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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

PRELIMINARY ENVIRONMENTAL ASSESSMENT OF CALMAR INCORPORATED

Prepared for:

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TABLE OF CONTENTS

Section		Page
1.0	INTRODUCTION	1
	1.1 Background and Purpose	1
	1.2 Site Location and Surrounding Land Use	1
	1.3 Site History	5
	1.4 Areas of Concern	5
	1.4.1 Waste Storage Area	5
	1.4.2 Outlet Area and Compressor Area	9
2.0	SUB-SURFACE INVESTIGATION	9
	2.1 Waste Storage Area Boring Program	13
	2.2 Utility Trench Outlet and Compressor Chiller Area Boring Program	13
	2.3 Monitoring Wells	16
3.0	CHEMICAL ANALYSIS	16
	3.1 Soil Sample Analysis	16
	3.1.1 Borings B-1 and B-17 Sample Analysis	18
	3.2 Water Sample Analysis	37
	3.3 Clarifier Sample Analysis	37
	3.4 Discussion of Analytical Findings	39
4.0	FINDINGS	41
	4.1 Soil Cleanup Levels	41
	4.2 Definition of Contaminant Boundaries	41
	4.3 Groundwater Sampling Data	42
	4.4 Clarifier Characterization	42
	4.5 Initial Report of Carbon Tetrachloride	42

FIGURES

Number		Page
1	Site Location Map	2
2	Water Resources Control Board Identified Sites	3
3	CERCLIS Sited	6
4	Facility Site Map	8
5	Waste Storage Area Boring Location Map	14
6	Truck Access Lane Boring Location Map	15
7	Groundwater Monitoring Well Location Map	17

TABLES

Number		Page
1	Sites Located on Figure 2	4
2	Sited Located on Figure 3	7
3	Sample Identification and Field Analytical Readings	10
4	Boring Depths	12
5	Soil Sample Analytical Results Summary	19
6	Water Sample Analytical Results Summary	38
7	Clarifier Samples Analytical Results Summary	39
8	Evaluation of Analytical Results	40

TABLE OF CONTENTS (Con't)

APPENDICES

A	California Regional Water Quality Control Board, Los Angeles Region Letters Dated June 18, 1987 and March 23, 1988
B	Boring Logs
C	Standard Procedures for Field Soil Pore Space Gas Measurement
D	Well Construction Diagrams and Sieve Analysis
E	Laboratory Reports
F	Analytical Reports for the Re-Analysis of Samples 1 and 6 from Boring B-1 and Analysis of Samples from Boring B-17
G	Calmar Internal Work Orders

1.0 INTRODUCTION

1.1 Background and Purpose

The purpose of this document is to describe work performed at the request of Calmar's legal counsel (Arthur Fine) to respond to letters from the California Regional Water Quality Control Board - Los Angeles Region (CRWQCB) dated June 18, 1987 and March 23, 1988. Within these letters, Mr. Roy R. Sakaida (Senior Water Resource Control Engineer) expressed concern "that organic chemical use has occurred at the site (Calmar Inc., located in the City of Industry) and potential contamination pathways exist. Specifically, the waste storage area where evidence of storage barrel leakage is apparent, the areas where oily waste from compressors, chillers or coolers was observed, and the outlets of the concrete utility trenches." These letters in their entirety are included in Appendix A.

A Work Plan was written by BCLA to address these concerns, and was accepted and approved by the CRWQCB. The work plan is on file at the CRWQCB. The following report documents the activities which were performed in accordance with the Work Plan and presents the data which were generated by that program.

1.2 Site Location and Surrounding Land Use

The Calmar Inc. site, which is approximately 13 acres in area, is located in the City of Industry (Los Angeles County), California. It occupies the western corner of Turnbull Canyon Road and Proctor Avenue (see Figure 1). The occupant and address of the subject site is:

Calmar Incorporated Dispensing Systems (Calmar)
333 South Turnbull Canyon Road
City of Industry, CA 91749

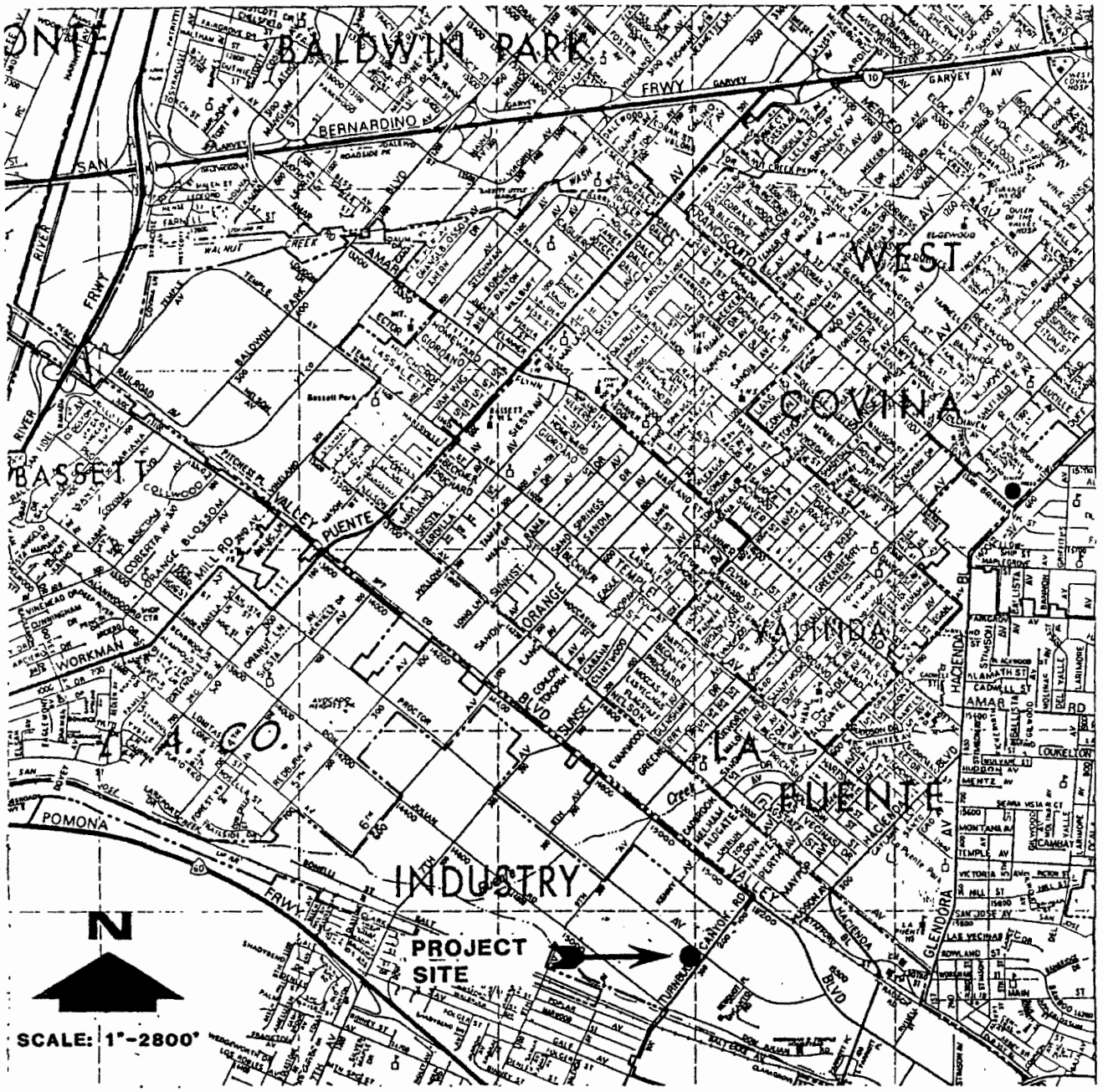
The northeast boundary of Calmar is Proctor Avenue, the southeast boundary is Turnbull Canyon Road. The properties to the northwest and southwest are occupied by industrial buildings.

Recognizing that groundwater contamination is a regional problem for the City of Industry and surrounding areas, BCLA consulted various sources with the intention of identifying other potential sources of soil and groundwater pollution near Calmar. Of particular concern are any such sites located hydraulically upgradient of Calmar which may have used the identified chemicals of concern (1,1 - dichloroethene; dichloromethane; 1,1,1 - trichloroethane; trichloroethylene; tetrachloroethene). The time available to perform these investigations was limited by the due date to present this report to the CRWQCB. Information gathered to date is summarized below:

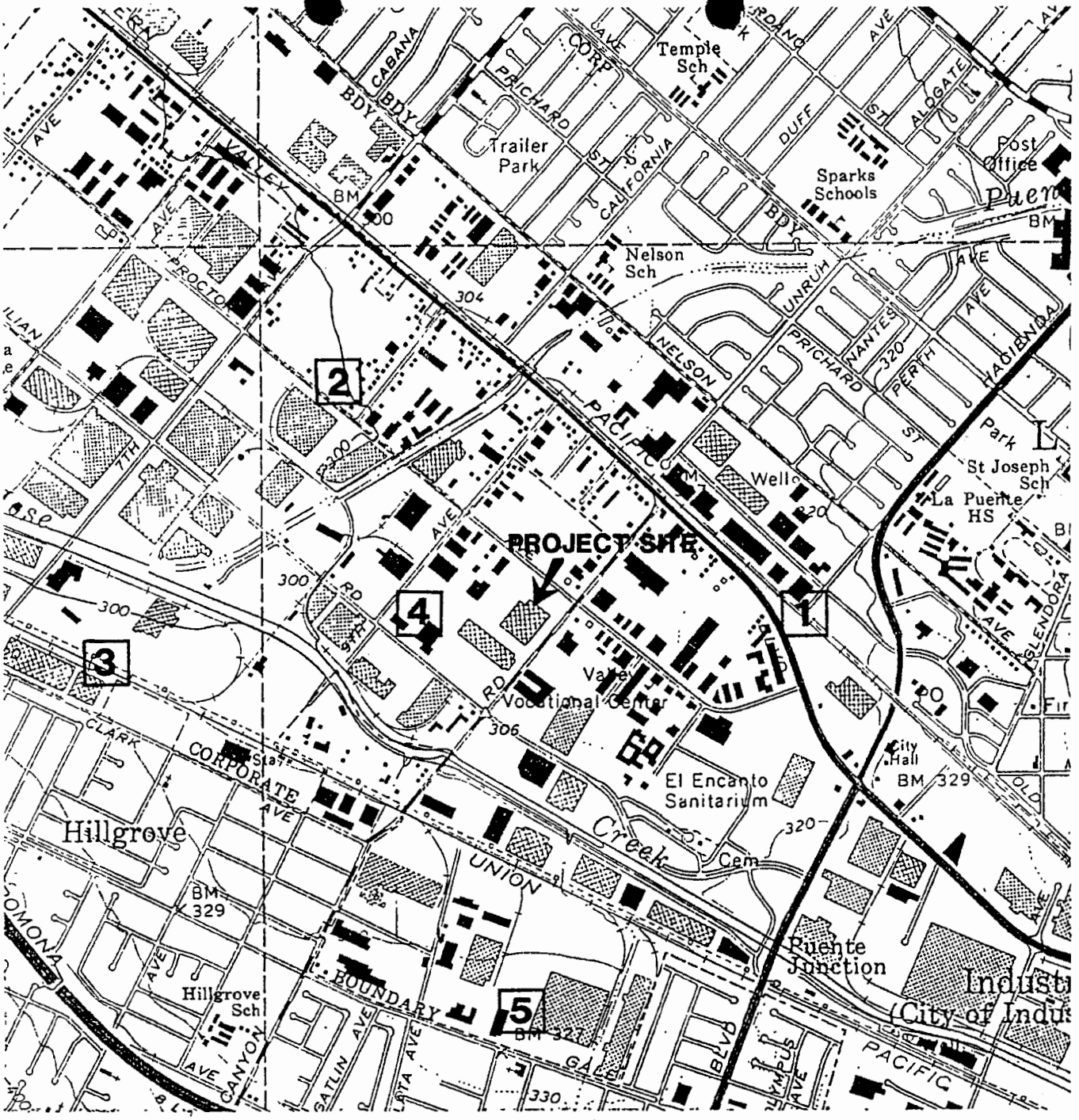
Hazardous Waste and Substances Sites List
Pursuant to AB3750 January 1, 1988

BCLA found five sites mentioned in the AB3750 list which were in the vicinity (1 mile) of the project site. These sites are shown on Figure 2.

A phone call made by BCLA on October 18, 1988, to Diane Edwards, Information Officer at the State Water Resources Control Board (SWRCB) in Sacramento, produced brief reports on the sites which are quoted on Table 1.



BCL	Source: THOMAS BROTHERS	Title: SITE LOCATION MAP	1



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BCL	Source: US GEOLOGICAL SURVEY BALDWIN PARK QUADRANGLE	Title: WATER RESOURCES CONTROL BOARD IDENTIFIED SITES	2

Table 1

Sites Located on Figure 2

WATER RESOURCES CONTROL BOARD IDENTIFIED SITES

Number	Site Name and Address	Agency Comments
1.	Hudson Paint Corp./ Universal Paint Corp. 111 Hudson Avenue Industry, CA 91744	"Substance leak was solvents. Last update - 4/6/88. Groundwater case. Site investigation in progress. No remedial action to date."
2.	Western Gear Corp. 14724 E. Proctor Industry, CA 91744	"Solvent leak reported 10/23/84. Update - 6/15/88. Groundwater case. Under investigation. No remedial action to date."
3.	Richardson Battery Parts 14755 E. Salt Lake Industry, CA 91746	"Substance was miscellaneous motor vehicle fuels. Reported - 5/6/86. Last update - 6/10/88. Groundwater case. Investigation in progress."
4.	Dubois Chemical 15010 Don Julian Road Industry, CA 91746	"Solvents. Date reported - 8/1/86. Last update - 4/15/88. Groundwater case. Investigation in progress."
5.	Challenge-Cook Brothers, Inc. 15421 E. Gale Avenue Industry, CA 91746	"Substance was not reported. Date - 11/29/83. Last update - 4/22/88. Case type is unknown. Status shows signed off. Remedial action deemed unnecessary or completed."

United States Environmental Protection Agency (EPA)

BCLA reviewed the EPA's L8 Report for reference to sites in the vicinity of the project site, which may be under investigation or remedial action by the EPA. The L8 Report is part of the Superfund database (CERCLIS), which contains potential hazardous waste sites that have been brought to the attention of the EPA. The EPA does not, however, guarantee that their database contains all potential hazardous waste sites that exist.

BCLA found seven sites listed in the L8 Report within a one mile area of the project site. These sites are shown on Figure 3 and the L8 comments about these sites are on Table 2.

Further investigations are underway to identify other potential sources of contamination and to gather information on the actual and potential impacts of these sites. The CRWQCB's assistance in this activity would be invaluable.

1.3 Site History

The Calmar facility was built on this site in about 1963. Prior to that time, the property was undeveloped. Calmar manufactures dispensing systems for household products (i.e., lotion pumps and spray pumps). These products are fabricated by injection molding of plastics. Raw material in the form of plastic beads is held in outside dispensing silos.

1.4 Areas of Concern

Three areas of concern have been specified by the CRWQCB in the letters included as Appendix A. One area is the Waste Storage Area at the western corner of the Calmar facility. The other two areas are the Compressor Chiller/Cooler Area (Compressor Area) and the Utility Trench Outlet Area (Outlet Area). Figure 4 shows these areas in relationship to the main plant.

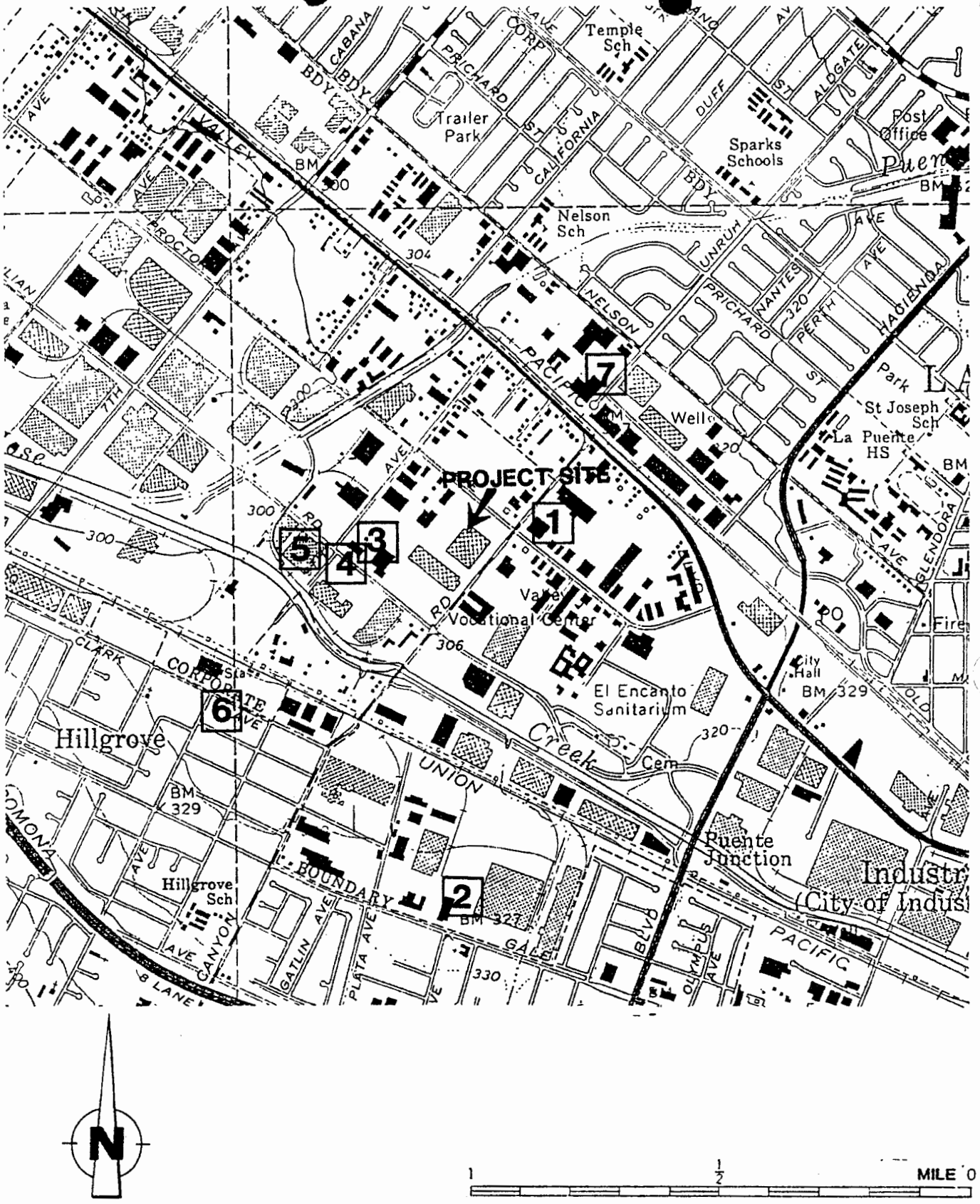
1.4.1 Waste Storage Area

The asphalt paved Waste Storage Area has been used as an empty 55-gallon drum storage area. Empty drums are accumulated in this area until they are picked up by the vendors supplying the chemicals. The drums were laid on their sides and stacked to reduce area usage. The CRWQCB noted that residual liquids in some drums had leaked, causing evident surficial staining to the asphalt.

According the Calmar representatives, the following products are received at Calmar in drums:

Isopropyl Alcohol
1,1,1-Trichloroethane
Stoddard Solvent
Multiple Purpose Oil
Petroleum Lubricating Oil with Inhibitors
Withrow 656 H Med Hydraulic Oil
Withrow 657 H Hvy Med Hydraulic Oil

The practice of laying empty drums on their sides was discontinued by Calmar as of July 1987. The drums (which are closed-top with two bung holes and a vent) are now stored upright on wooden pallets.



BCL	Source: US GEOLOGICAL SURVEY BALDWIN PARK QUADRANGLE	Title: CERCLIS SITES	3

Table 2

Sites Located on Figure 3

CERCLIS SITES

Number	Site Name and Address	NFA Flag	Event Type	Start Date	Compl. Date
1.	Benchmark Technology 200 S. Turnbull Cyn. Rd. Industry, CA 91749	NFA(1)	DS 1(2) PA 1(3)		3/01/86 12/01/87
2.	Challenge-Cook Bros. 15421 E. Gale Ave. Industry, CA 91745		DS 1 PA 1	 8/01/84	8/01/80 5/01/85
3.	Dubois Chemical/Div of Chemed Corp. 15010 Don Julian Rd. Industry, CA 91749	NFA	DS 1 PA 1		10/01/85 12/01/87
4.	Gary Safe Company 330 9th Avenue Industry, CA 91749	NFA	DS 1 PA 1		3/01/85 10/01/86
5.	W. R. Grace/Chemed Corp. 9th & Don Julian Rd. Industry, CA 91746		DS 1 PA 1		11/01/79 4/01/80
6.	Hill Brothers Chem Co. 15017 E. Clark Ave. Industry, CA 91745		DS 1 PA 1		3/01/85 12/01/86
7.	Screwcorp - Unruh Facility 135 N. Unruh Ave. Industry, CA 91744	NFA	DS 1 PA 1		3/01/85 12/01/86

(1) NFA=No Further Action. This classification indicates one of the following has occurred:

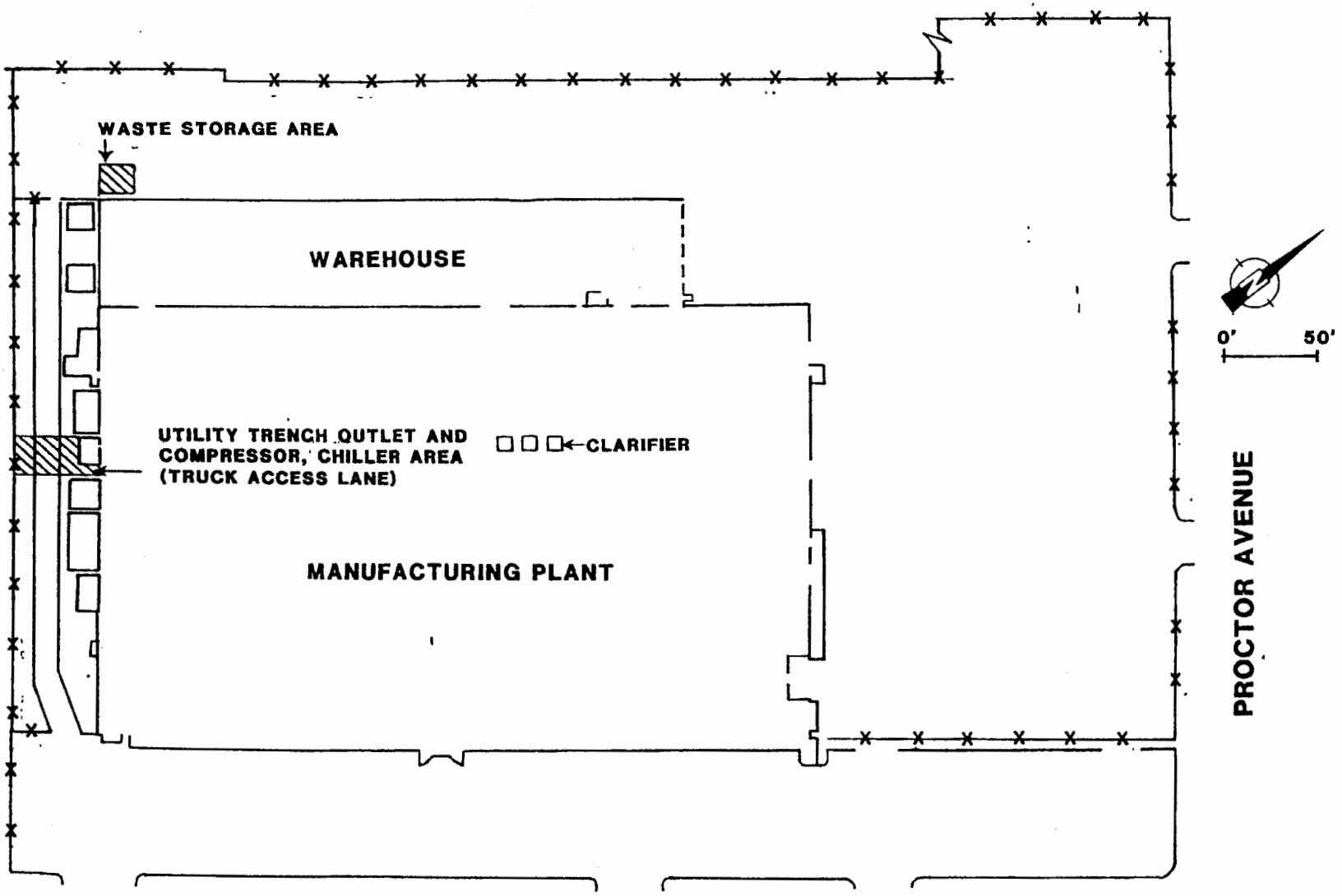
A. The preliminary assessment investigation found no information indicating that hazardous substances/wastes were ever used/produced.

B. The preliminary assessment indicated that hazardous substances/wastes were used/produced at low volumes or concentrations that would have minimal impact on public health or the environment.

C. The preliminary assessment indicates that all hazardous substance contamination has been effectively mitigated.

(2) DS 1 = Discovery Phase I

(3) PA 1 = Preliminary Assessment I



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Source: BCL ASSOCIATES, INC.

Title: FACILITY SITE MAP

4

1.4.2 Outlet Area and Compressor Area

These two areas are adjacent to one another. The Outlet Area shows staining, probably form oily water. This staining crosses the concrete truck access lane toward the property line. THe chemicals used in these areas are Hydraulic Oil and Compressor Oil. No solvents were reportedly used in these areas.

The Utility Trench, which drains into the outlet area, is the probable source of the liquid which stained the concrete of the truck access lane. This Utility Trench extends into the plant. Its purpose is to provide access to pipes and electrical conduits which extend along its length. Hydraulic oil and water from reportedly infrequent line breaks have accumulated in the trench. This liquid apparently drained out onto the Outlet Area. Steps have been taken to clean the Utility Trench and prevent future releases. Calmar Internal Work Order B-23189 dated October 11, 1988, (included in Appendix G) authorized Calmar's Maintenance Department to do the following: clean the trench by whatever means is appropriate, initiate an ongoing housekeeping procedure and an ongoing hydraulic oil spill cleanup method. An emergency spill procedure is a matter of Calmar policy. This procedure is included in Appendix G. Additional containment measures are being considered by Calmar and will be implemented soon.

The Compressor Area exhibits many of the same characteristics as the Outlet Area. An oil-like stain crosses the truck access lane toward the property line. The staining may have been caused by the "bleeding" of liquids accumulated in the compressor tanks.

It has been reported by Calmar that the source of oil staining at the compressor area has been corrected by maintenance procedure changes and equipment redesign. Additional containment measures are being considered by Calmar and will be implemented soon.

2.0 SUB-SURFACE INVESTIGATION

Sub-surface investigation at Calmar was conducted by BCLA using a hollow-stem auger drill rig to obtain samples at locations and depths prescribed in the approved Work Plan. Table 3 identifies the samples collected from Borings B1 through B17 in relation to their corresponding depths of collection, field analytical readings and whether or not the samples were selected for laboratory analysis. The borings are segregated in Table 3 by Area of Concern. Table 4 shows the total depth of each boring, and the depth at which groundwater was encountered.

A total of 17 hollow stem auger soil borings were completed at the Calmar site. during this phase of investigation. All soil borings were logged by a qualified geologist to provide for the construction of a detailed lithologic profile of the soils on site.

Directly below the pavement to approximately 3 feet below ground surface, a silty sand with pea gravel fill was encountered. The native soil horizons below the fill consisted of a fine to coarse sand (0.125mm-0.5mm) with numerous interfingering lenses of silty clay to clay to a depth of 55 feet below ground surface.

Table 4 shows the depth at which groundwater was encountered in Borings B-1, B-5, B-15, B-17 and B-8 was between 26 and 29.5 feet below ground surface. Groundwater was encountered at 37 feet below ground surface at Boring B-16.

TABLE 3
Sample Identification
and Field Analytical Readings

AREA OF CONCERN	BORING NUMBER	SAMPLE NUMBER	DEPTH*	FIELD ANALYTICAL READINGS (in ppm) ABOVE BACKGROUND PID	FID	IR	LABORATORY ANALYSIS REQUESTED
WASTE STORAGE AREA	B-1	1	0.5	0.7	8	935	X
		2	1.5	98	15.5	16	X
		3	5	3.6	3	ND	
		4	10	5.1	4.5	16	X
		5	15	0	0.4	16	
		6	20	0.8	3	16	X
		7	25	2.8	3	ND	X
		8	30	3.4	3	ND	X
	B-2	23	0.5	7	22	35	X
		24	2.5	10	17	ND	
		25	5	5	4	ND	
		26	10	5	4	35	X
	B-3	57	1	17	500	21	X
		58	2.5	17	45	42	
		59	5	17	35	42	X
		60	10	12	20	ND	X
	B-4	61	1	38	95	ND	X
		62	2.5	28	45	ND	
		63	5	28	40	ND	X
		64	10	11	22	ND	X
	B-5	9	0.5	8	8	650	X
		10	2.5	8	76	104	X
		11	5	Bg	5	104	X
		12	10	1	3	104	X
		13	15	1	2	ND	X
		14	20	2	2	ND	X
		15	25	4	1	ND	X
		16	30	4	5	ND	X
	B-6	20	0.25	3	Bg	ND	
		21	2.5	3	3	ND	
		22	5	2	2	69	X
	B-7	17	0.25	2	Bg	35	
		18	2.5	3	1	35	X
		19	5	2	Bg	35	
	B-15	65	1	4	7	42	X
		66	5	Bg	Bg	ND<17	X
		67	10	4	5	42	X
		68	15	3	3	ND<17	
		69	20	3	Bg	ND<17	
		70	25	7	3	ND<17	X
		71	30	3	5	NR	X
	B-17	87	0	5	3	18,124	X
		88	2.5	18	26	32	X
		89	5	6	11	32	X
		90	10	8	10	32	X
		91	15	6	2	ND <17	X
		92	20	1	1	ND <17	X
		93	25	4	2	ND <17	X
		94	30	4	66	ND <17	X

X - Analyzed by EPA Methods 8010, 8015, and 8020

ND - Not detected

NR - No reading due to loss of sample

TABLE 3
Sample Identification
and Field Analytical Readings

AREA OF CONCERN	BORING NUMBER	SAMPLE NUMBER	DEPTH*	FIELD ANALYTICAL READINGS (in ppm) ABOVE BACKGROUND PID	FID	IR	LABORATORY ANALYSIS REQUESTED
UTILITY TRENCH OUTLET	B-8	27	1	5	11	208	X
		28	2.5	3	15	138	X
		29	5	3	4	138	X
		30	10	2	5	121	X
		31	15	1	2	69	X
		32	20	6	5	35	X
		33	25	6	5	35	X
		34	30	Bg	5	69	X
	B-9	35	1	3	27	30	X
		36	2.5	3	10	30	
		37	5	2	5	30	
		38	10	2	2	30	X
	B-10	43	1	2	12	30	X
		44	2.5	2	8	30	
		45	5	2	Bg	30	
		46	10	Bg	Bg	59	X
	B-11	39	1	1	Bg	ND<17	
		40	2.5	2	Bg	30	X
		41	5	3	Bg	30	
		42	10	2	Bg	59	X
COMPRESSOR, CHILLER AREA	B-12	47	1	Bg	Bg	ND<17	X
		48	2.5	1	Bg	30	
		49	5	1	Bg	30	
		50	10	1	Bg	45	X
	B-13	54	1	2	5	104	X
		55	2.5	2.2	3	104	
		56	5	2	2	89	X
	B-14	51	1	3	Bg	89	
		52	2.5	2	Bg	59	X
		53	5	Bg	Bg	59	
DOWN GRADIENT BORING	B-16	72	1	0.2	1	ND<17	X
		73	2.5	0.4	0	ND<17	
		74	5	0	1	ND<17	X
		75	12	0	0	ND<17	
		76	17	0	0	ND<17	
		77	22	0	0	ND<17	
		78	27	0	0	ND<17	
		79	32	0	0	ND<17	
		80	37	0	1	ND<17	X
		81	42	0	0	ND<17	X

X - Analyzed by EPA Methods 8010, 8015, and 8020

TABLE 4

Boring Depths

Areas of Concern	Boring Number	Scheduled Depth*	Actual Depth*	Groundwater Depth*
Waste Storage Area	B-1	40	30	26
	B-2	10	10	NE
	B-3	10	10	NE
	B-4	10	10	NE
	B-5	40	30	27
	B-6	5	5	NE
	B-7	5	5	NE
	B-15 (2)	(1)	30 [44]	26
	B-17	(1)	31.5	29.5
Utility Trench Outlet	B-8 (2)	40	30 [47]	28
	B-9	10	10	NE
	B-10	10	10	NE
	B-11	10	10	NE
Compressor, Chiller Area	B-12	10	10	NE
	B-13	5	5	NE
	B-14	5	5	NE
Down Gradient Boring	B-16	(1)	55	37

(1) Boring not scheduled in Work Plan

(2) Boring subsequently advanced further to accept monitoring well. Final depth shown in brackets, ([ ]).

