EPA Region 5 Records Ctr.

357456

SITE INSPECTION REPORT
FOR
NORTH CHICAGO-[redacted]
NORTH CHICAGO, ILLINOIS
F05-8704-065
ILD980605976
PAN: FIL0361SC

September, 20, 1988

ecology and environment, inc.

111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL 312-663-9415

International Specialists in the Environment

MEMORANDUM

DATE: September, 20, 1988

TO: File

FROM: Kurt Sims K. S.

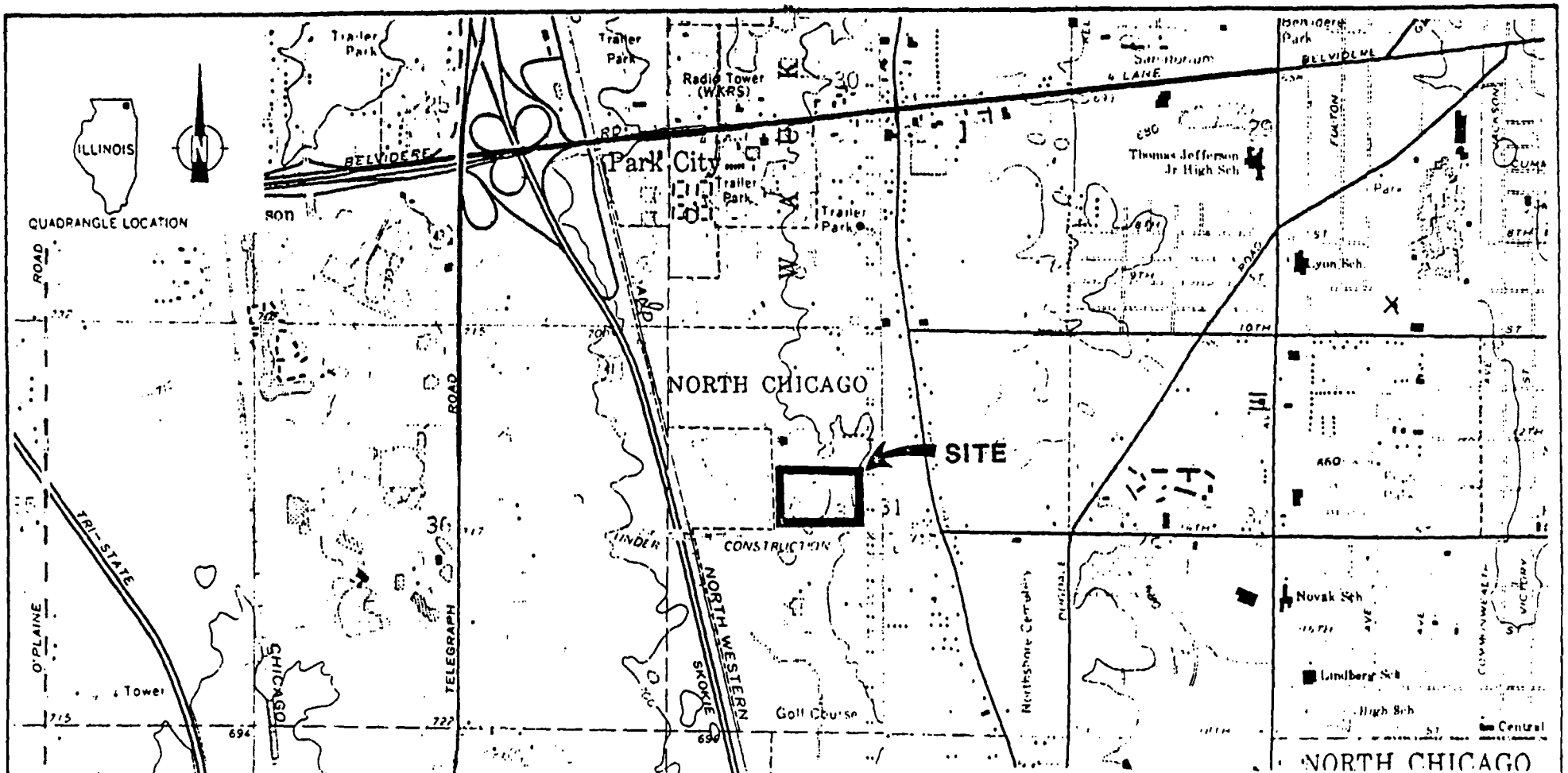
SUBJECT: Illinois/F05-8704-065/FIL0361SC
Lake County/North Chicago-BFI Landfill
ILD980605976

North Chicago-BFI Landfill is a closed landfill located in the town of North Chicago, Illinois, near Greenbay Road and 14th Street. The site was originally inspected by an Ecology and Environment, Inc., Field Investigation Team (E & E-FIT) on December 17, 1986. The site inspection report was submitted to the United States Environmental Protection Agency (U.S. EPA) on December 29, 1986 under Technical Directive Document (TDD) F05-8612-034. During the original site inspection, an on-site leachate seep was observed and photographed. Sampling had not been planned for the initial inspection. A followup site inspection that included sampling of the leachate seep was tasked to E & E-FIT. On August 18, 1987, E & E-FIT collected samples from the leachate seep and also collected a background soil sample.

Prior to collection of the samples, a heavy rainfall had occurred. The precise location of the leachate seep was difficult to determine because of the large amount of surface water runoff present at the site. A dark-stained organic material was observed at the point of the leachate seep. Surface soil sample S1 was collected from the seep. Surface soil sample S2 was collected from a location south of 14th Street in a prairie field and was used as a background sample. No other potential sampling points were observed on-site. Analysis of S1 did not reveal contamination levels greater than background levels. (See data summary sheets for complete sample analysis data.)

0196:4

recycled paper



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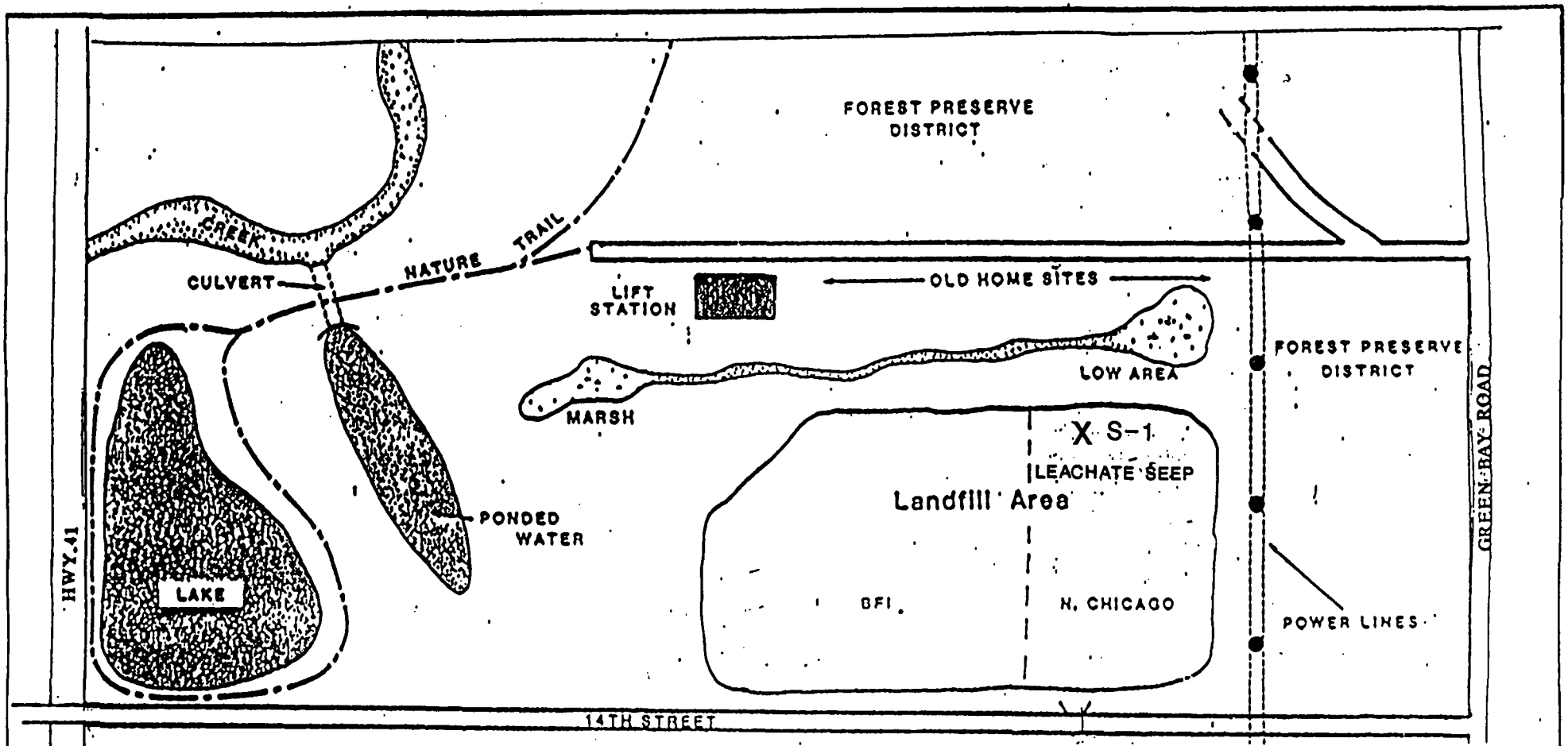
TITLE: Site Location Map	FIGURE #: 1
SITE: N. Chicago/BFI Landfill	SCALE: 1 : 24,000
CITY: N. Chicago STATE: IL	P.A.N.: FIL0361SC
SOURCE: USGS LIBERTYVILLE AND WAUKEGAN QUADS.	DATE: 1960 REVISED: 1972 & 1980



