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Current Conditions Report

Pontiac North Campus
Volume III of IV

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T.E.C. Report Number: 7680
Date Issued: 3 June 1982

Pontiac Motor Division
P.O. Box 666
Pontiac, Michigan 48053

Attention: Mr. Harold P. Flood
Plant Engineering

Re: Soil Investigation for
BARREL STORAGE AREA
Pontiac, Michigan

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Dear Sir:

We submit herewith the results of a soils investigation performed at the above referenced site. The field and laboratory data are included with the engineering analysis.

It is a pleasure to have been of service to you. Please feel free to call if any further information is desired. We would be pleased to furnish quality control testing on the project during the construction.

Respectfully submitted,

TESTING ENGINEERS & CONSULTANTS, INC.

John Banicki, P.E.
President

JB/js
Enclosure

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Pontiac Motor Division
Mr. Harold P. Flood
3 June 1982

T.E.C. Report Number: 7680 (Page 1)

INTRODUCTION

This report presents the results of a soils investigation for the Empty Barrel Storage Area at the Pontiac Motor Division of General Motors Corporation in Pontiac, Michigan. Authorization to perform this investigation was given by Mr. Harold P. Flood on 12 May 1982.

The purpose of this investigation was to obtain the information necessary to determine the basic engineering properties of the soils at the site through a series of test borings and laboratory tests performed on the soil samples obtained during the field investigation. This information has been evaluated to provide the general recommendations for site development preparations.

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Field Investigation

A total of 6 test borings were drilled on the site at the locations shown on the Test Boring Location Plan. The locations are accurate to within a short distance of the location shown on the plan, unless more accurately staked by the owner or land surveyor. The test borings were drilled on 17 May 1982 with truck-mounted auger equipment to depths of 10 feet each.

Drilling methods and standard penetration tests were performed in accordance with the current A.S.T.M. D-1452 and D-1586 procedures respectively. These procedures specify that a standard 2-inch O.D. split-barrel sampler be driven by a 140 pound hammer with a free fall of 30 inches. The number of hammer blows required to drive the split-barrel sampler through three successive 6-inch increments is recorded on the Test Boring Log. The first 6-inch increment is used for setting the sampler firmly in the soil, and the sum of the hammer blows for the second and third increments is referred to as the "Standard Penetration Index" (N).

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Field Investigation (Cont'd)

From the standard penetration test a soil sample is recovered in the liner sampler tubes that are located inside the split-barrel sampler. Upon recovery of a soil sample, the liner tubes are removed from the split-barrel sampler and placed in a brass container which is sealed to prevent moisture losses during transportation to the laboratory. Standard penetration tests are usually made at depths of 3 1/2, 7 and 10 feet and at 5 foot depth intervals thereafter. These parameters may vary for a given project depending on the nature of the subsoils and the geotechnical information required.

Bag samples of loose material were taken from the vicinity of several borings for compaction tests in the laboratory.

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Laboratory Testing

The laboratory testing consisted of determining the unconfined compressive strength, the natural bulk density and the natural moisture content of the soil samples recovered in the liner sampler tubes. In the unconfined compression tests, the compressive strength of the soil is determined by axially loading a soil sample under a slow strain rate until failure is obtained. The above referenced test data are recorded on the test Boring Logs. Some test results may deviate from the norm because of variations in texture, imperfect samples, presence of pebbles and/or sand streaks, etc. The results are still reported although they may not be relevant. In addition to the above, the compaction characteristics were determined for the representative samples by the modified proctor method AASHTO T-180.

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Laboratory Testing (Cont'd)

Samples taken in the field are retained in our laboratory for 60 days and are then destroyed unless special disposition is requested by the client. Samples retained over a long period of time are subject to moisture loss and are then no longer representative of the conditions initially encountered.

Analysis was made on combined samples of typical soils to determine the percents of contaminants by the E P Toxic tests.

GENERAL SUBSOIL AND GROUNDWATER CONDITIONS

Subsoil Conditions

The subsoil conditions encountered in the test borings are presented on the individual logs of Test Borings. Each log presents the soil profile as observed at that location as well as laboratory test data, ground water data, and other pertinent information. Descriptions of the various soil consistencies, relative densities and particle sizes are given in the Appendix following the Test Boring Logs. Definitions of the terms and symbols utilized in this report may be found in ASTM D-653.

The site is developed and graded with surface elevations at boring locations apparently varying by 2 feet or more. Part of the surface is paved with asphalt. The subsoil profiles at the site appear to be fairly uniform. The soils encountered are almost entirely sandy fill. Some clean brown sand was encountered which is apparently the original soil. The fill is very wet and oily and contains glass, cinders, slag, paper, vegetation, etc. The sand ranges from very loose to dense in compaction with no particular pattern, although generally loosening with depth.

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Pontiac Motor Division
Mr. Harold P. Flood
3 June 1982

Subsoil Conditions (Cont'd)

The moisture contents and natural bulk densities are quite variable.

Ground Water Observations

Water level readings were taken in the bore holes during and after the completion of drilling. These observations are noted on the respective Test Boring Logs. Water was encountered in all borings at 1/2 to 10 feet below existing grade and it remained near the original level.

ANALYSIS AND RECOMMENDATIONS

Proposed Development

The proposed development is to consist of paving the area for storage of empty barrels.

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Ground Water Conditions

The position of the water levels found in the test borings may vary somewhat depending on the seasonal precipitation. At this time they are relatively high because of wet fall and winter seasons. At the level encountered in the borings, it should present no problems for construction of the pavement. Where the water is high, it is probably free water in the fill, seeping or percolating down to the natural water table.

Chemical Analysis

Chemical analyses were performed on sample #1 (combined cores #1,2,3, @ 2 1/2') and sample #2 (combined cores #4,5,6 @ 2 1/2') to determine the contents of chemicals and metals which would be toxic contaminants. The test results exclude both representative samples from classification as hazardous

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Chemical Analysis (Cont'd)

waste for parameters tested as defined by the State of Michigan Department of Natural Resources and The Environmental Protection Agency.

Analysis results and critical levels designed by the E.P.A. and D.N.R. are tabulated on a data sheet.

On the basis of these tests, it should be permissible to allow the material to remain in place under the proposed pavement.

Recommended Earthwork Operations

Since the existing material varies from loose to compact, it should be thoroughly rolled with a heavy vibrating roller to compact the loose material as much as possible. This can be done over the existing pavement which appears to be very thin. Soft spots which cannot be stabilized should be removed and replaced. Although the existing fill does contain degradable material it does not appear justified to require complete removal. The compaction of the existing material is quite low as compared to that required for typical engineered fill.

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Additional engineered fill required to achieve desired grades should preferably consist of clean and well graded granular soils. Fill should be placed in uniform layers not more than 9 inches in thickness with the soils in each layer compacted to a minimum of 90% of the maximum density as determined by ASTM D-1557. Fill should be at approximately the optimum moisture content during placement and compaction. Furthermore, frozen material must not be used as fill and fill should not be placed on frozen ground.

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Pavement

The subgrade resulting from the site preparations, as outlined in the recommended earthwork operations section, will provide a fair subgrade for the pavement. It appears that edge drains should be provided to handle the flow of water in the fill. It is recommended that a 2" asphalt surface be placed on 8" of compacted granular base, anticipating a minimum of heavy truck traffic.

Kenneth D. Cummins
Professional Engineer

KDC/js

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APPENDIX

SOIL DESCRIPTIONS

In order to provide uniformity throughout our projects, the following nomenclature has been adopted to describe soil characteristics:

CONSISTENCY AND RELATIVE DENSITY

COHESIVE SOILS			GRANULAR SOILS		
"N" VALUES	"H-N" VALUES	CONSISTENCY	"N" VALUES	"H-N" VALUES	RELATIVE DENSITY
0 - 2	0 - 6	Very Soft	0 - 4	0 - 12	Very Loose
2 - 4	6 - 12	Soft	4 - 10	12 - 30	Loose
4 - 8	12 - 24	Plastic	10 - 30	30 - 90	Med. Compact
8 - 15	24 - 45	Firm	30 - 50	90 - 150	Compact
15- 30	45 - 90	Stiff	50 +	150 +	Dense
30- 60	90 - 180	Ex. Stiff			
60 +	180 +	Ex. Dense			

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Material Types by Particle Size

BOULDERS	-Stones over 12" in diameter
COBBLES	-Stones 3" to 12" in diameter
GRAVEL	-1/4" to 3" diameter
FINE GRAVEL	-#10 to 1/4" Sieve

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SOIL DESCRIPTIONS

Material Types by Particle Size (cont'd.)

PEBBLES	-Occasional pieces of gravel 1/4" to 3/4" in diameter found scattered throughout the other materials.
COARSE SAND	-#40 to #10 Sieves
FINE SAND	-#200 to #40 Sieves
SILT	-.005mm to #200 sieve material, fairly non-plastic.
CLAY	-.001mm to .005mm, plastic material that has a tendency to stick together, can be rolled into fine rods when moistened.
PEAT	-Black organic material containing partially decayed vegetable matter.
MARL	-Fresh water deposits of calcium carbonate, often containing percentages of Peat, Clay & Fine Sand.
SWAMP BOTTOM DEPOSITS	-Mixtures of Peat, Marl, Vegetation & Fine Sand containing large amounts of decayable organic material.