*=In feet below ground surface.

NE=Not Encountered

Soil samples at Calmar were collected using a hollow stem auger drill rig equipped with a split tube sampler. The samples were collected using a 24-inch long split tube sampler outfitted with four six-inch long, clean, one and one-half inch diameter stainless steel sleeves. The auger flights were cleaned prior to beginning the project and at the conclusion of the project. The auger bit was scrubbed clean with soapy tap water and a brush followed by a clean water rinse between each boring. The BCLA field supervisor was responsible for inspecting the drill bit, inside of the auger flights and sample collection tube to assure that were clean prior to drilling each hole. No lubricants other than clean water or teflon tape were used on the joints between the auger flights.

A portion of soil from each sampling interval was inspected in the field by a qualified geologist. These observations were documented on a boring/lithologic log. Copies of these logs may be found in Appendix B.

In addition, a portion of soil was subjected to the screening procedure described in Appendix C. The results of this field analysis may be seen in Table 1. The field instruments used to screen soil samples included: a Flame Ionization Detector (FID), manufactured by Century/Foxboro, Model 108 Organic Vapor Analyzer (OVA); a Photo Ionizaton Detector (PID), manufactured by HNU, Model PI 101; and an Infrared Spectrometer (IR), manufactured by Miran, Model 1A. Calibration procedures and specifications for these instruments were submitted to the CRWQCB on August 25, 1988.

2.1 Waste Storage Area Boring Program

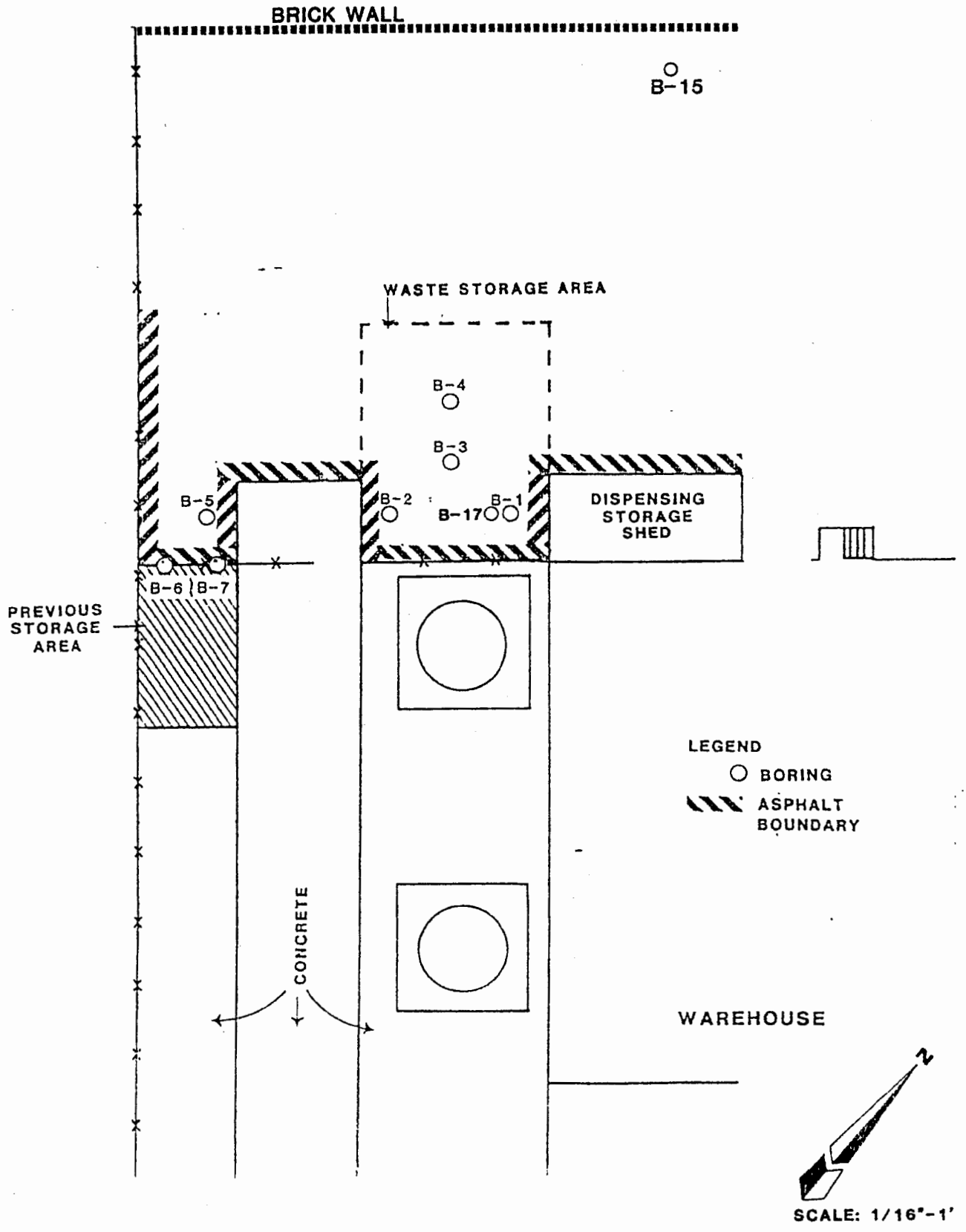
On June 8, 1988, all boring locations in concreted areas were cored to permit drilling. Boring locations for the Waste Storage Area are shown in Figure 5. Boring B-1 was advanced to a total depth of 30 feet below ground surface (BGS) and halted due to the encounter of a possible confining layer of clay. Research of CRWQCB files indicated that this clay layer is not a competent aquitard, therefore, its presence does not prohibit deeper exploration and/or well placement.

On July 27 and 28, 1988, borings B-2 through B-7 inclusive and B-15 were placed at the Waste Storage Area. B-15 was not scheduled in the original Work Plan, it was placed at the request of the CRWQCB. B-15 was subsequently converted to a monitoring well (MW-3) on August 26, 1988.

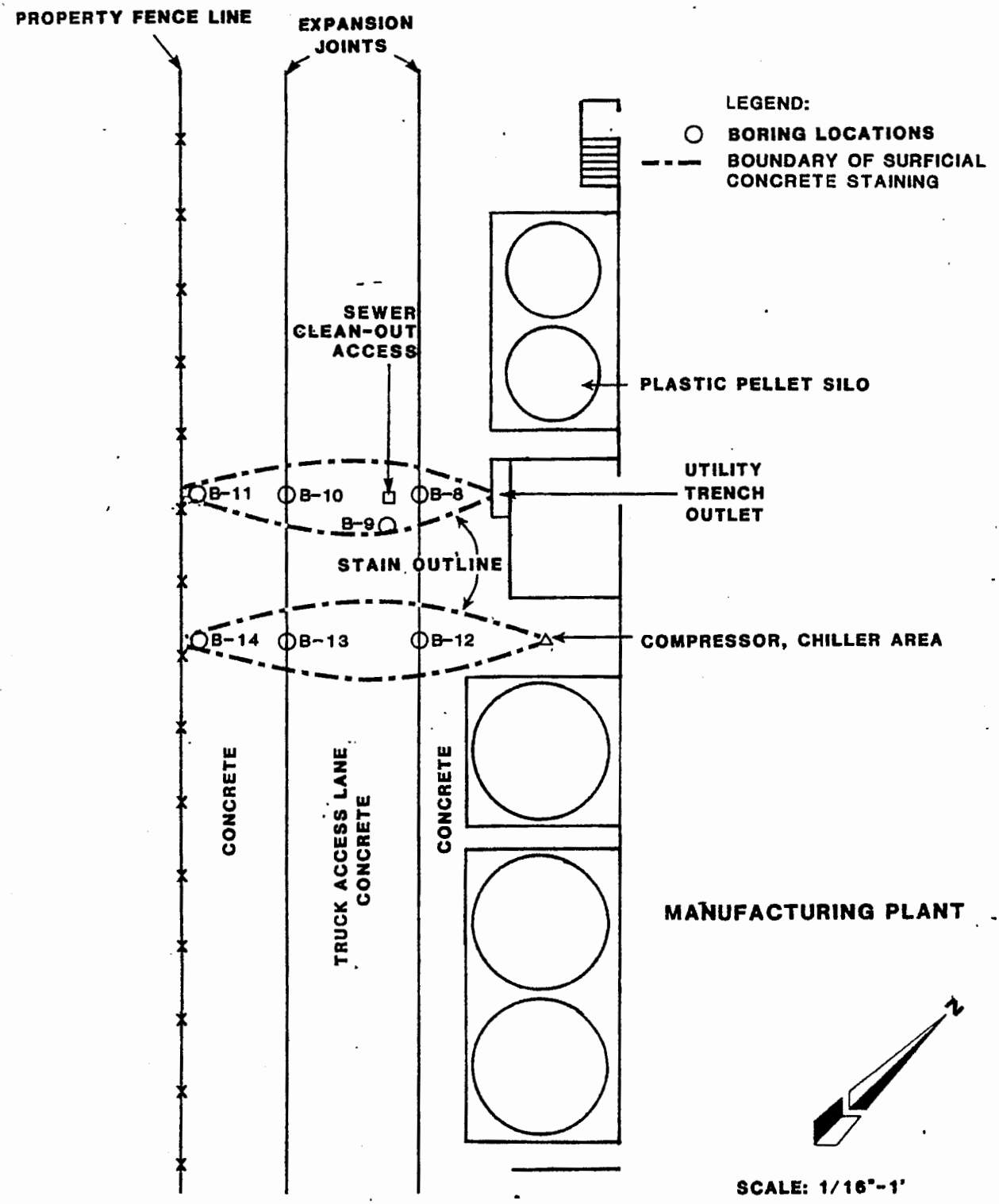
Laboratory analysis of samples obtained from boring B-1 reported carbon tetrachloride at levels uncharacteristic to the site. To verify or deny these initial findings, Boring B-17 was placed within 3 feet of Boring B-1. Samples were collected at intervals similar to those for B-1, to a total depth of 31.5 feet below ground surface. For further discussion of the analysis of these samples, please refer to Section 3.1.1.

2.2 Utility Trench Outlet and Compressor Chiller Area Boring Program

Borings B-8 through B-14 inclusive were placed in these areas on July 27 and 28, 1988. The locations of these borings are shown in Figure 6.



BCL	Source: BCL ASSOCIATES, INC.	Title: WASTE STORAGE AREA BORING LOCATION MAP	5



BCL	Source: BCL ASSOCIATES, INC.	Title: TRUCK ACCESS LANE BORING LOCATION MAP	6

The presence of underlying pipelines forced the relocation of borings B-10 and B-13. The projected placement of these borings were to have intersected the expansion joint on the southwest side of the Truck Lane. The borings were placed approximately 2 feet closer to the Calmar Building than originally proposed.

Boring B-8 was subsequently converted to a monitoring well (MW-2) on August 26, 1988.

2.3 Groundwater Monitoring Wells

On August 25, 1988, boring B-16 was placed to the northeast of the Waste Storage Area. Figure 7 shows the location of all the Groundwater Monitoring Wells. Soil samples were taken from B-16 at the intervals shown in Table 3. Boring B-16 was then deepened to permit the construction of a monitoring well, numbered Monitoring Well-1 (MW-1).

On August 26, 1988, borings B-8 and B-15 were redrilled and deepened to accept monitoring wells numbered MW-2 and MW-3 respectively.

During the prior stage of sampling, a soil sample was collected from the 26-30 foot BGS interval at B-15. This sample was within the saturated zone of this boring. The sample was subjected to Sieve Analysis to verify the choice of filter media (#3 Monterey Sand) and well screen slot size (0.02 inches), as proposed in the Work Plan. The result of this analysis is shown in Appendix D.

The wells were constructed with a 30 foot stainless steel screen interval. The screen extended 10 feet above the water level encountered in each specific boring. Well construction diagrams for each well are included in Appendix D.

On August 31, 1988, the wells were developed by overpumping. The development water was drummed, awaiting disposition.

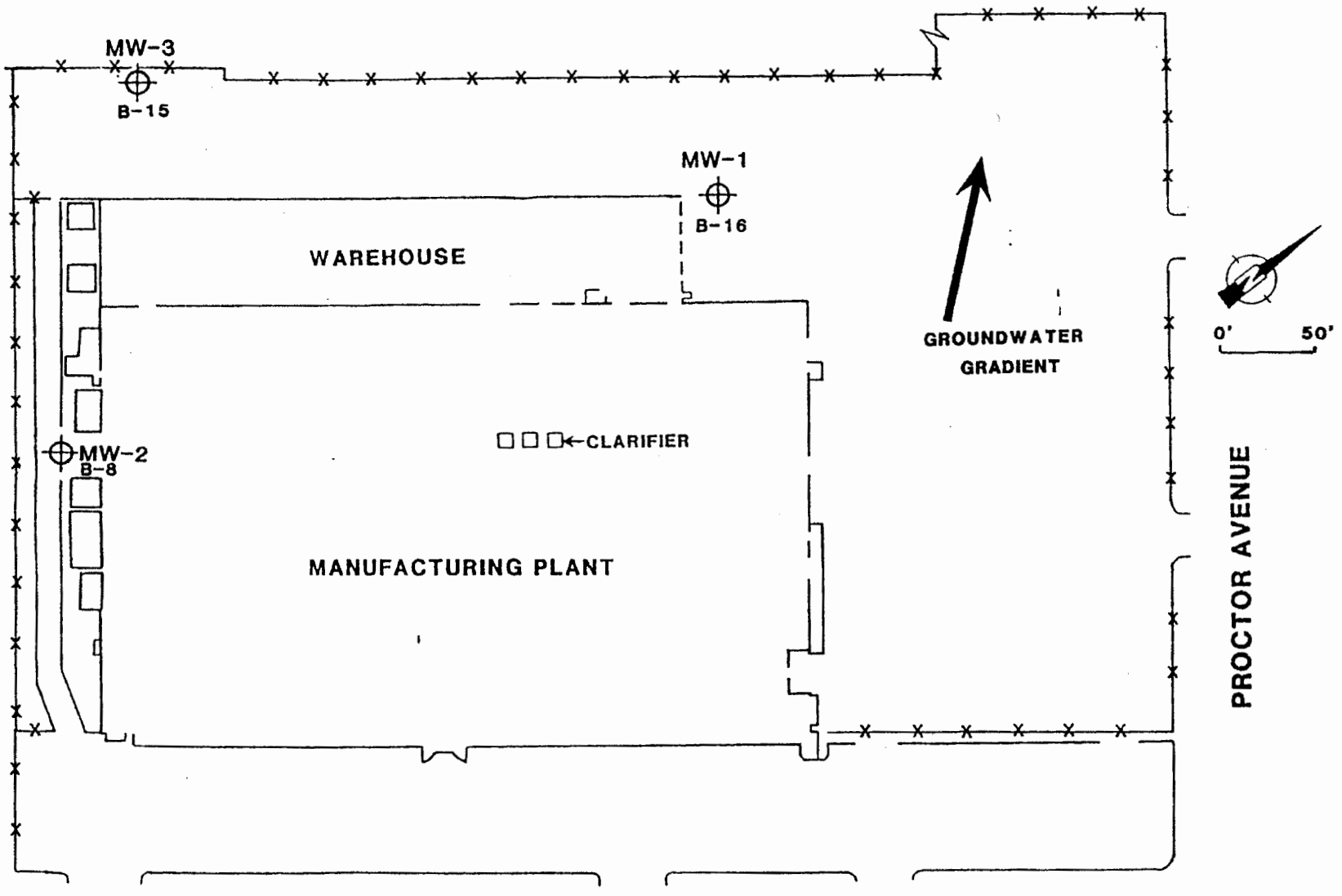
The wells were surveyed to a relative elevation on September 7, 1988. The groundwater gradient indicated by this survey and water level measurements taken on two separate days (September 2 and 7, 1988) is approximately to the northwest. Figure 7 shows the observed gradient in reTationship to the monitoring wells and the Calmar facility.

3.0 CHEMICAL ANALYSIS

3.1 Soil Sample Analysis

Soil samples were selected for analysis based on review of the boring logs and the field instrument readings as required by the approved Work Plan. Table 3 shows the samples collected from all borings performed during this phase of subsurface investigation in relation to their corresponding depth of collection, field analytical readings and whether or not the sample was subjected to laboratory analysis. The borings are segregated in Table 3 by Areas of Concern.

Samples showing higher ranges of field instrument readings relative to other samples within the same boring were selected for analysis. The rest of the samples were selected to give representative coverage of the various lithologies encounterd and particularly the depths corresponding to the saturated zone.



BCL	Source: BCL ASSOCIATES, INC.	Title: GROUNDWATER MONITORING WELL LOCATION MAP	7

All soil samples were subjected to analysis for: Halogenated Volatile Organics by EPA Method 8010; Aromatic Volatile Organics by EPA Method 8020; and Hydrocarbon Analysis with Carbon Chain Identification by Modified EPA Method 8015. These analytical criteria were set forth in the approved Work Plan. The Laboratory Reports for all analyses performed on samples from Calmar under this phase of investigation may be found in Appendix E.

Table 5 summarizes the analytical results of the 8010/8020/8015 analyses performed as well as the disposition of all samples collected. Each sample is shown in correlation to its depth and to the others from each specific boring. The Area of Concern is also specified to clarify the boring position.

3.1.1 Borings B-1 and B-17 Sample Analysis

Carbon Tetrachloride was reported in amounts up to 5000 ppb in samples analyzed from boring B-1. The only other report of this compound was in trace amounts in sample number 72 from boring B-16, at one foot BGS.

Samples 1 and 6 from Boring B-1 showed the highest concentrations of carbon tetrachloride. These samples were reanalyzed for halogenated hydrocarbons according to EPA Method 8010. The original analysis showed concentrations (1-5 ppm) of the chlorinated solvent carbon tetrachloride. Because this chemical reportedly has not been used on-site and is uncharacteristic of other samples analyzed from Calmar, reanalysis was performed even though holding times were violated. No carbon tetrachloride was detected in the reanalysis of the original samples.

Laboratory contamination of the samples or the analytical system by carbon tetrachloride is unlikely since the only source of carbon tetrachloride in BCL's laboratory is in a calibration standard combined with many other compounds. Contaminated glassware is a possible source of contamination. However, samples analyzed both before and after these samples showed no carbon tetrachloride contamination.

The absence of carbon tetrachloride in the second analysis cannot be completely explained. Carbon tetrachloride has a low boiling point and in the two months between analyses could not have evaporated from the resealed sample. It is unlikely that carbon tetrachloride reported at these levels would have decomposed completely in this time.

Table 5

Soil Sample

Analytical Results Summary

Boring B-1
Waste Storage Area
Analytical Results Summary

Methods 8010/8020

Depth of Collection (ft):		0.5	1.5	5	10	15	20	GW 26 ▼ 25	30
Sample Number:		1	2	3	4	5	6	7	8
Compound	MDL (ug/Kg)	Sample Concentration - ug/Kg (ppb)							
Tetrachloroethene	5.0	..	900	**	1,000	**	..	..	..
Trichloroethylene	5.0	..	..	**	..	**	..	..	..
1,1,1-trichloroethane	5.0	..	..	**	..	**	..	..	..
cis-1,2-dichloroethene	5.0	..	..	**	..	**	..	..	..
Dichloromethane	20.0	..	..	**	..	**	..	..	..
1,1-dichloroethane	5.0	..	..	**	..	**	..	..	..
1,1-dichloroethene	5.0	..	..	**	..	**	..	..	..
Benzene	5.0	..	..	**	..	**	..	TR	..
Chlorobenzene	5.0	..	..	**	..	**	..	..	..
1,2-Dichlorobenzene	5.0	..	..	**	..	**	..	..	..
1,3-Dichlorobenzene	5.0	..	..	**	..	**	..	..	..
1,4-Dichlorobenzene	5.0	..	..	**	..	**	..	..	..
Ethyl Benzene	5.0	TR	TR	**	TR	**	TR	TR	TR
Toluene	5.0	TR	TR	**	TR	**	TR	TR	TR
Xylenes(Dimethylbenzenes)	5.0	..	..	**	..	**	..	TR	..
Chloroform	5.0	..	..	**	..	**	..	..	..
Carbon Tetrachloride	5.0	2,300	1,200	**	800	**	5,000	..	1,200

Method 8015

Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)							
C8 - C10	0.1	..	..	**	..	**	..	..	..
C11 - C12	0.1	1.5	..	**	..	**	..	..	..
C13 - C14	0.1	0.5	..	**	..	**	..	..	..
C15 - C16	0.1	..	..	**	..	**	..	..	..
C17 - C18	0.1	0.2	..	**	..	**	..	..	..
C19 - C20	0.1	0.1	..	**	..	**	..	..	..
C21 - C22	0.1	..	..	**	..	**	..	..	..

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit
GW = Groundwater encountered

Boring B-2
Waste Storage Area
Analytical Results Summary

Methods 8010/8020

Depth of Collection (ft):		0.5	2.5	5	10
Sample Number:		23	24	25	26
Compound	MDL (ug/Kg)	Sample Concentration ug/Kg (ppb)			
Tetrachloroethene	5.0	120	**	**	TR
Trichloroethylene	5.0	TR	**	**	..
1,1,1-trichloroethane	5.0	..	**	**	TR
cis-1,2-dichloroethene	5.0	..	**	**	..
Dichloromethane	20.0	..	**	**	..
1,1-dichloroethane	5.0	..	**	**	..
1,1-dichloroethene	5.0	..	**	**	..
Benzene	5.0	..	**	**	..
Chlorobenzene	5.0	..	**	**	..
1,2-Dichlorobenzene	5.0	..	**	**	..
1,3-Dichlorobenzene	5.0	..	**	**	..
1,4-Dichlorobenzene	5.0	..	**	**	..
Ethyl Benzene	5.0	..	**	**	..
Toluene	5.0	..	**	**	..
Xylenes(Dimethylbenzenes)	5.0	..	**	**	..
Chloroform	5.0	..	**	**	..
Carbon Tetrachloride	5.0	..	**	**	..

Method 8015

Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)			
C8 - C10	0.1	7.5	**	**	..
C11 - C12	0.1	..	**	**	..
C13 - C14	0.1	..	**	**	..
C15 - C16	0.1	..	**	**	..
C17 - C18	0.1	0.7	**	**	1.9
C19 - C20	0.1	1.5	**	**	7.4
C21 - C22	0.1	13	**	**	14

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit

Boring B-3
Waste Storage Area
Analytical Results Summary

Methods 8010/8020

Depth of Collection (ft):		1	2.5	5	10
Sample Number:		57	58	59	60
Compound	MDL (ug/Kg)	Sample Concentration ug/Kg (ppb)			
Tetrachloroethene	5.0	80	**	43	120
Trichloroethylene	5.0	8.1	**	..	..
1,1,1-trichloroethane	5.0	59	**	TR	29
cis-1,2-dichloroethene	5.0	..	**	..	..
Dichloromethane	20.0	..	**	..	..
1,1-dichloroethane	5.0	..	**	..	..
1,1-dichloroethene	5.0	TR	**	..	..
Benzene	5.0	..	**	..	..
Chlorobenzene	5.0	TR	**	..	..
1,2-Dichlorobenzene	5.0	..	**	..	..
1,3-Dichlorobenzene	5.0	..	**	..	..
1,4-Dichlorobenzene	5.0	..	**	..	..
Ethyl Benzene	5.0	..	**	..	..
Toluene	5.0	..	**	..	..
Xylenes(Dimethylbenzenes)	5.0	..	**	..	..
Chloroform	5.0	..	**	..	..
Carbon Tetrachloride	5.0	..	**	..	..

Method 8015

Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)			
C8 - C10	0.1	..	**	..	..
C11 - C12	0.1	..	**	..	..
C13 - C14	0.1	..	**	..	..
C15 - C16	0.1	..	**	..	..
C17 - C18	0.1	..	**	..	..
C19 - C20	0.1	..	**	..	..
C21 - C22	0.1	..	**	..	..

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit

Boring B-4
Waste Storage Area
Analytical Results Summary

Methods 8010/8020

Depth of Collection (ft):		1	2.5	5	10
Sample Number:		61	62	63	64
Compound	MDL (ug/Kg)	Sample Concentration ug/Kg (ppb)			
Tetrachloroethene	5.0	260	**	14	13
Trichloroethylene	5.0	TR	**	..	..
1,1,1-trichloroethane	5.0	51	**	TR	5.2
cis-1,2-dichloroethene	5.0	..	**	..	..
Dichloromethane	20.0	..	**	..	..
1,1-dichloroethane	5.0	TR	**	..	..
1,1-dichloroethene	5.0	..	**	..	..
Benzene	5.0	..	**	..	..
Chlorobenzene	5.0	TR	**	..	..
1,2-Dichlorobenzene	5.0	..	**	..	..
1,3-Dichlorobenzene	5.0	..	**	..	..
1,4-Dichlorobenzene	5.0	..	**	..	..
Ethyl Benzene	5.0	..	**	..	..
Toluene	5.0	..	**	..	..
Xylenes(Dimethylbenzenes)	5.0	..	**	..	..
Chloroform	5.0	..	**	..	..
Carbon Tetrachloride	5.0	..	**	..	..

Method 8015

Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)			
C8 - C10	0.1	..	**	..	..
C11 - C12	0.1	..	**	..	..
C13 - C14	0.1	..	**	..	..
C15 - C16	0.1	..	**	..	..
C17 - C18	0.1	..	**	..	..
C19 - C20	0.1	..	**	..	..
C21 - C22	0.1	..	**	..	..

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit

Boring B-5
Waste Storage Area
Analytical Results Summary

Methods 8010/8020

Depth of Collection (ft):		0.5	1.5	5	10	15	20	GW 27 ▼ 25	30
Sample Number:		9	10	11	12	13	14	15	16
Compound	MDL (ug/Kg)	Sample Concentration - ug/Kg (ppb)							
Tetrachloroethene	5.0	TR	TR	TR	TR	**	6.1	TR	5.0
Trichloroethylene	5.0	..	..	..	..	..	..	..	..
1,1,1-trichloroethane	5.0	..	..	..	..	..	..	..	..
cis-1,2-dichloroethene	5.0	..	..	..	..	..	..	..	..
Dichloromethane	20.0	..	..	..	..	..	..	..	..
1,1-dichloroethane	5.0	..	..	..	..	..	..	..	..
1,1-dichloroethene	5.0	..	..	..	..	..	..	..	..
Benzene	5.0	..	..	..	..	..	..	..	..
Chlorobenzene	5.0	..	..	..	..	..	..	..	..
1,2-Dichlorobenzene	5.0	TR	..	..	..	..	..	..	..
1,3-Dichlorobenzene	5.0	..	..	..	..	..	..	..	..
1,4-Dichlorobenzene	5.0	..	..	..	..	..	..	..	..
Ethyl Benzene	5.0	..	..	..	..	..	TR	..	..
Toluene	5.0	..	..	..	..	..	..	..	..
Xylenes(Dimethylbenzenes)	5.0	..	..	..	..	..	..	..	..
Chloroform	5.0	..	..	..	..	..	..	..	..
Carbon Tetrachloride	5.0	..	..	..	..	..	..	..	..

Method 8015

Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)							
C8 - C10	0.1	..	..	..	..	..	..	..	..
C11 - C12	0.1	..	..	..	..	..	..	..	..
C13 - C14	0.1	..	..	..	..	..	..	..	..
C15 - C16	0.1	..	..	..	..	..	..	..	..
C17 - C18	0.1	..	..	..	..	..	..	..	..
C19 - C20	0.1	..	..	..	..	..	..	..	..
C21 - C22	0.1	..	..	..	..	..	..	..	..

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit
GW = Groundwater encountered

Boring B-6
Waste Storage Area
Analytical Results Summary

Methods 8010/8020

Depth of Collection (ft):		0.25	2.5	5
Sample Number:		20	21	22
Compound	MDL (ug/Kg)	Sample Concentration ug/Kg (ppb)		
Tetrachloroethene	5.0	**	**	..
Trichloroethylene	5.0	**	**	..
1,1,1-trichloroethane	5.0	**	**	..
cis-1,2-dichloroethene	5.0	**	**	..
Dichloromethane	20.0	**	**	..
1,1-dichloroethane	5.0	**	**	..
1,1-dichloroethene	5.0	**	**	..
Benzene	5.0	**	**	..
Chlorobenzene	5.0	**	**	TR
1,2-Dichlorobenzene	5.0	**	**	..
1,3-Dichlorobenzene	5.0	**	**	..
1,4-Dichlorobenzene	5.0	**	**	..
Ethyl Benzene	5.0	**	**	..
Toluene	5.0	**	**	..
Xylenes(Dimethylbenzenes)	5.0	**	**	..
Chloroform	5.0	**	**	..
Carbon Tetrachloride	5.0	**	**	..

Method 8015

Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)		
C8 - C10	0.1	**	**	..
C11 - C12	0.1	**	**	..
C13 - C14	0.1	**	**	..
C15 - C16	0.1	**	**	..
C17 - C18	0.1	**	**	..
C19 - C20	0.1	**	**	..
C21 - C22	0.1	**	**	..

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit

Boring B-7
Waste Storage Area
Analytical Results Summary

Methods 8010/8020

Depth of Collection (ft):		0.25	2.5	5
Sample Number:		17	18	19
Compound	MDL (ug/Kg)	Sample Concentration ug/Kg (ppb)		
Tetrachloroethene	5.0	**	..	**
Trichloroethylene	5.0	**	..	**
1,1,1-trichloroethane	5.0	**	..	**
cis-1,2-dichloroethene	5.0	**	..	**
Dichloromethane	20.0	**	..	**
1,1-dichloroethane	5.0	**	..	**
1,1-dichloroethene	5.0	**	..	**
Benzene	5.0	**	TR	**
Chlorobenzene	5.0	**	..	**
1,2-Dichlorobenzene	5.0	**	..	**
1,3-Dichlorobenzene	5.0	**	..	**
1,4-Dichlorobenzene	5.0	**	..	**
Ethyl Benzene	5.0	**	..	**
Toluene	5.0	**	..	**
Xylenes(Dimethylbenzenes)	5.0	**	..	**
Chloroform	5.0	**	..	**
Carbon Tetrachloride	5.0	**	..	**

Method 8015

Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)		
C8 - C10	0.1	**	..	**
C11 - C12	0.1	**	..	**
C13 - C14	0.1	**	..	**
C15 - C16	0.1	**	..	**
C17 - C18	0.1	**	..	**
C19 - C20	0.1	**	..	**
C21 - C22	0.1	**	..	**

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit

Boring B-8
Utility Trench Outlet
Analytical Results Summary

		Methods 8010/8020							
								GW 28	
Depth of Collection (ft):		1	2.5	5	10	15	20	25 ▼	30
Sample Number:		27	28	29	30	31	32	33	34
Compound	MDL (ug/Kg)	Sample Concentration - ug/Kg (ppb)							
Tetrachloroethene	5.0	..	..	..	..	..	..	TR	TR
Trichloroethylene	5.0	..	..	..	TR	..	TR	7.8	10
1,1,1-trichloroethane	5.0	..	..	..	..	..	..	..	..
cis-1,2-dichloroethene	5.0	TR	..	..	..	..	..	..	..
Dichloromethane	20.0	..	..	..	..	..	..	..	..
1,1-dichloroethane	5.0	..	..	..	..	..	..	..	..
1,1-dichloroethene	5.0	..	..	..	..	..	..	..	..
Benzene	5.0	..	..	..	..	..	..	..	TR
Chlorobenzene	5.0	..	..	..	..	..	..	..	TR
1,2-Dichlorobenzene	5.0	..	..	..	..	..	..	..	..
1,3-Dichlorobenzene	5.0	..	..	..	..	..	..	..	..
1,4-Dichlorobenzene	5.0	..	..	..	..	..	..	..	..
Ethyl Benzene	5.0	..	..	..	..	..	..	..	TR
Toluene	5.0	TR	..	..	..	..	..	..	TR
Xylenes(Dimethylbenzenes)	5.0	TR	..	..	..	..	..	..	TR
Chloroform	5.0	..	..	..	..	..	..	..	..
Carbon Tetrachloride	5.0	..	..	..	..	..	..	..	..

		Method 8015							
Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)							
C8 - C10	0.1	..	..	..	..	..	..	..	..
C11 - C12	0.1	..	..	..	..	..	..	..	..
C13 - C14	0.1	..	..	..	..	..	..	..	..
C15 - C16	0.1	..	..	..	..	..	..	..	..
C17 - C18	0.1	..	..	..	..	..	..	..	..
C19 - C20	0.1	..	..	..	..	..	..	..	..
C21 - C22	0.1	..	..	..	0.16	..	..	..	..