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TITLE: SAMPLE LOCATION MAP	FIGURE #: 2
SITE: N.CHICAGO/BFI LANDFILL	SCALE: N.T.S.
CITY: NORTH CHICAGO STATE: ILLINOIS	P.A.N.: FIL0361SC
SOURCE: ON-SITE INSPECTION	DATE: 1987 REVISED: NA

ug/Kg

COMPOUND											
ITC	MEU 098	MEU 099									
DTC	ET 596	ET 597									
SAMPLE	S-1	S-2 BKG									
chloromethane											
bromomethane											
vinyl chloride											
chloroethane											
methylene chloride	6										
acetone	30	27									
carbon disulfide											
1,1-dichloroethene											
1,1-dichloroethane											
trans-1,2,-dichloroethene											
chloroform											
1,2-dichloroethane											
2-butanone											
1,1,1-trichloroethane											
carbon tetrachloride											
vinyl acetate											
bromodichloromethane											
1,1,2,2-tetrachloroethane											
1,2-dichloropropane											
trans-1,3-dichloropropene											
trichloroethene											
dibromochloromethane											
1,1,2-trichloroethane											
benzene											
cis-1,3-dichloropropene											
2-chloroethylvinylether											
bromoform											
2-hexanone											
4-methyl-2-pentanone											
tetrachloroethene											
toluene											
chlorobenzene											
ethylbenzene											
styrene											
total xylenes											
N-nitrosodimethylamine											
phenol											
aniline											
bis(2-chloroethyl)ether											
2-chlorophenol											
1,3-dichlorobenzene											
1,4-dichlorobenzene											
benzyl alcohol		330 J									
1,2-dichlorobenzene											
2-methylphenol											
bis(2-chloroisopropyl)ether											
4-methylphenol											
N-nitroso-di-n-propylamine											
hexachloroethane											
nitrobenzene											
isophrone											
2-nitrophenol											
2,4-dimethylphenol											
benzoic acid											
bis(2-chloroethoxy)methane											
2,4-dichlorophenol											
1,2,4-trichlorobenzene											
napthalene											
4-chloroaniline											
hexachlorobutadiene											
4-chloro-3-methylphenol											
2-methylnapthalene											
hexachlorocyclopentadiene											
2,4,6-trichlorophenol											
2,4,5-trichlorophenol											
2-chloronaphthalene											
2-nitroaniline											
dimethyl phthalate											
acenapthylene											
3-nitroaniline		1600 J									
acenaphthene											
2,4-dinitrophenol											
4-nitrophenol											
dibenzofuran											
2,4-dinitrotoluene											
2,6-dinitrotoluene											
diethylphthalate	130 J										
4-chlorophenyl-phenylether											
fluorene											
4-nitroaniline		1600 J									
4,6-dinitro-2-methylphenol											
N-nitrosodiphenylamine											
4-bromophenyl-phenylether											
hexachlorobenzene											

STATE ILLINOIS SITE NORTH CHI./BFI LF TDD FOS-8704-065 PAGE 1 OF 2, SET # 1

ug/Kg

COMPOUND											
	ITC	MEU 098	MEU 099								
	OTC	ET 596	ET 597								
	SAMPLE	S-1	S-2 BKG								
pentachlorophenol											
phenanthrene											
anthracene											
di-n-butylphthalate		160 J									
fluoranthene											
benzidine											
pyrene											
butylbenzylphthalate											
3,3'-dichlorobenzidine											
benzo(a)anthracene											
bis(2-ethylhexyl)phthalate											
chrysene											
di-n-octylphthalate											
benzo(b&k)fluoranthene											
benzo(a)pyrene											
indeno(1,2,3-cd)pyrene											
dibenzo(a,h)anthracene											
benzo(g,h,i)perylene											
alpha-BHC											
beta-BHC											
delta-BHC											
gamma-BHC(lindane)											
heptachlor											
aldrin											
heptachlor epoxide											
endosulfan I											
dieldrin											
4,4'-DDE											
endrin											
endosulfan II											
4,4'-DDD											
endrin aldehyde											
endosulfan sulfate											
4,4'-DDT											
methoxychlor											
endrin ketone											
chlordane											
toxaphene											
Aroclor-1016											
Aroclor-1221											
Aroclor-1232											
Aroclor-1242											
Aroclor-1248											
Aroclor-1254											
Aroclor-1260											
ELEMENT mg/Kg											
aluminum		5310	9150								
antimony											
arsenic		7.8	11								
barium		[30]	[64]								
beryllium			[0.65]								
cadmium											
calcium		77200	3480								
chromium		12	16								
cobalt			[13]								
copper		25	18								
iron		29100	17900								
lead		13	32 S								
magnesium		35900	3760								
manganese		648	785								
mercury											
nickel		[22]	[20]								
potassium		[1080]	[933]								
selenium											
silver											
sodium											
thallium											
tin											
vanadium		[15]	[22]								
zinc		93	73								
cyanide CHECK IF ANALYZED ( )											
TENTATIVELY IDENTIFIED ORGANICS											

INTRODUCTION TO DATA TABLES

A SUMMARY OF THE ANALYTICAL RESULTS FOR SAMPLES WHICH WERE TAKEN DURING FIELD ACTIVITIES CAN BE FOUND IN THE FOLOWING TABLES. ONLY DETECTABLE CONCENTRATIONS ARE REPORTED, HOWEVER, IF THE COMPOUND HAS A FOOTNOTE FOLLOWING THE VALUE, CONSULT THE DEFINITION OF THE FOOTNOTE PROVIDED BELOW. ADDITIONAL QA/QC INFORMATION IS PROVIDED IN THE ATTACHED DATA SHEETS.

I) REPORTING UNITS
- A) ORGANICS
  - 1) Water Samples - ug/l or ppb (parts per billion)
  - 2) Soils or Sediments - ug/kg or ppb (parts per billion)
- B) METALS
  - 1) Water Samples - ug/l or ppb
  - 2) Soils or sediments - mg/kg or ppm

II) DEFINITION OF FOOTNOTES TO ANALYTICAL DATA

A) ORGANICS

Footnote	Definition	Interpretation
UJ	Detection Limit (D.L.) is estimated because of a Quality Control (QC) protocol. D.L. is possibly above or below Contract Required Detection Limit (CRDL).	Compound was not detected
UB	Compound found in laboratory blank. No Value above CRDL.	Compound was not detected
UJB	Compound found in laboratory blank, but not detected in sample. CRDL is estimated because of a QC protocol.	Compound was not detected
B	Compound found in blank. Two interpretations are possible:	
	a) If sample value is equivalent to D.L. to 5x blank concentration	Compound value is semi-quantitative.
	b) If sample value is greater than 5x the blank concentration	Compound value is quantitative
JB	Compound found in blank, value is estimated because of QC protocol.	Compound value is semi-quantitative
R	Do Not Use Value. Major Violation of QC Protocol	Compound value is not usable.
C	Value adjusted for blank (an unacceptable procedure)	Compound value is semi-quantitative
J	Value is above CRDL and is an estimated value because of a QC protocol	Compound value is semi-quantitative
Q	No Analytical Result	Compound was not detected
N	Presumptive evidence for the presence of a compound as used for a Tentatively Identified Compound (TIC)	Compound value is semi-quantitative

B) METALS

FOOTNOTE	DEFINITION	INTERPRETATION
E	Estimated or not reported due to interference. See laboratory narrative.	Compound or element was not detected or value is semi-quantitative
s	Analysis by Method of Standard Additions (Look for a "+" Footnote)	Value is quantative
R	Spike recoveries outside QC protocols which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semiquantitative
*	Duplicate value outside QC protocols which indicates a possible matrix problem	Value is semiquantitative
+	Correlation coefficient for standard additions is less than 0.995. See review and laboratory narrative.	Data value is biased
[ ]	Value is real, but is above instrument D.L. and below CRDL	Value may be quantitative or semiquantitative
UJ	D.L. is estimated because of a QC protocol. D.L. is possibly above or below CRDL.	Compound or element was not detected
J	Value is above CRDL and is an estimated value because of a QC protocol.	Value is semiquantitative

ecology and environment, inc.