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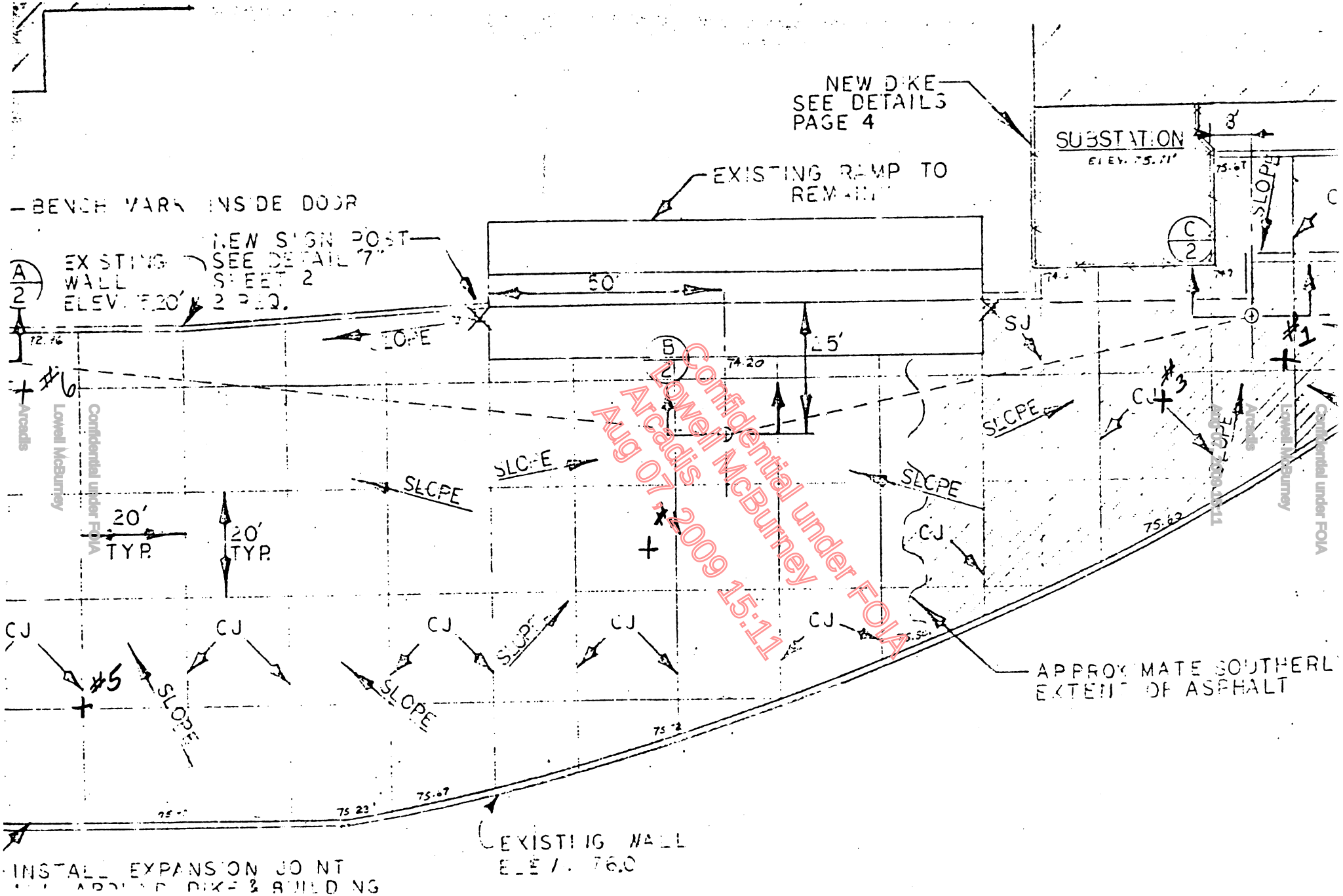
ANALYSIS FOR EP TOXIC TESTS

#1,2,3 @ 2'12 #4,5,6 @ 2'12

Material	Sample #1	Sample #2	Critical Level
Arsenic	.0015 mg/l	.0040 mg/l	5.0 mg/l
Barium	.82 mg/l	3.3 mg/l	100 mg/l
Cadmium	.005 mg/l	.005 mg/l	1.0 mg/l
Chromium, total	.06 mg/l	.07 mg/l	5.0 mg/l
Copper	.01 mg/l	.01 mg/l	100 mg/l
Cyanides/Reactivity	3.4 ppm	3.6 ppm	20 ppm
Lead	.13 mg/l	.14 mg/l	5.0 mg/l
Mercury	.001 mg/l	.0038 mg/l	0.2 mg/l
Selenium	.001 mg/l	.001 mg/l	1.0 mg/l
Silver	.06 mg/l	.03 mg/l	5.0 mg/l
Zinc	.98 mg/l	11.0 mg/l	500 mg/l

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soil borings *soil evaluation* *foundation investigation* *instrumentation*

BORING NO. #1 JOB NO. 7680 PROJECT SLUDGE DISPOSAL AREA

Ground Surface (Elev.)

Datum

CLIENT: Pontiac Motors Corporation

Location: Southwest Corner of Plant Area

Started 17 May 1982 Completed 17 May 1982

Driller Wm. Mancine

ELEV.	DEPTH IN FEET	SAMPLE TYPE	SAMPLE "N"	STRATA CHANGE	SOIL CLASSIFICATION	W.L.	W	γ_d	q_u
			19		Compact Moist Black & Brown Fine Foundry Sand FILL With Cinders, Slag, Pebbles & Gravel		WATER ENCOUNTERED 3' AT COMPLETION 3½' AFTER 10 MON. 3'3"		
	2	LS	19 16				13.2	74	
				3'					
	4	LS	3 17 16	4'	Loose Medium Compact Wet Oil Soaked Grey/Black Fine SAND FILL Tr. Wire, Vegetation & Metal		22.5	106	770
				6'	Compact Moist Black/Grey Fine Sand With Traces of Metal Washers & Vegetation FILL				
	6	LS	6 6 8		Medium Compact Wet Oil Soaked Black/Brown Fine Foundry Sand With Vegetation Tr. of Paper & Pebbles		37.6	107	1160
	8			8'	FILL				
		LS	1 2 2		Loose Wet Oil Soaked Black Coarse to Fine Cinder Sand Gravel & Pebbles FILL		11.5	125	290
	10			10'					
					END OF BORING				
	12								

"N" - Standard Penetration Resistance
S.S. - 2" O.D. Split Spoon Sample
- Sectional Liner Sample
- Shelby Tube Sample
- Bottle Sample
H.S. - Housel Sample

W - H_2O% of dry weight
γ_d - Natural Density-lbs. cu. ft.
q_u - Unconfined Compression lbs. sq. ft.
W.L. - Water Level

Boring No. # 1 /js

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BORING NO. #2 JOB NO. 7680 PROJECT SLUDGE DISPOSAL AREA

Ground Surface (Elev.)

Datum

CLIENT: Pontiac Motors Corporation

Location: Southwest Corner of Plant Area

Started 17 May 1982 Completed 17 May 1982

Driller Wm. Mancine

ELEV.	DEPTH IN FEET	SAMPLE TYPE	SAMPLE "N"	STRATA CHANGE	SOIL CLASSIFICATION	W.L.	W	γ_d	q_u
				4"	Comp.Moist Br./Blk.Oiley Sand W/S.Slag, Gr.,Peb. FILL		WATER ENCOUNTERED 11½' AT COMPLETION 6'10" AFTER 30 MIN. 6'		
	2	LS	6 10 10	3½'	Medium Compact Wet Oiley Grey/ Brown Fine Sand With Traces of Vegetation FILL		13.4	109	
	4	LS	1 6 8	6'	Medium Compact Wet Oiley Brown & Brown Fine Sand With Traces of Glass & Pebbles FILL		24.4	106	1060
	6	LS	1 2 8	8½'	Loose Wet Oiley Grey & Brown Meidum to Fine Sand With Traces of Gravel, Glass & Pebbles FILL		21.2	113	
	8	LS	4 3 4	10'	Loose Wet Oiley Black Fine Sand With Traces of Paper, Vegetation & Pebbles FILL		47.1	73	
	10				END OF BORING				
	12								

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"N" - Standard Penetration Resistance
S.S. - 2" O.D. Split Spoon Sample
L.S. - Sectional Liner Sample
S.T. - Shelby Tube Sample
B.S. - Bottle Sample
H.S. - Housel Sample

W - H_2O% of dry weight
γ_d - Natural Density-lbs. cu. ft.
q_u - Unconfined Compression lbs. sq. ft.
W.L. - Water Level

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BORING NO. #3 JOB NO. 7680 PROJECT SLUDGE DISPOSAL AREA

Ground Surface (Elev.)

Datum

CLIENT: Pontiac Motors Corporation Location: Southwest Corner of Plant Area

Started 17 May 1982 Completed 17 May 1982

Driller Wm. Mancine

ELEV.	DEPTH IN FEET	SAMPLE TYPE	SAMPLE "N"	STRATA CHANGE	SOIL CLASSIFICATION	W. L.	W	γ_d	q_u
	0	LS	8 16 14		Medium Compact Moist Black Oil Sand With Large Pieces of Slag Gravel, Pebbles & Traces of Plastic & Vegetation FILL		WATER ENCOUNTERED 3' AT COMPLETION 4'11" AFTER 5 MIN. 7'10"		
	2			2½'			9.8	71	
	4	LS	9 19 9		Medium Compact Wet Black & Green & Brown Oily Fine Sand With Traces of Vegetation FILL.		16.4	119	1160
	6	LS	2 4 4	6'	Loose Very Moist Oily Black & Tr. Green Medium to Fine Sand With Some Traces of Vegetation FILL		20.8	64	
	8	LS	1 12" 4 6"	8½'	Very Loose to Loose Wet Black Oily Fine Sand With Traces of Pebbles FILL		29.5	54	
	10			10'	END OF BORING				
	12								

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"N" - Standard Penetration Resistance
- 2" O.D. Split Spoon Sample
- Sectional Liner Sample
S.T. - Shelby Tube Sample
B.S. - Bottle Sample
H.S. - Housel Sample

W - H_2O% of dry weight
γ_d - Natural Density-lbs. cu. ft.
q_u - Unconfined Compression lbs. sq. ft.
W.L. - Water Level

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BORING NO. #4 JOB NO. 7680 PROJECT SLUDGE DISPOSAL AREA

Ground Surface (Elev.)

Datum

CLIENT: Pontiac Motors Corporation

Location: Southwest Corner of Plant Area

Started 17 May 1982 Completed 17 May 1982

Driller Wm. Mancine

ELEV.	DEPTH IN FEET	SAMPLE TYPE	SAMPLE "N"	STRATA CHANGE	SOIL CLASSIFICATION	W. L.	W	γ_d	q_u
				6"	Loose Moist Br./Blk. Fine Foundry Sand FILL		WATER ENCOUNTERED 7½' AT COMPLETION 8½' AFTER 10 MIN. 8'8"		
			6	1'	Firm Moist Br. Sandy Clay Tr. Peb. & Blk. Sand FILL				
	2	LS	35 60		Dense Moist Blk Gil Colored Fine Foundry SAND Traces of Metal FILL		11.0	122	10770
				3'					
	4	LS	15 12 9		Medium Compact Moist Black Fine Foundry Sand With Traces of Wood, Pebbles & Brown Fine Sand FILL		11.3	115	
				6'					
	6	LS	3 6" 1 12"		Very Loose Moist to Wet Black Fine Foundry Sand With Traces of Cinders, Gravel, Pebbles & Some Silt Sludge FILL		8.4	63	
	8			8½'					
		LS	4 3 3		Loose Wet Brown/Black/Grey SAND With Traces of Concrete Chips, Gr., Peb., Brick chips		25.8	109	480
	10			10'					
					END OF BORING				
	12								

"N" - Standard Penetration Resistance
S.S. - 2" O.D. Split Spoon Sample
L.S. - Sectional Liner Sample
S.T. - Shelby Tube Sample
B.S. - Bottle Sample
H.S. - Housel Sample

W - H_2O% of dry weight
γ_d - Natural Density-lbs. cu. ft.
q_u - Unconfined Compression-lbs. sq. ft.
W.L. - Water Level

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BORING NO. #5 JOB NO. 7680 PROJECT SLUDGE DISPOSAL AREA

Ground Surface (Elev.)