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit
GW = Groundwater encountered

Boring B-9
Utility Trench Outlet
Analytical Results Summary

Methods 8010/8020

Depth of Collection (ft):		1	2.5	5	10
Sample Number:		35	36	37	39
Compound	MDL (ug/Kg)	Sample Concentration ug/Kg (ppb)			
Tetrachloroethene	5.0	..	**	**	..
Trichloroethylene	5.0	..	**	**	TR
1,1,1-trichloroethane	5.0	..	**	**	..
cis-1,2-dichloroethene	5.0	TR	**	**	..
Dichloromethane	20.0	..	**	**	..
1,1-dichloroethane	5.0	..	**	**	..
1,1-dichloroethene	5.0	..	**	**	..
Benzene	5.0	..	**	**	..
Chlorobenzene	5.0	..	**	**	..
1,2-Dichlorobenzene	5.0	..	**	**	..
1,3-Dichlorobenzene	5.0	..	**	**	..
1,4-Dichlorobenzene	5.0	..	**	**	..
Ethyl Benzene	5.0	..	**	**	..
Toluene	5.0	..	**	**	..
Xylenes(Dimethylbenzenes)	5.0	..	**	**	..
Chloroform	5.0	..	**	**	..
Carbon Tetrachloride	5.0	..	**	**	..

Method 8015

Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)			
C8 - C10	0.1	..	**	**	..
C11 - C12	0.1	..	**	**	..
C13 - C14	0.1	..	**	**	..
C15 - C16	0.1	..	**	**	..
C17 - C18	0.1	..	**	**	..
C19 - C20	0.1	..	**	**	..
C21 - C22	0.1	..	**	**	1.7

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit

Boring B-10
Utility Trench Outlet
Analytical Results Summary

Methods 8010/8020

Depth of Collection (ft):		1	2.5	5	10
Sample Number:		43	44	45	46
Compound	MDL (ug/Kg)	Sample Concentration ug/Kg (ppb)			
Tetrachloroethene	5.0	..	**	**	..
Trichloroethylene	5.0	..	**	**	..
1,1,1-trichloroethane	5.0	..	**	**	..
cis-1,2-dichloroethene	5.0	..	**	**	..
Dichloromethane	20.0	..	**	**	..
1,1-dichloroethane	5.0	..	**	**	..
1,1-dichloroethene	5.0	..	**	**	..
Benzene	5.0	..	**	**	..
Chlorobenzene	5.0	..	**	**	..
1,2-Dichlorobenzene	5.0	..	**	**	..
1,3-Dichlorobenzene	5.0	..	**	**	..
1,4-Dichlorobenzene	5.0	..	**	**	..
Ethyl Benzene	5.0	..	**	**	..
Toluene	5.0	..	**	**	..
Xylenes(Dimethylbenzenes)	5.0	..	**	**	..
Chloroform	5.0	..	**	**	..
Carbon Tetrachloride	5.0	..	**	**	..

Method 8015

Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)			
C8 - C10	0.1	..	**	**	..
C11 - C12	0.1	..	**	**	..
C13 - C14	0.1	..	**	**	..
C15 - C16	0.1	..	**	**	..
C17 - C18	0.1	..	**	**	..
C19 - C20	0.1	..	**	**	..
C21 - C22	0.1	..	**	**	..

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit

Boring B-11
Utility Trench Outlet
Analytical Results Summary

Methods 8010/8020

Depth of Collection (ft):		1	2.5	5	10
Sample Number:		39	40	41	42
Compound	MDL (ug/Kg)	Sample Concentration ug/Kg (ppb)			
Tetrachloroethene	5.0	**	..	**	8.6
Trichloroethylene	5.0	**	..	**	..
1,1,1-trichloroethane	5.0	**	..	**	TR
cis-1,2-dichloroethene	5.0	**	..	**	..
Dichloromethane	20.0	**	..	**	96
1,1-dichloroethane	5.0	**	..	**	..
1,1-dichloroethene	5.0	**	..	**	..
Benzene	5.0	**	..	**	..
Chlorobenzene	5.0	**	..	**	..
1,2-Dichlorobenzene	5.0	**	..	**	..
1,3-Dichlorobenzene	5.0	**	..	**	..
1,4-Dichlorobenzene	5.0	**	..	**	..
Ethyl Benzene	5.0	**	..	**	..
Toluene	5.0	**	..	**	..
Xylenes(Dimethylbenzenes)	5.0	**	..	**	..
Chloroform	5.0	**	..	**	..
Carbon Tetrachloride	5.0	**	..	**	..

Method 8015

Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)			
C8 - C10	0.1	**	..	**	..
C11 - C12	0.1	**	..	**	..
C13 - C14	0.1	**	..	**	..
C15 - C16	0.1	**	..	**	..
C17 - C18	0.1	**	..	**	..
C19 - C20	0.1	**	..	**	..
C21 - C22	0.1	**	..	**	..

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit

Boring B-12
Compressor, Chiller Area
Analytical Results Summary

Methods 8010/8020

Depth of Collection (ft):		1	2.5	5	10
Sample Number:		47	48	49	50
Compound	MDL (ug/Kg)	Sample Concentration ug/Kg (ppb)			
Tetrachloroethene	5.0	..	**	**	..
Trichloroethylene	5.0	..	**	**	..
1,1,1-trichloroethane	5.0	..	**	**	..
cis-1,2-dichloroethene	5.0	..	**	**	..
Dichloromethane	20.0	..	**	**	..
1,1-dichloroethane	5.0	..	**	**	..
1,1-dichloroethene	5.0	..	**	**	..
Benzene	5.0	..	**	**	..
Chlorobenzene	5.0	..	**	**	..
1,2-Dichlorobenzene	5.0	..	**	**	..
1,3-Dichlorobenzene	5.0	..	**	**	..
1,4-Dichlorobenzene	5.0	..	**	**	..
Ethyl Benzene	5.0	..	**	**	..
Toluene	5.0	..	**	**	..
Xylenes(Dimethylbenzenes)	5.0	..	**	**	..
Chloroform	5.0	..	**	**	..
Carbon Tetrachloride	5.0	..	**	**	..

Method 8015

Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)			
C8 - C10	0.1	..	**	**	..
C11 - C12	0.1	..	**	**	..
C13 - C14	0.1	..	**	**	..
C15 - C16	0.1	..	**	**	1.6
C17 - C18	0.1	3.9	**	**	1.8
C19 - C20	0.1	0.43	**	**	3.0
C21 - C22	0.1	24	**	**	3.6

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit

Boring B-13
Compressor, Chiller Area
Analytical Results Summary

Methods 8010/8020

Depth of Collection (ft):		1	2.5	5
Sample Number:		54	55	56
Compound	MDL (ug/Kg)	Sample Concentration ug/Kg (ppb)		
Tetrachloroethene	5.0	..	**	..
Trichloroethylene	5.0	..	**	..
1,1,1-trichloroethane	5.0	..	**	..
cis-1,2-dichloroethene	5.0	..	**	..
Dichloromethane	20.0	..	**	..
1,1-dichloroethane	5.0	..	**	..
1,1-dichloroethene	5.0	..	**	..
Benzene	5.0	..	**	..
Chlorobenzene	5.0	..	**	..
1,2-Dichlorobenzene	5.0	..	**	..
1,3-Dichlorobenzene	5.0	..	**	..
1,4-Dichlorobenzene	5.0	..	**	..
Ethyl Benzene	5.0	..	**	..
Toluene	5.0	..	**	..
Xylenes(Dimethylbenzenes)	5.0	..	**	..
Chloroform	5.0	..	**	..
Carbon Tetrachloride	5.0	..	**	..

Method 8015

Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)		
C8 - C10	0.1	..	**	..
C11 - C12	0.1	..	**	..
C13 - C14	0.1	..	**	..
C15 - C16	0.1	..	**	..
C17 - C18	0.1	..	**	..
C19 - C20	0.1	..	**	..
C21 - C22	0.1	..	**	..

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit

Boring B-14
Compressor, Chiller Area
Analytical Results Summary

Methods 8010/8020

Depth of Collection (ft):		1	2.5	5
Sample Number:		51	52	53
Compound	MDL (ug/Kg)	Sample Concentration ug/Kg (ppb)		
Tetrachloroethene	5.0	**	2.9	**
Trichloroethylene	5.0	**	..	**
1,1,1-trichloroethane	5.0	**	5.6	**
cis-1,2-dichloroethene	5.0	**	..	**
Dichloromethane	20.0	**	..	**
1,1-dichloroethane	5.0	**	..	**
1,1-dichloroethene	5.0	**	..	**
Benzene	5.0	**	..	**
Chlorobenzene	5.0	**	..	**
1,2-Dichlorobenzene	5.0	**	..	**
1,3-Dichlorobenzene	5.0	**	..	**
1,4-Dichlorobenzene	5.0	**	..	**
Ethyl Benzene	5.0	**	..	**
Toluene	5.0	**	..	**
Xylenes(Dimethylbenzenes)	5.0	**	..	**
Chloroform	5.0	**	..	**
Carbon Tetrachloride	5.0	**	..	**

Method 8015

Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)		
C8 - C10	0.1	**	..	**
C11 - C12	0.1	**	..	**
C13 - C14	0.1	**	..	**
C15 - C16	0.1	**	..	**
C17 - C18	0.1	**	..	**
C19 - C20	0.1	**	0.91	**
C21 - C22	0.1	**	..	**

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit

Boring B-15
Waste Storage Area
Analytical Results Summary

Methods 8010/8020

Depth of Collection (ft):		1	5	10	15	20	GW 26 25	30
Sample Number:		65	66	67	68	69	70	71
Compound	MDL (ug/Kg)	Sample Concentration - ug/Kg (ppb)						
Tetrachloroethene	5.0	59	TR	8.7	**	**	..	23
Trichloroethylene	5.0	TR	..	..	**	**	..	TR
1,1,1-trichloroethane	5.0	TR	..	..	**	**	..	..
cis-1,2-dichloroethene	5.0	..	..	..	**	**	..	..
Dichloromethane	20.0	..	..	..	**	**	..	..
1,1-dichloroethane	5.0	..	..	..	**	**	..	TR
1,1-dichloroethene	5.0	..	..	..	**	**	..	7.9
Benzene	5.0	..	..	..	**	**	..	..
Chlorobenzene	5.0	..	..	..	**	**	..	..
1,2-Dichlorobenzene	5.0	..	..	..	**	**	..	..
1,3-Dichlorobenzene	5.0	..	..	..	**	**	..	..
1,4-Dichlorobenzene	5.0	..	..	..	**	**	..	..
Ethyl Benzene	5.0	..	..	..	**	**	..	..
Toluene	5.0	..	..	..	**	**	..	..
Xylenes(Dimethylbenzenes)	5.0	..	..	..	**	**	..	..
Chloroform	5.0	..	..	..	**	**	..	..
Carbon Tetrachloride	5.0	..	..	..	**	**	..	..

Method 8015

Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)						
C8 - C10	0.1	..	..	..	**	**	..	..
C11 - C12	0.1	..	..	..	**	**	..	..
C13 - C14	0.1	..	..	..	**	**	..	..
C15 - C16	0.1	..	..	..	**	**	..	..
C17 - C18	0.1	..	..	..	**	**	..	..
C19 - C20	0.1	..	..	..	**	**	..	..
C21 - C22	0.1	..	..	..	**	**	..	..

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit
GW = Groundwater encountered

Boring B-16
Down Gradient Boring
Analytical Results Summary

Methods 8010/8020

Depth of Collection (ft):		1	2.5	5	12	17	22	27	32	GW 37	42
Sample Number:		72	73	74	75	76	77	78	79	80	81
Compound	MDL (ug/Kg)	Sample Concentration - ug/Kg (ppb)									
Tetrachloroethene	5.0	..	**	..	**	**	**	**	**	..	14
Trichloroethylene	5.0	..	**	..	**	**	**	**	**	..	7.7
1,1,1-trichloroethane	5.0	..	**	..	**	**	**	**	**	..	..
cis-1,2-dichloroethene	5.0	..	**	..	**	**	**	**	**	..	..
Dichloromethane	20.0	..	**	..	**	**	**	**	**	..	..
1,1-dichloroethane	5.0	..	**	..	**	**	**	**	**	..	..
1,1-dichloroethene	5.0	..	**	..	**	**	**	**	**	..	..
Benzene	5.0	..	**	..	**	**	**	**	**	..	..
Chlorobenzene	5.0	..	**	..	**	**	**	**	**	..	..
1,2-Dichlorobenzene	5.0	..	**	..	**	**	**	**	**	..	..
1,3-Dichlorobenzene	5.0	..	**	..	**	**	**	**	**	..	..
1,4-Dichlorobenzene	5.0	..	**	..	**	**	**	**	**	..	..
Ethyl Benzene	5.0	..	**	..	**	**	**	**	**	..	..
Toluene	5.0	..	**	..	**	**	**	**	**	..	..
Xylenes(Dimethylbenzenes)	5.0	..	**	..	**	**	**	**	**	..	..
Chloroform	5.0	..	**	..	**	**	**	**	**	..	TR
Carbon Tetrachloride	5.0	TR	**	..	**	**	**	**	**	..	..

Method 8015

Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)									
C8 - C10	0.1	..	**	..	**	**	**	**	**	..	..
C11 - C12	0.1	..	**	..	**	**	**	**	**	..	..
C13 - C14	0.1	..	**	..	**	**	**	**	**	..	..
C15 - C16	0.1	..	**	..	**	**	**	**	**	..	..
C17 - C18	0.1	4.4	**	..	**	**	**	**	**	13	..
C19 - C20	0.1	7.0	**	9.0	**	**	**	**	**	..	..
C21 - C22	0.1	13	**	11	**	**	**	**	**	4.2	..

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit
GW = Groundwater encountered

Boring B-17
Waste Storage Area
Analytical Results Summary

Methods 8010/8020

Depth of Collection (ft):		0	2.5	5	10	15	20	25	GW 29.5 30
Sample Number:		87	88	89	90	91	92	93	94
Compound	MDL (ug/Kg)	Sample Concentration - ug/Kg (ppb)							
Tetrachloroethene	5.0	98	380	23	18	..	..	..	30
Trichloroethylene	5.0	TR	..	..	..	..	..	..	38
1,1,1-trichloroethane	5.0	13	11	TR	TR	..	..	..	..
cis-1,2-dichloroethene	5.0	..	..	..	..	..	..	..	TR
Dichloromethane	20.0	..	..	..	..	..	..	..	..
1,1-dichloroethane	5.0	..	..	..	..	..	..	..	TR
1,1-dichloroethene	5.0	..	..	..	..	..	..	..	16
Benzene	5.0	..	..	..	..	..	..	TR	..
Chlorobenzene	5.0	..	..	..	..	..	..	..	..
1,2-Dichlorobenzene	5.0	..	..	..	..	..	..	..	..
1,3-Dichlorobenzene	5.0	..	..	..	..	..	..	..	..
1,4-Dichlorobenzene	5.0	..	..	..	..	..	..	..	..
Ethyl Benzene	5.0	TR	TR	..	..	..	..	TR	..
Toluene	5.0	..	..	..	..	..	..	..	..
Xylenes(Dimethylbenzenes)	5.0	TR	TR	TR	TR	..	..	TR	TR
Chloroform	5.0	..	..	..	..	..	..	..	..
Carbon Tetrachloride	5.0	..	..	..	..	..	..	..	..

Method 8015

Compound	MDL (mg/Kg)	Sample Concentration mg/Kg (ppm)							
C8 - C10	0.1	TR	..	..	..	..	..	..	..
C11 - C12	0.1	TR	..	..	..	..	..	..	..
C13 - C14	0.1	TR	..	..	..	..	..	..	..
C15 - C16	0.1	1.8	..	..	..	..	..	..	..
C17 - C18	0.1	7.2	TR	..	..	..	..	..	..
C19 - C20	0.1	12	..	..	..	..	..	..	..
C21 - C22	0.1	17	..	..	..	..	..	..	..
C23 - C24	0.1	27	..	..	..	..	..	..	..

** = Sample not analyzed
.. = Not Detected
TR = Trace of compound below detection limit
MDL = Method Detection Limit
GW = Groundwater encountered

On October 14, 1988, Boring B-17 was placed within 3 feet of the location of Boring B-1. Samples from B-17 were collected in the identical fashion as those collected from B-1. This procedure is described in Section 2.0. The samples in the Boring were collected at the following depth intervals below ground surface:

Boring B-1 and B-17
Waste Storage Area
Sample Collection Intervals

Depth of Collection(ft.BGS)	Sample No. Boring B-1	Sample No. Boring B-17
0		87*
0.5	1*	
1.5	2*	
2.5		88*
5	3	89*
10	4*	90*
15	5	91*
20	6*	92*
25	7*	93*
30	8*	94*

* Samples analyzed by methods 8010, 8020 and 8015M

All samples collected from Boring B-17 were subjected to analysis by EPA Method 8010 with particular attention paid to determinatin of the presence of Carbon Tetrachloride. No carbon tetrachloride was detected in the B-17 samples. A summary of the analytical results for Borings B-1 and B-17 may be found in Table 5. The labotoratory reports for Boring B-17 analyses may be found in Appendix F. The analytical results for the B-17 samples are more characteristic of results from samples collected from the other borings in the Waste Storage Area.

3.2 Water Sample Analysis

Water samples were obtained from the Calmar monitoring wells on September 1, 1988. The samples were subjected to analysis by EPA Methods 601/602 and by modified Method 8015. Table 6 summarizes the results of these analyses. Copies of the laboratory reports may be found in Appendix E. Figure 7 shows the locations of the wells in relation to the Calmar facility.

3.3 Clarifier Sample Analysis

Table 7 summarizes the results of the Halogenated and Aromatic Volatile Organic analysis as well as the results of the Hydrocarbon Analysis with Carbon Chain Identification by modified EPA Method 8015. These samples were collected from the first stage of the clarifier on August 26, 1988.

TABLE 6

Water Sample
Analytical Results Summary

Compound	MDL (ug/L)	Concentration Detected (ug/L) Well No. Sample No. MW-1 86	MW-2 85	MW-3 84
1,1-dichloroethene	0.5	6.1	4	79
1,1-dichloroethane	0.5	ND	ND	36
cis-1,2-dichloroethene	0.5	TR	1.9	TR
1,2-dichloroethane	0.5	ND	ND	0.98
1,1,1-trichloroethane	0.5	6.5	0.77	2.3
Trichloroethylene	0.5	23	42	20
Tetrachloroethene	0.5	20	7	47
Benzene	0.5	TR	ND	ND
Ethyl benzene	0.5	ND	ND	TR
Toluene	0.5	TR	ND	ND
Xylenes (dimethyl benzenes)	0.5	TR	ND	ND
C8 - C22	100	ND	ND	ND

ND = Not detected
TR = Trace of compound below detection limit
MDL = Method detection limit

TABLE 7

Clarifier Samples
Analytical Results Summary

Compound	MDL (ug/Kg)	Sample Concentration (ug/Kg) Liquid	Sludge
Methods 8010/8020			
1,1-dichloroethane	5.0	1500	Tr
1,1,1-trichloroethane	5.0	2800	320,000
Method 8015(M)	**MDL (mg/Kg)**	**Sample Concentration (mg/Kg) Liquid**	**Sludge**
Benzene	5.0	Tr	Tr
Chlorobenzene	5.0	ND	ND
1,2 dichlorobenzene	5.0	ND	ND
1,3 dichlorobenzene	5.0	ND	ND
1,4 dichlorobenzene	5.0	ND	ND
Ethyl Benzene	5.0	ND	ND
Toluene	5.0	Tr	Tr
Xylenes (Dimethyl Benzenes)	5.0	Tr	Tr
Carbon Chain Length Anaylsis			
C8 - C10	0.10	1600	1000
C11 - C12	0.10	2200	2200
C13 - C14	0.10	150	120
C15 - C16	0.10	67	75
C17 - C18	0.10	210	240
C19 - C20	0.10	720	860
C20 - C22	0.10	310	3700

ug/kg = Micrograms per Kilogram (ppb)
MDL = Method Detection Limit
ND = Not Detected at MDL
Tr = Trace, at or below MDL

3.4 Discussion of Analytical Findings

Soil Sample Analyses

Table 8 is a concise evaluation of the analytical results for soil samples collected during the preliminary phase of investigation. This table does not consider trace amounts of solvents to be insignificant. Levels of the detected solvents which may be allowed to remain in the soil (clean-up goals) have not been established with the Water Board. These data indicate that the vertical limit of detectable levels of solvents have been determined at borings B-7 in the Waste Storage Area, at B-10 in the Utility Trench Area, and at B-13

in the Compressor Chiller Area. At the remainder of the borings, the vertical limit has not been determined. The horizontal boundary of detectable levels of solvent has not been determined.

None of the borings (B-1 through B-17) appear to be significant source points, contributing to the solvents detected in the underlying groundwater. C8-C22 hydrocarbons, as determined by the method 8015(M) analysis, do not exceed 28.33 ppm in any of the samples analyzed. These levels do not appear to be significant.

TABLE 8

Evaluation of Analytical Results
(Depths in Feet Below Ground Surface)

Area	Boring	Total Depth (feet)	Concern	Vertical Limit Defined
Waste	B-1	30	Trace solvents to 30 feet	Groundwater
Storage	B-2	10	Trace solvents/hydrocarbons to 10 feet	No
Area	B-3	10	Solvents to 10 feet	No
	B-4	10	Solvents to 10 feet	No
	B-5	30	Solvents to 30 feet	No
	B-6	5	Trace solvents at 5 feet	No
	B-7	5	Trace solvents at 2.5 feet	Yes
	B-15	30	Solvents to 30 feet	Water well
	B-17	30	Solvents to 30 feet	Groundwater
Utility	B-8	30	Solvents to 30 feet	Water well
Trench	B-9	10	Trace solvents to 10 feet/ Hydrocarbons at 10 feet	No
Outlet	B-10	10	None detected	Yes
	B-11	10	Solvents at 10 feet	No
Compressor	B-12	10	Low hydrocarbons to 10 feet	No
Chiller	B-13	5	None detected	Yes
Area	B-14	5	Solvents/hydrocarbons at 2.5 feet	No
Down Gradient Boring	B-16	42	Solvents/hydrocarbons to 42 feet	Water well

See Table 5 for a more complete representation of the analytical results per boring.

Water Sample Analyses

Table 6 shows the concentration of compounds found in samples from the wells installed at Calmar. The water from this round of sampling obtained from MW-3 shows higher concentrations of 1,1-dichloroethene, 1,1-dichloroethane and Tetrachloroethene than both MW-1 and MW-2. The source of the elevated contamination in MW-3 has not been conclusively established.

Clarifier Samples

As shown in Table 7, the sludge had 1,1,1-Trichloroethylene levels of 320,000 ppb. Carbon Chain Analysis of the clarifier samples showed additive C8-C22 hydrocarbon levels of 2,257 ppm for the liquid sample and 8,195 ppm for the sludge sample.

4.0 FINDINGS

4.1 Soil Cleanup Levels

There are some occurrences of solvents found in the soil samples obtained at Calmar. Levels of these compounds allowed to remain in soil have not been established. Formulae for the determination of Recommended Soil Cleanup Levels (RSCLs) have been proposed by the Toxic Substances Control Division, California Department of Health Services. These RSCLs may be used to find an acceptable limit of organic contaminants in soil. Using the Drinking Water Standards published for the compounds found at Calmar and applying the following formula, RSCLs may be determined. This formula is found in the California Site Mitigation Decision Tree Manual (May 1986), Section VIII, California Soil.

RSCL = DWS x 100 x 10

Where: RSCL = Recommended Soil Cleanup Level
DWS = Drinking Water Standard
100 = Attenuation of contaminant by soil
10 = Dilution of contaminant by groundwater

Using the above rationale, the following may be inferred:

Compound found at Calmar	DHS Action Level (water)*	RSCL*	Peak Concen-trations*	Sample No.	Depth BGS (feet)
1,1 - dichloroethene	6.0	6,000	16	94	30
Dichloromethane	(1)	(1)	96	42	10
1,1,1 - trichloroethane	200	200,000	59	57	1
Trichloroethylene	5	5,000	38	94	30
Tetrachloroethene	4	4,000	380	88	2.5

(1) Not Determined
*ppb= Parts Per Billion

These calculated RSCLs must be considered in relation to the proximity of groundwater with the contaminant occurrence. Establishment of acceptable concentrations of the contaminants found at Calmar must be determined through negotiation with the CRWQCB prior to evaluating the data gathered and planning mitigation measures, should they be required.

4.2 Definition of Contaminant Boundaries

Some of the borings as discussed in Section 3.4 do not define the vertical extent of detectable solvent intrusion. The horizontal boundary of the solvent occurrences has not been determined. Application of acceptable levels for these solvents will define goals and limits for interpretation of data gathered to date.

4.3 Groundwater Sampling Data

The data from the first round of groundwater sampling may not be viewed as being conclusive. An established, periodic monitoring program will better define the concentration and types of contaminants at the sample points (Monitoring Wells 1,2,3). Sampling from additional wells placed upgradient will of Calmar along with review of information on potential upgradient sources provide a determination of baseline chemical concentration in the groundwater. Based on those data, judgements may be formed as to sources and trends of the contaminant burden found in the groundwater underlying Calmar.

4.4 Clarifier Characterization

Analytical Results of the Clarifier samples show that the contents of the clarifier contain high levels of 1,1,1-Trichloroethylene and C8-C22 hydrocarbons. Whether or not the clarifier is a source of soil and/or groundwater contamination has not been established.

Subsequent to BCLA's sampling, the Clarifier was cleaned and inspected by Calmar personnel. Reportedly, the Clarifier appeared to be fully intact with no visible cracks. This was performed under Calmar Internal Work Order No. B23187 included in Appendix G.

4.5 Initial Report of Carbon Tetrachloride

The initial report of Carbon Tetrachloride in samples obtained from boring B-1 appears to be inaccurate. Samples from Boring B-17, which was placed adjacent to B-1, showed no detectable amount of carbon tetrachloride. The unconfirmed and uncharacteristic nature of the carbon tetrachloride occurrence in B-1 renders the rest of the analytical data for the B-1 samples suspect. It is recommended that the data from Boring B-1 samples be disregarded.

Hazardous Waste/Asbestos

This report is based on the assumption that the client represents to the best of its knowledge, records, and investigations, it has disclosed to BCL the existence of all hazardous wastes or toxic substances (including, but not limited to, asbestos) located at or near the project site(s).

The information contained in this report has received appropriate technical review and approval. The conclusions and recommendations presented represent professional judgements and are based upon the findings from the investigation identified in the report and the interpretation of such data based on our experience and background. This acknowledgement is made in lieu of all warranties, either expressed or implied.

Reviewed and Approved by

Robert L. Litzenberg, P.E.
California Registered Civil Engineer No. 31245
California Registered Environmental Assessor No. 00463

APPENDIX A

California Regional Water Quality Control Board
Los Angeles Region
Letters Dated June 18, 1987 and March 23, 1988

STATE OF CALIFORNIA GEORGE DEUKMEJIAN, Governor

ALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
OS ANGELES REGION

SOUTH BROADWAY, SUITE 4027
ANGELES, CALIFORNIA 90012-4596
620-4460

June 18, 1987

Duane Pefley
CALMAR, Inc.
333 Turnbull Canyon Rd.
City of Industry, CA 91745

SUBSURFACE INVESTIGATION (FILE NO. 102.055)

On May 5, 1987, your facility was examined by Board staff member Philip Chandler. It has been concluded from information and observations obtained at that time, that organic chemical use has occurred at the site and potential contamination pathways exist. Specifically the waste storage area where evidence of storage barrel leakage is apparent, the areas where oily waste from compressors, chillers or coolers was observed, and the outlets of the concrete utility trenches must be addressed. You are directed to submit a workplan for conducting a subsurface investigation to determine the extent of possible contamination at these listed areas. The plan must include the elements of the attached Work Plan Requirements. Exceptions to these are as follows:

1. Soil borings in the waste storage area are required to be a minimum depth of 40 feet. Other areas may have lesser depths. Additional depth may be required if moisture is encountered or if bottom-hole samples are contaminated.

2. Sample collection and treatment procedures should follow EPA guidelines to minimize loss of volatile and must be adequately described in the workplan.

3. The analysis plan should be based on EPA Method 8240 or 8010/8020 and supplemented by methods necessary to characterize other major chemicals pertinent to the site use history. Limits of detection should approach EPA's practicable quantification limits (PQL).

If soil or water contamination is confirmed at your facility, a more extensive ground water investigation may be required. Should you believe that this request is unjustified, please submit your reasons and supporting information to us (e.g. copies of any previous or ongoing investigative reports required by other agencies), in writing within 14 days. The workplan is required to be received by this agency no later than July 16, 1987. If you have any questions please call Philip Chandler (213) 620-6091.

ROY R. SAKAIDA
Senior Water Resource
Control Engineer

PBC:mdh

WORK PLAN REQUIREMENTS
for
INITIAL SUBSURFACE INVESTIGATIONS
(AB1803 FOLLOW-UP PROGRAM)

The objective of this initial investigation is to determine if there has been any leakage or spillage onto or beneath ground surface of materials which would create a potential for ground water contamination. Your work plan should include but not be limited to the following:

SITE HISTORY: Provide a brief description of past and present facility business and activities at the site. Describe storage, handling, use, and disposal procedures for priority chemicals. List the previous businesses at the site, if known. Give name, address, and phone number of landlord/lessor if you do not own the site.

FACILITY MAP: Prepare a scaled site map of the facility and identify all potential sources, past and present, for contamination. (Examples of potential sources include: chemical storage, transfer and use areas; above ground and subsurface piping; sumps; pits; above- and under-ground tanks; and waste storage.)

SITE SOILS AND GEOLOGY: This phase of investigation should determine the extent, lateral and vertical, of potential contamination in the vadose zone; define source(s); and provide background geological data for the area.

1. Locate all proposed borings on the facility map and provide rationale for the number and location of the borings.
2. Specify the proposed depth for each boring and justify if less than 40 feet. (Additional depths will be required if ground water is encountered or if samples at the bottom of the bore holes are contaminated.)
3. Identify the methods proposed for soil borings. (Use EPA or State Department of Health Services Decision Tree guidelines.)
4. Log all borings to provide soil types and changes and organic vapor concentrations encountered.
5. Provide a sampling plan to include equipment and procedures for collection and handling of soils. (As a minimum a sampling interval of 5 feet or change in soil material is required in each boring starting at just below surface, 5 ft, 10 ft, etc. Discrete, undisturbed samples will be taken, sealed, and transported to the laboratory for analyses.)
6. Describe any screening technique (OVA etc.) which would be used to select samples for analyses and any strategy for sequencing sample analyses to minimize overall number of sample analyses. (EPA sample holding times and conditions must be strictly observed.)

7. Provide the name of the laboratory selected for chemical analyses. (This laboratory must be State Department of Health Services certified for procedures used and must use EPA Methods 8240 or 8010/8020 supplemented by methods necessary to analyze for any chemicals used on site, both past and present. Analytical data must meet EPA limits of detection or be justified. Also data when presented must indicate whether a chemical was not detected or potentially exists below quantification limits.)

GROUNDWATER (HYDROGEOLOGY): Ground water must be monitored if any soil boring encounters free water or if the bottom sample of any boring is found to contain contaminants.

1. Provide a contingency plan for conversion of soil borings to ground water monitoring wells. (This should include permitting and well design specifications such as characterizing the aquifer and matching filter pack and well screen to the aquifer.)
2. Describe techniques to be used for field analysis of the ground water (depth, pH, conductivity etc.) as well as for water sampling, handling and transport.
3. Provide the name of the laboratory selected for chemical analyses. (This laboratory must be State Department of Health Sevices certified and use EPA Methods 624 or 601/602. Unfiltered samples are to be submitted to the laboratory for analyses and for report of sample turbidity. Limits of detection should be provided with lab reports with justification for limits not meeting EPA standards.)

ADDITIONAL REQUIREMENTS:

1. Submit a copy of any previous site investigation work of similar nature conducted at the site at the request of another agency or another unit of this agency.
2. Submit evidence that subsurface investigations will be directed or conducted by a California registered geologist, certified engineering geologist, or registered civil engineer.
3. Submit a time schedule to complete the proposed activities. Investigations are to be completed within 6 to 8 weeks of plan approval.

