PROPOSED CONSTRUCTION AREAS

CURRENT SWMU 62 BOUNDARY

250 0 250

SCALE FEET

NAS FORT WORTH
FORT WORTH, TEXAS

FIGURE 1

SWMU 62
SITE MAP

DATE: 8/29/95 | DWG: GEO-SURV.DWG

E/A&H has conducted a geophysical survey of approximately two-thirds of SWMU 62, including the area of the proposed LOX facility. The results of this investigation are detailed in a technical memorandum prepared by E/A&H and previously submitted to the TNRCC. The discussion of the geophysical survey presented here will be limited to the area proposed for construction.

The geophysical investigation identified anomalies throughout SWMU 62 (Figure 2). The anomalies were classified into one of four categories according to their interpreted significance with respect to the project objectives:

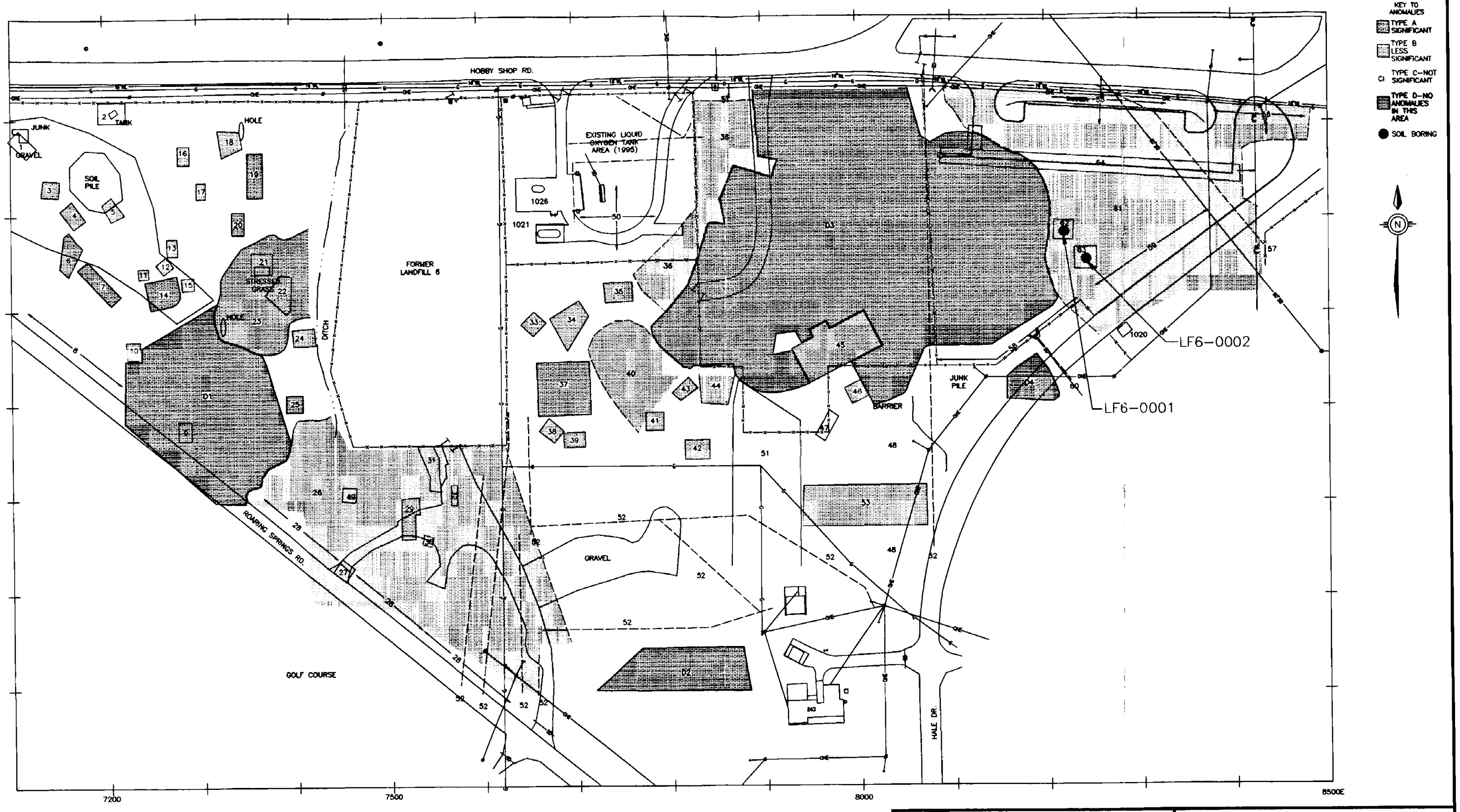
Type A - Strong, well-defined anomaly characteristic of a buried object, and for which some follow-up is recommended.

Type B - Weaker or more poorly defined anomaly due to a buried object, but less likely to be of environmental concern; follow-up is deemed less critical, but depends on the investigations of Type A anomalies.

Type C - Anomaly not believed to be caused by buried material of environmental concern; examples are anomalies from ditches, culture, metal objects at the surface, etc. Follow-up is not recommended.

Type D - Anomaly-free in light of the stated objectives.

Three Type B anomalies were identified either partially or entirely within the boundaries of the proposed LOX facility. They were designated anomalies 61, 62 and 63. Anomalies 62 and 63 lie entirely within anomaly 61.



NAS FORT WORTH
FORT WORTH, TEXAS

FIGURE 2
SOIL BORING LOCATIONS
SWMU 62

DWG DATE:05/09/96 | DWG NAME:103SBLC1

TAB

3

3.0 INVESTIGATION APPROACH

Based upon the approved summary of work, two soil borings were drilled within the limits of the proposed LOX facility. These borings were intended to identify the presence of any contaminants in the soil and to identify the presence of any landfilled materials.

3.1 Soil Borings

One soil boring was drilled in anomaly 62 and one soil boring was drilled in anomaly 63 (Figure 2). Specific boring locations within each anomaly were chosen based upon the results of the geophysical survey. These locations were marked in the field using a measuring tape. Due to problems encountered with onsite benchmarks, the exact locations of the borings could not be surveyed.

Each boring was drilled until either groundwater or bedrock was encountered. Borings were drilled using a 6.25-inch inner diameter hollow-stem auger. Samples were collected with 5-foot continuous samplers. Continuous samplers were chosen because they allowed for easier visual identification of any landfilled materials. Drill cuttings brought up by the augers were also inspected for evidence of landfilled materials. Field observations included soil color, texture, grain size, staining, odor, photoionization detector reading, visual moisture content, and a description of any landfilled material. No evidence of landfilled materials was found during the drilling of the soil borings.

Logs of the two soil borings, LF6-001 and LF6-002, are included in Attachment A. The stratigraphy of the site consisted of a surface cover of Pleistocene clays and sands to a depth of 8 to 10 feet. Beneath the soil a 2-foot thick caliche hardpan was encountered, with the formation of pisolites within this layer. Underlying this caliche horizon was a saturated red to orange-brown clayey sand with abundant *Texana gryphea* (Cretaceous fossil). Borings were terminated at 14 feet based on the saturated zone encountered at 10 to 12 feet. Native bedrock (Goodland Limestone) was not encountered in either boring.

Samples were collected from each boring at depths of 2, 4, and 9 feet, stopping at the first encountered water zone. Samples were collected from the continuous corer using a stainless steel spoon or spatula and immediately containerized, labeled, and preserved at 4^0 C.

Borings were backfilled using a lean bentonite-cement grout mixture. All equipment used to collect soil samples was properly decontaminated before beginning onsite activities and between sampling events. The decontamination process involved the following steps: pressure steam wash (when applicable), detergent wash, potable water rinse, deionized water rinse, pesticide-grade isopropanol rinse, final deionized water rinse.

All field procedures were generally consistent with procedures used at other Navy RFI sites.

3.2 Sample Analyses

The samples collected at NAS Fort Worth on February 26, 1996 were submitted to S-Cubed Laboratories in San Diego, California. Samples were analyzed for chemicals listed on the 40 CFR 264 Appendix IX list. The samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), Appendix IX metals, PCBs/pesticides, organophosphorus pesticides, herbicides, dioxins, cyanide, and sulfide. USEPA Level IV deliverables were specified for all sample analyses.

One duplicate sample and matrix spike/matrix spike duplicate samples were collected as part of the sampling effort. One trip blank for VOC analysis was submitted per shipping container. Field blanks and equipment rinse blanks were also submitted for analysis.

All analytical data was validated upon receipt from the laboratory.

TAB

4

4.0 RESULTS

This section summarizes the major findings from the analyses of samples collected for the LOX facility and provides the QA/QC evaluation (validation) of the analysis performed.

4.1 Sampling Results

SVOCs, PCBs/pesticides, organophosphorus pesticides, herbicides, dioxins, cyanide and sulfide were not detected in any of the soil samples. The only VOC detected was MIBK at 3 parts-per-billion (ppb) in the sample collected from a depth of 2 feet in LF6-001. The metals concentrations which were detected were consistent between the samples and extremely elevated levels were not detected. In the future, the metals data should be compared to any background values which are established for either SWMU 62 or NAS Fort Worth as a whole.

Table 1 summarizes the "hits" for the samples analyzed during this investigation.

4.2 Data Validation

Data validation verifies that the QC requirements of the data set have been met and characterizes the weakness of any questionable data. The data validation report is included in Attachment C.