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International Specialists in the Environment

CRL Receipt Date 10/7/87 FIT Receipt Date 11/3/87 Review Completed 11/8/87

TO: Kurt Sims

FROM: Brenda R. Jones

SUBJECT: BFI Landfill

PAN: IL0361 CASE # 7916

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
#	Low Soil	# 2	Low Soil
	Low Water		Low Water
	Drinking Water		Drinking Water
	Other		Other

Project Data Status _____ Completed!!

✓ Incomplete, awaiting: _____

FIT Data Review Findings:

Check Data Sheets for Transcription Errors

✓ Compounds were detected in sample(s); see enclosed sheet.

Book No. 6 Page No. 265 Date Sampled 8/18/87

260:001

ecology and environment, inc.
CHICAGO, ILLINOIS

CHEMICAL EVALUATION FORM

SITE NAME: BFI Landfill PAN#: DATE: 11/8/87

CASE #: 7916 UNITS: mg/kg REVIEWER: BRJ

TOX/ PERS	COMPOUND	CRDL	3-5xCRDL	MEUS-2 099		S-1 098				
	ALUMINUM									
	ANTIMONY									
	ARSENIC	2		11		7.8				
	BARIUM									
	BERYLLIUM	1		.65						
	CADMIUM									
	CHROMIUM	2		16		12				
	COBALT	10		13						
	COPPER	5		18		25				
	LEAD	1		32		13				
	MERCURY									
	NICKEL	8		20		22				
	SELENIUM									
	SILVER									
	THALLIUM									
	TIN									
	VANADIUM	10		22		15				
	ZINC									
	CYANIDE									

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

NOV 03 1987

Rec:
9 pages

DATE: ~~10~~. 11-2-87

SUBJECT: Review of Region V CLP Data Received for Review on 10-7-87

FROM: Curtis Ross, Director (5SCRL)
Central Regional Laboratory Jay Thakker

TO: Data User: FIT

We have reviewed the data for the following case(s).

SITE NAME: BFI LANDFILL SMO case No. 7916

EPA Data Set No. SF 4341 No. of Samples: 2 D.U./Activity Numbers Y905/C72100

CRL No. S7F516S24 - S25

SMO Traffic No. MEU098 - 099

CLP Laboratory: KMAL Hrs. Required for Review: 1

Following are our findings: This review covers 2 low soil samples analyzed for metals.
Spike recoveries for Sb (31%) Mn (54%) are low. Detection limit for Sb could be elevated. All Sb data are estimated (UJ). All Mn data are estimated (J).
All other QC audits are acceptable

Ada Lewis
11.2.87

( ) Data are acceptable for use.
(X) Data are acceptable for use with qualifications noted above.
( ) Data are preliminary - pending verification by Contractor Laboratory.
( ) Data are unacceptable.

cc: Duane Geuder, Quality Assurance Officer, EPA Support Services
James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

EPA FORM 1320-5 (Rev. 5/87)

SE 4/31/1

000001

U.S. EPA Contract Laboratory Program
Sample Management Office
209 Madison St. - Alexandria, VA 22314
703/557-2490 FTS: 8-557-2490

Date 9-23-87

COVER PAGE
INORGANIC ANALYSIS DATA PACKAGE

Lab Name ROCKY MOUNTAIN ANALYTICAL
SOW No. 784

Case No. 7916
QC Report No. 87215

Sample Numbers

EPA No.	Lab ID No.	EPA No.	Lab ID No.
MEU099D			
MEU099			
MEU099S			
MEU098			
[MEU999]			

RECEIVED
OCT 03 1987
US EPA CENTRAL REGIONAL LAB.
536 S. CLARK STREET
CHICAGO, ILLINOIS 60605

Comments: 2 LOW SOILS FOR TOTAL METALS ANALYSIS
SERIAL DILUTION OF SAMPLE MEU098 IS IDENTIFIED AS [MEU999]

ICP Interelement and background corrections applied? Yes X No ___
If yes, corrections applied before X or after ___ generation of raw data.

Footnotes:

NR - not required by contract at this time
Form I:
Value - If the result is a value greater than or equal to the instrument detection limit but less than the contract required detection limit, report the value in brackets (i.e., [10]). Indicate the method used with P (for ICP/Flame AA) or F (for furnace).
U - Indicates element was analyzed for but not detected. Report with the detection limit value (e.g., 10U).
E - Indicates a value estimated or not reported due to the presence of interference. Explanatory note included on cover page.
S - Indicates value determined by Method of Standard Addition.
R - Indicates spike sample recovery is not within control limits.
* - Indicates duplicate analysis is not within control limits.
+ - Indicates the correlation coefficient for method of standard addition is less than 0.995
CV - Indicates Cold Vapor
AS - Indicates Automated Spectrophotometric

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
209 Madison St. - Alexandria, VA 22314
703/557-2490 FTS: 8-557-2490

5-2

EPA Sample No.
MEU099

Date 9-23-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 7916
QC REPORT NO. 87215

Elements Identified and Measured

Concentration: Low X Medium ____
Matrix: Water ____ Soil X Sludge ____ Other ____

mg/kg dry weight

1.	ALUMINUM	9150	P	13.	MAGNESIUM	3760	P
2.	ANTIMONY	16U	P R	14.	MANGANESE	785	P R
3.	ARSENIC	11	F	15.	MERCURY	0.13U	CV
4.	BARIUM	[64]	P	16.	NICKEL	[20]	P
5.	BERYLLIUM	[0.65]	P	17.	POTASSIUM	[933]	P
6.	CADMIUM	2.6U	P	18.	SELENIUM	3.2U	F
7.	CALCIUM	3480	P	19.	SILVER	2.6U	P
8.	CHROMIUM	16	P	20.	SODIUM	699U	P
9.	COBALT	[13]	P	21.	THALLIUM	6.4U	F
10.	COPPER	18	P	22.	TIN	14U	P
11.	IRON	17900	P	23.	VANADIUM	[22]	P
12.	LEAD	32 S	F	24.	ZINC	73	P

Cyanide NR

Percent Solids (%) 78

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Pb sample result determined by MSA.

Lab Manager

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
209 Madison St. - Alexandria, VA 22314
703/557-2490 FTS: 8-557-2490

S-1

EPA Sample No.
MEU096

Date 9-23-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 7916
QC REPORT NO. 87215

Elements Identified and Measured

Concentration: Low X Medium ____
Matrix: Water ____ Soil X Sludge ____ Other ____

mg/kg dry weight

1.	ALUMINUM	5310	P	13.	MAGNESIUM	35900	P
2.	ANTIMONY	20U	P R	14.	MANGANESE	648	P R
3.	ARSENIC	7.8 ~~17.8J~~	F	15.	MERCURY	0.16U	CV
4.	BARIUM	[30]	P	16.	NICKEL	[22]	P
5.	BERYLLIUM	0.78U	P	17.	POTASSIUM	[1080]	P
6.	CADMIUM	3.1U	P	18.	SELENIUM	3.9U	F
7.	CALCIUM	77200	P	19.	SILVER	3.1U	P
8.	CHROMIUM	12	P	20.	SODIUM	852U	P
9.	COBALT	7U	P	21.	THALLIUM	7.8U	F
10.	COPPER	25	P	22.	TIN	17U	P
11.	IRON	29100	P	23.	VANADIUM	[15]	P
12.	LEAD	13	F	24.	ZINC	93	P

Cyanide NR Percent Solids (%) 64

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager

1 & 2

000006

Form III

Q.C. Report No. 87215

BLANKS

LAB NAME ROCKY MOUNTAIN ANALYTICAL CASE NO. 7916

DATE 9-23-87 UNITS ug/L

Matrix SOIL

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. ALUMINUM		15u					
2. ANTIMONY		25u					
3. ARSENIC							
4. BARIUM		3u					
5. BERYLLIUM		1u					
6. CADMIUM		4u					
7. CALCIUM		179u					
8. CHROMIUM		4u					
9. COBALT		9u					
10. COPPER		6u					
11. IRON		24u					
12. LEAD							
13. MAGNESIUM		153u					
14. MANGANESE		4u					
15. MERCURY							
16. NICKEL		8u					
17. POTASSIUM		175u					
18. SELENIUM							
19. SILVER		4u					
20. SODIUM		1090u					
21. THALLIUM							
22. TIN		22u					
23. VANADIUM		7u					
24. ZINC		3u					
Other:							
Cyanide							