Datum

CLIENT: Pontiac Motors Corporation Location: Southwest Corner of Plant Area

Started 17 May 1982 Completed 17 May 1982

Driller Wm. Mancine

ELEV.	DEPTH IN FEET	SAMPLE TYPE	SAMPLE "N"	STRATA CHANGE	SOIL CLASSIFICATION	W.L.	W	γ_d	q_u
				1"	ASPHALT PAVEMENT		WATER ENCOUNTERED 9' 9" AT COMPLETION 10' AFTER 10 MIN. 10'		
	2	LS	9 10 10		Medium Compact Moist Black Traces of Brown Fine Foundry Sand With Traces of Clay Layers & Pebbles FILL		10.1	113	
	4	LS	15 8 8	4½'			13.6	98	
	6	LS	3 3 3	6'	Medium Compact Moist Brown Fine SAND With Traces of Brown Clay Layers		15.9	105	290
	8	LS	3 3 5	8'	Loose Moist Brown Fine to Extremely Fine SAND With Traces of Dark Brown Fine Sand Lens		14.6	114	480
	10			10'	Loose Moist to Wet Brown Fine to Extremely Fine SAND Some Tr. Black Fine Sand Lnes Very Slight Trace of Silt				
	12				END OF BORING				

"N" - Standard Penetration Resistance
(- 2" O.D. Split Spoon Sample
- Sectional Liner Sample
S... - Shelby Tube Sample
B.S. - Bottle Sample
H.S. - Housel Sample

W - H_2O% of dry weight
γ_d - Natural Density-lbs. cu. ft.
q_u - Unconfined Compression lbs. sq. ft.
W.L. - Water Level

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BORING NO. #6 JOB NO. 7680 PROJECT SLUDGE DISPOSAL AREA

Ground Surface (Elev.)

Datum

CLIENT: Pontiac Motors Corporation

Location: Southwest Corner of Plant Area

Started 17 May 1982 Completed 17 May 1982

Driller Wm. Mancine

ELEV.	DEPTH IN FEET	SAMPLE TYPE	SAMPLE "N"	STRATA CHANGE	SOIL CLASSIFICATION	W. L.	W	γ_d	q_u
				1"	ASPHALT PAVEMENT		WATER ENCOUNTERED 6"		
				6"	Loose Wet Oily Crushed Stone FILL		AT COMPLETION 9"		
							AFTER 15 MIN. 5½"		
	2	LS	2 3 4		Loose Moist to Wet Oily Fine Foundry SAND With Traces of Vegetation & Pebbles		20.1	104	
				3½'	FILL				
	4	LS	3 4 6	4½'	Loose Moist Oily Brown Tr. Blk. Fine SAND W/S.Clay Content Possible Fill		15.5	107	190
	6	LS	4 10 15	7½'	Medium Compact Moist Brown Fine to Extremely Fine SAND Some Traces of Black Ex. Fine Sand Lens		9.8	106	190
	8	LS	11 12 13	10'	Medium Comapct Moist Brown Fine to Extremely Fine SAND With Some Silt Very Slight Tr. Silty Sandy Clay Content Some Traces of Black Sand Lens		12.9	104	1840
	10				END OF BORING				
	12								

"N" - Standard Penetration Resistance
S.S. - 2" O.D. Split Spoon Sample
L.S. - Sectional Liner Sample
S.T. - Shelby Tube Sample
B.S. - Bottle Sample
H.S. - Housel Sample

W - H_2O% of dry weight
γ_d - Natural
q_u - Unconfined Compression lbs. sq. ft.
W.L. - Water Level

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CLIENT: Pontiac Motor Corp.

TEC #7680

SOIL COMPACTION TEST GRAPH

DATE: 19 May 1982

PROJECT: SLUDGE DISPOSAL AREA

LOCATION: S.B. #1 0'-10'

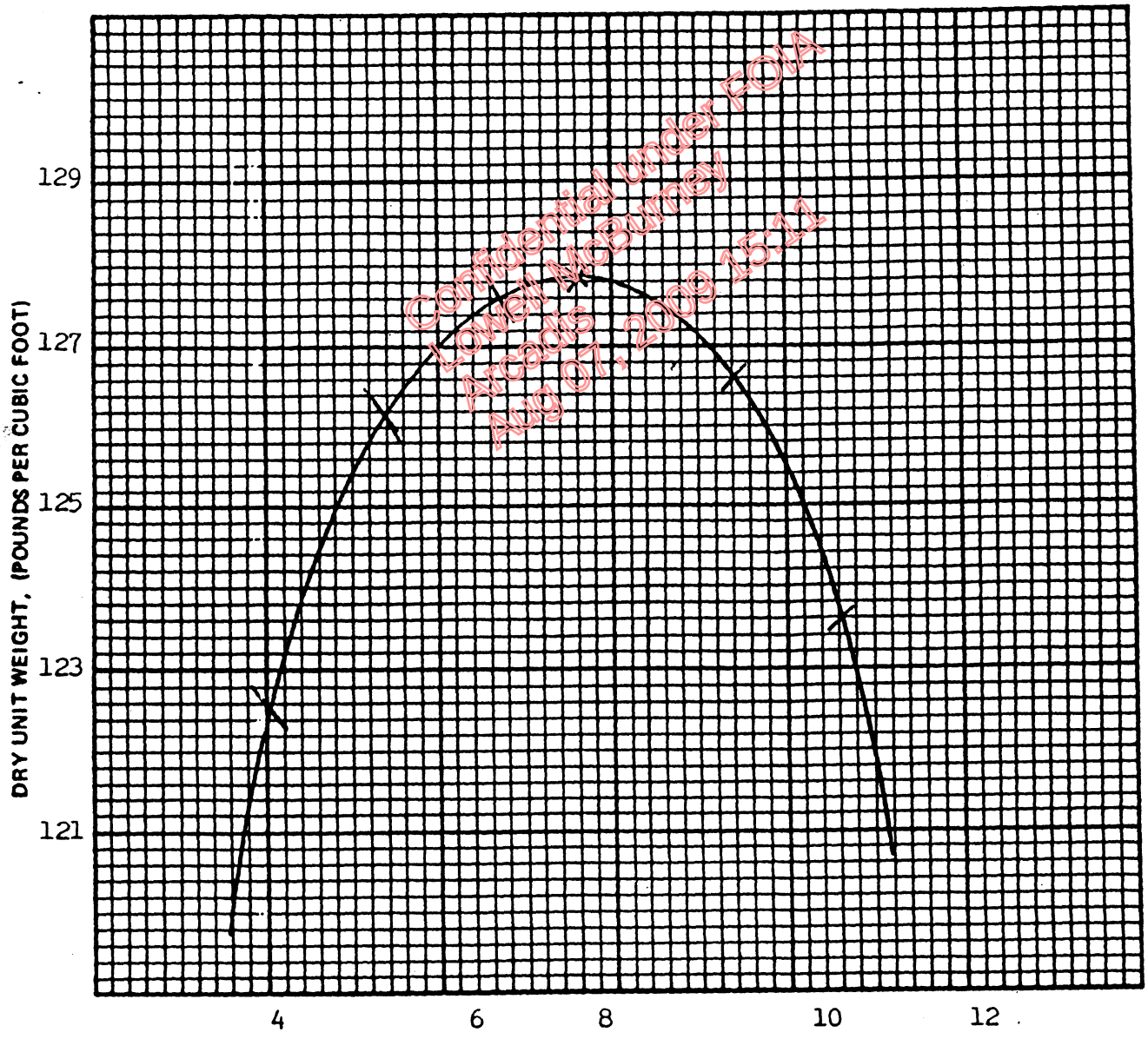
SAMPLE NUMBER: ☐ T-99 ☒ T-180

TYPE OF SOIL: Black Foundry Sand

RESULTS

MAXIMUM DENSITY: 127.8 #cu.ft.

OPTIMUM MOISTURE: 7.6 %



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PLOTTED BY: K. Blain

CHECKED BY: R. Chyla/js

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TESTING ENGINEERS & CONSULTANTS, INC.

1333 Rochester Road • Phone 588-6200 • Troy, Michigan 48099
P.O. Box 249

MEMBER

CLIENT: Pontiac Motor Corporation

TEC 7680

SOIL COMPACTION TEST GRAPH

DATE: 20 May 1982

PROJECT: SLUDGE DISPOSAL AREA

LOCATION: S.B. #3 2'6" - 10' BGS

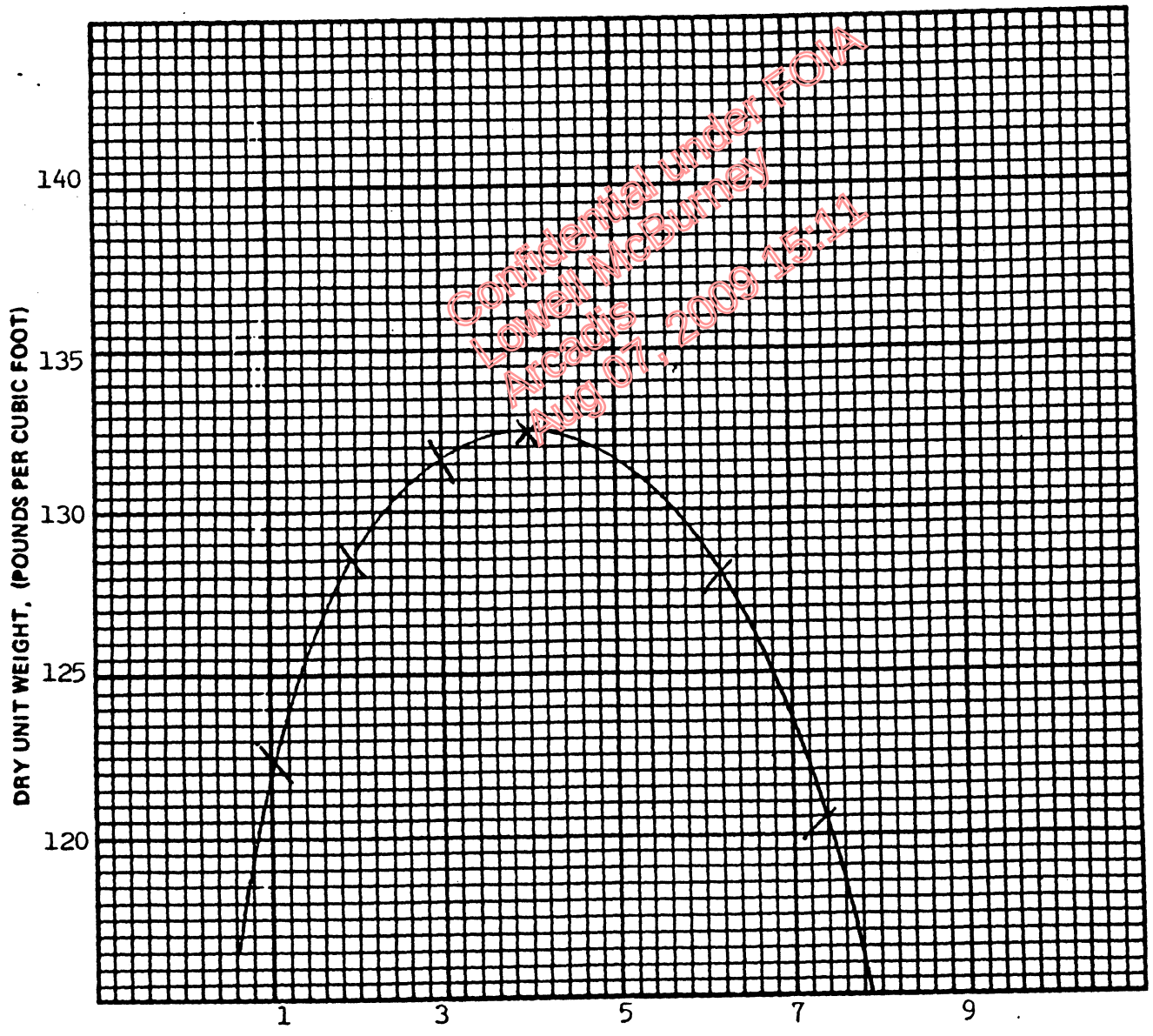
SAMPLE NUMBER: ☐ T-99 ☒ T-180

TYPE OF SOIL: Black Foundry Sand

RESULTS

MAXIMUM DENSITY: 132.5 #cu.ft.