Table 1

SWMU 62 SOIL DATA SUMMARY

Compounds	LF6-S-000102	LF6-S-000104	LF6-S-000109	LF6-S-000202	LF6-S-000204	LF6-S-000209
Metals (ppm)						
Arsenic	4	4.8	5.9	4.5	6.3	5.2
Barium	73.5	109	33.3	99.1	70.9	24.7
Beryllium	0.75	0.89	0.66	0.84	0.96	0.5
Cadmium	ND	ND	0.19	0.09	0.13	0.14
Chromium	16.4	21	18.2	17.4	23.4	13.3
Cobalt	4.7	4.9	2.8	5.6	4.8	2.7
Copper	6.9	6.9	5.4	10.7	5.8	3.5
Lead	10.6	9	6.3	11.2	9	5.3
Nickel	9.9	11.5	8	12.2	12	5.7
Thallium	ND	ND	ND	ND	1	1.4
Vanadium	25.4	31.6	29.2	27.2	36.5	22.5
Zinc	20.8	25.5	22	26.5	27.7	13.5
VOCs (ppb)						
MIBK	3	ND	ND	ND	ND	ND

Note: Table shows "hits" only

ND - Nondetect.

TAB

5

5.0 CONCLUSION

Soil borings LF6-001 and LF6-002 did not reveal the presence of landfilled materials in the area of geophysical anomalies 62 or 63. In addition, soil samples collected from these borings did not contain detectable levels of contamination, with the exception of the one sample which contained 3 ppb of MIBK. The lithology of the site indicates a native caliche hardpan is present at a depth of 9 feet beneath the proposed LOX facility. This hardpan layer was undisturbed and would indicate that landfilling activities did not extend beneath the site.

As previously stated, the work described in this summary is intended only to determine the suitability of a portion of SWMU 62 for future construction. It is not intended to address the limits of the former landfill or the quality of groundwater beneath the site.

TAB

A

ATTACHMENT A

BORING LOGS

Environmental & Safety Designs, Inc.

Log of Boring LF60001

Project: *NAS Ft. Worth*	Location: *Landfill 6*
Project No.: *0103-8420*	Geologist: *Allen Hall*
Started at *0842 on 02-26-96*	Surface Elevation: *NA. feet msl*
Completed at *0939 on 02-26-96*	Depth to Groundwater: *10.17 feet* Measured:
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *Core Terra*	Total Depth: *14 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
		02					CL	Brown sandy clay, hard.	
			CS-1	100	0.1				
		04					CL	Brown sandy clay, hard, caliche nodules 2-4 mm.	
			CS-2	100	0.5				
							CL	Dark brown clay.	
5							CL	Orange-brown sandy clay.	
		09					CAL	Tan sandy caliche with limestone fragments, very hard, red chert.	
			CS-3	100	0.0		CAL	Tan caliche zone, pizolites to 20 mm.	
10							SW	Red sand, fine, coarse at the base, wet.	
							SP	Orange-brown clayey-sand, (Texana Gryphea).	
			CS-4	72	0.0		SP		
15									
20									

Environmental & Safety Designs, Inc.

Log of Boring LF60002

Project: *NAS Ft. Worth*	Location: *Landfill 6*
Project No.: *0103-8420*	Geologist: *Allen Hall*
Started at *1012 on 02-26-96*	Surface Elevation: *NA. feet msl*
Completed at *1158 on 02-26-96*	Depth to Groundwater: *11 feet* Measured:
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *Core Terra*	Total Depth: *11 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
		02						Tan sandy clay, minor gravel with caliche nodules.	
								Brown sandy clay.	
			CS-1	100	0.0				
		04						Brown sandy clay, hard, with caliche nodules.	
			CS-2	58	0.0				
5		09					CL	Hard brown clay, trace of sand.	
								Orange-brown sandy clay, with gray streaks.	
								Base of shoe is caliche zone, used center-bit to cut last 6 in.	
			CS-3	90	0.0			Caliche hardpan, wet at the base of the shoe.	
10							CAL		
			CS-4	42	0.0				
15									
20									

TAB

B

ATTACHMENT B
ANALYTICAL DATA

DATALCP3
05/03/96

NAS FORT WORTH
NASFW LANDFILL #6

Time: 08:42

APX9-METAL						
SAMPLE ID ------->	LF6-S-0001-02	LF6-S-0001-04	LF6-S-0001-09	LF6-C-0001-09	LF6-S-0002-02	LF6-S-0002-04
ORIGINAL ID ----->	LF6S000102	LF6S000104	LF6S000109	LF6C000109	LF6S000202	LF6S000204
LAB SAMPLE ID --->	5556-04	5556-05	5556-06	5556-01	5556-07	5556-08
ID FROM REPORT -->	LF6S000102	LF6S000104	LF6S000109	LF6C000109	LF6S000202	LF6S000204
SAMPLE DATE ----->	02/26/96	02/26/96	02/26/96	02/26/96	02/26/96	02/26/96
DATE EXTRACTED -->	02/28/96	02/28/96	02/28/96	02/28/96	02/28/96	02/28/96
DATE ANALYZED --->	02/29/96	02/29/96	02/29/96	02/29/96	02/29/96	02/29/96
MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
UNITS ---------->	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG

CAS #	Parameter	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL
7440-36-0	Antimony (Sb)	0.39	UJ	0.42	UJ	0.4	UJ	0.4	UJ	0.41	UJ	0.39	UJ
7440-38-2	Arsenic (As)	4.		4.8		5.9		3.2		4.5		6.3	
7440-39-3	Barium (Ba)	73.5		109.		33.3	J	16.6	J	99.1		70.9	
7440-41-7	Beryllium (Be)	0.75	J	0.89	J	0.66	J	0.43	J	0.84	J	0.96	J
7440-43-9	Cadmium (Cd)	0.07	U	0.07	U	0.19	J	0.19	J	0.09	J	0.13	J
7440-47-3	Chromium (Cr)	16.4		21.		18.2		12.3		17.4		23.4	
7440-48-4	Cobalt (Co)	4.7	J	4.9	J	2.8	J	1.3	J	5.6	J	4.8	J
7440-50-8	Copper (Cu)	6.9		6.9		5.4	J	3.1	J	10.7		5.8	
7439-92-1	Lead (Pb)	10.6		9.		6.3		3.7		11.2		9.	
7439-97-6	Mercury (Hg)	0.11	U	0.11	U	0.1	U	0.11	U	0.12	U	0.1	U
7440-02-0	Nickel (Ni)	9.9		11.5		8.	J	4.	J	12.2		12.	
7782-49-2	Selenium (Se)	0.83	UR	0.88	UR	0.84	UR	0.84	UR	0.87	UR	0.81	UR
7440-22-4	Silver (Ag)	0.31	U	0.32	U	0.31	U	0.31	U	0.32	U	0.3	U
7440-28-0	Thallium (Tl)	0.83	U	0.88	U	1.6	U	1.6	U	0.87	U	1.	J
7440-62-2	Vanadium (V)	25.4		31.6		29.2		19.9		27.2		36.5	
7440-66-6	Zinc (Zn)	20.8		25.5		22.		10.9		26.5		27.7	
7440-31-5	Tin (Sn)	6.2	UJ	6.5	UJ	6.2	UJ	6.2	UJ	6.5	UJ	6.	UJ

*** Validation Complete ***

NAS FORT WORTH
NASFW LANDFILL #6

APX9-METAL

SAMPLE ID ------->	LF6-S-0002-09
ORIGINAL ID ----->	LF6S000209
LAB SAMPLE ID --->	5556-09
ID FROM REPORT -->	LF6S000209
SAMPLE DATE ----->	02/26/96
DATE EXTRACTED -->	02/28/96
DATE ANALYZED --->	02/29/96
MATRIX ---------->	Soil
UNITS ---------->	MG/KG

CAS #	Parameter	5556	VAL
7440-36-0	Antimony (Sb)	0.39	UJ
7440-38-2	Arsenic (As)	5.2	
7440-39-3	Barium (Ba)	24.7	J
7440-41-7	Beryllium (Be)	0.5	J
7440-43-9	Cadmium (Cd)	0.14	J
7440-47-3	Chromium (Cr)	13.3	
7440-48-4	Cobalt (Co)	2.7	J
7440-50-8	Copper (Cu)	3.5	J
7439-92-1	Lead (Pb)	5.3	
7439-97-6	Mercury (Hg)	0.11	U
7440-02-0	Nickel (Ni)	5.7	J
7782-49-2	Selenium (Se)	0.82	UR
7440-22-4	Silver (Ag)	0.3	U
7440-28-0	Thallium (Tl)	1.4	J
7440-62-2	Vanadium (V)	22.5	
7440-66-6	Zinc (Zn)	13.5	
7440-31-5	Tin (Sn)	6.1	UJ