2 & 2

000007

Form III

Q.C. Report No. 87215

BLANKS

LAB NAME ROCKY MOUNTAIN ANALYTICAL CASE NO. 7916

DATE 9-23-87 UNITS ug/L

Matrix SOIL

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. ALUMINUM	15U	15U				15U	
2. ANTIMONY	25U	25U				25U	
3. ARSENIC	10u	10u	10u			10u	
4. BARIUM	3U	3U				3U	
5. BERYLLIUM	1U	1U				1U	
6. CADMIUM	4U	4U				4U	
7. CALCIUM	179U	179U				179U	
8. CHROMIUM	4U	4U				4U	
9. COBALT	9U	9U				9U	
10. COPPER	6U	6U				[6.3]	
11. IRON	24U	24U				24U	
12. LEAD	5u	5u	5u			5u	
13. MAGNESIUM	153U	153U				153U	
14. MANGANESE	[4.2]	4U				4U	
15. MERCURY	0.2u	0.2u				0.2u	
16. NICKEL	8U	8U				8U	
17. POTASSIUM	175U	175U				175U	
18. SELENIUM	5u	5u	5u			5u	
19. SILVER	4U	4U				4U	
20. SODIUM	1090U	1090U				1090U	
21. THALLIUM	10u	10u	10u			10u	
22. TIN	22U	22U				22U	
23. VANADIUM	7U	7U				7U	
24. ZINC	3U	3U				[3.5]	
Other:							
Cyanide							

Form V

Q.C. Report No. 87215

SPIKE SAMPLE RECOVERY

LAB NAME ROCKY MOUNTAIN ANALYTICAL

DATE 9-23-87

CASE NO. 7916
EPA Sample No. MEU099
Lab Sample ID No. -
Units mg/kg

MATRIX SOIL

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R[1]	
Metals:						
1. ALUMINUM	75-125	6060	7140	NR		
2. ANTIMONY	75-125	77	12U	250	31	R
3. ARSENIC	75-125	26	8.5	20	88	
4. BARIUM	75-125	1020	[50]	1000	97	
5. BERYLLIUM	75-125	25	[0.51]	25	98	
6. CADMIUM	75-125	27	2U	25	108	
7. CALCIUM	75-125	[2200]	2720	NR		
8. CHROMIUM	75-125	110	13	100	97	
9. COBALT	75-125	256	[10]	250	98	
10. COPPER	75-125	140	14	125	101	
11. IRON	75-125	12200	14000	NR		
12. LEAD	75-125	33 S	25 S	10	80	
13. MAGNESIUM	75-125	[2410]	2940	NR		
14. MANGANESE	75-125	747	612	250	54	R
15. MERCURY	75-125	0.52	0.1U	0.5	104	
16. NICKEL	75-125	260	[15]	250	98	
17. POTASSIUM	75-125	[581]	[728]	NR		
18. SELENIUM	75-125	5.5	2.5U	5	110	
19. SILVER	75-125	27	2U	25	108	
20. SODIUM	75-125	545U	545U	NR		
21. THALLIUM	75-125	22	5U	25	88	
22. TIN	75-125	239	11U	250	96	
23. VANADIUM	75-125	268	[16]	250	100	
24. ZINC	75-125	304	57	250	99	
Other:						
Cyanide	75-125					

[1] %R = [(SSR - SR)/SA] x 100
"R"- out of control

Comments: Pb spiked sample result determined by MSA
Pb sample result determined by MSA

Form VI

Q.C. Report No. 67215

DUPLICATES

LAB NAME ROCKY MOUNTAIN ANALYTICAL

DATE 9-23-87

CASE NO. 7916
EPA Sample No. MEU099
Lab Sample ID No. -
Units - mg/kg

Matrix SOIL

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
Metals:				
1. ALUMINUM		7140	6690	6.5
2. ANTIMONY		12U	12U	NC
3. ARSENIC		8.5	12	34
4. BARIUM		[50]	[46]	NC
5. BERYLLIUM		[0.51]	0.5U	NC
6. CADMIUM		2U	2U	NC
7. CALCIUM		2720	[2250]	NC
8. CHROMIUM		13	11	17
9. COBALT		[10]	[8.2]	NC
10. COPPER		14	[12]	NC
11. IRON		14000	12600	11
12. LEAD		25 S	28	3.9
13. MAGNESIUM		2940	2540	15
14. MANGANESE		612	518	17
15. MERCURY		0.1U	0.1U	NC
16. NICKEL		[15]	[13]	NC
17. POTASSIUM		[728]	[664]	NC
18. SELENIUM		2.5U	2.5U	NC
19. SILVER		2U	2U	NC
20. SODIUM		545U	545U	NC
21. THALLIUM		5U	5U	NC
22. TIN		11U	11U	NC
23. VANADIUM		[18]	[15]	NC
24. ZINC		57	56	1.8
Other:				
% Solids		78	80	2.5
Cyanide				

I Out of Control

[1] To be added at a later date. [2] RPD = [|S-D|/((S+D)/2)] x 100

NC - Non calculable RPD due to value(s) less than CRDL

The following elements reported unflagged due to sample and/or duplicate concentration less than 5 times the CRDL and +/- CRDL:

ARSENIC

Form VII

Q.C. Report No. 87215
INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

LAB NAME ROCKY MOUNTAIN ANALYTICAL CASE NO 7916
DATE 9-23-87 UNITS ug/L

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l ICP/AA	Furnace	Lab Control Sample True	Found	%R
Metals:						
1. ALUMINUM	200	15		1980	1970	99
2. ANTIMONY	60	25		1010	1010	100
3. ARSENIC	10	31	2	49	46	94
4. BARIUM	200	3		1980	1850	94
5. BERYLLIUM	5	1		481	480	100
6. CADMIUM	5	4		489	451	92
7. CALCIUM	5000	179		49800	49300	99
8. CHROMIUM	10	4		506	486	96
9. COBALT	50	9		474	473	100
10. COPPER	25	6		542	532	98
11. IRON	100	24		1990	1970	99
12. LEAD	5	20	1	98	108 S	110
13. MAGNESIUM	5000	153		25000	23800	95
14. MANGANESE	15	4		513	499	97
15. MERCURY	0.2		0.2CV	1.0	1.0	100
16. NICKEL	40	8		496	467	94
17. POTASSIUM	5000	175		50200	48600	97
18. SELENIUM	5		1	98	106	108
19. SILVER	10	4		509	422	83
20. SODIUM	5000	1090		50700	49700	98
21. THALLIUM	10		1	97	84	86 87
22. TIN	40	22		2000	2000	100
23. VANADIUM	50	7		511	499	98
24. ZINC	20	3		3100	2730	88
Other:						
Cyanide	10		10AS	58		

CV - Cold Vapor
AS - Automated Spectrophotometric

Lead result determined by MSA

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 10-7-87 FIT Receipt Date 12-8-87 Review Completed 12-8-87

TO: K. Sims

FROM: Jim Mertes

SUBJECT: BFI L.F.

PAN: IL 0361 CASE # 7916

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
# 2	Low Soil	#	Low Soil
	Low Water		Low Water
	Drinking Water		Drinking Water
	Other		Other

Project Data Status X Completed!!

_____ Incomplete, awaiting: _____

FIT Data Review Findings:

See Attached usin INFO sheet
No HRS usable data
TICS detected in both samples

Check Data Sheets for Transcription Errors

X Compounds were detected in sample(s); see enclosed sheet.

Book No. 6 Page No. 265 Date Sampled 8-18-87

26U:001

1 hr. charged to above PAN Q weekending 12-12-87 J.M.

recycled paper

Recd 12/8/87
18 PAGES

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 12/2/87

SUBJECT: Review of Region V CLP Data
Received for Review on 10/1/87

FROM: Curtis Ross, Director (5SCRL) Patrick J. Chinilla for
Central Regional Laboratory

TO: Data User: FIT

We have reviewed the data for the following case(s).