STATE OF CALIFORNIA
GEORGE DEUKMEJIAN, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
LOS ANGELES REGION

107 SOUTH BROADWAY, SUITE 4027
LOS ANGELES, CALIFORNIA 90012—4596
(213) 620-4460

March 23, 1988

Mr. Duane Pefley
Calmar, Inc.
P. O. Box 1203
333 South Turnbull Canyon Road
City of Industry, CA 91749

SUBSURFACE INVESTIGATION (FILE NO. 102.055)

Your workplan for a subsurface investigation has been reviewed. It requires clarification and revision with respect to the following:

SITE SOILS AND GEOLOGY

1. Waste Storage Area

   a. Overall depth of borings B-4 and B-2 should be 40 feet as indicated. However B-1 may be reduced to 10 feet in depth.

   b. The rationale behind the slant boring, B-3, should be explained vis-a-vis multiple shallow borings.

   c. Two five foot shallow borings should be emplaced at the asphalt/concrete contact between the old storage area and asphalt stained by discharge from the present area.

2. Compressor Chiller Cooler Area

   a. Boring depths at B-10 and B-11 may be reduced to 5 feet.
   b. Depth of BH-9 should remain at 10 feet.

3. Utility Trench Outlet Area

   a. Boring depth on B-5 should be 40 feet.
   b. Borings B-6, B-7 and B-8 are acceptable as indicated.

4. Describe the method of storing soil from the borings until laboratory results are available prior to disposal.

SAMPLING

1. Field screening shall be not be performed on the undisturbed sample set aside for laboratory analysis. The techniques proposed for screening must be adequately described. A minimum of two samples must be analyzed by the laboratory from the shallow borings (5-10 feet) and four from the 40 foot borings. All samples from a given boring must be analyzed if a screening technique indicates contamination in that boring at any interval. Specific characteristics, calibration data and field procedures followed for any screening device shall be submitted in the final report.

2. Samples must be immediately stored and chilled, not merely transported in dry ice. Sample compositing is not acceptable.

3. All samples must be undisturbed. Transfer of soil samples for laboratory analysis into glass jars is not acceptable.

4. Water sampling is part of the contingency plan in case the boring must be converted to a discovery well. Collection and handling procedures must be described. Procedures must conserve volatile constituents e.g. bottom valve bailer.

5. Evaluation of soil properties which affect contaminant mobility is required.

6. Proposed sampling intervals are appropriate, but should be modified to reflect lithologic or contaminant changes observed during drilling.

7. Sample and analysis residual materials from the first stage of the clarifier. Provide copies of reports to and from the County of Los Angeles, Department of Sanitation.

LABORATORY ANALYSIS

1. Provide acknowledgement that EPA practical quantitation limits (PQL), 5-10 ppb in this instance, will be met by your chosen laboratory. Provide the name of the laboratory.

2. Acknowledge that QA/QC sheets will be included in the final report.

3. Confirm which analyses are to be performed. In this instance either EPA Methods 8240 or the 8010/8020 series and the modified 8015.

4. Methods used to determine detection limits must be explained by the laboratory for the final report.

5. The specified laboratory must describe their modifications to the EPA Method 8015.

6. All identifiable but non-quantifiable peaks must be reported.

GROUNDWATER (HYDROGEOLOGY)

1. The workplan recognizes the need for collecting water samples if water is encountered in the soil borings, however the described approach is not a contingency conversion plan as is required (Item 1, Groundwater section), but a redrilling approach.

2. Contingency well conversion details and sampling plans are required. If water is encountered, the boring must be extended to penetrate 10-20 feet into the saturated zone. A well should be constructed and developed to produce sand-free non-turbid water.

3. Discovery wells and converted soil borings do not have the same rigorous construction standards and material requirements (filter pack selection, inert materials in the saturated zones etc.) as monitoring wells. Use of pre-selected filter pack and screen size is acceptable in this instance. However the water sample analyses will be considered to be a low estimate of any observed contaminant concentrations.

4. A sieve analysis of aquifer materials from the screened interval must be submitted as a check on the construction assumptions and the representiveness of the water samples collected. Similarly a companion sample of the VOCs sample must be collected, and turbidity determined and reported.

5. Construction standards should include:

   a. Filter pack must extend 2 feet above the screen. Only pelletized bentonite is acceptable as a seal and the seal must be 3-5 feet in thickness.

   b. Screened interval should extend from 10 feet above static water level to the bottom of the boring. Screen and casing must be suspended during installation, not rested on the bottom of the hole.

   c. Bentonite/cement grout is preferred.

   d. Wellhead elevations must be surveyed to .01 feet.

   e. Wellhead must be permanently labeled.

6. Proposed development techniques must not cause long term effects on volatile constituents.

7. Ground water sampling procedures and reports should include:

   a. Conductivity, temperature and/or pH measurements determine equilibrium with formation water during purging for water sampling.

   b. Water level measurement made to 0.01 feet.

   c. Field sample logs.

   d. Appropriate pumps or bailer (constructed from inert material) and techniques to minimize de-gassing.

8. Well must be developed to produce non-turbid water, e.g. less than 10 ppm suspended solids.

9. Explain contingency storage of purge and development water until laboratory results are available.

REPORTING

1. The final report should include the details of the various practices applied in obtaining and analyzing the samples collected. However the constraints accruing to the data by selected procedures must be described and discussed in the main text as related to results reported and conclusions derived from these results. Specific assumptions necessary to perform tests, process data etc., need to be explicitly described.

A revised workplan is required to be received at this Board by March 31, 1988. If you have any questions, please call Philip Chandler at (213) 620-6091.

ROY R. SAKAIDA
Senior Water Resource
Control Engineer

PBC:kp

cc: Carl Sjoberg, County of Los Angeles, Department of Public Works
Robert L. Litzenberg, BCL Associates, Inc.
Tom Klinger, County of Los Angeles, Department of Health

APPENDIX B

Boring Logs

BCL ASSOCIATES, INC. — **BORING LOG AND SAMPLING RECORD** — PAGE 1 OF 1

PROJECT NAME: CALMAR
PROJECT NUMBER: 87-488 — BORING DESIGNATION: B-1

BORING LOCATION: ADJACENT TO HAZ. STORAGE AREA	DATE STARTED: 6-8-88	DATE FINISHED: 6-8-88
DRILLER: GREGG DRILLING	COMPLETION DEPTH (FT): 30	NUMBER OF SAMPLES: 8
DRILLING EQUIPMENT: MOBILE DRILL (B-53)	ELEVATION AND DATUM:	WATER DEPTH (FT): 26
DIAMETER AND TYPE OF WELL CASING:	LOGGED BY: JH	

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. FID	B.G. PID	READING FID	READING PID	READING IR	REMARKS
	FILL	3" ASPHALT PAVEMENT. VERY DARK BROWN (10YR2/2) SILTY SAND WITH CHIPS OF ASPHALT AND CONCRETE. PEBBLES ALSO PRESENT. DRY AND COMPACT. (FILL)	1	6/8	915	4	2.3	12	3.0	935	
	FILL		2	↓	920	4.5	3.0	20	101.0	16	
5	SM	BROWN (10YR5/3) SILTY SAND MINOR FINE SAND PRESENT. DRY AND SLIGHTLY COMPACT.	3		930	5	1.6	8	5.2	~~995~~	
10	SM	SAME AS ABOVE	4		935	5	2.1	9.5	7.2	16	
15	SW	BROWN (10YR5/3) MED TO COARSE SAND (1.5Ø - 0.5Ø) WELL GRADED. GRAINS SUB-ANGULAR TO SUBROUNDED. SLIGHTLY MOIST AND LOOSE.	5		945	5.5	2.1	6	2.1	16	
20	SP	BROWN (10YR5/3) FINE TO COARSE SAND (2.5Ø - 0.5Ø) WITH MINOR SILT. POORLY GRAD. SORTED (WELL). GRAINS SUBANGULAR TO SUBROUNDED SLIGHTLY MOIST AND SLIGHTLY COMPACT.	6		950	6	2.0	9	2.8	16	
25	SP	DARK YELLOWISH BROWN (10YR4/4) SILTY TO MED. SAND (1.5Ø) POORLY GRADED WELL SORTED GRAINS SUBROUNDED. MOIST AND SLIGHTLY COMPACT.	7		1000	6	2.2	9	5.0	0	
30	SM	VERY DARK GRAY (10YR3/1) SILTY CLAY. MOIST AND COMPACT.	8		1010	.6	2.2	9	5.6	0	
35					--						
40											

NOTE: FROM APPROXIMATELY 26-30' BELOW GROUND SURFACE (BETWEEN SAMPLE #'s 7+8, A VERY COARSE SAND (SATURATED WITH G.W.) WAS FOUND THE SILTY CLAY BELOW WAS MOIST NOT SATURATED. POSSIBLE PERCHED WATER TABLE PRESENT.

BCL1283-2

BCL ASSOCIATES, INC. **BORING LOG AND SAMPLING RECORD** PAGE 1 OF 1

PROJECT NAME CALMAR
PROJECT NUMBER 488 BORING DESIGNATION B-2

BORING LOCATION JUST WEST OF STORAGE AREA	DATE STARTED 7-27-88	DATE FINISHED 7-27-88
DRILLER SPECTRUM DRILLING	COMPLETION DEPTH (FT) 10	NUMBER OF SAMPLES 4
DRILLING EQUIPMENT CME 55 HSA RIG	ELEVATION AND DATUM	WATER DEPTH (FT) ND
DIAMETER AND TYPE OF WELL CASING N/A	LOGGED BY JH	VERTICAL B.H.

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. FID	B.G. PID	READING FID	READING PID	READING IR	REMARKS
	FILL	3" ASPHALT PAVEMENT. VERY DARK BROWN (10YR 2/2) SILTY TO FINE SAND WITH MINOR CLAY, BRICK AND ASPHALT CHIPS, SLIGHTLY MOIST AND COMPACT, (FILL)	23	7/27 ↓	1145	3	2	25	9	35	
	CL	GRAYISH BROWN (2.5Y 5/2) SILTY CLAY WITH FINE SAND. SLIGHTLY MOIST TO DRY AND COMPACT.	24		1155	3	2	20	12	ND<17	
5	CL	SAME AS ABOVE	25		1210	3	2	7	7	ND<17	
10	SC	VERY DARK GRAYISH BROWN (2.5Y 3/2) MED SAND WITH CLAY AND MINOR SMALL PEBBLES. SLIGHTLY MOIST AND COMPACT	26		1220	4	2	8	7	35	

BCL1283-2

BCL ASSOCIATES, INC.

BORING LOG AND SAMPLING RECORD

PROJECT NAME CALMAR

PROJECT NUMBER 488

BORING DESIGNATION B-3

BORING LOCATION JUST WEST OF STORAGE AREA	DATE STARTED 7-28-88	DATE FINISHED 7-28-88
DRILLER SPECTRUM DRILLING	COMPLETION DEPTH (FT) 10	NUMBER OF SAMPLES 4
DRILLING EQUIPMENT CME 55 HSA RIG	ELEVATION AND DATUM	WATER DEPTH (FT) ND
DIAMETER AND TYPE OF WELL CASING N/A	LOGGED BY JH	VERTICAL B.H.

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. FID	B.G. PID	READING FID	READING PID	READING IR	REMARKS
	FILL	3" ASPHALT SLAB 6" PEA GRAVEL (FILL)	S7	7/28	1410	5	2	.05%	19	21.	
	FILL	BLACK (2.5YN2/) SILTY CLAY WITH FINE SAND AND CHIPS OF ASPHALT AND BRICK. SLIGHTLY MOIST AND COMPACT.									
	CL	DARK GRAYISH BROWN (2.5Y4/2) SILTY CLAY WITH FINE SAND SLIGHTLY MOIST AND COMPACT	S8		1420	5	2	50	19	42	
5	CL	SAME AS ABOVE	S9		1430	5	2	40	19	42	
10	SC	DARK GRAYISH BROWN (2.5Y4/2) FINE SAND WITH CLAY. SLIGHTLY MOIST AND COMPACT	60		1440	5	2	25	14	ND	

BCL1283-2

BCL ASSOCIATES, IN

BORING LOG AND SAMPLING RECORD

PROJECT NAME CALMAR

PROJECT NUMBER 488 BORING DESIGNATION B-4

BORING LOCATION JUST NW OF B-3	DATE STARTED 7-28-88	DATE FINISHED 7-28-88
DRILLER SPECTRUM DRILLING	COMPLETION DEPTH (FT) 10	NUMBER OF SAMPLES 4
DRILLING EQUIPMENT CME 55 HSA RIG	ELEVATION AND DATUM	WATER DEPTH (FT) ND
DIAMETER AND TYPE OF WELL CASING N/A	LOGGED BY JH	VERTICAL B. H.

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. FID	B.G. PID	READING FID	READING PID	READING IR	REMARKS
		3" ASPHALT PAVEMENT 6" PEA GRAVEL (FILL)									
	FILL	BLACK (10YR2/1) SILTY CLAY WITH FINE SAND, SMALL BRICK GRAVEL AND ASPHALT CHIPS. MOIST AND COMPACT.	61	7/28	1500	5	2	100	40	ND <17	
	CL	GRAYISH BROWN (2.5Y5/2) SILTY CLAY WITH MINOR FINE SAND. SLIGHTLY MOIST AND LOOSE TO COMPACT.	62	↓	1520	5	2	50	30	ND <17	
5	CL	SAME AS ABOVE	63		1530	10	2	50	30	ND <17	
10	SC	GRAYISH BROWN (2.5Y5/2) FINE TO MED. SAND WITH SILTY CLAY. MINOR SMALL GRANULES ALSO PRESENT. SLIGHTLY MOIST AND COMPACT.	64		1540	8	2	30	13	ND <17	

BCL ASSOCIATES, IN | **BORING LOG AND SAMPLING RECORD** |

PROJECT NAME CALMAR
PROJECT NUMBER 488 BORING DESIGNATION B-5

BORING LOCATION NORTH OF PREVIOUS STORAGE AREA	DATE STARTED 7-27-88	DATE FINISHED 7-27-88
DRILLER SPECTRUM DRILLING	COMPLETION DEPTH (FT) 30	NUMBER OF SAMPLES 8
DRILLING EQUIPMENT CME 55 HSA RIG	ELEVATION AND DATUM	WATER DEPTH (FT) 27
DIAMETER AND TYPE OF WELL CASING 4" S.S. AND PVC.	LOGGED BY JH	VERTICAL B.H.

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. FID	B.G. PID	READING FID	READING PID	READING IR	REMARKS
	FILL	3" ASPHALT PAVEMENT VERY DARK BROWN (10YR2/2) SILTY CLAY WITH FINE SAND BRICKS, AND MINOR ASPHALT CHIPS. MOIST AND COMPACT. (FILL)	9	7/27 ↓	830	4	3	12	11	650	
	CL	GRAYISH BROWN (2.5Y5/2) SILTY CLAY WITH MINOR FINE SAND AND SLIGHT LAMINATION. SLIGHTLY MOIST AND COMPACT.	10		840	4	3	80	11	104	
5	CL	SAME AS ABOVE	11		855	5	4	10	4	104	
10	SP	BROWN (10YR4/3) FINE TO MED SAND WITH MINOR SILTY CLAY AND SMALL PEBBLES. SLIGHTLY MOIST AND SLIGHTLY COMPACT.	12		900	5	2	8	3	104	
15	SP	YELLOWISH BROWN (10YR5/6) FINE TO MED. SAND WITH MINOR SILT. SLIGHT LAMINATIONS PRESENT. GRAINS SUBANGULAR SLIGHTLY MOIST AND LOOSE	13		910	3	3	5	4	ND <17	
20	SP	DARK YELLOWISH BROWN (10YR4/4) COARSE TO GRANULE SAND WITH MINOR MED SAND AND SMALL PEBBLES. GRAINS SUBANGULAR. V. MOIST AND LOOSE.	14		920	3	4	5	6	ND <17	

BCL ASSOCIATES, IN

BORING LOG AND SAMPLING RECORD

PROJECT NAME CALMAR

PROJECT NUMBER 488 BORING DESIGNATION B-5

BORING LOCATION NORTH OF PREVIOUS STORAGE AREA	DATE STARTED 7-27-88	DATE FINISHED 7-27-88
DRILLER SPECTRUM DRILLING	COMPLETION DEPTH (FT) 30	NUMBER OF SAMPLES 8
DRILLING EQUIPMENT CME 55 HSA RIG	ELEVATION AND DATUM	WATER DEPTH (FT) 27
DIAMETER AND TYPE OF WELL CASING 4" S.S. AND PVC,	LOGGED BY JH	VERTICAL B.H.

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. READING FID	B.G. READING PID	FID	PID	IR	REMARKS
				7/27 ↓							
25	SC	DARK GRAYISH BROWN (2.5Y4/2) FINE TO MED SAND WITH SILTY CLAY. SLIGHT LAMINATIONS PRESENT. MOIST AND SLIGHTLY COMPACT.	15		925	3	3	4	7		NDL17
30	CH	DARK GRAY (5Y4/1) CLAY WITH SILT. STICKY WITH MINOR LAMINATIONS. SATURATED AND COMPACT.	16		935	3	3	8	7		NDL17

BCL ASSOCIATES, IN

BORING LOG AND SAMPLING RECORD

PROJECT NAME CALMAR

PROJECT NUMBER 488 BORING DESIGNATION B-6

BORING LOCATION JUST NORTH OF PREVIOUS STORAGE AREA.	DATE STARTED 7-27-88	DATE FINISHED 7-27-88
DRILLER SPECTRUM DRILLING	COMPLETION DEPTH (FT) 5	NUMBER OF SAMPLES 3
DRILLING EQUIPMENT CME 55 HSA RIG	ELEVATION AND DATUM	WATER DEPTH (FT) ND
DIAMETER AND TYPE OF WELL CASING N/A	LOGGED BY JH	VERTICAL B. H.

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. FID	B.G. PID	READING FID	READING PID	READING IR	REMARKS
	FILL	3" ASPHALT PAVEMENT VERY DARK BROWN (10YR2/2) SILTY TO FINE SAND WITH MINOR ASPHALT AND GRAVEL CHIPS. SLIGHTLY MOIST AND COMPACT. (FILL)	20	7/27 ↓	1110	3	2	3	5	ND<17	
2.5	CL	GRAYISH BROWN (2.5Y5/2) SILTY CLAY WITH FINE SAND SLIGHT LAMINATIONS PRESENT SLIGHTLY MOIST TO DRY AND SLIGHTLY COMPACT.	21		1120	2	3	5	6	ND<17	
5	CL	SAME AS ABOVE	22		1130	2	3	4	5	69	

BCL ASSOCIATES, IN

BORING LOG AND SAMPLING RECORD

PROJECT NAME CALMAR

PROJECT NUMBER 488

BORING DESIGNATION B-7

BORING LOCATION PREVIOUS STOCKE AREA (NORTH OF)	DATE STARTED 7-27-88	DATE FINISHED 7-27-88
DRILLER SPECTRUM DRILLING	COMPLETION DEPTH (FT) 5	NUMBER OF SAMPLES 3
DRILLING EQUIPMENT CME 55 HSA RIG	ELEVATION AND DATUM	WATER DEPTH (FT) ND
DIAMETER AND TYPE OF WELL CASING N/A	LOGGED BY JH	VERTICAL B.H.

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. FID	B.G. PID	READING FID	READING PID	REMARKS IR
	FILL	3" ASPHALT PAVEMENT. VERY DARK BROWN (10YR 2/2) SILTY CLAY WITH FINE SAND MINOR BRICK CHIPS, ASPHALT, AND GRAVEL CHIPS PRESENT. SLIGHTLY MOIST AND COMPACT. (FILL)	17	7/27 ↓	1030	3	3	3	5	35
2.5	CL	GRAYISH BROWN (2.5Y 3/2) SILTY CLAY WITH MINOR FINE SAND, SLIGHT LAMINATIONS PRESENT. SLIGHTLY MOIST AND COMPACT.	18		1040	3	3	4	6	35
5	CL	SAME AS ABOVE	19		1050	4	3	4	5	35

BCL1283-2

BCL ASSOCIATES, IN

BORING LOG AND SAMPLING RECORD

PROJECT NAME CALMAR

PROJECT NUMBER 488 BORING DESIGNATION B-8

BORING LOCATION JUST NORTH OF SEWER ACCESS	DATE STARTED 7-27-88	DATE FINISHED 7-27-88
DRILLER SPECTRUM DRILLING	COMPLETION DEPTH (FT) 30	NUMBER OF SAMPLES 8
DRILLING EQUIPMENT CME 55 HSA RIG	ELEVATION AND DATUM	WATER DEPTH (FT) 28
DIAMETER AND TYPE OF WELL CASING 4" S.S. AND PVC	LOGGED BY JH	VERTICAL B.H.

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. PID	B.G. PID	READING PID	READING PID	READING IR	REMARKS
		8" CONC. SLAB									
	FILL	BLACK (5Y 2.5/1) SILTY CLAY WITH MINOR CONCRETE CHIPS AND HC LIKE STAINING. SLIGHTLY MOIST AND COMPACT.	27	7/27	1355	1	2	12	7	208	
	CL	GRAY (5Y 5/1) SILTY CLAY WITH MINOR FINE SAND. HC LIKE STAINING PRESENT. SLIGHTLY MOIST AND COMPACT	28	↓	1400	3	2	18	5	138	
5	CL	SAME AS ABOVE	29		1410	3	2	7	5	138	
10	CL	YELLOWISH BROWN (10YR 5/4) SILTY CLAY WITH MINOR FINE SAND WITH SMALL PEBBLES SLIGHTLY MOIST AND COMPACT.	30		1420	2	3	7	5	121	
15	SP	YELLOWISH BROWN (10YR 5/4) FINE TO MED. SAND WITH MINOR SILT. SLIGHTLY MOIST AND LOOSE.	31		1425	2	2	4	3	69	
20	SP	YELLOWISH BROWN (10YR 5/4) COARSE SAND WITH MINOR GRANULE SAND. MOIST AND LOOSE.	32		1435	2	2	7	8	35	

BCL ASSOCIATES, IN

BORING LOG AND SAMPLING RECORD

PROJECT NAME CALMAR

PROJECT NUMBER 488 BORING DESIGNATION B-8

BORING LOCATION JUST NORTH OF SEWER ACCESS	DATE STARTED 7-27-88	DATE FINISHED 7-27-88
DRILLER SPECTRUM DRILLING	COMPLETION DEPTH (FT) 30	NUMBER OF SAMPLES 8
DRILLING EQUIPMENT CME 55 HSA RIG	ELEVATION AND DATUM	WATER DEPTH (FT) 28
DIAMETER AND TYPE OF WELL CASING 4" S.S. AND PVC	LOGGED BY JH	VERTICAL B.H.

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. FID	B.G. PID	READING FID	READING PID	READING IR	REMARKS
25	SC	OLIVE GRAY (5Y4/2) SILTY CLAY WITH FINE SAND MOIST AND COMPACT.	33	7/27 ↓	1440	2	2	7	8	35	
30	SC	SAME AS ABOVE	34		1450	2	2	7	2	69	

BCL ASSOCIATES, IN

BORING LOG AND SAMPLING RECORD

PROJECT NAME CALMAR

PROJECT NUMBER 488 **BORING DESIGNATION** B-10

BORING LOCATION JUST WEST OF B-9	**DATE STARTED** 7-28-88	**DATE FINISHED** 7-28-88
DRILLER SPECTRUM DRILLING	**COMPLETION DEPTH (FT)** 10	**NUMBER OF SAMPLES** 4
DRILLING EQUIPMENT CME 55 HSA RIG	**ELEVATION AND DATUM**	**WATER DEPTH (FT)** ND
DIAMETER AND TYPE OF WELL CASING N/A	**LOGGED BY** JH	VERTICAL B.H.

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. FID	B.G. PID	READING FID	READING PID	READING IR	REMARKS
		8" CONC. SLAB.		7/28							
	FILL	VERY DARK GRAY (5Y3/1) SILTY CLAY WITH FINE SAND AND CONCRETE CHIPS, SLIGHTLY MOIST AND COMPACT (FILL)	43	↓	1005	3	2	15	4	30	
	CL	DARK GRAYISH BROWN (2.5Y4/2) SILTY CLAY WITH FINE SAND SLIGHTLY MOIST AND COMPACT.	44		1015	4	2	12	4	30	
5	CL	SAME AS ABOVE	45		1025	4	3	4	5	30	
10	SC	LT. OLIVE BROWN (2.5Y5/4) FINE SAND WITH SILTY CLAY. SLIGHTLY MOIST AND COMPACT.	46		1035	3	2	3	2	59	

BCL ASSOCIATES, INC.

BORING LOG AND SAMPLING RECORD

PROJECT NAME CALMAR

PROJECT NUMBER 488 BORING DESIGNATION B-11

BORING LOCATION: JUST WEST OF B-10	DATE STARTED: 7-28-88	DATE FINISHED: 7-28-88
DRILLER: SPECTRUM DRILLING	COMPLETION DEPTH (FT): 10	NUMBER OF SAMPLES: 4
DRILLING EQUIPMENT: CME 55 HSA RIG	ELEVATION AND DATUM:	WATER DEPTH (FT): ND
DIAMETER AND TYPE OF WELL CASING: N/A	LOGGED BY: JH	VERTICAL B.H.

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. FID	B.G. PID	READING FID	READING PID	READING IR	REMARKS
		6" CONC. SLAB									
	FILL	VERY DARK GRAYISH BROWN (2.5Y3/2) SILTY CLAY WITH FINE SAND AND CHIPS OF CONCRETE MOIST AND COMPACT (FILL)	39	7/28	925	3	2	3	3	ND<17	
	CL	LIGHT BROWNISH GRAY (2.5Y6/2) SILTY CLAY WITH FINE SAND SLIGHTLY MOIST AND COMPACT	40		935	3	2	3	4	30	
5	CL	SAME AS ABOVE BUT GRAYISH BROWN (2.5Y5/2)	41		940	3	2	3	5	30	
10	CL	SAME AS ABOVE	42		950	3	2	3	4	59	

BCL ASSOCIATES, IN

BORING LOG AND SAMPLING RECORD

PROJECT NAME CALMAR

PROJECT NUMBER 488 BORING DESIGNATION B-12

BORING LOCATION JUST WEST OF CHILLER AREA	DATE STARTED 7-28-88	DATE FINISHED 7-28-88
DRILLER SPECTRUM DRILLING	COMPLETION DEPTH (FT) 10	NUMBER OF SAMPLES 4
DRILLING EQUIPMENT CME 55 HSA RIG	ELEVATION AND DATUM	WATER DEPTH (FT) ND
DIAMETER AND TYPE OF WELL CASING N/A	LOGGED BY JH	VERTICAL B.H.

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. FID	B.G. PID	READING FID	READING PID	READING IR	REMARKS
		8" CONC. SLAB		7/28							
	FILL	VERY DARK GRAY (2.5Y N3/) SILTY TO FINE SAND WITH CLAY AND CONCRETE. SLIGHTLY MOIST AND LOOSE TO COMPACT	47	↓	1100	4	3	4	3	ND<17	
	CL	DARK GRAYISH BROWN (2.5Y4/2) SILTY CLAY WITH FINE SAND. SLIGHTLY MOIST AND COMPACT.	48		1110	4	3	4	4	30	
	CL	SAME AS ABOVE	49		1120	4	3	4	4	30	
	CL	SAME AS ABOVE	50		1130	4	2	4	3	45	

BCL ASSOCIATES, INC. — **BORING LOG AND SAMPLING RECORD** — PAGE 1 OF 1

PROJECT NAME: CALMAR
PROJECT NUMBER: 488 — BORING DESIGNATION: B-13

BORING LOCATION: JUST WEST OF B-12	DATE STARTED: 7-28-88	DATE FINISHED: 7-28-88
DRILLER: SPECTRUM DRILLING	COMPLETION DEPTH (FT): 5	NUMBER OF SAMPLES: 3
DRILLING EQUIPMENT: CME 55 HSA RIG	ELEVATION AND DATUM:	WATER DEPTH (FT): ND
DIAMETER AND TYPE OF WELL CASING: N/A	LOGGED BY: JH	VERTICAL B.H.

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. FID	B.G. PID	READING FID	READING PID	READING IR	REMARKS
		8" CONC. SLAB		7/28							
	FILL	VERY DARK GRAY (5Y 3/1) SILTY CLAY WITH FINE SAND AND CONCRETE CHIPS. MOIST AND COMPACT (FILL)	S4	↓	1310	5	2	10	4	104	
	CL	OLIVE GRAY (5Y5/2) SILTY CLAY WITH FINE SAND, MOIST AND COMPACT.	S5		1320	5	2	8	4.2	104	
	CL	SAME AS ABOVE	S6		1330	5	2	7	4	89	*NOTE IR WARM AND MAY BE GIVING FALSE READINGS PURE CLEAN FROON READING .04 ON ABSORB.

BCLI283-2

BCL ASSOCIATES, INC.

BORING LOG AND SAMPLING RECORD

PROJECT NAME CALMAR

PROJECT NUMBER 488

BORING DESIGNATION B-14

BORING LOCATION JUST WEST OF B-13	DATE STARTED 7-28-88	DATE FINISHED 7-28-88
DRILLER SPECTRUM DRILLING	COMPLETION DEPTH (FT) 5	NUMBER OF SAMPLES 3
DRILLING EQUIPMENT CME 55 HSA RIG	ELEVATION AND DATUM	WATER DEPTH (FT) ND
DIAMETER AND TYPE OF WELL CASING N/A	LOGGED BY JH	VERTICAL B. H.

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. FID	B.G. PID	READING FID	READING PID	READING IR	REMARKS
		8" CONC. SLAB		7/28							
	FILL	VERY DARK GRAY (5Y3/1) SILTY CLAY TO FINE SAND WITH CHIPS OF CONCRETE. MOIST AND COMPACT. (FILL)	S1	↓	1140	4	2	4	5	89	
	CL	OLIVE GRAY (5Y5/2) SILTY CLAY WITH FINE SAND. MOIST AND COMPACT.	S2		1150	4	2	4	4	59	
5	CL	SAME AS ABOVE	S3		1200	4	2	4	2	59	

BCL ASSOCIATES, IN

BORING LOG AND SAMPLING RECORD

PROJECT NAME CALMAR

PROJECT NUMBER 488 BORING DESIGNATION B-15

BORING LOCATION JUST NW OF STORAGE AREA	DATE STARTED 7-28-88	DATE FINISHED 7-28-88
DRILLER SPECTRUM DRILLING	COMPLETION DEPTH (FT) 30	NUMBER OF SAMPLES 7
DRILLING EQUIPMENT CME 55 HSA RIG	ELEVATION AND DATUM	WATER DEPTH (FT) 26
DIAMETER AND TYPE OF WELL CASING 4" S.S. + PVC.	LOGGED BY GM	VERTICAL B. H

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. PID	B.G. FID	READING PID	READING FID	READING IR	REMARKS
	FILL	3" Asphalt cover MATERIAL, VERY DARK GREY (2.5Y, N3/) SILTY CLAY, WITH MINOR FINE SAND and asphalt chips. SLIGHTLY MOIST, VERY COMPACT	65	7/28 ↓	1600	5	2	12	6	42	
5	CL	Dark grayish BROWN (2.5, 4/2) Clayey silt, well sorted, slightly moist and very compact. Minor traces of coarser sand lenses.	66		1615	4	2	4	2	ND<17	
10	CL	LIGHT YELLOWISH BROWN (2.5, 6/4) Clayey silt with larger quartz grains. Barely moist, compact. - LENS OF COARSE SAND W/SMALL PEBBLES @ ≈ 12.5'	67		1630	5	2	10	6	42	
15	SW	LIGHT YELLOWISH BROWN (2.5, 6/4) FINE GRAINED SAND, EVENLY SORTED. SLIGHTLY MOIST, loosely COMPACTED. SOME OXIDATION STAINS INTERMITTENT THROUGH SAMPLE, - LENS OF COARSE SAND W/SMALL PEBBLES @ ≈ 17.5'	68		1640	5	2	8	5	ND<17	
20	SW	LIGHT YELLOWISH BROWN (2.5, 6/4) FINE GRAINED SAND WITH OXIDATION PARTICLES OF STAINING. SLIGHTLY MOIST, loosely COMPACTED	69		1645	7	2	7	5	ND<17	

BCLI283-2

BCL ASSOCIATES, INC.

BORING LOG AND SAMPLING RECORD

PROJECT NAME CAMAR

PROJECT NUMBER 87-488 BORING DESIGNATION B-15

BORING LOCATION: JUST NW OF STORAGE AREA	DATE STARTED: 7-28-88	DATE FINISHED: 7-28-88
DRILLER: SPECTRUM DRILLING	COMPLETION DEPTH (FT): 30	NUMBER OF SAMPLES: 7
DRILLING EQUIPMENT: GME 55 HSA RIG	ELEVATION AND DATUM:	WATER DEPTH (FT): 26
DIAMETER AND TYPE OF WELL CASING: 4" SS + PVC.	LOGGED BY: GM	VERTICAL B.H.

