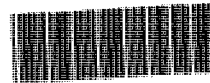


US EPA ARCHIVE DOCUMENT

P 12:57



SDMS DocID

252324

Superfund Records Center

SITE: entire siteBREAK: 17.7OTHER: 252324

PHASE II

LIMITED SUBSURFACE INVESTIGATION

PLAT 14, LOT 515

SMITH STREET

NORTH PROVIDENCE, RHODE ISLAND

June 3, 2002

Prepared for:

Cumberland Farms Inc.
777 Dedham Street
Canton, MA 02021

Prepared by:

Lincoln Environmental, Inc.
333 Washington Highway
Smithfield, Rhode Island 02917

Lincoln Environmental, Inc. Job Number RCF 8338F
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Appendix 1	Monitor Well Installation Logs
Appendix 2	Soil Analytical Results
Appendix 3	Soil Analytical Results -Triangle Labs (Dioxin)
Appendix 4	Water Level Gauging Data
Appendix 5	Groundwater Analytical Results

1.0 INTRODUCTION

1.1 Background

Lincoln Environmental, Inc. (Lincoln) was retained by Cumberland Farms Inc. to complete a Limited Subsurface Investigation at a currently undeveloped parcel of land known as Plat 14, Lot 516 located on Smith Street in North Providence, Rhode Island. According to information reviewed at the North Providence Tax Assessor's Office, the site consists of 16,500 square feet of undeveloped land currently zoned for commercial use. The current owners are listed as Andreoni, Orlando, A. and Edward Ricci. In April of 2002 a comprehensive Phase I report was submitted. This investigation was conducted to assess the soil and groundwater quality of the site and to review the records available at the Rhode Island Department of Environmental Management (RIDEM) pertaining to oil and/or hazardous materials storage and releases at the site and in the nearby surrounding area. This report summarizes the findings.

1.2 Assessment Terms, Conditions and Limitations

The environmental services provided were performed under the approved scope of work as set forth in *Lincoln Proposal No. 02R195, executed on April 18, 2002. All work is subject to the Terms and Conditions attached to the original authorized proposal. A Limitations section is also included as part of this assessment.*

2.0 HISTORICAL PROPERTY USES

Lincoln reviewed historical sources in an attempt to develop a history of the previous uses of the site and surrounding properties to help identify past uses that could have led to recognized environmental conditions in connection with the site property.

The site property is located in an area identified as a Superfund site, known as the Centerdale Manor Restoration Project. Based on information reviewed by Lincoln, previous investigations of these

areas have identified the presence of organic and inorganic substances in soil, sediment, and surface water. The Centerdale Worsted Mills was located in the Brook Village area prior to 1936. Following the properties use as a woolen mill it was utilized as a chemical manufacturing facility until the early 1970's. Based on a review of historical fire insurance maps, the eastern portion of the former chemical manufacturing company was located in the vicinity of the site property.

Two sediment sample locations from a previous investigation are located on the western side of the subject site in a drainage channel. These sediment samples identified concentrations of Dioxins.

2.1 Sanborn™ Maps

Sanborn™ maps are historic maps that were drafted for fire insurance purposes and often are used for historic land use determinations. Lincoln requested that Environmental Data Resources, Inc. (EDR) review their historic map collection for Sanborn® and other historic maps of the site area. According to EDR, historic map coverage is available for the site area for the years 1965, 1956, 1951, and 1921. A description of the site as depicted in each map is provided below.

1965 – The majority of the site property appears to consist of undeveloped land. However, a furniture warehouse and restaurant is pictured on the western portion of the site. Immediately, west of the site is the Metro Atlantic Chemical Manufacturing facility. A filling station is also depicted on the property north of Smith Street and adjacent to the site.

1956 – The site and surrounding area appear unchanged from the depiction in the previous map.

1951 – The adjacent chemical manufacturing plant is identified as the Atlantic Chemical Company.

Five gasoline tanks are depicted on the adjacent filling station property. The furniture warehouse and restaurant are depicted on the western portion of the site property.

1921 – The western portion of the site property maintains the Centerdale Worsted Mills, with a shipping, reeling and spooling building closest to the site property.

A second wool storage building is located at the rear of the site property.

The maps were provided in the Phase I report previously submitted in April 2002.

2.2 Preexisting Site or Surrounding Environmental Conditions

The above mentioned Centerdale Manor Superfund property is also identified as a historical known environmental condition. Past investigations conducted in the late 1970's and early 1980's identified "hundreds" of drums on the property in "various stages of deterioration". Stored in these drums were caustics, halogenated solvents, PCB's, ink wastes (heavy metals), and sulfuric acid. In addition, approximately one-hundred and fifty drums were observed scattered along the banks of the Woonasquatuckett River.

Based on a review of historical fire insurance maps a gasoline filling station occupied the property on the north side of Smith Street between at least 1951 and 1965. This former filling station maintained several underground storage tanks as depicted on the maps. No information as to removal of the tanks or conditions of soil and or groundwater in the vicinity of the former filling station could be identified. This property is located less than 200 feet from the northern terminus of the site property.

3.0 Physical Setting

Based on a review of the USGS topographical map of the site area, the elevation at the site is approximately 115 feet above mean sea level. Area topography slopes southwest towards the Woonasquatuckett River. Based on a review of the 1994 USGS Bedrock Geology map of Rhode Island, the site area is underlain by the Esmond Igneous Suite, which consists of gray, tan, greenish or pale-pink granite.

4.0 SUBSURFACE INVESTIGATION

4.1 Drilling Activities

On May 17, 2002 under the direction of Lincoln, Geosearch Inc. of Sterling, Massachusetts performed groundwater monitor well installation activities at the site. A Site Plan depicting the locations of the new monitor wells (MW-1 through MW-3) is included as **Figure 2**.

4.1.1 Monitor Well Construction

Three wells were installed using 4.25" ID hollow stem augers. Each monitor well was constructed of two-inch, screened sections of PVC pipe, flush threaded to solid PVC riser and brought to grade. The screened portion of the well was backfilled with #2 silica sand and capped with a subsurface annular, bentonite seal, approximately 1 foot above the screened section. Native backfill was used along the riser portion of the well. The wells were then finished with a flush mounted, watertight road box secured in concrete, to prevent surface run-off from entering the well. Monitor well construction logs are included as **Appendix 1**.

4.2 Field Screening

Field screening of the soil was performed at 0-2 feet and then at five-foot intervals during the soil borings, with a two-foot, stainless steel, split-spoon sampler. A 10.6 eV photoionization detector calibrated to an isobutylene standard was used to detect the presence of volatile organic compounds (VOCs) in the soil samples.

Well MW-3 recorded a reading of 4 ppm at approximately 11 feet below grade. Screening for all other locations and depth revealed that no VOCs were present above the instrument's detection limit of 1 part per million (ppm). Due to the relative absence of VOCs no soil was stored on site.

4.3 Soil Sampling and Analyses

A soil sample was retained from a depth of zero to two feet below grade at each boring for analysis of the RCRA 8 metals, polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and dioxin. An additional soil sample from each of the borings, at approximately the water table interface, was retained for laboratory analysis for VOCs. All laboratory analyses were performed by Groundwater Analytical of Buzzards Bay, Massachusetts except for the dioxin analysis, which was performed by Triangle Laboratories Inc. of Durham, North Carolina.

Concentrations of arsenic, barium, lead and mercury were detected in the soil samples; however, only arsenic exceeded the RIDEM Industrial/Commercial Direct Exposure Criteria in MW-1 and MW-3 at 4.3 and 4.1 milligrams per kilograms (mg/kg), respectively. An established criterion for this element is 3.8 mg/kg. One or more PAH compounds were detected in all wells, but only benzo(A)pyrene and benzo(B)fluoranthene were above their respective criterion limits. PCBs were not detected above the laboratory detection limits, which were lower than the applicable standards. No VOC concentrations detected were above the applicable standards. Dioxins (primarily 2,3,7,8-TCDD) have been detected in the soil samples, however, all samples are below the applicable EPA Preliminary Remediation Goal of 1 part per billion (ppb). The highest recorded concentration was 0.16 ppb detected in MW-2.

The soil analytical results are summarized in **Tables 1** through **3**. Complete Soil Analytical laboratory analyses are included in **Appendix 2**. The Triangle Laboratory's dioxin analysis is presented in **Appendix 3**.

4.4 Groundwater Gauging and Sampling

On May 20, 2002 monitor wells MW-1 through MW-3 were surveyed to establish locations and top of casing elevations. Also on this date an ORS interface probe was used to gauge the depth to groundwater and to determine the presence of non-aqueous phase liquid (NAPL). NAPL was not detected in any of the wells. Gauging data is included as **Appendix 4**. Based on the May 20, 2002

gauging data, the Groundwater Contour Map, included as **Figure 3**, shows groundwater flowing beneath the site in a southwesterly direction at an average gradient of .001 feet per foot. This is consistent with the adjacent Cumberland Farms property.

Groundwater samples were collected from the newly installed monitor wells MW-1 through MW-3 on May 20, 2002. Prior to sampling, the wells were purged a minimum of three standing - water well volumes. Samples were submitted to Groundwater Analytical of Buzzards Bay, Massachusetts for analysis of VOCs and PAHs via EPA Methods 8260 and 8270 respectively.

All VOC analytes were below the detection limits or not above their respective standards. The RIDEM Groundwater Quality Regulations do not have a published GB groundwater standard for PAHs. The results of the laboratory analyses are summarized in **Table 4** and **5**. Complete groundwater laboratory data are included in **Appendix 5**.

5.0 SUMMARY OF FINDINGS

- On May 17, 2002 three soil borings were completed as groundwater monitoring wells.
- Soils – Soil samples were obtained surficially (0-2 feet below grade) and at the groundwater interface depth. Lab analyticals at the groundwater interface were compared to the RIDEM leachability standards and all were found in compliance. The surficial soil lab analyticals indicated the metal, arsenic exceeding the RIDEM direct exposure criteria. Also, Benzo (A) Pyrene and Benzo (B) Fluoranthene (consistent with fuel oil) exceeded the direct exposure criteria. No PCBs were present in any of the samples. Dioxins were compliant with the EPA Preliminary Remediation Goal Standard.
- Groundwater – Analyticals received for groundwater indicate all compounds are in compliance with RIDEM GB groundwater requirements.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the soil laboratory analyses, compounds that exceeded their applicable Direct Exposure standards, (arsenic, benzo(A)pyrene and benzo(B)fluoranthene) constitutes a release in accordance with the RIDEM regulations.

Resolution to surficial soil releases typically consist of either excavating the effected soils with disposal or providing engineered controls such as a soil or asphalt cap along with an environmental land usage restriction (ELUR),

7.0 LIMITATIONS

Information obtained from public agencies, site inspections, limited sampling and laboratory chemical analysis was used to characterize the site. The accuracy of the conclusions derived from this information is based solely on the accuracy of the information reported. Events occurring on the site after the gauging event and remedial work are beyond the scope of this report. If information becomes available concerning the site that is not included in this report, it should be made available to Lincoln so that conclusions and recommendations can be re-evaluated and modified where applicable.

No attempt was made to determine the compliance of present or former owners or operators of the site with federal, state, or municipal environmental or land use laws or regulations. No attempt was made to evaluate or assess the structural integrity of any site improvements including tanks, piping, equipment or other structures.

Due to the geological and soil formations are inherently random, variable and indeterminate (heterogeneous), the professional analyses and opinions presented by Lincoln under this agreement are not guaranteed to be a representation of complete site conditions, which are subject to change with time as a result of natural or man-made processes. Although the services are extensive, findings and conclusions are limited to and by the information obtained. Lincoln makes no

expressed or implied representations or warranties regarding any changes in condition of the premises after the date of the on-site inspection(s). In addition, other subsurface investigatory methods are available that could further define the soil and groundwater conditions.

Photoionization detector (PID) field screening is not as sensitive as laboratory analysis and conclusions drawn from such screening are limited to those contaminants potentially detectable with a 10.0 electron volt lamp. No representation regarding the potential results of additional field screening, laboratory testing, or regarding the potential results or tests for materials not tested for is expressed or implied. Any qualitative or quantitative information regarding the site that was not available to Lincoln at the time of this assessment may result in a modification of the representations made in this report.

Lincoln has retained a copy of this report. No additions or deletions are permitted without the written consent of Lincoln. Use of this report in whole or in part by parties other than those authorized by Lincoln is prohibited.

Table 1 Soil Analytical Results RCRA 8 Metals Plat 14, Lot 516 Smith Street North Providence, Rhode Island										
Sample ID	Date	Depth (feet)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)
MW-1	05/17/2002	0-2	4.3	30	<.58	<12	<12	0.040	<12	<5.8
MW-2	05/17/2002	0-2	3.4	71	<.59	<12	100	0.074	<12	<5.9
MW-3	05/17/2002	0-2	4.1	50	<.58	<12	160	0.18	<12	<5.8
<i>Residential Direct Exposure Criteria</i>			7.0	5,500	39	390	150	23	390	200
Industrial/Commercial Direct Exposure			7.0	10,000	1,000	10,000	500	610	10,000	10,000

Notes:

- 1) mg/kg = milligrams per kilogram
- 2) samples analyzed for Trace Metals Via ICP-AES and CVAA
- 3) Values in **BOLD** exceed the standards or the laboratory detection limits were set above the standards

Table 2 Soil Analytical Results for Polynuclear Aromatic Hydrocarbons (0-2 feet) Plat 14, Lot 516 Smith Street, North Providence, Rhode Island								
MW No. Date	PAH Compounds							
	Acenaphthene	Acenaphthylene	Anthracene	Benzo(A)Anthracene	Benzo(A)Pyrene	Benzo(B)Fluoranthene	Benzo(K)Fluoranthene	Benzo(G,H,I)Perylene
MW-1								
05/17/2002	<.36	<.36	<.36	<.36	<.36	<.36	<.36	<.36
MW-2								
05/17/2002	<.39	0.7	1.3	4.1	5.1	7.9	3.1	9.1
MW-3								
05/17/2002	<.36	<.36	0.9	2.1	2.3	3.5	1.4	<.36
Residential Direct Exposure Criteria	43	23	35	0.9	0.4	0.9	0.9	0.8
Commercial Direct Exposure Criteria	10,000	10,000	10,000	7.8	0.8	7.8	78	10,000

MW No. Date	PAH Compounds Continued								
	Chrysene	Dibenzo(A,H)Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-CD)Pyrene	Naphthalene	2-Methyl Naphthalene	Phenanthrene	Pyrene
MW-1									
05/17/2002	<.36	<.36	0.52	<.36	<.36	<.36	<.36	<.36	0.38
MW-2									
05/17/2002	5	<.39	12	0.49	1.3	<.39	<.39	8.8	7.5
MW-3									
05/17/2002	2	<.36	5	0.4	0.5	<.36	<.36	4.2	3.4
Residential Direct Exposure Criteria	0.4	0.4	20	28	0.9	54	123	40.0	13.0
Commercial Direct Exposure Criteria	780	0.8	10,000	10,000	7.8	10,000	10,000	10,000	10,000

All units in ug/kg: micrograms per kilogram
 Analysis via EPA Method 8270C
 Standards are the Direct Exposure Criteria for Industrial/Commercial Properties
 Values in **BOLD** are above the standards **OR** the laboratory method detection limits were set above the standards

Table 3 Soil Analytical Results Plat 14, Lot 516 Smith Street North Providence, Rhode Island								
Sample ID	Date	Depth (feet)	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Xylenes (µg/kg)	MTBE (µg/kg)	Naphthalene (µg/kg)
MW-1	05/17/2002	10-12	<250	<250	<250	<250	<250	<250
MW-2	05/17/2002	10-12	<250	<250	<250	<250	<250	<250
MW-3	05/17/2002	7	<410	<410	<410	320	<410	300
GB Soil Leachability Criteria			4,300	54,000	62,000	NE	100,000	NE

Notes:

- 1) µg/kg = micrograms per kilogram
- 2) samples analyzed for VOCs via EPA Method 8260M
- 3) This table summarizes BTEX, naphthalene, and MTBE compounds, refer to laboratory report for complete analytical data and method detection limits
- 4) NE = criteria not established for this compound

Table 4 Groundwater Analytical Results Plat 14, Lot 516 Smith Street North Providence, Rhode Island							
Well ID	Date	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	MTBE
MW-1	05/20/2002	<.5	<.5	<.5	<.5	<.5	<.5
MW-2	05/20/2002	<.5	<.5	<.5	<.5	<.5	<.5
MW-3	05/20/2002	1	<.5	<.5	7	62	1
RIDEM GB Standards		140	1,700	1,600	NE	NE	5,000

Notes:

- 1) All results reported in $\mu\text{g/l}$ = micrograms per liter
- 2) Monitor well samples analyzed via EPA Method 8260M.
- 3) This table summarizes BTEX compounds, Naphthalene & MTBE only. For a complete listing of analytes refer to the laboratory report.

Table 5 Groundwater Analytical Results for Polynuclear Aromatic Hydrocarbons Plat 14, Lot 516 Smith Street, North Providence, Rhode Island								
MW No. Date	PAH Compounds							
	Acenaphthene	Acenaphthylene	Anthracene	Benzo(A)Anthracene	Benzo(A)Pyrene	Benzo(B)Fluoranthene	Benzo(K)Fluoranthene	Benzo(G,H,I)Perylene
MW-1								
05/20/2002	<10	<10	<10	<10	<10	<10	<10	<10
MW-2								
05/20/2002	<10	<10	<10	<10	<10	<10	<10	<10
MW-3								
05/20/2002	<10	<10	<10	<10	<10	<10	<10	<10

MW No. Date	PAH Compounds Continued								
	Chrysene	Dibenzo(A,H)Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-CD)Pyrene	Naphthalene	2-Methyl Naphthalene	Phenanthrene	Pyrene
MW-1									
05/20/2002	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-2									
05/20/2002	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-3									
05/20/2002	<10	<10	23	<10	<10	18	<10	33	20

All units in ug/l: micrograms per liter
Analysis via EPA Method 8270
No criteria has been established for PAHs in a GB designated area



FIGURE 1

SITE LOCATION MAP
SOURCE: U.S.G.S.

DATE: 6/3/02 DWG: RCF8338FL
LE JOB NO. RCF8338F BY: TM



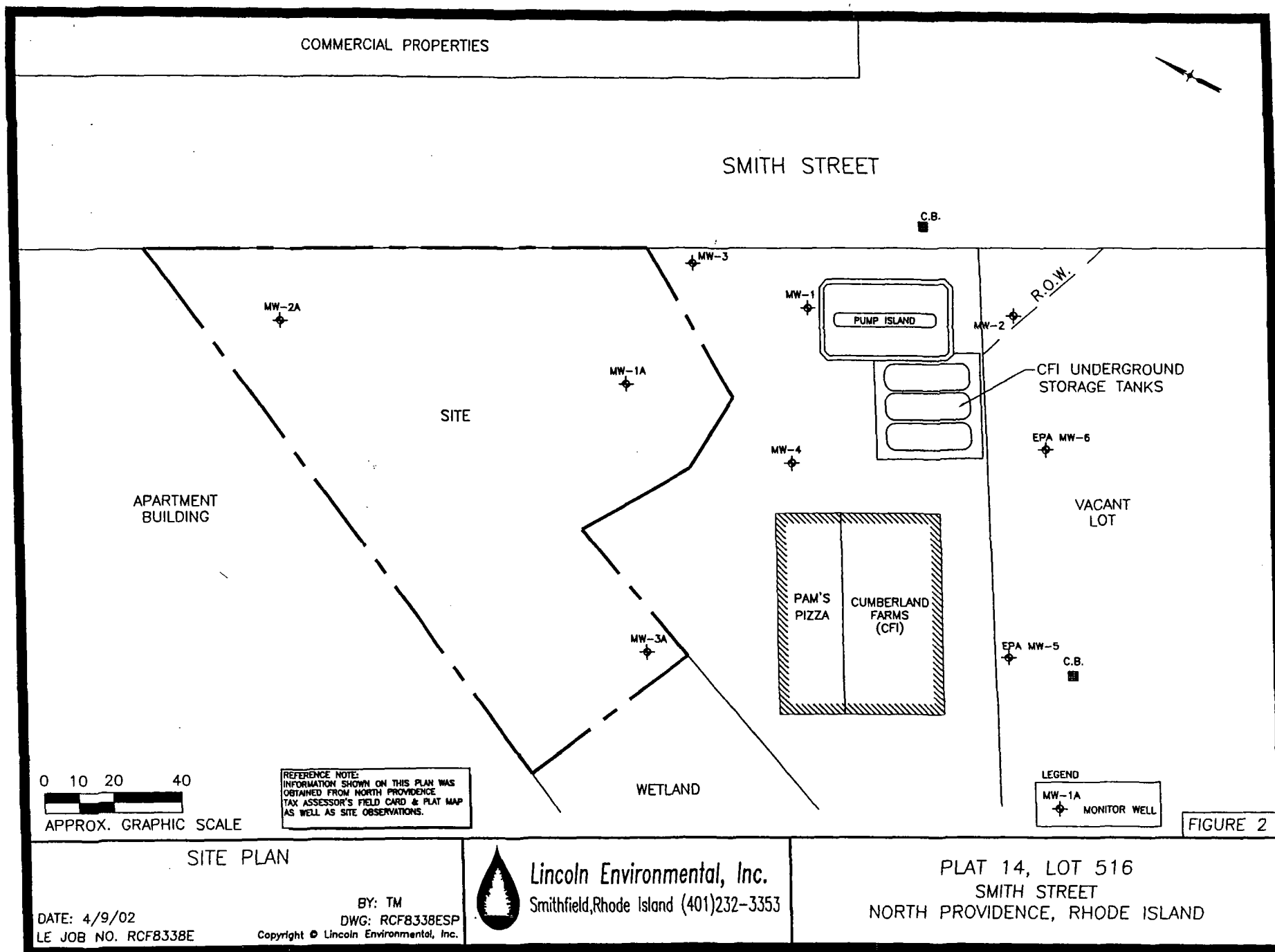
Lincoln Environmental, Inc.

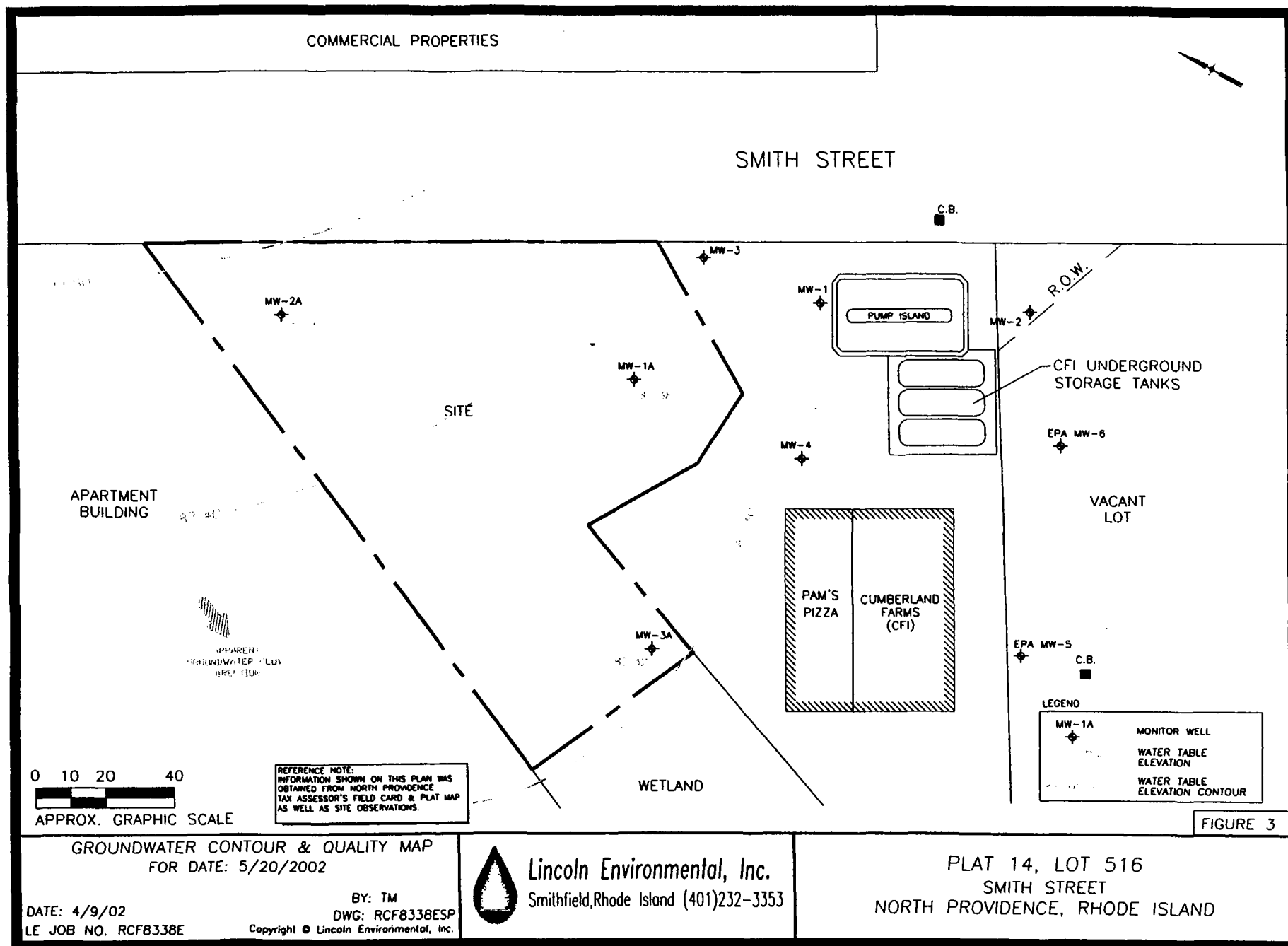
Smithfield, Rhode Island (401)232-3353

PLAT 14, LOT 516

SMITH STREET

NORTH PROVIDENCE, RHODE ISLAND







SMITH STREET		DRILLED BY: GEOSEARCH	PROJECT NUMBER: RCF8338F
		DRILLING METHOD: HOLLOW STEM AUGER	WELL NUMBER: MW-1A
		SAMPLING METHOD: SPLIT SPOON	LOCATION: LOT 516 SMITH STREET, N. PROV.
		SCREENING INSTRUMENT: PID	DATE: 5/17/02
		DEPTH TO WATER: ~10'	LOGGED BY: P.L.

RISER: TYPE PVC	DIAMETER 2"	LENGTH 8'	WELL SEAL: BENTONITE	HOLE DIA.: 7.25"
SCREEN: TYPE PVC SLOT .010	DIAMETER 2"	LENGTH 10'	SAND PACK: #2 SAND	TOTAL DEPTH: 18'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
						CONCRETE ROAD BOX LOCKING CAP	
	0		4				
	1	20"	6	D	ND		0-2': SILT, SAND AND PEBBLES, ORGANICS
			10				
	2		17				
	3						
	4		10				3'-5': CEMENT, BRICK, ROCK FRAGMENTS REFUSAL (RELOCATED HOLE 5' NORTH)
	5	24"	33	D	ND		
			55				
	6		53				5'-7': SILT, SOME SAND, GRANITE FRAGMENTS
	7					BENTONITE	
	8						
	9						
	10		19				
	11	18"	21	W	ND		10'-12': SAND, MEDIUM TO COARSE, POORLY SORTED WITH SMALL PEBBLES
			21				
	12		24				
	13						
	14						
	15		10				
	16	24"	10	W	ND		15'-17': SAND; MEDIUM TO COARSE, POORLY SORTED WITH SMALL PEBBLES
			10				
	17		10				
	18						
	19						
	20						



SMITH STREET		DRILLED BY: GEOSEARCH	PROJECT NUMBER: RCF8338F
		DRILLING METHOD: HOLLOW STEM AUGER	WELL NUMBER: MW-2A
		SAMPLING METHOD: SPLIT SPOON	LOCATION: LOT 516 SMITH STREET, N. PROV.
		SCREENING INSTRUMENT: PID	DATE: 5/17/02
		DEPTH TO WATER: ~10'	LOGGED BY: P.L.

RISER: TYPE PVC	DIAMETER 2"	LENGTH 5'	WELL SEAL: BENTONITE	HOLE DIA.: 7.25"
SCREEN: TYPE PVC SLOT .010	DIAMETER 2"	LENGTH 10'	SAND PACK: #2 SAND	TOTAL DEPTH: 15'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
						CONCRETE ROAD BOX LOCKING CAP RISER BENTONITE SCREEN #2 SAND	
	0		4				
	1	18"	7	D	ND		0-2': SILT, FINE SAND AND ORGANCs
			9				
	2		9				
	3						
	4						
	5		7				
	6	12"	10	D	ND		5'-7': SAND FINE TO MEDIUM, NOT SORTED SMALL PEBBLES, BLACK
			11				
	7		11				
	8						
	9						
	10		11				
	11	18"	33	W	ND		10'-12': SAND, MEDIUM TO COARSE, NOT SORTED, PEBBLES
			30				
	12		30				
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						



SMITH STREET		DRILLED BY: GEOSEARCH	PROJECT NUMBER: RCF8338F
		DRILLING METHOD: HOLLOW STEM AUGER	WELL NUMBER: MW-3A
		SAMPLING METHOD: SPLIT SPOON	LOCATION: LOT 516 SMITH STREET, N. PROV.
		SCREENING INSTRUMENT: PID	DATE: 5/17/02
		DEPTH TO WATER: ~7'	LOGGED BY: P.L.