NAS FORT WORTH
NASFW LANDFILL #6

APX9-PEST																			
	SAMPLE ID ------->	LF6-S-0001-02		LF6-S-0001-04		LF6-S-0001-09		LF6-C-0001-09		LF6-S-0002-02		LF6-S-0002-04	
	ORIGINAL ID ----->	LF6S000102		LF6S000104		LF6S000109		LF6C000109		LF6S000202		LF6S000204	
	LAB SAMPLE ID --->	5556-04RX		5556-05RX		5556-06RX		5556-01RX		5556-07RX		5556-08RX	
	ID FROM REPORT -->	LF6S000102		LF6S000104		LF6S000109		LF6C000109		LF6S000202		LF6S000204	
	SAMPLE DATE ----->	02/26/96		02/26/96		02/26/96		02/26/96		02/26/96		02/26/96	
	DATE EXTRACTED -->	03/11/96		03/11/96		03/11/96		03/11/96		03/11/96		03/11/96	
	DATE ANALYZED --->	03/15/96		03/15/96		03/15/96		03/15/96		03/15/96		03/15/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL
319-84-6	alpha-BHC	1.87	U	1.96	U	1.9	U	1.91	U	1.98	U	1.91	U
319-85-7	beta-BHC	1.87	U	1.96	U	1.9	U	1.91	U	1.98	U	1.91	U
319-86-8	delta-BHC	1.87	U	1.96	U	1.9	U	1.91	U	1.98	U	1.91	U
58-89-9	gamma-BHC (Lindane)	1.87	U	1.96	U	1.9	U	1.91	U	1.98	U	1.91	U
76-44-8	Heptachlor	1.87	U	1.96	U	1.9	U	1.91	U	1.98	U	1.91	U
309-00-2	Aldrin	1.87	U	1.96	U	1.9	U	1.91	U	1.98	U	1.91	U
1024-57-3	Heptachlor epoxide	1.87	U	1.96	U	1.9	U	1.91	U	1.98	U	1.91	U
959-98-8	Endosulfan I	1.87	U	1.96	U	1.9	U	1.91	U	1.98	U	1.91	U
60-57-1	Dieldrin	3.64	U	3.81	U	3.69	U	3.71	U	3.84	U	3.7	U
72-55-9	4,4'-DDE	3.64	U	3.81	U	3.69	U	3.71	U	3.84	U	3.7	U
72-20-8	Endrin	3.64	U	3.81	U	3.69	U	3.71	U	3.84	U	3.7	U
33213-65-9	Endosulfan II	3.64	U	3.81	U	3.69	U	3.71	U	3.84	U	3.7	U
72-54-8	4,4'-DDD	3.64	U	3.81	U	3.69	U	3.71	U	3.84	U	3.7	U
1031-07-8	Endosulfan sulfate	3.64	U	3.81	U	3.69	U	3.71	U	3.84	U	3.7	U
50-29-3	4,4'-DDT	3.64	U	3.81	U	3.69	U	3.71	U	3.84	U	3.7	U
72-43-5	Methoxychlor	18.7	U	19.6	U	19.	U	19.1	U	19.8	U	19.1	U
53494-70-5	Endrin ketone	3.64	U	3.81	U	3.69	U	3.71	U	3.84	U	3.7	U
7421-93-4	Endrin aldehyde	3.64	U	3.81	U	3.69	U	3.71	U	3.84	U	3.7	U
5103-71-9	alpha-Chlordane	1.87	U	1.96	U	1.9	U	1.91	U	1.98	U	1.91	U
5103-74-2	gamma-Chlordane	1.87	U	1.96	U	1.9	U	1.91	U	1.98	U	1.91	U
8001-35-2	Toxaphene	187.	U	196.	U	190.	U	191.	U	198.	U	191.	U
12674-11-2	Aroclor-1016	36.4	U	38.1	U	36.9	U	37.1	U	38.4	U	37.	U
11104-28-2	Aroclor-1221	73.9	U	77.4	U	74.8	U	75.3	U	77.9	U	75.2	U
11141-16-5	Aroclor-1232	36.4	U	38.1	U	36.9	U	37.1	U	38.4	U	37.	U
53469-21-9	Aroclor-1242	36.4	U	38.1	U	36.9	U	37.1	U	38.4	U	37.	U
12672-29-6	Aroclor-1248	36.4	U	38.1	U	36.9	U	37.1	U	38.4	U	37.	U
11097-69-1	Aroclor-1254	36.4	U	38.1	U	36.9	U	37.1	U	38.4	U	37.	U
11096-82-5	Aroclor-1260	36.4	U	38.1	U	36.9	U	37.1	U	38.4	U	37.	U
12789-03-6	Technical Chlordane	36.4	U	38.1	U	36.9	U	37.1	U	38.4	U	37.	U

NAS FORT WORTH
NASFW LANDFILL #6

APX9-PEST

SAMPLE ID ------->	LF6-S-0002-09
ORIGINAL ID ----->	LF6S000209
LAB SAMPLE ID --->	5556-09RX
ID FROM REPORT -->	LF6S000209
SAMPLE DATE ----->	02/26/96
DATE EXTRACTED -->	03/11/96
DATE ANALYZED --->	03/15/96
MATRIX ---------->	Soil
UNITS ---------->	UG/KG

CAS #	Parameter	5556	VAL
319-84-6	alpha-BHC	1.94	U
319-85-7	beta-BHC	1.94	U
319-86-8	delta-BHC	1.94	U
58-89-9	gamma-BHC (Lindane)	1.94	U
76-44-8	Heptachlor	1.94	U
309-00-2	Aldrin	1.94	U
1024-57-3	Heptachlor epoxide	1.94	U
959-98-8	Endosulfan I	1.94	U
60-57-1	Dieldrin	3.77	U
72-55-9	4,4'-DDE	3.77	U
72-20-8	Endrin	3.77	U
33213-65-9	Endosulfan II	3.77	U
72-54-8	4,4'-DDD	3.77	U
1031-07-8	Endosulfan sulfate	3.77	U
50-29-3	4,4'-DDT	3.77	U
72-43-5	Methoxychlor	19.4	U
53494-70-5	Endrin ketone	3.77	U
7421-93-4	Endrin aldehyde	3.77	U
5103-71-9	alpha-Chlordane	1.94	U
5103-74-2	gamma-Chlordane	1.94	U
8001-35-2	Toxaphene	194.	U
12674-11-2	Aroclor-1016	37.7	U
11104-28-2	Aroclor-1221	76.4	U
11141-16-5	Aroclor-1232	37.7	U
53469-21-9	Aroclor-1242	37.7	U
12672-29-6	Aroclor-1248	37.7	U
11097-69-1	Aroclor-1254	37.7	U
11096-82-5	Aroclor-1260	37.7	U
12789-03-6	Technical Chlordane	37.7	U

NAS FORT WORTH
NASFW LANDFILL #6

APX9-SVOA																	
	SAMPLE ID ------->	LF6-S-0001-02		LF6-S-0001-04		LF6-S-0001-09		LF6-C-0001-09		LF6-S-0002-02		LF6-S-0002-04	
	ORIGINAL ID ----->	LF6S000102		LF6S000104		LF6S000109		LF6C000109		LF6S000202		LF6S000204	
	LAB SAMPLE ID --->	5556-04		5556-05		5556-06		5556-01		5556-07		5556-08	
	ID FROM REPORT -->	LF6S000102		LF6S000104		LF6S000109		LF6C000109		LF6S000202		LF6S000204	
	SAMPLE DATE ----->	02/26/96		02/26/96		02/26/96		02/26/96		02/26/96		02/26/96	
	DATE EXTRACTED -->	02/28/96		02/28/96		02/28/96		02/28/96		02/28/96		02/28/96	
	DATE ANALYZED --->	03/07/96		03/07/96		03/08/96		03/07/96		03/08/96		03/08/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL
108-95-2	Phenol	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
111-44-4	bis(2-Chloroethyl)ether	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
95-57-8	2-Chlorophenol	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
541-73-1	1,3-Dichlorobenzene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
106-46-7	1,4-Dichlorobenzene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
100-51-6	Benzyl alcohol	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
95-50-1	1,2-Dichlorobenzene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
95-48-7	2-Methylphenol (o-Cresol)	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
9999900-32-2	3-Methylphenol/4-Methylphenol	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
621-64-7	N-Nitroso-di-n-propylamine	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
67-72-1	Hexachloroethane	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
98-95-3	Nitrobenzene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
78-59-1	Isophorone	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
88-75-5	2-Nitrophenol	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
105-67-9	2,4-Dimethylphenol	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
111-91-1	bis(2-Chloroethoxy)methane	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
120-83-2	2,4-Dichlorophenol	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
120-82-1	1,2,4-Trichlorobenzene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
91-20-3	Naphthalene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
106-47-8	4-Chloroaniline	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
87-68-3	Hexachlorobutadiene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
59-50-7	4-Chloro-3-methylphenol	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
91-57-6	2-Methylnaphthalene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
77-47-4	Hexachlorocyclopentadiene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
88-06-2	2,4,6-Trichlorophenol	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
95-95-4	2,4,5-Trichlorophenol	1800.	U	1800.	U	1800.	U	1800.	U	1900.	U	1800.	U
91-58-7	2-Chloronaphthalene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
88-74-4	2-Nitroaniline	1800.	U	1800.	U	1800.	U	1800.	U	1900.	U	1800.	U
131-11-3	Dimethyl phthalate	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
208-96-8	Acenaphthylene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
606-20-2	2,6-Dinitrotoluene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
99-09-2	3-Nitroaniline	1800.	U	1800.	U	1800.	U	1800.	U	1900.	U	1800.	U
83-32-9	Acenaphthene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
51-28-5	2,4-Dinitrophenol	1800.	U	1800.	U	1800.	U	1800.	U	1900.	U	1800.	U
100-02-7	4-Nitrophenol	1800.	U	1800.	U	1800.	U	1800.	U	1900.	U	1800.	U