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	B.G. FID	B.G. PID	READING FID	READING PID	READING IR	REMARKS
25	SP	LIGHT YELLOWISH BROWN (2.5, 6/4) COARSE GRAINSAND WITH SMALL PEBBLES. VERY POORLY SORTED, NOT COMPACT - MOIST.	70	7/28 ↓	1655	7	2	10	9	ND <17	
30	CL	DARK GRAY (5, 4/1) SILTY CLAY WET AND COMPACT	71		1710	5	2	10	5		VOA JAR BROKEN IR NOT TAKEN
35											

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BORING LOG AND SAMPLING RECORD

PROJECT NAME CALMAR

PROJECT NUMBER 87-488 BORING DESIGNATION B-16

BORING LOCATION N.W. LOADING DOCK	DATE STARTED 8-25-88	DATE FINISHED 8-25-88
DRILLER SPECTRUM (GARY + MARK)	COMPLETION DEPTH (FT)	NUMBER OF SAMPLES 10
DRILLING EQUIPMENT CME 55	ELEVATION AND DATUM	WATER DEPTH (FT) 37' BGS
DIAMETER AND TYPE OF WELL CASING 10" H.S.A.	LOGGED BY GSM	

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	PPM ND BG/R	PPM PID BG/R	REMARKS DIR PPM
25'		SILTY CLAY						
		CLAY						
		SILTY CLAY WITH FINE SAND + SMALL PEBBLES LIGHT OLIVE GRAY LOOSE, DRY	78	8/25	1045	4/4	2/0	NDL17
30'								
		SILTY TO FINE GRAINED SAND GRAY LOOSE, SLIGHTLY MOIST	79	8/25	1105	4/4	2/0	NDL17
35'								
▽ GWS		FINE SAND GRAY VERY WELL SORTED, LOOSE SLIGHTLY MOIST	80	8/25	1115	4/5	2/0	NDL17
40'								
		FINE SAND WITH SMALL PEBBLES GRAVEL LOOSE, ~~SATURATED~~	81	8/25	1125	4/4	2/2	NDL17 SCREEN WILL BE PLACED APPROX. 20' INTO AQUIFER
45'								

BCL ASSOCIATES, IN

BORING LOG AND SAMPLING RECORD

PROJECT NAME CALMAR

PROJECT NUMBER 87-488 BORING DESIGNATION B-16

BORING LOCATION N.W. CORNER OF LOADING DOCK	DATE STARTED 8-25-88	DATE FINISHED 8-25-88
DRILLER SPECTRUM (GARY & MARK)	COMPLETION DEPTH (FT)	NUMBER OF SAMPLES 10
DRILLING EQUIPMENT CME 55	ELEVATION AND DATUM	WATER DEPTH (FT) 37' BGS
DIAMETER AND TYPE OF WELL CASING H.S.A. 10" OUTER DIA.	LOGGED BY GSM	

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	PPM FID BG/R	PPM PID BG/R	REMARKS IR TPH PPM
0		0-3" ASPHALT PAVEMENT 3"-3' GRAVEL FILL CLAYEY SILT DARK BROWN, DRY, SEMICOMPACT	72	8/25	0955	4/5	1.8/0	ND<17
5'		CLAYEY SILT DARK OLIVE SEMICOMPACT, DRY	73	8/25	1000	4/4	1.6/0	ND<17
		SILTY CLAY OLIVE BROWN SEMICOMPACT, SOME VERY FINE SAND GRAINS GIVING ROUGH TEXTURE. SEMICOMPACT, DRY CLAY - DRY	74	8/25	1010	4/5	2/0	ND<17
10'		~~SILTY CLAY~~ IS VERY FINE GRAINED SAND WITH SILT OLIVE BROWN, DRY, SEMICOMPACT. SAND IS LOOSE (NON-COHESIVE).	75	8/25	1018	4/4	1/0	ND<17
15'		SILTY TO VERY FINE GRAINED SAND (WITH MINOR CLAY TRACE) LOOSE, DRY. OLIVE BROWN CLAY	76	8/25	1025	4/4	2/0	ND<17
20'		FINE GRAINED SAND, LOOSE LIGHT OLIVE BROWN, DRY	77	8/25	1035	4/4	2/0	ND<17

BCLI283-2

BCL ASSOCIATES, INC. **BORING LOG AND SAMPLING RECORD** PAGE 1 OF TWO

PROJECT NAME CALMAR

PROJECT NUMBER 87-488 BORING DESIGNATION B-17

BORING LOCATION 8' OFF SW CORNER OF BLDG. 3' S OF B-1	DATE STARTED 10.14.88	DATE FINISHED 10.14.88
DRILLER SPECTRUM (GARY DARIEW)	COMPLETION DEPTH (FT) 31.5'	NUMBER OF SAMPLES 8
DRILLING EQUIPMENT CME 55	ELEVATION AND DATUM	WATER DEPTH (FT) 29.5'
DIAMETER AND TYPE OF WELL CASING 8" HSA.	LOGGED BY GSM	

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	PPM FID B4/12	PPM PID B4/R	REMARKS	IR 7PH PPM
0		ASPHALT PAVEMENT, 0-6"							
15		FILL - SAND, GRAVEL, ASPHALT VERY DARK GRAYISH BROWN (10YR 3/2) DRY SEMICOMPACT	87	10/14	945	4/9	4/7	DILUTION 1:24	18124
25' 13		CLAY VERY DARK GRAY (10YR3/1) DRY, SEMICOMPACT	88	10/14	955	4/22	4/30		32
5' 15	CL	SILTY CLAY GRAYISH BROWN (10YR 5/2 DRY, SEMICOMPACT	89	10/14	1000	4/10	4/15		32
		SILTY CLAY DARKENING							
10'		CLAY WITH SAND							
19	SM	SAND WITH SOME CLAY FINE GRAINED SAND DARK YELLOWISH BROWN (10YR 3/4) SLIGHTLY MOIST, SEMICOMPACT LARGER QTZ. GRAINS VISIBLE	90	10/14	1005	4/12	4/14		32
	SP	COARSE GRAINED SAND POORLY SORTED WITH SMALL PEBBLES AND POORLY ROUNDED LARGER QTZ. GRAINS							
15		⇒ COARSENING FINER MED. GRAINED SAND MOD. SORTED							
21		FINE GRAINED SAND PALE BROWN (10YR 6/3) MOIST, COMPACT WELL SORTED	91	10/14	1015	4/10	4/6		NDL17
	SM	SAME							
20'		MED. GRAINS MIXED IN FINE GR. SAND.							
42		FINE GRAINED SAND OLIVE YELLOW (2.5Y 6/8) WELL SORTED DRY	92	10/14	1025	4/-	4/5		NDL17

BCLI283-2

BCL ASSOCIATES, INC. — **BORING LOG AND SAMPLING RECORD**

PROJECT NAME CALMAR
PROJECT NUMBER 87-488 — BORING DESIGNATION B-17

BORING LOCATION 8' OFF SW CORNER OF BLDG. 3' S. OF B-1	DATE STARTED 10-14-88	DATE FINISHED 10-14-88
DRILLER SPECTRUM (GARY DARREW)	COMPLETION DEPTH (FT) 31.5'	NUMBER OF SAMPLES 8
DRILLING EQUIPMENT CME 55	ELEVATION AND DATUM	WATER DEPTH (FT) 29.5'
DIAMETER AND TYPE OF WELL CASING 8" HSA.	LOGGED BY GSM	

DEPTH (FEET)	LITHOLOGY	DESCRIPTION	SAMPLE NO.	DATE	TIME	PPM FID B4/12	PPM PID B4/12	REMARKS IR TPH PPM
25'		FINE GRAINED SAND CONT'D.						
		FINE SILT WITH CLAY, MOIST						
22	SM	COLOR CHANGE FROM YELLOW FINE GRAINED SAND LIGHT GRAY (5Y 6/1) MOIST, COMPACT	93	10/14	1035	4/8	4/6	NDL17
		COARSENING UPWARD						
0'		COARSE GRAINED SAND W/ SMALL PEBBLES						
		FINE SILT WITH CLAY						
8-4/4								
	ML	FINE SILT DARK GRAY (2.5Y N4) SATURATED	94	10/14	1055	4/8	4/70	NDL17
		COMPLETION DEPTH AT 31.5' BACKFILLED WITH 3' OF BENTONITE AND 28' OF CEMENT & CAPPED. WITH A PATCH.						
35'								

BCLI283-2

APPENDIX C

Standard Procedures for Field Soil Pore Space Gas Measurements

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[redacted]

5702 Bolsa Avenue, Huntington Beach, CA 92649 / (714) 892-2565
(213) 437-4148

ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	43	Client Name:	BCL Associates, Inc.
Laboratory Job No.:	00358	Client Job Number:	87-488
Date Collected:	07-28-88		
Date Received (in lab):	07-29-88	Date Extracted:	08-11-88
Date Analyzed:	08-11-88	Extraction Method:	5030

Sample Matrix;
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-009

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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(213) 437-4148

ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	46	Client Name:	BCL Associates,Inc.
Laboratory Job No.:	00358	Client Job Number:	87-488
Date Collected:	07-28-88		
Date Received (in lab):	07-29-88	Date Extracted:	08-11-88
Date Analyzed:	08-11-88	Extraction Method:	5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-012

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	47	Client Name:	BCL Associates, Inc.
Laboratory Job No.:	00358	Client Job Number:	87-488
Date Collected:	07-28-88		
Date Received (in lab):	07-09-88	Date Extracted:	08-11-88
Date Analyzed:	08-11-88	Extraction Method:	5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-013

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	50	Client Name:	BCL Associates, Inc.
Laboratory Job No.:	00358	Client Job Number:	87-488
Date Collected:	07-27-88		
Date Received (in lab):	07-29-88	Date Extracted:	08-11-88
Date Analyzed:	08-11-88	Extraction Method:	5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-016

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

DL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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(213) 437-4148

ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.: 57
Laboratory Job No.: 00358
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 07-29-88

Client Name: BCL Associates, Inc.
Client Job Number: 87-488

Date Extracted: 08-11-88
Extraction Method: 5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-023

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	Trace		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	59	Yes	
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	8.1	Yes	
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	80	Yes	
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

Standard Procedures for Field Soil Pore Space Gas Measurments

It has been demonstrated that volatile organic gases can exist and migrate through the pore spaces in soil. The measurement of the concentrations of volatile organic gases present in soil pore spaces can provide information on the extent and degree of chemical contamination. This information can be used to select samples for analysis, identify soils requiring remedial action and document the adequacy of clean up activities.

Soil pore space gas measurements must be performed in a standardized manner to assure that the results are accurate and representative of the area being monitored. Such measurements must be comparable to soil pore space gas measurements made in other areas. BCLA has field tested several methods for the measurement of soil pore space gas concentrations. The following methods have been found to provide the most accurate and reliable data. The California Department of Health Services (CDHS) and California Regional Water Quality Control Board (CRWQCB) have observed and evaluated these methods and accept the readings as valid.

It is vital that all of the procedures described in this document be followed in a rigorous manner as measurements made in the field may be influenced by many variables. Prior to performing these measurements the instruments to be used must be calibrated in accordance with BCLA procedures.

This soil pore space gas measurement method is designed to be performed on soil samples collected using a hollow stem auger drill rig equipped with a split tube sampler. The sample is to be collected using a 24-inch long split tube sampler outfitted with four six-inch long, clean, one and one-half inch diameter stainless steel sleeves. The auger flights are to be cleaned prior to the beginning of the project and at the conclusion of the project. The auger bit is to be scrubbed clean with soapy tap water and a brush followed by a clean water rinse in between each boring. The BCLA field supervisor is responsible for inspecting the drill bit, inside of the auger flights and sample collection tube to assure that all are clean prior to drilling each hole. No lubricants other than clean water or teflon tape are to be used on the joints between the auger flights.

To collect a sample, the drill crew advances the auger flights to the desired depth, at which point the drill head is disconnected from the uppermost auger flight. The sample tube, which has been loaded with the stainless steel sleeves, is attached to a slide hammer and lowered down the center of the auger flights until the tube contacts soil. The sample tube is then advanced at least 16 inches into the formation.

The sample tube is then raised to the surface and disconnected from the slide hammer. The BCLA field crew opens the sample tube. The soil from the tip of the sampler is immediately pushed into a clean eight-ounce sample jar with an aluminum foil septum. A cap with a 1/2± inch hole drilled in the center is used to close the jar. The jar should be no more than one half full.

The capped jar is agitated to break up the soil particles and allowed to sit for ten minutes so that the pore space gas will fill the head space of the jar. A portable flame ionization detector (FID) and photo ionization detector (PID) are used to monitor this head space gas. The steel probe tip on these instruments is inserted through the opening in the cap, puncturing the aluminum foil septum. The probe is inserted into the hole approximately one half the distance from the cap to the soil. The probe is left in the jar a minimum of 10 seconds or until the instrument readings stabilize. The instrument readings are logged on the geologists lithologic log along with the background readings obtained in ambient air. Once the pore space reading is completed, the cap with a hole is to be removed and replaced with an intact cap with a teflon liner. The jar is to be labeled, sealed, stored and transported to the designated laboratory in accordance with BCLA standard operating procedures. This sample is valid for analysis for the base, neutral, acid extractable organics, pesticides, PCB's, inorganics, and pH, but not for the volatile organic compounds.

After the sampler is retrieved, the four stainless steel sleeves are separated. The sleeve closest to the bottom of the sampler is capped with clean air-tight polyethylene caps with teflon liners. The caps are taped to the sleeve to assure they remain in place. The tube is to be labeled, sealed and chilled in an insulated chest in accordance with standard BCLA procedures.

The two sleeves remaining are cleaned as discussed below and reused as spacers. Fresh sleeves must always be used for the two lower-most sample sleeves. The used rinse water is placed on the auger cuttings.

If a soil sample is not recovered from a given depth, a replacement sample is collected as close as possible to the same depth.

While the soil pore space gases are being monitored, the BCLA field crew also processes the soil samples. At all times the sample processing area is kept clean. After removing the stainless steel sleeves from the sample tube, the sleeves to be reused and the sample tubes are cleaned in the following manner. All loose soil is wiped off the items using disposable paper towels. The sample tube and sleeves are immersed in a bucket containing a solution of water and Liquinox detergent (or equivalent) cleaning powder. A scrub brush is used to thoroughly clean each part of the sample tube and the sleeves. A bottle brush is used to clean the interior of the tip of the sample tube and the sleeves. The wash water must be changed frequently. Following the wash step, the tube is

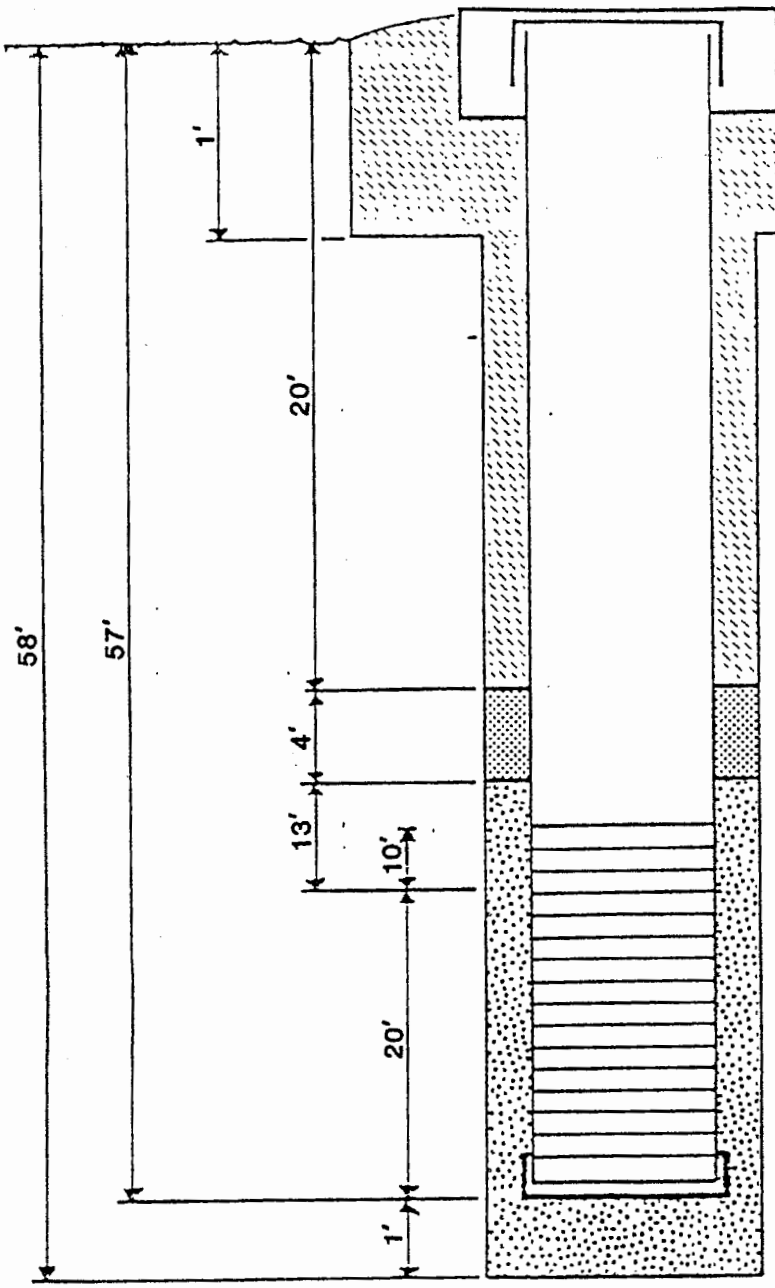
sprayed using a portable hand pressurized sprayer filled with tap water. At least 1/2 quart of water will be used per sample tube and sleeve washing. Following the tap water rinse the tube and sleeves are rinsed with at least two cups of distilled water. The washed tube and sleeves are inspected at each step in this process to assure the effectiveness of the cleaning. Following confirmation of the cleanliness of the tube and sleeves, after the final distilled water rinse, the clean sleeves and sample tube are assembled and a plastic bag will be rubber-banded over the tip of the sample tube. The tube remains in a clean portion of the work area. All persons involved in touching the sample collection tube during the washing process shall only touch the tube with clean gloves. The tube will remain in the clean area until it is required to collect another sample. At this point, a BCLA field crew member will remove the tube using a clean pair of gloves. The BCLA crew member will present the tube to the drill crew member who attaches the tube to the slide hammer. The plastic bag will remain on the tip of the sample tube until just before the tube is lowered into the hollow center of the auger. At this point, a BCLA crew member will remove the bag.

APPENDIX D

Well Construction Diagrams

and

Sieve Analysis



VENTED WELL CAP
TYPE: PVC

GROUND SURFACE

DIAMETER OF SURFACE SEAL: 12 inches

MATERIAL: CONCRETE-BENTONITE GROUT

ANNULAR SPACE
FILL: CONCRETE
SEAL: CONCRETE

WELL CASING
MATERIAL: PVC
DIAMETER: 4 INCHES
LENGTH: 27 FEET

SEAL
MATERIAL: BENTONITE PELLETS

▽ APPROXIMATELY 37' B.G.S.

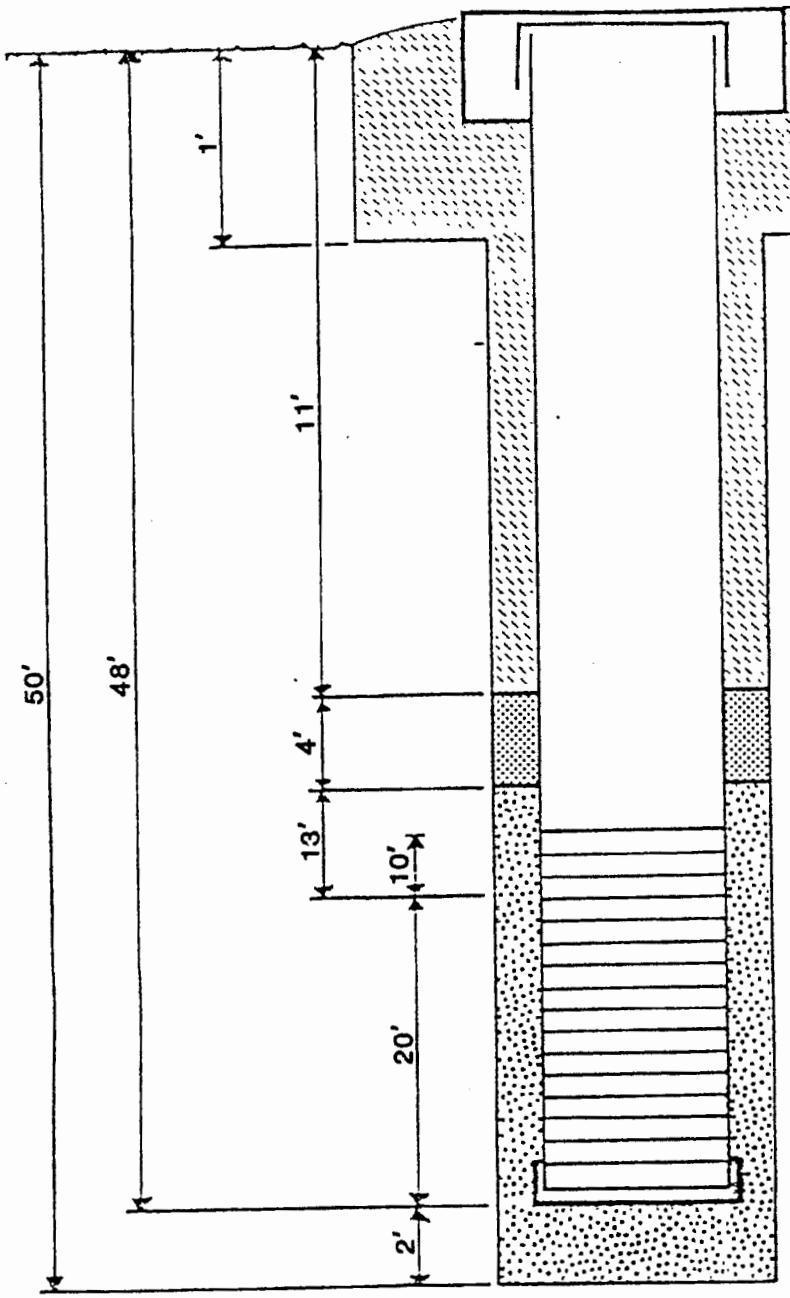
SCREEN
MATERIAL: STAINLESS STEEL
SLOT SIZE: 0.02 INCHES
LENGTH: 30 FEET

FILTER PACK
MATERIAL: #3 MONTEREY SAND
DIAMETER: 12 INCHES

CAP

BOREHOLE
DIAMETER: 12 INCHES

BCL	Source: BCL ASSOCIATES, INC.	Title: MW-1 GROUNDWATER WELL



VENTED WELL CAP
TYPE: PVC

GROUND SURFACE

DIAMETER OF SURFACE SEAL:
12 inches

MATERIAL:
CONCRETE-BENTONITE GROUT

ANNULAR SPACE
FILL: CONCRETE
SEAL: CONCRETE

WELL CASING
MATERIAL: PVC
DIAMETER: 4 INCHES
LENGTH: 18 FEET

SEAL
MATERIAL: BENTONITE PELLETS

▽ APPROXIMATELY 28' B.G.S.

SCREEN
MATERIAL: STAINLESS STEEL
SLOT SIZE: 0.02 INCHES
LENGTH: 30 FEET

FILTER PACK
MATERIAL: #3 MONTEREY SAND
DIAMETER: 12 INCHES

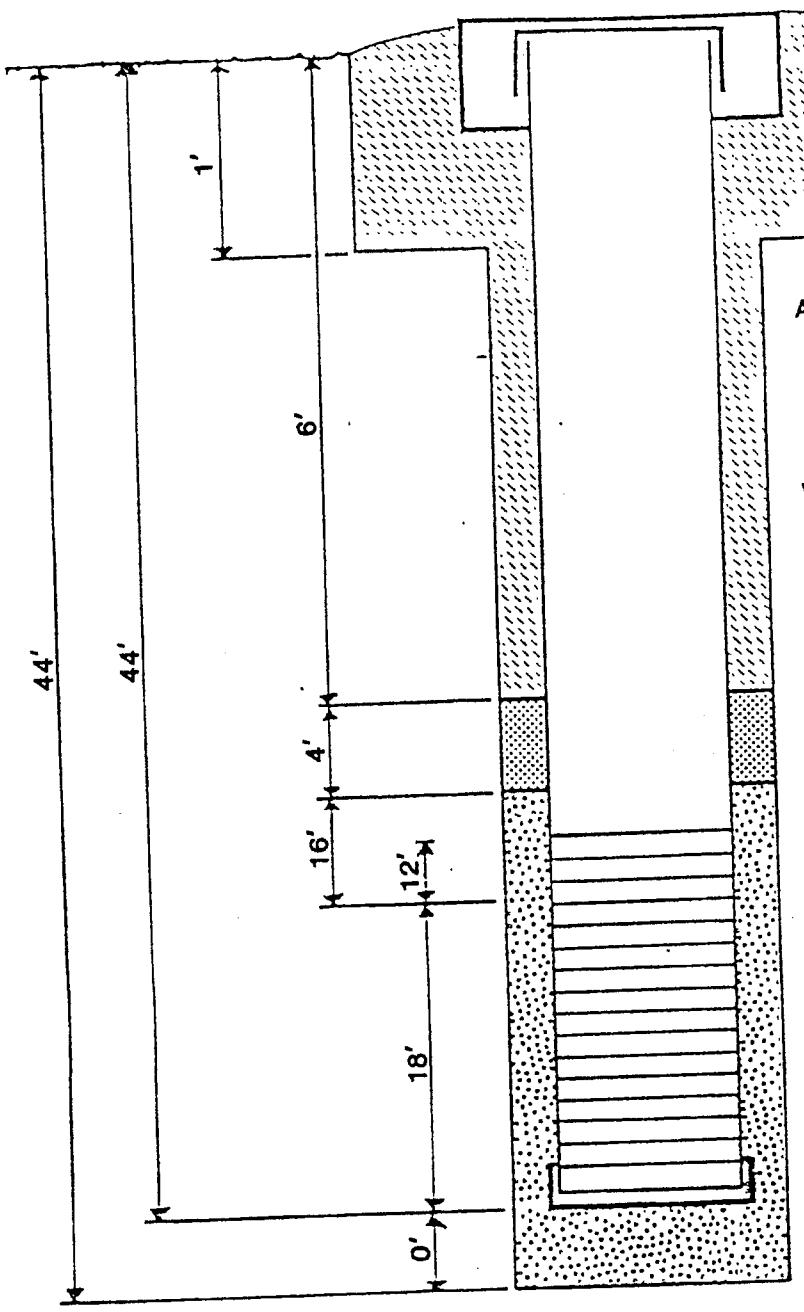
CAP

BOREHOLE
DIAMETER: 12 INCHES

BCL

Source:
BCL ASSOCIATES, INC.

Title:
MW-2
GROUNDWATER WELL



VENTED WELL CAP
TYPE: PVC

GROUND SURFACE

DIAMETER OF SURFACE SEAL: 12 inches

MATERIAL: CONCRETE-BENTONITE GROUT

ANNULAR SPACE
FILL: CONCRETE
SEAL: CONCRETE

WELL CASING
MATERIAL: PVC
DIAMETER: 4 INCHES
LENGTH: 14 FEET

SEAL
MATERIAL: BENTONITE PELLETS

▽ APPROXIMATELY 26' B.G.S.

SCREEN
MATERIAL: STAINLESS STEEL
SLOT SIZE: 0.02 INCHES
LENGTH: 30 FEET

FILTER PACK
MATERIAL: #3 MONTEREY SAND
DIAMETER: 12 INCHES

CAP

BOREHOLE
DIAMETER: 12 INCHES

BCL

Source: BCL ASSOCIATES, INC.

Title: **MW-3**
GROUNDWATER WELL

MOORE & TABER GEOTECHNICAL ENGINEERS AND GEOLOGISTS
4530 EAST LA PALMA AVENUE · ANAHEIM, CALIFORNIA 92807 ·
TELEPHONE (714) 779-2591 FAX: (714) 779-8377

ADDITIONAL OFFICES
SAN DIEGO
BAKERSFIELD

August 12, 1988

Job No. 188-103

Mr. Jeff Hensel
BCL Associates, Inc.
5702 Bolsa Avenue
Huntington Beach, California 92649

SOIL TESTING

Your Project Name: CalMar-87-488
Your Project No.: 00358
Your Sample No.: 00358-038
Date Received: August 10, 1988
Description: Fine to medium silty sand (SM)
Type of Test: Grain-size analyses of soil
ASTM D-422

Results:

Sieve Size	Percent Passing
1/2"	100
3/8"	99
No. 4	96
No. 8	87
No. 16	69
No. 30	51
No. 60	40
No. 100	31
No. 200	24
.02mm	15
.005mm	9
.002mm	-- 7

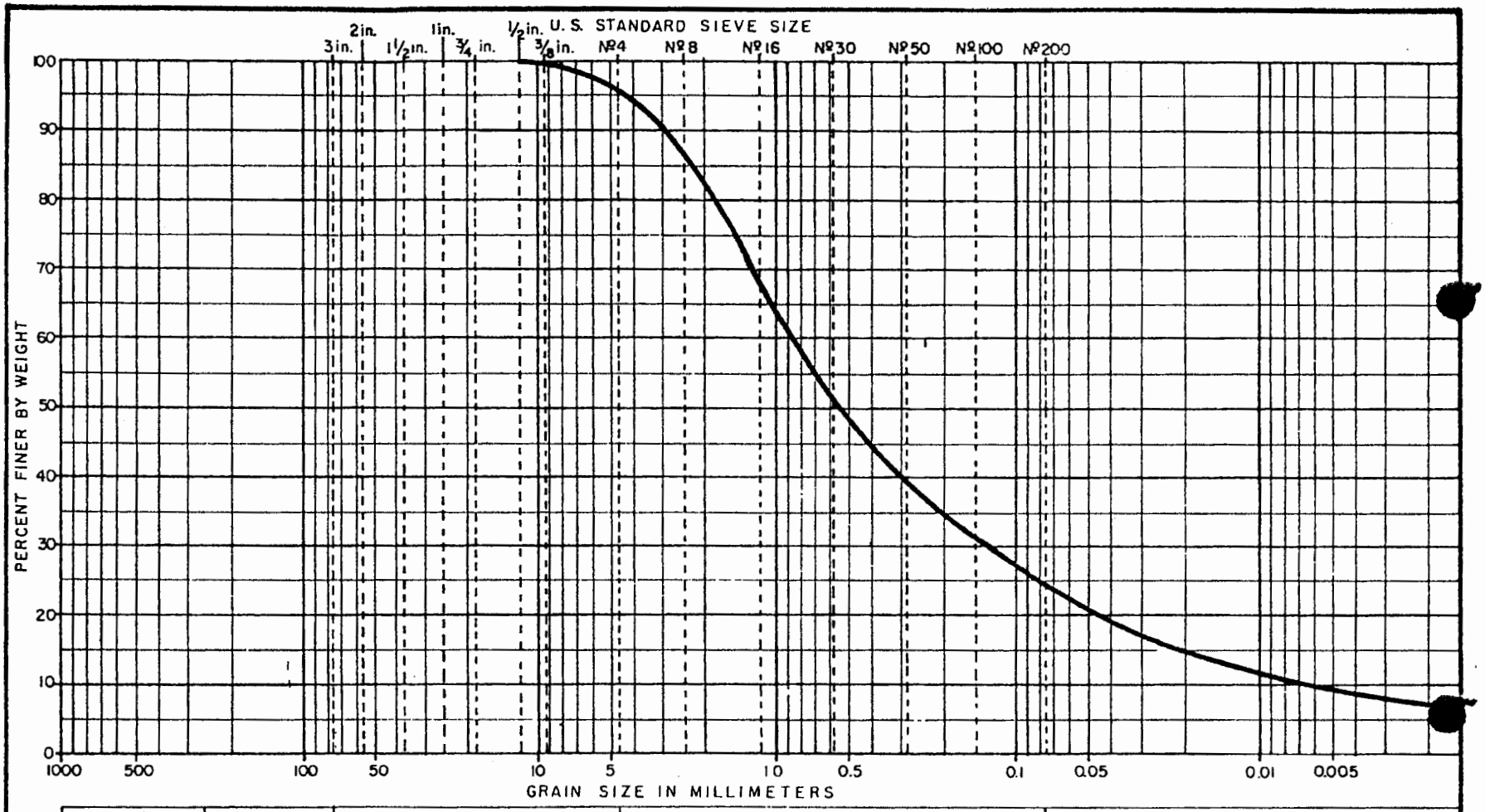
MOORE & TABER

Robert J. Nagle
Laboratory Manager
bh

Attachment: Grain Size Distribution

Distribution: (2) Addressee

Job No. 188-103 - August 12, 1988



BOULDERS	COBBLES	GRAVEL		SAND			FINES (Silt and Clay)
		Coarse	Fine	Coarse	Medium	Fine	

Bor./Samp.№	Elev. or Depth	Unified Soil Class	Description	Nat. Water	LL	PL	PI	SE	Max Dry Dens.	Opt Moisture
358-038		SM	Fine to medium silty sand							

GRAIN SIZE DISTRIBUTION

MOORE & TABER
Engineers — Geologists

Project BCL Associates, Inc.

