'07 TA-21 DP Site Aggregate Area

ENTERED

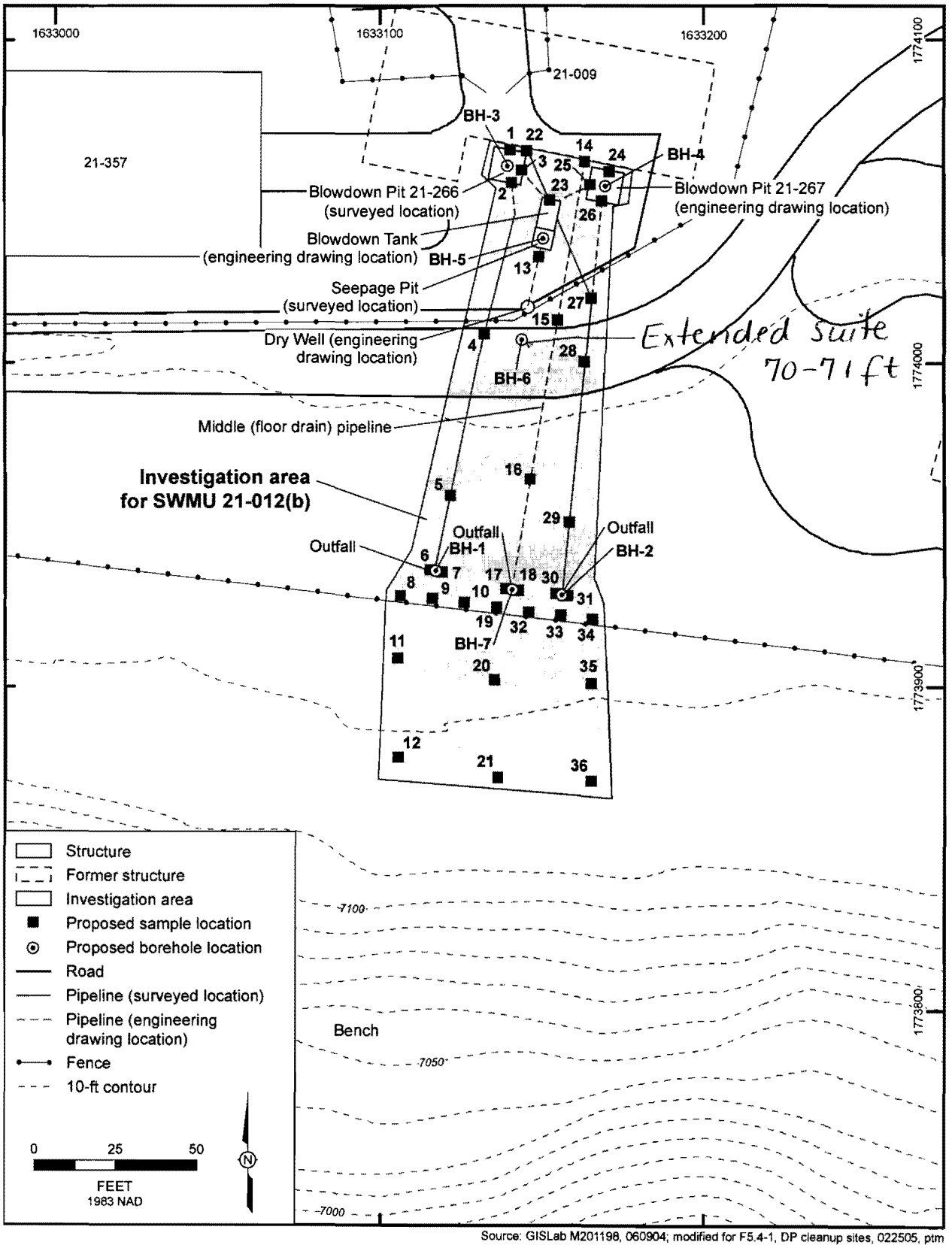
7/23/07

30268

Extended Suite Analyses

Event ID	Sample ID	PRS ID	Location ID	Map Location	Top Depth (ft)	Bottom Depth (ft)
	RE21-07-76277	21-012(b)	21-27671	BH-6	70	71
42	RE21-07-515	21-024(a)	21-27340	4a	5.5	6.5
145	RE21-07-4045	21-024(e)	21-27253	25b	1	1.5
47	RE21-07-582	21-024(g)	21-27596	20b	2	3
140	RE21-07-3963	21-024(l)-99	21-27515	BH-2	15	16
144	RE21-07-4030	21-024(o)	21-27355	13b	2	2.5
48	RE21-07-583	21-026(a)-99	21-27558	12b	2	3
118	RE21-07-5087	21-027(c)	21-27411	14a	0	0.5

RECEIVED
SEP 2007
NMED Hazardous Waste Bureau



Source: GISLab M201198, 060904; modified for F5.4-1, DP cleanup sites, 022505, ptm

Figure 5.4-1. SWMU 21-012(b) proposed sample locations

Los Alamos National Laboratory
Environmental Restoration Project
Los Alamos, NM 87545

SAMPLE COLLECTION LOG

SAMPLE ID: RE21-07-76277

EVENT ID: 11952

EVENT NAME: SWMU 21-012(b), DP Site Aggregate Area

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		6/27/07	EVAL CLASS:	~~ALCH~~ Jm 6/27/07	QAT-3
TIME COLLECTED (HH:MM):		1500	SAMPLE TECH CODE:	SS	04
PRS ID:	PRS: 21-012(b)	UK	FIELD QC TYPE:	NA	
LOCATION ID:	21-27671		COMPOSITE TYPE:	NA	
LOCATION TYPE:	BH	BH-6d	FIELD PREP:	NA	
TOP DEPTH ():	~~0.00~~ Jm 6/27/07	70 (~~FT~~ / cm / NA)	SAMPLE USAGE:	INV	
BOTTOM DEPTH ():	~~0.00~~ Jm 6/27/07	71 (~~FT~~ / cm / NA)	WATER FLOWING :		YES___ NO___ NA ✓
FIELD MATRIX:	~~S~~ Jm 6/27/07	R	SCREEN/PORT DESC (wells only):		N/A
			ER SOP Followed:		6.09

#	CONTAINER	PRESERVATIVE	ORDER	ANALYTICAL SPECIAL INSTRUCTIONS
1	~~8 IN RESEALABLE POLY~~ BAG	~~NONE~~	~~RADVANA+B+G~~ Jm 6/27/07	
2	125 SEPTUM AMBER GLASS	ICE	8260B	
3	~~125 ML GLASS~~	~~ICE~~	~~8270C~~ Jm 6/27/07	
	~~125~~ 500 ML GLASS Jm 6/27/07	ICE	8270C	
5	1 L POLY	NONE	AM241+GS+ISOPU+ISOU+SR90	
6	500 ML POLY	ICE	HG	
7	125 ML POLY	NONE	PH	
8	1 L POLY	ICE	TALMET+U+CN+NO3+CLO4	+ Li + Sr + Mo Jm 6/27/07

ADDITIONAL INFORMATION (optional): Special Instructions:

SAMPLE DESC: Grey Tuff

SAMPLE LOCATION DESC: 21-27671 5' South of the dry well, below bottom of dry well, starting @ surface

Location Description: 21-012(b)

FIELD SCREENING/MEASUREMENT RESULTS:

α = .47 dpm β = 1441 dpm PID = 79 ppm

COLLECTED BY: (PRINTED NAME) Randy Vigil (SIGNATURE) [signature] (DATE) 6/27/07

REVIEWED BY: (PRINTED NAME) E Ballejos (SIGNATURE) [signature] (DATE) 6/27/07

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**7064S-2**	**Date Collected:**	**06/27/2007 12:00**	**Matrix:**	**SOIL**
Lab Sample ID:	**189723001**	**Date Received:**	**06/30/2007 09:30**	**%Moisture:**	**6.1**
Client Sample:	**4**	**Client:**	**LANL006**	**Project:**	**LANL00600**
Client ID:	**RE21-07-76277**	**Method:**	**SW846 8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**652159**	**Inst:**	**ECD2A.I**	**Dilution:**	**1**
Run Date:	**07/19/2007 19:29**	**Analyst:**	**JXM**	**Inj. Vol:**	**1 uL**
Prep Date:	**07/18/2007 20:58**	**Aliquot:**	**30 g**	**Final Volume:**	**1 mL**
Data File:	**041f4101.d**	**Column:**	**1 CLP1**	**Level:**	**LOW**
	041b4101.d		**2 CLP2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	Uh	3.55	ug/kg	1.18	3.55	1
11104-28-2	Aroclor-1221	Uh	3.55	ug/kg	1.18	3.55	1
11141-16-5	Aroclor-1232	Uh	3.55	ug/kg	1.18	3.55	1
53469-21-9	Aroclor-1242	Uh	3.55	ug/kg	1.18	3.55	1
12672-29-6	Aroclor-1248	Uh	3.55	ug/kg	1.18	3.55	1
11097-69-1	Aroclor-1254	Uh	3.55	ug/kg	1.18	3.55	1
11096-82-5	Aroclor-1260	Uh	3.55	ug/kg	1.18	3.55	1

Sample ID: **RE21-07-76277** **EPA Method 8290**

Client Data		Sample Data		Laboratory Data			
Name:	Los Alamos National Laboratory	Matrix:	Soil	Lab Sample:	29225-001	Date Received:	20-Jul-07
Project:	7078S	Sample Size:	10.9 g	QC Batch No.:	9257	Date Extracted:	14-Aug-07
Date Collected:	27-Jun-07	%Solids:	92.6	Date Analyzed DB-5:	15-Aug-07	Date Analyzed DB-225:	NA
Time Collected:	1500						

Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
2,3,7,8-TCDD	ND	0.119		
1,2,3,7,8-PeCDD	ND	0.104		
1,2,3,4,7,8-HxCDD	ND	0.129		
1,2,3,6,7,8-HxCDD	ND	0.148		
1,2,3,7,8,9-HxCDD	ND	0.135		
1,2,3,4,6,7,8-HpCDD	0.0682			J,B
OCDD	0.340			J
2,3,7,8-TCDF	ND	0.0525		
1,2,3,7,8-PeCDF	ND	0.0879		
2,3,4,7,8-PeCDF	ND	0.0838		
1,2,3,4,7,8-HxCDF	ND	0.0327		
1,2,3,6,7,8-HxCDF	ND	0.0328		
2,3,4,6,7,8-HxCDF	ND	0.0378		
1,2,3,7,8,9-HxCDF	ND	0.0496		
1,2,3,4,6,7,8-HpCDF	ND	0.0547		
1,2,3,4,7,8,9-HpCDF	ND	0.0544		
OCDF	ND	0.197		

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	103	40 - 135	
	13C-1,2,3,7,8-PeCDD	106	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	101	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	101	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	102	40 - 135	
	13C-OCDD	90.5	40 - 135	
	13C-2,3,7,8-TCDF	103	40 - 135	
	13C-1,2,3,7,8-PeCDF	92.1	40 - 135	
	13C-2,3,4,7,8-PeCDF	100	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	101	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	96.6	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	101	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	99.4	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	97.7	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	97.7	40 - 135	
	13C-OCDF	97.1	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	101	40 - 135	

Totals			
Total TCDD	ND	0.119	
Total PeCDD	ND	0.104	
Total HxCDD	ND	0.137	
Total HpCDD	0.186		B
Total TCDF	ND	0.0525	
Total PeCDF	ND	0.0857	
Total HxCDF	ND	0.0375	
Total HpCDF	ND	0.0546	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): **0.00102**

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. TEQ based on (1989) International Toxic Equivalent Factors (ITEF).
The results are reported in dry weight. The sample size is reported in wet weight.