*** Validation Complete ***

NAS FORT WORTH
NASFW LANDFILL #6

APX9-SVOA

	SAMPLE ID ------->	LF6-S-0001-02		LF6-S-0001-04		LF6-S-0001-09		LF6-C-0001-09		LF6-S-0002-02		LF6-S-0002-04	
	ORIGINAL ID ----->	LF6S000102		LF6S000104		LF6S000109		LF6C000109		LF6S000202		LF6S000204	
	LAB SAMPLE ID --->	5556-04		5556-05		5556-06		5556-01		5556-07		5556-08	
	ID FROM REPORT -->	LF6S000102		LF6S000104		LF6S000109		LF6C000109		LF6S000202		LF6S000204	
	SAMPLE DATE ----->	02/26/96		02/26/96		02/26/96		02/26/96		02/26/96		02/26/96	
	DATE EXTRACTED -->	02/28/96		02/28/96		02/28/96		02/28/96		02/28/96		02/28/96	
	DATE ANALYZED --->	03/07/96		03/07/96		03/08/96		03/07/96		03/08/96		03/08/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ----------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL
132-64-9	Dibenzofuran	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
121-14-2	2,4-Dinitrotoluene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
84-66-2	Diethylphthalate	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
7005-72-3	4-Chlorophenylphenylether	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
86-73-7	Fluorene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
100-01-6	4-Nitroaniline	1800.	U	1800.	U	1800.	U	1800.	U	1900.	U	1800.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	1800.	U	1800.	U	1800.	U	1800.	U	1900.	U	1800.	U
86-30-6	N-Nitrosodiphenylamine	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
101-55-3	4-Bromophenyl-phenylether	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
118-74-1	Hexachlorobenzene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
87-86-5	Pentachlorophenol	1800.	U	1800.	U	1800.	U	1800.	U	1900.	U	1800.	U
85-01-8	Phenanthrene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
120-12-7	Anthracene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
84-74-2	Di-n-butylphthalate	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
206-44-0	Fluoranthene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
129-00-0	Pyrene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
85-68-7	Butylbenzylphthalate	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
91-94-1	3,3'-Dichlorobenzidine	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
56-55-3	Benzo(a)anthracene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
218-01-9	Chrysene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
117-84-0	Di-n-octyl phthalate	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
205-99-2	Benzo(b)fluoranthene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
207-08-9	Benzo(k)fluoranthene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
50-32-8	Benzo(a)pyrene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
193-39-5	Indeno(1,2,3-cd)pyrene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
53-70-3	Dibenz(a,h)anthracene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
191-24-2	Benzo(g,h,i)perylene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
110-86-1	Pyridine	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
62-75-9	N-Nitrosodimethylamine	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
109-06-8	2-Picoline	1800.	U	1800.	U	1800.	U	1800.	U	1900.	U	1800.	U
10595-95-6	N-Nitrosomethylethylamine	1800.	U	1800.	U	1800.	U	1800.	U	1900.	U	1800.	U
66-27-3	Methyl methanesulfonate	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
55-18-5	N-Nitrosodiethylamine	1400.	U	1500.	U	1400.	U	1500.	U	1500.	U	1500.	U
62-50-0	Ethyl methanesulfonate	1400.	U	1500.	U	1400.	U	1500.	U	1500.	U	1500.	U
62-53-3	Aniline	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U

NAS FORT WORTH
NASFW LANDFILL #6

APX9-SVOA

SAMPLE ID ------->	LF6-S-0001-02	LF6-S-0001-04	LF6-S-0001-09	LF6-C-0001-09	LF6-S-0002-02	LF6-S-0002-04
ORIGINAL ID ----->	LF6S000102	LF6S000104	LF6S000109	LF6C000109	LF6S000202	LF6S000204
LAB SAMPLE ID -->	5556-04	5556-05	5556-06	5556-01	5556-07	5556-08
ID FROM REPORT -->	LF6S000102	LF6S000104	LF6S000109	LF6C000109	LF6S000202	LF6S000204
SAMPLE DATE ----->	02/26/96	02/26/96	02/26/96	02/26/96	02/26/96	02/26/96
DATE EXTRACTED -->	02/28/96	02/28/96	02/28/96	02/28/96	02/28/96	02/28/96
DATE ANALYZED --->	03/07/96	03/07/96	03/08/96	03/07/96	03/08/96	03/08/96
MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
UNITS ---------->	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG

CAS #	Parameter	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL
930-55-2	N-Nitrosopyrrolidine	3000.	U	3100.	U	3000.	U	3000.	U	3100.	U	3000.	U
98-86-2	Acetophenone	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
59-89-2	N-Nitrosomorpholine	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
95-53-4	o-Toluidine	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
100-75-4	N-Nitrosopiperidine	1400.	U	1500.	U	1400.	U	1500.	U	1500.	U	1500.	U
126-68-1	O,O,O-Triethylphosphorothioate	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
122-09-8	a,a-Dimethylphenethylamine	3000.	U	3100.	U	3000.	U	3000.	U	3100.	U	3000.	U
87-65-0	2,6-Dichlorophenol	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
1888-71-7	Hexachloropropene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
106-50-3	p-Phenylenediamine	7300.	U	7600.	U	7400.	U	7400.	U	7700.	U	7400.	U
924-16-3	N-Nitroso-di-n-butylamine	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
94-59-7	Safrole	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
95-94-3	1,2,4,5-Tetrachlorobenzene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
120-58-1	Isosafrole	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
130-15-4	1,4-Naphthoquinone	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
99-65-0	1,3-Dinitrobenzene	1400.	U	1500.	U	1400.	U	1500.	U	1500.	U	1500.	U
608-93-5	Pentachlorobenzene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
134-32-7	1-Naphthylamine	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
91-59-8	2-Naphthylamine	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
58-90-2	2,3,4,6-Tetrachlorophenol	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
99-55-8	5-Nitro-o-toluidine	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
122-39-4	Diphenylamine	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
465-73-6	Isodrin	360.	U	380.	U	370.	U	370.	U	380.	U	370.	U
99-35-4	1,3,5-Trinitrobenzene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
62-44-2	Phenacetin	1400.	U	1500.	U	1400.	U	1500.	U	1500.	U	1500.	U
297-97-2	Thionazin	1400.	U	1500.	U	1400.	U	1500.	U	1500.	U	1500.	U
92-67-1	4-Aminobiphenyl	1400.	U	1500.	U	1400.	U	1500.	U	1500.	U	1500.	U
82-68-8	Pentachloronitrobenzene	1400.	U	1500.	U	1400.	U	1500.	U	1500.	U	1500.	U
23950-58-5	Pronamide	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
88-85-7	Dinoseb	1400.	U	1500.	U	1400.	U	1500.	U	1500.	U	1500.	U
56-57-5	4-Nitroquinoline 1-oxide	3000.	U	3100.	U	3000.	U	3000.	U	3100.	U	3000.	U
91-80-5	Methapyrilene	7400.	U	7700.	U	7500.	U	7500.	U	7800.	U	7500.	U
140-57-8	Aramite	1400.	U	1500.	U	1400.	U	1500.	U	1500.	U	1500.	U
60-11-7	p-(Dimethylamino)azobenzene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
119-93-7	3,3-Dimethylbenzidine	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
53-96-3	Acetamidofluorene	1400.	U	1500.	U	1400.	U	1500.	U	1500.	U	1500.	U

NAS FORT WORTH
NASFW LANDFILL #6

APX9-SVOA																	
	SAMPLE ID ------->	LF6-S-0001-02		LF6-S-0001-04		LF6-S-0001-09		LF6-C-0001-09		LF6-S-0002-02		LF6-S-0002-04	
	ORIGINAL ID ----->	LF6S000102		LF6S000104		LF6S000109		LF6C000109		LF6S000202		LF6S000204	
	LAB SAMPLE ID --->	5556-04		5556-05		5556-06		5556-01		5556-07		5556-08	
	ID FROM REPORT -->	LF6S000102		LF6S000104		LF6S000109		LF6C000109		LF6S000202		LF6S000204	
	SAMPLE DATE ----->	02/26/96		02/26/96		02/26/96		02/26/96		02/26/96		02/26/96	
	DATE EXTRACTED -->	02/28/96		02/28/96		02/28/96		02/28/96		02/28/96		02/28/96	
	DATE ANALYZED --->	03/07/96		03/07/96		03/08/96		03/07/96		03/08/96		03/08/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL
57-97-6	7,12-Dimethylbenz(a)anthracene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
56-49-5	3-Methyl cholanthrene	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
70-30-4	Hexachlorophene	7300.	U	7600.	U	7400.	U	7400.	U	7700.	U	7400.	U
143-50-0	Kepone	14000.	U	15000.	U	14000.	U	15000.	U	15000.	U	15000.	U
510-15-6	Chlorobenzilate	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
298-00-0	Methyl parathion	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U
2303-16-4	Diallate	730.	U	760.	U	740.	U	740.	U	770.	U	740.	U

NAS FORT WORTH
NASFW LANDFILL #6

APX9-SVOA

SAMPLE ID ------->	LF6-S-0002-09
ORIGINAL ID ----->	LF6S000209
LAB SAMPLE ID --->	5556-09
ID FROM REPORT -->	LF6S000209
SAMPLE DATE ----->	02/26/96
DATE EXTRACTED -->	02/28/96
DATE ANALYZED --->	03/08/96
MATRIX ---------->	Soil
UNITS ----------->	UG/KG

CAS #	Parameter	5556	VAL
108-95-2	Phenol	750.	U
111-44-4	bis(2-Chloroethyl)ether	750.	U
95-57-8	2-Chlorophenol	750.	U
541-73-1	1,3-Dichlorobenzene	750.	U
106-46-7	1,4-Dichlorobenzene	750.	U
100-51-6	Benzyl alcohol	750.	U
95-50-1	1,2-Dichlorobenzene	750.	U
95-48-7	2-Methylphenol (o-Cresol)	750.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	750.	U
9999900-32-2	3-Methylphenol/4-Methylphenol	750.	U
621-64-7	N-Nitroso-di-n-propylamine	750.	U
67-72-1	Hexachloroethane	750.	U
98-95-3	Nitrobenzene	750.	U
78-59-1	Isophorone	750.	U
88-75-5	2-Nitrophenol	750.	U
105-67-9	2,4-Dimethylphenol	750.	U
111-91-1	bis(2-Chloroethoxy)methane	750.	U
120-83-2	2,4-Dichlorophenol	750.	U
120-82-1	1,2,4-Trichlorobenzene	750.	U
91-20-3	Naphthalene	750.	U
106-47-8	4-Chloroaniline	750.	U
87-68-3	Hexachlorobutadiene	750.	U
59-50-7	4-Chloro-3-methylphenol	750.	U
91-57-6	2-Methylnaphthalene	750.	U
77-47-4	Hexachlorocyclopentadiene	750.	U
88-06-2	2,4,6-Trichlorophenol	750.	U
95-95-4	2,4,5-Trichlorophenol	1800.	U
91-58-7	2-Chloronaphthalene	750.	U
88-74-4	2-Nitroaniline	1800.	U
131-11-3	Dimethyl phthalate	750.	U
208-96-8	Acenaphthylene	750.	U
606-20-2	2,6-Dinitrotoluene	750.	U
99-09-2	3-Nitroaniline	1800.	U
83-32-9	Acenaphthene	750.	U
51-28-5	2,4-Dinitrophenol	1800.	U
100-02-7	4-Nitrophenol	1800.	U