RISER: TYPE PVC DIAMETER 2" LENGTH 3' WELL SEAL: BENTONITE HOLE DIA.: 7.25"

SCREEN: TYPE PVC SLOT .010 DIAMETER 2" LENGTH 10' SAND PACK: #2 SAND TOTAL DEPTH: 13'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
						CONCRETE ROAD BOX LOCKING CAP	
	0		9				
	1	20"	11	D	ND		0-2': SILT, FINE, PEBBLES ORGANICS
			14			BENTONITE	
	2		14				
	3					RISER	
	4		18				
	5	12"	21	M	ND		5'-7': SILT; SAND; FINE, PEBBLES, BRICK, CONCRETE, WOOD
			24				
	6		25				
	7						
	8					SCREEN	
	9					#2 SAND	
	10						
	11	18"		W	4		10'-12': SAND, MEDIUM TO COARSE, NOT SORTED, SMALL PEBBLES, ORGANICS, BLACK
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						

GROUNDWATER ANALYTICAL

Groundwater Analytical, Inc.
P.O. Box 1200
228 Main Street
Buzzards Bay, MA 02532
Telephone (508) 759-4441
FAX (508) 759-4475

May 28, 2002

Mr. Paul Leclerc
Lincoln Environmental, Inc.
333 Washington Highway
Smithfield, RI 02917

Project: Lot 516 Smith St. N. Prov./RCF 8338F
Lab ID: 50958
Sampled: 05-17-02

Dear Paul:

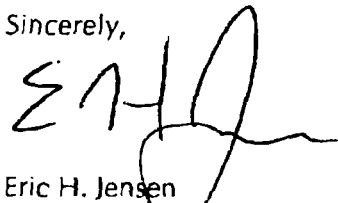
Enclosed are the Volatile Organics, Semivolatile Organics, PCBs, Metals and Dioxin Analyses performed for the above referenced project. The Dioxin Analyses were subcontracted. This project was processed for Priority One Week turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a project narrative indicating project changes and non-conformances, a brief description of the Quality Assurance/Quality Control procedures employed by our laboratory, and a statement of our state certifications.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,



Eric H. Jensen
Operations Manager

EHJ/pcl
Enclosures

GROUNDWATER ANALYTICAL

Trace Metals by ICP-AES and CVAA

Field ID: MW-1 (0-2)
Project: Lot 516 Smith St. N. Prov./RCF 8338F
Client: Lincoln Environmental, Inc.
Container: 250 mL Glass
Preservation: Cool
Matrix: Soil

Laboratory ID: 50958-04
Sampled: 05-17-02
Received: 05-20-02
% Solids 89

CAS Number	Analyte	Concentration	Units	Reporting Limit	Analyzed	QC Batch	Method
7440-38-2	Arsenic, Total	4.3	mg/Kg	1.2	05-23-02	MM-1612-S	6010B
7440-39-3	Barium, Total	30	mg/Kg	23	05-23-02	MM-1612-S	6010B
7440-43-9	Cadmium, Total	BRL	mg/Kg	0.58	05-23-02	MM-1612-S	6010B
7440-47-3	Chromium, Total	BRL	mg/Kg	12	05-23-02	MM-1612-S	6010B
7439-92-1	Lead, Total	35	mg/Kg	12	05-23-02	MM-1612-S	6010B
7439-97-6	Mercury, Total	0.040	mg/Kg	0.037	05-22-02	MP-1228-S	7471A
7782-49-2	Selenium, Total	BRL	mg/Kg	12	05-23-02	MM-1612-S	6010B
7440-22-4	Silver, Total	BRL	mg/Kg	5.8	05-23-02	MM-1612-S	6010B

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

Trace Metals by ICP-AES and CVAA

Field ID: MW-2 (0-2)
Project: Lot 516 Smith St. N. Prov./RCF 8338F
Client: Lincoln Environmental, Inc.
Container: 250 mL Glass
Preservation: Cool
Matrix: Soil

Laboratory ID: 50958-05
Sampled: 05-17-02
Received: 05-20-02
% Solids 85

CAS Number	Analyte	Concentration	Units	Reporting Limit	Analyzed	QC Batch	Method
7440-38-2	Arsenic, Total	3.4	mg/Kg	1.2	05-23-02	MM-1612-S	6010B
7440-39-3	Barium, Total	71	mg/Kg	24	05-28-02	MM-1612-S	6010B
7440-43-9	Cadmium, Total	BRL	mg/Kg	0.59	05-23-02	MM-1612-S	6010B
7440-47-3	Chromium, Total	BRL	mg/Kg	12	05-28-02	MM-1612-S	6010B
7439-92-1	Lead, Total	100	mg/Kg	12	05-28-02	MM-1612-S	6010B
7439-97-6	Mercury, Total	0.074	mg/Kg	0.039	05-22-02	MP-1228-S	7471A
7782-49-2	Selenium, Total	BRL	mg/Kg	12	05-23-02	MM-1612-S	6010B
7440-22-4	Silver, Total	BRL	mg/Kg	5.9	05-23-02	MM-1612-S	6010B

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

Trace Metals by ICP-AES and CVAA

Field ID: MW-3 (0-2)
Project: Lot 516 Smith St. N. Prov./RCF 8338F
Client: Lincoln Environmental, Inc.
Container: 250 mL Glass
Preservation: Cool
Matrix: Soil

Laboratory ID: 50958-06
Sampled: 05-17-02
Received: 05-20-02
% Solids 87

CAS Number	Analyte	Concentration	Units	Reporting Limit	Analyzed	QC Batch	Method
7440-38-2	Arsenic, Total	4.1	mg/Kg	1.2	05-23-02	MM-1612-S	6010B
7440-39-3	Barium, Total	50	mg/Kg	23	05-23-02	MM-1612-S	6010B
7440-43-9	Cadmium, Total	BRL	mg/Kg	0.58	05-23-02	MM-1612-S	6010B
7440-47-3	Chromium, Total	BRL	mg/Kg	12	05-23-02	MM-1612-S	6010B
7439-92-1	Lead, Total	160	mg/Kg	12	05-23-02	MM-1612-S	6010B
7439-97-6	Mercury, Total	0.18	mg/Kg	0.038	05-22-02	MP-1228-S	7471A
7782-49-2	Selenium, Total	BRL	mg/Kg	12	05-23-02	MM-1612-S	6010B
7440-22-4	Silver, Total	BRL	mg/Kg	5.8	05-23-02	MM-1612-S	6010B

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions.
Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8270C Polynuclear Aromatic Hydrocarbons by GC/MS

Field ID: MW-1 (0-2)
Project: Lot 516 Smith St. N. Prov. /RCF 8338F
Client: Lincoln Environmental, Inc.
Container: 250 mL Glass
Preservation: Cool
Matrix: Soil
% Moisture: 11

Laboratory ID: 50958-04
QC Batch ID: SV-1140-M
Sampled: 05-17-02
Received: 05-20-02
Extracted: 05-22-02
Analyzed: 05-23-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
91-20-3	Naphthalene	BRL	ug/Kg	360
91-57-6	2-Methylnaphthalene	BRL	ug/Kg	360
208-96-8	Acenaphthylene	BRL	ug/Kg	360
83-32-9	Acenaphthene	BRL	ug/Kg	360
86-73-7	Fluorene	BRL	ug/Kg	360
85-01-8	Phenanthrene	BRL	ug/Kg	360
120-12-7	Anthracene	BRL	ug/Kg	360
206-44-0	Fluoranthene	520	ug/Kg	360
129-00-0	Pyrene	380	ug/Kg	360
56-55-3	Benzo[a]anthracene	BRL	ug/Kg	360
218-01-9	Chrysene	BRL	ug/Kg	360
205-99-2	Benzo[b]fluoranthene	BRL	ug/Kg	360
207-08-9	Benzo[k]fluoranthene	BRL	ug/Kg	360
50-32-8	Benzo[a]pyrene	BRL	ug/Kg	360
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL	ug/Kg	360
53-70-3	Dibenzo[a,h]anthracene	BRL	ug/Kg	360
191-24-2	Benzo[g,h,i]perylene	BRL	ug/Kg	360

QC Surrogate Compounds	Recovery	QC Limits
Nitrobenzene-d ₅	65 %	23 - 120 %
2-Fluorobiphenyl	73 %	30 - 115 %
Terphenyl-d ₁₄	73 %	18 - 137 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as selected from the Polynuclear Aromatic Hydrocarbon analytes specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8270C Polynuclear Aromatic Hydrocarbons by GC/MS

Field ID: MW-2 (0-2)
Project: Lot 516 Smith St. N. Prov. /RCF 8338F
Client: Lincoln Environmental, Inc.
Container: 250 mL Glass
Preservation: Cool
Matrix: Soil
% Moisture: 15

Laboratory ID: 50958-05
QC Batch ID: SV-1140-M
Sampled: 05-17-02
Received: 05-20-02
Extracted: 05-22-02
Analyzed: 05-23-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
91-20-3	Naphthalene	BRL	ug/Kg	390
91-57-6	2-Methylnaphthalene	BRL	ug/Kg	390
208-96-8	Acenaphthylene	700	ug/Kg	390
83-32-9	Acenaphthene	BRL	ug/Kg	390
86-73-7	Fluorene	490	ug/Kg	390
85-01-8	Phenanthrene	8,800	ug/Kg	390
120-12-7	Anthracene	1,300	ug/Kg	390
206-44-0	Fluoranthene	12,000	ug/Kg	390
129-00-0	Pyrene	7,500	ug/Kg	390
56-55-3	Benzo[a]anthracene	4,100	ug/Kg	390
218-01-9	Chrysene	5,000	ug/Kg	390
205-99-2	Benzo[b]fluoranthene	7,900	ug/Kg	390
207-08-9	Benzo[k]fluoranthene	3,100	ug/Kg	390
50-32-8	Benzo[a]pyrene	5,100	ug/Kg	390
193-39-5	Indeno[1,2,3-c,d]pyrene	1,300	ug/Kg	390
53-70-3	Dibenzo[a,h]anthracene	BRL	ug/Kg	390
191-24-2	Benzo[g,h,i]perylene	910	ug/Kg	390

QC Surrogate Compounds	Recovery	QC Limits
Nitrobenzene-d ₅	62 %	23 - 120 %
2-Fluorobiphenyl	70 %	30 - 115 %
Terphenyl-d ₁₄	61 %	18 - 137 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as selected from the Polynuclear Aromatic Hydrocarbon analytes specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8270C Polynuclear Aromatic Hydrocarbons by GC/MS

Field ID: MW-3 (0-2)
Project: Lot 516 Smith St. N. Prov. /RCF 8338F
Client: Lincoln Environmental, Inc.
Container: 250 mL Glass
Preservation: Cool
Matrix: Soil
% Moisture: 13

Laboratory ID: 50958-06
QC Batch ID: SV-1140-M
Sampled: 05-17-02
Received: 05-20-02
Extracted: 05-22-02
Analyzed: 05-23-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
91-20-3	Naphthalene	BRL	ug/Kg	360
91-57-6	2-Methylnaphthalene	BRL	ug/Kg	360
208-96-8	Acenaphthylene	BRL	ug/Kg	360
83-32-9	Acenaphthene	360	ug/Kg	360
86-73-7	Fluorene	400	ug/Kg	360
85-01-8	Phenanthrene	4,200	ug/Kg	360
120-12-7	Anthracene	900	ug/Kg	360
206-44-0	Fluoranthene	5,400	ug/Kg	360
129-00-0	Pyrene	3,400	ug/Kg	360
56-55-3	Benzo[a]anthracene	2,100	ug/Kg	360
218-01-9	Chrysene	2,000	ug/Kg	360
205-99-2	Benzo[b]fluoranthene	3,500	ug/Kg	360
207-08-9	Benzo[k]fluoranthene	1,400	ug/Kg	360
50-32-8	Benzo[a]pyrene	2,300	ug/Kg	360
193-39-5	Indeno[1,2,3-c,d]pyrene	500	ug/Kg	360
53-70-3	Dibenzo[a,h]anthracene	BRL	ug/Kg	360
191-24-2	Benzo[g,h,i]perylene	BRL	ug/Kg	360

QC Surrogate Compounds	Recovery	QC Limits
Nitrobenzene-d ₅	62 %	23 - 120 %
2-Fluorobiphenyl	70 %	30 - 115 %
Terphenyl-d ₁₄	56 %	18 - 137 %

Method Reference: Test Methods for Evaluating Solid Waste. US EPA. SW-846. Third Edition. Update III (1996). Analyte list as selected from the Polynuclear Aromatic Hydrocarbon analytes specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8082 Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID:	MW-1 (0-2)	Laboratory ID:	50958-04
Project:	Lot 516 Smith St. N. Prov./RCF 8338F	QC Batch ID:	PB-1563-M
Client:	Lincoln Environmental, Inc.	Sampled:	05-17-02
Container:	250 mL Glass	Received:	05-20-02
Preservation:	Cool	Extracted:	05-28-02
Matrix:	Soil	Analyzed:	05-28-02
% Moisture:	11	Dilution Factor:	1

CAS Number	Analyte	Concentration	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL	ug/Kg	87
11104-28-2	Aroclor 1221	BRL	ug/Kg	87
11141-16-5	Aroclor 1232	BRL	ug/Kg	87
53469-21-9	Aroclor 1242	BRL	ug/Kg	87
12672-29-6	Aroclor 1248	BRL	ug/Kg	87
11097-69-1	Aroclor 1254	BRL	ug/Kg	87
11096-82-5	Aroclor 1260	BRL	ug/Kg	87
QC Surrogate Compound		Recovery	QC Limits	
Tetrachloro-m-xylene		67 %	25 - 121 %	
Decachlorobiphenyl		85 %	28 - 138 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as Aroclor analytes formerly specified by EPA Method 8080A. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8082 Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID:	MW-2 (0-2)	Laboratory ID:	50958-05
Project:	Lot 516 Smith St. N. Prov./RCF 8338F	QC Batch ID:	PB-1563-M
Client:	Lincoln Environmental, Inc.	Sampled:	05-17-02
Container:	250 mL Glass	Received:	05-20-02
Preservation:	Cool	Extracted:	05-28-02
Matrix:	Soil	Analyzed:	05-28-02
% Moisture:	15	Dilution Factor:	1

CAS Number	Analyte	Concentration	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL	ug/Kg	92
11104-28-2	Aroclor 1221	BRL	ug/Kg	92
11141-16-5	Aroclor 1232	BRL	ug/Kg	92
53469-21-9	Aroclor 1242	BRL	ug/Kg	92
12672-29-6	Aroclor 1248	BRL	ug/Kg	92
11097-69-1	Aroclor 1254	BRL	ug/Kg	92
11096-82-5	Aroclor 1260	BRL	ug/Kg	92

QC Surrogate Compound	Recovery	QC Limits
Tetrachloro- <i>m</i> -xylene	66 %	25 - 121 %
Decachlorobiphenyl	84 %	28 - 138 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as Aroclor analytes formerly specified by EPA Method 8080A. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8082 Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID:	MW-3 (0-2)	Laboratory ID:	50958-06
Project:	Lot 516 Smith St. N. Prov./RCF 8338F	QC Batch ID:	PB-1563-M
Client:	Lincoln Environmental, Inc.	Sampled:	05-17-02
Container:	250 mL Glass	Received:	05-20-02
Preservation:	Cool	Extracted:	05-28-02
Matrix:	Soil	Analyzed:	05-28-02
% Moisture:	13	Dilution Factor:	1

CAS Number	Analyte	Concentration	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL	ug/Kg	89
11104-28-2	Aroclor 1221	BRL	ug/Kg	89
11141-16-5	Aroclor 1232	BRL	ug/Kg	89
53469-21-9	Aroclor 1242	BRL	ug/Kg	89
12672-29-6	Aroclor 1248	BRL	ug/Kg	89
11097-69-1	Aroclor 1254	BRL	ug/Kg	89
11096-82-5	Aroclor 1260	BRL	ug/Kg	89

QC Surrogate Compound	Recovery	QC Limits
Tetrachloro- <i>m</i> -xylene	64 %	25 - 121 %
Decachlorobiphenyl	74 %	28 - 138 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as Aroclor analytes formerly specified by EPA Method 8080A. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8260B Volatile Organics by GC/MS

Field ID: MW-1 (10-12)
Project: Lot 516 Smith St. N. Prov./RCF 8338F
Client: Lincoln Environmental, Inc.
Container: 60 mL Glass
Preservation: Methanol / Cool
Matrix: Soil
% Moisture: 11

Laboratory ID: 50958-01
QC Batch ID: VM1-1095-E
Sampled: 05-17-02
Received: 05-20-02
Analyzed: 05-24-02
Dilution Factor: 1
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CAS Number	Analyte	Concentration	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL	ug/Kg	500
74-87-3	Chloromethane	BRL	ug/Kg	500
75-01-4	Vinyl Chloride	BRL	ug/Kg	500
74-83-9	Bromomethane	BRL	ug/Kg	500
75-00-3	Chloroethane	BRL	ug/Kg	500
75-69-4	Trichlorofluoromethane	BRL	ug/Kg	500
60-29-7	Diethyl Ether	BRL	ug/Kg	500
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	250
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL	ug/Kg	2,500
67-64-1	Acetone	BRL	ug/Kg	2,500
75-15-0	Carbon Disulfide	BRL	ug/Kg	2,500
75-09-2	Methylene Chloride	BRL	ug/Kg	1,000
156-60-5	trans- 1,2-Dichloroethene	BRL	ug/Kg	250
1634-04-4	Methyl tert-butyl Ether (MTBE)	BRL	ug/Kg	250
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	250
590-20-7	2,2-Dichloropropane	BRL	ug/Kg	250
156-59-2	cis- 1,2-Dichloroethene	BRL	ug/Kg	250
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	2,500
74-97-5	Bromochloromethane	BRL	ug/Kg	250
109-99-9	Tetrahydrofuran (THF)	BRL	ug/Kg	2,500
67-66-3	Chloroform	BRL	ug/Kg	250
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	250
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	250
563-58-6	1,1-Dichloropropene	BRL	ug/Kg	250
71-43-2	Benzene	BRL	ug/Kg	250
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	250
79-01-6	Trichloroethene	BRL	ug/Kg	250
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	250
74-95-3	Dibromomethane	BRL	ug/Kg	250
75-27-4	Bromodichloromethane	BRL	ug/Kg	250
10061-01-5	cis- 1,3-Dichloropropene	BRL	ug/Kg	250
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	2,500
108-88-3	Toluene	BRL	ug/Kg	250
10061-02-6	trans- 1,3-Dichloropropene	BRL	ug/Kg	250
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	250
127-18-4	Tetrachloroethene	BRL	ug/Kg	250
142-28-9	1,3-Dichloropropane	BRL	ug/Kg	250
591-78-6	2-Hexanone	BRL	ug/Kg	2,500
124-48-1	Dibromochloromethane	BRL	ug/Kg	250
106-93-4	1,2-Dibromoethane (EDB)	BRL	ug/Kg	250
108-90-7	Chlorobenzene	BRL	ug/Kg	250
630-20-6	1,1,1,2-Tetrachloroethane	BRL	ug/Kg	250
100-41-4	Ethylbenzene	BRL	ug/Kg	250

GROUNDWATER ANALYTICAL

EPA Method 8260B (Continued) Volatile Organics by GC/MS

Field ID: MW-1 (10-12)
Project: Lot 516 Smith St. N. Prov./RCF 8338F
Client: Lincoln Environmental, Inc.
Container: 60 mL Glass
Preservation: Methanol / Cool
Matrix: Soil
% Moisture: 11

Laboratory ID: 50958-01
QC Batch ID: VM1-1095-E
Sampled: 05-17-02
Received: 05-20-02
Analyzed: 05-24-02
Dilution Factor: 1
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CAS Number	Analyte	Concentration	Units	Reporting Limit
108-38-3/106-42-3	meta- Xylene and para- Xylene	BRL	ug/Kg	250
95-47-6	ortho- Xylene	BRL	ug/Kg	250
100-42-5	Styrene	BRL	ug/Kg	250
75-25-2	Bromoform	BRL	ug/Kg	250
98-82-8	Isopropylbenzene	BRL	ug/Kg	250
108-86-1	Bromobenzene	BRL	ug/Kg	250
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	250
96-18-4	1,2,3-Trichloropropane	BRL	ug/Kg	250
103-65-1	n-Propylbenzene	BRL	ug/Kg	250
95-49-8	2-Chlorotoluene	BRL	ug/Kg	250
108-67-8	1,3,5-Trimethylbenzene	BRL	ug/Kg	250
106-43-4	4-Chlorotoluene	BRL	ug/Kg	250
98-06-6	tert- Butylbenzene	BRL	ug/Kg	250
95-63-6	1,2,4-Trimethylbenzene	BRL	ug/Kg	250
135-98-8	sec- Butylbenzene	BRL	ug/Kg	250
541-73-1	1,3-Dichlorobenzene	BRL	ug/Kg	250
99-87-6	4-Isopropyltoluene	BRL	ug/Kg	250
106-46-7	1,4-Dichlorobenzene	BRL	ug/Kg	250
95-50-1	1,2-Dichlorobenzene	BRL	ug/Kg	250
104-51-8	n-Butylbenzene	BRL	ug/Kg	250
96-12-8	1,2-Dibromo-3-chloropropane	BRL	ug/Kg	250
120-82-1	1,2,4-Trichlorobenzene	BRL	ug/Kg	250
87-68-3	Hexachlorobutadiene	BRL	ug/Kg	250
91-20-3	Naphthalene	BRL	ug/Kg	250
87-61-6	1,2,3-Trichlorobenzene	BRL	ug/Kg	250

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	100 %	80 - 120 %
1,2-Dichloroethane-d ₄	107 %	80 - 120 %
Toluene-d ₈	101 %	81 - 117 %
4-Bromofluorobenzene	92 %	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified in Tables 6 and 7 of the method, and additional analytes as specified by MA DEP Method 1 Standards (310 C.M.R. 40.0973) and recommended by NH DES for initial waste site investigations, effective 12/1/97. Results are reported on a dry weight basis. Analysis performed utilizing methanol extraction technique.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8260B Volatile Organics by GC/MS

Field ID: MW-2 (10-12)
Project: Lot 516 Smith St. N. Prov./RCF 8338F
Client: Lincoln Environmental, Inc.
Container: 60 mL Glass
Preservation: Methanol / Cool
Matrix: Soil
% Moisture: 12

Laboratory ID: 50958-02
QC Batch ID: VM1-1095-E
Sampled: 05-17-02
Received: 05-20-02
Analyzed: 05-24-02
Dilution Factor: 1
Page: 1 of 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL	ug/Kg	500
74-87-3	Chloromethane	BRL	ug/Kg	500
75-01-4	Vinyl Chloride	BRL	ug/Kg	500
74-83-9	Bromomethane	BRL	ug/Kg	500
75-00-3	Chloroethane	BRL	ug/Kg	500
75-69-4	Trichlorofluoromethane	BRL	ug/Kg	500
60-29-7	Diethyl Ether	BRL	ug/Kg	500
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	250
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL	ug/Kg	2,500
67-64-1	Acetone	BRL	ug/Kg	2,500
75-15-0	Carbon Disulfide	BRL	ug/Kg	2,500
75-09-2	Methylene Chloride	BRL	ug/Kg	1,000
156-60-5	trans- 1,2-Dichloroethene	BRL	ug/Kg	250
1634-04-4	Methyl tert-butyl Ether (MTBE)	BRL	ug/Kg	250
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	250
590-20-7	2,2-Dichloropropane	BRL	ug/Kg	250
156-59-2	cis- 1,2-Dichloroethene	BRL	ug/Kg	250
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	2,500
74-97-5	Bromochloromethane	BRL	ug/Kg	250
109-99-9	Tetrahydrofuran (THF)	BRL	ug/Kg	2,500
67-66-3	Chloroform	BRL	ug/Kg	250
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	250
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	250
563-58-6	1,1-Dichloropropene	BRL	ug/Kg	250
71-43-2	Benzene	BRL	ug/Kg	250
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	250
79-01-6	Trichloroethene	BRL	ug/Kg	250
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	250
74-95-3	Dibromomethane	BRL	ug/Kg	250
75-27-4	Bromodichloromethane	BRL	ug/Kg	250
10061-01-5	cis- 1,3-Dichloropropene	BRL	ug/Kg	250
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	2,500
108-88-3	Toluene	BRL	ug/Kg	250
10061-02-6	trans- 1,3-Dichloropropene	BRL	ug/Kg	250
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	250
127-18-4	Tetrachloroethene	BRL	ug/Kg	250
142-28-9	1,3-Dichloropropane	BRL	ug/Kg	250
591-78-6	2-Hexanone	BRL	ug/Kg	2,500
124-48-1	Dibromochloromethane	BRL	ug/Kg	250
106-93-4	1,2-Dibromoethane (EDB)	BRL	ug/Kg	250
108-90-7	Chlorobenzene	BRL	ug/Kg	250
630-20-6	1,1,1,2-Tetrachloroethane	BRL	ug/Kg	250
100-41-4	Ethylbenzene	BRL	ug/Kg	250

GROUNDWATER ANALYTICAL

EPA Method 8260B (Continued) Volatile Organics by GC/MS

Field ID: MW-2 (10-12)
Project: Lot 516 Smith St. N. Prov./RCF 8338F
Client: Lincoln Environmental, Inc.
Container: 60 mL Glass
Preservation: Methanol / Cool
Matrix: Soil
% Moisture: 12

Laboratory ID: 50958-02
QC Batch ID: VM1-1095-E
Sampled: 05-17-02
Received: 05-20-02
Analyzed: 05-24-02
Dilution Factor: 1
Page: 2 of 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
108-38-3/106-42-3	meta- Xylene and para- Xylene	BRL	ug/Kg	250
95-47-6	ortho- Xylene	BRL	ug/Kg	250
100-42-5	Styrene	BRL	ug/Kg	250
75-25-2	Bromoform	BRL	ug/Kg	250
98-82-8	Isopropylbenzene	BRL	ug/Kg	250
108-86-1	Bromobenzene	BRL	ug/Kg	250
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	250
96-18-4	1,2,3-Trichloropropane	BRL	ug/Kg	250
103-65-1	n-Propylbenzene	BRL	ug/Kg	250
95-49-8	2-Chlorotoluene	BRL	ug/Kg	250
108-67-8	1,3,5-Trimethylbenzene	BRL	ug/Kg	250
106-43-4	4-Chlorotoluene	BRL	ug/Kg	250
98-06-6	tert- Butylbenzene	BRL	ug/Kg	250
95-63-6	1,2,4-Trimethylbenzene	BRL	ug/Kg	250
135-98-8	sec-Butylbenzene	BRL	ug/Kg	250
541-73-1	1,3-Dichlorobenzene	BRL	ug/Kg	250
99-87-6	4-Isopropyltoluene	BRL	ug/Kg	250
106-46-7	1,4-Dichlorobenzene	BRL	ug/Kg	250
95-50-1	1,2-Dichlorobenzene	BRL	ug/Kg	250
104-51-8	n-Butylbenzene	BRL	ug/Kg	250
96-12-8	1,2-Dibromo-3-chloropropane	BRL	ug/Kg	250
120-82-1	1,2,4-Trichlorobenzene	BRL	ug/Kg	250
87-68-3	Hexachlorobutadiene	BRL	ug/Kg	250
91-20-3	Naphthalene	BRL	ug/Kg	250
87-61-6	1,2,3-Trichlorobenzene	BRL	ug/Kg	250

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	100 %	80 - 120 %
1,2-Dichloroethane-d ₄	105 %	80 - 120 %
Toluene-d ₈	101 %	81 - 117 %
4-Bromofluorobenzene	95 %	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified in Tables 6 and 7 of the method, and additional analytes as specified by MA DEP Method 1 Standards (310 C.M.R. 40.0973) and recommended by NH DES for initial waste site investigations, effective 12/1/97. Results are reported on a dry weight basis. Analysis performed utilizing methanol extraction technique.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8260B Volatile Organics by GC/MS

Field ID: MW-3 (7)
Project: Lot 516 Smith St. N. Prov./RCF 8338F
Client: Lincoln Environmental, Inc.
Container: 60 mL Glass
Preservation: Methanol / Cool
Matrix: Soil
% Moisture: 12

Laboratory ID: 50958-03
QC Batch ID: VM1-1095-E
Sampled: 05-17-02
Received: 05-20-02
Analyzed: 05-24-02
Dilution Factor: 1
Page: 1 of 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL	ug/Kg	500
74-87-3	Chloromethane	BRL	ug/Kg	500
75-01-4	Vinyl Chloride	BRL	ug/Kg	500
74-83-9	Bromomethane	BRL	ug/Kg	500
75-00-3	Chloroethane	BRL	ug/Kg	500
75-69-4	Trichlorofluoromethane	BRL	ug/Kg	500
60-29-7	Diethyl Ether	BRL	ug/Kg	500
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	250
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL	ug/Kg	2,500
67-64-1	Acetone	BRL	ug/Kg	2,500
75-15-0	Carbon Disulfide	BRL	ug/Kg	2,500
75-09-2	Methylene Chloride	BRL	ug/Kg	1,000
156-60-5	trans-1,2-Dichloroethene	BRL	ug/Kg	250
1634-04-4	Methyl tert-butyl Ether (MTBE)	BRL	ug/Kg	250
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	250
590-20-7	2,2-Dichloropropane	BRL	ug/Kg	250
156-59-2	cis-1,2-Dichloroethene	BRL	ug/Kg	250
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	2,500
74-97-5	Bromochloromethane	BRL	ug/Kg	250
109-99-9	Tetrahydrofuran (THF)	BRL	ug/Kg	2,500
67-66-3	Chloroform	BRL	ug/Kg	250
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	250
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	250
563-58-6	1,1-Dichloropropene	BRL	ug/Kg	250
71-43-2	Benzene	BRL	ug/Kg	250
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	250
79-01-6	Trichloroethene	BRL	ug/Kg	250
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	250
74-95-3	Dibromomethane	BRL	ug/Kg	250
75-27-4	Bromodichloromethane	BRL	ug/Kg	250
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/Kg	250
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	2,500
108-88-3	Toluene	BRL	ug/Kg	250
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/Kg	250
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	250
127-18-4	Tetrachloroethene	BRL	ug/Kg	250
142-28-9	1,3-Dichloropropane	BRL	ug/Kg	250
591-78-6	2-Hexanone	BRL	ug/Kg	2,500
124-48-1	Dibromochloromethane	BRL	ug/Kg	250
106-93-4	1,2-Dibromoethane (EDB)	BRL	ug/Kg	250
108-90-7	Chlorobenzene	BRL	ug/Kg	250
630-20-6	1,1,1,2-Tetrachloroethane	BRL	ug/Kg	250
100-41-4	Ethylbenzene	BRL	ug/Kg	250

GROUNDWATER ANALYTICAL

EPA Method 8260B (Continued) Volatile Organics by GC/MS

Field ID: MW-3 (7)
Project: Lot 516 Smith St. N. Prov./RCF 8338F
Client: Lincoln Environmental, Inc.
Container: 60 mL Glass
Preservation: Methanol / Cool
Matrix: Soil
% Moisture: 12

Laboratory ID: 50958-03
QC Batch ID: VM1-1095-E
Sampled: 05-17-02
Received: 05-20-02
Analyzed: 05-24-02
Dilution Factor: 1
Page: 2 of 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
108-38-3/106-42-3	meta- Xylene and para- Xylene	320	ug/Kg	250
95-47-6	ortho- Xylene	BRL	ug/Kg	250
100-42-5	Styrene	BRL	ug/Kg	250
75-25-2	Bromoform	BRL	ug/Kg	250
98-82-8	Isopropylbenzene	BRL	ug/Kg	250
108-86-1	Bromobenzene	BRL	ug/Kg	250
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	250
96-18-4	1,2,3-Trichloropropane	BRL	ug/Kg	250
103-65-1	n-Propylbenzene	BRL	ug/Kg	250
95-49-8	2-Chlorotoluene	BRL	ug/Kg	250
108-67-8	1,3,5-Trimethylbenzene	BRL	ug/Kg	250
106-43-4	4-Chlorotoluene	BRL	ug/Kg	250
98-06-6	tert- Butylbenzene	BRL	ug/Kg	250
95-63-6	1,2,4-Trimethylbenzene	360	ug/Kg	250
135-98-8	sec-Butylbenzene	BRL	ug/Kg	250
541-73-1	1,3-Dichlorobenzene	BRL	ug/Kg	250
99-87-6	4-Isopropyltoluene	BRL	ug/Kg	250
106-46-7	1,4-Dichlorobenzene	BRL	ug/Kg	250
95-50-1	1,2-Dichlorobenzene	BRL	ug/Kg	250
104-51-8	n-Butylbenzene	BRL	ug/Kg	250
96-12-8	1,2-Dibromo-3-chloropropane	BRL	ug/Kg	250
120-82-1	1,2,4-Trichlorobenzene	BRL	ug/Kg	250
87-68-3	Hexachlorobutadiene	BRL	ug/Kg	250
91-20-3	Naphthalene	300	ug/Kg	250
87-61-6	1,2,3-Trichlorobenzene	BRL	ug/Kg	250

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	96 %	80 - 120 %
1,2-Dichloroethane-d ₄	108 %	80 - 120 %
Toluene-d ₈	95 %	81 - 117 %
4-Bromofluorobenzene	99 %	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified in Tables 6 and 7 of the method, and additional analytes as specified by MA DEP Method 1 Standards (310 C.M.R. 40.0973) and recommended by NH DES for initial waste site investigations, effective 12/1/97. Results are reported on a dry weight basis. Analysis performed utilizing methanol extraction technique.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

GROUNDWATER ANALYTICAL

Project Narrative

Project: Lot 516 Smith St. N. Prov./RCF 8338F
Client: Lincoln Environmental, Inc.

Lab ID: 50958
Received: 05-20-02

A. Physical Condition of Sample(s)

This project was received by the laboratory in satisfactory condition. The sample(s) were received undamaged in appropriate containers with the correct preservation.

B. Project Documentation

This project was accompanied by satisfactory Chain of Custody documentation. The sample container label(s) agreed with the Chain of Custody.

C. Analysis of Sample(s)

No analytical anomalies or non-conformances were noted by the laboratory during the processing of these sample(s). All data contained within this report are released without qualification.

GROUNDWATER
ANALYTICAL228 Main Street, P.O. Box 1200
Buzzards Bay, MA 02532
Telephone (508) 759-4441
FAX (508) 759-4475CHAIN-OF-CUSTODY RECORD
AND WORK ORDER

No 053087

Project Name SMITH ST. Firm: LINCOLN ENVIRONMENTAL INC.
 LOT 516 N. PROJ. 223 WASHINGTON HWY
 Project Number: RLEP38F Address: SMITHFIELD, R.I. 02897
 Sampler Name: Paul Leiker City/State/Zip: 401 232 3353
 Project Manager: Paul Leiker Telephone: 401 232 3353

TURNAROUND
☐ STANDARD (10 Business Days)
☒ PRIORITY (5 Business Days)
☐ RUSH (RAN-)
 (Rush requires Rush Authorization Number)
 Please FAX ☒ YES ☐ NO
 FAX Number: 232-1120

BILLING
 Purchase Order No.: GWA Reference No.:

INSTRUCTIONS: Use separate line for each container (except replicates).

DATE	TIME	SAMPLE IDENTIFICATION	Matrix Type		Container(s)	Preservation		Filter	LABORATORY NUMBER (Lab Use Only)
			WATER	SOIL		REF	NO		
7/20		MW-1 (0-2)			1				4
		MW-2 (0-2)			1				5
		MW-3 (0-2)			1				6
		MW-1 (0-2)			2	X			X
		MW-2 (0-2)			2	X			X
		MW-3 (0-2)			2	X			X

ANALYSIS REQUEST

Options	Volatiles	Semivolatiles	Pesticides/PCBs	Metals	Trace Organics	Heavy Metals	General Chemistry	Other
☐ NO Lead ☐ NO Cad ☐ NO Cu ☐ NO Ni ☐ NO Zn	☐ VOCs ☐ SVOCs ☐ PCBs ☐ PAHs ☐ BTEX ☐ Other	☐ PCBs ☐ PAHs ☐ BTEX ☐ Other	☐ PCBs ☐ PAHs ☐ BTEX ☐ Other	☐ Lead ☐ Cad ☐ Cu ☐ Ni ☐ Zn ☐ Other	☐ PCBs ☐ PAHs ☐ BTEX ☐ Other	☐ Lead ☐ Cad ☐ Cu ☐ Ni ☐ Zn ☐ Other	☐ pH ☐ Alkalinity ☐ Hardness ☐ Chloride ☐ Sulfate ☐ Nitrate ☐ Ammonia ☐ Nitrite ☐ Nitrogen ☐ Phosphate ☐ Silica ☐ Fluoride ☐ Boron ☐ Manganese ☐ Iron ☐ Cobalt ☐ Molybdenum ☐ Selenium ☐ Vanadium ☐ Chromium ☐ Manganese ☐ Iron ☐ Cobalt ☐ Molybdenum ☐ Selenium ☐ Vanadium ☐ Chromium	☐ Other

REMARKS / SPECIAL INSTRUCTIONS

DATA QUALITY OBJECTIVES

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

Relinquished by Sampler:	Date	Time	Received by:	Receipt Temperature
Paul Leiker	5/10/92	12:15	[Signature]	60
Relinquished by:	Date	Time	Received by:	Shipping/Airbill Number:
[Signature]	5/10/92	12:15	[Signature]	
Relinquished by:	Date	Time	Received by Laboratory:	Custody Seal/ Cooler Serial Number:
			[Signature]	
Method of Shipment: ☐ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐ Other				

Regulatory Program

- ☐ Safe Drinking Water Act
☐ MA DEP Form
☐ NPOES/Clean Water Act
 Specify State:
☐ RCRA/Haz Waste Char.
☐ MA MCP (310 CMR 40)
 Reportable Concentrations
☐ RCGW - 1 ☐ RCS - 1
☐ RCGW - 2 ☐ RCS - 2
☐ MA Dredge Disposal
☐ NH ☐ RI ☐ CT ☐ ME
 Specify Category: GB

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. For water samples each MS, MSD and Sample Duplicate requires an additional sample aliquot.