OPTIMUM MOISTURE: 4.0 %



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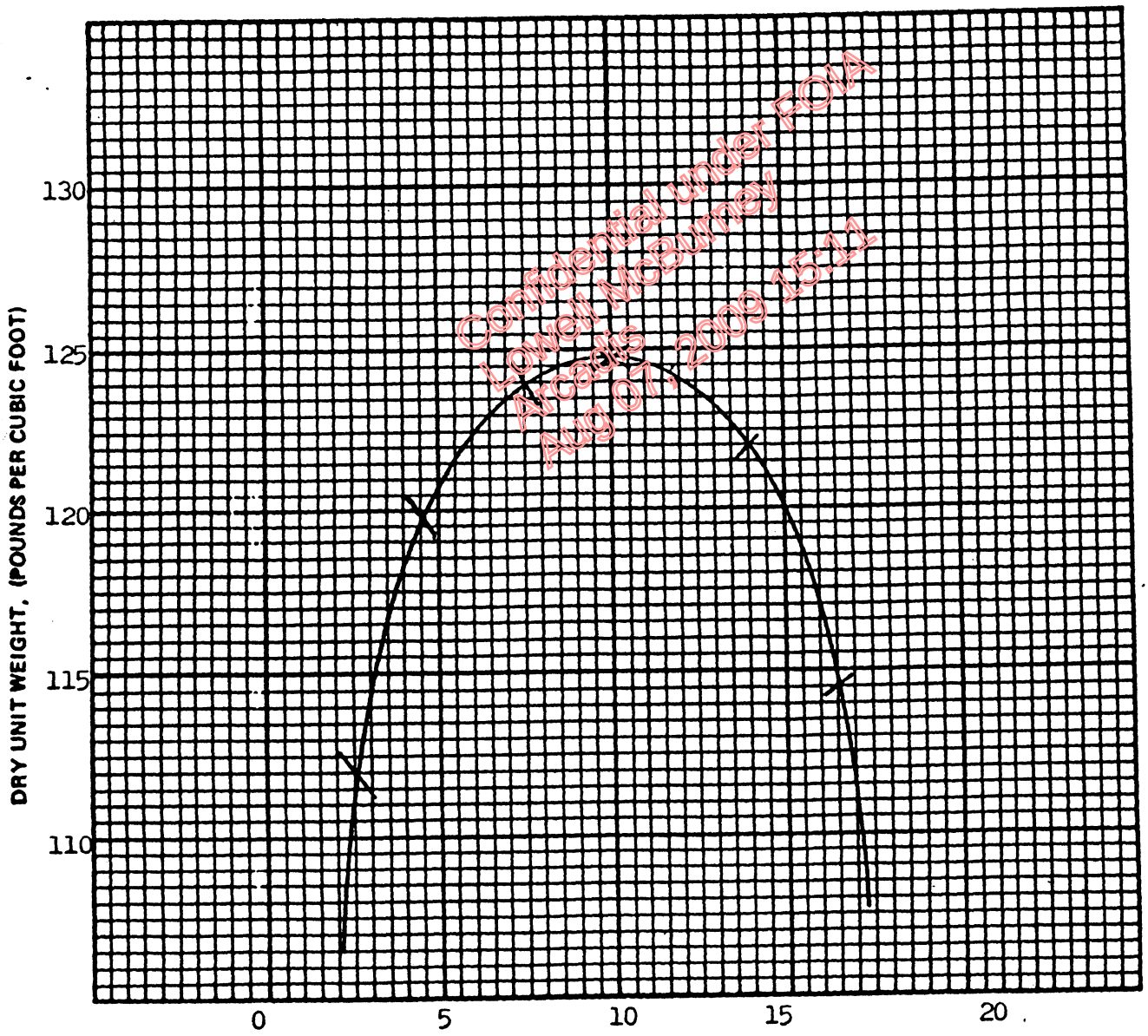
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MEMBER

CLIENT: Pontiac Motor Corp. TEC 7680

SOIL COMPACTION TEST GRAPH	DATE: 19 May 1982
PROJECT: SLUDGE DISPOSAL AREA	RESULTS
LOCATION: S.B.#4 0'-6" 10' BGS SAMPLE NUMBER: ☐ T-99 ☒ T-180	MAXIMUM DENSITY: 124.5 #cu..ft.
TYPE OF SOIL: BLACK FOUNDRY SAND	OPTIMUM MOISTURE: 10.0%



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MEMBER

CLIENT: Pontiac Motor Corporation TEC 7680

SOIL COMPACTION TEST GRAPH

DATE: 19 May 1982

PROJECT: SLUDGE DISPOSAL AREA

LOCATION: S.B. #5 1" to 4'10" BGS

SAMPLE NUMBER: ☐ T-99 ☒ T-180

TYPE OF SOIL: Black Foundry Sand

RESULTS

MAXIMUM DENSITY: 123.8 #cu.ft.

OPTIMUM MOISTURE: 8.6 %



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REVISED CLOSURE PLAN FOR

HAZARDOUS WASTE STORAGE

at the

GENERAL MOTORS CORPORATION

C.P.C. - PONTIAC FACILITY

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APPENDIX A - ANALYSIS OF WASTE STORED/ACCUMULATED
APPENDIX B - CLOSURE CERTIFICATION CHECKLIST

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INTRODUCTION

This closure plan describes the activities necessary to properly close the container storage area at the C.P.C. - Pontiac facility. The closure plan has been developed in accordance with 40 CFR 265.111 - 265.115 and R299.9613 of Michigan Public Act 64.

A. Background

General Motors, C.P.C. - Pontiac facility submitted a Part A application to the E.P.A. on November 18, 1980 for storage of hazardous waste at the facility for periods greater than 90 days. Since that time, the Part A has been revised to reflect changes in the regulations and remove inadvertent additions. Subsequent to 1984, C.P.C. - Pontiac has reduced the volume of hazardous waste generated and as a result, the facility does not need to store hazardous waste on-site in excess of 90 days. C.P.C. - Pontiac will operate hazardous waste management activities at the facility under generator only status in accordance with 40 CFR Part 262 and Michigan Act 64, Part 3 rules.

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B. Purpose and Scope

The purpose of this closure plan is to provide documentation of compliance with 40 CFR Part 265.111 (Closure Performance Standard) which states that an owner or operator must close the facility in a manner that ensures the following:

1. Minimizes the need for further maintenance, and,
2. Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated rainfall or waste decomposition products to the ground or surface waters or to the atmosphere.

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The scope of this closure plan includes the container storage area south of the salvage building. This closure plan describes the activities necessary to remove waste and waste residuals from the regulated unit, decontaminate facility equipment and document closure. In addition, the plan provides estimates of the maximum hazardous waste inventory, the estimated closure date and closure schedule.

I. GENERAL FACILITY INFORMATION

A. Facility Name and Location

Facility Name:	General Motors Corporation C.P.C. - Pontiac Facility
Facility Address:	One Pontiac Plaza Pontiac, MI 48058
Facility Contact:	Dale G. Gossiaux
Telephone Number:	(313) 857-2287
E.P.A. I.D. Number:	MID005356886

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B. Facility Description

The G.M. C.P.C. - Pontiac facility is located in the City of Pontiac approximately two (2) miles west of the I-75 freeway, north of M-59. The geographical coordinates of the site are 42° 38′ 02"N latitude and 83° 17′ 05"W longitude. The entire plant occupies approximately 402 acres. Figure 1 is a map of the site and figure 2 is a diagram of the storage pad.

C. Waste Characteristics

1. Wastes Managed in the Container Storage Area

Liquid hazardous wastes are generated in a number of areas of the facility and are collected in 55-gallon drums. When the

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drums are nearly full, they are sealed and then taken to the container storage area for temporary storage prior to shipment off-site for treatment and/or disposal. One solid hazardous waste is generated in two (2) areas of the facility and collected in tub-like containers. When these tubs are full, they are taken to the container storage area and then transferred into a 20-cubic yard roll-off box for accumulation prior to shipment off-site for reclamation or disposal. The following hazardous wastes are accumulated in the container storage area prior to off-site treatment, reclamation or disposal:

D001 - Ignitable hazardous waste.

F001 - Listed hazardous waste.

F005 - Listed hazardous waste.

D008 - Characteristic hazardous waste.

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As detailed in Figures 1 and 2, the container storage area is located on the south side of the salvage building. The dimensions of the area are approximately 300' X 90' with a nominal pad thickness of 8" of reinforced concrete. The dike around the area is constructed of concrete approximately 4" thick. The joints are sealed to prevent any leakage and the pad is properly inspected and maintained to ensure it's integrity. A licensed hazardous waste transporter is utilized to haul the waste off-site. When the liquid hazardous waste are shipped, a vacuum truck vacuums the liquids from the drums. The entire load is manifested as an F005 waste, with additional waste codes noted on the manifest. The 20-cubic yard roll-off box is hauled off-site once every 60 to 90 days by a licensed

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hauler to a licensed disposal facility or reclamation facility.

D. Estimate of Maximum Waste Inventory

The following table summarizes the maximum inventory of wastes that can be stored at any one time:

Waste Type	Amount
Paint Thinner	39,000 gallons
Paint	Included with above
Gasoline	Included with above
Chlorinated Solvents	Included with above
Bearing Machining Waste	20 Cubic Yards

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CLOSURE METHOD

A. Container Storage Area

All hazardous waste in containers will be removed at closure. A licensed hazardous waste transporter will be utilized to haul the waste off-site. Ultimate disposition of the hazardous wastes will be to licensed hazardous waste treatment or disposal facilities.

DECONTAMINATION METHODS

A. Container Storage Area

The container storage area will be visually inspected for any evidence of hazardous waste residue. If any residues are present, they will be initially cleaned with a high water pressure spin jet. Spot residues will be cleaned up with a high pressure water blaster. The sump system will be visually inspected for any evidence of residues. If any residues are present, it will be cleaned with a high pressure sewer cleaner and water blaster. Once cleaning has been completed, the entire area will be rinsed and the

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rinsate will be analyzed for compatibility with the facility's wastewater treatment system. If compatible, the water will be pumped to a holding tank. If incompatible, the water will be hauled to an appropriate, licensed treatment facility. At this point also, the rinsate will be analyzed for contaminates to determine the decontamination level. (See Section V (B)).