Analyst: DMS

Approved By: William J. Luksemburg 16-Aug-2007 15:10

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High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-76277

Lab Code: GEL

GEL Job No (SDG) 7064S-2

Matrix: SOIL

GEL Sample ID: 189723001

Sample Amount 2

Moisture: 6.1

Amount Units g

Date Received: 30-JUN-07

Extraction Type Sonication

Extraction Batch ID: 651973

Concentrated Extract Volume (mL) 10

Date Extracted: 19-JUL-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0720026a

Date Analyzed: 21-JUL-07 03:19

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	Uh
121-14-2	2,4-Dinitrotoluene	500	Uh
121-82-4	RDX	500	Uh
19406-51-0	4-Amino-2,6-dinitrotoluene	500	Uh
2691-41-0	HMX	500	Uh
35572-78-2	2-Amino-4,6-dinitrotoluene	500	Uh
479-45-8	Tetryl	500	Uh
606-20-2	2,6-Dinitrotoluene	500	Uh
78-11-5	PETN	1000	Uh
88-72-2	o-Nitrotoluene	500	Uh
98-95-3	Nitrobenzene	500	Uh
99-08-1	m-Nitrotoluene	500	Uh
99-35-4	1,3,5-Trinitrobenzene	500	Uh
99-65-0	m-Dinitrobenzene	500	Uh
99-99-0	p-Nitrotoluene	500	Uh

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

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High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-76277

Lab Code: GEL

GEL Job No (SDG) 7064S-2

Matrix: SOIL

GEL Sample ID: 189723001

Sample Amount 2

Moisture: 6.1

Amount Units g

Date Received: 30-JUN-07

Extraction Type Sonication

Extraction Batch ID: 651973

Concentrated Extract Volume (mL) 10

Date Extracted: 19-JUL-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS0724016.wiff

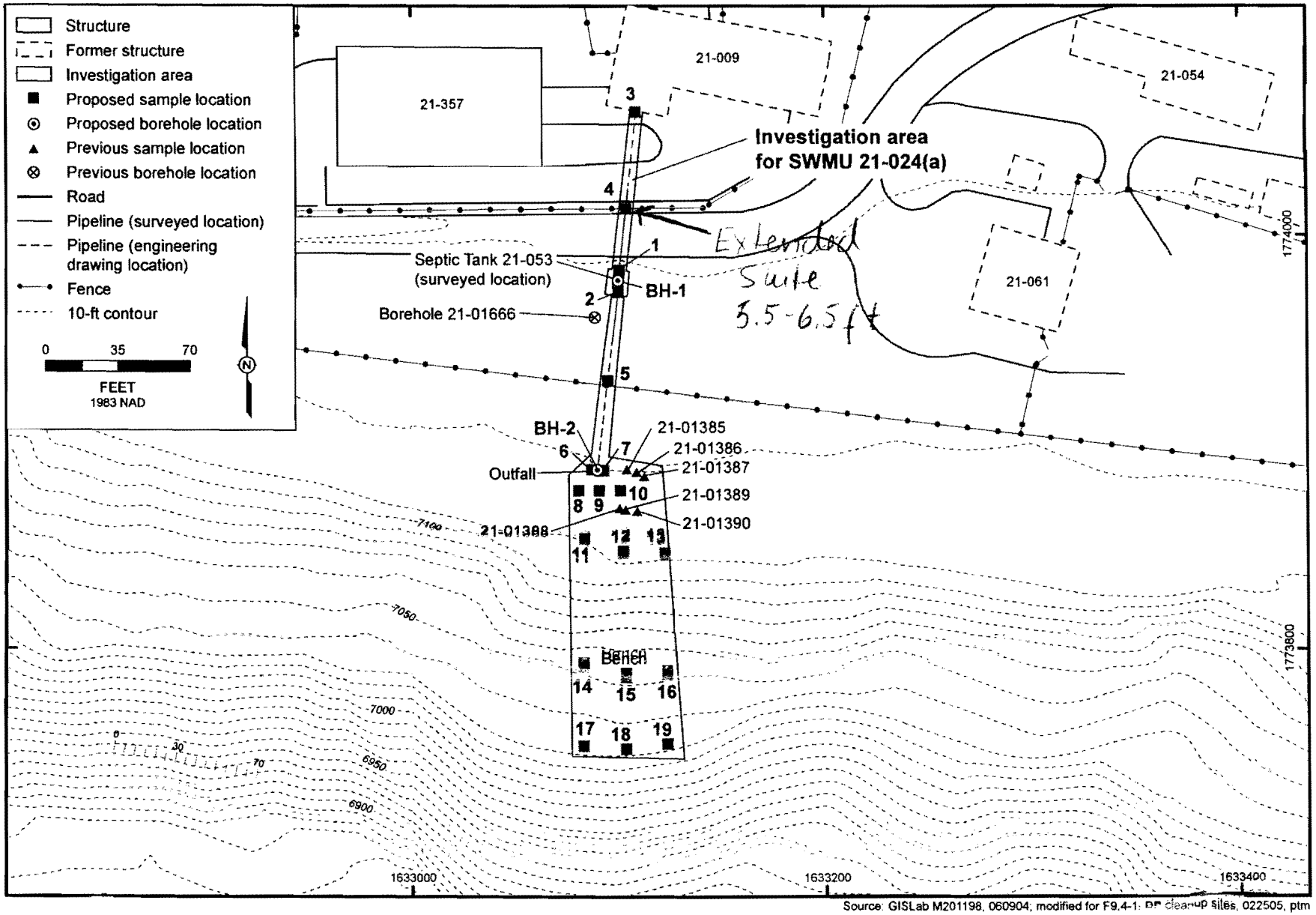
Date Analyzed: 24-JUL-07 20:22

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1000	Uh
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	Uh
618-87-1	3,5-Dinitroaniline	1000	Uh
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	Uh
78-30-8	tris(o-cresyl) phosphate	1000	Uh

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$



Source: GISLab M201198, 060904; modified for F9.4-1: RF cleanup sites, 022505, ptm

Figure 9.4-1. SWMU 21-024(a) proposed sample locations

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 42 **EVENT NAME:** SWMU 21-024(a) surface and subsurface

SAMPLE ID: RE21-07-515

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		04/27/07	MEDIA:	~~ALL~~ Qbt3	Qbt3
TIME COLLECTED (HH:MM)		1005	SUB-MEDIA:	UA	ok
PRS ID:	21-024(a)	OK	SAMPLE TECH CODE:	HA	HA
LOCATION ID:	UNK	4a-21-27340	FIELD QC TYPE:		OK
LOCATION TYPE:	GENERIC	OK	FIELD PREP:	NA	
TOP DEPTH:		5.5 ft	SAMPLE USAGE:	INV	INV
BOTTOM DEPTH:		6.5 ft	SCREEN/PORT DESC:	NA	
FIELD MATRIX:		R	EXCAVATED: YES / NO / NA		

COMPOSITE TYPE: NA COMPOSITE TIME INTERVAL: NA WATER FLOWING: YES / NO / NA

BOREHOLE: YES / NO / NA BOREHOLE DECLINATION: NA BOREHOLE DIRECTION: NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	COMMENTS
2		8082	125 ML GLASS	Ice	Y	
2		8290	125 ML GLASS	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
2		TPH-DRO	125 ML GLASS	Ice	~~Y~~ N	
1		TPH-GRO	125 SEPTUM AMBER GLASS	Ice	~~Y~~ N	

SAMPLE DESC: Gray tuff w/some soil.
This sample collected for extended suite analyses.

LOCATION DESC: location 4a - 50ft south of former Bldg 21-009.

FIELD SCREENING/MEASUREMENT RESULTS:

α - 0 dpm β - 529 dpm PID - 0.1 ppm

COLLECTED BY (PRINT) Antoinette E. Taya REVIEWED BY (PRINT) [illegible]

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Antoinette E. Taya	04/27/07 1111	(Printed Name)	4/27/07 11:11
(Signature)		(Signature)	
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

21-024(a)

GEL Laboratories LLC

Report Date: May 9, 2007

PCB
Certificate of Analysis
Sample Summary

SDG Number:	07–42	**Date Collected:**	04/27/2007 12:00	**Matrix:**	SOIL
Lab Sample ID:	185139001	**Date Received:**	05/01/2007 09:15	**%Moisture:**	9.2
Client Sample:	1,2	**Client:**	LANL006	**Project:**	LANL00600
Client ID:	RE21–07–515	**Method:**	SW846 8082	**SOP Ref:**	GL–OA–E–040
Batch ID:	630667	**Inst:**	ECD1A.I	**Dilution:**	10
Run Date:	05/04/2007 12:39	**Analyst:**	RAW2	**Inj. Vol:**	1 uL
Prep Date:	05/03/2007 08:45	**Aliquot:**	30 g	**Final Volume:**	1 mL
Data File:	020f2001.d	**Column:**	1 CLP1	**Level:**	LOW
	020b2001.d		2 CLP2		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674–11–2	Aroclor–1016	U	36.7	ug/kg	12.2	36.7	1
11104–28–2	Aroclor–1221	U	36.7	ug/kg	12.2	36.7	1
11141–16–5	Aroclor–1232	U	36.7	ug/kg	12.2	36.7	1
53469–21–9	Aroclor–1242	U	36.7	ug/kg	12.2	36.7	1
12672–29–6	Aroclor–1248	U	36.7	ug/kg	12.2	36.7	1
11097–69–1	Aroclor–1254	U	36.7	ug/kg	12.2	36.7	1
11096–82–5	Aroclor–1260	U	36.7	ug/kg	12.2	36.7	1

21-024(a)

Sample ID: RE21-07-515 **EPA Method 8290**

Client Data		Sample Data		Laboratory Data			
Name:	Los Alamos National Laboratory	Matrix:	Soil	Lab Sample:	28937-001	Date Received:	1-May-07
Project:	07-41	Sample Size:	10.6 g	QC Batch No.:	9053	Date Extracted:	16-May-07
Date Collected:	27-Apr-07	%Solids:	95.3	Date Analyzed DB-5:	18-May-07	Date Analyzed DB-225:	NA
Time Collected:	1005						

Analyte	Conc. (pg/g)	DL [a]	EMPC [b]	Qualifiers		Labeled Standard	%R	LCL-UCL [d]	Qualifiers
2,3,7,8-TCDD	ND	0.0710			IS	13C-2,3,7,8-TCDD	94.7	40 - 135	
1,2,3,7,8-PeCDD	ND	0.0994				13C-1,2,3,7,8-PeCDD	79.9	40 - 135	
1,2,3,4,7,8-HxCDD	ND	0.140				13C-1,2,3,4,7,8-HxCDD	87.9	40 - 135	
1,2,3,6,7,8-HxCDD	ND	0.155				13C-1,2,3,6,7,8-HxCDD	82.1	40 - 135	
1,2,3,7,8,9-HxCDD	ND	0.144				13C-1,2,3,4,6,7,8-HpCDD	95.1	40 - 135	
1,2,3,4,6,7,8-HpCDD	1.47			J		13C-OCDD	98.2	40 - 135	
OCDD	13.0			B		13C-2,3,7,8-TCDF	100	40 - 135	
2,3,7,8-TCDF	0.0773			J		13C-1,2,3,7,8-PeCDF	92.2	40 - 135	
1,2,3,7,8-PeCDF	ND	0.0881				13C-2,3,4,7,8-PeCDF	96.2	40 - 135	
2,3,4,7,8-PeCDF	ND	0.0877				13C-1,2,3,4,7,8-HxCDF	82.9	40 - 135	
1,2,3,4,7,8-HxCDF	ND	0.0466				13C-1,2,3,6,7,8-HxCDF	84.6	40 - 135	
1,2,3,6,7,8-HxCDF	ND	0.0459				13C-2,3,4,6,7,8-HxCDF	90.3	40 - 135	
2,3,4,6,7,8-HxCDF	0.0517			J		13C-1,2,3,7,8,9-HxCDF	93.6	40 - 135	
1,2,3,7,8,9-HxCDF	ND	0.0690				13C-1,2,3,4,6,7,8-HpCDF	90.8	40 - 135	
1,2,3,4,6,7,8-HpCDF	0.514			J		13C-1,2,3,4,7,8,9-HpCDF	108	40 - 135	
1,2,3,4,7,8,9-HpCDF	ND	0.0435				13C-OCDF	101	40 - 135	
OCDF	1.11			J	CRS	37Cl-2,3,7,8-TCDD	88.4	40 - 135	

Totals			
Total TCDD	0.748		
Total PeCDD	ND	0.0994	
Total HxCDD	ND		0.158
Total HpCDD	2.97		
Total TCDF	0.301		
Total PeCDF	0.168		
Total HxCDF	0.478		
Total HpCDF	1.14		

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.0468

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. TEQ based on (1989) International Toxic Equivalent Factors (ITEF).
The results are reported in dry weight. The sample size is reported in wet weight.