NAS FORT WORTH
NASFW LANDFILL #6

APX9-SVOA

SAMPLE ID ------->	LF6-S-0002-09
ORIGINAL ID ----->	LF6S000209
LAB SAMPLE ID --->	5556-09
ID FROM REPORT -->	LF6S000209
SAMPLE DATE ----->	02/26/96
DATE EXTRACTED -->	02/28/96
DATE ANALYZED --->	03/08/96
MATRIX ---------->	Soil
UNITS ----------->	UG/KG

CAS #	Parameter	5556	VAL
132-64-9	Dibenzofuran	750.	U
121-14-2	2,4-Dinitrotoluene	750.	U
84-66-2	Diethylphthalate	750.	U
7005-72-3	4-Chlorophenylphenylether	750.	U
86-73-7	Fluorene	750.	U
100-01-6	4-Nitroaniline	1800.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	1800.	U
86-30-6	N-Nitrosodiphenylamine	750.	U
101-55-3	4-Bromophenyl-phenylether	750.	U
118-74-1	Hexachlorobenzene	750.	U
87-86-5	Pentachlorophenol	1800.	U
85-01-8	Phenanthrene	750.	U
120-12-7	Anthracene	750.	U
84-74-2	Di-n-butylphthalate	750.	U
206-44-0	Fluoranthene	750.	U
129-00-0	Pyrene	750.	U
85-68-7	Butylbenzylphthalate	750.	U
91-94-1	3,3'-Dichlorobenzidine	750.	U
56-55-3	Benzo(a)anthracene	750.	U
218-01-9	Chrysene	750.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	750.	U
117-84-0	Di-n-octyl phthalate	750.	U
205-99-2	Benzo(b)fluoranthene	750.	U
207-08-9	Benzo(k)fluoranthene	750.	U
50-32-8	Benzo(a)pyrene	750.	U
193-39-5	Indeno(1,2,3-cd)pyrene	750.	U
53-70-3	Dibenz(a,h)anthracene	750.	U
191-24-2	Benzo(g,h,i)perylene	750.	U
110-86-1	Pyridine	750.	U
62-75-9	N-Nitrosodimethylamine	750.	U
109-06-8	2-Picoline	1800.	U
10595-95-6	N-Nitrosomethylethylamine	1800.	U
66-27-3	Methyl methanesulfonate	750.	U
55-18-5	N-Nitrosodiethylamine	1500.	U
62-50-0	Ethyl methanesulfonate	1500.	U
62-53-3	Aniline	750.	U

NAS FORT WORTH
NASFW LANDFILL #6

APX9-SVOA

SAMPLE ID ------->	LF6-S-0002-09
ORIGINAL ID ----->	LF6S000209
LAB SAMPLE ID --->	5556-09
ID FROM REPORT -->	LF6S000209
SAMPLE DATE ----->	02/26/96
DATE EXTRACTED -->	02/28/96
DATE ANALYZED --->	03/08/96
MATRIX ---------->	Soil
UNITS ---------->	UG/KG

CAS #	Parameter	5556	VAL
930-55-2	N-Nitrosopyrrolidine	3100.	U
98-86-2	Acetophenone	750.	U
59-89-2	N-Nitrosomorpholine	750.	U
95-53-4	o-Toluidine	750.	U
100-75-4	N-Nitrosopiperidine	1500.	U
126-68-1	O,O,O-Triethylphosphorothioate	750.	U
122-09-8	a,a-Dimethylphenethylamine	3100.	U
87-65-0	2,6-Dichlorophenol	750.	U
1888-71-7	Hexachloropropene	750.	U
106-50-3	p-Phenylenediamine	7500.	U
924-16-3	N-Nitroso-di-n-butylamine	750.	U
94-59-7	Safrole	750.	U
95-94-3	1,2,4,5-Tetrachlorobenzene	750.	U
120-58-1	Isosafrole	750.	U
130-15-4	1,4-Naphthoquinone	750.	U
99-65-0	1,3-Dinitrobenzene	1500.	U
608-93-5	Pentachlorobenzene	750.	U
134-32-7	1-Naphthylamine	750.	U
91-59-8	2-Naphthylamine	750.	U
58-90-2	2,3,4,6-Tetrachlorophenol	750.	U
99-55-8	5-Nitro-o-toluidine	750.	U
122-39-4	Diphenylamine	750.	U
465-73-6	Isodrin	380.	U
99-35-4	1,3,5-Trinitrobenzene	750.	U
62-44-2	Phenacetin	1500.	U
297-97-2	Thionazin	1500.	U
92-67-1	4-Aminobiphenyl	1500.	U
82-68-8	Pentachloronitrobenzene	1500.	U
23950-58-5	Pronamide	750.	U
88-85-7	Dinoseb	1500.	U
56-57-5	4-Nitroquinoline 1-oxide	3100.	U
91-80-5	Methapyrilene	7600.	U
140-57-8	Aramite	1500.	U
60-11-7	p-(Dimethylamino)azobenzene	750.	U
119-93-7	3,3-Dimethylbenzidine	750.	U
53-96-3	Acetamidofluorene	1500.	U

NAS FORT WORTH
NASFW LANDFILL #6

APX9-SVOA

SAMPLE ID ------->	LF6-S-0002-09
ORIGINAL ID ----->	LF6S000209
LAB SAMPLE ID --->	5556-09
ID FROM REPORT -->	LF6S000209
SAMPLE DATE ----->	02/26/96
DATE EXTRACTED -->	02/28/96
DATE ANALYZED --->	03/08/96
MATRIX ---------->	Soil
UNITS ---------->	UG/KG

CAS #	Parameter	5556	VAL
57-97-6	7,12-Dimethylbenz(a)anthracene	750.	U
56-49-5	3-Methyl cholanthrene	750.	U
70-30-4	Hexachlorophene	7500.	U
143-50-0	Kepone	15000.	U
510-15-6	Chlorobenzilate	750.	U
298-00-0	Methyl parathion	750.	U
2303-16-4	Diallate	750.	U

*** Validation Complete ***

NAS FORT WORTH
NASFW LANDFILL #6

APX9-VOA													
	SAMPLE ID ------->	LF6-S-0001-02		LF6-S-0001-04 RE		LF6-S-0001-09		LF6-C-0001-09		LF6-S-0002-02		LF6-S-0002-04	
	ORIGINAL ID ----->	LF6S000102		LF6S000104		LF6S000109		LF6C000109		LF6S000202		LF6S000204	
	LAB SAMPLE ID --->	5556-04		5556-05RE		5556-06		5556-01RE		5556-07		5556-08	
	ID FROM REPORT -->	LF6S000102		LF6S000104		LF6S000109		LF6C000109		LF6S000202		LF6S000204	
	SAMPLE DATE ----->	02/26/96		02/26/96		02/26/96		02/26/96		02/26/96		02/26/96	
	DATE ANALYZED --->	02/28/96		02/29/96		02/29/96		02/29/96		02/29/96		02/29/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL
74-87-3	Chloromethane	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
74-83-9	Bromomethane	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
75-01-4	Vinyl chloride	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
75-00-3	Chloroethane	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
75-09-2	Methylene chloride	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
67-64-1	Acetone	11.	U	12.	U	11.	U	11.	U	12.	U	11.	U
75-15-0	Carbon disulfide	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
75-35-4	1,1-Dichloroethene	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
75-34-3	1,1-Dichloroethane	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
156-60-5	trans-1,2-Dichloroethene	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
67-66-3	Chloroform	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
107-06-2	1,2-Dichloroethane	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
78-93-3	2-Butanone (MEK)	11.	U	12.	U	11.	U	11.	U	12.	U	11.	U
71-55-6	1,1,1-Trichloroethane	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
56-23-5	Carbon tetrachloride	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
108-05-4	Vinyl acetate	11.	U	12.	U	11.	U	11.	U	12.	U	11.	U
78-87-5	1,2-Dichloropropane	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
79-01-6	Trichloroethene	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
124-48-1	Dibromochloromethane	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
80-62-6	Methyl methacrylate	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
71-43-2	Benzene	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
75-25-2	Bromoform	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	3.	J	12.	U	11.	U	11.	U	12.	U	11.	U
591-78-6	2-Hexanone	11.	U	12.	U	11.	U	11.	U	12.	U	11.	U
127-18-4	Tetrachloroethene	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
108-88-3	Toluene	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
108-90-7	Chlorobenzene	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
100-41-4	Ethylbenzene	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
100-42-5	Styrene	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
1330-20-7	Xylene (Total)	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
75-71-8	Dichlorodifluoromethane	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
75-69-4	Trichlorofluoromethane	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
74-88-4	Methyl iodide	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U