B. Equipment

The equipment used on the pad were two fork-lift trucks. These fork-lifts will be decontaminated by the use of a high pressure water blaster and a detergent/water mixture. When cleaned, the fork-lifts will be swab sampled and analyzed to determine the decontamination level. (See Section V(C)). Furthermore, any equipment used to remove material during closure and equipment used for decontamination will be decontaminated using the same methods as for the fork-lifts prior to leaving the pad area.

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CLOSURE DOCUMENTATION

A. Background Sampling and Analysis

Background samples will be taken in four uncontaminated areas from the plant site, as diagrammed in figure 4. Four samples from each soil horizon at each location will be analyzed for the parameters in Table 2. The Gosset's students T-test will be used for comparison with background to below pad soil samples and to determine the 99% confidence level for the metal constituents.

B. Container Storage Area

Documentation of closure of the container storage area will consist of the following items:

- Storage Pad Decontamination Documentation
- Soil Analysis

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1. Storage Pad Decontamination Documentation

The rinse water produced during the decontamination operation of the concrete pad will be analyzed for the parameters listed in Table 1 using the procedures listed in Table 3. Also, concrete borings will be taken and analyzed at the points where soil samples are collected below the pad. (See V (B) (2)). The borings will be examined in cross-section to see if visible contamination is present. If visible, that portion of concrete will be ground up and analyzed for the constituents listed in Table 1. If no contamination is visible, the entire coring will be ground up and analyzed. The concrete pad will be considered to be adequately decontaminated when both of the following conditions are met:

a. The level of lead in the rinsate is within 99% confidence level determined from background and the stated organic results show no considerable differences from background levels, and,

b. If contamination is present in any one concrete sample, that area will be scarified, resampled and analyzed to determine that decontamination has been accomplished.

2. Soil Analysis

Soil samples below the pad surface will be taken to five feet to characterize the soil types. By using the DNR's recommended equation, a grid system will be established over the storage pad:

$$\frac{\sqrt{A/3.141}}{2} = GI$$

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For the storage pad, A = 300´ X 90´ = 27,000 sq. ft. The grid interval that will be used is 45´. In twelve areas on the pad, the soil will be sampled every foot to five feet and analyzed for the parameters listed in table 1. (See figure 3.) If unacceptable levels of contamination are present in a sample, additional samples will be taken to define the extent within the pad area. Remedial actions will be taken to alleviate the threat to human health and the environment, if any. If any excavation of contaminated soils is deemed necessary, excavation will be limited to either the extent of contamination or building foundations should they interfere with the grid interval. Since we plan to continue using the drum pad after closure as a "Generator Only" pad, we wish to avoid any massive destruction of the pad and associated or adjacent buildings if contamination is present. We, therefore, reserve the right to pursue other acceptable alternative remedial actions or plans instead of excavation.

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C. Equipment

The fork-lifts will be determined to be decontaminated when the wipe samples show that the solvent concentrations are non-detectable and the lead level is within the 99% confidence level determined from background.

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TABLE 1

Constituents for Analysis

PARAMETER	RATIONALE
Lead	Contained in the Bearing Machining Waste.
Benzene	Contained in Gasoline.
Toluene	Contained in Gasoline.
Xylene	Contained in Gasoline.
1,1,1-Trichloroethane	Contained in Chlorinated Solvents.
Methylene Chloride	Contained in Chlorinated Solvents.
Methyl Ethyl Ketone	Contained in Paint Thinner.
1-Butanol	Contained in Paint Thinner.

TABLE 2

Constituents for Background Analysis

PARAMETER	PARAMETER	PARAMETER
Arsenic	Barium	Cadmium
Chromium	Lead	Mercury
Selenium	Silver	Copper
Zinc	Benzene	Toluene
Xylene	1,1,1-Trichloroethane	1-Butanol
Methylene Chloride	Methyl Ethyl Ketone	

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TABLE 3

Analytical Procedures to Use to Document Decontamination

PARAMETER	REFERENCE METHOD
al Metals Digestion	SW-846, #3010
d	SW-846, #7420
zene	SW-846, #8020
uene	SW-846, #8020
ene	SW-846, #8020
,1-Trichloroethane	SW-846, #8010
hylene Chloride	SW-846, #8010
hyl Ethyl Ketone	SW-846, #8015
itanol	SW-846, #8015

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VI. CLOSURE DOCUMENTATION REPORT

Upon completion of on-site activities, C.P.C. - Pontiac will submit to the MDNR a report documenting that closure activities were conducted according to the approved closure plan. The items addressed in the Closure Documentation Report will include all of the items identified in the attached "Closure Certification Checklist". The documentation report will be signed and certified by an independent, registered, professional engineer. In addition, C.P.C. - Pontiac will submit a letter to the MDNR certifying that closure was conducted according to the approved closure plan.

II. ESTIMATED CLOSURE SCHEDULE

C.P.C. - Pontiac will begin closure activities within 30 days of receiving M.D.N.R. approval of the closure plan. The closure schedule detailed below assumes that closure activities are conducted in the fall, spring or summer. Subsequent to the approval of the M.D.N.R., the following steps will be taken to ensure the proper decontamination and closure of the container storage area. In addition, five (5) days prior to key events such as concrete coring, background and soil sampling, C.P.C. - Pontiac will contact the Waste Management Division, Northville Office and the Permit Unit Staff of the Michigan Department of Natural Resources.

AY 1 1. The last volume of drummed hazardous waste and bearing machining waste are received.

AY 2 2. The bearing machining waste is hauled off-site in the 20-cubic yard roll-off box and sent to Wayne Disposal, Inc. for disposal.

to 3. The drummed hazardous wastes are removed from the drums and sent to Petro-Chem Processing, Inc. or another properly licensed facility for disposal. The maximum amount to be disposed of is

AY 5 39,000 gallons.

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6 4. All drums are water blasted so that no hazardous constituents remain in the drums.

5. All emptied drums are sent to Columbus Steel Drum, Inc.

11 6. Storage Pad Clean-Up Begins.

12 7. All dirt and bulk non-hazardous solids are scraped from the pad.

8. The decontamination of the storage pad, dike, ramps and south salvage wall begins with the spin jet, water blaster and steam ough cleaner.

9. The catch basins and sump are decontaminated.

10. The storage pad, dike, ramps south salvage wall catch basins and sump are rinsed with hot water/steam, twice.

22 11. A sample from the rinse waters (2) will be taken for analysis.

23 12. Background sampling and analysis is conducted.

42 13. Pending analytical results of the rinse waters, the storage pad is cored in the specified areas for concrete and soil sampling and analysis.

62 14. Pending analytical results of the concrete and soil analyses and comparison from the background, the closure of the storage pad is complete. *

72 15. Closure of the container storage pad is certified by the independent, registered, professional engineer. *

75 16. The certification and documentation report are sent to the MDNR. *

ıould any contamination of soils or groundwater (if any) be discovered, e dates will need to be extended as necessary until a course of action or for remediation is mutually agreed upon between the MDNR and General rs Corporation.

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l wash and rinse water will be transferred to an unused wastewater treatment nk before final disposition through the wastewater treatment system or to an f-site treatment facility.

II. ESTIMATED CLOSURE COSTS FOR THE CONTAINER STORAGE AREA

A.	Disposal of 20 cubic yards of D008 waste at Wayne Disposal, Inc. @ $125.00/Cu.Yd.	$ 2,500.00
B.	Disposal of 39,000 gallons of mixed paint and thinners at Petro-Chem @ $0.554/gallon	$ 21,600.00
C.	Transportation of 1 load of solid waste to Wayne Disposal, Inc..	$ 610.00
D.	Transportation of mixed paint and thinners to Petro-Chem. (13 loads @ 3,000 gal/load @ $610.00/load). . .	$ 7,930.00
E.	Decontamination of the Pad	
	1. 4 men, 14 days (448 hrs) @ $20.00/hr	$ 8,960.00
	2. Steam cleaner (includes one man), 112 hrs @ $45.00/hr.	$ 5,040.00
	3. Spin Jet (includes one man), 112 hrs @ $45.00/hr..	$ 5,040.00
	4. Water Blaster (includes one man), 112 hrs @ $45.00/hr.	$ 5,040.00
	5. Sewer Cleaner (includes one man), 112 hrs @ $45.00/hr.	$ 5,040.00

(CONTINUED ON NEXT PAGE)

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III. ESTIMATED CLOSURE COSTS FOR THE CONTAINER STORAGE AREA (CONT.)

F.	Analysis of rinsate (2 samples)	$ 300.00
G.	Analysis of Concrete and soil samples	$ 30,000.00
H.	Certification of closure plan	$ 3,000.00
I.	Disposal of wash and rinse waters if the the Wastewater Treatment plant cannot handle it.	$ 2,000.00
J.	Miscellaneous Expenses.	$ 4,940.00
	TOTAL COST ESTIMATE FOR CLOSURE OF THE PAD.	$102,000.00

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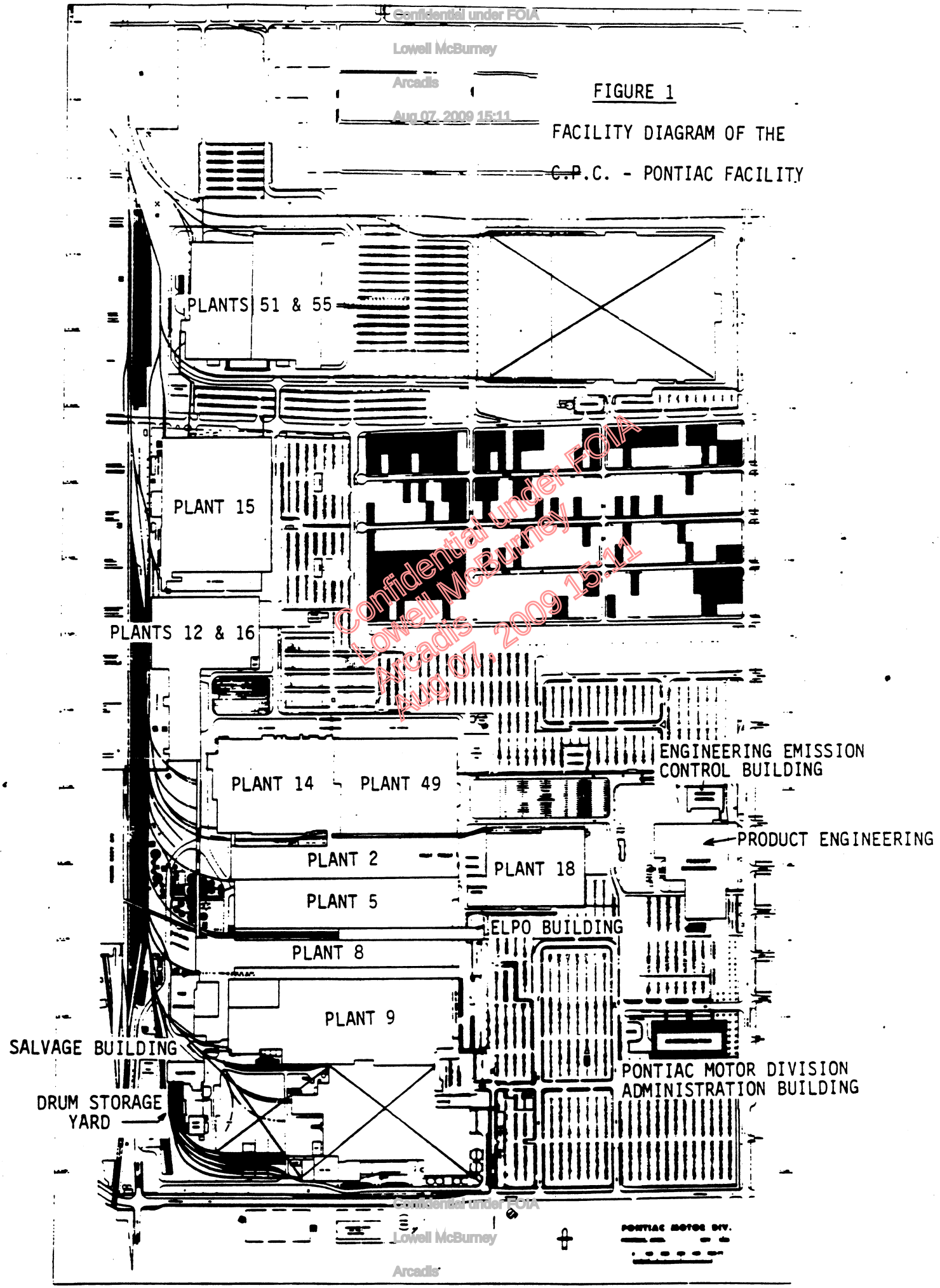
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FIGURE 1