Analyst: DMS

Approved By: William J. Luksemburg 21-May-2007 10:03

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21-024(a)

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-515

Lab Code: GEL

GEL Job No (SDG) 07-42

Matrix: SOIL

GEL Sample ID: 185139001

Sample Amount 2

Moisture: 9.2

Amount Units g

Date Received: 01-MAY-07

Extraction Type Sonication

Extraction Batch ID: 630594

Concentrated Extract Volume (mL) 10

Date Extracted: 07-MAY-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL datafile: EXP0508027a

Date Analyzed: 09-MAY-07 06:15

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

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21-024(a)

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-515

Lab Code: GEL

GEL Job No (SDG) 07-42

Matrix: SOIL

GEL Sample ID: 185139001

Sample Amount 2

Moisture: 9.2

Amount Units g

Date Received: 01-MAY-07

Extraction Type Sonication

Extraction Batch ID: 630594

Concentrated Extract Volume (mL) 10

Date Extracted: 07-MAY-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS0511029.wiff

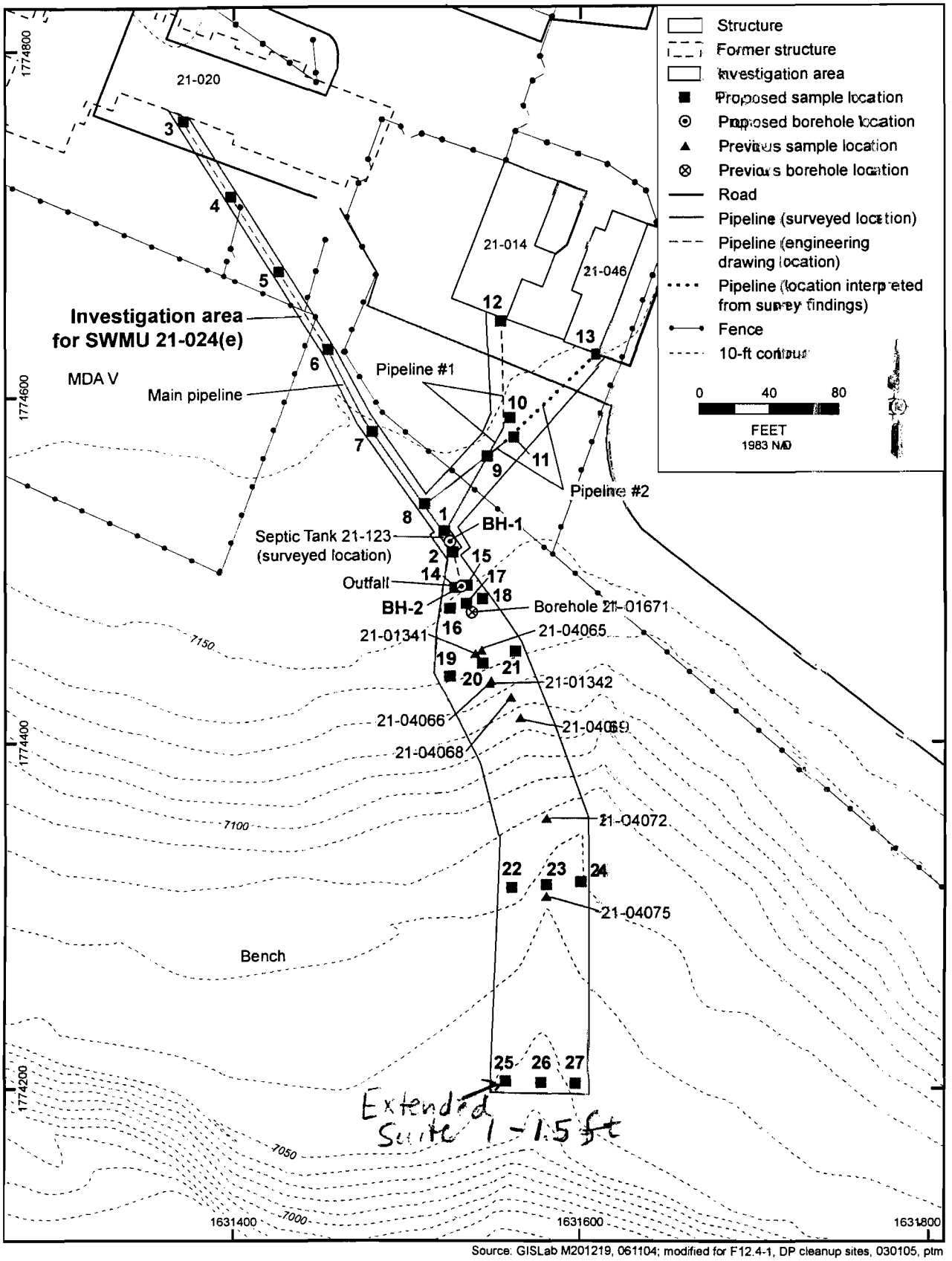
Date Analyzed: 12-MAY-07 00:11

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1000	U
59229-75-3	2,4-Diamino-4-nitrotoluene	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$



Source: GISLab M201219, 061104; modified for F12.4-1, DP cleanup sites, 030105, ptm

Figure 12.4-1. SWMU 21-024(e) proposed sample locations

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 145 **EVENT NAME:** Waste sampling 21-024(e)

SAMPLE ID: RE21-07-4045

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		07/18/2007	MEDIA:	~~NA~~ MCV	QBT3
TIME COLLECTED(HH:MM)		08:16	SUB-MEDIA:	UA	OK
PRS ID:	MCV 7/18/07 ~~21-024(f)~~	21-024(e)	SAMPLE TECH CODE:	~~SS~~ MCV 7/18/07	HA
LOCATION ID:	21-27253 ~~WST-000002~~ MCV 07/10/07	Loc 25b	FIELD QC TYPE:	NA	OK
LOCATION TYPE:	GENERIC	OK	FIELD PREP:	NA	↓
TOP DEPTH:	~~0~~ 0.0 MCV 07/10/07	1.0 ft	SAMPLE USAGE:	~~WST~~ MCV 7/18/07	INV
BOTTOM DEPTH:	MCV ~~0~~ 1.5 07/10/07	1.5 ft	SCREEN/PORT DESC:	NA	
FIELD MATRIX:	7/18/07 ~~S~~	R	EXCAVATED: YES / NO / NA		

COMPOSITE TYPE: — COMPOSITE TIME INTERVAL: — WATER FLOWING: YES / NO / NA

BOREHOLE: YES / NO / NA BOREHOLE DECLINATION: — BOREHOLE DIRECTION: —

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
2		8082	125 ML GLASS	Ice	Y	
2		8290	125 ML GLASS	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
2		8151A	125 ML GLASS	Ice	N	

SAMPLE DESC:

Weathered Tuff

* Extended suite sample

LOCATION DESC:

Location 25b - 0ft west of location 26

FIELD SCREENING/MEASUREMENT RESULTS:

α - 17dpm β - 671dpm PID - 75 ppm

COLLECTED BY (PRINT) M Whitaker **REVIEWED BY (PRINT)** Antoinette E. Tryon

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name)	7/18/07	(Printed Name)	7/18/07
(Signature)	16:20	(Signature)	16:20
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

21-024(e)

PCB
Certificate of Analysis
Sample Summary

SDG Number:	07-297	Date Collected:	07/18/2007 12:00	Matrix:	SOIL
Lab Sample ID:	190003001	Date Received:	07/21/2007 09:20	%Moisture:	7.1
Client Sample:	1,2	Client:	LANL006	Project:	LANL00600
Client ID:	RE21-07-4045	Method:	SW846 8082	SOP Ref:	GL-OA-E-040
Batch ID:	653462	Inst:	ECD1A.I	Dilution:	1
Run Date:	07/24/2007 15:32	Analyst:	RAW2	Inj. Vol:	1 uL
Prep Date:	07/23/2007 19:33	Aliquot:	30 g	Final Volume:	1 mL
Data File:	029f2901.d	Column:	1 CLP1	Level:	LOW
	029b2901.d		2 CLP2		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.59	ug/kg	1.20	3.59	1
11104-28-2	Aroclor-1221	U	3.59	ug/kg	1.20	3.59	1
11141-16-5	Aroclor-1232	U	3.59	ug/kg	1.20	3.59	1
53469-21-9	Aroclor-1242	U	3.59	ug/kg	1.20	3.59	1
12672-29-6	Aroclor-1248	U	3.59	ug/kg	1.20	3.59	1
11097-69-1	Aroclor-1254	U	3.59	ug/kg	1.20	3.59	1
11096-82-5	Aroclor-1260	U	3.59	ug/kg	1.20	3.59	1

21-024 (e)

Sample ID: RE21-07-4045 **EPA Method 8290**

Client Data		Sample Data		Laboratory Data			
Name:	Los Alamos National Laboratory	Matrix:	Soil	Lab Sample:	29222-001	Date Received:	20-Jul-07
Project:	07-296C	Sample Size:	10.3 g	QC Batch No.:	9210	Date Extracted:	25-Jul-07
Date Collected:	18-Jul-07	%Solids:	94.5	Date Analyzed DB-5:	28-Jul-07	Date Analyzed DB-225:	NA
Time Collected:	0816						

Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
2,3,7,8-TCDD	ND	0.138		
1,2,3,7,8-PeCDD	ND	0.130		
1,2,3,4,7,8-HxCDD	ND	0.247		
1,2,3,6,7,8-HxCDD	ND	0.244		
1,2,3,7,8,9-HxCDD	ND	0.245		
1,2,3,4,6,7,8-HpCDD	ND		0.580	
OCDD	4.78			J
2,3,7,8-TCDF	ND	0.125		
1,2,3,7,8-PeCDF	ND	0.146		
2,3,4,7,8-PeCDF	ND	0.155		
1,2,3,4,7,8-HxCDF	ND	0.0579		
1,2,3,6,7,8-HxCDF	ND	0.0603		
2,3,4,6,7,8-HxCDF	ND	0.0715		
1,2,3,7,8,9-HxCDF	ND	0.115		
1,2,3,4,6,7,8-HpCDF	ND	0.205		
1,2,3,4,7,8,9-HpCDF	ND	0.0973		
OCDF	0.411			J

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	92.5	40 - 135	
	13C-1,2,3,7,8-PeCDD	82.2	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	95.8	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	94.8	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	102	40 - 135	
	13C-OCDD	83.9	40 - 135	
	13C-2,3,7,8-TCDF	92.6	40 - 135	
	13C-1,2,3,7,8-PeCDF	83.6	40 - 135	
	13C-2,3,4,7,8-PeCDF	79.8	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	116	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	94.4	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	95.0	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	101	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	102	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	104	40 - 135	
	13C-OCDF	90.2	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	85.1	40 - 135	

Totals		
Total TCDD	ND	0.138
Total PeCDD	ND	0.130
Total HxCDD	ND	0.459
Total HpCDD	ND	1.42
Total TCDF	ND	0.128
Total PeCDF	ND	0.150
Total HxCDF	ND	0.218
Total HpCDF	ND	0.218

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.00519

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. TEQ based on (1989) International Toxic Equivalent Factors (ITEF).
The results are reported in dry weight. The sample size is reported in wet weight.