By RJN Date 8/12/88

APPENDIX E

Laboratory Reports

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(213) 437-4148

LABORATORY REPORT

Report to: BCL Associates, Inc.
5702 Bolsa Avenue
Huntington Beach, CA 92649

Attention: James J.Severns

Client Number: 87-488
Laboratory Number: 00283
Report Date: 06/28/88
Received Date: 06/08/88

Purchase Order No.:

Sample Description: Six soil samples

Testing Methods: Total Petroleum Hydrocarbons with Carbon Chain I.D./GC-FID; EPA Method 5030/Modified 8015
Volatile Organic/GC; EPA Method 5030/8020
Halogenated Volatile Organics/GC; EPA Method 5030/8010

See attached sheets for test results.

Rhondi Bobich
Environmental Chemist

Steve Jones, Ph.D.
Lab Manager

3.48F1.R248

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval: _____
Date: _____

Client (Field) Sample No.: 1
Date Collected: 06/08/88
Date Received (in lab): 06/08/88
Date Analyzed: 06/19/88

Dilution Factor: 94
Extraction Method: 5030

Lab Sample Number: 28-00283-001

Sample Matrix:

[ ] Water (micrograms per liter)

[X] Soil (micrograms per kilogram)

[ ] Other (specify)_____

Compound Name	MDL (ug/Kg)	Concentration Found (ug/Kg)	Confirmation (Y/N)
Chloromethane	50	ND	
Bromomethane	50	ND	
Vinyl Chloride	50	ND	
Chloroethane	50	ND	
Dichloromethane	50	ND	
Trichlorofluoromethane	50	ND	
1,1-Dichloroethylene	50	ND	
1,1-Dichloroethane	50	ND	
trans-1,2-Dichloroethane	50	ND	
Chloroform	50	ND	
1,2-Dichloroethane	50	ND	
1,1,1-Trichloroethane	50	ND	
Carbon tetrachloride	50	2300	Y
Bromodichloromethane	50	ND	
1,2-Dichloropropane	50	ND	
trans-1,3-Dichloropropene	50	ND	
Trichloroethylene	50	ND	

ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010
(Continued)

Client No.: 1

Lab Sample No.: 28-00283-001

Compound Name	MDL (ug/Kg)	Concentration Found (ug/Kg)	Confirmation (Y/N)
Mix 1	150	ND	
2-chloroethyl vinyl ether	50	ND	
Bromoform	50	ND	
Mix 2	50	ND	
Chlorobenzene	50	ND	
1,3-Dichlorobenzene	50	ND	
1,2-Dichlorobenzene	50	ND	
1,4-Dichlorobenzene	50	ND	

Mix 1 = cis-1,3-Dichloropropene
1,1,2-trichloroethane
Dibromochloromethane

Mix 2 = Tetrachloroethylene
1,1,2,2-Tetrachloroethane

MDL = Method Detection Limit
ND = Not detected at MDL
@ = Trace; At or below MDL

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[redacted]

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval: _____
Date: _____

Client (Field) Sample No.: 2
Date Collected: 06/08/88
Date Received (in lab): 06/08/88
Date Analyzed: 06/19/88

Dilution Factor: 82
Extraction Method: 5030

Sample Matrix:

[ ] Water (micrograms per liter)

[X] Soil (micrograms per kilogram)

[ ] Other (specify)_____

Lab Sample Number: 28-00283-002

Compound Name	MDL (ug/Kg)	Concentration Found (ug/Kg)	Confirmation (Y/N)
Cloromethane	50	ND	
Bromomethane	50	ND	
Vinyl Chloride	50	ND	
Chloroethane	50	ND	
Dichloromethane	50	ND	
Trichlorofluoromethane	50	ND	
1,1-Dichloroethylene	50	ND	
1,1-Dichloroethane	50	ND	
trans-1,2-Dichloroethane	50	ND	
Chloroform	50	ND	
1,2-Dichloroethane	50	ND	
1,1,1-Trichloroethane	50	ND	
Carbon tetrachloride	50	1200	Y
Bromodichloromethane	50	ND	
1,2-Dichloropropane	50	ND	
trans-1,3-Dichloropropene	50	ND	
Trichloroethylene	50	ND	

3.48G1.ARS-488.7

ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010
(Continued)

Client No.: 2

Lab Sample No.: 28-00283-002

Compound Name	MDL (ug/Kg)	Concentration Found (ug/Kg)	Confirmation (Y/N)
Mix 1	150	ND	Y
2-chloroethyl vinyl ether	50	ND	
Bromoform	50	ND	
Mix 2	50	ND	
Chlorobenzene	50	900	
1,3-Dichlorobenzene	50	ND	
1,2-Dichlorobenzene	50	ND	
1,4-Dichlorobenzene	50	ND	

Mix 1 = cis-1,3-Dichloropropene
1,1,2-trichloroethane
Dibromochloromethane

Mix 2 = Tetrachloroethylene
1,1,2,2-Tetrachloroethane

MDL = Method Detection Limit
ND = Not detected at MDL
@ = Trace; At or below MDL

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[redacted]

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval: _____
Date: _____

Client (Field) Sample No.: 4
Date Collected: 06/08/88
Date Received (in lab): 06/08/88
Date Analyzed: 06/19/88

Dilution Factor: 92
Extraction Method: 5030

Sample Matrix:

[ ] Water (micrograms per liter)

[X] Soil (micrograms per kilogram)

[ ] Other (specify) _____

Lab Sample Number: 28-00283-004

Compound Name	MDL (ug/Kg)	Concentration Found (ug/Kg)	Confirmation (Y/N)
Cloromethane	50	ND	
Bromomethane	50	ND	
Vinyl Chloride	50	ND	
Chloroethane	50	ND	
Dichloromethane	50	ND	
Trichlorofluoromethane	50	ND	
1,1-Dichloroethylene	50	ND	
1,1-Dichloroethane	50	ND	
trans-1,2-Dichloroethane	50	ND	
Chloroform	50	ND	
1,2-Dichloroethane	50	ND	
1,1,1-Trichloroethane	50	ND	
Carbon tetrachloride	50	800	Y
Bromodichloromethane	50	ND	
1,2-Dichloropropane	50	ND	
trans-1,3-Dichloropropene	50	ND	
Trichloroethylene	50	ND	

3.48G1.ARS-488.8

ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010
(Continued)

Client No.: 4

Lab Sample No.: 28-00283-004

Compound Name	MDL (ug/Kg)	Concentration Found (ug/Kg)	Confirmation (Y/N)
Mix 1	150	ND	
2-chloroethyl vinyl ether	50	ND	
Bromoform	50	ND	
Mix 2	50	1000	Y
Chlorobenzene	50	ND	
1,3-Dichlorobenzene	50	ND	
1,2-Dichlorobenzene	50	ND	
1,4-Dichlorobenzene	50	ND	

Mix 1 = cis-1,3-Dichloropropene
1,1,2-trichloroethane
Dibromochloromethane

Mix 2 = Tetrachloroethylene
1,1,2,2-Tetrachloroethane

MDL = Method Detection Limit
ND = Not detected at MDL
@ = Trace; At or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval: _____
Date: _____

Client (Field) Sample No.: 6
Date Collected: 06/08/88
Date Received (in lab): 06/08/88
Date Analyzed: 06/19/88

Dilution Factor: 87
Extraction Method: 5030

Sample Matrix:

[ ] Water (micrograms per liter)

[X] Soil (micrograms per kilogram)

[ ] Other (specify)_____

Lab Sample Number: 28-00283-006

Compound Name	MDL (ug/Kg)	Concentration Found (ug/Kg)	Confirmation (Y/N)
Cloromethane	50	ND	
Bromomethane	50	ND	
Vinyl Chloride	50	ND	
Chloroethane	50	ND	
Dichloromethane	50	ND	
Trichlorofluoromethane	50	ND	
1,1-Dichloroethylene	50	ND	
1,1-Dichloroethane	50	ND	
trans-1,2-Dichloroethane	50	ND	
Chloroform	50	ND	
1,2-Dichloroethane	50	ND	
1,1,1-Trichloroethane	50	ND	
Carbon tetrachloride	50	5000	Y
Bromodichloromethane	50	ND	
1,2-Dichloropropane	50	ND	
trans-1,3-Dichloropropene	50	ND	
Trichloroethylene	50	ND	

3.48G1.ARS-488.9

ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010
(Continued)

Client No.: 6

Lab Sample No.: 28-00283-006

Compound Name	MDL (ug/Kg)	Concentration Found (ug/Kg)	Confirmation (Y/N)
Mix 1	150	ND	
2-chloroethyl vinyl ether	50	ND	
Bromoform	50	ND	
Mix 2	50	ND	
Chlorobenzene	50	ND	
1,3-Dichlorobenzene	50	ND	
1,2-Dichlorobenzene	50	ND	
1,4-Dichlorobenzene	50	ND	

Mix 1 = cis-1,3-Dichloropropene
1,1,2-trichloroethane
Dibromochloromethane

Mix 2 = Tetrachloroethylene
1,1,2,2-Tetrachloroethane

MDL = Method Detection Limit
ND = Not detected at MDL
@ = Trace; At or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval: _____
Date: _____

Client (Field) Sample No.: 7
Date Collected: 06/08/88
Date Received (in lab): 06/08/88
Date Analyzed: 06/19/88

Dilution Factor: 106
Extraction Method: 5030

Sample Matrix:

[ ] Water (micrograms per liter)

[X] Soil (micrograms per kilogram)

[ ] Other (specify) _____

Lab Sample Number: 28-00283-007

Compound Name	MDL (ug/Kg)	Concentration Found (ug/Kg)	Confirmation (Y/N)
Cloromethane	50	ND	
Bromomethane	50	ND	
Vinyl Chloride	50	ND	
Chloroethane	50	ND	
Dichloromethane	50	ND	
Trichlorofluoromethane	50	ND	
1,1-Dichloroethylene	50	ND	
1,1-Dichloroethane	50	ND	
trans-1,2-Dichloroethane	50	ND	
Chloroform	50	ND	
1,2-Dichloroethane	50	ND	
1,1,1-Trichloroethane	50	ND	
Carbon tetrachloride	50	ND	
Bromodichloromethane	50	ND	
1,2-Dichloropropane	50	ND	
trans-1,3-Dichloropropene	50	ND	
Trichloroethylene	50	ND	

3.48G1.ARS488.10

ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010
(Continued)

Client No.: 7

Lab Sample No.: 28-00283-007

Compound Name	MDL (ug/Kg)	Concentration Found (ug/Kg)	Confirmation (Y/N)
Mix 1	150	ND	
2-chloroethyl vinyl ether	50	ND	
Bromoform	50	ND	
Mix 2	50	ND	
Chlorobenzene	50	ND	
1,3-Dichlorobenzene	50	ND	
1,2-Dichlorobenzene	50	ND	
1,4-Dichlorobenzene	50	ND	

Mix 1 = cis-1,3-Dichloropropene
1,1,2-trichloroethane
Dibromochloromethane

Mix 2 = Tetrachloroethylene
1,1,2,2-Tetrachloroethane

MDL = Method Detection Limit
ND = Not detected at MDL
@ = Trace; At or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 8
Date Collected:
Date Received (in lab): 06/08/88
Date Analyzed: 06/19/88

Dilution Factor: 92
Extraction Method:

Sample Matrix:

[ ] Water (micrograms per liter)

[X] Soil (micrograms per kilogram)

[ ] Other (specify)

Lab Sample Number: 28-00283-008

Compound Name	Blank (ug/L)	MDL (ug/Kg)	Concentration Found (ug/Kg)	Confirmation (Y/N)	Notes
Cloromethane	0	50	ND		
Bromomethane	0	50	ND		
Vinyl Chloride	0	50	ND		
Chloroethane	0	50	ND		
Dichloromethane	1	50	ND		
Trichlorofluoromethane	0	50	ND		
1,1-Dichloroethylene	0	50	ND		
1,1-Dichloroethane	0	50	ND		
trans-1,2-Dichloroethane	0	50	ND		
Chloroform	1	50	ND		
1,2-Dichloroethane	0	50	ND		
1,1,1-Trichloroethane	2	50	ND		
Carbon tetrachloride	2	50	1200	*	
Bromodichloromethane	0.1	50	ND		
1,2-Dichloropropane	0	50	ND		
trans-1,3-Dichloropropene	0	50	ND		
Trichloroethylene	0	50	ND		

3.48G1.ARS-488.11

ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010
(Continued)

Client No.: 8

Lab Sample No.: 28-00283-008

Compound Name	MDL (ug/Kg)	Concentration Found (ug/Kg)	Confirmation (Y/N)
Mix 1	150	ND	
2-chloroethyl vinyl ether	50	ND	
Bromoform	50	ND	
Mix 2	50	ND	
Chlorobenzene	50	ND	
1,3-Dichlorobenzene	50	ND	
1,2-Dichlorobenzene	50	ND	
1,4-Dichlorobenzene	50	ND	

Mix 1 = cis-1,3-Dichloropropene
1,1,2-trichloroethane
Dibromochloromethane

Mix 2 = Tetrachloroethylene
1,1,2,2-Tetrachloroethane

MDL = Method Detection Limit
ND = Not detected at MDL
@ = Trace; At or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval: _____
Date: _____

Client (Field) Sample No.: 1
Date Collected 06/08/88
Date Received (in lab): 06/08/88
Date Analyzed: 06/19/88

Dilution Factor: 94
Extraction Method: 5030

Lab Sample Number: 28-00283-001

Sample Matrix:

[ ] Water (micrograms per liter)

[X] Soil (micrograms per kilogram)

[ ] Other (specify)_____

Compound Name	MDL (ug/Kg)	Concentration Detected ug/Kg	Confirmation (Yes/No)**
Benzene	50	ND	No
Toluene	50	@	No
Chlorobenzene	50	ND	No
Ethyl Benzene	50	@	No
Xylenes	150	ND	No
1-Dichlorobenzene	50	ND	No
1-Dichlorobenzene	50	ND	No
1,4-Dichlorobenzene	50	ND	No

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the MDL and could not be accurately quantitated.

3.48G1.ARS-488.12

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval: _____
Date: _____

Client (Field) Sample No.: 2
Date Collected 06/08/88
Date Received (in lab): 06/08/88
Date Analyzed: 06/19/88

Dilution Factor: 82
Extraction Method: 5030

Sample Matrix:

[ ] Water (micrograms per liter)

[X] Soil (micrograms per kilogram)

[ ] Other (specify)_____

Lab Sample Number: 28-00283-002

Compound Name	MDL (ug/Kg)	Concentration Detected ug/Kg	Confirmation (Yes/No)**
Benzene	50	ND	
Toluene	50	@	
Chlorobenzene	50	ND	
Ethyl Benzene	50	@	
Xylenes	150	ND	
1-Dichlorobenzene	50	ND	
1-Dichlorobenzene	50	ND	
1,4-Dichlorobenzene	50	ND	

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the MDL and could not be accurately quantitated.

3.48G1.ARS-488.13

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 4
Date Collected: 06/08/88
Date Received (in lab): 06/08/88
Date Analyzed: 06/19/88

Dilution Factor: 92
Extraction Method: 5030

Sample Matrix:

[ ] Water (micrograms per liter)

[X] Soil (micrograms per kilogram)

[ ] Other (specify)

Lab Sample Number: 28-00283-004

Compound Name	MDL (ug/Kg)	Concentration Detected ug/Kg	Confirmation (Yes/No)**
Benzene	50	ND	
Toluene	50	@	No
Chlorobenzene	50	ND	
Ethyl Benzene	50	@	No
Xylenes	150	ND	
1-Dichlorobenzene	50	ND	
1-Dichlorobenzene	50	ND	
1,4-Dichlorobenzene	50	ND	

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the MDL and could not be accurately quantitated.

3.48G1.ARS-488.14

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval: _____
Date: _____

Client (Field) Sample No.: 6
Date Collected: 06/08/88
Date Received (in lab): 06/08/88
Date Analyzed: 06/19/88

Dilution Factor: 87
Extraction Method: 5030

Sample Matrix:

[ ] Water (micrograms per liter)

[X] Soil (micrograms per kilogram)

[ ] Other (specify) _____

Lab Sample Number: 28-00283-006

Compound Name	MDL (ug/Kg)	Concentration Detected ug/Kg	Confirmation (Yes/No)**
Benzene	50	ND	
Toluene	50	@	No
Chlorobenzene	50	ND	
Ethyl Benzene	50	@	No
Xylenes	150	ND	
1-Dichlorobenzene	50	ND	
1-Dichlorobenzene	50	ND	
1,4-Dichlorobenzene	50	ND	

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the MDL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval: _____
Date: _____

Client (Field) Sample No.: 7
Date Collected: 06/08/88
Date Received (in lab): 06/08/88
Date Analyzed: 06/19/88

Dilution Factor: 106
Extraction Method: 5030

Sample Matrix:

[ ] Water (micrograms per liter)

[X] Soil (micrograms per kilogram)

[ ] Other (specify)_____

Lab Sample Number: 28-00283-007

Compound Name	MDL (ug/Kg)	Concentration Detected ug/Kg	Confirmation (Yes/No)**
Benzene	50	@	No
Toluene	50	@	No
Chlorobenzene	50	@	No
Ethyl Benzene	50	ND	
Xylenes	150	@	No
1-Dichlorobenzene	50	ND	
1-Dichlorobenzene	50	ND	
1,4-Dichlorobenzene	50	ND	

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the MDL and could not be accurately quantitated.

3.48G1.ARS-488.16

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval: _____
Date: _____

Client (Field) Sample No.: 8
Date Collected: 06/08/88
Date Received (in lab): 06/08/88
Date Analyzed: 06/19/88

Dilution Factor: 92
Extraction Method: 5030

Sample Matrix:

[ ] Water (micrograms per liter)

[X] Soil (micrograms per kilogram)

[ ] Other (specify)_____

Lab Sample Number: 28-00283-008

Compound Name	MDL (ug/Kg)	Concentration Detected ug/Kg	Confirmation (Yes/No)**
Benzene	50	ND	
Toluene	50	@	No
Chlorobenzene	50	ND	
Ethyl Benzene	50	@	No
Xylenes	150	ND	
1-Dichlorobenzene	50	ND	
1-Dichlorobenzene	50	ND	
1,4-Dichlorobenzene	50	ND	

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the MDL and could not be accurately quantitated.

3.48G1.ARS-488.17

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ANALYTICAL RESULTS SUMMARY
Hydrocarbon Analysis with Carbon Chain ID
EPA Method 8015

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar

Client (Field) Sample No.: 1
Date Collected: 06-08-88
Date Received (in lab): 06-08-88
Date Analyzed: 06-15-88

Sample Matrix:

[ ] Water (milligrams per liter)

[X] Soil (milligrams per kilogram)

[ ] Other (specify)_____

Lab Sample No.: 28-00283-001

Compound	Method Detection Limit (MDL) (ppm)	Concentration Detected mg/Kg (ppm)	Notes
$C_8 - C_{10}$	0.1	ND	
$C_{11} - C_{12}$	0.1	1.5	
$C_{13} - C_{14}$	0.1	0.5	
$C_{15} - C_{16}$	0.1	ND	
$C_{17} - C_{18}$	0.1	0.2	
$C_{19} - C_{20}$	0.1	0.1	
$C_{21} - C_{22}$	0.1	ND	

ND = Not Detected

3.48G1.ARS-488

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ANALYTICAL RESULTS SUMMARY
Hydrocarbon Analysis with Carbon Chain ID
EPA Method 8015

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar

Client (Field) Sample No.: 2
Date Collected: 06-08-88
Date Received (in lab): 06-08-88
Date Analyzed: 06-15-88

Sample Matrix:

[ ] Water (milligrams per liter)

[X] Soil (milligrams per kilogram)

[ ] Other (specify)_____

Lab Sample No.: 28-00283-002

Compound	Method Detection Limit (MDL) (ppm)	Concentration Detected mg/Kg (ppm)	Notes
$C_8 - C_{10}$	0.1	ND	
$C_{11} - C_{12}$	0.1	ND	
$C_{13} - C_{14}$	0.1	ND	
$C_{15} - C_{16}$	0.1	ND	
$C_{17} - C_{18}$	0.1	ND	
$C_{19} - C_{20}$	0.1	ND	
$C_{21} - C_{22}$	0.1	ND	

ND = Not Detected

3.48G1.ARS-488.1

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ANALYTICAL RESULTS SUMMARY
Hydrocarbon Analysis with Carbon Chain ID
EPA Method 8015

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar

Client (Field) Sample No.: 4
Date Collected: 06-08-88
Date Received (in lab): 06-08-88
Date Analyzed: 06-15-88

Sample Matrix:

[ ] Water (milligrams per liter)

[X] Soil (milligrams per kilogram)

[ ] Other (specify)_____

Lab Sample No.: 28-00283-004

Compound	Method Detection Limit (MDL) (ppm)	Concentration Detected mg/Kg (ppm)	Notes
$C_8 - C_{10}$	0.1	ND	
$C_{11} - C_{12}$	0.1	ND	
$C_{13} - C_{14}$	0.1	ND	
$C_{15} - C_{16}$	0.1	ND	
$C_{17} - C_{18}$	0.1	ND	
$C_{19} - C_{20}$	0.1	ND	
$C_{21} - C_{22}$	0.1	ND	

ND = Not Detected

3.48G1.ARS-488.2

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ANALYTICAL RESULTS SUMMARY
Hydrocarbon Analysis with Carbon Chain ID
EPA Method 8015

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar

Client (Field) Sample No.: 6
Date Collected: 06-08-88
Date Received (in lab): 06-08-88
Date Analyzed: 06-15-88

Sample Matrix:

[ ] Water (milligrams per liter)

[X] Soil (milligrams per kilogram)

[ ] Other (specify)_____

Lab Sample No.: 28-00283-006

Compound	Method Detection Limit (MDL) (ppm)	Concentration Detected mg/Kg (ppm)	Notes
$C_8 - C_{10}$	0.1	ND	
$C_{11} - C_{12}$	0.1	ND	
$C_{13} - C_{14}$	0.1	ND	
$C_{15} - C_{16}$	0.1	ND	
$C_{17} - C_{18}$	0.1	ND	
$C_{19} - C_{20}$	0.1	ND	
$C_{21} - C_{22}$	0.1	ND	

ND = Not Detected

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ANALYTICAL RESULTS SUMMARY
Hydrocarbon Analysis with Carbon Chain ID
EPA Method 8015

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar

Client (Field) Sample No.: 7
Date Collected: 06-08-88
Date Received (in lab): 06-08-88
Date Analyzed: 06-15-88

Sample Matrix:

[ ] Water (milligrams per liter)

[X] Soil (milligrams per kilogram)

[ ] Other (specify)_____

Lab Sample No.: 28-00283-007

Compound	Method Detection Limit (MDL) (ppm)	Concentration Detected mg/Kg (ppm)	Notes
$C_8 - C_{10}$	0.1	ND	
$C_{11} - C_{12}$	0.1	ND	
$C_{13} - C_{14}$	0.1	ND	
$C_{15} - C_{16}$	0.1	ND	
$C_{17} - C_{18}$	0.1	ND	
$C_{19} - C_{20}$	0.1	ND	
$C_{21} - C_{22}$	0.1	ND	

ND = Not Detected

3.48G1.ARS-488.4

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ANALYTICAL RESULTS SUMMARY
Hydrocarbon Analysis with Carbon Chain ID
EPA Method 8015

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar

Client (Field) Sample No.: 8
Date Collected: 06-08-88
Date Received (in lab): 06-08-88
Date Analyzed: 06-15-88

Sample Matrix:

[ ] Water (milligrams per liter)

[X] Soil (milligrams per kilogram)

[ ] Other (specify)_____

Lab Sample No.: 28-00283-008

Compound	Method Detection Limit (MDL) (ppm)	Concentration Detected mg/Kg (ppm)	Notes
$C_8 - C_{10}$	0.1	ND	
$C_{11} - C_{12}$	0.1	ND	
$C_{13} - C_{14}$	0.1	ND	
$C_{15} - C_{16}$	0.1	ND	
$C_{17} - C_{18}$	0.1	ND	
$C_{19} - C_{20}$	0.1	ND	
$C_{21} - C_{22}$	0.1	ND	

ND = Not Detected

3.48G1.ARS-488.5

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L A B O R A T O R Y R E P O R T

Report to: BCL Associates, Inc.
5702 Bolsa Avenue
Huntington Beach, CA.
92649

Client No: 488
Laboratory No: 00358
Report Date: 08-22-88
Recieved Date: 07-28-88

Attention: James C. Crisp

Sample Description: Thirty-eight soil samples in stainless steel sleeves

Testing Methods:
Halogenated Volatile Organics/GC-ElCD;
EPA Method 8010.
Aromatic Volatile Organics/GC-PID;
EPA Method 8020.
Hydrocarbon Analysis with Carbon Chain ID/GC-FID;
Modified EPA Method 8015.

Results for the 8010, 8020, and modified 8015 analyses are on the following summary sheets.

Rhondi Bobich
GC Group Leader

Steve Jones, Ph.D.
Lab Manager

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 35
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-001

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 38
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-004

H N_LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	1.7

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 40
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-006

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 42
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-008

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 43
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-009

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 46
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-012

CI N LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 47
CLIENT JOB NO: 488

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

SAMPLE MATRIX:

LAB SAMPLE NO: 28-00358-013

IN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	3.9
C19-C20	0.10	0.43
C21-C22	0.10	24

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 50
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-016

CARBON LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	1.6
C17-C18	0.10	1.8
C19-C20	0.10	3.0
C21-C22	0.10	3.6

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 52
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-018

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	.91
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: S4
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-020

CI N LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 56
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-022

N LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 57
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-023

CI N LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 59
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-025

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 60
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-026

TN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 61
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-027

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 63
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-029

TN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 64
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-030

N LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO. 65
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-031

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 66
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-032

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 67
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-033

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL Associates, Inc.
CLIENT SAMPLE NO: 70
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07-27-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00358-036

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.: 35
Laboratory Job No.: 00358
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88
Date Extracted: 08-11-88
Extraction Method: 5030

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar

Sample Matrix;
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-001

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	Trace		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.: 38
Laboratory Job No. 00358
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88
Date Extracted: 08-11-88
Extraction Method: 5030

Client Name: BCL Associates, Inc.
Client Job Number: 87-488

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-004

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	Trace		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	40	Client Name:	BCL Associates, Inc.
Laboratory Job No.:	00357	Client Job Number:	87-488
Date Collected:	07-28-88		
Date Received (in lab):	07-29-88	Date Extracted:	08-11-88
Date Analyzed:	08-11-88	Extraction Method:	5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-006

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.: 42
Laboratory Job No.: 00358
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Date Extracted: 08-11-88
Extraction Method: 5030

Sample Matrix:
___ Water (micrograms per liter)
X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-008

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	96	Yes	
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	Trace		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	8.6	Yes	
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	52	Client Name:	BCL Associates, Inc.
Laboratory Job No.:	00358	Client Job Number:	87-488
Date Collected:	07-28-88		
Date Received (in lab):	07-29-88	Date Extracted:	08-11-88
Date Analyzed:	08-11-88	Extraction Method:	5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-018

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	5.6	Yes	
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	29	Yes	
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	54	Client Name:	BCL Associates, Inc.
Laboratory Job No.:	00358	Client Job Number:	87-488
Date Collected:	07-28-88		
Date Received (in lab):	07-29-88	Date Extracted:	08-11-88
Date Analyzed:	08-11-88	Extraction Method:	5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-020

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.: 56
Laboratory Job No.: 00358
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Date Extracted: 08-11-88
Extraction Method: 5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-022

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.: 59
Laboratory Job No.: 00358
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Date Extracted: 08-11-88
Extraction Method: 5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-025

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	Trace		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	43		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.: 60
Laboratory Job No.: 00378
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Date Extracted: 08-11-88
Extraction Method: 5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-026

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	29	Yes	
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	120	Yes	
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.: 61
Laboratory Job No.: 00358
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Client Name: BCL Association, Inc.
Client Job Number: 87-488

Date Extracted: 08-11-88
Extraction Method: 5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-027

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	5.0	ND		
Trichlorofluoromethane	20.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	Trace		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	51	Yes	
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	Trace		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	260	Yes	
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	63	Client Name:	BCL Associates, Inc.
Laboratory Job No.:	00358	Client Job Number:	87-488
Date Collected:	07-28-88		
Date Received (in lab):	07-29-88	Date Extracted:	08-11-88
Date Analyzed:	08-11-88	Extraction Method:	5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-029

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	Trace		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	14	Yes	
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.: 64
Laboratory Job No.: 00358
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Date Extracted: 08-11-88
Extraction Method: 5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-030

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	5.2	Yes	
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	13	Yes	
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.: 65
Laboratory Job No.: 00358
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Date Extracted: 08-11-88
Extraction Method: 5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-031

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	Trace		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	Trace		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	59	Yes	
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	66	Client Name:	BCL Associates, Inc.
Laboratory Job No.:	00358	Client Job Number:	87-488
Date Collected:	07-28-88		
Date Received (in lab):	07-29-88	Date Extracted:	08-11-88
Date Analyzed:	08-11-88	Extraction Method:	5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-032

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	Trace		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.: 67
Laboratory Job No.: 00358
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Date Extracted: 08-11-88
Extraction Method: 5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-033

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	8.7	Yes	
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	70	Client Name:	BCL Associates, Inc.
Laboratory Job No.:	00358	Client Job Number:	87-488
Date Collected:	07-28-88		
Date Received (in lab):	07-29-88	Date Extracted:	08-11-88
Date Analyzed:	08-11-88	Extraction Method:	5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-036

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.: 71
Laboratory Job No.: 00358
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Date Extracted: 08-11-88
Extraction Method: 5030

Sample Matrix:
___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00358-037

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	7.9	Yes	
1,1-dichloroethane	5.0	Trace		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	5.3	Yes	
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	23	Yes	
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 35
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00358-001

___ Water (micrograms per liter)

X Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 38
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00358-004

___ Water (micrograms per liter)

X Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 40
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

___ Water (micrograms per liter)

___ Soil (micrograms per kilogram)

___ Other (specify)_____

Lab Sample Number: 28-00358-006

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 42
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00358-013

___ Water (micrograms per liter)

__X__ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
J This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 43
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00358-009

___ Water (micrograms per liter)

___ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 46
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00358-012

___ Water (micrograms per liter)

___ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 47
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00358-013

___ Water (micrograms per liter)

_X_ Soil (micrograms per kilogram)

_ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 50
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Lab Sample Number: 28-00358-016

Sample Matrix:

___ Water (micrograms per liter)

__X Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 52
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00358-018

___ Water (micrograms per liter)

Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 54
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00358-020

___ Water (micrograms per liter)

_X_ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 56
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00358-022

___ Water (micrograms per liter)

Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
J This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 57
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00358-023

__ Water (micrograms per liter)

_X_ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	Trace		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
J This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 59
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00358-025

___ Water (micrograms per liter)

___ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 60
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Lab Sample Number: 28-00358-026

Sample Matrix:

___ Water (micrograms per liter)

__X__ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 61
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00358-027

___ Water (micrograms per liter)

Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
J This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 63
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00358-029

___ Water (micrograms per liter)

__X__ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
J This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 64
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Lab Sample Number: 28-00358-030

Sample Matrix:

___ Water (micrograms per liter)

X Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
J This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 65
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00358-031

___ Water (micrograms per liter)

X Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 66
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00358-032

___ Water (micrograms per liter)

Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
J This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 71
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Lab Sample Number: 28-00358-037

Sample Matrix:

___ Water (micrograms per liter)

_X_ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 67
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Lab Sample Number: 28-00358-033

Sample Matrix:

___ Water (micrograms per liter)

_X_ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
J This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 87-488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 70
Date Collected: 07-28-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-11-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00358-036

___ Water (micrograms per liter)

___ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
J This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	9	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-001

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	@		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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L A B O R A T O R Y R E P O R T

Report to: BCL Associates,Inc.
5702 Bolsa Avenue
Huntington Beach, CA.
92649

Client No: 488
Laboratory No: 00357
Report Date: 08-22-88
Recieved Date: 07-27-88

Attention: James C. Crisp

Purchase Order No:

Sample Description: Twenty-six soil samples in stainless steel sleeves.

Testing Methods: Halogenated Volatile Organics/GC-EICD; Method 8010.
Aromatic Volatile Organics/GC-PID; EPA Method 8020.
Hydrocarbon Analysis with Carbon Chain ID/GC-FID:
Modified EPA Method 8015.

Results for the 8010, 8020, and Modified 8015 analyses are on the following summary sheets.