FACILITY DIAGRAM OF THE

~~G.P~~.C. - PONTIAC FACILITY



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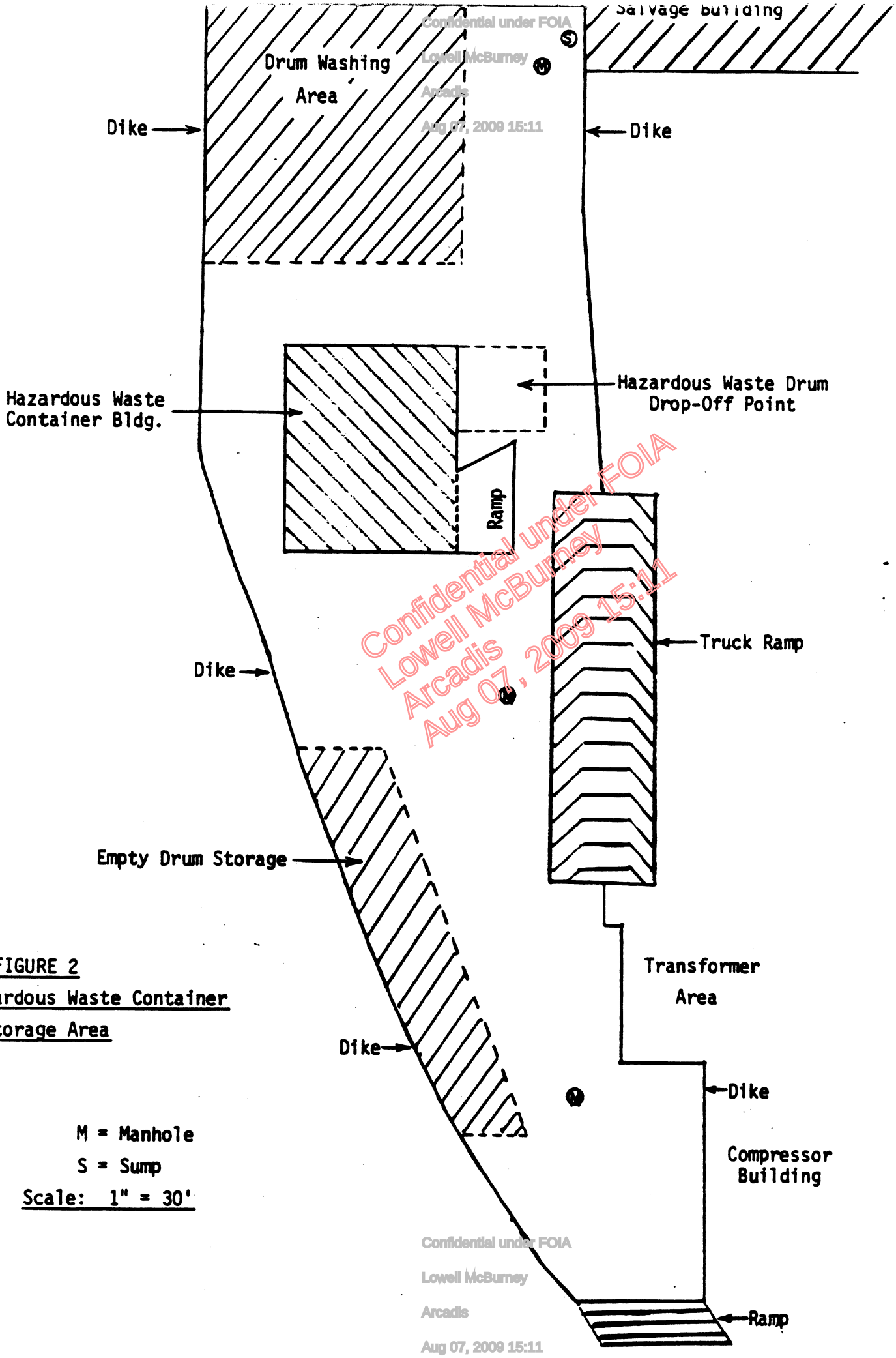


FIGURE 2

Hazardous Waste Container Storage Area

M = Manhole

S = Sump

Scale: 1" = 30'

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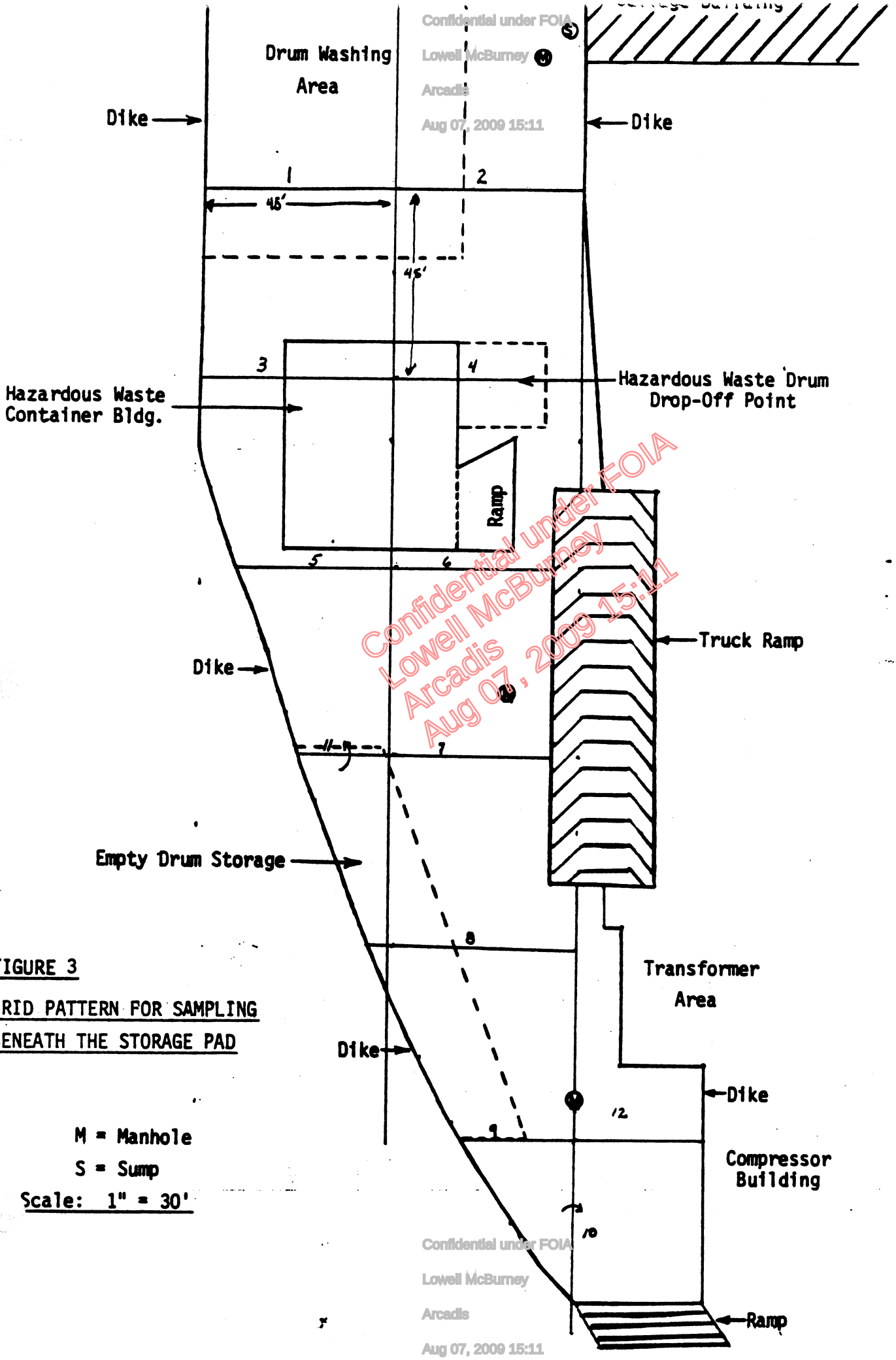