SITE NAME: BFI Landfill SMO Case No. 7916

EPA Data Set No. SF4341 No. of Samples: 2 D.U./Activity Numbers Y905/C72100

CRL No. 87FS16524 - S25

SMO Traffic No. ET596 - 597

CLP Laboratory: SWOK Hrs. Required for Review: 2

PAN #:

Following are our findings:

Reviewed by Jim Clyne
30 Nov 87

(X) Data are acceptable for use.
( ) Data are acceptable for use with qualifications noted above.
( ) Data are preliminary - pending verification by Contractor Laboratory.
( ) Data are unacceptable.

cc: Duane Geuder, Quality Assurance Officer, EPA Support Services
James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

EPA FORM 1320-6 (Rev. 5/87)

Case 7916 for BFI Landfill consists of two soils samples. The analysis was performed by SWOK for VOA, SV and Pesticides/PCBs. TC

A.	Holding Times	- Acceptable
B.	Surrogates	- Acceptable
C.	MS/MSD	- Acceptable MS/MSD OADS forms did not have the spikes marked MS or MSD.
D.	Laboratory Blank	The lab blank had typical lab artifacts of methylene chloride, acetone and phthalates.
E.	Calibrations	- Acceptable
F.	Pesticides	- Acceptable Linearity - acceptable DBC Shift - Acceptable DDT retention times > 12 minutes - ACCEPTABLE TC - ~~Acceptable~~ TC

USER's INFORMATION SHEET

The two soil samples ET596 and ET597 had no TCL hits other than lab artifacts. There were numerous TICs found in both samples. No HRS usable data.

38U:009:3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS # 7916 CONTRACTOR SWOK

08/19/87

Instrument # 5100A	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	08/19/87			~~9/10/87 9:17~~											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane		30.1	J												
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride															
Acetone															
Carbon Disulfide															
1,1-Dichloroethane															
1,1-Dichloroethene															
Trans-1,2-Dichloroethene															
Chloroform															
2-Butanone		~~0.255~~		~~200~~											
1,2-Dichloroethane															
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate															
Bromodichloromethane															
1,2-Dichloropropane															
Trans-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
cis-1,3-Dichloropropene															
2-Chloroethylvinylether															
Bromoform															
4-Methyl-2-Pentanone															
2-Hexanone															
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
m-Xylene															
o/p-Xylene															

AFFECTED SAMPLES:

~~ET 596~~	ET 596			
~~ET 597~~	ET 597			
~~ET 597 MS~~	ET 597 MS			
~~ET 597 MSD~~	ET 597 MSD			
Blank	Blank			
50 Std	Con/Cal Std			
100				
150				
200				
20				

Reviewer's Initials/Date: [illegible]

* These flags should be applied to the analytes on the sample data sheets.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

CASE/SAS # 7916 CONTRACTOR S WOK

Instrument #	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	8/27/87 8:24			9/10/87 (917)											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Phenol															
bis(-2-Chloroethyl)Ether															
2-Chlorophenol															
1,3-Dichlorobenzene															
1,4-Dichlorobenzene															
Benzyl Alcohol					35	J									
1,2-Dichlorobenzene															
2-Methylphenol															
bis(2-chloroisopropyl)Ether															
4-Methylphenol															
N-Nitroso-Di-n-Propylamine															
Hexachloroethane															
Nitrobenzene															
Isophorone															
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic Acid															
bis(2-Chloroethoxy)Methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline		60.5	J												
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene															
Hexachlorocyclopentadiene															
2,4,6-Trichlorophenol															
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline															
Dimethyl Phthalate															
Acenaphthylene															
3-Nitroaniline					54	J									
Acenaphthene															
2,4-Dinitrophenol															
4-Nitrophenol															
Dibenzofuran															

AFFECTED SAMPLES:

SSTD50
Blank 1
ET597
ET597MS
ET597MSD
ET596

Reviewer Initials/Date: [illegible]

* These flags should be applied to the analytes on the sample data sheets.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
Page 2

CASE/SAS # 7916 CONTRACTOR SWOK

Instrument #	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:															
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
2,4-Dinitrotoluene															
2,6-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenyl-phenylether															
Fluorene															
4-Nitroaniline		34.3	J												
4,6-Dinitro-2-Methylphenol															
N-Nitrosodiphenylamine															
4-Bromophenyl-phenylether															
Hexachlorobenzene															
Pentachlorophenol															
Phenanthrene															
Anthracene															
Di-n-Butylphthalate															
Fluoranthene															
Pyrene															
Butylbenzylphthalate															
Benzo(a)Anthracene															
bis(2-Ethylhexyl)Phthalate															
Chrysene															
Di-n-Octyl Phthalate															
Benzo(b)Fluoranthene															
Benzo(k)Fluoranthene															
Benzo(a)Pyrene															
Indeno(1,2,3-cd)Pyrene															
Dibenz(a,h)Anthracene															
Benzo(g,h,i) Perylene															
3,3'-dichlorobenzidine		47.3		54											

SEE PAGE 1 FOR AFFECTED SAMPLES.

* These flags should be applied to the analytes on the sample data sheets.

Reviewer's Initials/Date: [illegible] 30 Nov

8/87

Case: 7916

Contractor: SWOK

TENTATIVELY IDENTIFIED COMPOUNDS WATCH ASSESSMENT

NOTE: Reviewer should note directly on Organic Analysis Data Sheet (OADS) those matches that in his opinion (based on contract criteria) are unreasonable.

CRITERIA

(1) Relative intensities of major ions (>10%) reference spectrum should be present in the sample spectrum.

(2) Relative intensities of major ions in sample spectrum should agree to within ± 20% of reference spectrum intensities.

(3) Molecular ions present in reference spectrum should be present in sample spectrum.

(4) Ions present in sample spectrum, but not in reference spectrum should be reviewed for possible background contamination or presence of coeluting interferences.

(5) Ions present in reference spectrum, but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or coeluting interferences.

(6) If, in the reviewer's opinion, no valid identification can be made the compound should be labelled as "unknown" and the initials and date of the reviewer placed on the OADS.

Reviewer's Initials/Date: [illegible] 30 Nov 87

SOIL SURROGATE PERCENT RECOVERY SUMMARY

Case No. 7916 Contract Laboratory SOUTHWEST LAB OF OKLAHOMA Contract No. 68-01-7168

Low ✓ Medium _____

	VOLATILE				SEMI-VOLATILE							PESTICIDE
EPA SAMPLE NO.	TOLUENE-D8 81-117 (81-117)	BFB 74-121 (74-121)	1,2 DICHLOROETHANE-D4 70-121 (70-121)	NITROBENZENE-D5 23-120 (23-120)	2-FLUOROBIPHENYL 30-115 (30-115)	TERPHENYL-D14 18-137 (18-137)			PHENOL-D6 24-113 (24-113)	2-FLUOROPHENOL 25-121 (25-121)	2,4,6 TRIBROMOPHENOL 19-122 (19-122)	DIBUTYL-CHLORENDATE 20-150 (20-150)
ET596	104	93	101	78	71	85			67	73	60	70
ET597	105	92	102	85	85	120			82	86	95	95
ET597MS	107	97	103	77	76	105			66	76	65	101
ET597MSD	113	84	104	81	77	102			74	78	84	110
BLANK-1	102	95	100	58	65	70			55	64	57	
03257PS81												91

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

*ADVISORY LIMITS ONLY

Volatiles: 0 out of 15 ; outside of QC limits

Semi-Volatiles: 0 out of 30 ; outside of QC limits

Pesticides: 0 out of 5 ; outside of QC limits

7/85

Comments:

FORM I

SOIL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Case No. 7916 **Contractor** SOUTHWEST LAB. OF OKLAHOMA **Contract No.** 68-01-7168

Low Level X **Medium Level** _____

FRACTION	COMPOUND	CONC. SPIKE ADDED (ug/Kg)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS* RPD	QC LIMITS* RECOVERY
VOA SMO SAMPLE NO. ET597	1,1-Dichloroethene	63	0	52	83	49	78	6	22	59-172
	Trichloroethene			65	103	55	87	17	24	62-137
	Chlorobenzene			~~67~~ 63	100	60	95	5	21	60-133
	Toluene			68	108	67	106	2	21	59-139
	Benzene			67	106	63	100	6	21	66-142
B/N SMO SAMPLE NO. ET597	1,2,4-Trichlorobenzene	2016	0	1629	81	1663	83	2	23	38-107
	Acenaphthene			1525	76	1596	79	4	19	31-137
	2,4 Dinitrotoluene			1523	76	1578	78	3	47	28-89
	Pyrene			1729	86	1908	95	10	36	35-142
	N-Nitrosodi-n-Propylamine			1440	71	1518	75	6	38	41-126
	1,4-Dichlorobenzene			1410	70	1469	73	4	27	28-104
ACID SMO SAMPLE NO. ET597	Pentachlorophenol	4031	0	2754	68	2544	63	8	47	17-109
	Phenol			2849	71	3036	75	6	35	26-90
	2-Chlorophenol			3071	76	3213	80 ~~76~~	5	50	25-102
	4-Chloro-3-Methylphenol			3234	80	3452	86	7	33	26-103
	4-Nitrophenol			1650	41	1832	45	9	50	11-114
PEST SMO SAMPLE NO. ET597	Lindane	32.24	0	30.12	93.4	29.66	92.0	1.5	50	46-127
	Heptachlor		0	29.43	91.3	28.90	89.6	1.8	31	35-130
	Aldrin		0	28.36	88.0	27.81	86.2	1.9	43	34-132
	Dieldrin	80.61	0	76.54	94.9	75.27	93.4	1.6	38	31-134
	Endrin		0	77.22	95.8	76.87	95.4	0.4	45	42-139
	4,4'-DDT		2.16	82.37	99.5	80.77	97.5	2.0	50	23-134

*ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD:
VOAs 0 out of 5 ; outside QC limits
B/N 0 out of 6 ; outside QC limits
ACID 0 out of 5 ; outside QC limits
PEST 0 out of 6 ; outside QC limits

RECOVERY:
VOAs 0 out of ~~8~~ 10 ; outside QC limits
B/N 0 out of 12 ; outside QC limits
ACID 0 out of 10 ; outside QC limits
PEST 0 out of 12 ; outside QC limits

Comments:

7/85

FORM III

METHOD BLANK SUMMARY

Case No. 7916 Region 1 Contractor SOUTHWEST LAB OF OKLAHOMA Contract No. 68-01-7168/1A or /2A

FILE ID	DATE OF ANALYSIS	FRACTION	MATRIX	CONC. LEVEL	INST. ID	CAS NUMBER	COMPOUND (HSL, TIC OR UNKNOWN)	CONC.	UNITS	CRDL
3298	08/19/87	VOA	SOIL	LOW	5970D	N/A	NONE FOUND	N/A	N/A	N/A
BLK7916	09/10/87	SVOA	SOIL	LOW	5100A	N/A	Unknown compound	140	ug/kg	N/A
	↓	↓	↓	↓	↓	↓	Unknown compound	1060	↓	↓
	↓	↓	↓	↓	↓	↓	Unknown ester	270	↓	↓
08857PSB1	09-07-87	Pest	SOIL	L	HP5890A	—	None found	—	—	—

Comments:

FORM IV 7/85

Sample Number
ET 597

S-2

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: SOUTHWEST LABORATORY OF OKLA.
Case No: 7916
Lab Sample ID No: 3300 /13572
QC Report No:
Sample Matrix: SOIL
Contract No: 68-01-7168/1A 68-01-7168/2A
Data Release Authorized By: Jayant Shringarpure
Date Sample Received: 08-19-87

Volatile Compounds

Concentration: (Low) Medium (Circle One)
Date Extracted/Prepared:
Date Analyzed: 08-19-87
Conc/Dil Factor: 1 pH 7-13
Percent Moisture: (Not Decanted) 21

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	10U
74-83-9	Bromomethane	10U
75-01-4	Vinyl Chloride	10U
75-00-3	Chloroethane	10U
75-09-2	Methylene Chloride	5U
67-64-1	Acetone	27 ~~10U~~
75-15-0	Carbon Disulfide	5U
75-35-4	1,1-Dichloroethene	5U
75-34-3	1,1-Dichloroethane	5U
156-60-5	Trans-1,2-Dichloroethene	5U
67-66-3	Chloroform	5U
107-06-2	1,2-Dichloroethane	5U
78-93-3	2-Butanone	10U
71-55-6	1,1,1-Trichloroethane	5U
56-23-5	Carbon Tetrachloride	5U
108-05-4	Vinyl Acetate	10U
75-27-4	Bromodichloromethane	5U

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1,2-Dichloropropane	5U
10061-02-6	Trans-1,3-Dichloropropene	5U
79-01-6	Trichloroethene	5U
124-48-1	Dibromochloromethane	5U
79-00-5	1,1,2-Trichloroethane	5U
71-43-2	Benzene	5U
10061-01-5	cis-1,3-Dichloropropene	5U
110-75-8	2-Chloroethylvinylether	10U
75-25-2	Bromoform	5U
591-78-6	4-Methyl-2-Pentanone	10U
108-10-1	2-Hexanone	10U
127-18-4	Tetrachloroethene	5U
79-34-5	1,1,2,2-Tetrachloroethane	5U
108-88-3	Toluene	5U
108-90-7	Chlorobenzene	5U
100-41-4	Ethylbenzene	5U
100-42-5	Styrene	5U
	Total Xylenes	5U

J = %D > 25%

Data Reporting Qualifiers

For reporting results to EPA the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used they must be fully described and such description attached to the data summary report.

Laboratory Name SOUTHWEST LABORATORY OF OKLA.

Case No 7916

Contract # 68-01-7168/1A 68-01-7168/2A

Sample Number ET 597

S-2

12 of 19

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared 08/25/87

Date Analyzed 09/10/87

Conc/Dil Factor: 1

Percent Moisture (Decanted) 21

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)
108 95-2	Phenol	330 U
111-44-4	bis(-2-Chloroethyl)Ether	330 U
95-57-8	2-Chlorophenol	330 U
541-73-1	1 3-Dichlorobenzene	330 U
106-46-7	1 4-Dichlorobenzene	330 U
100-51-6	Benzyl Alcohol	330 ~~U~~ J
95-50-1	1, 2-Dichlorobenzene	330 U
95-48-7	2-Methylphenol	330 U
39638-32-9	bis(2-chloroisopropyl)Ether	330 U
106-44-5	4-Methylpheno'	330 U
621-64-7	N-Nitroso-Di-n-Propylamine	330 U
67-72-1	Hexachloroethane	330 U
98-95-3	Nitrobenzene	330 U
78-59-1	Isophorone	330 U
88-75-5	2-Nitrophenol	330 U
105-67-9	2 4-Dimethylphenol	330 U
65-85-0	Benzoic Acid	1600 U
111-91-1	bis(-2-Chloroethoxy)Methane	330 U
120-83-2	2, 4-Dichlorophenol	330 U
120-82-1	1, 2, 4-Trichlorobenzene	330 U
91-20-3	Naphthalene	330 U
106-47-8	4-Chloroaniline	330 U
87-68-3	Hexachlorobutadiene	330 U
59-50-7	4-Chloro-3-Methylphenol	330 U
91-57-6	2-Methylnaphthalene	330 U
77-47-4	Hexachlorocyclopentadiene	330 U
88-06-2	2, 4, 6-Trichlorophenol	330 U
95-95-4	2, 4, 5-Trichlorophenol	1600 U
91-58-7	2-Chloronaphthalene	330 U
88-74-4	2-Nitroaniline	1600 U
131-11-3	Dimethyl Phthalate	330 U
208-96-8	Acenaphthylene	330 U
[illegible]-09-2	3-Nitroaniline	1600 ~~U~~ J

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	330 U
51-28-5	2, 4-Dinitrophenol	1600 U
100-02-7	4-Nitrophenol	1600 U
132-64-9	Dibenzofuran	330 U
121-14-2	2 4-Dinitrotoluene	330 U
606-20-2	2, 6-Dinitrotoluene	330 U
84-66-2	Diethylphthalate	330 U
7005-72-3	4-Chlorophenyl-phenylether	330 U
86-73-7	Fluorene	330 U
100-01-6	4-Nitroaniline	1600 ~~U~~ J
534-52-1	4, 6-Dinitro-2-Methylphenol	1600 U
86-30-6	N-Nitrosodiphenylamine (1)	330 U
101-55-3	4-Bromophenyl-phenylether	330 U
118-74-1	Hexachlorobenzene	330 U
87-86-5	Pentachlorophenol	1600 U
85-01-8	Phenanthrene	330 U
120-12-7	Anthracene	330 U
84-74-2	Di-n-Butylphthalate	330 U
206-44-0	Fluoranthene	330 U
129-00-0	Pyrene	330 U
85-68-7	Butylbenzylphthalate	330 U
91-94-1	3, 3'-Dichlorobenzidine	660 U
56-55-3	Benzo(a)Anthracene	330 U
117-81-7	bis(2-Ethylhexyl)Phthalate	330 U
218-01-9	Chrysene	330 U
117-84-0	Di-n-Octyl Phthalate	330 U
205-99-2	Benzo(b)Fluoranthene	330 U
207-08-9	Benzo(k)Fluoranthene	330 U
50-32-8	Benzo(a)Pyrene	330 U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	330 U
53-70-3	Dibenz(a h)Anthracene	330 U
191-24-2	Benzo(g h, i)Perylene	330 U