Analyst: MAS

Approved By: William J. Luksemburg 01-Aug-2007 08:45

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21-024(e)

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-4045

Lab Code: GEL

GEL Job No (SDG) 07-297

Matrix: SOIL

GEL Sample ID: 190003001

Sample Amount 2

Moisture: 7.1

Amount Units g

Date Received: 21-JUL-07

Extraction Type Sonication

Extraction Batch ID: 653048

Concentrated Extract Volume (mL) 10

Date Extracted: 25-JUL-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXH0730040a

Date Analyzed: 31-JUL-07 14:41

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

21-024(e)

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High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-4045

Lab Code: GEL

GEL Job No (SDG) 07-297

Matrix: SOIL

GEL Sample ID: 190003001

Sample Amount 2

Moisture: 7.1

Amount Units g

Date Received: 21-JUL-07

Extraction Type Sonication

Extraction Batch ID: 653048

Concentrated Extract Volume (mL) 10

Date Extracted: 25-JUL-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS080022.wiff

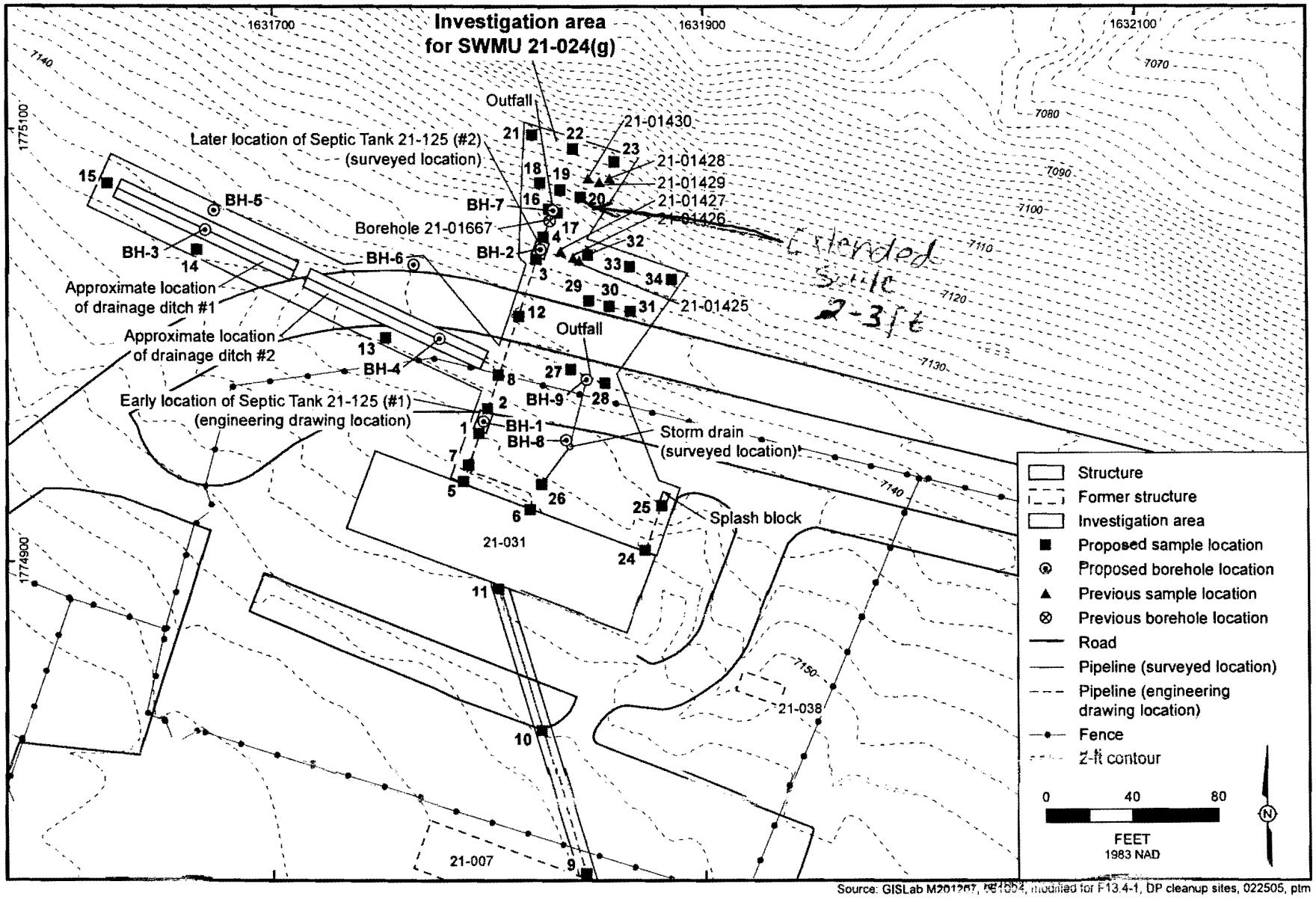
Date Analyzed: 02-AUG-07 22:34

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$



Source: GISLab M201267, 061004, modified for F13.4-1, DP cleanup sites, 022505, ptm

Figure 13.4-1. SWMU 21-024(g) proposed sample locations

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 47 **EVENT NAME:** 21-024(g) extended

SAMPLE ID: RE21-07-582

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		05/24/07	MEDIA:	~~ALLH~~ EKT 05/24/07	Qbt3
TIME COLLECTED (HH:MM)		0930	SUB-MEDIA:	UA	
PRS ID:		OK	SAMPLE TECH CODE:	~~SB~~ EKT 05/24/07	HA
LOCATION ID:	UNK	Location 20 b	FIELD QC TYPE:		NA
LOCATION TYPE:	GENERIC	location 20b	FIELD PREP:	NA	OK
TOP DEPTH:	0	2.0 ft	SAMPLE USAGE:	~~WST~~ EKT 05/24/07	INV
BOTTOM DEPTH:	0	3.0 ft	SCREEN/PORT DESC:		NA
FIELD MATRIX:	S		EXCAVATED: YES / NO (NA)		

COMPOSITE TYPE: — COMPOSITE TIME INTERVAL: — WATER FLOWING: YES (NO) NA

BOREHOLE: YES (NO) NA BOREHOLE DECLINATION: — BOREHOLE DIRECTION: —

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	COMMENTS
2		8082	125ML GLASS	Ice	Y	
2		8290	125ML GLASS	Ice	Y	
1		NMED Explosives list	250ML AMBER GLASS	Ice	Y	

SAMPLE DESC:

GRAY WHEATHERED TUFF

LOCATION DESC:
location 20 b

FIELD SCREENING/MEASUREMENT RESULTS:

α - 16dpm β - 542 dpm PID - 2.5 ppm

COLLECTED BY (PRINT) ERIC K ROSA

REVIEWED BY (PRINT) Matt Whitaker

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name)	5/24/07	(Printed Name)	5/24/07
(Signature)	1600	(Signature)	4:00
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

21-024(9)

GEL Laboratories LLC

Report Date: June 2, 2007

PCB
Certificate of Analysis
Sample Summary

SDG Number:	07-84	**Date Collected:**	05/24/2007 12:00	**Matrix:**	SOIL
Lab Sample ID:	186774001	**Date Received:**	05/26/2007 09:45	**%Moisture:**	13.6
Client Sample:	1,2	**Client:**	LANL006	**Project:**	LANL00600
Client ID:	RE21-07-582	**Method:**	SW846 8082	**SOP Ref:**	GL-OA-E-040
Batch ID:	638347	**Inst:**	ECD1A.I	**Dilution:**	1
Run Date:	05/31/2007 15:19	**Analyst:**	RAW2	**Inj. Vol:**	1 uL
Prep Date:	05/30/2007 19:43	**Aliquot:**	30 g	**Final Volume:**	1 mL
Data File:	024f2401.d	**Column:**	1 CLP1	**Level:**	LOW
	024b2401.d		2 CLP2		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.86	ug/kg	1.29	3.86	1
11104-28-2	Aroclor-1221	U	3.86	ug/kg	1.29	3.86	1
11141-16-5	Aroclor-1232	U	3.86	ug/kg	1.29	3.86	1
53469-21-9	Aroclor-1242	U	3.86	ug/kg	1.29	3.86	1
12672-29-6	Aroclor-1248	U	3.86	ug/kg	1.29	3.86	1
11097-69-1	Aroclor-1254	J	2.50	ug/kg	1.29	3.86	2
11096-82-5	Aroclor-1260	J	2.20	ug/kg	1.29	3.86	1

21-024(g)

Sample ID: RE21-07-582 **EPA Method 8290**

Client Data		Sample Data		Laboratory Data			
Name:	Los Alamos National Laboratory	Matrix:	Soil	Lab Sample:	29037-001	Date Received:	1-Jun-07
Project:	07-102	Sample Size:	11.6 g	QC Batch No.:	9100	Date Extracted:	2-Jun-07
Date Collected:	24-May-07	%Solids:	86.3	Date Analyzed DB-5:	5-Jun-07	Date Analyzed DB-225:	NA
Time Collected:	0930						

Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
2,3,7,8-TCDD	ND	0.108		
1,2,3,7,8-PeCDD	ND	0.126		
1,2,3,4,7,8-HxCDD	ND	0.269		
1,2,3,6,7,8-HxCDD	ND	0.289		
1,2,3,7,8,9-HxCDD	ND	0.272		
1,2,3,4,6,7,8-HpCDD	1.30			J
OCDD	8.79			
2,3,7,8-TCDF	ND	0.0820		
1,2,3,7,8-PeCDF	ND	0.122		
2,3,4,7,8-PeCDF	ND	0.127		
1,2,3,4,7,8-HxCDF	ND	0.0824		
1,2,3,6,7,8-HxCDF	ND	0.0774		
2,3,4,6,7,8-HxCDF	ND	0.0886		
1,2,3,7,8,9-HxCDF	ND	0.121		
1,2,3,4,6,7,8-HpCDF	0.546			J
1,2,3,4,7,8,9-HpCDF	ND	0.105		
OCDF	0.714			J

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	84.2	40 - 135	
	13C-1,2,3,7,8-PeCDD	87.4	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	83.2	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	82.6	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	84.2	40 - 135	
	13C-OCDD	80.7	40 - 135	
	13C-2,3,7,8-TCDF	93.7	40 - 135	
	13C-1,2,3,7,8-PeCDF	91.6	40 - 135	
	13C-2,3,4,7,8-PeCDF	95.9	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	78.0	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	80.4	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	83.8	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	83.4	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	80.7	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	93.4	40 - 135	
	13C-OCDF	85.1	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	84.5	40 - 135	

Totals			
Total TCDD	ND	0.108	
Total PeCDD	ND	0.126	
Total HxCDD	ND	0.276	
Total HpCDD	2.67		
Total TCDF	ND	0.0820	
Total PeCDF	0.223		
Total HxCDF	0.415		0.469
Total HpCDF	0.998		

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.0280

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. TEQ based on (1989) International Toxic Equivalent Factors (ITEF).
The results are reported in dry weight. The sample size is reported in wet weight.