*** Validation Complete ***

NAS FORT WORTH
NASFW LANDFILL #6

APX9-VOA						
SAMPLE ID ------->	LF6-S-0001-02	LF6-S-0001-04 RE	LF6-S-0001-09	LF6-C-0001-09	LF6-S-0002-02	LF6-S-0002-04
ORIGINAL ID ----->	LF6S000102	LF6S000104	LF6S000109	LF6C000109	LF6S000202	LF6S000204
LAB SAMPLE ID --->	5556-04	5556-05RE	5556-06	5556-01RE	5556-07	5556-08
ID FROM REPORT -->	LF6S000102	LF6S000104	LF6S000109	LF6C000109	LF6S000202	LF6S000204
SAMPLE DATE ----->	02/26/96	02/26/96	02/26/96	02/26/96	02/26/96	02/26/96
DATE ANALYZED --->	02/28/96	02/29/96	02/29/96	02/29/96	02/29/96	02/29/96
MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
UNITS ---------->	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG

CAS #	Parameter	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL
107-05-1	3-Chloropropene	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
107-12-0	Propionitrile	55.	UR	58.	UR	56.	UR	56.	UR	58.	UR	56.	UR
75-05-8	Acetonitrile	55.	UR	58.	UR	56.	UR	56.	UR	58.	UR	56.	UR
107-02-8	Acrolein	55.	UR	58.	UR	56.	UR	56.	U	58.	U	56.	UR
126-99-8	Chloroprene	11.	U	12.	U	11.	U	11.	U	12.	U	11.	U
107-13-1	Acrylonitrile	55.	U	58.	UR	56.	U	56.	U	58.	U	56.	U
123-91-1	1,4-Dioxane	55.	UR	58.	UR	56.	UR	56.	UR	58.	UR	56.	UR
126-98-7	Methacrylonitrile	55.	U	58.	U	56.	U	56.	U	58.	U	56.	U
74-95-3	Methylene bromide	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
78-83-1	Isobutyl alcohol	550.	UR	580.	UR	560.	UR	560.	UR	580.	UR	560.	UR
106-93-4	1, 2-Dibromoethane	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
630-20-6	1,1,1,2-Tetrachloroethane	6.	U	6.	UJ	6.	U	6.	U	6.	U	6.	U
95-47-6	o-Xylene	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
96-18-4	1,2,3-Trichloropropane	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
110-57-6	trans-1,4-Dichloro-2-butene	6.	U	6.	UJ	6.	U	6.	U	6.	U	6.	U
96-12-8	1,2-Dibromo-3-Chloropropane	6.	U	6.	UJ	6.	U	6.	U	6.	U	6.	U
97-63-2	Ethyl methacrylate	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
76-01-7	Pentachloroethane	6.	U	6.	UJ	6.	U	6.	U	6.	U	6.	U

*** Validation Complete ***

NAS FORT WORTH
NASFW LANDFILL #6

APX9-VOA

SAMPLE ID ------->	LF6-S-0002-09
ORIGINAL ID ----->	LF6S000209
LAB SAMPLE ID --->	5556-09
ID FROM REPORT -->	LF6S000209
SAMPLE DATE ----->	02/26/96
DATE ANALYZED --->	02/29/96
MATRIX ---------->	Soil
UNITS ----------->	UG/KG

CAS #	Parameter	5556	VAL
74-87-3	Chloromethane	6.	U
74-83-9	Bromomethane	6.	U
75-01-4	Vinyl chloride	6.	U
75-00-3	Chloroethane	6.	U
75-09-2	Methylene chloride	6.	U
67-64-1	Acetone	16.	U
75-15-0	Carbon disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
156-60-5	trans-1,2-Dichloroethene	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone (MEK)	11.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon tetrachloride	6.	U
108-05-4	Vinyl acetate	11.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
80-62-6	Methyl methacrylate	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	11.	U
591-78-6	2-Hexanone	11.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	6.	U
108-90-7	Chlorobenzene	6.	U
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (Total)	6.	U
75-71-8	Dichlorodifluoromethane	6.	U
75-69-4	Trichlorofluoromethane	6.	U
74-88-4	Methyl iodide	6.	U

NAS FORT WORTH
NASFW LANDFILL #6

APX9-VOA

SAMPLE ID ------->	LF6-S-0002-09
ORIGINAL ID ----->	LF6S000209
LAB SAMPLE ID --->	5556-09
ID FROM REPORT -->	LF6S000209
SAMPLE DATE ----->	02/26/96
DATE ANALYZED --->	02/29/96
MATRIX ---------->	Soil
UNITS ---------->	UG/KG

CAS #	Parameter	5556	VAL
107-05-1	3-Chloropropene	6.	U
107-12-0	Propionitrile	57.	UR
75-05-8	Acetonitrile	57.	UR
107-02-8	Acrolein	57.	UR
126-99-8	Chloroprene	11.	U
107-13-1	Acrylonitrile	57.	U
123-91-1	1,4-Dioxane	57.	UR
126-98-7	Methacrylonitrile	57.	U
74-95-3	Methylene bromide	6.	U
78-83-1	Isobutyl alcohol	570.	UR
106-93-4	1, 2-Dibromoethane	6.	U
630-20-6	1,1,1,2-Tetrachloroethane	6.	U
95-47-6	o-Xylene	6.	U
96-18-4	1,2,3-Trichloropropane	6.	U
110-57-6	trans-1,4-Dichloro-2-butene	6.	U
96-12-8	1,2-Dibromo-3-Chloropropane	6.	U
97-63-2	Ethyl methacrylate	6.	U
76-01-7	Pentachloroethane	6.	U

NAS FORT WORTH
NASFW LANDFILL #6

DIOXIN																			
	SAMPLE ID ------->	LF6-S-0001-02			LF6-S-0001-04			LF6-S-0001-09			LF6-C-0001-09			LF6-S-0002-02			LF6-S-0002-04		
	ORIGINAL ID ----->	LF6S000102			LF6S000104			LF6S000109			LF6C000109			LF6S000202			LF6S000204		
	LAB SAMPLE ID --->	5556-04			5556-05			5556-06			5556-01			5556-07			5556-08		
	ID FROM REPORT -->	LF6S000102			LF6S000104			LF6S000109			LF6C000109			LF6S000202			LF6S000204		
	SAMPLE DATE ----->	02/26/96			02/26/96			02/26/96			02/26/96			02/26/96			02/26/96		
	DATE EXTRACTED -->	03/05/96			03/05/96			03/05/96			03/05/96			03/05/96			03/05/96		
	DATE ANALYZED --->	03/13/96			03/13/96			03/13/96			03/13/96			03/13/96			03/13/96		
	MATRIX ---------->	Soil			Soil			Soil			Soil			Soil			Soil		
	UNITS ---------->	UG/KG			UG/KG			UG/KG			UG/KG			UG/KG			UG/KG		
CAS #	Parameter	5556		VAL	5556		VAL	5556		VAL	5556		VAL	5556		VAL	5556		VAL
1746-01-6	2378-TCDD		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U
40321-76-4	12378-PeCDD		0.4	U		0.5	U		0.4	U		0.4	U		0.5	U		0.4	U
39227-28-6	123478-HxCDD		0.4	U		0.5	U		0.4	U		0.4	U		0.5	U		0.4	U
57653-85-7	123678-HxCDD		0.2	U		0.2	U		0.2	U		0.2	U		0.2	U		0.2	U
19408-74-3	123789-HxCDD		0.2	U		0.2	U		0.2	U		0.2	U		0.2	U		0.2	U
35822-46-9	1234678-HpCDD		0.7	U		0.7	U		0.7	U		0.7	U		0.7	U		0.7	U
3268-87-9	OCDD		0.3	U		0.4	U		0.3	U		0.3	U		0.4	U		0.3	U
51207-31-9	2378-TCDF		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U
57117-41-6	12378-PeCDF		0.4	U		0.5	U		0.4	U		0.4	U		0.5	U		0.4	U
57117-31-4	23478-PeCDF		0.6	U		0.6	U		0.6	U		0.6	U		0.6	U		0.6	U
70648-26-9	123478-HxCDF		0.6	U		0.6	U		0.6	U		0.6	U		0.6	U		0.6	U
57117-44-9	123678-HxCDF		0.3	U		0.4	U		0.3	U		0.3	U		0.4	U		0.3	U
60851-34-5	234678-HxCDF		0.4	U		0.5	U		0.4	U		0.4	U		0.5	U		0.4	U
72918-21-9	123789-HxCDF		0.3	U		0.4	U		0.3	U		0.3	U		0.4	U		0.3	U
67562-39-4	1234678-HpCDF		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U
55673-89-7	1234789-HpCDF		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U
39001-02-0	OCDF		0.3	U		0.4	U		0.3	U		0.3	U		0.4	U		0.3	U
41903-57-5	Total Tetra-Dioxins		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U
36088-22-9	Total Penta-Dioxins		0.4	U		0.5	U		0.4	U		0.4	U		0.5	U		0.4	U
34465-46-8	Total Hexa-Dioxins		0.3	U		0.4	U		0.3	U		0.3	U		0.4	U		0.3	U
37871-00-4	Total Hepta-Dioxins		0.7	U		0.7	U		0.7	U		0.7	U		0.7	U		0.7	U
55722-27-5	Total Tetra-Furans		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U
30602-15-4	Total Penta-Furans		0.4	U		0.5	U		0.4	U		0.4	U		0.5	U		0.4	U
55684-94-1	Total Hexa-Furans		0.4	U		0.5	U		0.4	U		0.4	U		0.5	U		0.4	U
38998-75-3	Total Hepta-Furans		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U