- Project Specific QC Required Selection of QC Sample
☐ Sample Duplicate ☐ Selected by laboratory
☐ Matrix Spike ☐ Please use sample:
☐ Matrix Spike Duplicate

1720

GROUNDWATER
ANALYTICAL228 Main Street, P.O. Box 1200
Buzzards Bay, MA 02532
Telephone (508) 759-4441
FAX (508) 759-4475CHAIN-OF-CUSTODY RECORD
AND WORK ORDER

No 053088

Project Name: LOT 516 SMITH ST N. PROJ RI Firm: LINCOLN ENVIRONMENTAL INC

Project Number: RCF338F Address: 333 WASHINGTON HWY

Sampler Name: Paul City/State/Zip: SMITHFIELD RI 02917

Project Manager: Paul L. Lerner Telephone: 401-232-3353

TURNAROUND

☐ STANDARD (10 Business Days)☐ PRIORITY (5 Business Days)☐ RUSH (RAN-)

(Rush requires Rush Authorization Number)

Please FAX ☐ YES ☐ NOFAX Number: 401-232-1130

BILLING

Purchase Order No.:

GWA Reference No.:

ANALYSIS REQUEST

INSTRUCTIONS: Use separate line for each container (except replicates).

DATE	TIME	SAMPLE IDENTIFICATION	Matrix	Type	Container(s)	Preservation	Filtered	LABORATORY NUMBER (Lab Use Only)	ANALYSIS REQUEST																																																																																																			
									Volatiles	Semi-volatiles	Pesticides/PCBs	Metals	Trace Metals	General Chemistry	Other																																																																																													
								50958	☐ DWA	☐ DWA 2	☐ DWA 3	☐ DWA 4	☐ DWA 5	☐ DWA 6	☐ DWA 7	☐ DWA 8	☐ DWA 9	☐ DWA 10	☐ DWA 11	☐ DWA 12	☐ DWA 13	☐ DWA 14	☐ DWA 15	☐ DWA 16	☐ DWA 17	☐ DWA 18	☐ DWA 19	☐ DWA 20	☐ DWA 21	☐ DWA 22	☐ DWA 23	☐ DWA 24	☐ DWA 25	☐ DWA 26	☐ DWA 27	☐ DWA 28	☐ DWA 29	☐ DWA 30	☐ DWA 31	☐ DWA 32	☐ DWA 33	☐ DWA 34	☐ DWA 35	☐ DWA 36	☐ DWA 37	☐ DWA 38	☐ DWA 39	☐ DWA 40	☐ DWA 41	☐ DWA 42	☐ DWA 43	☐ DWA 44	☐ DWA 45	☐ DWA 46	☐ DWA 47	☐ DWA 48	☐ DWA 49	☐ DWA 50	☐ DWA 51	☐ DWA 52	☐ DWA 53	☐ DWA 54	☐ DWA 55	☐ DWA 56	☐ DWA 57	☐ DWA 58	☐ DWA 59	☐ DWA 60	☐ DWA 61	☐ DWA 62	☐ DWA 63	☐ DWA 64	☐ DWA 65	☐ DWA 66	☐ DWA 67	☐ DWA 68	☐ DWA 69	☐ DWA 70	☐ DWA 71	☐ DWA 72	☐ DWA 73	☐ DWA 74	☐ DWA 75	☐ DWA 76	☐ DWA 77	☐ DWA 78	☐ DWA 79	☐ DWA 80	☐ DWA 81	☐ DWA 82	☐ DWA 83	☐ DWA 84	☐ DWA 85	☐ DWA 86	☐ DWA 87	☐ DWA 88	☐ DWA 89	☐ DWA 90	☐ DWA 91	☐ DWA 92	☐ DWA 93	☐ DWA 94	☐ DWA 95	☐ DWA 96	☐ DWA 97	☐ DWA 98	☐ DWA 99	☐ DWA 100

REMARKS / SPECIAL INSTRUCTIONS

3 jars labeled: MW-1 (0-2) RIOW-1
APPROX MW 2 (0-2) RIOW-1
5/12/02 MW 3 (0-2) RIOW-1

TO BE SENT TO TRIANGLE LABS
FOR ANALYSIS VIA 8290
EXPECTED DELIVERY 5/23

DATA QUALITY OBJECTIVES

Regulatory Program

☐ Safe Drinking Water Act
☐ MA DEP Form
☐ NPDES/Clean Water Act
Specify State: _____
☐ RCRA/Haz. Waste Char.
☐ MA MCP (310 CMR 40)
Reportable Concentrations
☐ RCGW - 1 ☐ RCS - 1
☐ RCGW - 2 ☐ RCS - 2
☐ MA Dredge Disposal
☐ NH ☐ RI ☐ CT ☐ ME
Specify Category: _____

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. For water samples, each MS, MSD and Sample Duplicate requires an additional sample aliquot.

Project Specific QC Required
☐ Sample Duplicate
☐ Matrix Spike
☐ Matrix Spike Duplicate

Selection of QC Sample
☐ Selected by laboratory
☐ Please use sample: _____

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof

Relinquished by Sampler:	Date	Time	Received by:	Receipt Temperature:
<i>Paul Lerner</i>	5/12/02	10:00	<i>[Signature]</i>	6.0
Relinquished by:	Date	Time	Received by:	Shipping/Airbill Number:
<i>[Signature]</i>	5/12/02	5:15	<i>[Signature]</i>	
Relinquished by:	Date	Time	Received by Laboratory:	Custody Seal/Cooler Serial Number:
			<i>[Signature]</i>	
Method of Shipment: ☐ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐ _____ 1726				

CASE NARRATIVE

**Analysis of Samples for the Presence of
2,3,7,8-Tetrachlorinated Dibenzo-*p*-Dioxin by
High-Resolution Chromatography / High-Resolution Mass Spectrometry**

Method 8290 Rev. 0 (9/94)

Date: May 28, 2002
Client ID: Cumberland Farms
P.O. Number:
TLI Project Number: 57452

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Rev. 11/19/97
WWW.TriangleLabs.com

Overview

The samples and associated QC samples were extracted and analyzed according to procedures described in EPA Method 8290 Rev. 0 (9/94). Any particular difficulties encountered during the sample handling by Triangle Laboratories will be discussed in the QC Remarks section below. This report contains results from only the 8290 dioxin analyses of the soil samples.

Quality Control Samples

A laboratory method blank, identified as the TLI Blank, was prepared along with the samples.

Laboratory control spike (LCS) and laboratory control spike duplicate (LCSD) samples are extracted and analyzed along with each batch of samples. A report summarizing the analyte recoveries and relative percent differences for these samples is included in the data package.

A clean-up blank was processed along with the sample to prove that contamination was not introduced during the cleanup procedures. The results of this clean-up blank are included with the data package.

Quality Control Remarks

This release of this particular set of Cumberland Farms analytical data by Triangle Laboratories was authorized by the Quality Control Chemist who has reviewed each sample data package following a series of inspections/reviews. When applicable, general deviations from acceptable QC requirements are identified below and comments are made on the effect of these deviations upon the validity and reliability of the results. Specific QC issues associated with this particular project are:

Sample receipt: Three soil samples were received from Cumberland Farms at 10.0°C in good condition on May 22, 2002 and stored in a refrigerator at 4°C.

Sample Preparation Laboratory: None

Mass Spectrometry: None

Data Review: None

Other Comments: No 2,3,7,8-substituted target analytes were detected in the method blank above the target detection limit (TDL).

The analytical data presented in this report are consistent with the guidelines of EPA Method 8290 Rev. 0 (9/94). Any exceptions have been discussed in the QC Remarks section of this case narrative with emphasis on their effect on the data. Should Cumberland Farms have any questions or comments regarding this data package, please feel free to contact one of our Project Scientists at (919) 544-5729.

For Triangle Laboratories, Inc.,

Released by,

Kenneth Chelley

Report Preparation Chemist

The total number of pages in the data package is : 80

Method 8290 Sample Calculations:

Analyte Concentration

The concentration or amount of any analyte is calculated using the following expression.

$$C_{(\sigma)} = \frac{A_{\sigma} * Q_{\beta}}{A_{\beta} * RRF_{(\sigma)} * W}$$

Where:

- $C_{(\sigma)}$ = concentration or amount of a given analyte
- A_{σ} = integrated current for the characteristic ions of the analyte
- A_{β} = integrated current of the characteristic ions of the corresponding internal standard
- Q_{β} = amount of internal standard added to the sample before extraction
- $RRF_{(\sigma)}$ = mean analyte relative response factor from the initial calibration
- W = sample weight or volume

Detection Limits

The detection limit reported for a target analyte that is not detected or presents an analyte response that is less than 2.5 times the background level is calculated by using the following expression. The area of the analyte is replaced by the noise level measured in a region of the chromatogram clear of genuine GC signals. The detection limits represent the maximum possible concentration of a target analyte that could be present without being detected.

$$DL_{(\sigma)} = \frac{2.5 * H * Q_{\beta}}{H_{\beta} * RRF_{(\sigma)} * W}$$

Where:

- $DL_{(\sigma)}$ = estimated detection limit for a target analyte
- 2.5 = minimum response required for a GC signal
- H = sum heights of the noise
- H_{β} = sum of peak heights of the characteristic ions of the corresponding internal standard
- Q_{β} = amount of internal standard added to the sample before extraction
- $RRF_{(\sigma)}$ = mean analyte relative response factor from the initial calibration
- W = sample weight or volume

Data Flags

In order to assist with data interpretation, data qualifier flags are used on the final reports. Please note that all data qualifier flags are subjective and are applied as consistently as possible. Each flag has been reviewed by two independent Chemists and the impact of the data qualifier flag on the quality of the data discussed above. The most commonly used flags are:

A '**B**' flag is used to indicate that an analyte has been detected in the laboratory method blank as well as in an associated field sample. The '**B**' flag is used only when the concentration of analyte found in the sample is less than 20 times that found in the associated blank. This flag denotes possible contribution of background laboratory contamination to the concentration or amount of that analyte detected in the field sample.

An '**E**' flag is used to indicate a concentration based on an analyte to internal standard ratio which exceeds the range of the calibration curve. Values which are outside the calibration curve are estimates only.

An '**I**' flag is used to indicate labeled standards have been interfered with on the GC column by coeluting, interferent peaks. The interference may have caused the standard's area to be overestimated. All quantitations relative to this standard, therefore, may be underestimated.

A '**J**' flag is used to indicate a concentration based on an analyte to internal standard ratio which is below the calibration curve. Values which are outside the calibration curve are estimates only.

A '**PR**' flag is used to indicate that a GC peak is poorly resolved. This resolution problem may be seen as two closely eluting peaks without a reasonable valley between the peak tops, overly broad peaks, or peaks whose shapes vary greatly from a normal distribution. The concentrations or amounts reported for such peaks are most likely overestimated.

A '**Q**' flag is used to indicate the presence of QC ion instabilities caused by quantitative interferences.

An '**RO**' flag is used to indicate that a labeled standard has an ion abundance ratio that is outside of the acceptable QC limits, most likely due to a coeluting interference. This may have caused the percent recovery of the standard to be overestimated. All quantitations versus this standard, therefore, may be underestimated.

An '**S**' flag indicates that the response of a specific PCDD/PCDF isomer has exceeded the normal dynamic range of the mass spectrometer detection system. The corresponding signal is saturated and the reported analyte concentration is a 'minimum estimate'. When the '**S**' qualifier is used in the reporting of 'totals', there is saturation of one (not

necessarily from a specific isomer) or more saturated signals for a given class of compounds. Results for saturated analytes are reported as greater than the upper calibration limit.

A 'U' flag is used to indicate that a specific isomer cannot be resolved from a large, co-eluting interferent GC peak. The specific isomer is reported as not detected as a valid concentration cannot be determined. The calculated detection limit, therefore, should be considered an underestimated value.

A 'V' flag is used to indicate that, although the percent recovery of a labeled standard may be below a specific QC limit, the signal-to-noise ratio of the peak is greater than ten-to-one. The standard is considered reliably quantifiable. All quantitations derived from the standard are considered valid as well.

An 'X' flag is used to indicate that a polychlorodibenzofuran (PCDF) peak has eluted at the same time as the associated diphenyl ether (DPE) and that the DPE peak intensity is at least ten percent of the total PCDF peak intensity. Total PCDF values are flagged 'X' if the total DPE contribution to the total PCDF value is greater than ten percent. All PCDF peaks that are significantly influenced by the presence of DPE peaks are either reported as "estimated maximum possible concentration (EMPC) values without regard to the isotopic abundance ratio, or are included in the detection limit value depending on the analytical method.



TRIANGLE LABORATORIES, INC.

LIST OF CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Primary NELAC Certificates: Florida Department of Health, #E87769; SDWA, Method 1613, 2,3,7,8-TCDD for Dioxin in Drinking Water; CWA, Method 613, 2,3,7,8-TCDD AND Method 1613, PCDD/PCDF & totals; RCRA/CERCLA, Methods 8280/8290, PCDD/PCDF & totals; CAA, TO-9A, all dioxins/furans AND TO-13A, semi-volatiles. Expires June 30, 2002.

State of Alabama, Department of Environmental Management. Laboratory ID # 40950. 2,3,7,8 TCDD (Dioxin) in drinking water. Expires 31 July 2002.

State of Alaska, Department of Environmental Conservation. Lab ID #NC-06-00. Certificate number NC00140. 2,3,7,8- TCDD (Dioxin) in drinking water. Expires December 21, 2002.

State of Arizona, Department of Health Services. Certificate #AZ0423. Drinking Water for Dioxin, Dioxin in Waste Water and Solid or Hazardous Waste. Expires May 26, 2002.

State of Arkansas, Department of Environmental Quality. Pulp/paper, soil, water, and Hazardous Waste for Dioxin/Furans. Expires 8 January 2003.

NELAC Certificates: State of California, Department of Health Services, Certificate No. 01167CA. SDWA, Method 1613, 2,3,7,8-TCDD for Dioxin in Drinking Water; CWA, Method 613, 2,3,7,8-TCDD AND Method 1613, PCDD/PCDF & totals; RCRA/CERCLA, Methods 8280/8290, PCDD/PCDF & totals; CAA, TO-9A, all dioxins/furans AND TO-13A, semi-volatiles. Expires October 31, 2002.

State of Colorado, Department of Public Health and Environment. SDWA, Dioxin by EPA 1613. Expires April 30, 2003.

State of Connecticut, Department of Health Services. Registration # PH-0117. SDWA, Method 1613, 2,3,7,8-TCDD for Dioxin in Drinking Water; CWA, Method 1613, PCDD/PCDF & totals; RCRA/CERCLA, Methods 8280/8290, PCDD/PCDF & totals. Expires September 30, 2003.

Delaware Health and Social Services. Dioxin Certification waived for out-of-state laboratories; accept home-state Certifications.

Primary NELAC Certificates: Florida Department of Health, #E87769; SDWA, Method 1613, 2,3,7,8-TCDD for Dioxin in Drinking Water; CWA, Method 613, 2,3,7,8-TCDD AND Method 1613, PCDD/PCDF & totals; RCRA/CERCLA, Methods 8280/8290, PCDD/PCDF & totals; CAA, TO-9A, all dioxins/furans AND TO-13A, semi-volatiles. Expires June 30, 2002.

Revised 5/15/02 nch

Y:\certific\administ\certlist.doc

2445 S. Alston Ave. • Durham, NC 27713 • (919) 544-5729 • FAX (919) 544-5491

www.trianglelabs.com

Georgia Department of Environmental Quality. Chemical Certification of Drinking Water for Dioxins, method 1613, reciprocity based on North Carolina Certification. SDWA, Method 1613, 2,3,7,8-TCDD for Dioxin in Drinking Water; CWA, Method 613, 2,3,7,8-TCDD AND Method 1613, PCDD/PCDF & totals; RCRA/CERCLA, Methods 8280/8290, PCDD/PCDF & totals; CAA, TO-9A, all dioxins/furans AND TO-13A, semi-volatiles; reciprocity based on FL-DOH NELAC Certificates. Certificate # 953, expires June 30, 2002.

Hawaii Department of Health. Certified for Dioxin under the Safe Drinking Water Act. "Accepted" status for regulatory purposes. Expires June 30, 2002.

Idaho Department of Health and Welfare. Dioxin in drinking water, EPA Method 1613. Expires December 31, 2002.

NELAC Certificates: Illinois Environmental Protection Agency. Accreditation Number #200007, Certificate #000468; Drinking Water, Method 1613, 2,3,7,8-TCDD; Wastewater, Organic, Methods 1613 and 613; Hazardous and Solid Waste, Organic, Methods 8280A and 8290. Expires 30 September 2002.

Indiana Department of Health. Dioxin in drinking water, EPA method 1613. Lab ID # C-NC-01. Expires July 31, 2002.

NELAC Certificates: State of Kansas, Department of Health and Environment. Cert. # E-10215. SDWA, Method 1613, 2,3,7,8-TCDD for Dioxin in Drinking Water; CWA, Method 1613, PCDD/PCDF; RCRA/CERCLA, Methods 8280/8290, PCDD/PCDF & totals. Expires 31 January 2003.

Commonwealth of Kentucky, Department for Environmental Protection. Lab ID #90060. 2,3,7,8 TCDD (Dioxin) in drinking water. Expires December 31, 2002.

NELAC Certificates: State of Louisiana Department of Environmental Quality. Certificate # 01979. CAA, TO-9A and TO-13A; CWA, Method 613 2,3,7,8-TCDD and Method 1613 PCDDs/PCDFs; Solid and Hazardous Waste Methods 8280A & 8290 PCDDs/PCDFs; Misc. Methods 1613, 8280A & 8290. Expires 30 June 2002.

NELAC Certificates: State of Louisiana Department of Health & Hospitals. Dioxin (2,3,7,8-TCDD) in Drinking Water. Certificate # LA020003. Expires December 31, 2002.

Maryland Department of Health and Mental Hygiene. Certification # 235, SOC 2 (Dioxin). Expires September 30, 2002.

Commonwealth of Massachusetts, Department of Environmental Protection, does not require Certification for Drinking Water Dioxin/Furan analysis.

State of Michigan, Department of Environmental Quality. 2,3,7,8 TCDD by Method 1613. Expires April 1, 2001. *Renewal pending.

Minnesota Department of Health. The certification program in MN does not include dioxins/furans for CWA, SDWA or RCRA/CERCLA. See U.S. EPA Region V.

Mississippi State Department of Health. Dioxin in drinking water. No expiration date.

Montana Department of Health and Environmental Services. CERT0019. Dioxin in drinking water. Expires December 31, 2002.

State of Nebraska Department of Health. Reciprocal certification through the North Carolina Department of Health and Human Services and Florida DOH NELAC Certification. SDWA, Method 1613, 2,3,7,8-TCDD for Dioxin in Drinking Water; CWA, Method 613, 2,3,7,8-TCDD AND Method 1613, PCDD/PCDF & totals; RCRA/CERCLA, Methods 8280/8290, PCDD/PCDF & totals; CAA, TO-9A, all dioxins/furans AND TO-13A, semi-volatiles. Expires July 31, 2002.

State of Nevada, Department of Conservation and Natural Resources. Lab Certificate No. NC-00140-2002-73, expires July 31, 2002. CWA, Method 1613, PCDD/PCDF & totals, expires July 31, 2002.

State of Nevada, Department of Human Resources. Lab Certificate No. NC-00140-2002-73, expires July 31, 2002. SDWA, Method 1613, 2,3,7,8-TCDD for Dioxin in Drinking Water, expires July 31, 2002.

NELAC Certificates: State of New Jersey, Department of Environmental Protection. ID #NC851. SDWA, Method 1613, 2,3,7,8-TCDD for Dioxin in Drinking Water; CWA, Method 1613, PCDD/PCDF & totals; RCRA/CERCLA, Method 8290, PCDD/PCDF & totals; CAA, Methods 0023A and MM5 (Sampling Train). Expires June 30, 2002.

State of New Mexico, Environment Department. Safe Drinking Water Act; 2,3,7,8-TCDD by Method 1613. Expires 30 June 2002.

NELAC Certificates: New York State Department of Health, LAB ID #11026. Potable Water, 2,3,7,8-TCDD, EPA 1613, Serial # 14199; Non-Potable Water, 2,3,7,8-TCDD, EPA 613, Serial # 14200. Valid through 15 June 2002.

State of North Carolina, Department of Health and Human Services. Certificate # 37751. Dioxin in drinking water. Expires July 31, 2002.

North Dakota State Department of Health and Consolidated Laboratories. Certificate # R-076. Dioxin in drinking water. Expires June 30, 2002.

Ohio EPA. Ohio does not offer out-of-state lab certifications; certification by EPA Region 5 is honored.

Oklahoma Department of Environmental Quality. Laboratory #9612. 2,3,7,8 TCDD (Dioxin). Expires August 31, 2002.

NELAC Certificates: Oregon Environmental Laboratory Accreditation Program. Certificate No.: 911918452. SDWA, Method 1613, 2,3,7,8-TCDD for Dioxin in Drinking Water; CWA, Method 613, 2,3,7,8-TCDD AND Method 1613, PCDD/PCDF & totals; RCRA/CERCLA, Methods 8280/8290, PCDD/PCDF & totals; CAA, TO-9A, all dioxins/furans AND TO-13A, semi-volatiles. Expires January 31, 2003.

DOCUMENT CONTROL

Index of Custody Records

[illegible]

=TRIANGLE LABORATORIES, INC. -- LOG IN RECORD/CHAIN OF CUSTODY:

Custody Seal	: Absent	Sample Seals:	Absent
Chain of Custody	: Present	Container...	Intact
Sample Tags	: Absent		
Sample Tag Numbers:	Not Listed on Chain of Custody		
SMO Forms	: N/A		

TLI Project Number 57452
Client: CUFD01 - Cumberland Farms
Project: Lot 516, Smith St.

Book
328

Date Received	05/22/02
---------------	----------

Page

Carrier and Number	FEDEX
--------------------	-------

36

Ice Chest ICE PACKS Temp 10.0 C

[illegible]

Receiving Remarks: ICE PACKS ARRIVED THAWED. 05/22/02 DT

Archive Remarks:

TRIANGLE LABORATORIES, INC.
SAMPLE TRACKING AND PROJECT MANAGEMENT FORM

-----ADMINISTRATIVE INFORMATION-----

TLI Proj#: 57452-	Samples: 3	TurnAround.: 7 Day(s)
Prod Code: D25011	Matrix.: Soil	Hold Time...: 30 Day(s)
DetectLim: 1 ppt	Type....: B	Start Date.: 05/22/02
	Recvd...: 05/22/02	Ship By....: 05/28/02
		DWL Due Dt.: 05/27/02

Analyte List.: 2378-TCDD

Method.....: Method 8290: 2,3,7,8-TCDD

Client Proj...: Lot 516, Smith St.

Client.....: Cumberland Farms (CUF01)

P.O. No.....:

Contact.....: Eric Jensen

Proj. Mgr.....:

Collect Dt/Tm: 05/17/02

Phone.....: 508-759-4441

Fax.....: 508-759-4475

Sample Origin:

-----SPECIAL INSTRUCTIONS / QA REQUIREMENTS-----

Prespike Standard: n/a

Extraction Exp...: 06/16/02

-----REPORTING REQUIREMENTS-----

Reporting Format: Report Option II

See MILES for Instructions/Communications.



Completed by:

AC

[Signature]

DATE:

052302

Reviewed by:

[Signature]

[Signature]

DATE:

052302

(PMGT0197)

Triangle Laboratories, Inc.®

2445 S. Alston Ave. • Durham, North Carolina 27713

Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 15:59 05/23/2002

Triangle Laboratories, Inc.

57452.XLS

Percent Moisture Data

Project # 57452

		Target wt. (g)			Target wt. (g)			Target wt. (g)
Date/Time:	5/24/02 9:30		Date/Time:			Date/Time:		
TLI ID:	326 36 1	10.01	TLI ID:			TLI ID:		
Initial: 3.8734g								
Final: 3.4938g								
Moisture: 9.80%								
Date/Time:	5/24/02 9:43		Date/Time:			Date/Time:		
TLI ID:	326 36 2	11.66	TLI ID:			TLI ID:		
Initial: 5.7942g								
Final: 4.9679g								
Moisture: 14.26%								
Date/Time:	5/24/02 9:49		Date/Time:			Date/Time:		
TLI ID:	326 36 3	11.28	TLI ID:			TLI ID:		
Initial: 6.1951g								
Final: 5.4898g								
Moisture: 11.38%								
Date/Time:			Date/Time:			Date/Time:		
TLI ID:			TLI ID:			TLI ID:		
Date/Time:			Date/Time:			Date/Time:		
TLI ID:			TLI ID:			TLI ID:		
Date/Time:			Date/Time:			Date/Time:		
TLI ID:			TLI ID:			TLI ID:		
Date/Time:			Date/Time:			Date/Time:		
TLI ID:			TLI ID:			TLI ID:		
Date/Time:			Date/Time:			Date/Time:		
TLI ID:			TLI ID:			TLI ID:		

Analyst/Date: CGR 5/24/02

57452

Extraction

Type: Soxhlet Jar / Sep Funnel / Steam Dist / Cont LL / ASE / Waste Dilution / Solid PhaseS.O.P: 105 Version: 16Time On: 1400Time Off: 600

Solvents/Acids	Lot Numbers
<u>Toluene</u>	<u>015708</u>

Comments / Observations: Used Presoaked sand lot # 53-8-15E
for Blk, Lcs, LcsO (002) 57440 - soil, brown, no odor
57451 - 002 - soil, tan, no odor 57452 - soil, brown,
no odor mmt 5/24/02

Concentration

Type: Rotovap / KD / Speedvac RMS.O.P: 124 Version: 16 5/25/02Tridecane Lot # FT-1-23-303 F

Solvent Exchange	Lot Number
<u>Heptane</u>	<u>021381</u>
<u>Iso - Octane</u>	<u>N/A</u>

Division: 20%/80% 50%/50% 5ml/20ml Other _____

Comments / Observations: _____

S.O.P: 280 ^{10mm} 5/25/02 Version: 11
 S.O.P: 260 Version: 14 5/26/02
 S.O.P: _____ Version: _____

MeCl2/Hept	ID
<u>1.5%</u>	<u>CUSPL-17-187-1</u>
<u>20%</u>	<u>CUSPL-17-187-2</u>
<u>6%</u>	
<u>Hept</u>	<u>021381</u>

Comments / Observations: for 280, used 50g silica gel for clean-up blank and 100g for
sample - 004. Silica gel 50A-7921 RM 5/25/02
57452

Transfers

S.O.P: DSP272 Version: 9 MK 5/26/02Division: 90:10 ESP 010.1 MK

Comments: Project 57440 + 57440, spl: 002 was split 90:10,
3-12 frach → 10 MS
MK 5/26/02

Solvents	Lot Numbers
<u>Heptane</u>	<u>021381</u>
<u>NA</u>	<u>NA</u>

*** Indicate the portion of any division that is processed or relinquished to mass spec.

Method: 8290
 Matrix: Soil
 Ext. Date: 5/24/02
 Analyst: ma

Project-Sample ID / TLI ID	Gross Weight Before	Gross Weight After	Sample Size g / mL	Concn. ug/mL	Volume uL	Chemist	Spike #	Spike ID	Exp. Date	Time	Concn. ug/mL	Volume uL	Any Left Yes/No	
57440 0 TLI Blank			10.0			ma	8156 H	USF-AIS	4/25/03	5/24/02	13:00	0.10 ug/mL	20 uL	Yes/No
57440 2 326-24-1	302.5	290.4	12.0			ma	8162 F	USF-MK	4/25/03	5/24/02	13:00	0.01 ug/mL	40 uL	Yes/No
57440 3 TLI LCS			10.0			ma	8156 L	USF-C	4/11/03	5/25/02	10:52	0.01 ug/mL	20 uL	Yes/No
57440 4 TLI LCSD			10.0											Yes/No
57451 2 326-35-1	965.9	954.9	11.0											Yes/No
57452 2 326-36-1	480.7	468.8	11.0											Yes/No
57452 3 326-36-2	473.8	461.7	12.0											Yes/No
57452 4 326-36-3	460.8	448.6	12.0											Yes/No
3.452-005 TLI Clean-Up	NA	NA	NA			ma								Yes/No
8133 I USF-AIS 5/12/03 5/25/02 0.10 ug/mL 16:30 20 uL			ma 8156 L USF-C 4/11/03 5/25/02 10:52 0.01 ug/mL 20 uL											Yes/No
														Yes/No
														Yes/No
														Yes/No

(16) ^{run} station

6 9

Project-Sample ID / TLI ID			1	2	3	4	7	8	8A	3/4	8B	9	↓
57440	0	TLI Blank	run 5/24/02	run station	run station	run station	run station		N/A	N/A	run 5/26/02	NAK NA 5/26/02	M 5/26/02
57440	2	326-24-1							↓	↓		MK 5/26/02	
57440	3	TLI LCS							N/A	N/A		NA NAK 5/26/02	
57440	4	TLI LCSD						(16) ^{run} station	NA NAK 5/26/02	N/A			
57451	2	326-35-1							N/A	N/A			
57452	2	326-36-1											
57452	3	326-36-2	↓	↓	↓	↓	↓						
57452	4	326-36-3	run 5/24/02	run station	run station	run station	run station		run station N/A	run station N/A	↓	↓	↓
57452	4	326-36-3	run 5/24/02	run station	run station	run station	run station		run station N/A	run station N/A	↓	↓	↓
57452-UCS		TLI Clean-Up	MA	run station	N/A	MA	MA		run station	run station	30 5/26/02	NA 2 MK	MK 5/26/02

1) Extraction (2) Spike after extraction (3) Add Tridecane (4) Concentrate (40mL / 10 mL / Tridecane) 5) Combine

(6) Divide / Lipid Determination (7) Solvent Exchange 8) Cleanup (DSP260 / DSP280 /) 9) Transfer () Other:

10:10
MK TLI
5/26/02

Date: 05/24/02
Time: 15.06

TRIANGLE LABORATORIES, INC.
Wet Lab Extraction and Observations
Project: 57452

PRDPERC v4.03
Page: 1

Sample #	TLI_Number	Customer.Sample.Id	Init. pH...	NaOH Adj. mL...	H2SO4 Adj. pH.1, mL...	pH.2	Appearance	Color	Odor	Vol.	Entered.By	Date	Time	S
002	326-36-1	MW-1(0-2) DIOXINS	n/a	n/a	n/a	n/a	n/a	soil	brown	none	0	holland	05/24/02 15:06:40	F
003	326-36-2	MW-2(0-2) DIOXINS	n/a	n/a	n/a	n/a	n/a	soil	brown	none	0	holland	05/24/02 15:06:40	F
004	326-36-3	MW-3(0-2) DIOXINS	n/a	n/a	n/a	n/a	n/a	soil	brown	none	0	holland	05/24/02 15:06:40	F

*** End of Report ***

TRIANGLE LABORATORIES, INC.
Transfer Chain-of-Custody Form
Project 57452

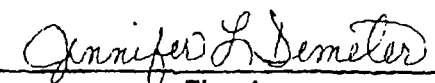
Transfer From: DWLH5 To: DMS5

	Initials..	Date.....	Time...
Released by:	<u>MK</u>	<u>5/26/02</u>	<u>10:30 pm</u>
Accepted by:	<u>coll</u>	<u>5/27/02</u>	<u>10:45</u>

MILES.ID.....	TLI_No.....	Cust.Id.....
57452- -002	326-36-1	MW-1(0-2) DIOXINS
57452- -003	326-36-2	MW-2(0-2) DIOXINS
57452- -004	326-36-3	MW-3(0-2) DIOXINS
57452- -005	TLI Clean-Up	CleanUp Blk

-----XfrCOC (Rev 11/01/94)-----
Additional comments or instructions:

Triangle Laboratories, Inc.
Run Log

<u>Instrument ID</u> T0T-101	<u>Column Type</u> DB5	<u>Column ID</u> 1434113	<u>Plot Name</u> T02	<u>Inl. Vol.</u> 2.0 μ l	<u>Acquisition</u> NDB50S	<u>G/C</u> NDB50S
<u>Signature</u> 						<u>Date</u> 26 MAY 02

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
T022464	5/26/02	20:51	57329r1	325-12-3A	4	ARO30-B-C52-2	AUTO	6.1 ES	QD 5/26/02	
T022465	5/27/02	1002	-	8136A	-	R+chlc	Auto	12%	calc 5/27/02	
T022466	5/27/02	11:09	-	8146	-	8290/1613 CONCAL 10	AUTO	7.0 ES	QD 5/27/02	Good Terms Only. calc 5/27/02
T022467	5/27/02	12:28	-	8146	-	8290/1613 Concal 10	Auto	6.3 ES	calc 5/27/02	Good if 8290 T.O. calc 5/27/02
T022468		13:43	57447	TLE Blank	1	TLE Blank	Auto	7.7 G	calc 5/27/02	
T022469		14:30	57446	TLE Blank	0	TLE Blank		8.1 G		
T022470		15:17	57440	326-24-1	2	S/EPA-401A-5-53.5/A		7.4 G		
T022471		16:05	57451	326-25-1	2	Lab # 503041 Essex Loyasport CK		7.7 G		
T022472		16:53	57447	326-31-1	2	3		9.5 G		
T022473		17:41	↓	326-31-2	3	4		9.2 G		
T022474		18:24	57447	326-31-3	4	5		9.5 G		
T022475	↓	19:16	57460	326-44-1	2	4th Floor		9.3 G		
T022476	5/27/02	20:04	57447	TLE LCS	5	TLE LCS	Auto	9.4 G	calc 5/27/02	