Analyst: DMS

Approved By: William J. Luksemburg 07-Jun-2007 05:15

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21-024(g)

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-582

Lab Code: GEL

GEL Job No (SDG) 07-84

Matrix: SOIL

GEL Sample ID: 186774001

Sample Amount 2

Moisture: 13.6

Amount Units g

Date Received: 26-MAY-07

Extraction Type Sonication

Extraction Batch ID: 637961

Concentrated Extract Volume (mL) 10

Date Extracted: 30-MAY-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP060408a

Date Analyzed: 05-JUN-07 12:09

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

21-024(9)

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High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-582

Lab Code: GEL

GEL Job No (SDG) 07-84

Matrix: SOIL

GEL Sample ID: 186774001

Sample Amount 2

Moisture: 13.6

Amount Units g

Date Received: 26-MAY-07

Extraction Type Sonication

Extraction Batch ID: 637961

Concentrated Extract Volume (mL) 10

Date Extracted: 30-MAY-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: HXS1607018.wiff

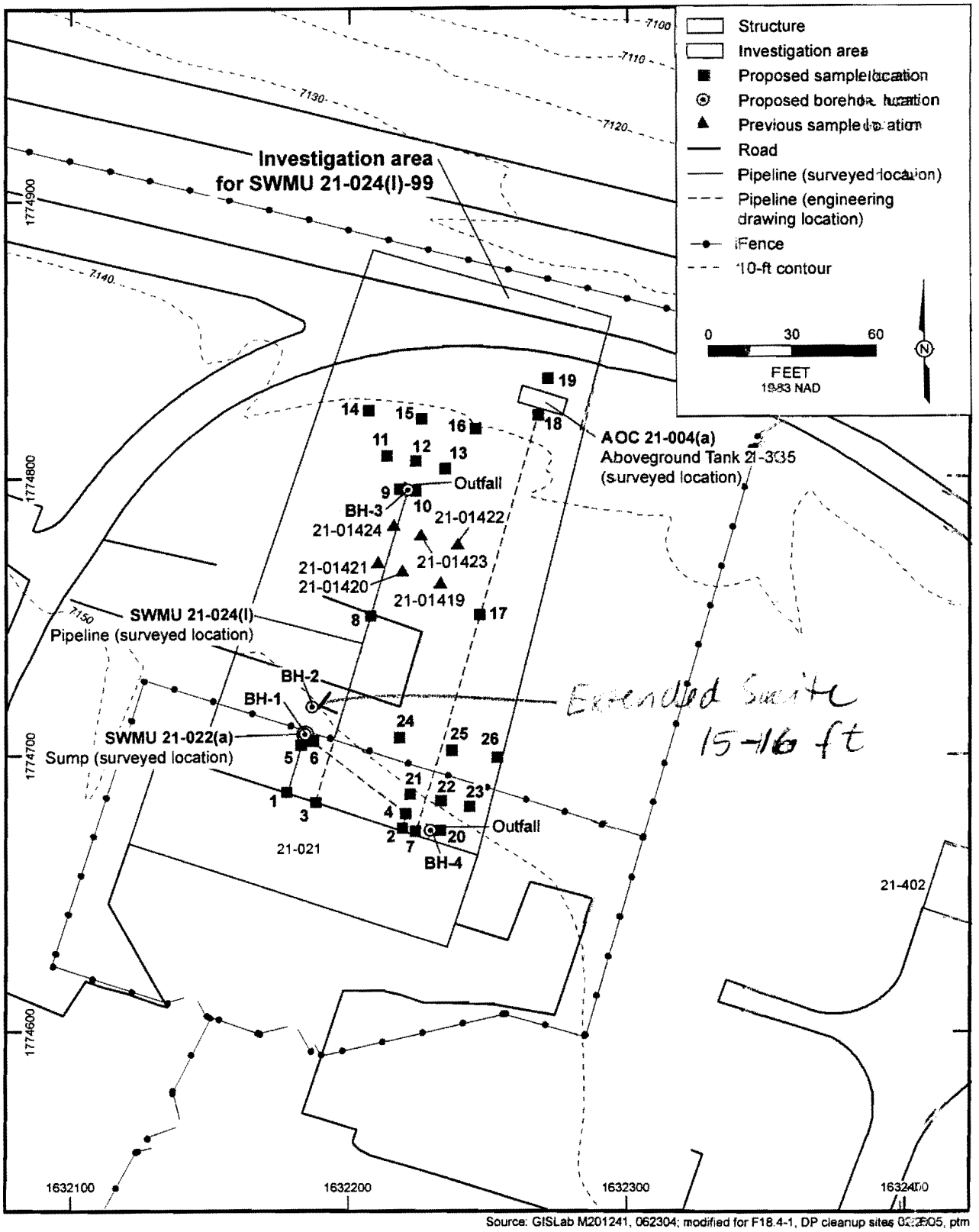
Date Analyzed: 07-JUN-07 19:25

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$



Source: GISLab M201241, 062304; modified for F18.4-1, DP cleanup sites 022605, ptm

Figure 18.4-1. SWMU 21-024(l)-99 proposed sample locations

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 140 **EVENT NAME:** Waste sampling 21-024(I)

SAMPLE ID: RE21-07-3963

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		07/09/2007	MEDIA:	~~NA~~ MCW 7/9/07	QBT3
TIME COLLECTED (HH:MM)		11:29	SUB-MEDIA:	UA	OK
PRS ID:	21-024(I)	OK	SAMPLE TECH CODE:	SS	
LOCATION ID:	~~WST-000902~~ RE 7/9/07	21-27515/BH-2	FIELD QC TYPE:	NA	
LOCATION TYPE:	~~GENERIC~~ MCW 7/9/07	BH	FIELD PREP:	NA	
TOP DEPTH:	~~Blank~~ 07/23/07	15.0ft	SAMPLE USAGE:	~~WST~~ MCW 7/9/07	INV
BOTTOM DEPTH:	~~Blank~~ 07/23/07	16.0ft	SCREEN/PORT DESC:		
FIELD MATRIX: MCW 7/9/07	R		EXCAVATED: YES / NO / NA		

COMPOSITE TYPE: — COMPOSITE TIME INTERVAL: — WATER FLOWING: YES / NO / NA

BOREHOLE: YES / NO / NA BOREHOLE DECLINATION: — BOREHOLE DIRECTION: —

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
2		8082	125 ML GLASS	Ice	Y	
2		8290	125 ML GLASS	Ice	Y	
1		NMED Explosives list	~~250~~ 500 ML AMBER GLASS MCW 7/9/07	Ice	Y	
2		8151A	125 ML GLASS	Ice	N	

SAMPLE DESC:

Gray Tuff

LOCATION DESC:

BH-2 — 10ft North of sump

FIELD SCREENING/MEASUREMENT RESULTS:

α-62 dpm β-510 dpm PID-0.0ppm

COLLECTED BY (PRINT) M Whinnard **REVIEWED BY (PRINT)** B Gallegos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name)	7/9/07	(Printed Name)	7/9/07
(Signature)	1335	(Signature)	13135
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

21-024(R)-99

GEL Laboratories LLC

Report Date: July 20, 2007

PCB
Certificate of Analysis
Sample Summary

SDG Number:	07-258	Date Collected:	07/09/2007 12:00	Matrix:	SOIL
Lab Sample ID:	189312001	Date Received:	07/11/2007 09:15	%Moisture:	4.8
Client Sample:	1,2	Client:	LANL006	Project:	LANL00600
Client ID:	RE21-07-3963	Method:	SW846 8082	SOP Ref:	GL-OA-E-040
Batch ID:	650726	Inst:	ECD2A.I	Dilution:	1
Run Date:	07/17/2007 18:33	Analyst:	JXM	Inj. Vol:	1 uL
Prep Date:	07/13/2007 21:13	Aliquot:	30 g	Final Volume:	1 mL
Data File:	0361[illegible]601.d	Column:	1 CLP1	Level:	LOW
	0361[illegible]3601.d		2 CLP2		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.50	ug/kg	1.17	3.50	1
11104-28-2	Aroclor-1221	U	3.50	ug/kg	1.17	3.50	1
11141-16-5	Aroclor-1232	U	3.50	ug/kg	1.17	3.50	1
53469-21-9	Aroclor-1242	U	3.50	ug/kg	1.17	3.50	1
12672-29-6	Aroclor-1248	U	3.50	ug/kg	1.17	3.50	1
11097-69-1	Aroclor-1254	U	3.50	ug/kg	1.17	3.50	1
11096-82-5	Aroclor-1260	U	3.50	ug/kg	1.17	3.50	1

21-024 (1)-99

Sample ID: RE21-07-3963 **EPA Method 8290**

Client Data		Sample Data		Laboratory Data			
Name:	Los Alamos National Laboratory	Matrix:	Soil	Lab Sample:	29175-001	Date Received:	11-Jul-07
Project:	07-259C	Sample Size:	10.8 g	QC Batch No.:	9190	Date Extracted:	17-Jul-07
Date Collected:	9-Jul-07	%Solids:	94.4	Date Analyzed DB-5:	21-Jul-07	Date Analyzed DB-225:	NA
Time Collected:	1129						

Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
2,3,7,8-TCDD	ND	0.0614		
1,2,3,7,8-PeCDD	ND	0.0546		
1,2,3,4,7,8-HxCDD	ND	0.193		
1,2,3,6,7,8-HxCDD	ND	0.0880		
1,2,3,7,8,9-HxCDD	ND	0.0847		
1,2,3,4,6,7,8-HpCDD	0.538			J
OCDD	5.33			B
2,3,7,8-TCDF	0.189			J
1,2,3,7,8-PeCDF	ND	0.0606		
2,3,4,7,8-PeCDF	ND	0.0553		
1,2,3,4,7,8-HxCDF	ND	0.0371		
1,2,3,6,7,8-HxCDF	ND	0.0421		
2,3,4,6,7,8-HxCDF	ND	0.0425		
1,2,3,7,8,9-HxCDF	ND	0.0663		
1,2,3,4,6,7,8-HpCDF	0.634			J
1,2,3,4,7,8,9-HpCDF	ND	0.0770		
OCDF	0.778			J

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	85.9	40 - 135	
	13C-1,2,3,7,8-PeCDD	85.3	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	88.1	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	86.0	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	86.5	40 - 135	
	13C-OCDD	59.6	40 - 135	
	13C-2,3,7,8-TCDF	87.8	40 - 135	
	13C-1,2,3,7,8-PeCDF	85.9	40 - 135	
	13C-2,3,4,7,8-PeCDF	86.9	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	76.9	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	75.1	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	82.0	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	78.9	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	76.7	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	77.1	40 - 135	
	13C-OCDF	70.6	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	95.0	40 - 135	

Totals		
Total TCDD	ND	0.0614
Total PeCDD	ND	0.0546
Total HxCDD	ND	0.122
Total HpCDD	1.46	
Total TCDF	0.332	
Total PeCDF	ND	0.0580
Total HxCDF	0.375	
Total HpCDF	1.18	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.0367

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit.

e. TEQ based on (1989) International Toxic Equivalent Factors (ITEF).

The results are reported in dry weight. The sample size is reported in wet weight.