(1) Cannot be separated from diphenylamine

J - %D > 25%

Laboratory Name SOUTHWEST LABORATORY OF OKLAHOMA

Case No 7916

Contract # 68-01-7168/1A or 2A

Sample Number ET597

S-2

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 8-25-87

Date Analyzed 9-7-87

Conc/Dil Factor: 1

Percent Moisture (decanted) 21.0

GPC Cleanup ☐Yes ☑No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	8.0 U
319-85-7	Beta-BHC	8.0 U
319-86-8	Delta-BHC	8.0 U
58-89-9	Gamma-BHC (Lindane)	8.0 U
76-44-8	Heptachlor	8.0 U
309-00-2	Aldrin	8.0 U
1024-57-3	Heptachlor Epoxide	8.0 U
959-98-8	Endosulfan I	8.0 U
60-57-1	Dieldrin	16.0 U
72-55-9	4, 4'-DDE	16.0 U
72-20-8	Endrin	16.0 U
33213-65-9	Endosulfan II	16.0 U
72-54-8	4, 4'-DDD	16.0 U
1031-07-8	Endosulfan Sulfate	16.0 U
50-29-3	4, 4'-DDT	16.0 U
72-43-5	Methoxychlor	80.0 U
53494-70-5	Endrin Ketone	16.0 U
57-74-9	Chlordane	80.0 U
8001-35-2	Toxaphene	160.0 U
12674-11-2	Aroclor-1016	80.0 U
11104-28-2	Aroclor-1221	80.0 U
11141-16-5	Aroclor-1232	80.0 U
53469-21-9	Aroclor-1242	80.0 U
12672-29-6	Aroclor-1248	80.0 U
11097-69-1	Aroclor-1254	160.0 U
11096-82-5	Aroclor-1260	160.0 U

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s — or W_s 31.40 V_t 20000 V_i 5

Laboratory Name SOUTHWEST LABORATORY OF OKLA.

Case No 7916

Sample Number
ET 597

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Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	N/A	Unknown compound	BNA	560	200
2.				571	1050
3.				640	130
4.				658	1000
5.		Unknown acid		1551	110
6.				1646	200
7.		Unknown ketone		1654	380
8.		Unknown acid		1662	670
9.		Unknown hydrocarbon		1765	120
10.				1793	340
11.				1904	50
12.				2093	100
13.				2152	200
14.				2209	220
15.		Unknown aldehyde		2231	640
16.		Unknown hydrocarbon		2264	570
17.				2325	600
18.		Unknown aldehyde		2354	170
19.		Unknown hydrocarbon		2395	750
20.		Unknown hydrocarbon		2573	200
21.					
22.		None found	VOA	—	—
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Sample Number
ET596

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Organics Analysis Data Sheet
(Page 1)

Laboratory Name: SOUTHWEST LABORATORY OF OKLA. Case No: 7916

Lab Sample ID No 3299 /13571 QC Report No:

Sample Matrix: SOIL Contract No: 68-01-7168/1A 68-01-7168/2A

Data Release Authorized By: Jayant Shringarpure Date Sample Received 08-19-87

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: —

Date Analyzed: 08-19-87

Conc/Dil Factor: 1 pH 7.10

Percent Moisture: (Not Decanted) 29

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	10U
74-83-9	Bromomethane	10U
75-01-4	Vinyl Chloride	10U
75-00-3	Chloroethane	10U
75-09-2	Methylene Chloride	6 ~~5U~~
67-64-1	Acetone	30 ~~10U~~
75-15-0	Carbon Disulfide	5U
75-35-4	1, 1-Dichloroethene	5U
75-34-3	1, 1-Dichloroethane	5U
156-60-5	Trans-1, 2-Dichloroethene	5U
67-66-3	Chloroform	5U
107-06-2	1, 2-Dichloroethane	5U
78-93-3	2-Butanone	10U J
71-55-6	1, 1, 1-Trichloroethane	5U
56-23-5	Carbon Tetrachloride	5U
108-05-4	Vinyl Acetate	10U
75-27-4	Bromodichloromethane	5U

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1, 2-Dichloropropane	5U
10061-02-6	Trans-1, 3-Dichloropropene	5U
79-01-6	Trichloroethene	5U
124-48-1	Dibromochloromethane	5U
79-00-5	1, 1, 2-Trichloroethane	5U
71-43-2	Benzene	5U
10061-01-5	cis-1, 3-Dichloropropene	5U
110-75-8	2-Chloroethylvinylether	10U
75-25-2	Bromoform	5U
591-78-6	4-Methyl-2-Pentanone	10U
108-10-1	2-Hexanone	10U
127-18-4	Tetrachloroethene	5U
79-34-5	1, 1, 2, 2-Tetrachloroethane	5U
108-88-3	Toluene	5U
108-90-7	Chlorobenzene	5U
100-41-4	Ethylbenzene	5U
100-42-5	Styrene	5U
	Total Xylenes	5U

J = %D > 25%

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit, report the value.

U: Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J: Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g., 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated, report as 3J.

C: This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B: This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other: Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

Laboratory Name SOUTHWEST LABORATORY OF OKLA.

Case No. 7916

Contract # 68-01-7168/1A 68-01-7168/2A

Sample Number ET 596

S-1

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared 08/25/87 09/10/87

Date Analyzed 09/10/87

Conc/Dil Factor: 1

Percent Moisture (Decanted) 29

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	330 U
111-44-4	bis(2-Chloroethyl)Ether	330 U
95-57-8	2-Chlorophenol	330 U
541-73-1	1,3-Dichlorobenzene	330 U
106-46-7	1,4-Dichlorobenzene	330 U
100-51-6	Benzyl Alcohol	330 U
95-50-1	1,2-Dichlorobenzene	330 U
95-48-7	2-Methylphenol	330 U
39638-32-9	bis(2-chloroisopropyl)Ether	330 U
106-44-5	4-Methylphenol	330 U
621-64-7	N-Nitroso-Di-n-Propylamine	330 U
67-72-1	Hexachloroethane	330 U
98-95-3	Nitrobenzene	330 U
78-59-1	Isophorone	330 U
88-75-5	2-Nitrophenol	330 U
105-67-9	2,4-Dimethylphenol	330 U
65-85-0	Benzoic Acid	1600 U
111-91-1	bis(2-Chloroethoxy)Methane	330 U
120-83-2	2,4-Dichlorophenol	330 U
120-82-1	1,2,4-Trichlorobenzene	330 U
91-20-3	Naphthalene	330 U
106-47-8	4-Chloroaniline	330 U
87-68-3	Hexachlorobutadiene	330 U
59-50-7	4-Chloro-3-Methylphenol	330 U
91-57-6	2-Methylnaphthalene	330 U
77-47-4	Hexachlorocyclopentadiene	330 U
88-06-2	2,4,6-Trichlorophenol	330 U
95-95-4	2,4,5-Trichlorophenol	1600 U
91-58-7	2-Chloronaphthalene	330 U
88-74-4	2-Nitroaniline	1600 U
131-11-3	Dimethyl Phthalate	330 U
[illegible]96-8	Acenaphthylene	330 U
[illegible]09-2	3-Nitroaniline	1600 U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	330 U
51-28-5	2,4-Dinitrophenol	1600 U
100-02-7	4-Nitrophenol	1600 U
132-64-9	Dibenzofuran	330 U
121-14-2	2,4-Dinitrotoluene	330 U
606-20-2	2,6-Dinitrotoluene	330 U
84-66-2	Diethylphthalate	130J ~~330 U~~
7005-72-3	4-Chlorophenyl-phenylether	330 U
86-73-7	Fluorene	330 U
100-01-6	4-Nitroaniline	1600 U
534-52-1	4,6-Dinitro-2-Methylphenol	1600 U
86-30-6	N-Nitrosodiphenylamine (1)	330 U
101-55-3	4-Bromophenyl-phenylether	330 U
118-74-1	Hexachlorobenzene	330 U
87-86-5	Pentachlorophenol	1600 U
85-01-8	Phenanthrene	330 U
120-12-7	Anthracene	330 U
84-74-2	Di-n-Butylphthalate	160J ~~330 U~~
206-44-0	Fluoranthene	330 U
129-00-0	Pyrene	330 U
85-68-7	Butylbenzylphthalate	330 U
91-94-1	3,3'-Dichlorobenzidine	660 U
56-55-3	Benzo(a)Anthracene	330 U
117-81-7	bis(2-Ethylhexyl)Phthalate	330 U
218-01-9	Chrysene	330 U
117-84-0	Di-n-Octyl Phthalate	330 U
205-99-2	Benzo(b)Fluoranthene	330 U
207-08-9	Benzo(k)Fluoranthene	330 U
50-32-8	Benzo(a)Pyrene	330 U
193-39-5	Indeno(1,2,3-cd)Pyrene	330 U
53-70-3	Dibenz(a,h)Anthracene	330 U
191-24-2	Benzo(g,h,i)Perylene	330 U

(1)-Cannot be separated from diphenylamine

Laboratory Name SOUTHWEST LABORATORY OF OKLAHOMA

Case No 7916

Contract # 68-01-7168/1A or 2A

Sample Number ET596

S-1 ~~17~~ 18

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration Low Medium (Circle One)