N Transcribed from chromatographic data

C Dated Initials required

ConCal Due: _____

ConCal Due: _____

Triangle Laboratories, Inc.
Run Log

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	G/C
<u>70T-101</u>	<u>DB5</u>	<u>1434113</u>	<u>TO2</u>	<u>2.0 µL</u>	<u>11DB5US</u>	<u>11DB5US</u>
 Signature						<u>5/27/02</u> Date

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
TO22477	5/27/02	20:52	57447	TLI LCSD	6	TLI LCSD	Auto	9.4 38	Cell 5/27/02	
TO22478	↓	21:40	57440	TLI LCS	3	TLI LCS	↓	8.1 55	↓	
TO22479	↓	22:27	57440	TLI LCSD	4	TLI LCSD	↓	8.3 60	↓	
TO22480	5/27/02	23:15	—	8146	—	8290/1613 Concal 10	Auto	9.9 65	Cell 5/27/02	NG Recal L.O. Jas/28/02
TO22481	5/28/02	00:31	—	8146	—	8290/1613 Concal 10	Auto	1.3 64	Jas 5/28/02	Concl F/B 8290 T-2 Jas/28/02
TO22482			—	8124 A	—	RTCHK	Auto		Jas 5/28/02	

Transcribed from chromatographic data

Dated Initials required

ConCal Due: _____

ConCal Due: _____

Run Log

Instrument ID	Column Type	Column ID	Plot Name	Int. Vol.	Acquisition	G/C
70S-104	DB5	211627	T02	2.0 μ L	NDB5US	NDB5US
<i>James R. Semeton</i> Signature						25 MAY 02 Date

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
S022142	5/25/02	22:06	57409r1	325-92-2	3	S020514A2	AUTO	1.6 E6	JA 5/25/02	R
↓ 43	↓	22:54	57247B1	TLI LCS	15	TLI LCS	↓	6.2 E6	↓	R
↓ 44	5/25/02	23:42	57247B1	TLI LCSD	16	TLI LCSD	AUTO	6.2 E6	↓	R
S022145	5/26/02	00:29	-	8146	-	8290/1613 CONCALIO	AUTO	5.1 E6	JA 5/25/02	Good 8290 T→O F/B Used Ending Only 5/26/02
S022146	5/26/02	12:29	-	8136A	-	RTCHK	AUTO	17%	JA 5/26/02	
S022147	5/26/02	13:32	-	8146	-	8290/1613 Concalio	Auto	2.5 E6	JA 5/26/02	TECF > 20% JA 5/26/02
S022148	5/26/02	14:51	-	8146	-	8290/1613 Concalio	Auto	2.5 E6	↓	13.2% KCSF > 30% JA 5/26/02
S022149	5/26/02	-	-	8146	-	8290/1613 Concalio	Auto	-	↓	↓
S022150	5/27/02	10:37	-	8136A	-	RTchk	Auto	15%	Call 5/27/02	
S022151	5/27/02	11:57	-	8146	-	8290/1613 Concalio	Auto	1.3E6	Call 5/27/02	Good 8290 TETRA JA 5/27/02
S022152	↓	13:43	-	8140Q	-	RS-100	↓	2.1 C4	JA 5/27/02	Chn Japer
↓ 53	↓	14:30	57354	TLI BLANK	0	TLI BLANK	↓	2.1 C4	↓	
S022154	5/27/02	15:17	57354	325-37-1	2	AR030-SE-052-CLSIG	AUTO	5.0 C4	JA 5/27/02	

Transcribed from chromatographic data

 ** Dated initials required
 67

 ConCal Due: _____
 ConCal Due: _____

Kun Log

Instrument ID	Column Type	Column ID	Plot Name	Ini. Vol.	Acquisition	G/C
705-104	DB5	211K27	TO2	2.0ul	NDB5US	NDB5US
<i>Jennifer L. Semeler</i> Signature						27 MAY/02 Date

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
S022155	5/27/02	14:05	57354	TLI LCS	3	TLI LCS	AUTO	2.5 60	JDS 5/27/02	
56		14:53	↓	TLI LCSD	4	TLI LCSD		3.5 60		
57		17:42	57354	TLI Clean Up	5	CLEAN UP BLANK		3.0 60		
58		18:28	57452	326-36-1	2	MW-1(0-2)Dioxins		2.7 60		
59		19:10	↓	326-36-2	3	MW-2(0-2)Dioxins		4.5 60		
60		20:03	↓	326-36-3	4	MW-3(0-2)Dioxins		5.0 60		
61		20:51	57452	TLI Clean Up	5	CLEAN UP BLANK	↓			
S022162	5/27/02	21:39	—	8146	—	8290/1613 Concal 10	AUTO	3.3 60	JDS 5/27/02	Grand F10 500 Tcm only JDS/25/02
S022163	5/28/02	10:11	—	8146	—	8290/1613 Concal 10	Aut		JDS 5/28/02	
S022164	↓	01:01	—	8146	—	8290/1613 Concal 10	Aut		JDS 5/28/02	Grand F10 500 Tcm

Transcribed from chromatographic data
 Dated initials required

ConCal Due: _____
 ConCal Due: _____

1/q5/forms/hrunlog.doc (02/05/97)

SAMPLE
DATA

TRIANGLE LABORATORIES, INC.
LAB CONTROL SPIKE RECOVERY ANALYSIS AND COMPARISON

Project: 57452
Matrix: SAND
Method: 8290

	T022469	T022478		T022479		
Isomer	ID: TLI Blank	ID: TLI LCS		ID: TLI LCSD		Relative
	Sample	With Spike	Percent	Spike Dup	Percent	Percent
	(pg/g)	(pg/g)	Recovery	(pg/g)	Recovery	Difference
2378-TCDD	ND	38.8	97.0	39.5	98.7	1.74

ND: Not Detected
NA: Not Applicable
[...]: EMPC Value

MILES 4.22.16
GRY_PSUM v1.10

Processed By: 

Date: 05/28/02

Percent Recovery QC Limits: 70 to 130 percent.
Relative Percent Difference QC Limits: +/- 20 percent.

Nominal Spike Levels:

TCDD/TCDF...: 0.4 ng
PeCDD/PeCDF: 2.0 ng
HxCDD/HxCDF: 2.0 ng
HpCDD/HpCDF: 2.0 ng
OCDD/OCDF...: 4.0 ng

TRIANGLE LABORATORIES, INC.
Sample Results for Project 57452
Method MIT3 Analysis (DB-5)

Page 1
05/28/2002

```
=====
Data File          T022469          S022158          S022159          S022160
Sample ID          TLI Blank        MW-1(0-2) DIOXI  MW-2(0-2) DIOXI  MW-3(0-2) DIOXI
                               NS                               NS                               NS
Units              pg/g              pg/g              pg/g              pg/g
Extraction Date    05/24/2002        05/24/2002        05/24/2002        05/24/2002
Analysis Date      05/27/2002        05/27/2002        05/27/2002        05/27/2002
Instrument          T                  S                  S                  S
Matrix             SAND              SOIL              SOIL              SOIL
Extraction Type
=====
Analytes
2378-TCDD          (0.3)              17.8              160              0.76 J

Other Standards Percent Recovery Summary (% Rec)
37Cl-TCDD          62.5              91.6              87.2              85.8

Internal Standards Percent Recovery Summary (% Rec)
13C12-2378-TCDD    55.1              77.6              62.6              72.9

```

TRIANGLE LABORATORIES, INC.
Sample Results for Project 57452
Method MIT3 Analysis (DB-5)

Page 2
05/28/2002

```
=====
Data File      S022161      T022478      T022479
Sample ID      CleanUp Blk    TLI LCS      TLI LCSD

Units          pg/g        pg/g        pg/g
Extraction Date 05/25/2002    05/24/2002    05/24/2002
Analysis Date   05/27/2002    05/27/2002    05/27/2002
Instrument       S            T            T
Matrix          SAND          SAND          SAND
Extraction Type

=====
Analytes
2378-TCDD      (0.1)        38.8        39.5

Other Standards Percent Recovery Summary (% Rec)
37C1-TCDD      71.3         64.5        67.8

Internal Standards Percent Recovery Summary (% Rec)
13C12-2378-TCDD 62.2         55.6        59.4
=====
(Detection Limit).
```

Cumberland Farms

TLI Project: 57452
Client Sample: TLI Blank

Method 8290 TCDD Analysis (b)
Analysis File: T022469

Client Project:	Lot 516, Smith St.	Date Received:	/ /	Spike File:	SPMIT32S
Sample Matrix:	SAND	Date Extracted:	05/24/2002	ICal:	TF51212
TLI ID:	TLI Blank	Date Analyzed:	05/27/2002	ConCal:	T022467
Sample Size:	10.000 g	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	T022469	% Lipid:	n/a
GC Column:	DB-5	Analyst:	CGK	% Solids:	n/a

Analytes	Conc. (pg/g)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	ND	0.3				—

Internal Standard	Conc. (pg/g)	% Recovery	QC Limits	Ratio	RT	Flags
¹³ C ₁₂ -2,3,7,8-TCDD	110	55.1	40%-130%	0.81	26:40	—

Other Standard	Conc. (pg/g)	% Recovery	QC Limits	RT	Flags
³⁷ Cl ₄ -2,3,7,8-TCDD	12.5	62.5	40%-130%	26:42	—

Recovery Standard	Ratio	RT	Flags
¹³ C ₁₂ -1,2,3,4-TCDD	0.83	26:29	—

Data Reviewer:  05/28/2002

Page 1 of 1

MIT3_PSR v1.00, LARS 6.25.04

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Printed: 08:45 05/28/2002

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Initial Date. .

Data Review By:

 5, 28, 02

Calculated Noise Height: 0.07

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of T022469B.dbf
05/28/2002 Matched GC Peaks / Ratio / Ret. Time

Compound/

M_Z.... QC.Log Omit Why ..RT. OK Ratio Total.Area/Ht Area/Ht.Peak1 Area/Ht. Peak2 Rel.RT Compound.Name.. ID.. Flags.

TCDD	0.65-0.89				0.899-1.043			
320-322	DC	NL	Height	0.15	0.08	0.07		
	DC	SN 25:11 RO	0.39	0.16			0.944	
	DC	SN 25:16	0.67	0.20			0.948	
	DC	SN 25:30 RO	2.00	0.16			0.956	
	DC	SN 25:33 RO	2.75	0.07			0.958	
	DC	SN 26:04 RO	1.05	0.39			0.978	
	DC	SN 26:35 RO	1.75	0.21			0.997	
	DC	SN 27:26 RO	0.33	0.09			1.029	
	DC	SN 27:36	0.81	0.49			1.035	
320-322		0 Peaks		0.00				
37Cl-TCDD					0.925-1.075			
328	DC	NL	Height	0.06	0.06			
	DC	WL 24:02		0.18			0.901	
	DC	WL 24:07		0.15			0.904	
	DC	WL 24:09		0.15			0.906	
	DC	WL 24:17		0.09			0.911	
	DC	WL 24:22		0.07			0.914	
	DC	WL 24:24		0.21			0.915	
	DC	WL 24:34		0.13			0.921	
	DC	SN 24:42		0.13			0.926	
	DC	SN 24:54		0.25			0.934	
	DC	SN 25:18		0.24			0.949	
	DC	SN 25:34		0.27			0.959	
	DC	SN 25:44		0.08			0.965	
	DC	SN 25:49		0.12			0.968	
	DC	SN 25:56		0.24			0.973	
	DC	SN 26:10		0.21			0.981	
	DC	SN 26:15		0.12			0.984	
		26:42	40.24	40.24			1.001	37Cl-TCDD
		26:55	0.41	0.41			1.009	CLS
		28:12	0.31	0.31			1.058	
328		3 Peaks		40.96				
13C12-TCDD					0.925-1.075			
332-334	DC	NL	Height	0.29	0.21	0.08		
		26:29	0.83	639.19	289.00	350.19	0.993	13C12-1234-TCDD RS1
		26:40	0.81	403.43	180.39	223.04	1.000	13C12-2378-TCDD IS1
		Height	112.91	50.50		62.41		
332-334		2 Peaks		1,042.62				

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Compound/

M_Z.... QC.Log Omit Why ..RT OK Ratio Total.Area/Ht Area/Ht.Peak1 Area/Ht.Peak2 Rel.RT Compound.Name.. ID.. Flags.

Column Description..... "Why" Code Description..... QC Log Desc.....

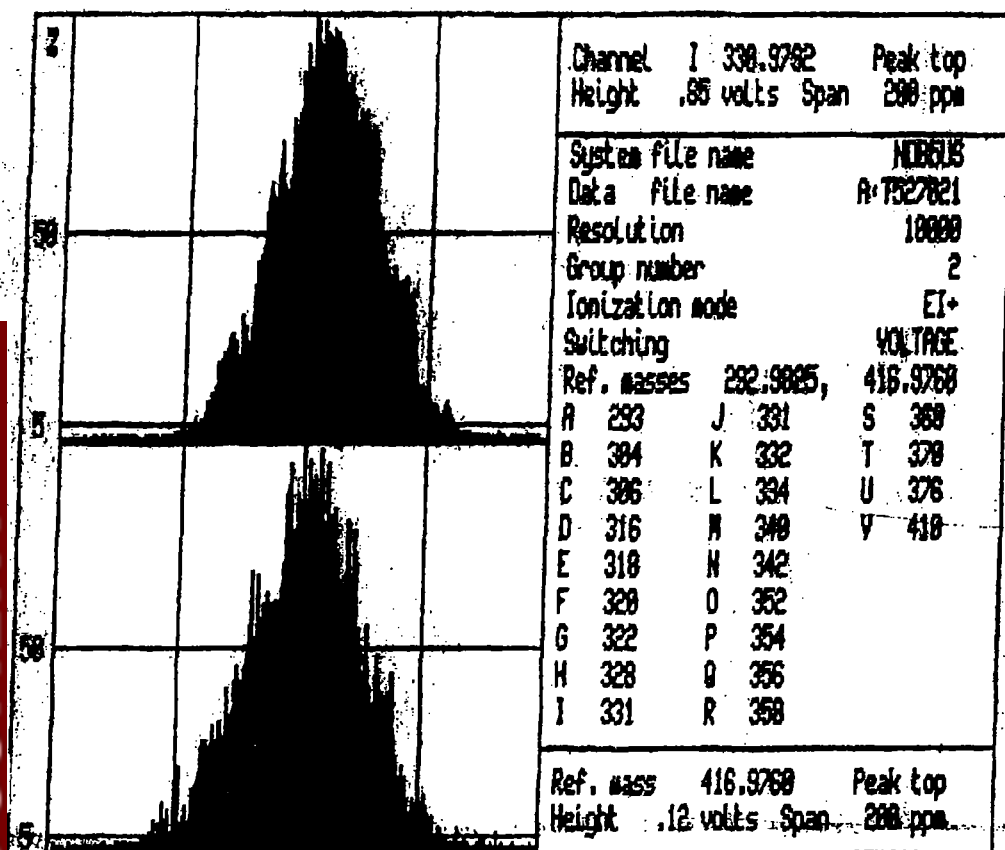
M_Z	-Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT.	-Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1	-Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK	-RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT	-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
			N-Name Changed
			X-Ether Interference

*** End of Report ***

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Cumberland Farms

TLI Project: 57452
Client Sample: MW-1(0-2) DIOXINS

Method 8290 TCDD Analysis (b)
Analysis File: S022158

Client Project:	Lot 516, Smith St.	Date Received:	05/22/2002	Spike File:	SPMIT32S
Sample Matrix:	SOIL	Date Extracted:	05/24/2002	ICal:	SF52012
TLI ID:	326-36-1	Date Analyzed:	05/27/2002	ConCal:	S022151
Sample Size:	11.000 g	Dilution Factor:	n/a	% Moisture:	9.8
Dry Weight:	9.922 g	Blank File:	T022469	% Lipid:	n/a
GC Column:	DB-5	Analyst:	JLD	% Solids:	90.2

Analytes	Conc. (pg/g)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	17.8			0.74	27:05	—

Internal Standard	Conc. (pg/g)	% Recovery	QC Limits	Ratio	RT	Flags
¹³ C ₁₂ -2,3,7,8-TCDD	156	77.6	40%-130%	0.79	27:04	—

Other Standard	Conc. (pg/g)	% Recovery	QC Limits	RT	Flags
³⁷ Cl ₄ -2,3,7,8-TCDD	18.5	91.6	40%-130%	27:06	—

Recovery Standard	Ratio	RT	Flags
¹³ C ₁₂ -1,2,3,4-TCDD	0.82	26:50	—

Data Reviewer: 4/10 05/28/2002

Page 1 of 1

MTI3_PSR v1.00, LARS 6 23 04

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Printed: 08:45 05/28/2002

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Initial Date...

Data Review By:

pk *6/18/02*

Channel specific noise levels computed from 'NL' heights.

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of S022158B.dbf
05/28/2002 Matched GC Peaks / Ratio / Ret. Time

Compound/

M_Z.... QC.Log Omit Why ..RT. OK Ratio Total.Area/Ht Area/Ht.Peak1 Area/Ht.Peak2 Rel.RT Compound.Name.. ID.. Flags.

TCDD		0.65-0.89		0.899-1.043			
320-322	DC NL	Height	0.04	0.02	0.02		
	DC WL	24:09 0.73	0.83		0.892		
		24:26 RO 0.01	0.85	0.37	29.51 0.903		J
		24:55 RO 0.63	3.15	1.37	2.17 0.921 1379-TCDD	AN	J
		25:01 RO 0.92	8.78	3.82	4.17 0.924		J
		25:13 RO 0.41	1.61	0.70	1.71 0.932		J
		25:34 RO 0.47	0.18	0.08	0.17 0.945		J
		25:51 0.67	6.06	2.43	3.63 0.955		J
		26:00 RO 1.21	0.83	0.57	0.47 0.961		J
		26:19 RO 5.14	0.76	2.21	0.43 0.972		J
		26:34 RO 1.80	1.31	1.33	0.74 0.982		J
		26:55 RO 0.53	2.16	0.94	1.78 0.994		J
		27:05 0.74	172.12	73.10	99.02 1.001 2378-TCDD	AN	
320-322	11 Peaks		197.81				

37Cl-TCDD		0.925-1.075			
328	DC NL	Height	0.03	0.03	
	DC WL	24:08	1.83		0.892
	DC WL	24:39	0.17		0.911
	DC WL	25:02	0.75		0.925
		25:08	0.52	0.52	0.929
		25:36	6.74	6.74	0.946
		25:49	0.97	0.97	0.954
		25:56	0.22	0.22	0.958
		26:05	0.43	0.43	0.964
		26:13	0.26	0.26	0.969
		26:17	2.25	2.25	0.971
		26:32	0.78	0.78	0.980
		26:41	0.40	0.40	0.986
		26:51	0.75	0.75	0.992
		27:06	207.81	207.81	1.001 37Cl-TCDD
		27:19	1.34	1.34	1.009
		27:30	22.68	22.68	1.016
		27:55	1.09	1.09	1.031
		28:03	0.18	0.18	1.036
		28:09	0.14	0.14	1.040
		28:14	1.07	1.07	1.043
328	17 Peaks		247.63		

13C12-TCDD		0.65-0.89		0.925-1.075			
332-334	DC NL	Height	0.21	0.18	0.03		
N		26:50 0.82	2,330.53	1,047.05	1,283.48 0.991 13C12-1234-TCDD	RS1	
		27:04 0.79	2,063.85	912.04	1,151.81 1.000 13C12-2378-TCDD	IS1	
		Height	456.37	203.44	252.93		

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Compound/

M_Z.... QC.Log Omit Why ..RT. OK Ratio Total.Area/Ht Area/Ht.Peak1 Area/Ht.Peak2 Rel.RT Compound.Name.. ID.. Flags.

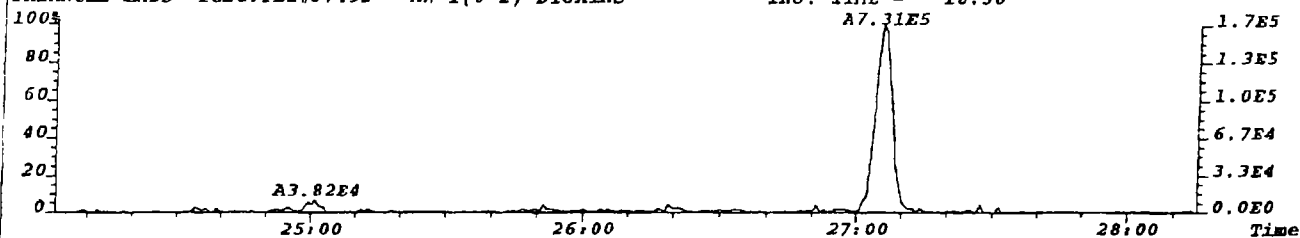
	27:32	RO	0.36	3.31	1.44	4.03	1.017
	27:40	RO	0.41	1.91	0.83	2.03	1.022
332-334	4 Peaks			4,399.60			

Column Description..... "Why" Code Description..... QC Log Desc.....

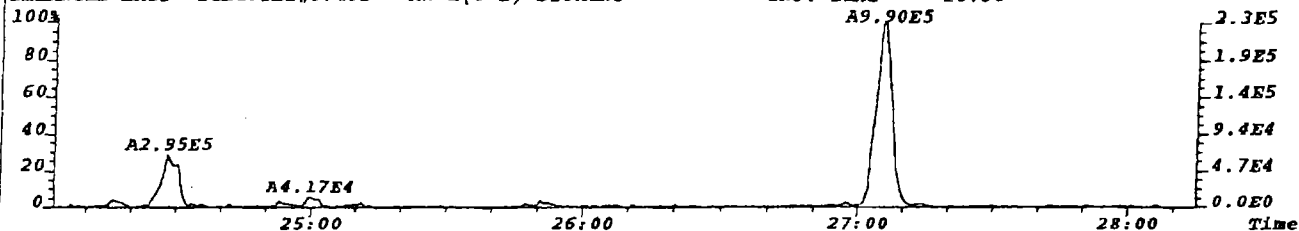
M_Z	-Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT.	-Retention Time (mm:ss)	WK-Above Retention Time Window	K-Peak Kept
Rat.1	-Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK	-RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT	-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
			N-Name Changed
			X-Ether Interference

*** End of Report ***

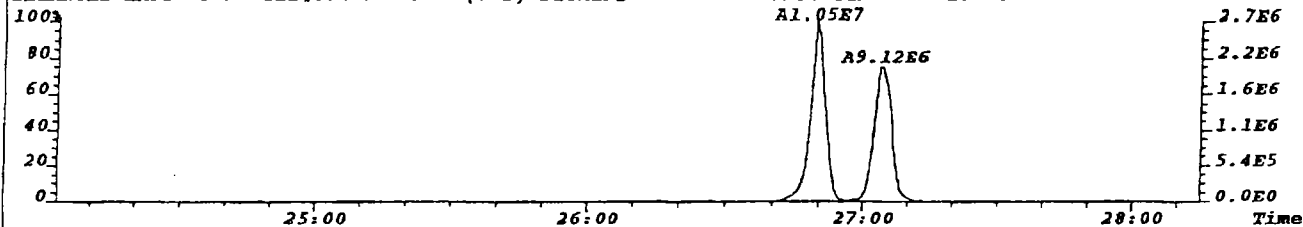
File:S022158 #1-771 Acq:27-MAY-2002 18:28:28 EI+ Voltage SIR 70S Noise:30
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,120.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#57452 MW-1(0-2) DIOXINS INJ. TIME = 18:30



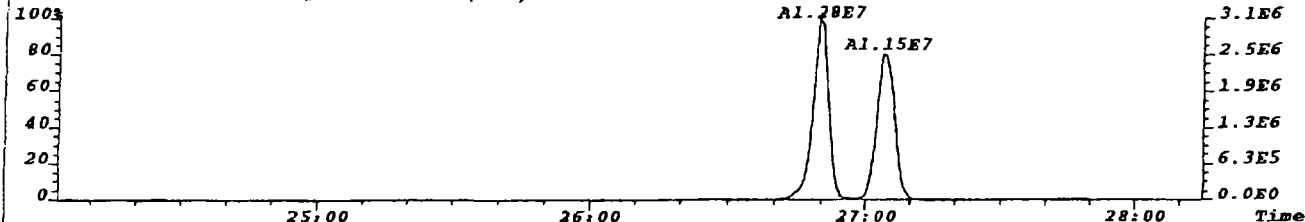
File:S022158 #1-771 Acq:27-MAY-2002 18:28:28 EI+ Voltage SIR 70S Noise:29
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,116.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#57452 MW-1(0-2) DIOXINS INJ. TIME = 18:30



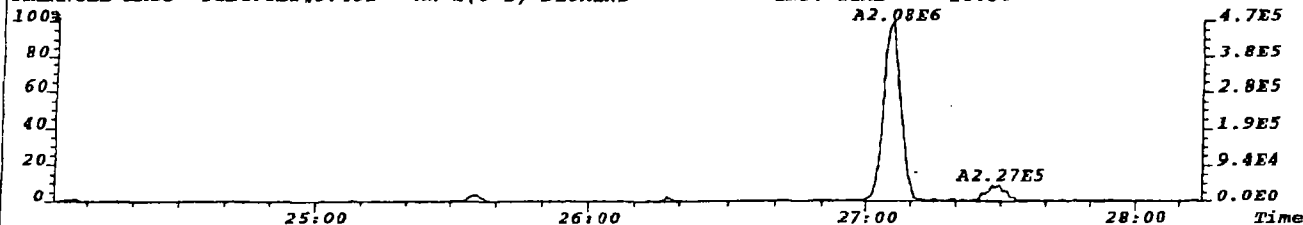
File:S022158 #1-771 Acq:27-MAY-2002 18:28:28 EI+ Voltage SIR 70S Noise:228
331.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,912.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#57452 MW-1(0-2) DIOXINS INJ. TIME = 18:30



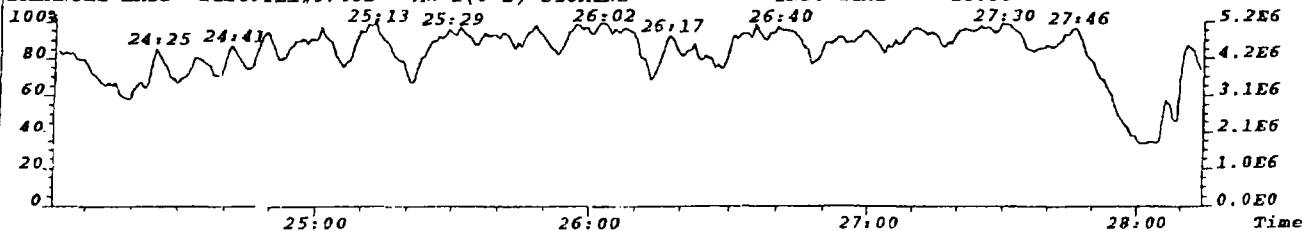
File:S022158 #1-771 Acq:27-MAY-2002 18:28:28 EI+ Voltage SIR 70S Noise:39
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,156.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#57452 MW-1(0-2) DIOXINS INJ. TIME = 18:30

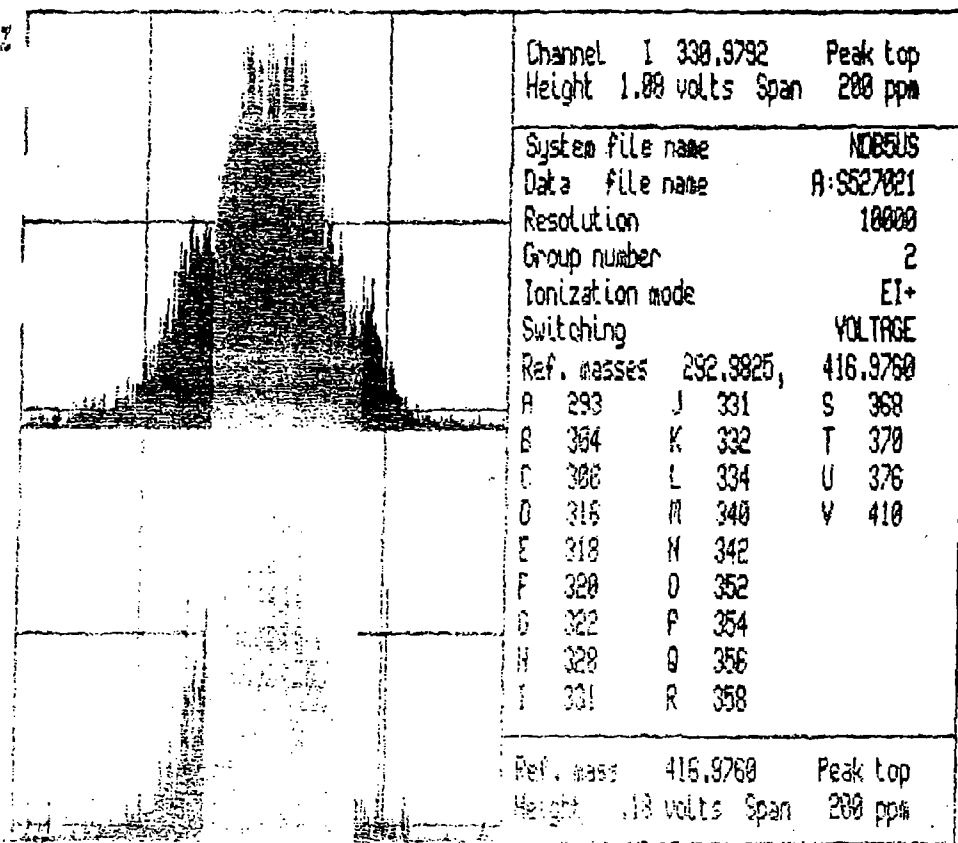


File:S022158 #1-771 Acq:27-MAY-2002 18:28:28 EI+ Voltage SIR 70S Noise:34
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,136.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#57452 MW-1(0-2) DIOXINS INJ. TIME = 18:30



File:S022158 #1-771 Acq:27-MAY-2002 18:28:28 EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#57452 MW-1(0-2) DIOXINS INJ. TIME = 18:30





US EPA ARCHIVE DOCUMENT

Method 8290 TCDD Analysis (b)
Analysis File: S022159

Analytes	Conc. (pg/g)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	160			0.76	26:54	—
Internal Standard	Conc. (pg/g)	% Recovery	QC Limits	Ratio	RT	Flags
¹³ C ₁₂ -2,3,7,8-TCDD	122	62.6	40%-130%	0.80	26:53	—
Other Standard	Conc. (pg/g)	% Recovery	QC Limits		RT	Flags
¹⁷ Cl ₄ -2,3,7,8-TCDD	17.0	87.2	40%-130%		26:53	—
Recovery Standard				Ratio	RT	Flags
¹³ C ₁₂ -1,2,3,4-TCDD				0.80	26:41	—

Page 1 of 1

MIT3_PSR v1.00, LARS 6.25 (14)

Printed: 08:45 05/28/2002

Initial Date...

Data Review By:

 5/28/02
 P. J. ...

Channel specific noise levels computed from 'NL' heights.

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of S022159B.dbf
05/28/2002 Matched GC Peaks / Ratio / Ret. Time

Compound/

M_2.... OC.Log Omit Why ..RT. OK Ratio Total.Area/Ht Area/Ht.Peak1 Area/Ht.Peak2 Rel.RT Compound.Name.. ID.. Flags.

TCDD		0.65-0.89		0.899-1.043			
320-322	DC NL	Height	1.02	0.48	0.54		
	DC WL	24:01 RO 0.57	26.30		0.893		
		24:34 0.71	28.89	11.95	16.94 0.914		
		24:46 0.82	30.90	13.96	16.94 0.921	1379-TCDD	AN
		24:54 0.88	40.45	18.98	21.47 0.926		
		25:02 RO 0.54	15.49	6.74	12.46 0.931		
		25:26 0.89	3.56	1.68	1.88 0.946		J
		25:43 0.75	43.80	18.78	25.02 0.957		
		25:54 RO 1.41	4.25	3.39	2.40 0.963		J
		26:01 RO 0.20	4.60	2.00	9.99 0.968		J
		26:21 RO 0.61	13.72	5.97	9.82 0.980		J
		26:31 RO 1.08	8.23	5.03	4.65 0.986		J
		26:39 0.69	5.03	2.06	2.97 0.991		J
		26:54 0.76	2,291.68	992.15	1,299.53 1.001	2378-TCDD	AN
320-322	12 Peaks		2,490.60				

37C1-TCDD		0.925-1.075			
328	DC NL	Height	0.22	0.22	
	DC WL	23:57	39.01		0.891
	DC WL	24:14	2.42		0.901
	DC WL	24:20	0.68		0.905
	DC WL	24:26	2.25		0.909
	DC WL	24:37	3.55		0.916
	DC WL	24:44	4.65		0.920
		25:03	1.81	1.81	0.932
		25:11	1.05	1.05	0.937
		25:29	306.60	306.60	0.948
		25:44	3.91	3.91	0.957
		25:53	0.71	0.71	0.963
		26:01	2.23	2.23	0.968
		26:13	9.40	9.40	0.975
		26:23	0.87	0.87	0.981
		26:30	1.84	1.84	0.986
		26:53	351.68	351.68	1.000
		27:08	7.07	7.07	1.009
		27:18	558.46	558.46	1.015
		27:31	7.68	7.68	1.024
		27:44	3.53	3.53	1.032
		27:52	3.23	3.23	1.037
		28:11	15.60	15.60	1.048
328	16 Peaks		1,275.67		

Compound/

M_Z.... QC.Log Omit Why ..RT. OK Ratio Total.Area/Ht Area/Ht.Peak1 Area/Bt.Peak2 Rel.RT Compound.Name.. ID.. Flags.