Analyst: JMH

Approved By: William J. Luksemburg 31-Jul-2007 15:05

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21-024(2)-99

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-3963

Lab Code: GEL

GEL Job No (SDG) 07-258

Matrix: SOIL

GEL Sample ID: 189312001

Sample Amount 2

Moisture: 4.8

Amount Units g

Date Received: 11-JUL-07

Extraction Type Sonication

Extraction Batch ID: 650361

Concentrated Extract Volume (mL) 10

Date Extracted: 16-JUL-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL datafile: EXP0723014a

Date Analyzed: 23-JUL-07 15:49

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}} \times \text{Dilution Factor}$$

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21-024(2)-99

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-3963

Lab Code: GEL

GEL Job No (SDG) 07-258

Matrix: SOIL

GEL Sample ID: 189312001

Sample Amount 2

Moisture: 4.8

Amount Units g

Date Received: 11-JUL-07

Extraction Type Sonication

Extraction Batch ID: 650361

Concentrated Extract Volume (mL) 10

Date Extracted: 16-JUL-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS0717016.wiff

Date Analyzed: 17-JUL-07 18:38

Units: ug/kg

Cas No	Compound	Concentration*	Q
3058-38-6	TATB	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

*Concentration=

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}} \times \text{Dilution Factor}$$

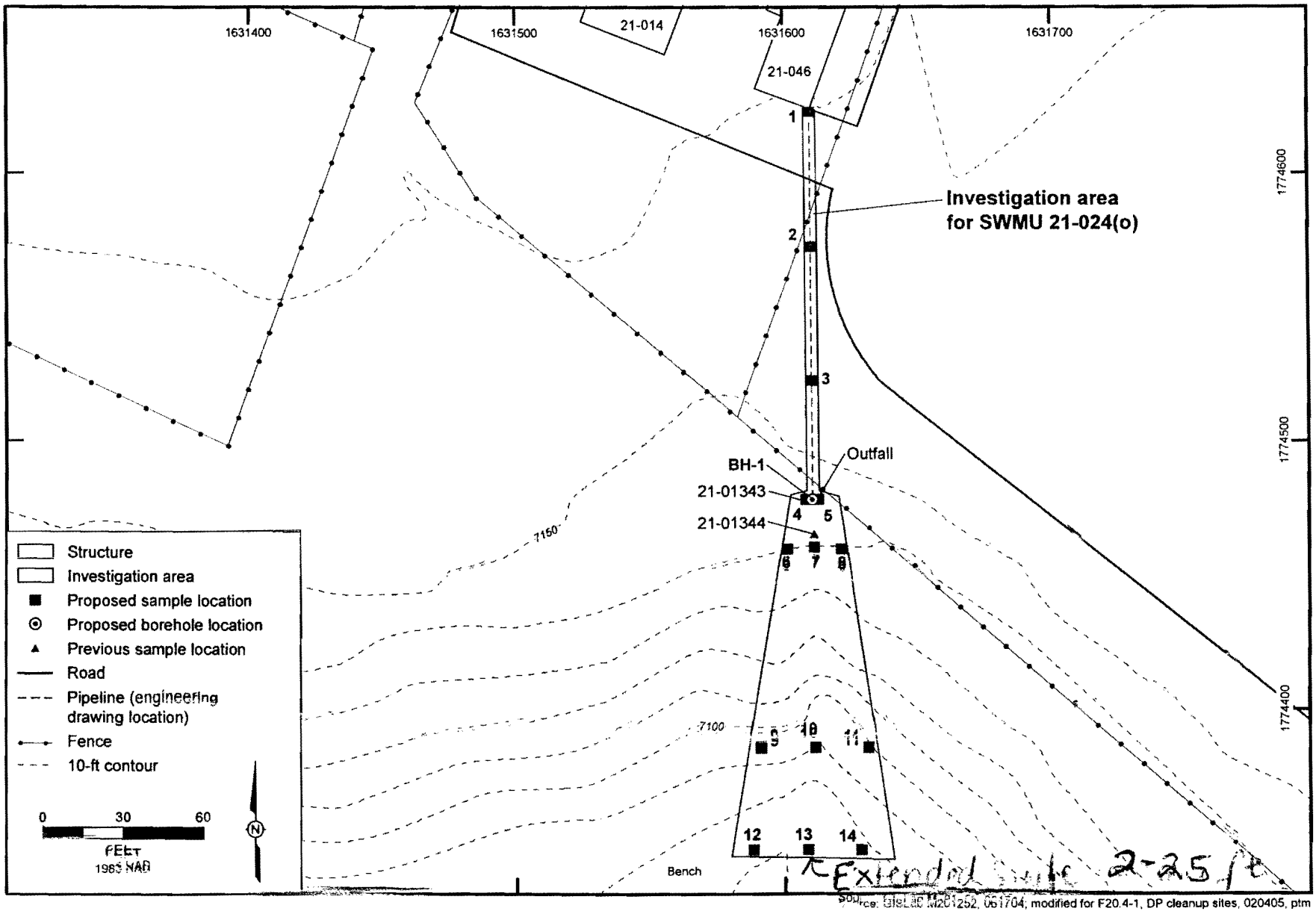

Figure 20.4-1. SWMU 21-024(o) proposed sample locations

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 144 **EVENT NAME:** Waste sampling 21-024(o)

SAMPLE ID: RE21-07-4030

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		07/10/2007	MEDIA:	~~NA~~ NCW 7/10/07	QBT3
TIME COLLECTED (HH:MM)		10:40	SUB-MEDIA:	UA	OK
PRS ID:	NCW 7/10/07 ~~21-024(d)~~	21-024(d)	SAMPLE TECH CODE:	~~BS~~ NCW 7/10/07	HA
LOCATION ID:	~~WST-600992~~ ac rcc 06/22/07	21-27355/13b	FIELD QC TYPE:	NA	OK
LOCATION TYPE:	GENERIC	OK	FIELD PREP:	NA	↓
TOP DEPTH:	~~2.0 ft~~ ac rcc 06/22/07	2.0 ft	SAMPLE USAGE:	~~WST~~ ac rcc 06/22/07	INV
BOTTOM DEPTH:	~~2.5 ft~~ ac rcc 06/22/07	2.5 ft	SCREEN/PORT DESC:	NA	
FIELD MATRIX:	NCW 7/10/07 ~~S~~ R		EXCAVATED: YES / NO / NA		

COMPOSITE TYPE: — COMPOSITE TIME INTERVAL: — WATER FLOWING: YES / NO / NA

BOREHOLE: YES / NO / NA BOREHOLE DECLINATION: — BOREHOLE DIRECTION: —

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
2		8082	125 ML GLASS	Ice	Y	
2		8290	125 ML GLASS	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
2		8151A	125 ML GLASS	Ice	N ac rcc 07/10/07	

SAMPLE DESC:

Weathered Tuff

LOCATION DESC:

Location 13b

FIELD SCREENING/MEASUREMENT RESULTS:

α - 66 dpm β - 876 dpm PID - 24.5 ppm

COLLECTED BY (PRINT) M Whitaker **REVIEWED BY (PRINT)** Antoinette E. Taya

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Antoinette E Taya	07/10/07 1443	(Printed Name) Melissa Sandoval	7/10/07 1443
(Signature)		(Signature)	
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

21-024(0)

PCB
Certificate of Analysis
Sample Summary

SDG Number:	07-265	**Date Collected:**	07/10/2007 12:00	**Matrix:**	SOIL
Lab Sample ID:	189396001	**Date Received:**	07/12/2007 09:30	**%Moisture:**	3.3
Client Sample:	1,2	**Client:**	LANL006	**Project:**	LANL00600
Client ID:	HE21-07-4030	**Method:**	SW846 8082	**SOP Ref:**	GL-OA-E-040
Batch ID:	651460	**Inst:**	ECD2A.I	**Dilution:**	1
Run Date:	07/18/2007 13:53	**Analyst:**	JXM	**Inj. Vol:**	1 uL
Prep Date:	07/17/2007 08:30	**Aliquot:**	30 g	**Final Volume:**	1 mL
Data File:	014f1401.d	**Column:**	1 CLP1	**Level:**	LOW
	014b1401.d		2 CLP2		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.45	ug/kg	1.15	3.45	1
11104-28-2	Aroclor-1221	U	3.45	ug/kg	1.15	3.45	1
11141-16-5	Aroclor-1232	U	3.45	ug/kg	1.15	3.45	1
53469-21-9	Aroclor-1242	U	3.45	ug/kg	1.15	3.45	1
12672-29-6	Aroclor-1248	U	3.45	ug/kg	1.15	3.45	1
11097-69-1	Aroclor-1254	U	3.45	ug/kg	1.15	3.45	1
11096-82-5	Aroclor-1260		20.1	ug/kg	1.15	3.45	2

21-024(0)

Sample ID: RE21-07-4030 **EPA Method 8290**

Client Data		Sample Data		Laboratory Data			
Name:	Los Alamos National Laboratory	Matrix:	Soil	Lab Sample:	29183-001	Date Received:	12-Jul-07
Project:	07-266C	Sample Size:	10.4 g	QC Batch No.:	9183	Date Extracted:	14-Jul-07
Date Collected:	10-Jul-07	%Solids:	95.9	Date Analyzed DB-5:	19-Jul-07	Date Analyzed DB-225:	NA
Time Collected:	1040						

Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
2,3,7,8-TCDD	ND	0.108		
1,2,3,7,8-PeCDD	ND	0.0982		
1,2,3,4,7,8-HxCDD	ND	0.184		
1,2,3,6,7,8-HxCDD	ND	0.200		
1,2,3,7,8,9-HxCDD	ND	0.193		
1,2,3,4,6,7,8-HpCDD	4.89			
OCDD	43.1			
2,3,7,8-TCDF	ND		0.188	
1,2,3,7,8-PeCDF	ND	0.169		
2,3,4,7,8-PeCDF	0.333			J
1,2,3,4,7,8-HxCDF	0.196			J
1,2,3,6,7,8-HxCDF	ND		0.140	
2,3,4,6,7,8-HxCDF	0.179			J
1,2,3,7,8,9-HxCDF	ND	0.104		
1,2,3,4,6,7,8-HpCDF	1.17			J
1,2,3,4,7,8,9-HpCDF	ND	0.198		
OCDF	2.67			J

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	94.6	40 - 135	
	13C-1,2,3,7,8-PeCDD	98.5	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	93.9	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	86.4	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	71.6	40 - 135	
	13C-OCDD	81.2	40 - 135	
	13C-2,3,7,8-TCDF	88.9	40 - 135	
	13C-1,2,3,7,8-PeCDF	98.2	40 - 135	
	13C-2,3,4,7,8-PeCDF	98.0	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	115	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	92.8	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	96.2	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	95.3	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	81.4	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	98.2	40 - 135	
	13C-OCDF	91.0	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	94.9	40 - 135	

Totals				
Total TCDD	ND	0.108		
Total PeCDD	ND	0.0982		
Total HxCDD	1.07			
Total HpCDD	12.4			
Total TCDF	0.849		1.04	
Total PeCDF	3.10			
Total HxCDF	2.36		2.81	B
Total HpCDF	2.67			

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.310

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. TEQ based on (1989) International Toxic Equivalent Factors (ITEF).
The results are reported in dry weight. The sample size is reported in wet weight.