*** Validation Complete ***

NAS FORT WORTH
NASFW LANDFILL #6

DIOXIN

SAMPLE ID ------->	LF6-S-0002-09
ORIGINAL ID ----->	LF6S000209
LAB SAMPLE ID --->	5556-09
ID FROM REPORT -->	LF6S000209
SAMPLE DATE ----->	02/26/96
DATE EXTRACTED -->	03/05/96
DATE ANALYZED --->	03/13/96
MATRIX ---------->	Soil
UNITS ---------->	UG/KG

CAS #	Parameter	5556	VAL
1746-01-6	2378-TCDD	0.1	U
40321-76-4	12378-PeCDD	0.4	U
39227-28-6	123478-HxCDD	0.4	U
57653-85-7	123678-HxCDD	0.2	U
19408-74-3	123789-HxCDD	0.2	U
35822-46-9	1234678-HpCDD	0.7	U
3268-87-9	OCDD	0.3	U
51207-31-9	2378-TCDF	0.1	U
57117-41-6	12378-PeCDF	0.4	U
57117-31-4	23478-PeCDF	0.6	U
70648-26-9	123478-HxCDF	0.6	U
57117-44-9	123678-HxCDF	0.3	U
60851-34-5	234678-HxCDF	0.4	U
72918-21-9	123789-HxCDF	0.3	U
67562-39-4	1234678-HpCDF	0.1	U
55673-89-7	1234789-HpCDF	0.1	U
39001-02-0	OCDF	0.3	U
41903-57-5	Total Tetra-Dioxins	0.1	U
36088-22-9	Total Penta-Dioxins	0.4	U
34465-46-8	Total Hexa-Dioxins	0.3	U
37871-00-4	Total Hepta-Dioxins	0.7	U
55722-27-5	Total Tetra-Furans	0.1	U
30602-15-4	Total Penta-Furans	0.4	U
55684-94-1	Total Hexa-Furans	0.4	U
38998-75-3	Total Hepta-Furans	0.1	U

*** Validation Complete ***

NAS FORT WORTH
NASFW LANDFILL #6

HERB													
	SAMPLE ID ------->	LF6-S-0001-02		LF6-S-0001-04		LF6-S-0001-09		LF6-C-0001-09		LF6-S-0002-02		LF6-S-0002-04	
	ORIGINAL ID ----->	LF6S000102		LF6S000104		LF6S000109		LF6C000109		LF6S000202		LF6S000204	
	LAB SAMPLE ID --->	5556-04		5556-05		5556-06		5556-01		5556-07		5556-08	
	ID FROM REPORT -->	LF6S000102		LF6S000104		LF6S000109		LF6C000109		LF6S000202		LF6S000204	
	SAMPLE DATE ----->	02/26/96		02/26/96		02/26/96		02/26/96		02/26/96		02/26/96	
	DATE EXTRACTED -->	03/04/96		03/04/96		03/04/96		03/04/96		03/04/96		03/04/96	
	DATE ANALYZED --->	03/15/96		03/15/96		03/15/96		03/15/96		03/15/96		03/15/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL
93-72-1	2,4,5-TP (Silvex)	110.	U	116.	U	112.	U	112.	U	117.	U	112.	U
93-76-5	2,4,5-T	110.	U	116.	U	112.	U	112.	U	117.	U	112.	U
94-75-7	2,4-D	265.	U	278.	U	268.	U	270.	U	280.	U	270.	U
94-82-6	2,4-DB	201.	U	211.	U	203.	U	205.	U	212.	U	205.	U

NAS FORT WORTH
NASFW LANDFILL #6

HERB

SAMPLE ID ------->	LF6-S-0002-09
ORIGINAL ID ----->	LF6S000209
LAB SAMPLE ID --->	5556-09
ID FROM REPORT -->	LF6S000209
SAMPLE DATE ----->	02/26/96
DATE EXTRACTED -->	03/04/96
DATE ANALYZED --->	03/15/96
MATRIX ---------->	Soil
UNITS ----------->	UG/KG

CAS #	Parameter	5556	VAL
93-72-1	2,4,5-TP (Silvex)	114.	U
93-76-5	2,4,5-T	114.	U
94-75-7	2,4-D	274.	U
94-82-6	2,4-DB	208.	U

*** Validation Complete ***

NAS FORT WORTH
NASFW LANDFILL #6

OP PEST													
	SAMPLE ID ------->	LF6-S-0001-02		LF6-S-0001-04		LF6-S-0001-09		LF6-C-0001-09		LF6-S-0002-02		LF6-S-0002-04	
	ORIGINAL ID ----->	LF6S000102		LF6S000104		LF6S000109		LF6C000109		LF6S000202		LF6S000204	
	LAB SAMPLE ID --->	5556-04RX		5556-05		5556-06		5556-01		5556-07		5556-08	
	ID FROM REPORT -->	LF6S000102		LF6S000104		LF6S000109		LF6C000109		LF6S000202		LF6S000204	
	SAMPLE DATE ----->	02/26/96		02/26/96		02/26/96		02/26/96		02/26/96		02/26/96	
	DATE EXTRACTED -->	03/11/96		02/28/96		02/28/96		02/28/96		02/28/96		02/28/96	
	DATE ANALYZED --->	03/20/96		03/09/96		03/09/96		03/09/96		03/09/96		03/09/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL
60-51-5	Dimethoate	143.	U	150.	U	145.	U	146.	UJ	151.	U	146.	U
298-04-4	Disulfoton	38.6	U	40.5	U	39.	U	39.4	UJ	40.7	U	39.3	U
52-85-7	Famphur	110.	U	116.	U	112.	U	112.	UJ	116.	U	112.	U
56-38-2	Parathion	33.1	U	34.7	U	33.5	U	33.7	UJ	34.9	U	33.7	U
298-02-2	Phorate	22.1	U	23.1	U	22.3	U	22.5	UJ	23.3	U	22.5	U
3689-24-5	Sulfotep	38.6	U	40.5	U	39.	U	39.4	UJ	40.7	U	39.3	U

*** Validation Complete ***

NAS FORT WORTH
NASFW LANDFILL #6

OP PEST

SAMPLE ID ------->	LF6-S-0002-09
ORIGINAL ID ----->	LF6S000209
LAB SAMPLE ID --->	5556-09
ID FROM REPORT -->	LF6S000209
SAMPLE DATE ----->	02/26/96
DATE EXTRACTED -->	02/28/96
DATE ANALYZED --->	03/09/96
MATRIX ---------->	Soil
UNITS ---------->	UG/KG

CAS #	Parameter	5556	VAL
60-51-5	Dimethoate	148.	UJ
298-04-4	Disulfoton	40.	UJ
52-85-7	Famphur	114.	UJ
56-38-2	Parathion	34.3	UJ
298-02-2	Phorate	22.8	UJ
3689-24-5	Sulfotep	40.	UJ

*** Validation Complete ***

NAS FORT WORTH
NASFW LANDFILL #6

WET CHEM													
	SAMPLE ID ------->	LF6-S-0001-02		LF6-S-0001-04		LF6-S-0001-09		LF6-C-0001-09		LF6-S-0002-02		LF6-S-0002-04	
	ORIGINAL ID ----->	LF6S000102		LF6S000104		LF6S000109		LF6C000109		LF6S000202		LF6S000204	
	LAB SAMPLE ID --->	5556-04		5556-05		5556-06		5556-01		5556-07		5556-08	
	ID FROM REPORT -->	LF6S000102		LF6S000104		LF6S000109		LF6C000109		LF6S000202		LF6S000204	
	SAMPLE DATE ----->	02/26/96		02/26/96		02/26/96		02/26/96		02/26/96		02/26/96	
	DATE ANALYZED --->	03/22/96		03/22/96		03/22/96		03/22/96		03/22/96		03/22/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL	5556	VAL
18496-25-8	Sulfide	690.	U	1450.	U	1400.	U	1410.	U	1460.	U	703.	U
57-12-5	Cyanide (CN)	0.552	U	0.579	U	0.559	U	0.652	U	0.583	U	0.562	U

*** Validation Complete ***

NAS FORT WORTH
NASFW LANDFILL #6

WET CHEM							
	SAMPLE ID ------->	LF6-S-0002-09					
	ORIGINAL ID ----->	LF6S000209					
	LAB SAMPLE ID --->	5556-09					
	ID FROM REPORT -->	LF6S000209					
	SAMPLE DATE ----->	02/26/96					
	DATE ANALYZED --->	03/22/96					
	MATRIX ---------->	Soil					
	UNITS ---------->	MG/KG					
CAS #	Parameter	5556	VAL				
18496-25-8	Sulfide	1430.	U				
57-12-5	Cyanide (CN)	0.571	U				

*** Validation Complete ***

TAB

C

ATTACHMENT C
DATA VALIDATION REPORT

1.0 INTRODUCTION

This report presents the analytical validation for data collected during the NAS Fort Worth Landfill #6 investigation and the quality assurance/quality control (QA/QC) evaluation of those data. The purpose of the data validation is to verify that the QC requirements of the data set have been met and to characterize the weakness data. Data validation is the systematic and independent verification of data qualify. The laboratory does not perform data validation; validation is independent of the laboratory. It requires defined acceptable criteria to provide assurance that the data are adequate for the intended use. The process consists of data screening, checking, auditing, verification, flagging, certification, and review.

Seven soil, one field blank, one equipment blank, and one trip blank (for volatile organic analyses only) samples were collected at NAS Fort Worth Landfill #6 on February 26, 1996. The samples were analyzed by Maxwell Laboratories, S-Cubed Division of San Diego, California and data was reported using USEPA Data Quality Objectives (DQO) Level IV. The analytical methods and DQO laboratory deliverables are summarized in Table 1-1.