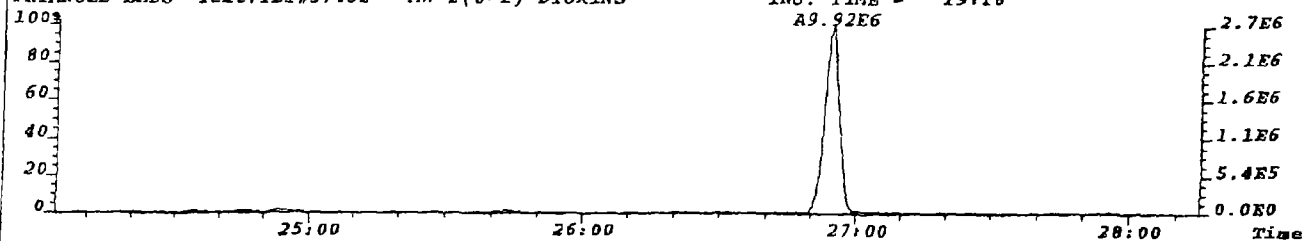
		0.65-0.89		0.925-1.075	
13C12-TCDD					
332-334	DC NL	Height	0.32	0.29	0.03
		26:41	0.80	4,144.13	1,841.32
		26:53	0.80	2,959.72	1,313.73
		Height	815.25	362.20	453.05
		27:08	0.78	8.91	3.91
		27:25 RO	1.63	9.49	8.71
		27:35	0.81	5.81	2.60
332-334	5 Peaks			7,128.06	

Column Description..... "Why" Code Description..... QC Log Desc.....

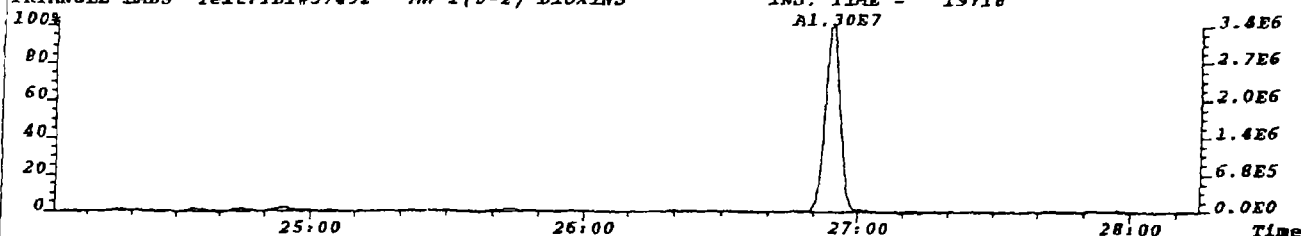
M_Z	-Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT.	-Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat..1	-Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK	-RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT	-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
			N-Name Changed
			X-Ether Interference

*** End of Report ***

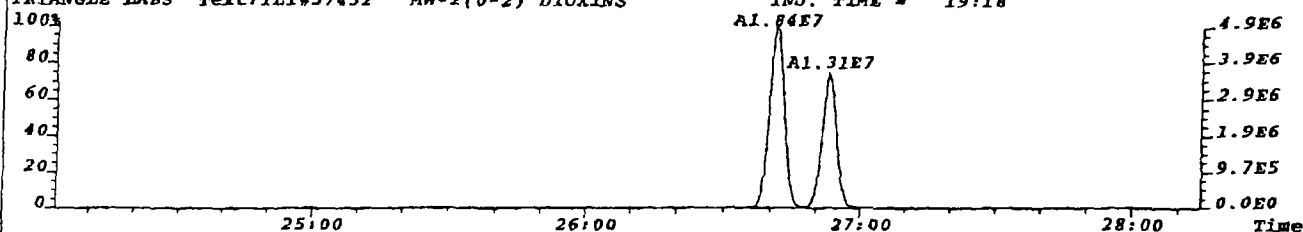
File:S022159 #1-771 Acq:27-MAY-2002 19:16:06 EI+ Voltage SIR 70S Noise:596
 319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2384.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57452 MW-2(0-2) DIOXINS INJ. TIME = 19:18



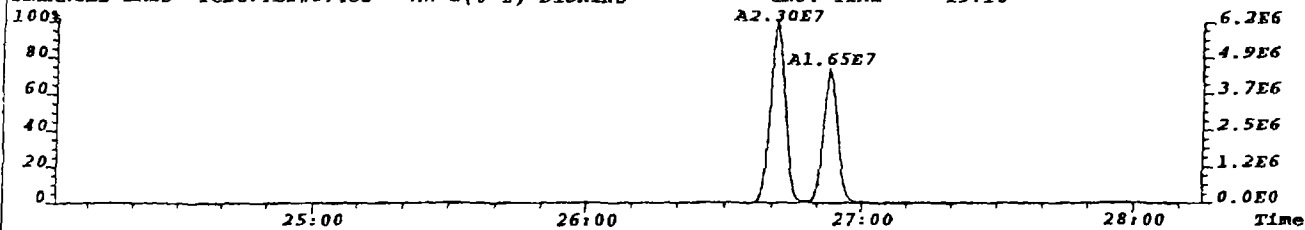
File:S022159 #1-771 Acq:27-MAY-2002 19:16:06 EI+ Voltage SIR 70S Noise:676
 321.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2704.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57452 MW-2(0-2) DIOXINS INJ. TIME = 19:18



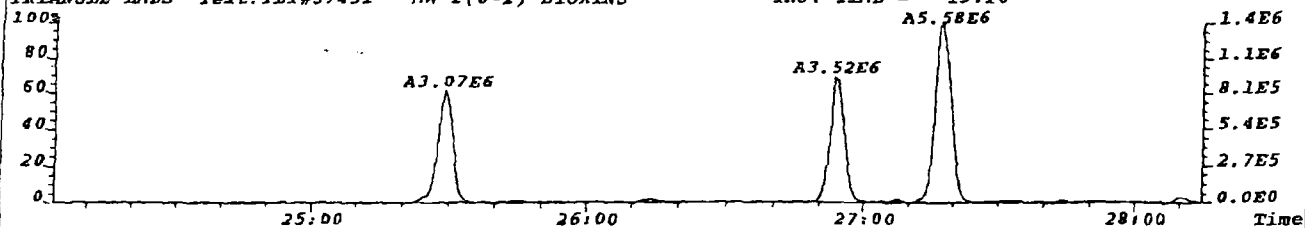
File:S022159 #1-771 Acq:27-MAY-2002 19:16:06 EI+ Voltage SIR 70S Noise:357
 331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1428.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57452 MW-2(0-2) DIOXINS INJ. TIME = 19:18



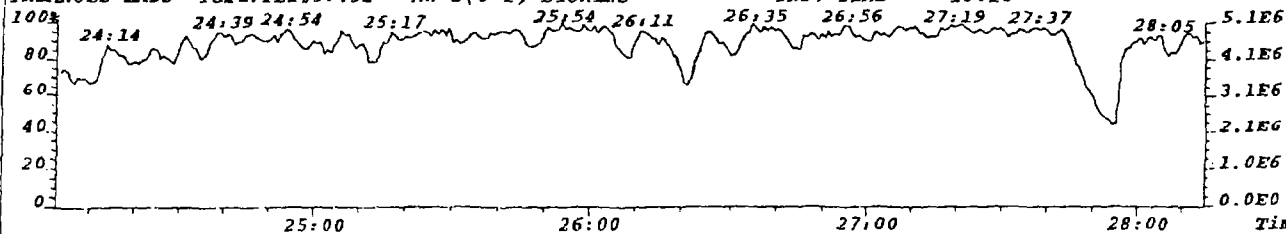
File:S022159 #1-771 Acq:27-MAY-2002 19:16:06 EI+ Voltage SIR 70S Noise:35
 333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57452 MW-2(0-2) DIOXINS INJ. TIME = 19:18



File:S022159 #1-771 Acq:27-MAY-2002 19:16:06 EI+ Voltage SIR 70S Noise:281
 327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1124.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57452 MW-2(0-2) DIOXINS INJ. TIME = 19:18



File:S022159 #1-771 Acq:27-MAY-2002 19:16:06 EI+ Voltage SIR 70S
 330.9792 F:2 Exp:NDB5US
 TRIANGLE LABS Text:TLI#57452 MW-2(0-2) DIOXINS INJ. TIME = 19:18



Channel I 330.9792 Peak top
Height 1.00 volts Span 200 ppm

System file name NDBSUS

Data file name A:5527021

Resolution 10000

Group number 2

Ionization mode EI+

Switching VOLTAGE

Ref. masses 292.9825, 416.9760

A 293 J 331 S 368

B 304 K 332 T 370

C 306 L 334 U 376

D 316 M 340 V 410

E 318 N 342

F 320 O 352

G 322 P 354

H 328 Q 356

I 331 R 358

Ref. mass 416.9760 Peak top

Height .10 volts Span 200 ppm

Cumberland Farms

TLI Project: 57452
Client Sample: MW-3(0-2) DIOXINS

Method 8290 TCDD Analysis (b)
Analysis File: S022160

Client Project:	Lot 516, Smith St.	Date Received:	05/22/2002	Spike File:	SPMIT32S
Sample Matrix:	SOIL	Date Extracted:	05/24/2002	ICal:	SF52012
TLI ID:	326-36-3	Date Analyzed:	05/27/2002	ConCal:	S022151
Sample Size:	12.000 g	Dilution Factor:	n/a	% Moisture:	11.4
Dry Weight:	10.632 g	Blank File:	T022469	% Lipid:	n/a
GC Column:	DB-5	Analyst:	JLD	% Solids:	88.6

Analytes	Conc. (pg/g)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	0.76			0.87	26:49	J_

Internal Standard	Conc. (pg/g)	% Recovery	QC Limits	Ratio	RT	Flags
¹³ C ₁₂ -2,3,7,8-TCDD	137	72.9	40%-130%	0.80	26:48	—

Other Standard	Conc. (pg/g)	% Recovery	QC Limits	RT	Flags
³⁷ Cl ₄ -2,3,7,8-TCDD	16.1	85.8	40%-130%	26:49	—

Recovery Standard	Ratio	RT	Flags
¹³ C ₁₂ -1,2,3,4-TCDD	0.81	26:37	—

Data Reviewer:  05/28/2002

Page 1 of 1

M773_PSR v1.00, LAKS 6 25 04

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Printed: 08:45 05/28/2002

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Initial Date...

Data Review By:

PK 5/24/02

Channel specific noise levels computed from 'NL' heights.

The Total Area for each peak with an ion abundance ratio outside
ratio limits has been recalculated according to method requirements.

Page No. 1
05/28/2002

Listing of S022160B.dbf
Matched GC Peaks / Ratio / Ret. Time

Compound/

M_Z.... QC.Log Omit Why ..RT. OK Ratio Total Area/Ht Area/Ht.Peak1 Area/Ht.Peak2 Rel.RT Compound.Name.. ID.. Flags.

TCDD		0.65-0.89		0.899-1.043					
320-322	DC NL	Height	0.05	0.03	0.02				
	24:08 RO	0.03	0.18	0.08	3.09	0.900		J	
	24:19	0.82	6.57	2.96	3.61	0.907	1368-TCDD	AN	J
	24:40 RO	0.60	5.45	2.37	3.98	0.920	1379-TCDD	AN	J
	25:22 RO	1.13	1.77	1.13	1.00	0.947			J
	25:37	0.70	10.90	4.48	6.42	0.956			J
	25:47 RO	0.99	3.10	1.35	1.37	0.962			J
	26:06 RO	3.75	1.54	3.26	0.87	0.974			J
	26:18 RO	0.60	4.00	1.74	2.90	0.981			J
	26:29	0.67	28.54	11.47	17.07	0.988			
	26:42 RO	0.98	4.46	1.94	1.97	0.996			J
	26:49	0.87	12.80	5.96	6.84	1.001	2378-TCDD	AN	J
	26:57 RO	0.91	2.44	1.06	1.16	1.006			J
	27:08 RO	0.61	3.61	1.57	2.58	1.012			J
	27:34 RO	1.02	1.58	0.91	0.89	1.029			J
	27:52	0.71	2.24	0.93	1.31	1.040			J
	DC WH 28:03	0.81	1.25			1.047			
	DC WH 28:12 RO	1.78	0.48			1.052			
320-322	15 Peaks		89.18						
37Cl-TCDD				0.925-1.075					
328	DC NL	Height	0.02	0.02					
	DC WL 24:24		0.17			0.910			
	DC WL 24:41		0.41			0.921			
	24:59		0.73	0.73		0.932			
	25:05		0.28	0.28		0.936			
	25:27		14.45	14.45		0.950			
	25:37		0.53	0.53		0.956			
	25:55		0.40	0.40		0.967			
	26:01		0.22	0.22		0.971			
	26:20		0.17	0.17		0.983			
	26:29		0.61	0.61		0.988			
	26:49		338.47	338.47		1.001	37Cl-TCDD	CLS	
	27:01		1.72	1.72		1.008			
	27:13		18.17	18.17		1.016			
	27:27		0.89	0.89		1.024			
	27:39		0.37	0.37		1.032			
	27:47		0.62	0.62		1.037			
	27:59		1.16	1.16		1.044			
	28:09		4.81	4.81		1.050			
	28:18		1.57	1.57		1.056			
328	17 Peaks		385.17						

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Printed: 01:52 05/28/2002

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Compound/

M_Z.... QC.Log Omit Why ..RT OK Ratio Total.Area/Ht Area/Ht.Peak1 Area/Ht.Peak2 Rel.RT Compound.Name.. ID.. Flags.

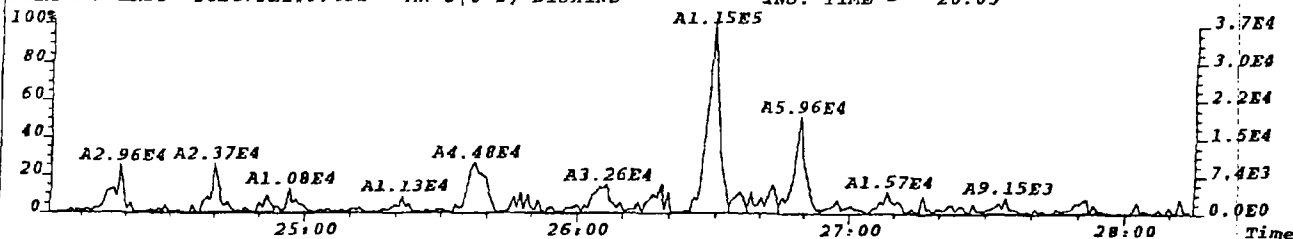
13C12-TCDD		0.65-0.89		0.925-1.075	
332-334	DC NL	Height	0.19	0.16	0.03
	26:37	0.81	4,051.30	1,819.11	2,232.19
	26:48	0.80	3,368.33	1,494.27	1,874.06
		Height	930.89	413.33	517.56
	27:11 RO	0.62	11.06	4.81	7.80
	27:16 RO	0.40	7.61	3.31	8.29
	27:39	0.79	5.06	2.23	2.83
332-334	5 Peaks		7,443.36		

Column Description..... "Why" Code Description..... QC Log Desc.....

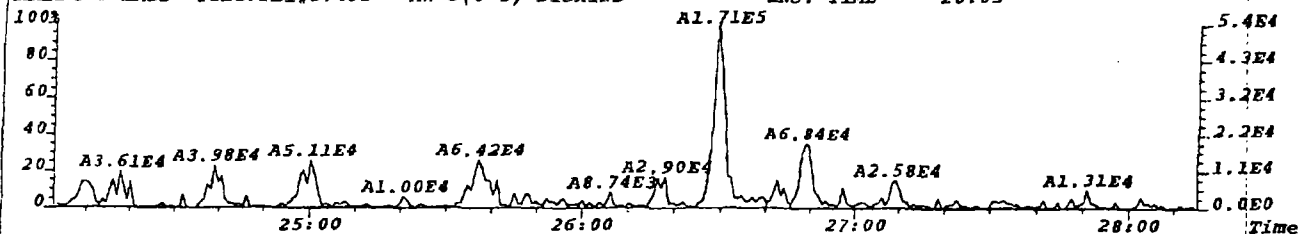
M_Z	-Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT.	-Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1	-Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK	-RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT	-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
			N-Name Changed
			X-Ether Interference

*** End of Report ***

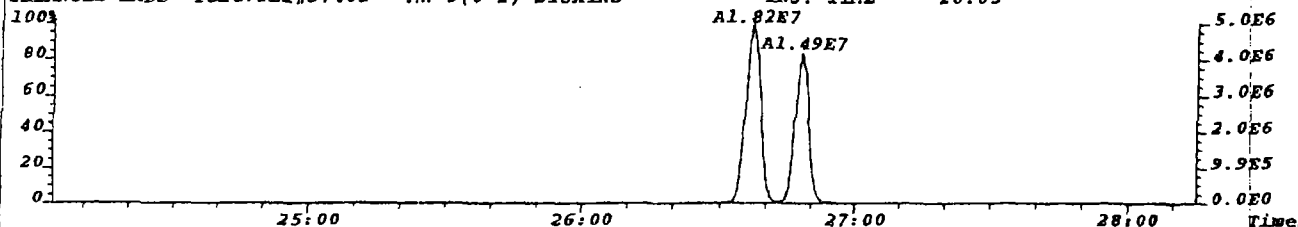
File:S022160 #1-771 Acq:27-MAY-2002 20:03:48 EI+ Voltage SIR 70S Noise:32
 319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,128.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57452 MW-3(0-2) DIOXINS INJ. TIME = 20:05



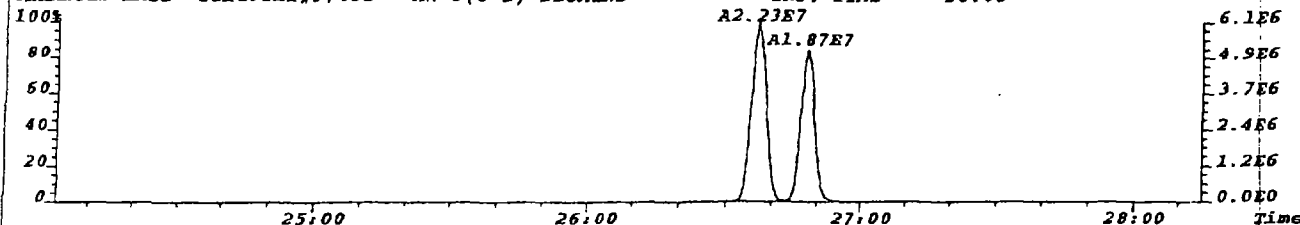
File:S022160 #1-771 Acq:27-MAY-2002 20:03:48 EI+ Voltage SIR 70S Noise:31
 321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,124.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57452 MW-3(0-2) DIOXINS INJ. TIME = 20:05



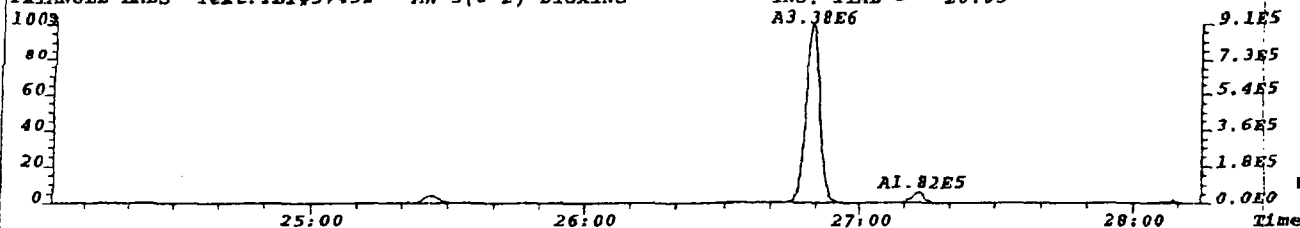
File:S022160 #1-771 Acq:27-MAY-2002 20:03:48 EI+ Voltage SIR 70S Noise:198
 331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,192.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57452 MW-3(0-2) DIOXINS INJ. TIME = 20:05



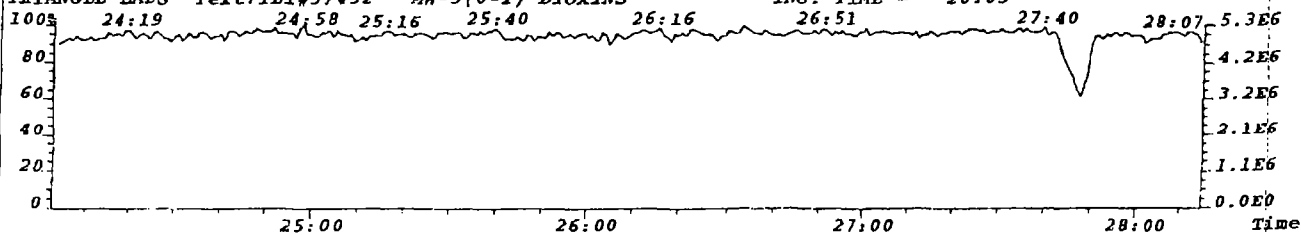
File:S022160 #1-771 Acq:27-MAY-2002 20:03:48 EI+ Voltage SIR 70S Noise:36
 333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,144.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57452 MW-3(0-2) DIOXINS INJ. TIME = 20:05

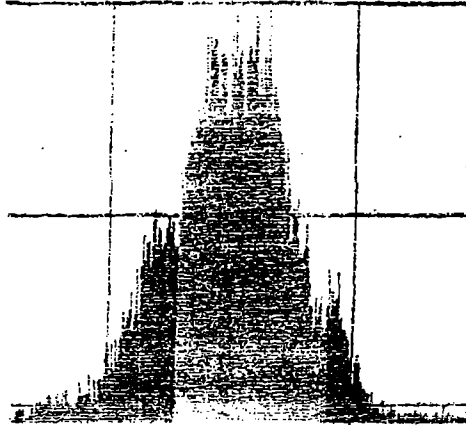


File:S022160 #1-771 Acq:27-MAY-2002 20:03:48 EI+ Voltage SIR 70S Noise:30
 327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,120.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57452 MW-3(0-2) DIOXINS INJ. TIME = 20:05



File:S022160 #1-771 Acq:27-MAY-2002 20:03:48 EI+ Voltage SIR 70S
 330.9792 F:2 Exp:NDB5US
 TRIANGLE LABS Text:TLI#57452 MW-3(0-2) DIOXINS INJ. TIME = 20:05





Channel I 330.9792 Peak top
Height 1.00 volts Span 200 ppm

System file name ND85US

Data file name A:9527021

Resolution 10000

Group number 2

Ionization mode EI+

Switching VOLTAGE

Ref. masses 292.9825, 416.9760

A 293 J 331 S 368

B 304 K 332 T 370

C 308 L 334 U 376

D 318 M 340 V 410

E 318 N 342

F 320 O 352

G 322 P 354

H 328 Q 356

I 331 R 358

Ref. mass 416.9760 Peak top

Height 1.18 volts Span 200 ppm

Cumberland Farms

TLI Project: 57452
Client Sample: CleanUp Blk

Method 8290 TCDD Analysis (b)
Analysis File: S022161

Client Project:	Lot 516, Smith St.	Date Received:	05/22/2002	Spike File:	SPMIT32S
Sample Matrix:	SAND	Date Extracted:	05/25/2002	ICal:	SF52012
TLI ID:	TLI Clean-Up	Date Analyzed:	05/27/2002	ConCal:	S022151
Sample Size:	10.000 g	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	T022469	% Lipid:	n/a
GC Column:	DB-5	Analyst:	JLD	% Solids:	n/a

Analytes	Conc. (pg/g)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	ND	0.1				—

Internal Standard	Conc. (pg/g)	% Recovery	QC Limits	Ratio	RT	Flags
¹³ C ₁₂ -2,3,7,8-TCDD	124	62.2	40%-130%	0.80	26:45	—

Other Standard	Conc. (pg/g)	% Recovery	QC Limits	Ratio	RT	Flags
³⁷ Cl ₄ -2,3,7,8-TCDD	14.3	71.3	40%-130%		26:46	—

Recovery Standard	Ratio	RT	Flags
¹³ C ₁₂ -1,2,3,4-TCDD	0.81	26:35	—

Data Reviewer:  05/28/2002

Initial Date...

Data Review By:

 5/28/02

Calculated Noise Height: 0.14

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1

Listing of S022161B.dbf

05/28/2002

Matched GC Peaks / Ratio / Ret. Time

Compound/

M_Z.... QC.Log Omit Why ..RT. OK Ratio Total.Area/Ht Area/Ht.Peak1 Area/Ht.Peak2 Rel.RT Compound.Name.. ID.. Plags.

TCDD		0.65-0.89		0.899-1.043	
320-322	DC NL	Height	0.05	0.02	0.03
	DC SN 24:08 RO	0.42	0.44		0.902
	DC SN 24:16	0.83	0.53		0.907 1368-TCDD
	DC SN 25:13	0.68	0.42		0.943
	DC SN 25:23	0.67	0.10		0.949
	DC SN 25:37 RO	0.19	0.14		0.958
	DC SN 25:47 RO	8.00	0.11		0.964
	DC SN 26:01 RO	4.26	0.55		0.973
	DC SN 26:42 RO	0.90	0.55		0.998
D	D SN 26:45 RO	0.91	0.94		1.000 2378-TCDD
	DC SN 27:03 RO	2.00	0.16		1.011
	DC SN 27:11 RO	1.00	0.23		1.016
	DC SN 27:26 RO	1.00	0.53		1.026
	DC SN 27:34 RO	0.57	0.37		1.031
	DC WH 27:59 RO	0.20	0.07		1.046
	DC WH 28:14 RO	5.67	0.05		1.055
320-322	0 Peaks		0.00		

37Cl-TCDD		0.925-1.075	
328	DC NL	Height	0.03
	DC WL 24:04	0.14	0.900
	DC WL 24:16	0.58	0.907
	DC WL 24:30	0.41	0.916
	DC WL 24:38	0.39	0.921
	DC SN 24:57	0.47	0.933
	25:25	1.07	0.950
	DC SN 25:36	0.16	0.957
	DC SN 25:53	0.08	0.968
	DC SN 26:00	0.23	0.972
	DC SN 26:25	0.07	0.988
	DC SN 26:38	0.13	0.996
	26:46	191.00	1.001 37Cl-TCDD
	27:01	0.92	1.010
	DC SN 27:04	0.78	1.012
	27:23	0.85	1.024
	DC SN 27:41	0.53	1.035
	27:59	0.43	1.046
	DC SN 28:06	0.36	1.050
328	5 Peaks	194.27	

13C12-TCDD		0.925-1.075	
332-334	DC NL	Height	0.03
	26:35	0.81	0.994 13C12-1234-TCDD RSI

Compound/

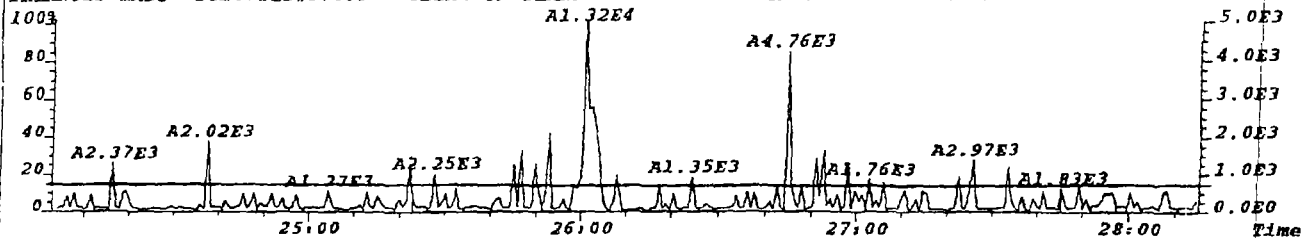
M_Z	QC Log	Omit	Why	RT	OK	Ratio	Total Area/Ht	Area/Ht	Peak1	Area/Ht	Peak2	Rel. RT	Compound Name	ID	Flags
26:45						0.80	1,952.65	865.51		1,087.14		1.000	13C12-2378-TCDD	ISI	
			Height				532.98	237.71		295.27					
27:04	RO					0.09	1.82	0.79		8.39		1.012			
27:30	RO					0.51	6.00	2.61		5.12		1.028			
332-334			4 Peaks				4,711.67								

Column Description..... "Why" Code Description..... QC Log Desc.....

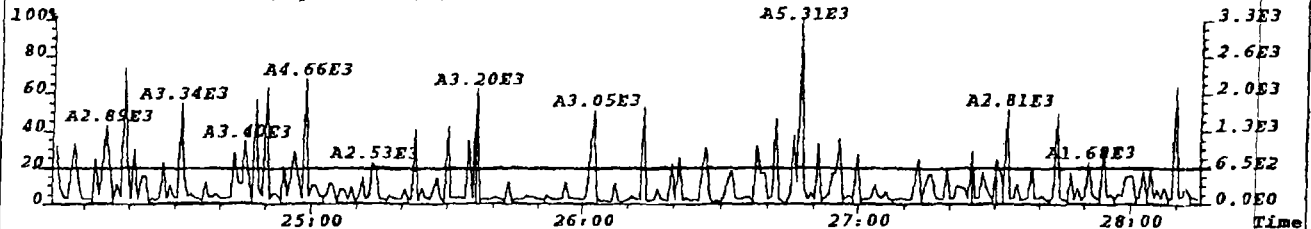
M_Z	-Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
RT	-Retention Time (mm:ss)	WH-Above Retention Time Window	X-Peak Kept
Rat.1	-Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK	-RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel. RT	-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
			N-Name Changed
			X-Ether Interference

*** End of Report ***

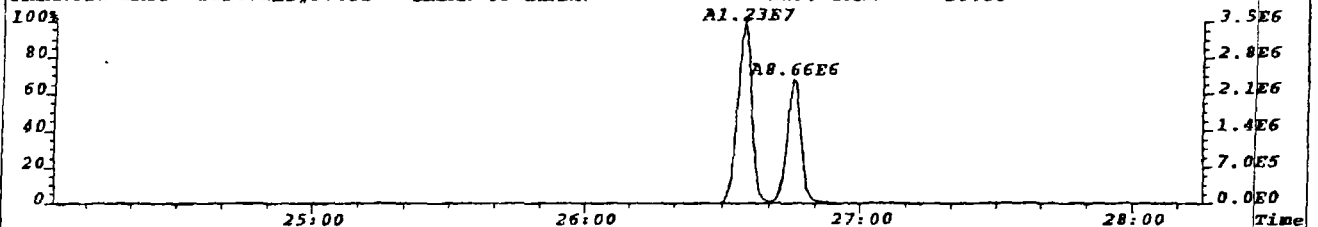
File: S022161 #1-771 Acq: 27-MAY-2002 20:51:29 EI+ Voltage SIR 70S Noise: 31
319.8965 F: 2 BSUB(256, 30, -3.0) PKD(7, 5, 3, 0.05%, 124.0, 1.00%, F, T) Exp: NDB5US
TRIANGLE LABS Text: TLI#57452 CLEAN UP BLANK INJ. TIME = 20:53



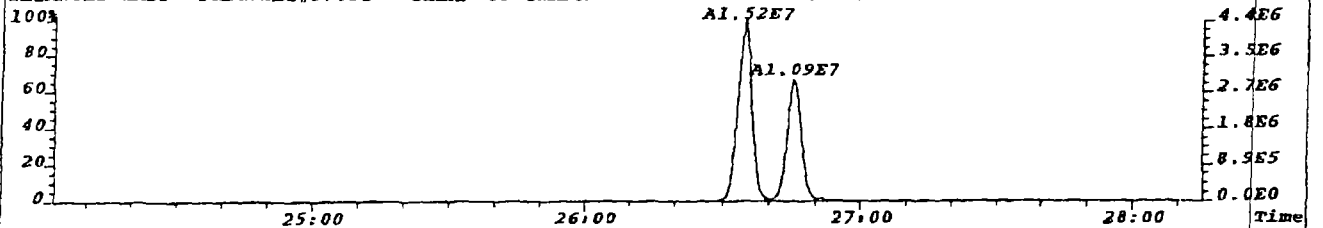
File: S022161 #1-771 Acq: 27-MAY-2002 20:51:29 EI+ Voltage SIR 70S Noise: 32
321.8936 F: 2 BSUB(256, 30, -3.0) PKD(7, 5, 3, 0.05%, 128.0, 1.00%, F, T) Exp: NDB5US
TRIANGLE LABS Text: TLI#57452 CLEAN UP BLANK INJ. TIME = 20:53



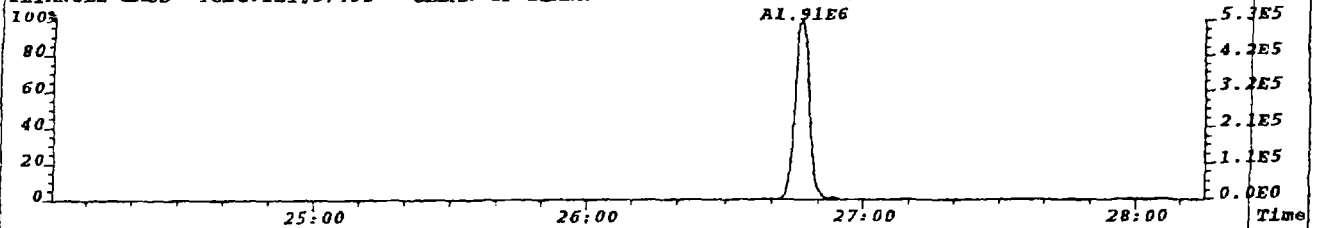
File: S022161 #1-771 Acq: 27-MAY-2002 20:51:29 EI+ Voltage SIR 70S Noise: 223
331.9368 F: 2 BSUB(256, 30, -3.0) PKD(7, 5, 3, 0.05%, 892.0, 1.00%, F, T) Exp: NDB5US
TRIANGLE LABS Text: TLI#57452 CLEAN UP BLANK INJ. TIME = 20:53