Rhondi Bobich
GC Group Leader

Steve Jones, Ph.D.
Lab Manager

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	11	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-003

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	@		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	10	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-002

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	@		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	13	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-005

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	12	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-004

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	@		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	15	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-007

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	@		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	14	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-006

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	6.1	GC/MS	
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	18	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-010

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	16	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-008

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	5.0	GC/MS	
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	23	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-015

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	@		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	120	GC/MS	
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	22	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-014

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	27	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-019

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	@		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

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ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	26	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-018

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	@		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	@		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

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ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	29	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-021

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	28	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-020

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	31	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-023

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	30	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-022

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	@		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	33	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-025

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	7.8	GC/MS	
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	@		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	32	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-024

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	@		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 09
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-001

__ Water (micrograms per liter)

__ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	@		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	34	Client Name:	BCL
Laboratory Job No.:	00357	Client Job Number:	488
Date Collected:	07/27/88	Project Name:	Calmar
Date Received (in lab):	07/29/88	Date Extracted:	08/10/88
Date Analyzed:	08/10/88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00357-026

Compound	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	20.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	10	GC/MS	
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	@		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates,Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 11
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-003

__ Water (micrograms per liter

_X_ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates,Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 10
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-002

Water (micrograms per liter)

Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
J This compound was detected but its concentration was below the PQL and could not be accurately quantified.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates,Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 13
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-005

___ Water (micrograms per liter)

_X_ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates,Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 12
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-004

___ Water (micrograms per liter)

_X_ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
J This compound was detected but its concentration was below the PQL and could not be accurately quantified.

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Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 15
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-007

__ Water (micrograms per liter)

_X_ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
J This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates,Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 14
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88
Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-006

Water (micrograms per liter)

Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	@		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 18
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-010

_ Water (micrograms per liter)

X Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	@		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could n
be accurately quantified.

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Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 16
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-008

_ Water (micrograms per liter)

Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could n
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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 23
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-015

___ Water (micrograms per liter)

X Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could n be accurately quantified.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 22
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-014

___ Water (micrograms per liter)

__ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	@		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could n
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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

lient Name: BCL Associates, Inc.
ient Job Number: 488
roject Name: Calmar
aboratory Supervisor Approval:
ate:

Client (Field) Sample No.: 27
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

ample Matrix:

__ Water (micrograms per liter)

Soil (micrograms per kilogram)

__ Other (specify)_____

Lab Sample Number: 28-00357-019

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
nzene	5.0	ND		
hlorobenzene	5.0	ND		
,2-Dichlorobenzene	5.0	ND		
,3-Dichlorobenzene	5.0	ND		
,4-Dichlorobenzene	5.0	ND		
thyl Benzene	5.0	ND		
luene	5.0	@		
ylenes (Dimethyl Benzenes)	5.0	@		

MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could no be accurately quantified.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 26
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-018

__ Water (micrograms per liter)

:Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could n
be accurately quantified.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 29
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-021

Water (micrograms per liter)

_X_ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could n be accurately quantified.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 28
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-020

___ Water (micrograms per liter)

Soil (micrograms per kilogram)

Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
J This compound was detected but its concentration was below the PQL and could n be accurately quantified.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 31
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Lab Sample Number: 28-00357-023

Sample Matrix:

___ Water (micrograms per liter)

___ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could not be accurately quantified.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 30
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-022

_ Water (micrograms per liter)

Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
J This compound was detected but its concentration was below the PQL and could no be accurately quantified.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 33
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-0025

___ Water (microgram per liter)

Soil (microgram per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
This compound was detected but its concentration was below the PQL and could not be accurately quantified.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 32
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-024

___ Water (micrograms per liter)

___ Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could n be accurately quantified.

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME:	BCLA	DATE COLLECTED:	07/27/88
CLIENT SAMPLE NO:	9	DATE ANALYZED:	08/09/88
CLIENT JOB NO:	488	DILUTION FACTOR:	
		EXTRACTION METHOD:	
SAMPLE MATRIX:	SOIL	LAB SAMPLE NO:	28-00357-001

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 34
Date Collected: 07-27-88
Date Received (in lab): 07-29-88
Date Analyzed: 08-10-88

Dilution Factor:
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00357-026

__ Water (micrograms per liter)

Soil (micrograms per kilogram)

___ Other (specify)_____

Compound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	5.0	@		
Chlorobenzene	5.0	@		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	@		
Toluene	5.0	@		
Xylenes (Dimethyl Benzenes)	5.0	@		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
@ This compound was detected but its concentration was below the PQL and could n be accurately quantified.

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCLA
CLIENT SAMPLE NO: 11

CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07/27/88
DATE ANALYZED: 08/09/88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00357-003

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME:	BCLA	DATE COLLECTED:	07/27/88
CLIENT SAMPLE NO:	10	DATE ANALYZED:	08/09/88
CLIENT JOB NO:	488		
		DILUTION FACTOR:	
		EXTRACTION METHOD:	
SAMPLE MATRIX:	SOIL		
		LAB SAMPLE NO:	28-00357-002

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME:	BCLA	DATE COLLECTED:	07/27/88
CLIENT SAMPLE NO:	13	DATE ANALYZED:	08/09/88
CLIENT JOB NO:	488	DILUTION FACTOR:	
		EXTRACTION METHOD:	
SAMPLE MATRIX:	SOIL	LAB SAMPLE NO:	28-00357-005

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCLA
CLIENT SAMPLE NO: 12
CLIENT JOB NO: 488
SAMPLE MATRIX: SOIL

DATE COLLECTED: 07/27/88
DATE ANALYZED: 08/09/88
DILUTION FACTOR:
EXTRACTION METHOD:
LAB SAMPLE NO: 28-00357-004

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCLA
CLIENT SAMPLE NO: 15

CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07/27/88
DATE ANALYZED: 08/09/88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00357-007

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCLA
CLIENT SAMPLE NO: 14

CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07/27/88
DATE ANALYZED: 08/09/88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00357-006

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME:	BCLA	DATE COLLECTED:	07/27/88
CLIENT SAMPLE NO:	18	DATE ANALYZED:	08/09/88
CLIENT JOB NO:	488		
		DILUTION FACTOR:	
		EXTRACTION METHOD:	
SAMPLE MATRIX:	SOIL		
		LAB SAMPLE NO:	28-00357-010

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME:	BCLA	DATE COLLECTED:	07/27/88
CLIENT SAMPLE NO:	16	DATE ANALYZED:	08/09/88
CLIENT JOB NO:	488		
		DILUTION FACTOR:	
		EXTRACTION METHOD:	
SAMPLE MATRIX:	SOIL		
		LAB SAMPLE NO:	28-00357-008

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCLA
CLIENT SAMPLE NO: 23

CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07/27/88
DATE ANALYZED: 08/09/88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00357-015

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	7.5
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	0.70
C19-C20	0.10	1.5
C21-C22	0.10	13

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME:	BCLA	DATE COLLECTED:	07/27/88
CLIENT SAMPLE NO:	22	DATE ANALYZED:	08/09/88
CLIENT JOB NO:	488	DILUTION FACTOR:	
		EXTRACTION METHOD:	
SAMPLE MATRIX:	SOIL	LAB SAMPLE NO:	28-00357-014

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME:	BCLA	DATE COLLECTED:	07/27/88
CLIENT SAMPLE NO:	27	DATE ANALYZED:	08/09/88
CLIENT JOB NO:	488	DILUTION FACTOR:	
		EXTRACTION METHOD:	
SAMPLE MATRIX:	SOIL	LAB SAMPLE NO:	28-00357-019

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME:	BCLA	DATE COLLECTED:	07/27/88
CLIENT SAMPLE NO:	26	DATE ANALYZED:	08/09/88
CLIENT JOB NO:	488	DILUTION FACTOR:	
		EXTRACTION METHOD:	
SAMPLE MATRIX:	SOIL	LAB SAMPLE NO:	28-00357-018

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	1.9
C19-C20	0.10	7.4
C21-C22	0.10	14

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCLA
CLIENT SAMPLE NO: 29

CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07/27/88
DATE ANALYZED: 08/09/88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00357-021

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCLA
CLIENT SAMPLE NO: 28

CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07/27/88
DATE ANALYZED: 08/09/88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00357-020

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCLA
CLIENT SAMPLE NO: 31

CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07/27/88
DATE ANALYZED: 08/09/88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00357-023

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME:	BCLA	DATE COLLECTED:	07/27/88
CLIENT SAMPLE NO:	30	DATE ANALYZED:	08/09/88
CLIENT JOB NO:	488	DILUTION FACTOR:	
		EXTRACTION METHOD:	
SAMPLE MATRIX:	SOIL	LAB SAMPLE NO:	28-00357-022

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	0.16

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCLA
CLIENT SAMPLE NO: 33
CLIENT JOB NO: 488
SAMPLE MATRIX: SOIL

DATE COLLECTED: 07/27/88
DATE ANALYZED: 08/09/88
DILUTION FACTOR:
EXTRACTION METHOD:
LAB SAMPLE NO: 28-00357-025

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME:	BCLA	DATE COLLECTED:	07/27/88
CLIENT SAMPLE NO:	32	DATE ANALYZED:	08/09/88
CLIENT JOB NO:	488	DILUTION FACTOR:	
		EXTRACTION METHOD:	
SAMPLE MATRIX:	SOIL	LAB SAMPLE NO:	28-00357-024

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ADDITIONAL OFFICES
SAN DIEGO
BAKERSFIELD

August 12, 1988

Job No. 188-103

Mr. Jeff Hensel
BCL Associates, Inc.
5702 Bolsa Avenue
Huntington Beach, California 92649

SOIL TESTING

Your Project Name: CalMar-87-488
Your Project No.: 00358
Your Sample No.: 00358-038
Date Received: August 10, 1988
Description: Fine to medium silty sand (SM)
Type of Test: Grain-size analyses of soil
ASTM D-422

Results:

Sieve Size	Percent Passing
1/2"	100
3/8"	99
No. 4	96
No. 8	87
No. 16	69
No. 30	51
No. 60	40
No. 100	31
No. 200	24
.02mm	15
.005mm	9
.002mm	7

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Robert J. Nagle
Laboratory Manager
bh

Attachment: Grain Size Distribution

Distribution: (2) Addressee

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCLA
CLIENT SAMPLE NO: 34

CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 07/27/88
DATE ANALYZED: 08/09/88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00357-026

CHAIN LENGTH	* MDL (mg\Kg)	RESULTS (mg\Kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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(213) 437-4148

LABORATORY REPORT

Report to: BCL Associates, Inc.
5702 Bolsa Avenue
Huntington Beach, CA.
92649

Client No: 87-488
Laboratory No: 00419
Report Date: 09-12-88
Received Date: 08-29-88

Attention: James Severns

Purchase Order No:

Sample Description: Four soil samples.

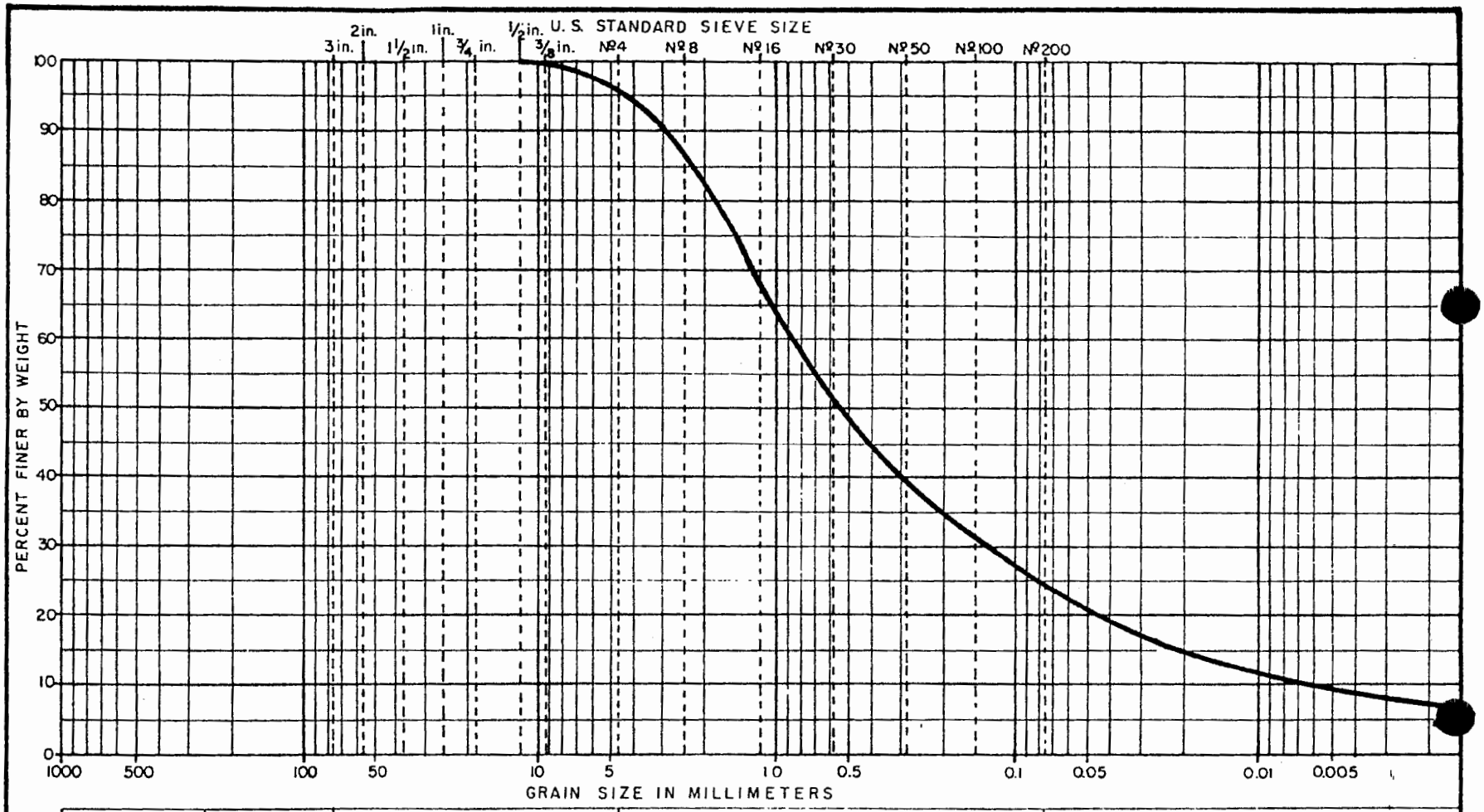
Testing Methods:
Halogenated Volatile Organics/GC-ElCD; EPA 8010.
Aromatic Volatile Organics/GC-PlD; EPA 8020.
Hydrocarbon Analysis with Carbon Chain ID/ GC-FlD; Modified EPA 8015.

Results for the 8010, 8020, and modified 8015 analyses are given on the following summary sheets.

Jesus Mallari
Technical Director

Steve Jones, Ph.D.
Lab Manager

Job No. 188-103 - August 12, 1988



BOULDERS	COBBLES	GRAVEL		SAND			FINES (Silt and Clay)
		Coarse	Fine	Coarse	Medium	Fine	

Bor./Samp.№	Elev. or Depth	Unified Soil Class.	Description	Nat. Water	LL	PL	PI	SE	Max Dry Dens	Opt Moisture
358-038		SM	Fine to medium silty sand							

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Project BCL Associates, Inc.

By RJN Date 8/12/88

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	74	Client Name: BCL Associates, Inc.	
Laboratory Job No.:	00419	Client Job Number:	488
Date Collected:	08-26-88		
Date Received (in lab):	08-29-88	Date Extracted:	09-07-88
Date Analyzed:	09-07-88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00419-003

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	---	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.: 72
Laboratory Job No.: 00419
Date Collected: 08-26-88
Date Received (in lab): 08-29-88
Date Analyzed:

Client Name: BCL Associates, Inc.
Client Job Number: 488

Date Extracted: 09-07-88
Extraction Method: 5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00419-001

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	---	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	TRACE		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	81	Client Name: BCL Associates, Inc.	
Laboratory Job No.:	00419	Client Job Number:	488
Date Collected:	08-26-88		
Date Received (in lab):	08-29-88	Date Extracted:	09-07-88
Date Analyzed:	09-07-88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00419-010

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	---	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	TRACE		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	7.7	YES	
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	14	YES	
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	80	Client Name:	BCL Associates, Inc.
Laboratory Job No.:	00419	Client Job Number:	488
Date Collected:	08-26-88		
Date Received (in lab):	08-29-88	Date Extracted:	09-07-88
Date Analyzed:	09-07-88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00419-009

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	---	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

lient Name: BCL ASSOCIATES, INC.
lient Job Number: 488
roject Name: CALMAR
boratory Supervisor Approval:
ate:

Client (Field) Sample No.: 74
Date Collected: 08-26-88
Date Received (in lab): 08-29-88
Date Analyzed: 09-07-88

Dilution Factor: --------
Extraction Method: 5030

Lab Sample Number: 28-00419-003

ample Matrix:

__ Water (micrograms per liter)

x_ Soil (micrograms per kilogram)

__ Other (specify)_____

ompound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
enzene	5.0	ND		
lorobenzene	5.0	ND		
.2-Dichlorobenzene	5.0	ND		
,3-Dichlorobenzene	5.0	ND		
.4-Dichlorobenzene	5.0	ND		
thyl Benzene	5.0	ND		
oluene	5.0	ND		
lenes (Dimethyl Benzenes)	5.0	ND		

MDL = Method Detection Limit
* Confirmation was performed according to Method 8010 Column 2 conditions.
This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

lient Name: BCL Associates, Inc.
lient Job Number: 488
roject Name: Calmar
aboratory Supervisor Approval:
ate:

Client (Field) Sample No.: 72
Date Collected: 08-26-88
Date Received (in lab): 08-29-88
Date Analyzed: 09-07-88

Dilution Factor: ---
Extraction Method: 5030

ample Matrix:

__ Water (micrograms per liter)

X_ Soil (micrograms per kilogram)

__ Other (specify)_____

Lab Sample Number: 28-00419-001

ompound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
nzene	5.0	ND		
ilorobenzene	5.0	ND		
.2-Dichlorobenzene	5.0	ND		
.3-Dichlorobenzene	5.0	ND		
.4-Dichlorobenzene	5.0	ND		
hyl Benzene	5.0	ND		
luene	5.0	TRACE		
lenes (Dimethyl Benzenes)	5.0	TRACE		

MDL = Method Detection Limit
< Confirmation was performed according to Method 8010 Column 2 conditions.
This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

lient Name: BCL Associates, Inc.
lient Job Number: 488
roject Name: Calmar
aboratory Supervisor Approval:
ate:

Client (Field) Sample No.: 81
Date Collected: 08-26-88
Date Received (in lab): 08-29-88
Date Analyzed: 09-07-88

Dilution Factor: ---
Extraction Method: 5030

ample Matrix:

__ Water (micrograms per liter)

X Soil (micrograms per kilogram)

__ Other (specify)_____

Lab Sample Number: 28-00419-010

ompound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
enzene	5.0	ND		
lorobenzene	5.0	ND		
,2-Dichlorobenzene	5.0	ND		
,3-Dichlorobenzene	5.0	ND		
,4-Dichlorobenzene	5.0	ND		
thyl Benzene	5.0	ND		
oluene	5.0	ND		
lenes (Dimethyl Benzenes)	5.0	ND		

MDL = Method Detection Limit
* Confirmation was performed according to Method 8010 Column 2 conditions. This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

.ient Name: BCL Associates, Inc.
.ient Job Number: 488
:oject Name: Calmar
.boratory Supervisor Approval:
ate:

Client (Field) Sample No.: 80
Date Collected: 08-26-88
Date Received (in lab): 08-29-88
Date Analyzed: 09-07-88

Dilution Factor: ---
Extraction Method: 5030

Lab Sample Number: 28-00419-009

ample Matrix:

__ Water (micrograms per liter)

X_ Soil (micrograms per kilogram)

__ Other (specify)_____

ompound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
enzene	5.0	ND		
lorobenzene	5.0	ND		
,2-Dichlorobenzene	5.0	ND		
,3-Dichlorobenzene	5.0	ND		
,4-Dichlorobenzene	5.0	ND		
thyl Benzene	5.0	ND		
oluene	5.0	ND		
lenes (Dimethyl Benzenes)	5.0	ND		

MDL = Method Detection Limit
* Confirmation was performed according to Method 8010 Column 2 conditions. This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL ASSOCIATES, INC.
CLIENT SAMPLE NO: 74
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 08-26-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00419-003

CHAIN LENGTH	* MDL (mg\kg)	RESULTS (mg\kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	9.0
C21-C22	0.10	11

ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL ASSOCIATES, INC.
CLIENT SAMPLE NO: 74
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 08-26-88
DATE ANALYZED: 08-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00419-003

CHAIN LENGTH	* MDL (mg\kg)	RESULTS (mg\kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	9.0
C21-C22	0.10	11

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL ASSOCIATES, INC.
CLIENT SAMPLE NO: 72
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 08-26-88
DATE ANALYZED: 09-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00419-001

CHAIN LENGTH	* MDL (mg\kg)	RESULTS (mg\kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	4.4
C19-C20	0.10	7.0
C21-C22	0.10	13

* MDL= METHOD DETECTION LIMIT

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[redacted]

ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL ASSOCIATES, INC.
CLIENT SAMPLE NO: 81
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 08-26-88
DATE ANALYZED: 09-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00419-010

CHAIN LENGTH	* MDL (mg\kg)	RESULTS (mg\kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL ASSOCIATES, INC.
CLIENT SAMPLE NO: 80
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 08-26-88
DATE ANALYZED: 09-09-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00419-009

CHAIN LENGTH	* MDL (mg\kg)	RESULTS (mg\kg)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	1.3
C19-C20	0.10	ND
C21-C22	0.10	4.2

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010

Client Field No.: 92
Laboratory Job No: 518
Date Collected: 10-14-88
Date Received (in lab): 10-17-88
Date Analyzed: 10-19-88

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Cal Mar

Date Extracted: 10-19-88
Extraction Method: 5030

Sample Matrix:

__ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
__ Other (specify) _____

Laboratory Sample No.: 28-00518-006

Compound	MDL * (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	5.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
Trace= at or Below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010

Client Field No.: 91
Laboratory Job No: 518
Date Collected: 10-18-88
Date Received (in lab): 10-17-88
Date Analyzed: 10-19-88

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Cal Mar

Date Extracted: 10-19-88
Extraction Method: 5030

Sample Matrix:

__ Water (micrograms per liter)
X Soil (micrograms per kilogram)
__ Other (specify) _____

Laboratory Sample No.: 28-00518-005

Compound	MDL * (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	5.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
Trace= at or Below MDL

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[redacted]

ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010

Client Field No.: 94
Laboratory Job No: 518
Date Collected: 10-14-88
Date Received (in lab): 10-17-88
Date Analyzed: 10-19-88

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Cal Mar

Date Extracted: 10-19-88
Extraction Method: 5030

Sample Matrix:

__ Water (micrograms per liter)
X Soil (micrograms per kilogram)
__ Other (specify) _____

Laboratory Sample No.: 28-00518-008

Compound	MDL * (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	5.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	16	YES	
1,1-dichloroethane	5.0	TRACE		
cis-1,2-dichloroethene	5.0	TRACE		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	38	YES	
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	30	YES	
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
Trace= at or Below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010

Client Field No.: 93
Laboratory Job No: 518
Date Collected: 10-14-88
Date Received (in lab): 10-17-88
Date Analyzed: 10-19-88

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Cal Mar

Date Extracted: 10-19-88
Extraction Method: 5030

Sample Matrix:

__ Water (micrograms per liter)
X Soil (micrograms per kilogram)
__ Other (specify) _____

Laboratory Sample No.: 28-00518-007

Compound	MDL * (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	5.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
Trace= at or Below MDL

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Field No.: 88
Laboratory Job No:
Date Collected: 10-14-88
Date Received (in lab): 10-17-88
Date Analyzed: 10-19-88

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Cal Mar

Dilution Factor: NONE
Extraction Method: 5030

Sample Matrix:

__ Water (micrograms per liter)

X Soil (micrograms per kilogram)

__ Other (specify) _____

Laboratory Sample No.: 28-00518-002

Compound	MDL * (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	TR		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	TR		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
TR = This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
KPA Method 8020

Client Field No.: 87
Laboratory Job No:
Date Collected: 10-14-88
Date Received (in lab): 10-17-88
Date Analyzed: 10-19-88

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Cal Mar

Dilution Factor: NONE
Extraction Method: 5030

Sample Matrix:

__ Water (micrograms per liter)

_X_ Soil (micrograms per kilogram)

__ Other (specify) _____

Laboratory Sample No.: 28-00518-001

Compound	MDL * (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
TR = This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Field No.: 90
Laboratory Job No:
Date Collected: 10-14-88
Date Received (in lab): 10-17-88
Date Analyzed: 10-19-88

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Cal Mar

Dilution Factor: NONE
Extraction Method: 5030

Sample Matrix:

__ Water (micrograms per liter)

_X_ Soil (micrograms per kilogram)

__ Other (specify) _____

Laboratory Sample No.: 28-00518-004

Compound	MDL * (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	TR		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
TR = This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Field No.: 89
Laboratory Job No:
Date Collected: 10-14-88
Date Received (in lab): 10-17-88
Date Analyzed: 10-19-88

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Cal Mar

Dilution Factor: NONE
Extraction Method: 5030

Sample Matrix:

___ Water (micrograms per liter)

_X_ Soil (micrograms per kilogram)

___ Other (specify) _____

Laboratory Sample No.: 28-00518-003

Compound	MDL * (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	TR		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	TR		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
TR = This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Field No.: 92
Laboratory Job No:
Date Collected: 10-14-88
Date Received (in lab): 10-17-88
Date Analyzed: 10-19-88

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Cal Mar

Dilution Factor: NONE
Extraction Method: 5030

Sample Matrix:

___ Water (micrograms per liter)

_X_ Soil (micrograms per kilogram)

___ Other (specify) _____

Laboratory Sample No.: 28-00518-006

Compound	MDL * (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	ND		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
TR = This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Field No.: 91
Laboratory Job No:
Date Collected: 10-14-88
Date Received (in lab): 10-17-88
Date Analyzed: 10-19-88

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Cal Mar

Dilution Factor: NONE
Extraction Method: 5030

Sample Matrix:

__ Water (micrograms per liter)

_X_ Soil (micrograms per kilogram)

__ Other (specify) _____

Laboratory Sample No.: 28-00518-005

Compound	MDL * (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	TR		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
TR = This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Field No.: 94
Laboratory Job No:
Date Collected: 10-14-88
Date Received (in lab): 10-17-88
Date Analyzed: 10-19-88

Client Name: BCL Asssociates, Inc.
Client Job Number: 488
Project Name: Cal Mar

Dilution Factor: NONE
Extraction Method: 5030

Sample Matrix:

__ Water (micrograms per liter)

_X_ Soil (micrograms per kilogram)

__ Other (specify) _____

Laboratory Sample No.: 28-00518-008

Compound	MDL * (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	ND		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	TR		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
TR = This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Field No.: 93
Laboratory Job No:
Date Collected: 10-14-88
Date Received (in lab): 10-17-88
Date Analyzed: 10-19-88

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Cal Mar

Dilution Factor: NONE
Extraction Method: 5030

Sample Matrix:

__ Water (micrograms per liter)

_X_ Soil (micrograms per kilogram)

__ Other (specify) _____

Laboratory Sample Number: 28-00518-007

Compound	MDL * (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)**	Notes
Benzene	5.0	ND		
Chlorobenzene	5.0	ND		
1,2-Dichlorobenzene	5.0	ND		
1,3-Dichlorobenzene	5.0	ND		
1,4-Dichlorobenzene	5.0	ND		
Ethyl Benzene	5.0	TR		
Toluene	5.0	ND		
Xylenes (Dimethyl Benzenes)	5.0	TR		

* MDL = Method Detection Limit
** Confirmation was performed according to Method 8010 Column 2 conditions.
TR = This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

Calmar

MANUFACTURING OPERATING PROCEDURE

Document Number 6 22 0 2 5 0 0 0 1 8 8

Rev. new

Page ___ of ___

Title/Description (i.e., mold No., machine No., action, etc.)
Hydraulic Oil Spillage, Clean-up Method

Product Type: General

Department: Molding Maint.

Orig. Issue Date: 10/28/88

Rev. Date: original

Prepared by: DBP

Reviewed by: _____

Approved by: _____

1.0 SCOPE

The purpose of this operating procedure is to provide a method for immediate clean-up of hydraulic oil that, from time to time, flows onto floor in the Molding Department when a hydraulic hose breaks, a cylinder packing breaks down, or machine part seal breaks.

2.0 PROCEDURE

2.1 Ongoing maintenance of hydraulic oil seepage from hydraulic injection molding machines.

2.1.1 Oil recovery trays beneath extruder and clamp cylinder are to be removed and their contents placed into the waste oil drum in the hazard waste storage area daily.

2.1.2 As machine is being attended to for oil tray recovery waste, any prolific and/or out of the ordinary hydraulic oil seal failures are to be reported and corrected.

2.1.3 If hydraulic oil is seeping onto the concrete floor below the machine, absorbant materials are to be used to isolate the contamination and steps to correct the condition are to follow.

2.2 In the event of a major hydraulic oil spillage.

2.2.1 Stop machine pump motor by actuating emergency stop control button.

2.2.2 Obtain absorant material (Zorbasol or equivalent) and contain oil on the floor as best possible.

2.2.3 Use wet/dryer air-operated vacuums mounted on 55 gallon drums to vacuum all fluid up off the floor, then use Zorbasol (or equivalent) to further remove all residual oil film from the floor.

2.2.4 If hydraulic oil floods area to extent that it enters into the utility trench behind the machine, and as soon as the fluid is contained above-floor, remove as many trench covers as required to isolate, contain, and vacuum, then use Zorbasol (or equivalent) to remove all remaining film before replacing steel covers over trench.

2.2.5 Zorbasol or equivalent absorbent material is to be removed and placed into open-top steel drum identified and stored, and stored in hazard waste storage area for proper disposal with drum cover secured inplace.

APPENDIX G

Calmar Internal Work Orders

WORK O[illegible]

☐ DESIGN ☐ R & D LAB. ☑ MAINT. ☐ MOLDING ☐ Q.C.

☐ M.E.D. ☐ R & D SHOP ☐ TOOL SHOP ☐ ASS'Y. ☐ (OTHER)

ACCOUNT NO. 050

JECT Seal hole in berm

E OF TOOL Fluid Containment Berm USED FOR/ON Hazard fluid containment

L NO. N/A

RUCTIONS Please take immediate steps to cleanout, fillup, nd seal the open hole thru the berm at the uth end of trench leading out of building ext to the compresser pad. The referred to ere is approximately 3/4" in diameter and xtend thru the berm at the bottom.

ATE WRITTEN 10/27/88 REQUESTED BY D. Pefley EST. HRS.

ATE REC'D. AUTHORIZED BY 10/27 ACTUAL HRS.

DATE REQUIRED 11/5/88 ASSIGNED TO J. Scalas APPROVED K.U.

DATE COMPLETED

Calmar

MANUFACTURING OPERATING PROCEDURE

Document Number 6220250-0001-88

Rev. No. New

Page ___ of ___

Title/Description (i.e., mold No., machine No., action, etc.)
Hydraulic Oil Spillage, Clean-up Method

Product Type: General

Department: Molding Maint.

Orig. Issue Date: 10/28/88

Rev. Date: original

Prepared by: DEP

Revised by: ___

Approved by: ___

1 2.3 Documentation

2.3.1 Hydraulic oil seal failures detected and repaired during routine daily maintenance are to be recorded and dated in the machine maintenance log.

2.3.2 Major oil spillage is to be reported in the machine log and a report given to the plant manager following each such incident, giving time and date of occurence, a summary of how and where it happened, and by whom it was brought under control.

Reference Work Order #2318 10-3-88

Re = Waste Water Clarifier

On Oct 30, 1988 the clarifier pits were pumped out and steam cleaned. A thorough examination of the side walls and bottom was made. No cracks or holes could be seen and the concrete appeared to be in good condition. The vacuum truck driver commented that our clarifier looked very good compared to some he has seen. I do not believe there are any leaks.

J Jacks

Photographs of clarifier taken before, during, and after cleaning on file with Duane Bayley.

WORK ORDER

No. B— 23189

☐ DESIGN ☐ R. & D. LAB. ☑ MAINT. ☐ MOLDING ☐ Q.C.

☐ M.E.D. ☐ R. & D. SHOP ☐ TOOL SHOP ☐ ASS'Y. ☐ (OTHER) _____

PROJECT Clean Trenches ACCOUNT NO. 700

TYPE OF TOOL Floor Trench

TOOL NO. _____ USED FOR/ON Molding Service

INSTRUCTIONS

Beginning with trench on east side of molding, rent equipment, hire vacuuming service, or plan to clean expeditiously best way. By means of vacuum, shovel, broom, etc., all trench area throughout the molding department.