Date Extracted/Prepared: 8-25-87

Date Analyzed 9-7-87

Conc/Dil Factor: 2

Percent Moisture (decanted) 28.7

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	8.0 U
319-85-7	Beta-BHC	8.0 U
319-86-8	Delta-BHC	8.0 U
58-89-9	Gamma-BHC (Lindane)	8.0 U
76-44-8	Heptachlor	8.0 U
309-00-2	Aldrin	8.0 U
1024-57-3	Heptachlor Epoxide	8.0 U
959-98-8	Endosulfan I	8.0 U
60-57-1	Dieldrin	16.0 U
72-55-9	4, 4'-DDE	16.0 U
72-20-8	Endrin	16.0 U
33213-65-9	Endosulfan II	16.0 U
72-54-8	4, 4'-DDD	16.0 U
1031-07-8	Endosulfan Sulfate	16.0 U
50-29-3	4, 4'-DDT	16.0 U
72-43-5	Methoxychlor	80.0 U
53494-70-5	Endrin Ketone	16.0 U
57-74-9	Chlordane	80.0 U
8001-35-2	Toxaphene	160.0 U
12674-11-2	Aroclor-1016	80.0 U
11104-28-2	Aroclor-1221	80.0 U
11141-16-5	Aroclor-1232	80.0 U
53469-21-9	Aroclor-1242	80.0 U
12672-29-6	Aroclor-1248	80.0 U
11097-69-1	Aroclor-1254	160.0 U
11096-82-5	Aroclor-1260	160.0 U

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s ——— or W_s 44.07 V_t 20000 V_i 5

Laboratory Name SOUTHWEST LABORATORY OF OKLA.

Case No 7916

Sample Number ET596

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Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	N/A	Unknown ester	BNA	579	220
2.		Unknown compound	BNA	657	1880
3.		Unknown hydrocarbon		1058	180
4.				1164	200
5.				1262	160
6.		Unknown compound		1278	260
7.		Unknown hydrocarbon		1357	350
8.				1453	400
9.		Unknown acid		1648	500
10.				1657	350
11.				1666	510
12.		Unknown hydrocarbon		1691	1400
13.	10544500	Sulfur		1747	230
14.	N/A	Unknown hydrocarbon		1781	870
15.		Unknown hydrocarbon		1981	75
16.				2153	450
17.				2266	~~360~~ 90
18.				2399	~~900~~ 430
19.		Unknown compound		2640	190
20.					
21.		None found	VOA	—	—
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

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FIELD PHOTOGRAPHY LOG SHEET

PAGE 1

DATE 8-18-87

TIME 11:55 (A.M.) P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
(S) SSW SW WSW
W WNW NW NNW

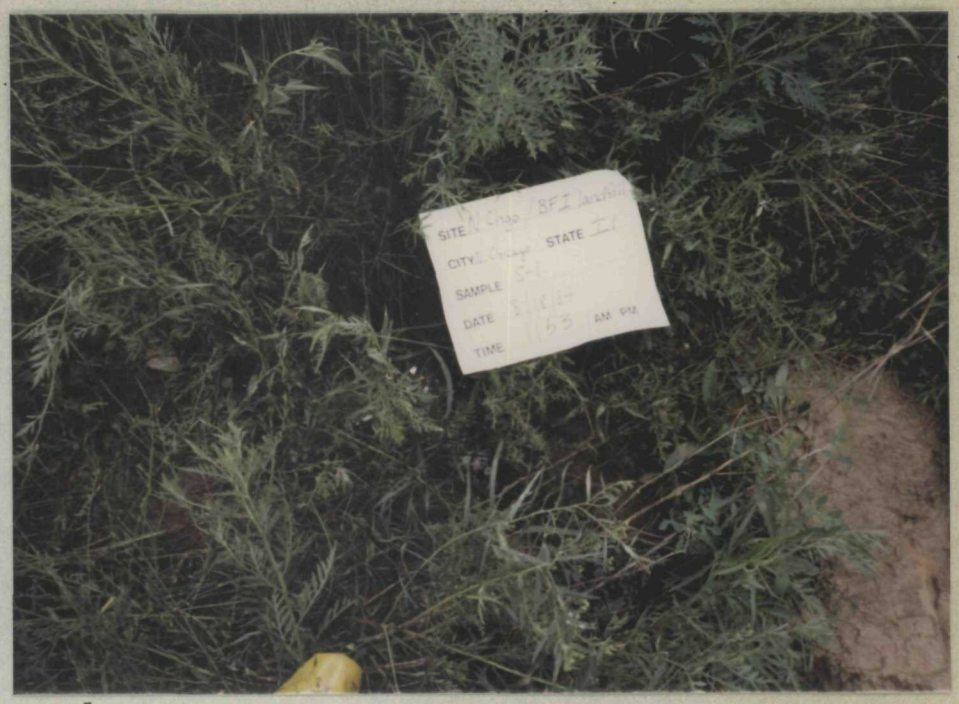
WEATHER OVERCAST 75°

SITE N.CHI./BFI LANDFILL

TDD# F05-8704-065

PHOTOGRAPHED BY: K.SIMS

SAMPLE ID# (if applicable) S-1



DESCRIPTION: LEACHATE SEEP ALONG NORTH SIDE OF EAST HALF OF LANDFILL.

DATE 8-18-87

TIME 11:56 (A.M.) P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
(S) SSW SW WSW
W WNW NW NNW

WEATHER OVERCAST 75°

SITE N.CHI./BFI LANDFILL

TDD# F05-8704-065

PHOTOGRAPHED BY: K.SIMS

SAMPLE ID# (if applicable) S-1

DESCRIPTION: SLOPE AT LEACHATE SEEP

FIELD PHOTOGRAPHY LOG SHEET

PAGE 2

DATE 8-18-87

TIME 12:35 A.M. P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

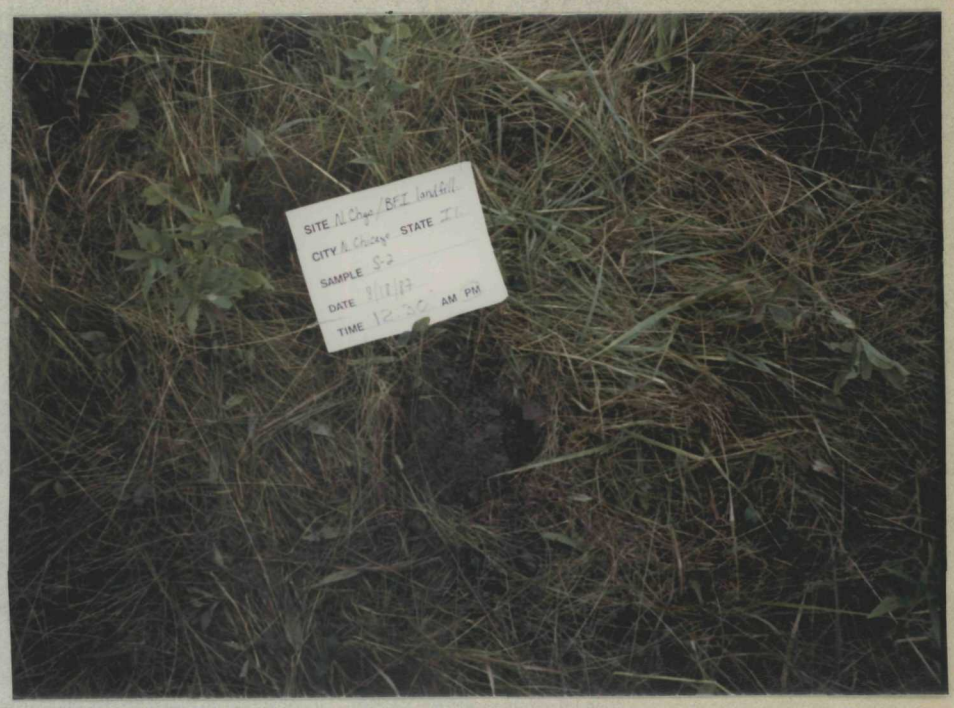
WEATHER OVERCAST 75°

SITE N. CHI./BFI LANDFILL

TDD# F05-8704-065

PHOTOGRAPHED BY: K. SIMS

SAMPLE ID# (if applicable) S-2 BKG



DESCRIPTION: BACKGROUND SURFACE SOIL SAMPLE

DATE 8-18-87

TIME 12:36 A.M. P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER OVERCAST 75°

SITE N. CHI./BFI LANDFILL

TDD# F05-8704-065

PHOTOGRAPHED BY: K. SIMS

SAMPLE ID# (if applicable) S-2 BKG

DESCRIPTION: BACKGROUND SAMPLE LOCATION POINT. NOTE LANDFILL ON NORTH SIDE OF 14TH ST.