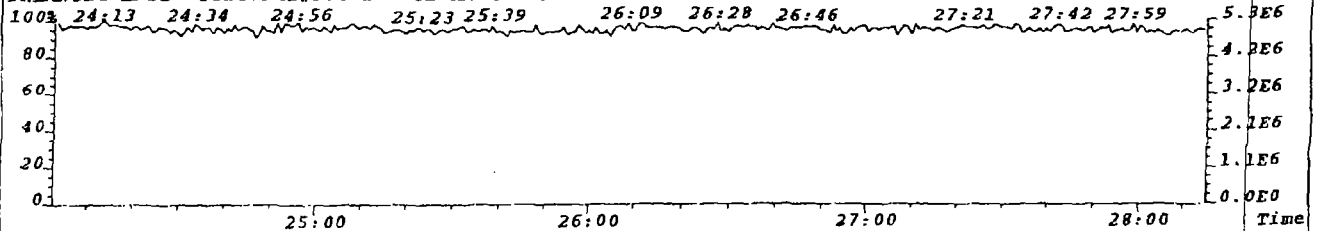
File: S022161 #1-771 Acq: 27-MAY-2002 20:51:29 EI+ Voltage SIR 70S Noise: 38
333.9338 F: 2 BSUB(256, 30, -3.0) PKD(7, 5, 3, 0.05%, 152.0, 1.00%, F, T) Exp: NDB5US
TRIANGLE LABS Text: TLI#57452 CLEAN UP BLANK INJ. TIME = 20:53

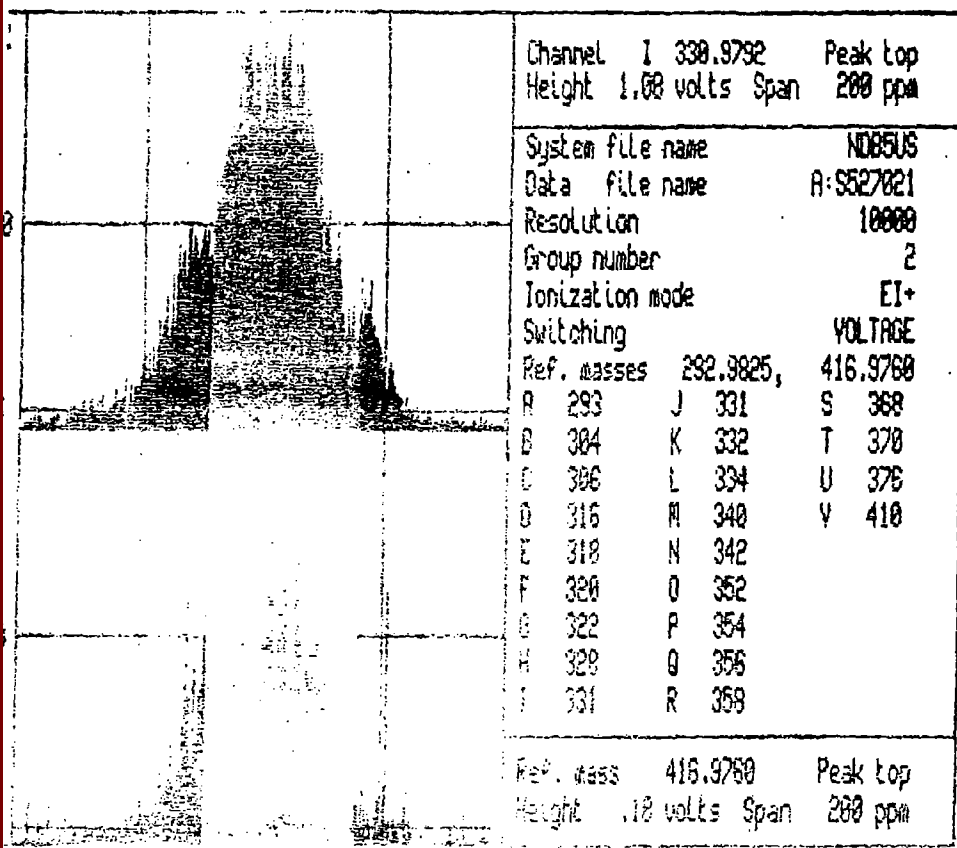


File: S022161 #1-771 Acq: 27-MAY-2002 20:51:29 EI+ Voltage SIR 70S Noise: 33
327.8847 F: 2 BSUB(256, 30, -3.0) PKD(7, 5, 3, 0.05%, 132.0, 1.00%, F, T) Exp: NDB5US
TRIANGLE LABS Text: TLI#57452 CLEAN UP BLANK INJ. TIME = 20:53



File: S022161 #1-771 Acq: 27-MAY-2002 20:51:29 EI+ Voltage SIR 70S
330.9792 F: 2 Exp: NDB5US
TRIANGLE LABS Text: TLI#57452 CLEAN UP BLANK INJ. TIME = 20:53





Cumberland Farms

TLI Project: 57452
Client Sample: TLI LCS

Method 8290 TCDD Analysis (b)
Analysis File: T022478

Client Project:	Lot 516, Smith St.	Date Received:	//	Spike File:	SPMIT32S
Sample Matrix:	SAND	Date Extracted:	05/24/2002	ICal:	TF51212
TLI ID:	TLI LCS	Date Analyzed:	05/27/2002	ConCal:	T022467
Sample Size:	10.000 g	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	T022469	% Lipid:	n/a
GC Column:	DB-5	Analyst:	CGK	% Solids:	n/a

Analytes	Conc. (pg/g)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	38.8			0.81	26:41	—

Internal Standard	Conc. (pg/g)	% Recovery	QC Limits	Ratio	RT	Flags
¹³ C ₁₂ -2,3,7,8-TCDD	111	55.6	40%-130%	0.82	26:40	—

Other Standard	Conc. (pg/g)	% Recovery	QC Limits	RT	Flags
³⁷ Cl ₄ -2,3,7,8-TCDD	12.9	64.5	40%-130%	26:41	—

Recovery Standard	Ratio	RT	Flags
¹³ C ₁₂ -1,2,3,4-TCDD	0.82	26:29	—

Data Reviewer:  05/28/2002

Page 1 of 1

MIT3_PSR v1.00, LARS 6.25.04

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Printed: 08:45 05/28/2002

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US EPA ARCHIVE DOCUMENT

Initial Date...

Data Review By:

Channel specific noise levels computed from 'NL' heights.

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of T022478B.dbf
05/28/2002 Matched GC Peaks / Ratio / Ret. Time

Compound/

M_Z.... QC.Log Omit Why ..RT. OK Ratio Total.Area/Ht Area/Ht.Peak1 Area/Ht.Peak2 Rel.RT Compound.Name.. ID.. Flags.

Compound	QC	Log	Omit	Why	RT	OK	Ratio	Total Area/Ht	Area/Ht	Peak1	Area/Ht	Peak2	Rel.RT	Compound Name	ID	Flags
TCDD					0.65-0.89								0.899-1.043			
320-322	DC	NL			Height			0.16		0.08		0.08				
	DC	SN	24:02	RO	0.10			0.11				0.901				
			26:41		0.81			89.46		40.12		49.34	1.001	2378-TCDD	AN	
	DC	SN	27:09	RO	0.22			0.14				1.018				
320-322			1	Peak				89.46								
37Cl-TCDD													0.925-1.075			
328	DC	NL			Height			0.08		0.08						
	DC	WL	24:13					0.04				0.908				
	DC	WL	24:18					0.08				0.911				
	DC	WL	24:20					0.24				0.913				
	DC	WL	24:28					0.21				0.918				
	DC	SN	24:44					0.12				0.928				
	DC	SN	24:52					0.07				0.933				
	DC	SN	24:56					0.11				0.935				
	DC	SN	25:31					0.23				0.957				
			26:41					43.40		43.40		1.001	37Cl-TCDD	CLS		
	DC	SN	27:02					0.11				1.014				
	DC	SN	27:38					0.12				1.036				
	DC	SN	27:45					0.16				1.041				
	DC	SN	27:54					0.07				1.046				
328			1	Peak				43.40								
13C12-TCDD													0.925-1.075			
332-334	DC	NL			Height			0.22		0.14		0.08				
	DC	WL	24:01	RO	2.00			0.34				0.901				
	DC	SN	25:32	RO	1.38			0.99				0.958				
			26:29		0.82			667.77		299.98		367.79	0.993	13C12-1234-TCDD	RS1	
			26:40		0.82			425.28		191.60		233.68	1.000	13C12-2378-TCDD	IS1	
					Height			117.35		53.22		64.13				
			27:02	RO	0.57			1.22		0.53		0.93	1.014			
332-334			3	Peaks				1.094.27								

Column Description..... "Why" Code Description..... QC Log Desc.....

M_Z	-Nominal Ion Mass(es)	WL	-Below Retention Time Window	A	-Peak Added
..RT.	-Retention Time (mm:ss)	WH	-Above Retention Time Window	K	-Peak Kept
Rat.1	-Ratio of M/M+2 Ions	SN	-Below Signal to Noise Level	D	-Peak Deleted
OK	-RO=Ratio Outside Limits	<M	-Below Method Detection Limit	T	-Time Changed
Rel.RT	-Relative Retention Time	NL	-Channel Specific Noise Level	M	-Peak Area Changed
				N	-Name Changed
				X	-Ether Interference

*** End of Report ***

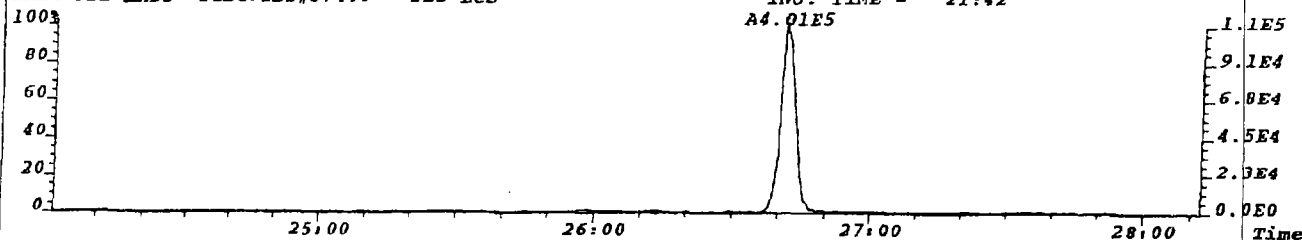
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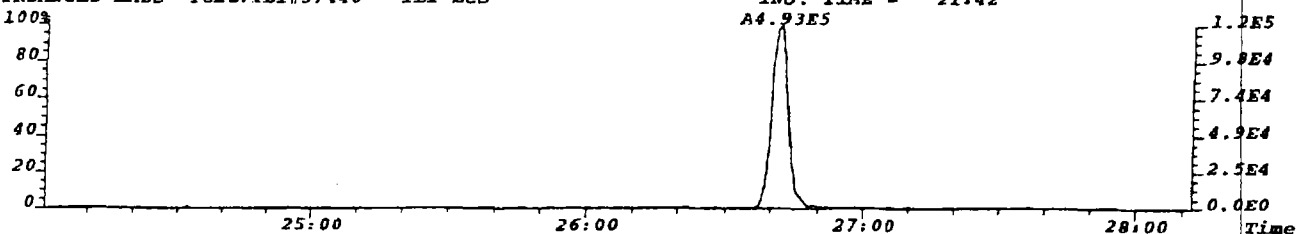
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 08:45 05/28/2002

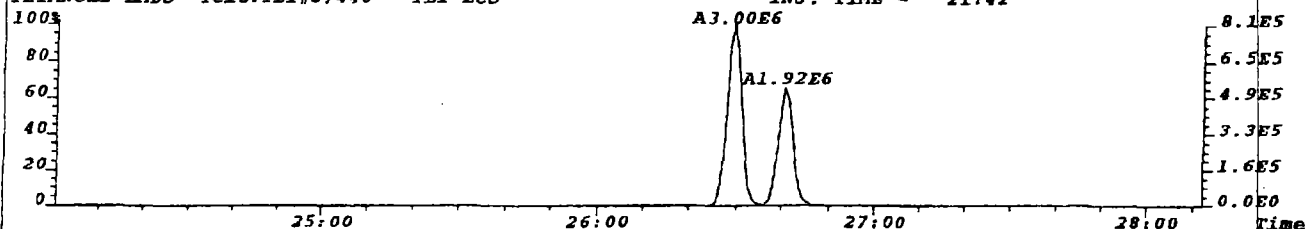
File:T022478 #1-886 Acq:27-MAY-2002 21:40:06 EI+ Voltage SIR 70T Noise:103
 319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,412.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57440 TLI LCS INJ. TIME = 21:42



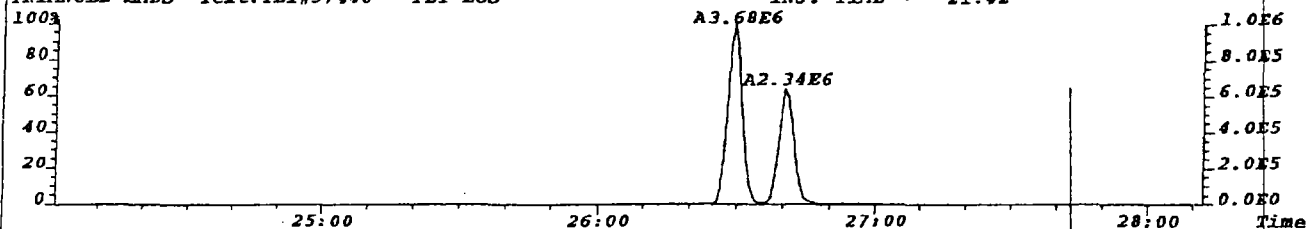
File:T022478 #1-886 Acq:27-MAY-2002 21:40:06 EI+ Voltage SIR 70T Noise:106
 321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,424.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57440 TLI LCS INJ. TIME = 21:42



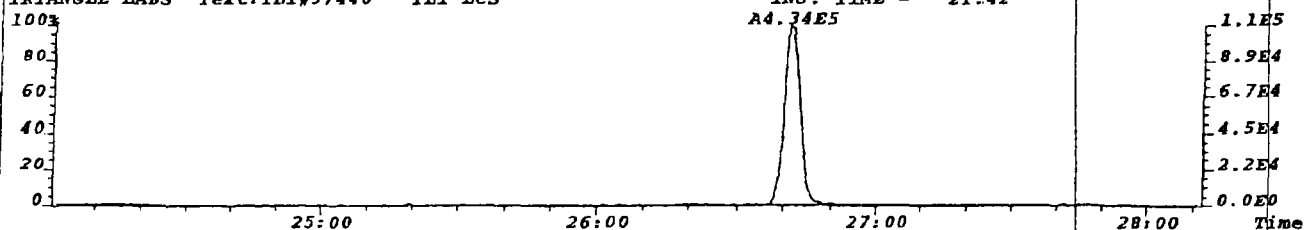
File:T022478 #1-886 Acq:27-MAY-2002 21:40:06 EI+ Voltage SIR 70T Noise:176
 331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,704.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57440 TLI LCS INJ. TIME = 21:42



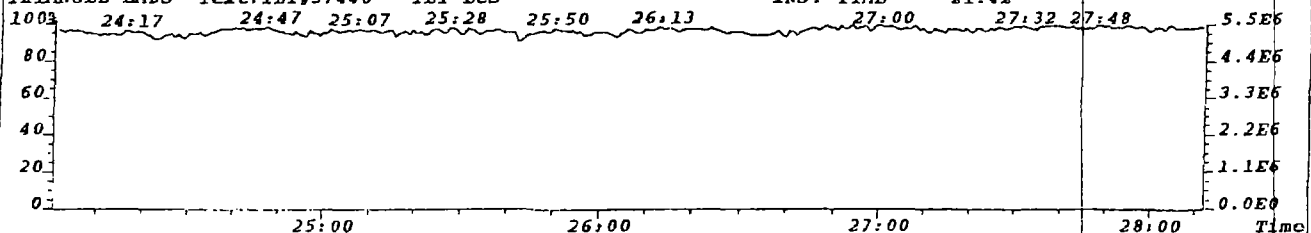
File:T022478 #1-886 Acq:27-MAY-2002 21:40:06 EI+ Voltage SIR 70T Noise:99
 333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,396.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57440 TLI LCS INJ. TIME = 21:42

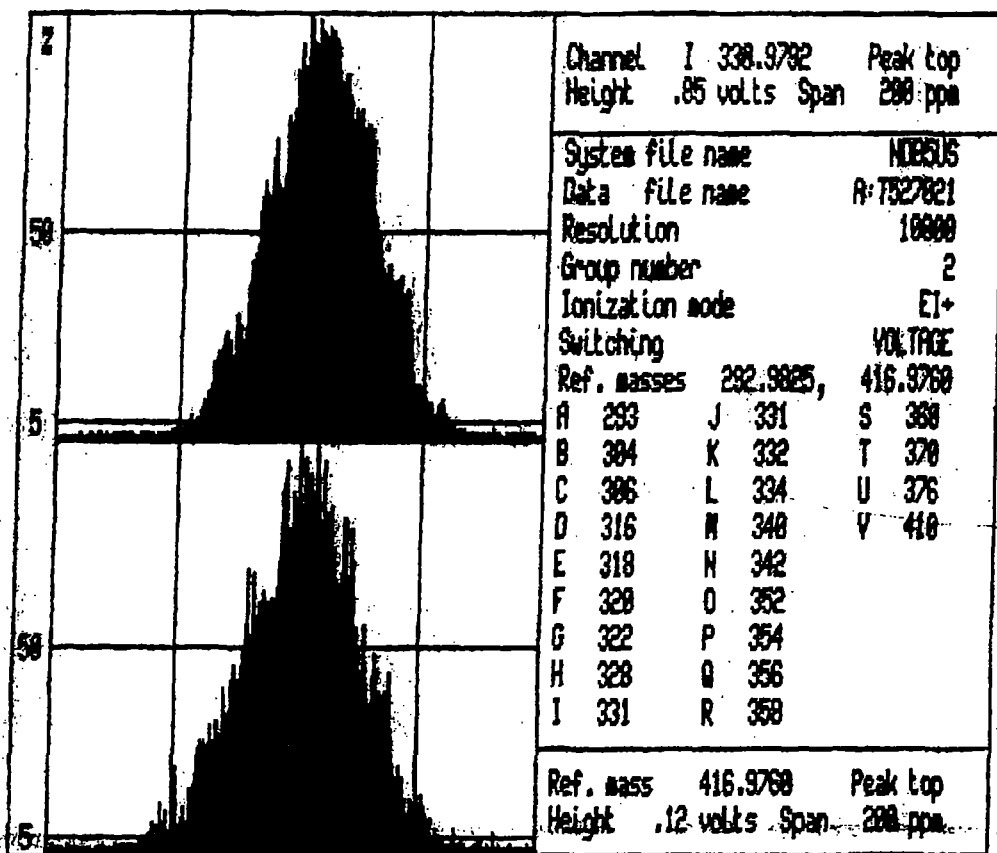


File:T022478 #1-886 Acq:27-MAY-2002 21:40:06 EI+ Voltage SIR 70T Noise:100
 327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,400.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57440 TLI LCS INJ. TIME = 21:42



File:T022478 #1-886 Acq:27-MAY-2002 21:40:06 EI+ Voltage SIR 70T
 330.9792 F:2 Exp:NDB5US
 TRIANGLE LABS Text:TLI#57440 TLI LCS INJ. TIME = 21:42





Cumberland Farms

TLI Project: 57452
Client Sample: TLI LCSD

Method 8290 TCDD Analysis (b)
Analysis File: T022479

Client Project:	Lot 516, Smith St.	Date Received:	/ /	Spike File:	SPMIT32S
Sample Matrix:	SAND	Date Extracted:	05/24/2002	ICal:	TF51212
TLI ID:	TLI LCSD	Date Analyzed:	05/27/2002	ConCal:	T022467
Sample Size:	10.000 g	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	T022469	% Lipid:	n/a
GC Column:	DB-5	Analyst:	CGK	% Solids:	n/a

Analytes	Conc. (pg/g)	DL	EMPC	Ratio	RT	Flags
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2,3,7,8-TCDD	39.5			0.80	26:42	—
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Internal Standard	Conc. (pg/g)	% Recovery	QC Limits	Ratio	RT	Flags
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¹³ C ₁₂ -2,3,7,8-TCDD	119	59.4	40%-130%	0.82	26:40	—
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Other Standard	Conc. (pg/g)	% Recovery	QC Limits	RT	Flags
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³⁷ Cl-2,3,7,8-TCDD	13.6	67.8	40%-130%	26:41	—
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Recovery Standard	Ratio	RT	Flags
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¹³ C ₁₂ -1,2,3,4-TCDD	0.82	26:29	—
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Data Reviewer:  05/28/2002

Page 1 of 1

MIT3_PSR v1.00, LARS 6 25.04

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Initial Date...

Data Review By:

 5/28/02

Channel specific noise levels computed from 'NL' heights.

The Total Area for each peak with an ion abundance ratio outside
ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of T022479B.dbf
05/28/2002 Matched GC Peaks / Ratio / Ret. Time

Compound/

M_Z.... QC.Log Omit Why ..RT. OK Ratio Total.Area/Ht Area/Ht.Peak1 Area/Ht.Peak2 Rel. RT Compound.Name.. ID.. Flags.

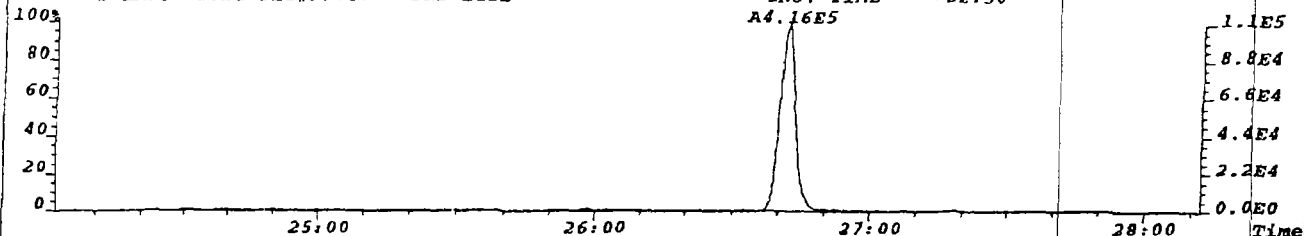
TCDD		0.65-0.89		0.899-1.043				
320-322	DC NL	Height	0.14	0.07	0.07			
	DC SN 24:20	0.67	0.25			0.913		
	DC SN 25:39 RO	1.67	0.21			0.962		
	DC SN 25:59 RO	1.72	0.57			0.974		
		26:42	0.80	93.37	41.61	51.76	1.001	2378-TCDD AN
	DC SN 27:13 RO	0.58	0.16			1.021		
	DC SN 27:26	0.83	0.22			1.029		
320-322	1 Peak		93.37					
37C1-TCDD		0.925-1.075						
328	DC NL	Height	0.07	0.07				
	DC WL 24:12		0.19			0.908		
	DC WL 24:21		0.16			0.913		
	DC WL 24:34		0.09			0.921		
	DC WL 24:37		0.04			0.923		
	DC WL 24:39		0.12			0.924		
	DC SN 24:50		0.10			0.931		
		26:30	0.14	0.14		0.994		
		26:41	43.80	43.80		1.001	37C1-TCDD	CLS
		27:05	0.29	0.29		1.016		
328	3 Peaks		44.23					
13C12-TCDD		0.65-0.89		0.925-1.075				
332-334	DC NL	Height	0.22	0.15	0.07			
		26:29	0.82	641.08	288.93	352.15	0.993	13C12-1234-TCDD RS1
		26:40	0.82	436.27	196.12	240.15	1.000	13C12-2378-TCDD IS1
		Height	120.90	54.09	66.81			
		26:58	0.81	0.67	0.30	0.37	1.011	
332-334	3 Peaks		1,078.02					

Column Description..... "Why" Code Description..... QC Log Desc.....

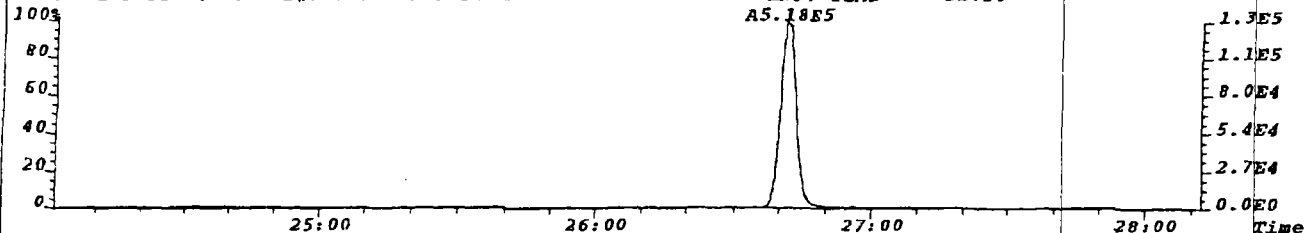
M_Z	-Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT.	-Retention Time (mm:ss)	WH-Above Retention Time Window	X-Peak Kept
Rat.1	-Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK	-RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel. RT	-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
			N-Name Changed
			X-Ether Interference

*** End of Report ***

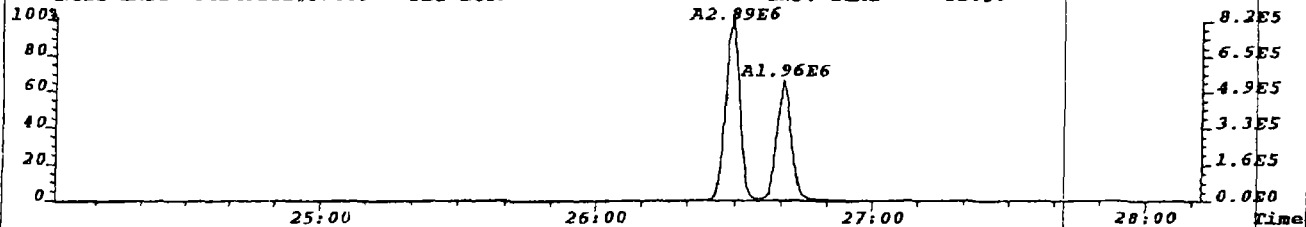
File:T022479 #1-886 Acq:27-MAY-2002 22:27:53 EI+ Voltage SIR 70T Noise:82
 319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,328.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57440 TLI LCSD INJ. TIME = 22:30



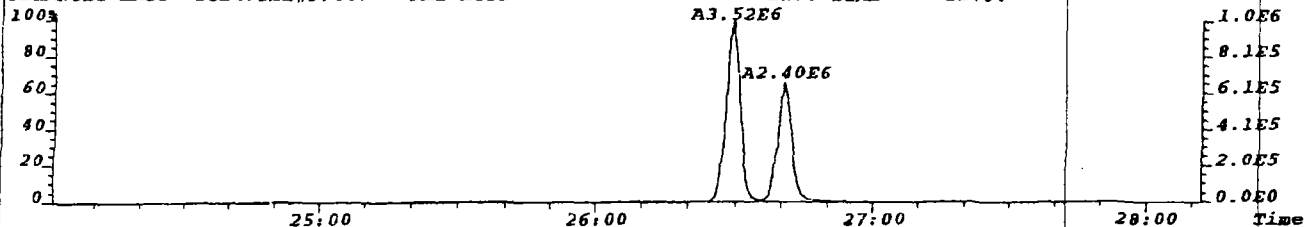
File:T022479 #1-886 Acq:27-MAY-2002 22:27:53 EI+ Voltage SIR 70T Noise:84
 321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,336.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57440 TLI LCSD INJ. TIME = 22:30



File:T022479 #1-886 Acq:27-MAY-2002 22:27:53 EI+ Voltage SIR 70T Noise:189
 331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,756.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57440 TLI LCSD INJ. TIME = 22:30



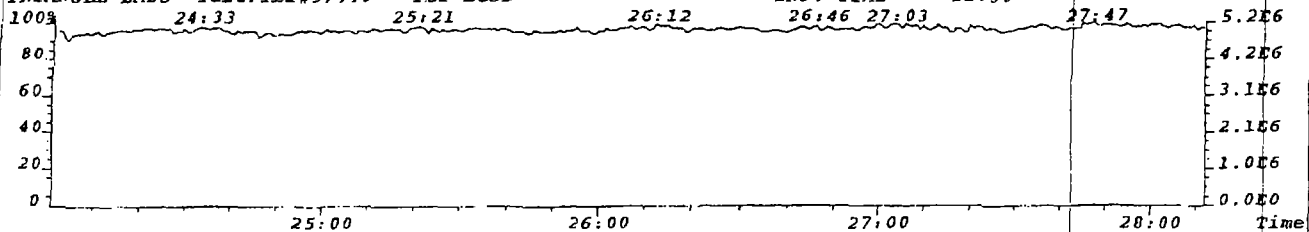
File:T022479 #1-886 Acq:27-MAY-2002 22:27:53 EI+ Voltage SIR 70T Noise:90
 333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,360.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57440 TLI LCSD INJ. TIME = 22:30

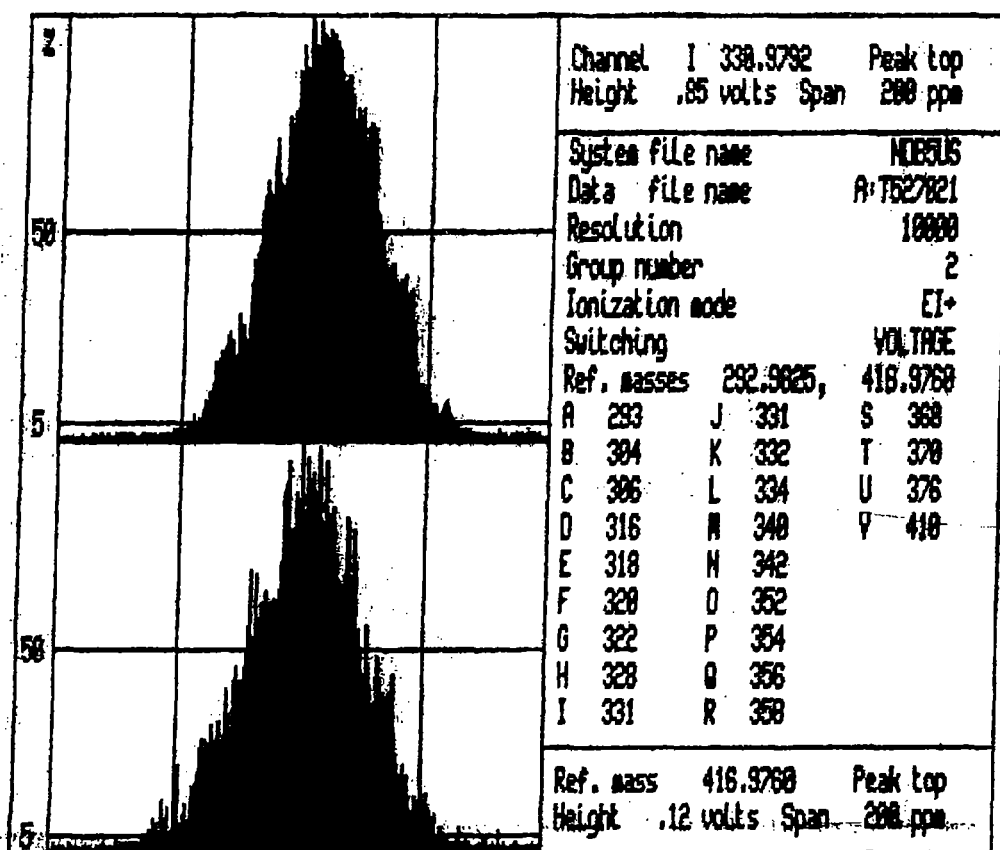


File:T022479 #1-886 Acq:27-MAY-2002 22:27:53 EI+ Voltage SIR 70T Noise:90
 327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,360.0,1.00%,F,T) Exp:NDB5US
 TRIANGLE LABS Text:TLI#57440 TLI LCSD INJ. TIME = 22:30



File:T022479 #1-886 Acq:27-MAY-2002 22:27:53 EI+ Voltage SIR 70T
 330.9792 F:2 Exp:NDB5US
 TRIANGLE LABS Text:TLI#57440 TLI LCSD INJ. TIME = 22:30