FIGURE 3

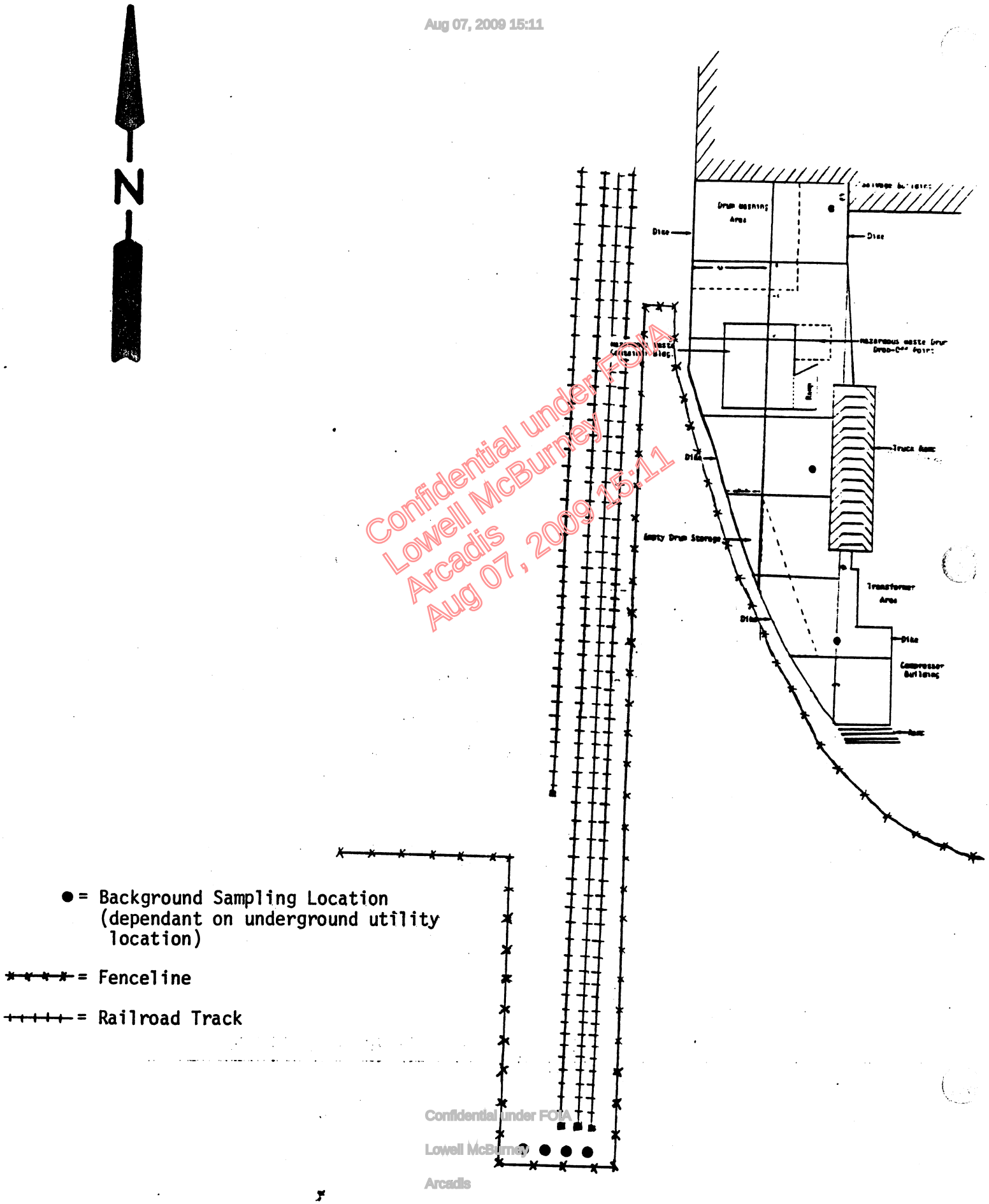
GRID PATTERN FOR SAMPLING BENEATH THE STORAGE PAD

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Figure 4

Background Sampling Locations



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APPENDIX A

ANALYSIS OF WASTES STORED/ACCUMULATED ON THE CONTAINER STORAGE PAD

1. Mixed Paints/Solvents

2. Bearing Machining Waste

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Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue
Pontiac, MI 48058
313/334-4747

1. Mixed Paints/Solvents

General Motors Corporation
CPC Group Pontiac Operations
One Pontiac Plaza
Pontiac, MI 48053
Attn: Dale Gossiaux

August 17, 1987

Sample Received: 7-28-87

Sample Number:	24950
Client I.D.:	Sample #222 7-27-87
Physical Description:	100% Dark Brown Oil <1% Fine Black Solid
Ignitability, °F	77
Density, g/ml	0.88
Xylene, mg/kg	30,200
Toluene, mg/kg	130,000
M.E.K., mg/kg	7050
1-Butanol, mg/kg	16,000
1,1,1-Trichloroethane, mg/kg	15,000
Methylene Chloride, mg/kg	<350
Benzene, mg/kg	1950

cc: Valory Strausser

Q/lr

Susan K Scott
Laboratory Supervisor

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Analytical Laboratories Division

408 Auburn Avenue
Pontiac, MI 48058
313/334-4747

2a. Bearing Machining Waste, Plant 9

General Motors Corporation
CPC - Pontiac Operations
Pontiac, MI 48056
Attn: Dale Gossiaux

May 4, 1987

Sample Received: 4/6/87

Sample Number: 20279

Client I.D.: Lead Machining Chips

Sample #214
Process #09040
Part #'s: Bay #00-85, Machine #ND-4216

EP Toxicity:

Arsenic, As, mg/l	<0.005
Barium, Ba, mg/l	<0.05
Cadmium, Cd, mg/l	<0.01
Hexavalent Chromium, Cr+6, mg/l	<0.05
Copper, Cu, mg/l	<0.02
Lead, Pb, mg/l	880
Mercury, Hg, mg/l	<0.0005
Nickel, Ni, mg/l	0.03
Selenium, Se, mg/l	<0.005
Silver, Ag, mg/l	<0.02
Zinc, Zn, mg/l	0.47
Total Cyanide, CN, mg/l	<0.02

100 grams of sample was leached into 1600 mls of deionized water and brought to a final volume of 2000 mls. Final pH after the addition mls of 0.5 N acetic acid was 4.8.

cc: Valory Struasser

EP/AA

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Pontiac, MI 48058
313/334-4747

2b. Bearing Machining Waste, Plant 51

General Motors Corporation
CPC - Pontiac Operations
Pontiac, MI 48058
Attn: Dale Gossiaux

May 4, 1987

Sample Received: 4/6/87

Sample Number: 20280

CTient I.D.: Lead Machining Chips
Sample 2215
Process 51010
Pit #[illegible], Bay No. EE-13, TM-448

EP Toxicity:

Arsenic, As, mg/l	<0.005
Barium, Ba, mg/l	<0.05
Cadmium, Cd, mg/l	<0.01
Hexavalent Chromium, Cr+6, mg/l	<0.05
Copper, Cu, mg/l	<0.02
Lead, Pb, mg/l	950
Mercury, Hg, mg/l	<0.0005
Nickel, Ni, mg/l	0.04
Selenium, Se, mg/l	<0.005
Silver, Ag, mg/l	<0.02
Zinc, Zn, mg/l	0.47
Total Cyanide, CN, mg/l	0.03

100 grams of sample was leached into 1600 mls of deionized water and brought to a final volume of 2000 mls. Final pH after the addition 160mls of 0.5 N acetic acid was 4.8.

cc: Valory Struasser

EP/bk

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APPENDIX B

CLOSURE CERTIFICATION CHECKLIST

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CLOSURE CERTIFICATION CHECKLIST

his checklist was developed to ensure that the closure activities are ocumented and followed according to the approved closure plan. This hecklist identifies items in the approved closure plan that must be written p in the closure documentation report.

- Copies of manifests of all wastes removed from the storage facility upon closure, including where and how much was removed.
- Summary of the decontamination procedures, including the type of equipment used and how the wastewater was disposed.
- Time table of the closure activities.
- Condition of haul roads, if necessary.
- Weather Conditions.
- Concrete, rinsate and soil analyses results.
- Runoff controls utilized.
- Certification statement by C.P.C. - Pontiac and the independent, registered, professional engineer.

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STATE OF MICHIGAN

JAMES J. BLANCHARD, Governor

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PLANT ENGINEERING
DESIGN
JUN 17 1 53 PM '88

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING
BOX 30028
LANSING, MI 48909

~~GORDON E. GUYER, Director~~
David F. Hales, Director

June 8, 1988

Mr. Dale G. Gossiaux
Senior Environmental Engineer
CPC-Pontiac
Pontiac Engineer Operations
One Pontiac Plaza
Pontiac, Michigan 48058-3486

Dear Mr. Gossiaux:

SUBJECT: CPC-Pontiac
Container Storage Closure Plan
MID 005 356 886

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The Michigan Department of Natural Resources (MDNR) has completed a review of your revised closure plan dated May 6, 1988, pursuant to the requirements of 40 CFR, Part 265, which are adopted by reference in MAC R 299.11003 of the Act 64 administrative rules. Based on this review, and the fact that no significant comments were received during the 30-day public comment period, the MDNR hereby approves your closure plan subject to the condition enclosed with this letter.

Closure of RCRA interim status units does not release the facility from its responsibilities under the Hazardous and Solid Waste Amendments of 1984 (HSWA). All interim status facilities are subject to the corrective action requirements of these amendments.

If you have any questions, please contact Ms. Andrea Schoenrock, of my staff, at 517-373-3988.

Sincerely,

Alan J. Howard, Chief
Waste Management Division
517-373-2730

cc: Ms. Marilyn Sabadaszka, USEPA
Mr. Rich Traub, USEPA
Ms. Andrea Schoenrock, MDNR
Ms. Kay Brower, MDNR
Mr. Ken Burda/C&E File
Ms. Lynne King, MDNR

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INTERIM CLOSURE REPORT
FORMER CONTAINER STORAGE AREA
CPC - PONTIAC

APRIL 20, 1989
Job No. 00299-164-14

Dames & Moore

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1.0 INTRODUCTION

Dames & Moore was retained by the Chevrolet-Pontiac-Canada Group in Pontiac, Michigan (CPC-Pontiac) to oversee the closure of a hazardous waste storage pad at its facility (Figure 1). .The objective of this report is to summarize the closure activities completed thus far and the results obtained from those activities and to review the environmental conditions at the pad.

1.1 BACKGROUND

Prior to July 1, 1988, the concrete pad adjacent to the salvage building at the CPC-Pontiac facility (Figure 2, herein referred to as the site) was used for storage of hazardous and non-hazardous wastes. The northern portion of the pad was used to wash empty storage containers. The wash waters were drained into the sump and pumped to CPC-Pontiac's waste water treatment plant. In 1984 CPC-Pontiac reduced the volume of hazardous waste generated and consequently the need to store hazardous waste for greater than 90 days was eliminated. CPC-Pontiac elected to continue hazardous waste management activities at the facility under the generator only status as stated in the 40 CFR Part 262 and Michigan Act 64, Part 3 rules. A closure plan for the storage pad was prepared by CPC-Pontiac and submitted to the Michigan Department of Natural Resources (MDNR) for approval in November 1987. The plan was revised in accordance with MDNR's comments and re-submitted in February 1988. After completing final revisions the plan was again submitted in May 1988. Approval for the closure plan was received from MDNR in June 1988.

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1.2 CLOSURE ACTIVITIES

Closure was begun on July 1, 1988. The cleaning of the pad was conducted by Inland Waters of Detroit, Michigan. Dames & Moore collected wipe samples during the pad cleaning and rinsate samples once the cleaning was complete. Dames & Moore also conducted background and pad soil sampling as prescribed in the closure plan. To avoid remobilization costs, samples were collected at 5 foot intervals to a depth of 20 feet to be analyzed if contamination were found below the 2 foot level. The background samples were analyzed for the parameters stated in the closure plan (Table 1). Initially, only the

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samples from the upper 2 feet below the pad were submitted for laboratory analysis for the compounds stated in the closure plan (Table 2). The analytical results from the pad soil samples indicated the presence of some of the constituents of concern.

In an attempt to discern the vertical extent of contamination, the soil samples from the 5, 10, 15 and 20 foot intervals below the pad were analyzed. Samples from several borings indicated the presence of organic compounds to a depth of 20 feet, which was thought to be close to the ground water table.