Table 1-1
NAS Fort Worth Analytical Program

Analytical Method	Data Quality Level	Method Reference
Volatile Organic Compounds (VOCs)	IV	SW-846 8240, 40 CFR Part 264 Appendix IX List
Semivolatile Organic Compounds (SVOCs)	IV	SW-846 8270, 40 CFR Part 264 Appendix IX List
Pesticides/Polychlorinated Biphenyls (Pest/PCBs)	IV	SW-846 8080, 40 CFR Part 264 Appendix IX List
Chlorinated Herbicides	IV	SW-846 8150, 40 CFR Part 264 Appendix IX List
Organophosphorus Pesticides (OP Pesticides)	IV	SW-846 8140, 40 CFR Part 264 Appendix IX List
Polychlorinated Dioxins and Furans	IV	SW-846 8280, 40 CFR Part 264 Appendix IX List

Table 1-1 NAS Fort Worth Analytical Program		
Analytical Method	**Data Quality Level**	**Method Reference**
Metals	IV	SW-846 6010/7421, 40 CFR Part 264 Appendix IX List
Cyanide	IV	SW-846 9010
Sulfide	IV	USEPA 376.2, modified for soil analysis

The references for the methods listed in Table 1-1 were obtained from the following sources:

- USEPA Office of Solid Waste and Emergency Response (OSWER), *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846), 3rd Edition, revised July 1992.

- USEPA Environmental Monitoring and Support Laboratory, *Methods for Chemical Analysis of Water and Wastes* (EPA-600/4-79-020, revised March 1983).

1.1 Data Assessment and Qualifiers

The USEPA methods described in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, and *Methods for Chemical Analysis of Water and Wastes* define quality control criteria that the laboratory must meet but the methods do not address data evaluation from a user's perspective. Evaluation criteria for organics are available in *USEPA Contract Laboratory National Functional Guidelines for Organic Data Review* (Organic Functional Guidelines), February 1994, EPA-540/R-94/012. Inorganic criteria are available in *USEPA Contract Laboratory National Functional Guidelines for Inorganic Data Review* (Inorganic Functional Guidelines), February 1994, EPA-540/R-94/013. Both documents were used throughout the data evaluation process when the analytical methods did not address data usability.

Organic data evaluation for samples collected at NAS Fort Worth included the following parameters:

- Holding times
- instrument performance checks
- Surrogate spike recoveries
- Instrument calibration
- Matrix spike and matrix spike duplicates (MS/MSD)
- Blank analysis
- Internal standard performance
- Compound quantitation
- Field duplicate precision
- Compound Quantitation

Inorganic data evaluation included the following parameters:

- Holding times
- Instrument calibration
- Matrix spike results (MS)
- Laboratory duplicates
- Blank analysis
- ICP interference check samples
- ICP serial dilutions
- Laboratory control sample (LCS) results
- Field duplicate precision

According to Functional Guidelines, when the QC parameters do not fall within the specific method guidelines, the data evaluator annotates or "flags" the corresponding compounds where deficiencies were found. The data from NAS Fort Worth were evaluated using this approach. The following validation flags were used to annotate data exhibiting laboratory and/or field deficiencies or problems:

1.2 Validation Qualifiers

U **Undetected** — The analyte was found in a sample, but at a concentration less than 10 times the blank concentration for common organic constituents (methylene chloride, acetone, 2-butanone, and phthalate esters) or five times the blank concentration for other constituents; the associated value shown is the quantitation limit after validation blank correction.

J **Estimated Value** — One or more QC parameters were outside control limits.

UJ **Undetected and Estimated** — The analyte was analyzed for but not detected above the listed estimated quantitation limit; the quantitation limit is estimated because one or more QC parameters was outside control limits.

R/UR **Unusable Data** — One or more QC parameters grossly exceeded control limits.

These validation flags were applied to data where data deficiencies were noted during validation. Because the laboratory uses some of the same qualifiers during analyses, laboratory qualifiers "U" and "J" remained on the data unless superseded by a validation qualifier (e.g., "UJ", "UR"). Laboratory qualifiers which remained on the data after validation are described below:

1.3 Laboratory Qualifiers

U **Undetected** — The analyte was analyzed for but not detected above the Practical Quantitation Limit (PQL)

J **Estimated Value Below PQL** — The analyte was detected below the PQL and is estimated.

2.0 ORGANIC DATA

2.1 Holding Times

All samples were received by the laboratory in good condition with the proper custody documents intact. All technical holding times were found to be within method requirements.

2.2 Calibrations

Volatiles: All GC/MS performance checks were within criteria. Several compounds had relative response factors (RRFs) outside the QC window in the initial and continuing calibration. The following compounds were flagged "UR" in all soil samples because the RRF was below the recommended limit of 0.05: propionitrile, acrolein, aceonitrile, 1,4-dioxane, methacrylonitrile, and isobutyl alcohol.

Semivolatiles: All GC/MS performance checks were within criteria. In the initial and continuing calibrations, several compounds had percent relative standard deviations (%RSDs) and percent differences (%Ds) outside acceptable criteria but no positive results were affected. The undetected results were not flagged because all the %RSDs and %Ds were less than 50%.

Pesticides/PCBs: All pesticide/PCB calibration criteria were met.

Herbicides: Due to an autosampler failure, second column results were not obtained. The method states that second column confirmation is required if positive results are reported. There were no samples with positive results. Therefore, no action was taken during this data review. All other calibration criteria were met.

OP Pesticides: All initial calibration criteria were met. In the continuing calibrations, several compounds had %Ds outside acceptable criteria but no positive results were affected. The

undetected results were not flagged because all the %Ds for the primary column were less than 50%.

Dioxins/Furans: All GC/MS performance checks were within criteria. In addition, all dioxin/furan calibration criteria were met.

2.3 Blanks

All laboratory blanks for all organic methods were free from contamination. The volatile trip blank was also free from contamination. Equipment blank LF6E022696 and field blank LF6F022696 only contained volatile contamination. The equipment blank and field blank contained acetone at concentrations of 47 μg/L and 37 μg/L, respectively. 2-Butanone was detected in the equipment and field blanks at concentrations of 9 μg/L and 6 μg/L, respectively. Acetone in sample LF6S000209 was flagged non-detect "U" due to the presence of acetone in the field blanks. No other samples contained either acetone or 2-butanone.

2.4 Matrix Spikes

All matrix spike/matrix spike duplicate criteria were met for all analytical methods.

2.5 Surrogates

In the OP Pesticide fraction, samples LF6S000109 (37%/28.6%) and LF6S000209 (28%/23%) were reanalyzed due to low surrogate recoveries. The reanalyzed samples had lower surrogate recoveries than the original samples; therefore, the first results were used. Samples LF6S000109 and LF6S000209 had no positive results, therefore, all undetected values were flagged "UJ" in these two samples.

All surrogate criteria were met for the remaining organic methods.

2.6 GC/MS Internal Standards

All SVOC and dioxin/furan internal standards were within QC criteria. Sample LF6S000104 was reanalyzed because three internal standards had area counts outside the lower QC limit. The reanalyzed sample only had one internal standard (1,4-dichlorobenzene$_{d4}$) with area count outside the lower QC limit. Therefore, the reanalyzed sample was deemed to be the more representative analysis. Compounds associated with 1,4-dichlorobenzene$_{d4}$ in sample LF6S000104RE were flagged "UJ" because they were all undetect.

2.7 Field Duplicates

All field duplicate precision criteria were met for all methods.

3.0 INORGANIC ANALYSIS

3.1 Holding Times

All samples were received by the laboratory in good condition with the proper custody documents intact. All sample holding times were within method requirements.

3.2 Calibration:

All calibration criteria were met for metals, cyanide and sulfide analyses.

3.3 Blanks

All method and field blanks were contaminant-free for cyanide and sulfide. Several elements were detected in the preparation, calibration, field and equipment blanks. However, most elements found in the blanks had no affect on the samples because the sample concentrations were greater than five times the blank concentration. Only thallium in samples LF6S000109 and LF6C000109 were flagged "U" due to blank contamination.

3.4 ICP Interference Check Sample Analyses

Tin had an ICP check recovery of 89.4% which was below the lower QC limit of 90%. Therefore, all tin soil results were flagged "UJ", indicating a possible low bias.

3.5 ICP Serial Dilutions

All ICP Serial dilution results were within QC limits.

3.6 Laboratory Control Sample Analyses

All laboratory control sample results were within QC limits.

3.7 Laboratory Duplicates/Spikes

All laboratory duplicate results were within QC limits. However, antimony and selenium had percent recoveries of 35.1% and 0%, respectively. All antimony results were undetected and were flagged "UJ", indicating a potential low bias. All selenium results were also undetected but were flagged "UR" indicating an extreme low bias and matrix interference.

3.8 Field Duplicates

The duplicate results were found to be in close agreement with the original results for soil matrices.

4.0 SUMMARY

Completeness: Completeness is defined as the percentage of measurements made which are judged to be valid. All of the samples analyzed for the NAS Fort Worth Landfill were determined to be valid with some qualification, except for the results flagged "UR". There were 1778 total measurements (number of unique sample results). Of this total, 41 were flagged "UR" (98 percent completeness). There were no positive results rejected. Therefore, the data met the project completeness goal.

Comparability: Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. Comparability is assured through the use of established methods of field sampling by experienced field personnel and laboratory analysis as specified by EPA protocols. All samples for the NAS Fort Worth Landfill were collected and analyzed using established USEPA guidelines.

5.0 CONCLUSION

The overall data quality of the analytical work done at NAS Fort Worth, except for the undetected sample results that were qualified as unusable, were considered to be satisfactory and usable for interpretation and remediation.

FINAL PAGE

ADMINISTRATIVE RECORD

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ADMINISTRATIVE RECORD

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