CALIBRATION DATA

Analysis Date..... 01/21/2002
Instrument..... T

Method..... MIT3

Analytes	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
Total MCDF	0.000	0.000	100%		4:48	18:48			0
Total MCDD	0.000	0.000	100%		5:32	19:32			0
Total DCDF	0.000	0.000	100%		11:48	19:48			0
Total DCDD	0.000	0.000	100%		12:32	20:32			0
Total TriCDF	0.000	0.000	100%		15:48	22:48			0
Total TriCDD	0.000	0.000	100%		17:32	23:32			0
1368-TCDF	1.030	0.052	5%	21:36	23:48	30:48	0.808		6
1278-TCDF	1.062	0.022	2%	24:25			0.818		6
2378-TCDF	1.107	0.027	2%	24:50			0.802		6
TOTAL TCDF	1.107	0.027	2%				0.810		6
1368-TCDD	0.936	0.016	2%	22:59	24:32	31:32	0.788		6
1379-TCDD	0.825	0.027	3%	23:22			0.800		6
2378-TCDD	1.084	0.083	8%	25:33			0.766		6
TOTAL TCDD	1.084	0.083	8%				0.782		6
12378-PeCDF	0.932	0.024	3%	28:47	24:47	32:47	1.533		6
23478-PeCDF	1.020	0.037	4%	29:30			1.500		6
TOTAL PeCDF	0.976	0.030	3%				1.515		6
12378-PeCDD	1.007	0.050	5%	29:50	25:49	33:49	1.626		6
TOTAL PeCDD	1.007	0.050	5%				1.626		6
123478-HxCDF	1.207	0.047	4%	32:15	28:21	36:21	1.259		6
123678-HxCDF	1.114	0.030	3%	32:21			1.264		6
234678-HxCDF	1.054	0.044	4%	32:50			1.255		6
123789-HxCDF	0.882	0.036	4%	33:36			1.251		6
TOTAL HxCDF	1.064	0.038	4%				1.258		6
123478-HxCDD	1.085	0.032	3%	32:57	29:01	37:01	1.233		6
123678-HxCDD	1.004	0.049	5%	33:02			1.245		6
123789-HxCDD	1.069	0.036	3%	33:20			1.220		6
TOTAL HxCDD	1.052	0.038	4%				1.232		6
1234678-HpCDF	1.188	0.033	2%	35:13	31:12	39:12	1.055		6
1234789-HpCDF	1.203	0.040	4%	36:45			1.060		6
TOTAL HpCDF	1.245	0.034	3%				1.057		6
1234678-HpCDD	1.015	0.007	1%	36:15	32:15	40:15	1.021		6
TOTAL HpCDD	1.015	0.007	1%				1.021		6
OCDF	1.217	0.093	8%	40:02	35:50	43:50	0.885		6
OCDD	1.004	0.031	3%	39:51	35:50	43:50	0.828		6
Other Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
37C1-TCDD	0.879	0.036	4%	25:33	23:32	27:32			6
13C12-PeCDF 234	0.923	0.007	1%	29:29	26:47	30:47	1.538		6
13C12-HxCDF 478	0.988	0.011	1%	32:15			0.515		6
13C12-HxCDF 234	0.925	0.009	1%	32:50			0.515		6
13C12-HxCDF 789	0.734	0.013	2%	33:35			0.518		6
13C12-HxCDD 478	0.962	0.023	2%	32:57			1.218		6
13C12-HpCDF 789	0.736	0.010	1%	36:44	33:12	39:12	0.431		6

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Printed: 16:06 02/2/2002

Internal Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-2378-TCDF	1.687	0.031	2%	24:48	23:48	25:48	0.761		6
13C12-2378-TCDD	1.146	0.019	2%	25:32	23:32	27:32	0.807		6
13C12-PeCDF 123	1.338	0.040	3%	28:47	24:47	32:47	1.536		6
13C12-PeCDD 123	0.809	0.032	4%	29:49	25:49	33:49	1.493		6
13C12-HxCDF 678	1.516	0.010	1%	32:21	28:21	36:21	0.516		6
13C12-HxCDD 678	0.985	0.016	2%	33:01	32:01	34:01	1.215		6
13C12-HpCDF 678	0.927	0.016	2%	35:12	33:12	39:12	0.437		6
13C12-HpCDD 678	0.730	0.012	2%	36:15	35:15	37:15	1.036		6
13C12-OCDD	0.596	0.031	5%	39:50	37:50	41:50	0.867		6

Recovery Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-1234-TCDD	1.000	0.000	0%	25:21			0.819		6
13C12-HxCDD 789	1.000	0.000	0%	33:20			1.207		6

*** End of Report ***

Analysis Date.....: 02/01/2002
Instrument.....: S

Method.....: MIT3

Analytes	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
Total MCDF	0.000	0.000	100%		6:31	20:31			0
Total MCDD	0.000	0.000	100%		7:14	21:14			0
Total DCDF	0.000	0.000	100%		13:31	21:31			0
Total DCDD	0.000	0.000	100%		14:14	22:14			0
Total TriCDF	0.000	0.000	100%		17:31	24:31			0
Total TriCDD	0.000	0.000	100%		19:14	25:14			0
1368-TCDF	1.109	0.020	2%	23:28	25:31	32:31	0.837		6
1278-TCDF	0.994	0.026	3%	26:09			0.843		6
2378-TCDF	0.981	0.038	4%	26:32			0.857		6
TOTAL TCDF	0.981	0.038	4%				0.844		6
1368-TCDD	0.995	0.020	2%	24:46	26:14	33:14	0.764		6
1379-TCDD	0.809	0.063	8%	25:09			0.777		6
2378-TCDD	0.942	0.032	3%	27:15			0.768		6
TOTAL TCDD	0.942	0.032	3%				0.769		6
12378-PeCDF	0.904	0.054	6%	30:24	26:23	34:23	1.541		6
23478-PeCDF	0.965	0.075	8%	31:05			1.505		6
TOTAL PeCDF	0.934	0.064	7%				1.522		6
12378-PeCDD	0.984	0.028	3%	31:25	27:24	35:24	1.613		6
TOTAL PeCDD	0.984	0.028	3%				1.613		6
123478-HxCDF	1.071	0.043	4%	33:48	29:53	37:53	1.296		6
123678-HxCDF	1.060	0.033	3%	33:54			1.312		6
234678-HxCDF	1.059	0.048	5%	34:23			1.294		6
123789-HxCDF	0.895	0.044	5%	35:11			1.304		6
TOTAL HxCDF	1.022	0.038	4%				1.301		6
123478-HxCDD	1.022	0.054	5%	34:30	30:34	38:34	1.242		6
123678-HxCDD	0.995	0.053	5%	34:35			1.249		6
123789-HxCDD	1.030	0.052	5%	34:54			1.230		6
TOTAL HxCDD	1.016	0.050	5%				1.240		6
1234678-HpCDF	1.320	0.047	4%	36:50	32:49	40:49	1.072		6
1234789-HpCDF	1.028	0.031	3%	38:24			1.065		6
TOTAL HpCDF	1.174	0.037	3%				1.068		6
1234678-HpCDD	1.014	0.037	4%	37:53	33:53	41:53	1.074		6
TOTAL HpCDD	1.014	0.037	4%				1.074		6
OCDF	1.295	0.096	7%	41:49	37:35	45:35	0.905		6
OCDD	1.021	0.049	5%	41:36	37:35	45:35	0.852		6
Other Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
3701-TCDD	0.853	0.017	2%	27:15	25:14	29:14			6
13012-PeCDF 234	0.890	0.030	3%	31:04	28:23	32:23	1.441		6
13012-HxCDF 478	0.907	0.024	3%	33:47			0.504		6
13012-HxCDF 234	0.981	0.020	2%	34:23			0.506		6
13012-HxCDF 789	0.776	0.023	3%	35:10			0.503		6
13012-HxCDD 478	0.915	0.052	6%	34:29			1.213		6
13012-HpCDF 789	0.713	0.021	3%	38:24	34:49	40:49	0.391		6

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Printed: 19:28 02/01/2002

Internal Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-2378-TCDF	1.486	0.042	3%	26:31	25:31	27:31	0.742		6
13C12-2378-TCDD	1.141	0.044	4%	27:14	25:14	29:14	0.792		6
13C12-PeCDF 123	1.161	0.097	8%	30:23	26:23	34:23	1.449		6
13C12-PeCDD 123	0.748	0.079	11%	31:24	27:24	35:24	1.456		6
13C12-HxCDF 678	1.441	0.051	4%	33:53	29:53	37:53	0.504		6
13C12-HxCDD 678	1.017	0.042	4%	34:34	33:34	35:34	1.211		6
13C12-HpCDF 678	0.799	0.010	1%	36:49	34:49	40:49	0.395		6
13C12-HpCDD 678	0.611	0.024	4%	37:53	36:53	38:53	1.017		6
13C12-OCDD	0.506	0.049	10%	41:35	39:35	43:35	0.859		6

Recovery Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-1234-TCDD	1.000	0.000	0%	27:03			0.801		6
13C12-HxCDD 789	1.000	0.000	0%	34:54			1.201		6

*** End of Report ***

Date: 05/27/2002

TRIANGLE LABORATORIES, INC.

Continuing Calibration for T022467

Analysis Date..... 05/27/2002

Method..... MIT3

Operator..... CGK

Instrument... T

Init Calibration.. TP51212

Std. Conc..... 10.00

ICal Date..... 01/21/2002

Analyte Summary						ICal		Delta	
Name	RF	Ratio	RT	RT	Rel. RT	RF	RF	%D	
		1&2	Lo/High						
Total MCDF	0.000		6:00			0.000	0.000	100.0%	
			20:00						
Total MCDD	0.000		6:43			0.000	0.000	100.0%	
			20:43						
Total DCDF	0.000		13:00			0.000	0.000	100.0%	
			21:00						
Total DCDD	0.000		13:43			0.000	0.000	100.0%	
			21:43						
Total TriCDF	0.000		17:00			0.000	0.000	100.0%	
			24:00						
Total TriCDD	0.000		18:43			0.000	0.000	100.0%	
			24:43						
1368-TCDF	1.226	0.79	22:40	22:51	0.8788	1.030	0.196	19.1%	
			27:53						
1278-TCDF	1.052	0.85		25:37	0.9854	1.062	-0.010	-0.9%	
2378-TCDF	1.078	0.80		26:01	1.0008	1.107	-0.029	-2.6%	
TOTAL TCDF	1.078	0.81				1.107	-0.029	-2.6%	
1368-TCDD	1.072	0.78	24:01	24:12	0.9057	0.936	0.136	14.5%	
			27:52						
1379-TCDD	0.936	0.80		24:35	0.9199	0.825	0.111	13.5%	
2378-TCDD	1.017	0.72		26:44	1.0004	1.084	-0.067	-6.2%	
TOTAL TCDD	1.017	0.77				1.084	-0.067	-6.2%	
12378-PeCDF	0.995	1.55	27:47	29:57	1.0007	0.932	0.063	6.7%	
			31:45						
23478-PeCDF	1.054	1.49		30:39	1.0241	1.020	0.034	3.3%	
TOTAL PeCDF	1.024	1.52				0.976	0.048	5.0%	
12378-PeCDD	1.109	1.64	29:01	30:59	1.0003	1.007	0.102	10.1%	
			31:36						
TOTAL PeCDD	1.109	1.64				1.007	0.102	10.1%	
123478-HxCDF	1.193	1.24	32:14	33:23	0.9979	1.207	-0.014	-1.2%	
			34:56						
123678-HxCDF	1.132	1.22		33:28	1.0006	1.114	0.018	1.6%	
234678-HxCDF	1.077	1.23		33:57	1.0149	1.054	0.023	2.2%	

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Printed: 14:27 05/27/2002

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Date: 05/27/2002

TRIANGLE LABORATORIES, INC.
Continuing Calibration for T022467

123789-HxCDF	0.874	1.25	34:43	1.0380	0.882	-0.008	-0.9%
TOTAL HxCDF	1.069	1.23			1.064	0.005	0.5%
123478-HxCDD	1.055	1.27	32:43 34:35	34:04	0.9982	1.085	-0.030 -2.7%
123678-HxCDD	1.008	1.26		34:08	1.0000	1.004	0.004 0.4%
123789-HxCDD	1.015	1.26		34:28	1.0100	1.069	-0.054 -5.0%
TOTAL HxCDD	1.026	1.26				1.052	-0.026 -2.5%
1234678-HpCDF	1.483	1.02	36:10 38:02	36:21	1.0006	1.388	0.095 6.9%
1234789-HpCDF	1.090	1.04		37:53	1.0427	1.103	-0.013 -1.2%
TOTAL HpCDF	1.287	1.03				1.245	0.042 3.3%
1234678-HpCDD	1.053	1.00	36:27 37:32	37:23	1.0003	1.015	0.038 3.8%
TOTAL HpCDD	1.053	1.00				1.015	0.038 3.8%
OCDF	1.417	0.89	37:00 45:00	41:12	1.0049	1.217	0.200 16.5%
OCDD	1.100	0.82	37:00 45:00	41:01	1.0005	1.004	0.096 9.6%

Other Standard Summary

Name	RF	Ratio 1±2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
37C1-TCDD	0.861		24:43 28:43	26:44	1.0004	0.879	-0.018	-2.0%
13C12-PeCDF 234	0.898	1.57	25:56 33:56	30:38	1.0234	0.923	-0.025	-2.7%
13C12-HxCDF 478	0.952	0.50	29:27 37:27	33:22	0.9976	0.988	-0.036	-3.7%
13C12-HxCDF 234	0.933	0.52		33:57	1.0149	0.925	0.008	0.8%
13C12-HxCDF 789	0.725	0.50		34:42	1.0374	0.734	-0.009	-1.2%
13C12-HxCDD 478	0.906	1.21	33:08 35:08	34:03	0.9977	0.962	-0.056	-5.8%
13C12-HpCDF 789	0.684	0.41	34:20 40:20	37:52	1.0424	0.736	-0.052	-7.0%

Internal Standard Summary

Name	RF	Ratio 1±2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-2378-TCDF	1.747	0.75	25:00 27:00	26:00	1.0000	1.687	0.060	3.5%
13C12-2378-TCDD	1.248	0.79	24:43 28:43	26:43	1.0000	1.146	0.102	8.9%

Date: 05/27/2002

TRIANGLE LABORATORIES, INC.
Continuing Calibration for T022467

13C12-PeCDF 123	1.027	1.50	25:56	29:56	1.0000	1.338	-0.311	-23.2%
			33:56					
13C12-PeCDD 123	0.592	1.39	26:58	30:58	1.0000	0.809	-0.217	-26.9%
			34:58					
13C12-HxCDF 678	1.514	0.49	29:27	33:27	1.0000	1.516	-0.002	-0.1%
			37:27					
13C12-HxCDD 678	1.020	1.17	33:08	34:08	1.0000	0.985	0.035	3.6%
			35:08					
13C12-HpCDF 678	0.848	0.41	34:20	36:20	1.0000	0.927	-0.079	-8.5%
			40:20					
13C12-HpCDD 678	0.645	1.01	36:22	37:22	1.0000	0.730	-0.085	-11.6%
			38:22					
13C12-OCDD	0.445	0.85	40:49	41:00	1.0000	0.596	-0.151	-25.3%
			41:09					

Recovery Standard Summary

Name	RF	Ratio	RT	RT	Rel. RT	ICal	Delta	%D
		1&2	Lo/High			RF	RF	
13C12-1234-TCDD	1.000	0.80	24:43	26:32	0.9929	1.000	0.000	0.0%
			28:43					
13C12-HxCDD 789	1.000	1.21	33:08	34:27	1.0094	1.000	0.000	0.0%
			35:08					

QC Front End Check: 2.6927 TetraRS/HexaRS: 1.567

Compound/

M_Z... ..RT. OK Ratio Total.Area... Area.Peak.1.. Area.Peak.2.. Rel.RT Compound.Name.. ID..

TCDF 0.65-0.89
304-306 22:51 0.79 88.90 39.26 49.64 0.879 1368-TCDF AN
25:37 0.85 76.26 35.01 41.25 0.985 1278-TCDF AN
26:01 0.80 78.14 34.77 43.37 1.001 2378-TCDF AN
304-306 3 Peaks
13C12-TCDF 0.65-0.89
316-318 26:00 0.75 724.89 309.90 414.99 1.000 13C12-2378-TCDF ISO
316-318 1 Peak

----- Above: TCDF / TCDD Follows -----

TCDD 0.65-0.89
320-322 24:12 0.78 55.51 24.29 31.22 0.906 1368-TCDD AN
24:35 0.80 48.47 21.53 26.94 0.920 1379-TCDD AN
26:44 0.72 52.65 22.12 30.53 1.000 2378-TCDD AN
320 3 Peaks
37C1-TCDD
328 26:44 44.59 44.59 1.000 37C1-TCDD CLS
328-330 1 Peak
13C12-TCDD 0.65-0.89
332-334 26:32 0.80 415.01 184.99 230.02 0.993 13C12-1234-TCDD RS1
26:43 0.79 517.78 228.70 289.08 1.000 13C12-2378-TCDD IS1
332-334 2 Peaks

----- Above: TCDD / PeCDF Follows -----

PeCDF 1.32-1.78
340-342 29:57 1.55 212.04 128.79 83.25 1.001 12378-PeCDF AN
30:39 1.49 224.65 134.38 90.27 1.024 23478-PeCDF AN
340-342 2 Peaks
13C12-PeCDF 1.32-1.78
352-354 29:56 1.50 426.32 256.03 170.29 1.000 13C12-PeCDF 123 IS2
30:38 1.57 382.97 233.96 149.01 1.023 13C12-PeCDF 234 SUR1
352-354 2 Peaks

----- Above: PeCDF / PeCDD Follows -----

PeCDD 1.32-1.78
356-358 30:59 1.64 136.16 84.62 51.54 1.000 12378-PeCDD AN
356-358 1 Peak
13C12-PeCDD 1.32-1.78
368-370 30:58 1.39 245.52 142.68 102.84 1.000 13C12-PeCDD 123 IS3
368-370 1 Peak

----- Above: PeCDD / HxCDF Follows -----

Compound/

M_Z.... RT. OK Ratio Total.Area... Area.Peak.1.. Area.Peak.2.. Rel.RT Compound.Name.. ID..

HxCDF 1.05-1.43

374-376	33:23	1.24	194.87	107.73	87.14	0.998	123478-HxCDF	AN
	33:28	1.22	184.93	101.66	83.27	1.001	123678-HxCDF	AN
	33:57	1.23	176.03	97.09	78.94	1.015	234678-HxCDF	AN
	34:43	1.25	142.90	79.31	63.59	1.038	123789-HxCDF	AN

374-376 4 Peaks

13C12-HxCDF 0.43-0.59

384-386	33:22	0.50	311.00	103.65	207.35	0.998	13C12-HxCDF 478	SUR2
	33:27	0.49	326.82	108.13	218.69	1.000	13C12-HxCDF 678	IS4
	33:57	0.52	304.78	103.74	201.04	1.015	13C12-HxCDF 234	ALT2
	34:42	0.50	237.10	79.49	157.61	1.037	13C12-HxCDF 789	ALT1

384-386 4 Peaks

----- Above: HxCDF / HxCDD Follows -----

HxCDD 1.05-1.43

390-392	34:04	1.27	116.18	64.91	51.27	0.998	123478-HxCDD	AN
	34:08	1.26	110.96	61.83	49.13	1.000	123678-HxCDD	AN
	34:28	1.26	111.79	62.24	49.55	1.010	123789-HxCDD	AN

390-392 3 Peaks

13C12-HxCDD 1.05-1.43

402-404	34:03	1.21	199.52	109.23	90.29	0.998	13C12-HxCDD 478	SUR3
	34:08	1.17	220.20	118.87	101.33	1.000	13C12-HxCDD 678	IS5
	34:27	1.21	215.82	118.08	97.74	1.009	13C12-HxCDD 789	RS2

402-404 3 Peaks

----- Above: HxCDD / HpCDF Follows -----

HpCDF 0.88-1.20

408-410	36:21	1.02	135.74	68.52	67.22	1.001	1234678-HpCDF	AN
	37:53	1.04	99.74	50.83	48.91	1.043	1234789-HpCDF	AN

408-410 2 Peaks

13C12-HpCDF 0.37-0.51

418-420	36:20	0.41	183.02	53.21	129.81	1.000	13C12-HpCDF 678	IS6
	37:52	0.41	125.25	36.23	89.02	1.042	13C12-HpCDF 789	SUR4

418-420 2 Peaks

----- Above: HpCDF / HpCDD Follows -----

RpCDD 0.88-1.20

424-426	37:23	1.00	73.36	36.77	36.59	1.000	1234678-HpCDD	AN
---------	-------	------	-------	-------	-------	-------	---------------	----

424-426 1 Peak

13C12-HpCDD 0.88-1.20

436-438	37:22	1.01	139.27	69.81	69.46	1.000	13C12-HpCDD 678	IS7
---------	-------	------	--------	-------	-------	-------	-----------------	-----

436-438 1 Peak

----- Above: HpCDD / Octa-CDD and CDF Follows -----

Page No. 3
05/27/2002

Listing of T022467
GC Peaks / Ratio / Ret. Time

Compound/

M_Z	..RT.	OK	Ratio	Total Area	Area.Peak.1	Area.Peak.2	Rel.RT	Compound.Name	ID
OCDF									
442-444	41:12		0.76-1.02						
			0.89	136.26	64.05	72.21	1.005	OCDF	AN
442-444			1 Peak						
OCDD									
458-460	41:01		0.76-1.02						
			0.82	105.78	47.74	58.04	1.001	OCDD	AN
458-460			1 Peak						
13C12-OCDD									
470-472	41:00		0.76-1.02						
			0.85	192.29	88.19	104.10	1.000	13C12-OCDD	ISB
470			1 Peak						

Column Description.....

M_Z - Nominal Ion Mass(es)
..RT. - Retention Time (mm:ss)
Rat.1 - Ratio of M/M+2 Ions
OK - RO=Ratio Outside Limits
Rel.RT - Relative Retention Time

*** End of Report ***

Date: 05/27/2002

TRIANGLE LABORATORIES, INC.

Continuing Calibration for S022151

Analysis Date....: 05/27/2002

Method.....: MIT3

Operator.....: CGK

Instrument...: S

Init Calibration.: SF52012

Std.Conc.....: 10.00

ICal Date.....: 02/01/2002

Analyte Summary Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
Total MCDF	0.000		5:03 20:03			0.000	0.000	100.0%
Total MCDD	0.000		6:46 20:46			0.000	0.000	100.0%
Total DCDF	0.000		13:03 21:03			0.000	0.000	100.0%
Total DCDD	0.000		13:46 21:46			0.000	0.000	100.0%
Total TriCDF	0.000		17:03 24:03			0.000	0.000	100.0%
Total TriCDD	0.000		18:46 24:46			0.000	0.000	100.0%
1368-TCDF	1.532	0.81	22:43 27:56	22:55	0.8798	1.109	0.423	38.1%
1278-TCDF	1.039	0.84		25:39	0.9846	0.994	0.045	4.6%
2378-TCDF	1.176	0.75		26:04	1.0008	0.981	0.195	19.9%
TOTAL TCDF	1.176	0.80				0.981	0.195	19.9%
1368-TCDD	1.076	0.74	24:03 27:55	24:15	0.9059	0.995	0.081	8.2%
1379-TCDD	0.804	0.86		24:38	0.9201	0.809	-0.005	-0.6%
2378-TCDD	1.041	0.84		26:46	1.0000	0.942	0.099	10.5%
TOTAL TCDD	1.041	0.81				0.942	0.099	10.5%
12378-PeCDF	0.880	1.48	27:49 31:48	30:00	1.0007	0.904	-0.024	-2.6%
23478-PeCDF	0.949	1.49		30:41	1.0233	0.965	-0.016	-1.6%
TOTAL PeCDF	0.915	1.48				0.934	-0.019	-2.1%
12378-PeCDD	0.934	1.51	29:04 31:39	31:01	1.0006	0.984	-0.050	-5.0%
TOTAL PeCDD	0.934	1.51				0.984	-0.050	-5.0%
123478-HxCDF	1.045	1.23	32:17 34:59	33:25	0.9970	1.071	-0.027	-2.5%
123678-HxCDF	1.220	1.24		33:31	1.0000	1.060	0.160	15.1%
234678-HxCDF	0.991	1.26		34:00	1.0143	1.059	-0.068	-6.4%

Page 1

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Date: 05/27/2002

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Continuing Calibration for S022151

123789-HxCDF	0.764	1.38	34:46	1.0373	0.895	-0.131	-14.7%
TOTAL HxCDF	1.005	1.27			1.022	-0.017	-1.7%
123478-HxCDD	0.931	1.28	32:46 34:38	0.9982	1.022	-0.091	-8.9%
123678-HxCDD	1.105	1.18	34:12	1.0006	0.995	0.110	11.0%
123789-HxCDD	0.921	1.28	34:31	1.0099	1.030	-0.109	-10.6%
TOTAL HxCDD	0.985	1.24			1.016	-0.031	-3.0%
1234678-HpCDF	1.458	1.02	36:12 38:04	1.0000	1.320	0.138	10.4%
1234789-HpCDF	1.073	1.01	37:55	1.0423	1.028	0.045	4.4%
TOTAL HpCDF	1.265	1.02			1.174	0.091	7.8%
1234678-HpCDD	1.091	1.13	36:29 37:35	1.0000	1.014	0.077	7.6%
TOTAL HpCDD	1.091	1.13			1.014	0.077	7.6%
OCDF	1.485	0.91	36:59 44:59	1.0054	1.295	0.190	14.7%
OCDD	1.033	0.92	36:59 44:59	1.0010	1.021	0.012	1.2%

Other Standard Summary

Name	RF	Ratio	RT	RT	Rel. RT	ICal RF	Delta RF	%D
37C1-TCDD	0.930	1.62	Lo/High 24:46 28:46	26:46	1.0000	0.853	0.077	9.1%
13C12-PeCDF 234	0.873	1.53	25:59 33:59	30:40	1.0230	0.890	-0.017	-1.9%
13C12-HxCDF 478	0.795	0.50	29:31 37:31	33:25	0.9970	0.907	-0.112	-12.3%
13C12-HxCDF 234	0.815	0.51		34:00	1.0143	0.981	-0.166	-16.9%
13C12-HxCDF 789	0.616	0.50		34:45	1.0367	0.776	-0.160	-20.6%
13C12-HxCDD 478	0.774	1.34	33:11 35:11	34:06	0.9977	0.915	-0.141	-15.5%
13C12-HpCDF 789	0.675	0.45	34:23 40:23	37:54	1.0418	0.713	-0.038	-5.4%

Internal Standard Summary

Name	RF	Ratio	RT	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-2378-TCDF	1.537	0.76	Lo/High 25:03 27:03	26:03	1.0000	1.486	0.051	3.4%
13C12-2378-TCDD	1.075	0.80	24:46 28:46	26:46	1.0000	1.141	-0.066	-5.8%

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Date: 05/27/2002

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Continuing Calibration for S022151

13C12-PeCDF 123	0.944	1.47	25:59	29:59	1.0000	1.161	-0.217	-18.7%
			33:59					
13C12-PeCDD 123	0.596	1.44	27:00	31:00	1.0000	0.748	-0.152	-20.3%
			35:00					
13C12-HxCDF 678	2.072	0.53	29:31	33:31	1.0000	1.441	0.631	43.8%
			37:31					
13C12-HxCDD 678	1.261	1.16	33:11	34:11	1.0000	1.017	0.244	24.0%
			35:11					
13C12-HpCDF 678	1.073	0.46	34:23	36:23	1.0000	0.799	0.274	34.3%
			40:23					
13C12-HpCDD 678	0.678	0.95	36:25	37:25	1.0000	0.611	0.067	11.0%
			38:25					
13C12-OCDD	0.465	0.82	40:49	40:59	1.0000	0.506	-0.041	-8.0%
			41:09					

Recovery Standard Summary

Name	RF	Ratio	RT	RT	Rel. RT	ICal	Delta	%D
		1&2	Lo/High			RF	RF	
13C12-1234-TCDD	1.000	0.81	24:46	26:35	0.9929	1.000	0.000	0.0%
			28:46					
13C12-HxCDD 789	1.000	1.15	33:11	34:30	1.0094	1.000	0.000	0.0%
			35:11					

QC Front End Check: 2.9420 TetraRS/HexaRS: 2.126

Compound/

M_2	RT	OK	Ratio	Total Area	Area	Peak.1	Area	Peak.2	Rel. RT	Compound Name	ID
TCDF	0.65-0.89										
304-306	22:55		0.81	252.07	112.81		139.26	0.880	1368-TCDF	AN	
	25:39		0.84	171.03	78.26		92.77	0.985	1278-TCDF	AN	
	26:04		0.75	193.57	83.13		110.44	1.001	2378-TCDF	AN	
304-306			3 Peaks								
13C12-TCDF	0.65-0.89										
316-318	26:03		0.76	1,645.61	707.99		937.62	1.000	13C12-2378-TCDF	ISO	
316-318			1 Peak								

----- Above: TCDF / TCDD Follows -----

TCDD	0.65-0.89										
320-322	24:15		0.74	123.89	52.89		71.00	0.906	1368-TCDD	AN	
	24:38		0.86	92.56	42.81		49.75	0.920	1379-TCDD	AN	
	26:46		0.84	119.85	54.81		65.04	1.000	2378-TCDD	AN	
320			3 Peaks								
37C1-TCDD											
328	26:46			107.07	107.07			1.000	37C1-TCDD	CLS	
328-330			1 Peak								
13C12-TCDD	0.65-0.89										
332-334	26:35		0.81	1,070.62	477.49		593.13	0.993	13C12-1234-TCDD	RS1	
	26:46		0.80	1,150.94	510.36		640.58	1.000	13C12-2378-TCDD	IS1	
332-334			2 Peaks								

----- Above: TCDD / PeCDF Follows -----

PeCDF	1.32-1.78										
340-342	30:00		1.48	444.94	265.35		179.59	1.001	12378-PeCDF	AN	
	30:41		1.49	480.04	287.17		192.87	1.023	23478-PeCDF	AN	
340-342			2 Peaks								
13C12-PeCDF	1.32-1.78										
352-354	29:59		1.47	1,011.16	601.11		410.05	1.000	13C12-PeCDF 123	IS2	
	30:40		1.53	882.75	533.95		348.80	1.023	13C12-PeCDF 234	SUR1	
352-354			2 Peaks								

----- Above: PeCDF / PeCDD Follows -----

PeCDD	1.32-1.78										
356-358	31:01		1.51	298.02	179.18		118.84	1.001	12378-PeCDD	AN	
356-358			1 Peak								
13C12-PeCDD	1.32-1.78										
368-370	31:00		1.44	637.93	376.51		261.42	1.000	13C12-PeCDD 123	IS3	
368-370			1 Peak								

----- Above: PeCDD / HxCDF Follows -----

Compound/

M_Z... ..RT. OK Ratio Total.Area... Area.Peak.1.. Area.Peak.2.. Rel.RT Compound.Name.. ID..

HxCDF 1.05-1.43
374-376 33:25 1.23 455.00 251.33 203.67 0.997 123478-HxCDF AN
33:31 1.24 531.60 293.90 237.70 1.000 123678-HxCDF AN
34:00 1.26 431.64 240.60 191.04 1.014 234678-HxCDF AN
34:46 1.38 332.61 193.13 139.48 1.037 123789-HxCDF AN
374-376 4 Peaks

13C12-HxCDF 0.43-0.59
384-386 33:25 0.50 692.90 231.94 460.96 0.997 13C12-HxCDF 478 SUR2
33:31 0.53 871.23 302.30 568.93 1.000 13C12-HxCDF 678 IS4
34:00 0.51 710.12 239.05 471.07 1.014 13C12-HxCDF 234 ALT2
34:45 0.50 536.51 178.53 357.98 1.037 13C12-HxCDF 789 ALT1
384-386 4 Peaks

----- Above: HxCDF / HxCDD Follows -----

HxCDD 1.05-1.43
390-392 34:07 1.28 246.60 138.38 108.22 0.998 123478-HxCDD AN
34:12 1.18 292.79 158.60 134.19 1.001 123678-HxCDD AN
34:31 1.28 243.94 137.03 106.91 1.010 123789-HxCDD AN
390-392 3 Peaks

13C12-HxCDD 1.05-1.43
402-404 34:06 1.34 409.99 234.69 175.30 0.998 13C12-HxCDD 478 SUR3
34:11 1.16 529.99 284.90 245.09 1.000 13C12-HxCDD 678 IS5
34:30 1.15 420.38 224.58 195.80 1.009 13C12-HxCDD 789 RS2
402-404 3 Peaks

----- Above: HxCDD / HpCDF Follows -----

HpCDF 0.88-1.20
408-410 36:23 1.02 328.66 166.34 162.32 1.000 1234678-HpCDF AN
37:55 1.01 241.94 121.49 120.45 1.042 1234789-HpCDF AN
408-410 2 Peaks
13C12-HpCDF 0.37-0.51
418-420 36:23 0.46 450.93 142.32 308.61 1.000 13C12-HpCDF 678 IS6
37:54 0.45 304.25 94.33 209.92 1.042 13C12-HpCDF 789 SUR4
418-420 2 Peaks

----- Above: HpCDF / HpCDD Follows -----

HpCDD 0.88-1.20
424-426 37:25 1.13 155.59 82.50 73.09 1.000 1234678-HpCDD AN
424-426 1 Peak
13C12-HpCDD 0.88-1.20
436-438 37:25 0.95 285.13 139.00 146.13 1.000 13C12-HpCDD 678 IS7
436-438 1 Peak

----- Above: HpCDD / Octa-CDD and CDF Follows -----

Compound/

M_Z... ..RT. OK Ratio Total.Area... Area.Peak.1.. Area.Peak.2.. Rel.RT Compound Name.. ID..

OCDF	0.76-1.02							
442-444 41:12	0.91	290.55	138.35	152.20	1.005	OCDF	AN	
442-444	1 Peak							
OCDD	0.76-1.02							
458-460 41:01	0.92	202.11	96.76	105.35	1.001	OCDD	AN	
458-460	1 Peak							
13C12-OCDD	0.76-1.02							
470-472 40:59	0.82	391.21	175.82	215.39	1.000	13C12-OCDD	IS8	
470	1 Peak							

Column Description.....