Analyst: JMH

Approved By: William J. Luksemburg 20-Jul-2007 12:59

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21-024(0)

1

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-4030

Lab Code: GEL

GEL Job No (SDG) 07-265

Matrix: SOIL

GEL Sample ID: 189396001

Sample Amount 2

Moisture: 3.3

Amount Units g

Date Received: 12-JUL-07

Extraction Type Sonication

Extraction Batch ID: 650361

Concentrated Extract Volume (mL) 10

Date Extracted: 16-JUL-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0720019a

Date Analyzed: 21-JUL-07 00:20

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

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21-074(0)

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-4030

Lab Code: GEL

GEL Job No (SDG) 07-265

Matrix: SOIL

GEL Sample ID: 189396001

Sample Amount 2

Moisture: 3.3

Amount Units g

Date Received: 12-JUL-07

Extraction Type Sonication

Extraction Batch ID: 650361

Concentrated Extract Volume (mL) 10

Date Extracted: 16-JUL-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS07J020.wiff

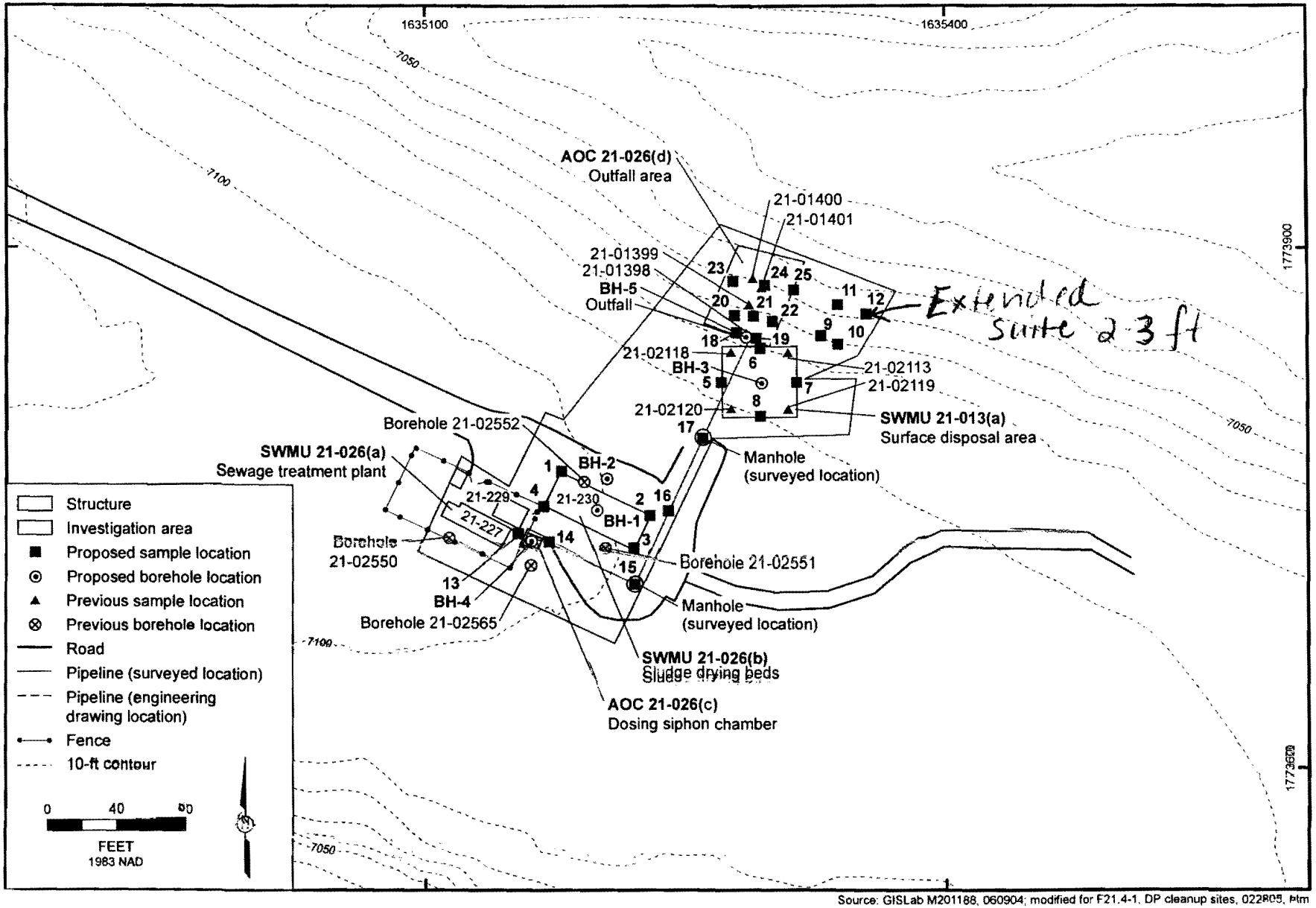
Date Analyzed: 17-JUL-07 20:05

Units: ug/kg

CAS No.	Compound	Concentration*	Q
30[illegible]838-6	TATB	1000	U
592[illegible]475-3	2,6-Diamino-4-nitrotoluene	2000	U
61[illegible]887-1	3,5-Dinitroaniline	1000	U
66[illegible]929-4	2,4-Diamino-6-nitrotoluene	2000	U
7[illegible]330-8	tris(o-cresyl) phosphate	1000	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}} \times \text{Dilution Factor}$$



Source: GISLab M201188, 060904; modified for F21.4-1, DP cleanup sites, 022805, ptm

Figure 21.4-1. SWMU 21-026(a)-99 proposed sample locations

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 48 **EVENT NAME:** 21-26(a) waste

SAMPLE ID: RE21-07-583

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		07/17/2007	MEDIA:	~~ALLH~~ MCW 7/17/07	QBT3
TIME COLLECTED (HH:MM)		10:53	SUB-MEDIA:	UA	OK
PRS ID:		21-026(a)	SAMPLE TECH CODE:	~~SS~~ MCW 7/17/07	HA
LOCATION ID:	~~UNPLANNED~~ 07/07/07	21-27558 Loc 12b	FIELD QC TYPE:	NA	OK
LOCATION TYPE:	GENERIC	OK	FIELD PREP:	NA	↓
TOP DEPTH:	~~0~~ 07/07/07	2.0 ft	SAMPLE USAGE:	~~WST~~ 05/09/07	INV
BOTTOM DEPTH:	~~0~~ 07/07/07	3.0 ft	SCREEN/PORT DESC:	NA	
FIELD MATRIX:	MCW 7/17/07 S R		EXCAVATED: YES / NO / NA		

COMPOSITE TYPE: — COMPOSITE TIME INTERVAL: — WATER FLOWING: YES / NO / NA

BOREHOLE: YES / NO / NA BOREHOLE DECLINATION: — BOREHOLE DIRECTION: —

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	COMMENTS
2		8082	125 ML GLASS	Ice	Y	
2		8290	125 ML GLASS	Ice	Y	
1		NMHD Explosives list	250 ML AMBER GLASS	Ice	Y	

SAMPLE DESC:

Weathered Tuff

* Extended Suite Sample

LOCATION DESC:

location 12b - 20ft. east of location 11

FIELD SCREENING/MEASUREMENT RESULTS:

α - 2 dpm β - 535 dpm PID - 70.2 ppm

COLLECTED BY (PRINT) J Whitaker REVIEWED BY (PRINT) Antoinette E. Tny

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name)	7/17/07	(Printed Name)	7/17/07
(Signature)	16:00	(Signature)	4:00
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

21-026(a)-99

GEL Laboratories LLC

Report Date: August 1, 2007

PCB
Certificate of Analysis
Sample Summary

SDG Number:	07-294	Date Collected:	07/17/2007 12:00	Matrix:	SOIL
Lab Sample ID:	1898[illegible]01	Date Received:	07/19/2007 09:30	%Moisture:	4.9
Client Sample:	1,2	Client:	LANL006	Project:	LANL00600
Client ID:	RE21-07-583	Method:	SW846 8082	SOP Ref:	GL-OA-E-040
Batch ID:	6[illegible]3073	Inst:	ECD2A.I	Dilution:	1
Run Date:	07/27/2007 13:10	Analyst:	JXM	Inj. Vol:	1 uL
Prep Date:	07/23/2007 08:00	Aliquot:	30 g	Final Volume:	1 mL
Data File:	015f1501.d	Column:	1 CLP1	Level:	LOW
	015b1501.d		2 CLP2		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.51	ug/kg	1.17	3.51	1
11104-28-2	Aroclor-1221	U	3.51	ug/kg	1.17	3.51	1
11141-16-5	Aroclor-1232	U	3.51	ug/kg	1.17	3.51	1
53469-21-9	Aroclor-1242	U	3.51	ug/kg	1.17	3.51	1
12672-29-6	Aroclor-1248	U	3.51	ug/kg	1.17	3.51	1
11097-69-1	Aroclor-1254		4.40	ug/kg	1.17	3.51	2
11096-82-5	Aroclor-1260	J	3.10	ug/kg	1.17	3.51	1

21-026(a)-99

Sample ID: RE21-07-583 **EPA Method 8290**

Client Data		Sample Data		Laboratory Data			
Name:	Los Alamos National Laboratory	Matrix:	Soil	Lab Sample:	29210-001	Date Received:	19-Jul-07
Project:	07-292C	Sample Size:	10.6 g	QC Batch No.:	9210	Date Extracted:	25-Jul-07
Date Collected:	17-Jul-07	%Solids:	94.3	Date Analyzed DB-5:	27-Jul-07	Date Analyzed DB-225:	NA
Time Collected:	1053						

Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
2,3,7,8-TCDD	ND	0.100		
1,2,3,7,8-PeCDD	ND	0.133		
1,2,3,4,7,8-HxCDD	ND	0.363		
1,2,3,6,7,8-HxCDD	ND	0.393		
1,2,3,7,8,9-HxCDD	ND	0.380		
1,2,3,4,6,7,8-HpCDD	1.58			J
OCDD	9.95			
2,3,7,8-TCDF	ND		0.0881	
1,2,3,7,8-PeCDF	ND	0.0975		
2,3,4,7,8-PeCDF	ND	0.0998		
1,2,3,4,7,8-HxCDF	ND	0.204		
1,2,3,6,7,8-HxCDF	ND	0.227		
2,3,4,6,7,8-HxCDF	ND	0.252		
1,2,3,7,8,9-HxCDF	ND	0.366		
1,2,3,4,6,7,8-HpCDF	ND	0.358		
1,2,3,4,7,8,9-HpCDF	ND	0.126		
OCDF	ND		0.594	

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	102	40 - 135	
	13C-1,2,3,7,8-PeCDD	109	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	110	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	90.1	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	103	40 - 135	
	13C-OCDD	79.0	40 - 135	
	13C-2,3,7,8-TCDF	101	40 - 135	
	13C-1,2,3,7,8-PeCDF	110	40 - 135	
	13C-2,3,4,7,8-PeCDF	107	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	114	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	86.3	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	96.9	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	102	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	91.8	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	109	40 - 135	
	13C-OCDF	86.0	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	89.0	40 - 135	

Totals			
Total TCDD	ND	0.100	
Total PeCDD	ND	0.133	
Total HxCDD	ND	0.379	
Total HpCDD	3.06		
Total TCDF	ND		0.181
Total PeCDF	ND	0.0986	
Total HxCDF	ND	0.256	
Total HpCDF	0.478		

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.0258

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit

e. TEQ based on (1989) International Toxic Equivalent Factors (ITEF).

The results are reported in dry weight. The sample size is reported in wet weight.

Analyst: RAS

Approved By: William J. Luksemburg 01-Aug-2007 08:41

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21-026(a)-99

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-583

Lab Code: GEL

GEL Job No (SDG) 07-291

Matrix: SOIL

GEL Sample ID: 189818001

Sample Amount 2

Moisture: 4.9

Amount Units g

Date Received: 19-JUL-07

Extraction Type Sonication

Extraction Batch ID: 653048

Concentrated Extract Volume (mL) 10

Date Extracted: 25-JUL-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0720018a

Date Analyzed: 30-JUL-07 20:56

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

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21-026(a)-95

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-583

Lab Code: GEL

GEL Job No (SDG) 07-291

Matrix: SOIL

GEL Sample ID: 189818001

Sample Amount 2

Moisture: 4.9

Amount Units g

Date Received: 19-JUL-07

Extraction Type Sonication

Extraction Batch ID: 653048

Concentrated Extract Volume (mL) 10

Date Extracted: 25-JUL-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS0802019.wiff