Cleaning of the trench is leading to an ongoing housekeeping procedure and hydraulic oil spill clean-up method. Emergy spill procedure is underway.

DATE WRITTEN 10/11/88 REQUESTED BY D. Pefley EST. HRS. _____

DATE REC'D. _____ AUTHORIZED BY D Pefley 10/11/88 ACTUAL HRS _____

DATE REQUIRED Complete by 11/31/88

DATE COMPLETED _____ ASSIGNED TO J. Jacka APPROVED K.D.

WORK ORDER

No. B— 23187

J

☐ DESIGN ☐ R. & D. LAB. ☑ MAINT. ☐ MOLDING ☐ Q.C.

☐ M.E.D. ☐ R. & D. SHOP ☐ TOOL SHOP ☐ ASS'Y. ☐ (OTHER) _____

PROJECT Clean Clarifier ACCOUNT NO. 050

TYPE OF TOOL _____

TOOL NO. _____ USED FOR/ON _____

INSTRUCTIONS

As soon as schedule can be arranged, please have clarifier thoroughly cleaned, including having sidewalls and bottom steam cleaned.

After cleaned the clarior must be inspected for obvious cracks or holes that might lead to se to the ~~sur~~ surrounding soil. Avoid having anyone getting down into clarifier. Write brief report of observations on work order (use back if necessary).

DATE WRITTEN 9/21/88 REQUESTED BY D. Pefley EST. HRS. _____

DATE REC'D. 9-21-88 AUTHORIZED BY Pefley ACTUAL HRS _____

DATE REQUIRED 10/2/88

DATE COMPLETED 9-30-88 ASSIGNED TO J. Jacka APPROVED K.D. 9/21

CODE | HOURS | TOTAL

BCL

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L A B O R A T O R Y R E P O R T

Report to:	BCL Associates, Inc. 5702 Bolsa Avenue Huntington Beach, CA. 92649	Client No: Laboratory No: Report Date: Received Date:	87-488 00436 09-12-88 09-02-88
Attention:	James Severns	Purchase Order No:	

Sample Description: Three water samples.

Testing Methods:
Halogenated Volatile Organics/GC-ElCD; EPA 601.
Aromatic Volatile Organics/GC-PlD; EPA 602.
Hydrocarbon Analysis with Carbon Chain ID/ GC-FlD; Modified EPA 8015.

Results for the three 601, 602, and modified 8015 analyses are given on the following summary sheets.

Jesus Mallari
Technical Director

Steve Jones, Ph.D.
Lab Manager

BCL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 601

Client Field No.:	85	Client Name:	BCL Associates, Inc.
Laboratory Job No.:	00436	Client Job Number:	488
Date Collected:	09-02-88		
Date Received (in lab):	09-02-88	Date Extracted:	09-08-88
Date Analyzed:	09-08-88	Extraction Method:	5030

Sample Matrix:

_X_ Water (micrograms per liter)
___ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00436-002

Chain Length	MDL (ug/L)	Concentration Detected (ug/L)	Confirmation (Yes/No)	Notes
Chloromethane	0.5	ND		
Bromomethane	0.5	ND		
Vinyl Chloride	0.5	ND		
Chloroethane	0.5	ND		
Dichloromethane	0.5	ND		
Trichlorofluoromethane	0.5	ND		
1,1-dichloroethene	0.5	4.0	yes	
1,1-dichloroethane	0.5	ND		
cis-1,2-dichloroethene	0.5	1.9	yes	
Chloroform	0.5	ND		
1,2-dichloroethane	0.5	ND		
1,1,1-trichloroethane	0.5	0.77	yes	
Carbon tetrachloride	0.5	ND		
Bromodichloromethane	0.5	ND		
1,2-dichloropropane	0.5	ND		
trans-1,3-dichloropropene	0.5	ND		
Trichloroethylene	0.5	42	yes	
cis-1,3-dichloropropene	0.5	ND		
Dibromochloromethane	0.5	ND		
1,1,2-trichloroethane	0.5	ND		
Bromoform	0.5	ND		
1,1,2,2-tetrachloroethane	0.5	ND		
Tetrachloroethene	0.5	7.0	yes	
Chlorobenzene	0.5	ND		
1,3-dichlorobenzene	0.5	ND		
1,2-dichlorobenzene	0.5	ND		
1,4-dichlorobenzene	0.5	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 601

Client Field No.:	84	Client Name:	BCL Associates, Inc.
Laboratory Job No.:	436	Client Job Number:	488
Date Collected:	09-02-88		
Date Received (in lab):	09-02-88	Date Extracted:	09-08-88
Date Analyzed:	09-08-88	Extraction Method:	5030

Sample Matrix:

_X_ Water (micrograms per liter)
___ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00436-001

Chain Length	MDL (mg/L)	Concentration Detected (mg/L	Confirmation (Yes/No)	Notes
Chloromethane	0.5	ND		
Bromomethane	0.5	ND		
Vinyl Chloride	0.5	ND		
Chloroethane	0.5	ND		
Dichloromethane	0.5	ND		
Trichlorofluoromethane	0.5	ND		
1,1-dichloroethene	0.5	79	yes	
1,1-dichloroethane	0.5	36	yes	
cis-1,2-dichloroethene	0.5	trace	yes	
Chloroform	0.5	ND		
1,2-dichloroethane	0.5	0.98	yes	
1,1,1-trichloroethane	0.5	2.3	yes	
Carbon tetrachloride	0.5	ND		
Bromodichloromethane	0.5	ND		
1,2-dichloropropane	0.5	ND		
trans-1,3-dichloropropene	0.5	ND		
Trichloroethylene	0.5	20	yes	
cis-1,3-dichloropropene	0.5	ND		
Dibromochloromethane	0.5	ND		
1,1,2-trichloroethane	0.5	ND		
Bromoform	0.5	ND		
1,1,2,2-tetrachloroethane	0.5	ND		
Tetrachloroethene	0.5	47	yes	
Chlorobenzene	0.5	ND		
1,3-dichlorobenzene	0.5	ND		
1,2-dichlorobenzene	0.5	ND		
1,4-dichlorobenzene	0.5	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

lient Name: BCL Associates, Inc.
lient Job Number: 488
roject Name: Calmar
aboratory Supervisor Approval:
ate:

Client (Field) Sample No.: 84
Date Collected: 09-02-88
Date Received (in lab): 09-02-88
Date Analyzed: 09-08-88

Dilution Factor: ---
Extraction Method: 5030

ample Matrix:

Lab Sample Number: 28-00436-001

X Water (micrograms per liter)

__ Soil (micrograms per kilogram)

_ Other (specify)_____

ompound	MDL*	Concentration Detected (mg/L) (ppb)	Confirmation (Yes/No)**	Notes
enzene	0.5	ND		
hlorobenzene	0.5	ND		
,2-Dichlcrobenzene	0.5	ND		
,3-Dichlorobenzene	0.5	ND		
,4-Dichlorobenzene	0.5	ND		
thyl Benzene	0.5	Trace		
oluene	0.5	ND		
ylenes (Dimethyl Benzenes)	0.5	ND		

MDL = Method Detection Limit
* Confirmation was performed according to Method 8010 Column 2 conditions.
This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 601

Client Field No.:	86	Client Name: BCL Associates, Inc.	
Laboratory Job No.:	436	Client Job Number:	488
Date Collected:	09-02-88		
Date Received (in lab):	09-02-88	Date Extracted:	09-08-88
Date Analyzed:	09-08-88	Extraction Method:	5030

Sample Matrix:

_X_ Water (micrograms per liter)
___ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00436-003

Chain Length	MDL (ug/L)	Concentration Detected (ug/L)	Confirmation (Yes/No)	Notes
Chloromethane	0.5	ND		
Bromomethane	0.5	ND		
Vinyl Chloride	0.5	ND		
Chloroethane	0.5	ND		
Dichloromethane	0.5	ND		
Trichlorofluoromethane	0.5	ND		
1,1-dichloroethene	0.5	6.1	YES	
1,1-dichloroethane	0.5	ND		
cis-1,2-dichloroethene	0.5	TRACE		
Chloroform	0.5	ND		
1,2-dichloroethane	0.5	ND		
1,1,1-trichloroethane	0.5	6.5	YES	
Carbon tetrachloride	0.5	ND		
Bromodichloromethane	0.5	ND		
1,2-dichloropropane	0.5	ND		
trans-1,3-dichloropropene	0.5	ND		
Trichloroethylene	0.5	23	YES	
cis-1,3-dichloropropene	0.5	ND		
Dibromochloromethane	0.5	ND		
1,1,2-trichloroethane	0.5	ND		
Bromoform	0.5	ND		
1,1,2,2-tetrachloroethane	0.5	ND		
Tetrachloroethene	0.5	20	YES	
Chlorobenzene	0.5	ND		
1,3-dichlorobenzene	0.5	ND		
1,2-dichlorobenzene	0.5	ND		
1,4-dichlorobenzene	0.5	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

lient Name: BCL Associates, Inc.
lient Job Number: 488
roject Name: Calmar
aboratory Supervisor Approval:
ate:

Client (Field) Sample No.: 86
Date Collected: 09-02-88
Date Received (in lab): 09-02-88
Date Analyzed: 09-08-88

Dilution Factor: --------
Extraction Method: 5030

ample Matrix:

Lab Sample Number: 28-00436-003

X Water (micrograms per liter)

__ Soil (micrograms per kilogram)

Other (specify)_____

ompound	MDL*	Concentration Detected (mg/L) (ppb)	Confirmation (Yes/No)**	Notes
enzene	0.5	Trace		
lorobenzene	0.5	ND		
,2-Dichlorobenzene	0.5	ND		
,3-Dichlorobenzene	0.5	ND		
,4-Dichlorobenzene	0.5	ND		
thyl Benzene	0.5	ND		
oluene	0.5	Trace		
lenes (Dimethyl Benzenes)	0.5	Trace		

MDL = Method Detection Limit

* Confirmation was performed according to Method 8010 Column 2 conditions.
This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Calmar
Laboratory Supervisor Approval:
Date:

Client (Field) Sample No.: 85
Date Collected: 09-02-88
Date Received (in lab): 09-02-88
Date Analyzed: 09-08-88

Dilution Factor: --------
Extraction Method: 5030

Sample Matrix:

Lab Sample Number: 28-00436-002

X Water (micrograms per liter)

__ Soil (micrograms per kilogram)

__ Other (specify)_____

Compound	MDL*	Concentration Detected (mg/L) (ppb)	Confirmation (Yes/No)**	Notes
Benzene	0.5	ND		
Chlorobenzene	0.5	ND		
1,2-Dichlorobenzene	0.5	ND		
1,3-Dichlorobenzene	0.5	ND		
1,4-Dichlorobenzene	0.5	ND		
Ethyl Benzene	0.5	ND		
Toluene	0.5	ND		
Xylenes (Dimethyl Benzenes)	0.5	ND		

MDL = Method Detection Limit
< Confirmation was performed according to Method 8010 Column 2 conditions.
This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL ASSOCIATES, INC.
CLIENT SAMPLE NO: 85
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 09-02-88
DATE ANALYZED: 09-11-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00436-002

CHAIN LENGTH	* MDL (mg\L)	RESULTS (mg\L)
C8-C10	0.10	0.00
C11-C12	0.10	0.00
C13-C14	0.10	0.00
C15-C16	0.10	0.00
C17-C18	0.10	0.00
C19-C20	0.10	0.00
C21-C22	0.10	0.00

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL ASSOCIATES, INC.
CLIENT SAMPLE NO: 84
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 09-02-88
DATE ANALYZED: 09-11-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00436-001

CHAIN LENGTH	* MDL (mg\L)	RESULTS (mg\L)
C8-C10	0.10	ND
C11-C12	0.10	ND
C13-C14	0.10	ND
C15-C16	0.10	ND
C17-C18	0.10	ND
C19-C20	0.10	ND
C21-C22	0.10	ND

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL ASSOCIATES, INC.
CLIENT SAMPLE NO: 86
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 09-02-88
DATE ANALYZED: 09-02-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00436-003

CHAIN LENGTH	* MDL (mg\L)	RESULTS (mg\L)
C8-C10	0.10	0.00
C11-C12	0.10	0.00
C13-C14	0.10	0.00
C15-C16	0.10	0.00
C17-C18	0.10	0.00
C19-C20	0.10	0.00
C21-C22	0.10	0.00

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	82	Client Name:	BCL Associates, Inc.
Laboratory Job No.:	00420	Client Job Number:	488
Date Collected:	08-26-88		
Date Received (in lab):	08-29-88	Date Extracted:	09-08-88
Date Analyzed:	09-08-88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
___ Soil (micrograms per kilogram)
_X_ Other (specify) Liquid

Laboratory Sample No.: 28-00420-001

Chain Length	MDL (ug/L)	Concentration Detected (ug/L)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	5.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	1500	YES	
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	2800	YES	
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	ND		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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L A B O R A T O R Y R E P O R T

Report to: BCL Associates, Inc.
5702 Bolsa Avenue
Huntington Beach, CA.
92649

Client No: 87-488
Laboratory No: 00420
Report Date: 09-12-88
Received Date: 08-29-88

Attention: James Severns

Purchase Order No:

Sample Description: Two liquid samples.

Testing Methods: Halogenated Volatile Organics/GC-ElCD; EPA 8010.
Aromatic Volatile Organics/GC-PlD; EPA 8020.
Hydrocarbon Analysis with Carbon Chain ID/ GC-FlD; Modified EPA 8015.

Results for the three 8010, 8020, and modified 8015 are on given on the following summary sheets.

Jesus Mallari
Technical Director

Steve Jones, Ph.D.
Lab Manager

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

lient Name: BCL Associates, Inc.
lient Job Number: 488
roject Name: Calmar
boratory Supervisor Approval:
ate:

Client (Field) Sample No.: 83
Date Collected: 08-26-88
Date Received (in lab): 08-29-88
Date Analyzed: 09-08-88

Dilution Factor: 2,283
Extraction Method: 5030

ample Matrix:

Lab Sample Number: 28-00420-002

__ Water (micrograms per liter)

__ Soil (micrograms per kilogram)

Other (specify) Sludge

ompound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
enzene	11,500	Trace		
lorobenzene	11,500	ND		
.2-Dichlorobenzene	11,500	ND		
.3-Dichlorobenzene	11,500	ND		
.4-Dichlorobenzene	11,500	ND		
hyl Benzene	11,500	ND		
luene	11,500	Trace		
lenes (Dimethyl Benzenes)	11,500	Trace		

MDL = Method Detection Limit
Confirmation was performed according to Method 8010 Column 2 conditions.
This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
Aromatic Volatile Organics
EPA Method 8020

ient Name: BCL Associates, Inc.
ient Job Number: 488
oject Name: Calmar
boratory Supervisor Approval:
ite:

Client (Field) Sample No.: 82
Date Collected: 08-26-88
Date Received (in lab): 08-29-88
Date Analyzed: 09-08-88

Dilution Factor:
Extraction Method: 5030

mple Matrix:

Lab Sample Number: 28-00420-001

__ Water (micrograms per liter)

__ Soil (micrograms per kilogram)

__ Other (specify) Liquid

mpound	MDL*	Concentration Detected (ug/Kg) (ppb)	Confirmation (Yes/No)**	Notes
nzene	5.0	Trace		
lorobenzene	5.0	ND		
2-Dichlorobenzene	5.0	ND		
3-Dichlorobenzene	5.0	ND		
4-Dichlorobenzene	5.0	ND		
hyl Benzene	5.0	ND		
luene	5.0	Trace		
lenes (Dimethyl Benzenes)	5.0	Trace		

MDL = Method Detection Limit
Confirmation was performed according to Method 8010 Column 2 conditions.
This compound was detected but its concentration was below the PQL and could not be accurately quantitated.

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL ASSOCIATES, INC.
CLIENT SAMPLE NO: 82
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 08-26-88
DATE ANALYZED: 09-08-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00420-001

CHAIN LENGTH	* MDL (mg\kg)	RESULTS (mg\kg)
C8-C10	0.10	1600
C11-C12	0.10	2200
C13-C14	0.10	150
C15-C16	0.10	67
C17-C18	0.10	210
C19-C20	0.10	720
C21-C22	0.10	3100

* MDL= METHOD DETECTION LIMIT

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	83	Client Name: BCL Associates, Inc.	
Laboratory Job No.:	00420	Client Job Number:	488
Date Collected:	08-26-88		
Date Received (in lab):	08-29-88	Date Extracted:	09-08-88
Date Analyzed:	09-08-88	Extraction Method:	5030
Dilution Factor:	2,283		

Sample Matrix:

___ Water (micrograms per liter)
___ Soil (micrograms per kilogram)
_X_ Other (specify) Sludge

Laboratory Sample No.:

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	11,500	ND		
Bromomethane	11,500	ND		
Vinyl Chloride	11,500	ND		
Chloroethane	11,500	ND		
Dichloromethane	11,500	ND		
Trichlorofluoromethane	11,500	ND		
1,1-dichloroethene	11,500	ND		
1,1-dichloroethane	11,500	TRACE	YES	
cis-1,2-dichloroethene	11,500	ND		
Chloroform	11,500	ND		
1,2-dichloroethane	11,500	ND		
1,1,1-trichloroethane	11,500	320,000	YES	
Carbon tetrachloride	11,500	ND		
Bromodichloromethane	11,500	ND		
1,2-dichloropropane	11,500	ND		
trans-1,3-dichloropropene	11,500	ND		
Trichloroethylene	11,500	ND		
cis-1,3-dichloropropene	11,500	ND		
Dibromochloromethane	11,500	ND		
1,1,2-trichloroethane	11,500	ND		
Bromoform	11,500	ND		
1,1,2,2-tetrachloroethane	11,500	ND		
Tetrachloroethene	11,500	ND		
Chlorobenzene	11,500	ND		
1,3-dichlorobenzene	11,500	ND		
1,2-dichlorobenzene	11,500	ND		
1,4-dichlorobenzene	11,500	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
@ = Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
MODIFIED METHOD 8015

CLIENT NAME: BCL ASSOCIATES, INC.
CLIENT SAMPLE NO: 83
CLIENT JOB NO: 488

SAMPLE MATRIX: SOIL

DATE COLLECTED: 08-26-88
DATE ANALYZED: 09-08-88

DILUTION FACTOR:
EXTRACTION METHOD:

LAB SAMPLE NO: 28-00420-002

CHAIN LENGTH	* MDL (mg\kg)	RESULTS (mg\kg)
C8-C10	0.10	1000
C11-C12	0.10	2200
C13-C14	0.10	120
C15-C16	0.10	75
C17-C18	0.10	240
C19-C20	0.10	860
C21-C22	0.10	3700

* MDL= METHOD DETECTION LIMIT

APPENDIX F

Analytical reports for the Reanalysis of

Samples 1 and 6 from Boring B-1

and Analysis of Samples from Boring B-17

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LABORATORY REPORT

Report to:	BCL Associates, Inc. 5702 Bolsa Avenue Huntington Beach, CA. 92649	Client Number: Laboratory No: Report Date: Received Date:	87-488 00441 09-08-88 09-07-88
Attention:	James Severns	Purchase Order No:	

Sample Description: Two soil samples labeled sample 1 and 6.

Testing Methods: Halogenated Volatile Hydrocarbons/GC-ElCD; EPA 8010.

The above referenced samples were reanalyzed for halogenated hydrocarbons according to EPA Method 8010. The original analysis showed high concentrations (1-5ppm) of the chlorinated solvent carbon tetrachloride. Because this chemical has not been found at this site before, the reanalysis was performed even though holding times are violated. No carbon tetrachloride was detected in the reanalysis of the original samples.

Laboratory contamination of the samples or the analytical system by carbon tetrachloride is unlikely since the only source of carbon tetrachloride in BCL's laboratory is in a calibration standard combined with many other compounds. Contaminated glassware is a possible source of contamination. However, samples analyzed both before and after these samples showed no carbon tetrachloride contamination.

The absence of carbon tetrachloride in the second analysis cannot be completely explained. The carbon tetrachloride has a low boiling point and in the two months between analyses could have evaporated from the sample. It is unlikely that carbon tetrachloride decomposed completely in this time frame.

The appearance of 22ppb Tetrachloroethene in sample 6 in the reanalysis may be due to masking by the unexplained occurance of carbon tetrachloride in the first analysis.

The final resolution of this would be to obtain additional samples from the same site, properly store and transport them to the laboratory, and analyze them by EPA 8010 before the expiration of the holding time for carbon tetrachloride analysis.

Rhondi Bobich
GC Group Leader

Steve Jones, Ph.D.
Lab Manager

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	1	Client Name:	BCL Associates, Inc.
Laboratory Job No.:	00441	Client Job Number:	488
Date Collected:		Project Name:	Calmar
Date Received (in lab):	09-07-88	Date Extracted:	09-11-88
Date Analyzed:	09-11-88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00441-001

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	5.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	ND		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	Trace		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	Trace		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
Trace - at or below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics Summary
EPA Method 8010

Client Field No.:	6	Client Name: BCL Associates, Inc.	
Laboratory Job No.:	00441	Client Job Number:	488
Date Collected:		Project Name:	Calmar
Date Received (in lab):	09-07-88	Date Extracted:	09-08-88
Date Analyzed:	09-08-88	Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify)

Laboratory Sample No.: 28-00441-002

Chain Length	MDL (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	5.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	Trace	YES	
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	Trace	YES	
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND	YES	
Tetrachloroethene	5.0	22		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
Trace - at or below MDL

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LABORATORY REPORT

Report to: BCL Associates, Inc.
5702 Bolsa Avenue
Huntington Beach, CA 92649

Client Number: 87-488

Laboratory No.: 00518

Report Date: 10-21-88

Received Date: 10-14-88

Attention: James Severns

Purchase Order No.:

Sample Description: Eight Soil Samples

Testing Methods: Halogenated Volatile Organics/GC-HECD; EPA 8010
Aromatic Volatile Organics/GC-PID; EPA 8020
Hydrocarbon Analysis with Carbon Chain ID/GC-FID; modified EPA 8015.

Results for the eight 8010, 8020, and modified 8015 analyses are given on the following summary sheets.

Rhondi Bobich
GC Group Leader

Steve Jones, Ph.D.
Laboratory Manager

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ANALYTICAL RESULTS SUMMARY
Modified Method 8015

Client Name: BCL Associates, Inc.
Client Sample Number: 87
Client Job Number: 488
Sample Collected: 10-14-88

Sample Matrix: Soil

Date Collected: 10-19-88
Date Analyzed: 10-20-88
Dilution Factor: 1.000
Extraction Solvent: Dichloromethane

Lab Sample Number: 28-00518-001

Chain Length	*PQL (mg/Kg)	Results (mg/Kg)
C8 - C10	0.5	TR
C11 - C12	0.5	TR
C13 - C14	0.5	TR
C15 - C16	0.5	1.8
C17 - C18	0.5	7.2
C19 - C20	0.5	12
C21 - C22	0.5	17
C23 - C24	0.5	27

*PQL = Practical Quantitation Limit
TR = Trace, detected below PQL
MDL = (PQL/10)

NOTES. Sample loaded with tar.

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ANALYTICAL RESULTS SUMMARY
Modified Method 8015

Client Name: BCL Associates, Inc.
Client Sample Number: 88
Client Job Number: 488
Sample Collected : 10-14-88

Sample Matrix: Soil

Date Collected: 10-18-88
Date Analyzed: 10-20-88
Dilution Factor: 1.000
Extraction Solvent: Dichloromethane

Lab Sample Number: 28-00518-002

Chain Length	*PQL (mg/Kg)	Results (mg/Kg)
C8 - C10	0.5	ND
C11 - C12	0.5	ND
C13 - C14	0.5	ND
C15 - C16	0.5	ND
C17 - C18	0.5	TRACE
C19 - C20	0.5	ND
C21 - C22	0.5	ND
C23 - C24	0.5	ND

*PQL = Practical Quantitation Limit
TRACE = Detected Below PQL
MDL = (PQL/10)
ND = Not Detected

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ANALYTICAL RESULTS SUMMARY
Modified Method 8015

Client Name: BCL Associates, Inc.
Client Sample Number: 89
Client Job Number: 488
Sample Collected : 10-14-88

Sample Matrix: Soil

Date Collected: 10-18-88
Date Analyzed: 10-20-88
Dilution Factor: 1.000
Extraction Solvent: Dichloromethane

Lab Sample Number: 28-00518-003

Chain Length	*PQL (mg/Kg)	Results (mg/Kg)
C8 - C10	0.5	ND
C11 - C12	0.5	ND
C13 - C14	0.5	ND
C15 - C16	0.5	ND
C17 - C18	0.5	ND
C19 - C20	0.5	ND
C21 - C22	0.5	ND
C23 - C24	0.5	ND

*PQL = Practical Quantitation Limit
TRACE = Detected Below PQL
MDL = (PQL/10)
ND = Not Detected

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ANALYTICAL RESULTS SUMMARY
Modified Method 8015

Client Name: BCL Associates, Inc.
Client Sample Number: 90
Client Job Number: 488
Sample Collected: 10-14-88

Sample Matrix: Soil

Date Collected: 10-18-88
Date Analyzed: 10-20-88
Dilution Factor: 1.000
Extraction Solvent: Dichloromethane

Lab Sample Number. 28-00518-004A

Chain Length	*PQL (mg/Kg)	Results (mg/Kg)
C8 - C10	0.5	ND
C11 - C12	0.5	ND
C13 - C14	0.5	ND
C15 - C16	0.5	ND
C17 - C18	0.5	ND
C19 - C20	0.5	ND
C21 - C22	0.5	ND
C23 - C24	0.5	ND

* PQL = Practical Quantitation Limit
TR= Trace, Detected Below PQL
MDL = (PQL/10)
ND = Not Detected

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ANALYTICAL RESULTS SUMMARY
Modified Method 8015

Client Name: BCL Associates, Inc.
Client Sample Number: 91
Client Job Number: 488
Sample Collected: 10-14-88

Sample Matrix: Soil

Date Collected: 10-18-88
Date Analyzed: 10-20-88
Dilution Factor: 1.000
Extraction Solvent: Dichloromethane

Lab Sample Number: 28-00518-005A

Chain Length	*PQL (mg/Kg)	Results (mg/Kg)
C8 - C10	0.5	ND
C11 - C12	0.5	ND
C13 - C14	0.5	ND
C15 - C16	0.5	ND
C17 - C18	0.5	ND
C19 - C20	0.5	ND
C21 - C22	0.5	ND
C23 - C24	0.5	ND

*PQL = Practical Quantitation Limit
TR = Trace, Detected Below PQL
MDL = (PQL/10)
ND = Not Detected

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ANALYTICAL RESULTS SUMMARY
Modified Method 8015

Client Name: BCL Associates, Inc.
Client Sample Number: 92
Client Job Number: 488
Sample Collected: 10-14-88

Sample Matrix: Soil

Date Collected: 10-18-88
Date Analyzed: 10-20-88
Dilution Factor: 1.000
Extraction Solvent: Dichloromethane

Lab Sample Number: 28-00518-006A

Chain Length	*PQL (mg/Kg)	Results (mg/Kg)
C8 - C10	0.5	ND
C11 - C12	0.5	ND
C13 - C14	0.5	ND
C15 - C16	0.5	ND
C17 - C18	0.5	ND
C19 - C20	0.5	ND
C21 - C22	0.5	ND
C23 - C24	0.5	ND

*PQL = Practical Quantitation Limit
TR = Trace, Detected Below PQL
MDL = (PQL/10)
ND = Not Detected

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ANALYTICAL RESULTS SUMMARY
Modified Method 8015

Client Name: BCL Associates, Inc.
Client Sample Number: 93
Client Job Number: 488
Sample Collected: 10-14-88

Sample Matrix: Soil

Date Collected: 10-18-88
Date Analyzed: 10-20-88
Dilution Factor: 1.000
Extraction Solvent: Dichloromethane

Lab Sample Number: 28-00518-007

Chain Length	*PQL (mg/Kg)	Results (mg/Kg)
C8 - C10	0.5	ND
C11 - C12	0.5	ND
C13 - C14	0.5	ND
C15 - C16	0.5	ND
C17 - C18	0.5	ND
C19 - C20	0.5	ND
C21 - C22	0.5	ND
C23 - C24	0.5	ND

* PQL = Practical Quantitation Limit
TR = Trace, Detected Below PQL
MDL = (PQL/10)
ND = Not Detected

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ANALYTICAL RESULTS SUMMARY
Modified Method 8015

Client Name: BCL Associates, Inc.
Client Sample Number: 94
Client Job Number: 488
Sample Collected: 10-14-88

Sample Matrix: Soil

Date Collected: 10-18-88
Date Analyzed: 10-20-88
Dilution Factor: 1.000
Extraction Solvent: Dichloromethane

Lab Sample Number: 28-00518-008

Chain Length	*PQL (mg/Kg)	Results (mg/Kg)
C8 - C10	0.5	ND
C11 - C12	0.5	ND
C13 - C14	0.5	ND
C15 - C16	0.5	ND
C17 - C18	0.5	ND
C19 - C20	0.5	ND
C21 - C22	0.5	ND
C23 - C24	0.5	ND

* PQL = Practical Quantitation Limit
TR = Trace, Detected Below PQL
MDL = (PQL/10)
ND = Not Detected

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010

Client Field No.: 87
Laboratory Job No: 518
Date Collected: 10-14-88
Date Received (in lab): 10-17-88
Date Analyzed: 10-19-88

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Cal Mar

Date Extracted: 10-19-88
Extraction Method: 5030

Sample Matrix:

__ Water (micrograms per liter)
X Soil (micrograms per kilogram)
__ Other (specify) _____

Laboratory Sample No.: 28-00518-001

Compound	MDL * (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	5.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	13		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	TRACE		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	98		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
Trace= at or Below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010

Client Field No.: 88
Laboratory Job No: 518
Date Collected: 10-14-88
Date Received (in lab): 10-17-88
Date Analyzed: 10-19-88

Client Name: BCL Associates, Inc.
Client Job Number: 488
Project Name: Cal Mar

Date Extracted: 10-19-88
Extraction Method: 5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify) _____

Laboratory Sample No.: 28-00518-002

Compound	MDL * (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	5.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	11	YES	
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	380	YES	
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
Trace= at or Below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010

Client Field No.:	89	Client Name:	BCL Associates, Inc.
Laboratory Job No:	518	Client Job Number:	488
Date Collected:	10-14-88	Project Name:	Cal Mar
Date Received (in lab):	10-17-88		
Date Analyzed:	10-19-88	Date Extracted:	10-19-88
		Extraction Method:	5030

Sample Matrix:

__ Water (micrograms per liter)
X Soil (micrograms per kilogram)
__ Other (specify) _____

Laboratory Sample No.: 28-00518-003

Compound	MDL * (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	5.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	TRACE		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	23		
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
Trace= at or Below MDL

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ANALYTICAL RESULTS SUMMARY
Halogenated Volatile Organics
EPA Method 8010

Client Field No.:	90	Client Name:	BCL Associates, Inc.
Laboratory Job No:	518	Client Job Number:	488
Date Collected:	10-14-88	Project Name:	Cal Mar
Date Received (in lab):	10-17-88		
Date Analyzed:	10-19-88	Date Extracted:	10-19-88
		Extraction Method:	5030

Sample Matrix:

___ Water (micrograms per liter)
_X_ Soil (micrograms per kilogram)
___ Other (specify) _____

Laboratory Sample No.: 28-00518-004

Compound	MDL * (ug/Kg)	Concentration Detected (ug/Kg)	Confirmation (Yes/No)	Notes
Chloromethane	5.0	ND		
Bromomethane	5.0	ND		
Vinyl Chloride	5.0	ND		
Chloroethane	5.0	ND		
Dichloromethane	5.0	ND		
Trichlorofluoromethane	5.0	ND		
1,1-dichloroethene	5.0	ND		
1,1-dichloroethane	5.0	ND		
cis-1,2-dichloroethene	5.0	ND		
Chloroform	5.0	ND		
1,2-dichloroethane	5.0	ND		
1,1,1-trichloroethane	5.0	TRACE		
Carbon tetrachloride	5.0	ND		
Bromodichloromethane	5.0	ND		
1,2-dichloropropane	5.0	ND		
trans-1,3-dichloropropene	5.0	ND		
Trichloroethylene	5.0	ND		
cis-1,3-dichloropropene	5.0	ND		
Dibromochloromethane	5.0	ND		
1,1,2-trichloroethane	5.0	ND		
Bromoform	5.0	ND		
1,1,2,2-tetrachloroethane	5.0	ND		
Tetrachloroethene	5.0	18	YES	
Chlorobenzene	5.0	ND		
1,3-dichlorobenzene	5.0	ND		
1,2-dichlorobenzene	5.0	ND		
1,4-dichlorobenzene	5.0	ND		

MDL = Method Detection Limit
ND = Not Detected at MDL
Trace= at or Below MDL