M_Z - Nominal Ion Mass(es)
..RT. - Retention Time (mm:ss)
Rat.1 - Ratio of M/M+2 Ions
OK - RO=Ratio Outside Limits
Rel.RT - Relative Retention Time

*** End of Report ***

US EPA ARCHIVE DOCUMENT

GROUNDWATER ANALYTICAL

Groundwater Analytical, Inc.
P.O. Box 1200
228 Main Street
Buzzards Bay, MA 02532
Telephone (508) 759-4441
FAX (508) 759-4475

May 29, 2002

Mr. Paul Leclerc
Lincoln Environmental, Inc.
333 Washington Hwy.
Smithfield, RI 02917

Project: Lot 516 Smith St. N. Prov./RCF8338F
Lab ID: 50977
Sampled: 05-20-02

Dear Paul:

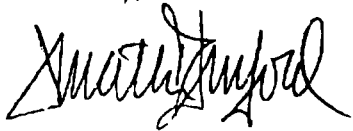
Enclosed are the Volatile Organics and Semivolatile Organics Analyses performed for the above referenced project. This project was processed for Priority One Week turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a project narrative indicating project changes and non-conformances, a brief description of the Quality Assurance/Quality Control procedures employed by our laboratory, and a statement of our state certifications.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,



Jonathan R. Sanford
President

JRS/kh
Enclosures

GROUNDWATER ANALYTICAL

EPA Method 8260B Volatile Organics by GC/MS

Field ID: MW-1
Project: Lot 516 Smith St. N. Prov./RCF8338F
Client: Lincoln Environmental, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 50977-01
QC Batch ID: VM5-2210-W
Sampled: 05-20-02
Received: 05-21-02
Analyzed: 05-24-02
Dilution Factor: 1
Page: 1 of 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL	ug/L	0.5
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-69-4	Trichlorofluoromethane	BRL	ug/L	0.5
60-29-7	Diethyl Ether	BRL	ug/L	2
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL	ug/L	5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans- 1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert- butyl Ether (MTBE)	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
590-20-7	2,2-Dichloropropane	BRL	ug/L	0.5
156-59-2	cis- 1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
74-97-5	Bromochloromethane	BRL	ug/L	0.5
109-99-9	Tetrahydrofuran (THF)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
563-58-6	1,1-Dichloropropene	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
74-95-3	Dibromomethane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis- 1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans- 1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	2	ug/L	0.5
142-28-9	1,3-Dichloropropane	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
106-93-4	1,2-Dibromoethane (EDB)	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
630-20-6	1,1,1,2-Tetrachloroethane	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5

GROUNDWATER ANALYTICAL

EPA Method 8260B (Continued) Volatile Organics by GC/MS

Field ID: MW-1
Project: Lot 516 Smith St. N. Prov./RCF8338F
Client: Lincoln Environmental, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 50977-01
QC Batch ID: VM5-2210-W
Sampled: 05-20-02
Received: 05-21-02
Analyzed: 05-24-02
Dilution Factor: 1
Page: 2 of 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
108-38-3/106-42-3	meta- Xylene and para- Xylene	BRL	ug/L	0.5
95-47-6	ortho- Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
98-82-8	Isopropylbenzene	BRL	ug/L	0.5
108-86-1	Bromobenzene	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5
96-18-4	1,2,3-Trichloropropane	BRL	ug/L	0.5
103-65-1	n-Propylbenzene	BRL	ug/L	0.5
95-49-8	2-Chlorotoluene	BRL	ug/L	0.5
108-67-8	1,3,5-Trimethylbenzene	BRL	ug/L	0.5
106-43-4	4-Chlorotoluene	BRL	ug/L	0.5
98-06-6	tert- Butylbenzene	BRL	ug/L	0.5
95-63-6	1,2,4-Trimethylbenzene	BRL	ug/L	0.5
135-98-8	sec- Butylbenzene	BRL	ug/L	0.5
541-73-1	1,3-Dichlorobenzene	BRL	ug/L	0.5
99-87-6	4-Isopropyltoluene	BRL	ug/L	0.5
106-46-7	1,4-Dichlorobenzene	BRL	ug/L	0.5
95-50-1	1,2-Dichlorobenzene	BRL	ug/L	0.5
104-51-8	n- Butylbenzene	BRL	ug/L	0.5
96-12-8	1,2-Dibromo-3-chloropropane	BRL	ug/L	0.5
120-82-1	1,2,4-Trichlorobenzene	BRL	ug/L	0.5
87-68-3	Hexachlorobutadiene	BRL	ug/L	0.5
91-20-3	Naphthalene	BRL	ug/L	0.5
87-61-6	1,2,3-Trichlorobenzene	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	104 %	86 - 118 %
1,2-Dichloroethane-d ₄	93 %	80 - 120 %
Toluene-d ₈	105 %	88 - 110 %
4-Bromofluorobenzene	98 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified in Tables 6 and 7 of the method, and additional analytes as specified by MA DEP Method 1 Standards (310 C.M.R. 40.0973) and recommended by NH DES for initial waste site investigations, effective 12/1/97. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

EPA Method 8260B Volatile Organics by GC/MS

Field ID: MW-2
Project: Lot 516 Smith St. N. Prov./RCF8338F
Client: Lincoln Environmental, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 50977-02
QC Batch ID: VM5-2210-W
Sampled: 05-20-02
Received: 05-21-02
Analyzed: 05-24-02
Dilution Factor: 1
Page: 1 of 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL	ug/L	0.5
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-69-4	Trichlorofluoromethane	BRL	ug/L	0.5
60-29-7	Diethyl Ether	BRL	ug/L	2
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL	ug/L	5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	<i>trans</i> -1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl <i>tert</i> -butyl Ether (MTBE)	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
590-20-7	2,2-Dichloropropane	BRL	ug/L	0.5
156-59-2	<i>cis</i> -1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
74-97-5	Bromochloromethane	BRL	ug/L	0.5
109-99-9	Tetrahydrofuran (THF)	BRL	ug/L	5
67-66-3	Chloroform	1	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
563-58-6	1,1-Dichloropropene	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
74-95-3	Dibromomethane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	<i>cis</i> -1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	<i>trans</i> -1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
142-28-9	1,3-Dichloropropane	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
106-93-4	1,2-Dibromoethane (EDB)	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
630-20-6	1,1,1,2-Tetrachloroethane	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5

GROUNDWATER ANALYTICAL

EPA Method 8260B (Continued) Volatile Organics by GC/MS

Field ID: MW-2
Project: Lot 516 Smith St. N. Prov./RCF8338F
Client: Lincoln Environmental, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 50977-02
QC Batch ID: VM5-2210-W
Sampled: 05-20-02
Received: 05-21-02
Analyzed: 05-24-02
Dilution Factor: 1
Page: 2 of 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
108-38-3/106-42-3	meta- Xylene and para- Xylene	BRL	ug/L	0.5
95-47-6	ortho- Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
98-82-8	Isopropylbenzene	BRL	ug/L	0.5
108-86-1	Bromobenzene	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5
96-18-4	1,2,3-Trichloropropane	BRL	ug/L	0.5
103-65-1	n-Propylbenzene	BRL	ug/L	0.5
95-49-8	2-Chlorotoluene	BRL	ug/L	0.5
108-67-8	1,3,5-Trimethylbenzene	BRL	ug/L	0.5
106-43-4	4-Chlorotoluene	BRL	ug/L	0.5
98-06-6	tert- Butylbenzene	BRL	ug/L	0.5
95-63-6	1,2,4-Trimethylbenzene	BRL	ug/L	0.5
135-98-8	sec-Butylbenzene	BRL	ug/L	0.5
541-73-1	1,3-Dichlorobenzene	BRL	ug/L	0.5
99-87-6	4-Isopropyltoluene	BRL	ug/L	0.5
106-46-7	1,4-Dichlorobenzene	BRL	ug/L	0.5
95-50-1	1,2-Dichlorobenzene	BRL	ug/L	0.5
104-51-8	n-Butylbenzene	BRL	ug/L	0.5
96-12-8	1,2-Dibromo-3-chloropropane	BRL	ug/L	0.5
120-82-1	1,2,4-Trichlorobenzene	BRL	ug/L	0.5
87-68-3	Hexachlorobutadiene	BRL	ug/L	0.5
91-20-3	Naphthalene	BRL	ug/L	0.5
87-61-6	1,2,3-Trichlorobenzene	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	103 %	86 - 118 %
1,2-Dichloroethane-d ₄	92 %	80 - 120 %
Toluene-d ₈	104 %	88 - 110 %
4-Bromofluorobenzene	96 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified in Tables 6 and 7 of the method, and additional analytes as specified by MA DEP Method 1 Standards (310 C.M.R. 40.0973) and recommended by NH DES for initial waste site investigations, effective 12/1/97. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8260B Volatile Organics by GC/MS

Field ID: MW-3
Project: Lot 516 Smith St. N. Prov./RCF8338F
Client: Lincoln Environmental, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 50977-03
QC Batch ID: VM5-2210-W
Sampled: 05-20-02
Received: 05-21-02
Analyzed: 05-24-02
Dilution Factor: 1
Page: 1 of 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL	ug/L	0.5
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-69-4	Trichlorofluoromethane	BRL	ug/L	0.5
60-29-7	Diethyl Ether	BRL	ug/L	2
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL	ug/L	5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans- 1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert- butyl Ether (MTBE)	1	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
590-20-7	2,2-Dichloropropane	BRL	ug/L	0.5
156-59-2	cis- 1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
74-97-5	Bromochloromethane	BRL	ug/L	0.5
109-99-9	Tetrahydrofuran (THF)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
563-58-6	1,1-Dichloropropene	BRL	ug/L	0.5
71-43-2	Benzene	1	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
74-95-3	Dibromomethane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis- 1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans- 1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
142-28-9	1,3-Dichloropropane	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
106-93-4	1,2-Dibromoethane (EDB)	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
630-20-6	1,1,1,2-Tetrachloroethane	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5

GROUNDWATER ANALYTICAL

EPA Method 8260B (Continued) Volatile Organics by GC/MS

Field ID: MW-3
Project: Lot 516 Smith St. N. Prov./RCF8338F
Client: Lincoln Environmental, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 50977-03
QC Batch ID: VM5-2210-W
Sampled: 05-20-02
Received: 05-21-02
Analyzed: 05-24-02
Dilution Factor: 1
Page: 2 of 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
108-38-3/106-42-3	meta- Xylene and para- Xylene	6	ug/L	0.5
95-47-6	ortho- Xylene	1	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
98-82-8	Isopropylbenzene	BRL	ug/L	0.5
108-86-1	Bromobenzene	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5
96-18-4	1,2,3-Trichloropropane	BRL	ug/L	0.5
103-65-1	n-Propylbenzene	BRL	ug/L	0.5
95-49-8	2-Chlorotoluene	BRL	ug/L	0.5
108-67-8	1,3,5-Trimethylbenzene	3	ug/L	0.5
106-43-4	4-Chlorotoluene	BRL	ug/L	0.5
98-06-6	tert- Butylbenzene	BRL	ug/L	0.5
95-63-6	1,2,4-Trimethylbenzene	4	ug/L	0.5
135-98-8	sec-Butylbenzene	BRL	ug/L	0.5
541-73-1	1,3-Dichlorobenzene	BRL	ug/L	0.5
99-87-6	4-Isopropyltoluene	BRL	ug/L	0.5
106-46-7	1,4-Dichlorobenzene	BRL	ug/L	0.5
95-50-1	1,2-Dichlorobenzene	BRL	ug/L	0.5
104-51-8	n-Butylbenzene	BRL	ug/L	0.5
96-12-8	1,2-Dibromo-3-chloropropane	BRL	ug/L	0.5
120-82-1	1,2,4-Trichlorobenzene	BRL	ug/L	0.5
87-68-3	Hexachlorobutadiene	BRL	ug/L	0.5
91-20-3	Naphthalene	62	ug/L	0.5
87-61-6	1,2,3-Trichlorobenzene	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	101 %	86 - 118 %
1,2-Dichloroethane-d ₄	90 %	80 - 120 %
Toluene-d ₈	106 %	88 - 110 %
4-Bromofluorobenzene	95 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified in Tables 6 and 7 of the method, and additional analytes as specified by MA DEP Method 1 Standards (310 C.M.R. 40.0973) and recommended by NH DES for initial waste site investigations, effective 12/1/97. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8270C Polynuclear Aromatic Hydrocarbons by GC/MS

Field ID: MW-1
Project: Lot 516 Smith St. N. Prov./RCF8338F
Client: Lincoln Environmental, Inc.
Container: 1 L Amber Glass
Preservation: Cool
Matrix: Aqueous

Laboratory ID: 50977-04
QC Batch ID: SV-1137-F
Sampled: 05-20-02
Received: 05-21-02
Extracted: 05-24-02
Analyzed: 05-25-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
91-20-3	Naphthalene	BRL	ug/L	10
91-57-6	2-Methylnaphthalene	BRL	ug/L	10
208-96-8	Acenaphthylene	BRL	ug/L	10
83-32-9	Acenaphthene	BRL	ug/L	10
86-73-7	Fluorene	BRL	ug/L	10
85-01-8	Phenanthrene	BRL	ug/L	10
120-12-7	Anthracene	BRL	ug/L	10
206-44-0	Fluoranthene	BRL	ug/L	10
129-00-0	Pyrene	BRL	ug/L	10
56-55-3	Benzo[a]anthracene	BRL	ug/L	10
218-01-9	Chrysene	BRL	ug/L	10
205-99-2	Benzo[b]fluoranthene	BRL	ug/L	10
207-08-9	Benzo[k]fluoranthene	BRL	ug/L	10
50-32-8	Benzo[a]pyrene	BRL	ug/L	10
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL	ug/L	10
53-70-3	Dibenzo[a,h]anthracene	BRL	ug/L	10
191-24-2	Benzo[g,h,i]perylene	BRL	ug/L	10
QC Subrogate Compounds		Recovery	QC Limits	
Nitrobenzene-d ₅		78 %	35 - 114 %	
2-Fluorobiphenyl		81 %	43 - 116 %	
Terphenyl-d ₁₄		91 %	33 - 141 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as selected from the Polynuclear Aromatic Hydrocarbon analytes specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8270C Polynuclear Aromatic Hydrocarbons by GC/MS

Field ID: MW-2
Project: Lot 516 Smith St. N. Prov./RCF8338F
Client: Lincoln Environmental, Inc.
Container: 1 L Amber Glass
Preservation: Cool
Matrix: Aqueous

Laboratory ID: 50977-05
QC Batch ID: SV-1137-F
Sampled: 05-20-02
Received: 05-21-02
Extracted: 05-24-02
Analyzed: 05-25-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
91-20-3	Naphthalene	BRL	ug/L	10
91-57-6	2-Methylnaphthalene	BRL	ug/L	10
208-96-8	Acenaphthylene	BRL	ug/L	10
83-32-9	Acenaphthene	BRL	ug/L	10
86-73-7	Fluorene	BRL	ug/L	10
85-01-8	Phenanthrene	BRL	ug/L	10
120-12-7	Anthracene	BRL	ug/L	10
206-44-0	Fluoranthene	BRL	ug/L	10
129-00-0	Pyrene	BRL	ug/L	10
56-55-3	Benzo[a]anthracene	BRL	ug/L	10
218-01-9	Chrysene	BRL	ug/L	10
205-99-2	Benzo[b]fluoranthene	BRL	ug/L	10
207-08-9	Benzo[k]fluoranthene	BRL	ug/L	10
50-32-8	Benzo[a]pyrene	BRL	ug/L	10
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL	ug/L	10
53-70-3	Dibenzo[a,h]anthracene	BRL	ug/L	10
191-24-2	Benzo[g,h,i]perylene	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
Nitrobenzene-d ₅	73 %	35 - 114 %
2-Fluorobiphenyl	76 %	43 - 116 %
Terphenyl-d ₁₄	84 %	33 - 141 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as selected from the Polynuclear Aromatic Hydrocarbon analytes specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8270C Polynuclear Aromatic Hydrocarbons by GC/MS

Field ID: MW-3
Project: Lot 516 Smith St. N. Prov./RCF8338F
Client: Lincoln Environmental, Inc.
Container: 1 L Amber Glass
Preservation: Cool
Matrix: Aqueous

Laboratory ID: 50977-06
QC Batch ID: SV-1137-F
Sampled: 05-20-02
Received: 05-21-02
Extracted: 05-24-02
Analyzed: 05-25-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
91-20-3	Naphthalene	18	ug/L	10
91-57-6	2-Methylnaphthalene	BRL	ug/L	10
208-96-8	Acenaphthylene	BRL	ug/L	10
83-32-9	Acenaphthene	BRL	ug/L	10
86-73-7	Fluorene	BRL	ug/L	10
85-01-8	Phenanthrene	33	ug/L	10
120-12-7	Anthracene	BRL	ug/L	10
206-44-0	Fluoranthene	23	ug/L	10
129-00-0	Pyrene	20	ug/L	10
56-55-3	Benzo[a]anthracene	BRL	ug/L	10
218-01-9	Chrysene	BRL	ug/L	10
205-99-2	Benzo[b]fluoranthene	BRL	ug/L	10
207-08-9	Benzo[k]fluoranthene	BRL	ug/L	10
50-32-8	Benzo[a]pyrene	BRL	ug/L	10
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL	ug/L	10
53-70-3	Dibenzo[a,h]anthracene	BRL	ug/L	10
191-24-2	Benzo[g,h,i]perylene	BRL	ug/L	10
QC Surrogate Compounds		Recovery	QC Limits	
Nitrobenzene-d ₅		76 %	35 - 114 %	
2-Fluorobiphenyl		77 %	43 - 116 %	
Terphenyl-d ₁₄		86 %	33 - 141 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as selected from the Polynuclear Aromatic Hydrocarbon analytes specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

Project Narrative

Project: Lot 516 Smith St. N. Prov./RCF8338F
Client: Lincoln Environmental, Inc.

Lab ID: 50977
Received: 05-21-02

A. Physical Condition of Sample(s)

This project was received by the laboratory in satisfactory condition. The sample(s) were received undamaged in appropriate containers with the correct preservation.

B. Project Documentation

This project was accompanied by satisfactory Chain of Custody documentation. The sample container label(s) agreed with the Chain of Custody.

C. Analysis of Sample(s)

No analytical anomalies or non-conformances were noted by the laboratory during the processing of these sample(s). All data contained within this report are released without qualification.

GROUNDWATER ANALYTICAL

228 Main Street, P.O. Box 1200
Buzards Bay, MA 02532
Telephone (508) 759-4441
FAX (508) 759-4475

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

No 053089

Project Name: LOT 516 SMITH ST N. PROV.
Firm: LINCOLN ENVIRONMENTAL
Project Number: RCF8338F
Address: 333 WASHINGTON HWY
Sampler Name: [Signature]
City/State/Zip: SMITHFIELD, RI 02917
Project Manager: Paul Lachar
Telephone: 232-3353

TURNAROUND
☐ STANDARD (10 Business Days)
☒ PRIORITY (5 Business Days)
☐ RUSH (RAN-)
(Rush requires Rush Authorization Number)
Please FAX ☐ YES ☐ NO
FAX Number: 232 1130
BILLING
Purchase Order No.:
GWA Reference No.:

ANALYSIS REQUEST

Volatiles	Semi-volatiles	Pesticides/PCBs	Metals	Petroleum Hydrocarbons		HCL Waste	General Chemistry	Other
				Est. TPH	Typ. TPH			
☐ BTEX ☐ C1-C4 ☐ C5-C6 ☐ C7-C10 ☐ C11-C14 ☐ C15-C18 ☐ C19-C22 ☐ C23-C26 ☐ C27-C30 ☐ C31-C34 ☐ C35-C38 ☐ C39-C42 ☐ C43-C46 ☐ C47-C50 ☐ C51-C54 ☐ C55-C58 ☐ C59-C62 ☐ C63-C66 ☐ C67-C70 ☐ C71-C74 ☐ C75-C78 ☐ C79-C82 ☐ C83-C86 ☐ C87-C90 ☐ C91-C94 ☐ C95-C98 ☐ C99-C102 ☐ C103-C106 ☐ C107-C110 ☐ C111-C114 ☐ C115-C118 ☐ C119-C122 ☐ C123-C126 ☐ C127-C130 ☐ C131-C134 ☐ C135-C138 ☐ C139-C142 ☐ C143-C146 ☐ C147-C150 ☐ C151-C154 ☐ C155-C158 ☐ C159-C162 ☐ C163-C166 ☐ C167-C170 ☐ C171-C174 ☐ C175-C178 ☐ C179-C182 ☐ C183-C186 ☐ C187-C190 ☐ C191-C194 ☐ C195-C198 ☐ C199-C202 ☐ C203-C206 ☐ C207-C210 ☐ C211-C214 ☐ C215-C218 ☐ C219-C222 ☐ C223-C226 ☐ C227-C230 ☐ C231-C234 ☐ C235-C238 ☐ C239-C242 ☐ C243-C246 ☐ C247-C250 ☐ C251-C254 ☐ C255-C258 ☐ C259-C262 ☐ C263-C266 ☐ C267-C270 ☐ C271-C274 ☐ C275-C278 ☐ C279-C282 ☐ C283-C286 ☐ C287-C290 ☐ C291-C294 ☐ C295-C298 ☐ C299-C302 ☐ C303-C306 ☐ C307-C310 ☐ C311-C314 ☐ C315-C318 ☐ C319-C322 ☐ C323-C326 ☐ C327-C330 ☐ C331-C334 ☐ C335-C338 ☐ C339-C342 ☐ C343-C346 ☐ C347-C350 ☐ C351-C354 ☐ C355-C358 ☐ C359-C362 ☐ C363-C366 ☐ C367-C370 ☐ C371-C374 ☐ C375-C378 ☐ C379-C382 ☐ C383-C386 ☐ C387-C390 ☐ C391-C394 ☐ C395-C398 ☐ C399-C402 ☐ C403-C406 ☐ C407-C410 ☐ C411-C414 ☐ C415-C418 ☐ C419-C422 ☐ C423-C426 ☐ C427-C430 ☐ C431-C434 ☐ C435-C438 ☐ C439-C442 ☐ C443-C446 ☐ C447-C450 ☐ C451-C454 ☐ C455-C458 ☐ C459-C462 ☐ C463-C466 ☐ C467-C470 ☐ C471-C474 ☐ C475-C478 ☐ C479-C482 ☐ C483-C486 ☐ C487-C490 ☐ C491-C494 ☐ C495-C498 ☐ C499-C502 ☐ C503-C506 ☐ C507-C510 ☐ C511-C514 ☐ C515-C518 ☐ C519-C522 ☐ C523-C526 ☐ C527-C530 ☐ C531-C534 ☐ C535-C538 ☐ C539-C542 ☐ C543-C546 ☐ C547-C550 ☐ C551-C554 ☐ C555-C558 ☐ C559-C562 ☐ C563-C566 ☐ C567-C570 ☐ C571-C574 ☐ C575-C578 ☐ C579-C582 ☐ C583-C586 ☐ C587-C590 ☐ C591-C594 ☐ C595-C598 ☐ C599-C602 ☐ C603-C606 ☐ C607-C610 ☐ C611-C614 ☐ C615-C618 ☐ C619-C622 ☐ C623-C626 ☐ C627-C630 ☐ C631-C634 ☐ C635-C638 ☐ C639-C642 ☐ C643-C646 ☐ C647-C650 ☐ C651-C654 ☐ C655-C658 ☐ C659-C662 ☐ C663-C666 ☐ C667-C670 ☐ C671-C674 ☐ C675-C678 ☐ C679-C682 ☐ C683-C686 ☐ C687-C690 ☐ C691-C694 ☐ C695-C698 ☐ C699-C702 ☐ C703-C706 ☐ C707-C710 ☐ C711-C714 ☐ C715-C718 ☐ C719-C722 ☐ C723-C726 ☐ C727-C730 ☐ C731-C734 ☐ C735-C738 ☐ C739-C742 ☐ C743-C746 ☐ C747-C750 ☐ C751-C754 ☐ C755-C758 ☐ C759-C762 ☐ C763-C766 ☐ C767-C770 ☐ C771-C774 ☐ C775-C778 ☐ C779-C782 ☐ C783-C786 ☐ C787-C790 ☐ C791-C794 ☐ C795-C798 ☐ C799-C802 ☐ C803-C806 ☐ C807-C810 ☐ C811-C814 ☐ C815-C818 ☐ C819-C822 ☐ C823-C826 ☐ C827-C830 ☐ C831-C834 ☐ C835-C838 ☐ C839-C842 ☐ C843-C846 ☐ C847-C850 ☐ C851-C854 ☐ C855-C858 ☐ C859-C862 ☐ C863-C866 ☐ C867-C870 ☐ C871-C874 ☐ C875-C878 ☐ C879-C882 ☐ C883-C886 ☐ C887-C890 ☐ C891-C894 ☐ C895-C898 ☐ C899-C902 ☐ C903-C906 ☐ C907-C910 ☐ C911-C914 ☐ C915-C918 ☐ C919-C922 ☐ C923-C926 ☐ C927-C930 ☐ C931-C934 ☐ C935-C938 ☐ C939-C942 ☐ C943-C946 ☐ C947-C950 ☐ C951-C954 ☐ C955-C958 ☐ C959-C962 ☐ C963-C966 ☐ C967-C970 ☐ C971-C974 ☐ C975-C978 ☐ C979-C982 ☐ C983-C986 ☐ C987-C990 ☐ C991-C994 ☐ C995-C998 ☐ C999-1000								

INSTRUCTIONS: Use separate line for each container (except replicates).

DATE	TIME	SAMPLE IDENTIFICATION	MATRIX	TYPE	CONTAINER(S)	PRESERVATION	LABORATORY NUMBER (Lab Use Only)	ANALYSIS REQUEST
5/24/04	11:00	MW-1	WATER	GROUNDWATER	100 mL	NO	1177	☒ BTEX ☒ C1-C4 ☒ C5-C6 ☒ C7-C10 ☒ C11-C14 ☒ C15-C18 ☒ C19-C22 ☒ C23-C26 ☒ C27-C30 ☒ C31-C34 ☒ C35-C38 ☒ C39-C42 ☒ C43-C46 ☒ C47-C50 ☒ C51-C54 ☒ C55-C58 ☒ C59-C62 ☒ C63-C66 ☒ C67-C70 ☒ C71-C74 ☒ C75-C78 ☒ C79-C82 ☒ C83-C86 ☒ C87-C90 ☒ C91-C94 ☒ C95-C98 ☒ C99-C102 ☒ C103-C106 ☒ C107-C110 ☒ C111-C114 ☒ C115-C118 ☒ C119-C122 ☒ C123-C126 ☒ C127-C130 ☒ C131-C134 ☒ C135-C138 ☒ C139-C142 ☒ C143-C146 ☒ C147-C150 ☒ C151-C154 ☒ C155-C158 ☒ C159-C162 ☒ C163-C166 ☒ C167-C170 ☒ C171-C174 ☒ C175-C178 ☒ C179-C182 ☒ C183-C186 ☒ C187-C190 ☒ C191-C194 ☒ C195-C198 ☒ C199-C202 ☒ C203-C206 ☒ C207-C210 ☒ C211-C214 ☒ C215-C218 ☒ C219-C222 ☒ C223-C226 ☒ C227-C230 ☒ C231-C234 ☒ C235-C238 ☒ C239-C242 ☒ C243-C246 ☒ C247-C250 ☒ C251-C254 ☒ C255-C258 ☒ C259-C262 ☒ C263-C266 ☒ C267-C270 ☒ C271-C274 ☒ C275-C278 ☒ C279-C282 ☒ C283-C286 ☒ C287-C290 ☒ C291-C294 ☒ C295-C298 ☒ C299-C302 ☒ C303-C306 ☒ C307-C310 ☒ C311-C314 ☒ C315-C318 ☒ C319-C322 ☒ C323-C326 ☒ C327-C330 ☒ C331-C334 ☒ C335-C338 ☒ C339-C342 ☒ C343-C346 ☒ C347-C350 ☒ C351-C354 ☒ C355-C358 ☒ C359-C362 ☒ C363-C366 ☒ C367-C370 ☒ C371-C374 ☒ C375-C378 ☒ C379-C382 ☒ C383-C386 ☒ C387-C390 ☒ C391-C394 ☒ C395-C398 ☒ C399-C402 ☒ C403-C406 ☒ C407-C410 ☒ C411-C414 ☒ C415-C418 ☒ C419-C422 ☒ C423-C426 ☒ C427-C430 ☒ C431-C434 ☒ C435-C438 ☒ C439-C442 ☒ C443-C446 ☒ C447-C450 ☒ C451-C454 ☒ C455-C458 ☒ C459-C462 ☒ C463-C466 ☒ C467-C470 ☒ C471-C474 ☒ C475-C478 ☒ C479-C482 ☒ C483-C486 ☒ C487-C490 ☒ C491-C494 ☒ C495-C498 ☒ C499-C502 ☒ C503-C506 ☒ C507-C510 ☒ C511-C514 ☒ C515-C518 ☒ C519-C522 ☒ C523-C526 ☒ C527-C530 ☒ C531-C534 ☒ C535-C538 ☒ C539-C542 ☒ C543-C546 ☒ C547-C550 ☒ C551-C554 ☒ C555-C558 ☒ C559-C562 ☒ C563-C566 ☒ C567-C570 ☒ C571-C574 ☒ C575-C578 ☒ C579-C582 ☒ C583-C586 ☒ C587-C590 ☒ C591-C594 ☒ C595-C598 ☒ C599-C602 ☒ C603-C606 ☒ C607-C610 ☒ C611-C614 ☒ C615-C618 ☒ C619-C622 ☒ C623-C626 ☒ C627-C630 ☒ C631-C634 ☒ C635-C638 ☒ C639-C642 ☒ C643-C646 ☒ C647-C650 ☒ C651-C654 ☒ C655-C658 ☒ C659-C662 ☒ C663-C666 ☒ C667-C670 ☒ C671-C674 ☒ C675-C678 ☒ C679-C682 ☒ C683-C686 ☒ C687-C690 ☒ C691-C694 ☒ C695-C698 ☒ C699-C702 ☒ C703-C706 ☒ C707-C710 ☒ C711-C714 ☒ C715-C718 ☒ C719-C722 ☒ C723-C726 ☒ C727-C730 ☒ C731-C734 ☒ C735-C738 ☒ C739-C742 ☒ C743-C746 ☒ C747-C750 ☒ C751-C754 ☒ C755-C758 ☒ C759-C762 ☒ C763-C766 ☒ C767-C770 ☒ C771-C774 ☒ C775-C778 ☒ C779-C782 ☒ C783-C786 ☒ C787-C790 ☒ C791-C794 ☒ C795-C798 ☒ C799-C802 ☒ C803-C806 ☒ C807-C810 ☒ C811-C814 ☒ C815-C818 ☒ C819-C822 ☒ C823-C826 ☒ C827-C830 ☒ C831-C834 ☒ C835-C838 ☒ C839-C842 ☒ C843-C846 ☒ C847-C850 ☒ C851-C854 ☒ C855-C858 ☒ C859-C862 ☒ C863-C866 ☒ C867-C870 ☒ C871-C874 ☒ C875-C878 ☒ C879-C882 ☒ C883-C886 ☒ C887-C890 ☒ C891-C894 ☒ C895-C898 ☒ C899-C902 ☒ C903-C906 ☒ C907-C910 ☒ C911-C914 ☒ C915-C918 ☒ C919-C922 ☒ C923-C926 ☒ C927-C930 ☒ C931-C934 ☒ C935-C938 ☒ C939-C942 ☒ C943-C946 ☒ C947-C950 ☒ C951-C954 ☒ C955-C958 ☒ C959-C962 ☒ C963-C966 ☒ C967-C970 ☒ C971-C974 ☒ C975-C978 ☒ C979-C982 ☒ C983-C986 ☒ C987-C990 ☒ C991-C994 ☒ C995-C998 ☒ C999-1000

REMARKS / SPECIAL INSTRUCTIONS	DATA QUALITY OBJECTIVES	CHAIN-OF-CUSTODY RECORD																																			
Regulatory Program ☐ Safe Drinking Water Act ☐ MA DEP Form ☒ NPDES/Clean Water Act Specify State: _____ ☐ RCRA/Haz. Waste Char. ☐ MA MCP (310 CMR 40) Reportable Concentrations: ☐ RCGW - 1 ☐ RCS - 1 ☐ RCGW - 2 ☐ RCS - 2 ☐ MA Dredge Disposal ☐ NH ☐ RI ☐ CT ☐ ME Specify Category: <u>GB</u>	Project Specific QC Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. For water samples, each MS, MSD and Sample Duplicate requires an additional sample aliquot. Project Specific QC Required ☐ Sample Duplicate ☐ Matrix Spike ☐ Matrix Spike Duplicate Selection of QC Sample ☐ Selected by laboratory ☐ Please use sample	NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof <table border="1"> <tr> <td>Relinquished by Sampler:</td> <td>Date</td> <td>Time</td> <td>Received by</td> <td>Reception Temperature</td> </tr> <tr> <td></td> <td>5/24/04</td> <td>11:00</td> <td>[Signature]</td> <td>71</td> </tr> <tr> <td>Relinquished by:</td> <td>Date</td> <td>Time</td> <td>Received by</td> <td>Shipping/Airbill Number:</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Relinquished by:</td> <td>Date</td> <td>Time</td> <td>Received by Laboratory:</td> <td>Custody Seal/ Cooler Serial Number:</td> </tr> <tr> <td></td> <td>5/24/04</td> <td>16:30</td> <td>[Signature]</td> <td></td> </tr> <tr> <td colspan="5">Method of Shipment: ☐ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐</td> </tr> </table>	Relinquished by Sampler:	Date	Time	Received by	Reception Temperature		5/24/04	11:00	[Signature]	71	Relinquished by:	Date	Time	Received by	Shipping/Airbill Number:						Relinquished by:	Date	Time	Received by Laboratory:	Custody Seal/ Cooler Serial Number:		5/24/04	16:30	[Signature]		Method of Shipment: ☐ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐				
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