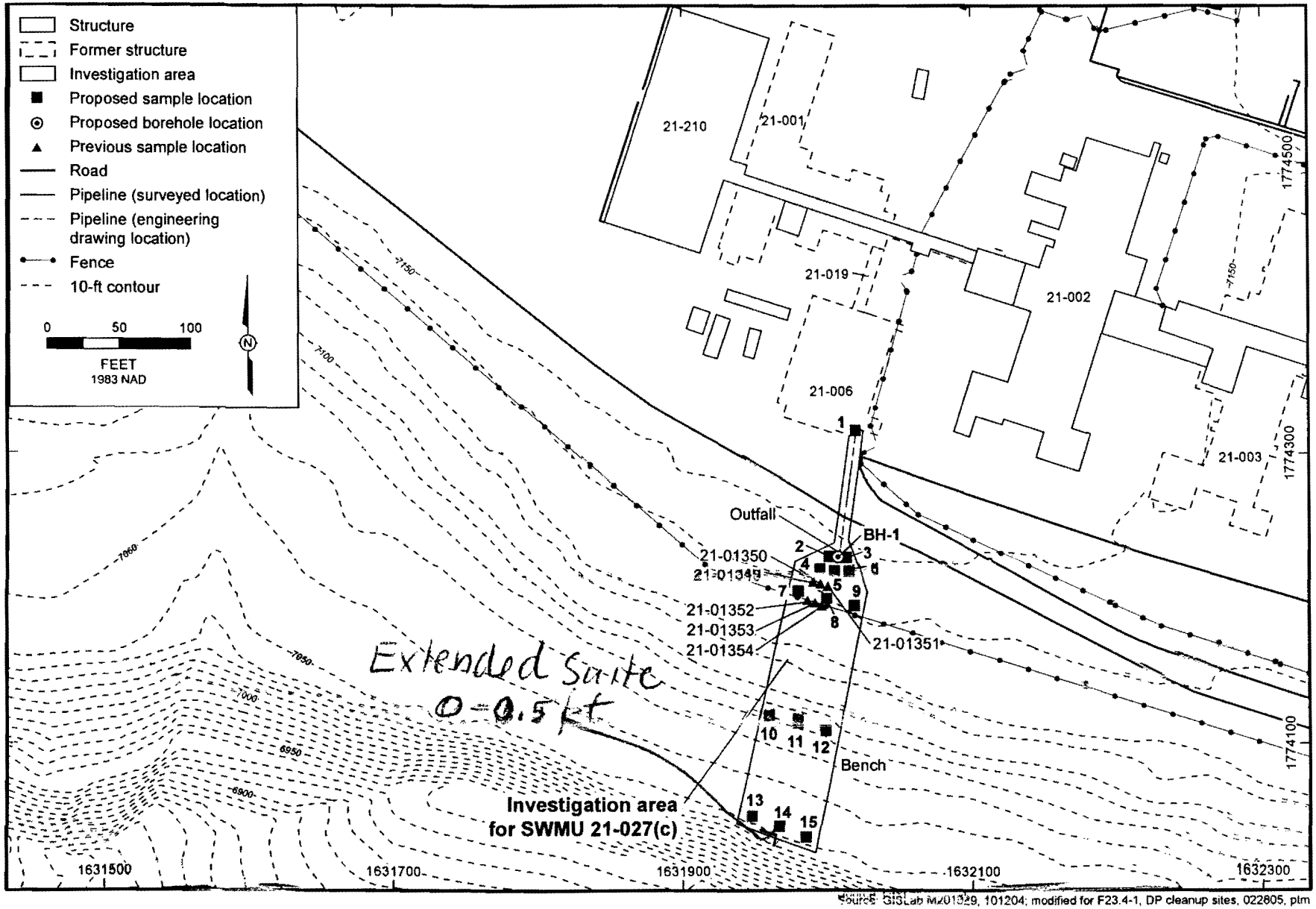
Date Analyzed: 02-AUG-07 21:28

Units: ug/kg

Cas No.	Compound	Concentration*	Q
30[illegible]8-38-6	TATB	1000	U
59[illegible]29-75-3	2,6-Diamino-4-nitrotoluene	2000	U
6[illegible]8-87-1	3,5-Dinitroaniline	1000	U
66[illegible]29-29-4	2,4-Diamino-6-nitrotoluene	2000	U
7[illegible]830-8	tris(o-cresyl) phosphate	1000	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}} \times \text{Dilution Factor}$$



Source: GISLab MX01329, 101204; modified for F23.4-1, DP cleanup sites, 022805, plm

Figure 23.4-1. SWMU 21-027(c) proposed sample locations

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 118 **EVENT NAME:** Surface&Subsurface CU 21-027(c) DP Site Aggregate Area. Spring 2007.

SAMPLE ID: RE21-07-5087

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		07/30/07	MEDIA:	~~ALL~~ 07/31/07	Qbt3
TIME COLLECTED (HH:MM)		0909	SUB-MEDIA:	UA	OK
PRS ID:	21-027(c)	OK	SAMPLE TECH CODE:	SS	
LOCATION ID:	21-27411	OK	FIELD QC TYPE:		
LOCATION TYPE:	GENERIC	OK	FIELD PREP:	NA	
TOP DEPTH:	0	OK	SAMPLE USAGE:	INV	
BOTTOM DEPTH:	07/31/07	0.5 ft	SCREEN/PORT DESC:	NA	
FIELD MATRIX:	07/31/07	R	EXCAVATED: YES / NO / NA		

COMPOSITE TYPE: — COMPOSITE TIME INTERVAL: — WATER FLOWING: YES / NO / NA

BOREHOLE: YES / NO / NA BOREHOLE DECLINATION: — BOREHOLE DIRECTION: —

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1		RADVANA+B+G	8 IN RESEALABLE POLY BAG	None	~~Y~~ N 07/31/07	
2		8082	125 ML GLASS	Ice	Y	
2		8290	125 ML GLASS	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	

SAMPLE DESC:

Weathered tuff Extended Suite

LOCATION DESC

Location 14a

FIELD SCREENING/MEASUREMENT RESULTS:

α - 18 dpm β - 1502 dpm PID - 0.1 ppm

COLLECTED BY (PRINT) Antoinette E. Tonz **REVIEWED BY (PRINT)**

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Antoinette E. Tonz	7/30/07 1455	(Printed Name)	7/30/07 1455
(Signature)		(Signature)	
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

21-027(c)

PCB
Certificate of Analysis
Sample Summary

SDG Number:	07-309	**Date Collected:**	07/30/2007 12:00	**Matrix:**	SOIL
Lab Sample ID:	190529001	**Date Received:**	08/01/2007 09:15	**%Moisture:**	.4
Client Sample:	1,2	**Client:**	LANL006	**Project:**	LANL00600
Client ID:	RE21-07-5087	**Method:**	SW846 8082	**SOP Ref:**	GL-OA-E-040
Batch ID:	657257	**Inst:**	ECD1A.I	**Dilution:**	1
Run Date:	08/08/2007 12:32	**Analyst:**	RAW2	**Inj. Vol:**	1 uL
Prep Date:	08/06/2007 18:50	**Aliquot:**	30 g	**Final Volume:**	1 mL
Data File:	025f2501.d	**Column:**	1 CLP1	**Level:**	LOW
	025b2501.d		2 CLP2		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.35	ug/kg	1.11	3.35	1
11104-28-2	Aroclor-1221	U	3.35	ug/kg	1.11	3.35	1
11141-16-5	Aroclor-1232	U	3.35	ug/kg	1.11	3.35	1
53469-21-9	Aroclor-1242	U	3.35	ug/kg	1.11	3.35	1
12672-29-6	Aroclor-1248	U	3.35	ug/kg	1.11	3.35	1
11097-69-1	Aroclor-1254	U	3.35	ug/kg	1.11	3.35	1
11096-82-5	Aroclor-1260	J	1.60	ug/kg	1.11	3.35	2

21-087 (c)

Sample ID: RE21-07-5087 **EPA Method 8290**

Client Data		Sample Data		Laboratory Data			
Name:	Los Alamos National Laboratory	Matrix:	Soil	Lab Sample:	29253-001	Date Received:	1-Aug-07
Project:	07-308C	Sample Size:	10.4 g	QC Batch No.:	9242	Date Extracted	8-Aug-07
Date Collected:	30-Jul-07	%Solids:	99.7	Date Analyzed DB-5:	15-Aug-07	Date Analyzed DB-225:	NA
Time Collected:	0909						

Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
2,3,7,8-TCDD	ND	0.0924		
1,2,3,7,8-PeCDD	ND	0.134		
1,2,3,4,7,8-HxCDD	ND	0.119		
1,2,3,6,7,8-HxCDD	ND		0.239	
1,2,3,7,8,9-HxCDD	0.191			J
1,2,3,4,6,7,8-HpCDD	5.16			
OCDD	49.6			
2,3,7,8-TCDF	ND	0.132		
1,2,3,7,8-PeCDF	ND	0.127		
2,3,4,7,8-PeCDF	ND	0.127		
1,2,3,4,7,8-HxCDF	ND	0.143		
1,2,3,6,7,8-HxCDF	ND	0.152		
2,3,4,6,7,8-HxCDF	ND	0.160		
1,2,3,7,8,9-HxCDF	ND	0.208		
1,2,3,4,6,7,8-HpCDF	1.20			J
1,2,3,4,7,8,9-HpCDF	ND		0.0563	
OCDF	2.18			J

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	93.9	40 - 135	
	13C-1,2,3,7,8-PeCDD	83.8	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	96.5	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	93.2	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	112	40 - 135	
	13C-OCDD	94.4	40 - 135	
	13C-2,3,7,8-TCDF	99.2	40 - 135	
	13C-1,2,3,7,8-PeCDF	86.5	40 - 135	
	13C-2,3,4,7,8-PeCDF	90.1	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	79.5	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	76.1	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	84.3	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	85.7	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	86.3	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	101	40 - 135	
	13C-OCDF	104	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	81.4	40 - 135	

Totals			
Total TCDD	ND	0.0924	
Total PeCDD	ND	0.134	
Total HxCDD	0.881		1.84
Total HpCDD	11.3		
Total TCDF	0.0849		
Total PeCDF	0.310		0.491
Total HxCDF	1.13		1.24
Total HpCDF	3.55		3.60

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.134

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. TEQ based on (1989) International Toxic Equivalent Factors (ITEF)
The results are reported in dry weight. The sample size is reported in wet weight.

Analyst: DMS

Approved By: William J. Luksemburg 16-Aug-2007 08:10

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21-027(c)

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-5087

Lab Code: GEL

GEL Job No (SDG) 07-309

Matrix: SOIL

GEL Sample ID: 190529001

Sample Amount 2

Moisture: .4

Amount Units g

Date Received: 01-AUG-07

Extraction Type Sonication

Extraction Batch ID: 657444

Concentrated Extract Volume (mL) 10

Date Extracted: 14-AUG-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL Data file: EXF0820015a

Date Analyzed: 20-AUG-07 23:42

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	Uh
121-14-2	2,4-Dinitrotoluene	500	Uh
121-82-4	RDX	500	Uh
19406-51-0	4-Amino-2,6-dinitrotoluene	500	Uh
2691-41-0	HMX	500	Uh
35572-78-2	2-Amino-4,6-dinitrotoluene	500	Uh
479-45-8	Tetryl	500	Uh
606-20-2	2,6-Dinitrotoluene	500	Uh
78-11-5	PETN	1000	Uh
88-72-2	o-Nitrotoluene	500	Uh
98-95-3	Nitrobenzene	500	Uh
99-08-1	m-Nitrotoluene	500	Uh
99-35-4	1,3,5-Trinitrobenzene	500	Uh
99-65-0	m-Dinitrobenzene	500	Uh
99-99-0	p-Nitrotoluene	500	Uh

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

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21-027(c)

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-5087

Lab Code: GEL

GEL Job No (SDG) 07-309

Matrix: SOIL

GEL Sample ID: 190529001

Sample Amount 2

Moisture: .4

Amount Units g

Date Received: 01-AUG-07

Extraction Type Sonication

Extraction Batch ID: 657444

Concentrated Extract Volume (mL) 10

Date Extracted: 14-AUG-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS0815027.wiff

Date Analyzed: 15-AUG-07 22:45

Units: ug/kg

Cas No	Compound	Concentration*	Q
3058-38-6	TATB	1000	Uh
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	Uh
618-87-1	3,5-Dinitroaniline	1000	Uh
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	Uh
78-30-8	tris(o-cresyl) phosphate	1000	Uh

*Concentration=

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}} \times \text{Dilution Factor}$$