As a result, a ground water monitoring plan was developed with monitoring wells at the perimeter of the storage pad. The objective was to place two wells upgradient and three downgradient to monitor ground water flow across the site. MDNR was contacted by CPC-Pontiac and informed of the plan. MDNR indicated that a formal work plan would not be necessary. Subsequently, however, a letter was received from MDNR, dated November 4, 1988, indicating that further sampling to determine horizontal and vertical extent of soil contamination would be necessary, and that if no demarcation between contaminated and clean soil could be determined, the ground water would have to be sampled. CPC-Pontiac decided that both of these objectives would be accomplished through the monitoring well installation. Soil samples would be collected for testing at 5-foot intervals to 25 or 30 feet depending on soil conditions in the boring.

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2.0 FIELD INVESTIGATIONS

2.1 STORAGE PAD DECONTAMINATION

After the empty hazardous waste storage containers were removed from the pad, it was cleaned using high water pressure washing equipment. During washing, wipe samples were collected at the locations shown in Figure 2, to evaluate the effectiveness of the cleaning. After the final rinse, a sample was collected of the rinsate from the pad, the floor of the hazardous waste storage building and the sewer lines underneath the pad. The wash waters were collected in the sump below the pad and a sample was analyzed to verify that the waters could be treated in the waste treatment plant at the facility. Once treatability was verified the wash waters were sent to the waste treatment facility. Analytical data are summarized in Table 3. A description of the pad decontamination procedures and the test results are given in Appendix A and Appendix B, respectively.

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2.2 SOIL SAMPLING - PHASE I

Four background soil borings (Figure 3) and 12 borings located on the storage pad (Figure 2) were installed in accordance with the approved closure plan from July 25 to July 29, 1988. Soil samples were collected at 1 foot intervals for the first 5 feet and at 5 foot intervals beyond that to 20 feet. Background samples were analyzed for parameters listed in Table 1 in accordance with the approved closure plan and the results are summarized in Table 4. Below pad samples were analyzed for the parameters in Table 2 in accordance with the approved closure plan and the results are summarized in Table 5. A description of the soil sampling procedure is presented in Appendix A, and the laboratory results are in Appendix B. The boring logs are presented in Appendix C.

The concrete cores obtained from each boring location were crushed and analyzed for the parameters in Table 2. The results are summarized in Table 6 and the analytical data is presented in Appendix B.

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2.3 SOIL SAMPLING - PHASE II

Five borings were installed for the collection of soil samples, one next to the location of each monitoring well (Figure 2) from November 7 to November 29, 1988. This procedure was necessary due to heaving sands at depth that complicated well installation procedures. Soil samples were collected at 5 foot intervals to a depth of at least 25 feet and to 30 feet where conditions permitted. The samples were analyzed for the parameters in Table 2 and the results are summarized in Table 7. The sampling procedure is presented in Appendix A, and the laboratory results are presented in Appendix B. The boring logs are presented in Appendix C.

2.4 GROUND WATER MONITORING

2.4.1 Well Installation

Five monitoring wells were installed at a depth of 30 feet with the screens from 20 to 30 feet between November 7 and November 28, 1988 (Figure 2). The wells were constructed of 2 inch stainless steel riser and 0.010 inch slotted screen. Standard well construction procedures were used and are described in Appendix A. The well construction diagrams are located with the boring logs in Appendix C.

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2.4.2 Sampling

One ground water sample was collected from each well for laboratory analysis. Wells MW-1, MW-2, MW-3 were sampled on November 18, 1988 and wells MW-4 and MW-5 were sampled on December 1, 1988. The samples were analyzed for the same parameters outlined in the closure plan for the soil samples (Table 2). A complete set of water levels was taken on December 1, 1988 and are listed in Table 8. The analytical results are summarized in Table 9. The description of the sampling procedure is given in Appendix A and the analytical results are given in Appendix B.

3.0 GEOLOGY AND HYDROGEOLOGY

3.1 GEOLOGY

3.1.1 Regional/Subregional Geology

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Oakland County is located in southeastern Michigan, along the southeast side of a major geologic feature known as the Michigan Basin, a "bowl-like" feature in which the sedimentary rocks dip inward from all directions toward the center of the Southern Peninsula of Michigan. The youngest rocks are located in the center, with progressively older rocks being found toward the margins.

Pleistocene glaciation has deposited glacial drift to a thickness of over 400 feet in parts of Oakland County. The buried bedrock surface is highly irregular; it consists of dissected upland and lowland areas. Oakland County is situated on the edge of the pre-glacial Thumb Upland, along the southeast margin of the Michigan Basin. Due to this, uplands and lowlands are located in the northwest and southeast portions of Oakland County, respectively. Several buried bedrock valleys 50 to 100 feet deep, incise the bedrock surface in several parts of the county. The preglacial topography influenced the reshaping of the region during various glacial episodes by affecting the deployment of glacial lobes. The entire Oakland County area was substantially altered in a physical and geologic sense during the glacial epoch. The northwest portion of the county contains two major morainic systems; ridge-like deposits essentially composed of till, which formed along a nearly static ice front of the Erie-Huron glacial lobe. The land surface elevations are highest in this portion of the county. Associated with these southwest-northeast trending features are sand and gravel deposits within the moraines and also as kames and

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kame terraces, as well as tills deposited as ground moraine. The moraines, which are associated with the extensive Huron-Erie and Saginaw Systems, are separated by three major outwash plains. These plains (the Commerce, Drayton, and Oxford Plains) are composed of marginal glacial deposits of sand and gravel, as well as clays and till deposited as ground moraine. They also follow a southwest-northeast orientation, reflective of the pre-dominant direction of glacial advance and retreat.

The southeastern corner of the county consists of a nearly level glacial lake plain, crossed by present-day streams. This area is part of the lake plain of southeastern Michigan, formed by lakes which were ancestral to the present Great Lakes. Such features as dunes, offshore bars, and lake bottom sands, silts and clays associated with the lakes are found in Oakland County. As the upland areas were deglaciated, outwash and meltwater streams built deltas in the ancestral lakes, and deposited alluvial materials in their floodplains. Because of this southeastern Oakland County is covered with a veneer of lake plain and alluvial deposits overlaying glacial tills. Minor readvances of glacial ice have caused lacustrine deposits to occasionally be overlain by glacial deposits in some areas.

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The City of Pontiac is located in East-Central Oakland County. Glacial margin deposits predominate in the area; land is nearly level to hills with somewhat poorly drained loamy soils situated on till plains (ground moraine) and end moraines. Clays and some sands are the predominant subsurface materials. The Pontiac area lays between two major outwash plains; the Drayton Outwash Plain, located to the north of Pontiac, and the Commerce Outwash Plain to the southwest. Some outwash deposits do extend to areas on the southwest and east sides of Pontiac; these are predominantly nearly level to rolling, well drained sandy soils situated on outwash plains, beach ridges, and moraines. Sands and gravels are more frequently encountered in these areas than in the morainic deposits which compose the bulk of surficial geologic features in the Pontiac area. The glacial deposits are underlain by shales, limestones and sandstones of Middle to Upper Devonian age, including the Antrim and Bedford Shales and Berea Sandstone.

3.1.2 Site

The area for approximately 1 mile surrounding the CPC-Pontiac facility lies within the moraine system deposits formed along the margin of the glacial ice front. Sediments consist primarily of clays and sands in the form of tills and small outwash deposits. Numerous small streams and lakes have also deposited alluvial and lacustrine sands, silts,

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and clays in some areas. Total thickness of glacial drift is estimated to be approximately 300 feet in Pontiac. Based upon information available from the pad boring logs the site is directly underlain by interbedded silt and silty clay. The clay contains occasional sand lenses and appears to pinch out to the south. The silt is continuous across the site but begins to pinch out at the north end of the pad. The silt and clay are overlain by approximately 5 to 15 feet of fill. The fill is composed mainly of foundry sand that contains a variety of debris including slag fragments and steel castings. Intermixed with the foundry sand is gravel, gray clay stringers, clayey fill material and light brown sand that lies mainly between the foundry sand and the concrete pad. It may have been added as part of the concrete pad construction. A cross section of the area below the pad is given as Figure 4.

3.2 HYDROLOGY

3.2.1 Regional/Subregional Hydrology

Surface water drainage in Oakland County is reflective of the topography. Predominant drainage is towards the east and south, although topographic features may cause localized flow to vary from this general pattern. Several rivers have their headwaters in or pass through Oakland County. These include the Clinton River, Huron River, Shiawassee River, Flint River, and River Rouge. Many lakes of various sizes (some quite large) are located in the county. Some of these are located along the courses of the rivers, while others are not connected to major streams. These small lakes are often reflective of local surface water drainage patterns.

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Surface water drainage in the vicinity of Pontiac is controlled primarily by such features as the Clinton River and several large lakes, including Lake Angelus, Loon Lake, Watkins Lake, and Sylvan Lake. Surface drainage appears to be predominantly towards the south and east, with localized variations demonstrated by the numerous lakes and marshes in the area. Stream valleys (such as the Clinton River) also influence surface runoff in their direction; thus surface drainage direction is dependent upon location within the area.

3.2.2 Site

Surface water drainages in the area surrounding the CPC-Pontiac facility appears to flow west-southwest , towards a series of small lakes (Harris Lake, Terry Lake, and

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Osmun Lake) as shown in Figure 1. Site drainage is controlled by the contour of the pad and is directed to the sewer system underlying the pad.

3.3 HYDROGEOLOGY

3.3.1 Regional/Subregional

Hydrogeology of glaciated regions is often complex due to the great variety of materials encountered. Hydrogeologic conditions in materials in the overlaying drift may or may not be reflective of conditions in the bedrock. Contrasts in the nature of materials within the glacial drift may often cause great variation in conditions over areas relatively small in aerial extent. The higher permeability of sands and gravels often creates hydrologic conditions which may contrast sharply with conditions in nearby clays and tills of lower permeability. The lower permeability of these materials often causes a perching effect with ground water elevations considerably above those in nearby sand or bedrock aquifers.

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Regional ground water flow in Oakland County is reflective of surface topography and subsurficial glacial and bedrock features. Ground water flow in both bedrock and glacial overburden appears to be predominantly to the east and south, although in the northern portion of the county the localized ground water flow is likely to be heavily influenced by topography and surface drainage patterns; this may be reflected in a northerly flow component in this area. In the vicinities of surface streams throughout the county, local ground water flow towards the center of and in the downstream direction of the stream valleys predominates. Most local wells are finished in the glacial drift; these deposits are much more likely to be water bearing than lake plain deposits in the southeastern corner of Oakland County. Bedrock aquifers are also utilized; however, water is often too highly mineralized for large scale utilization.

Based upon available information, ground water flow in glacial deposits in the Pontiac area is towards the center of local stream valleys, primarily the Clinton River, with a strong eastward component as well. The glacial deposits consist of interbedded aquifers, aquicludes, and aquitards at depth, with confined aquifer conditions predominating. Depth to ground water is highly variable, depending upon location; numerous marshes and small lakes often indicate an extremely shallow ground water table. Due to water quality and quantity limitations, Pontiac does not rely on large scale use of ground water resources.

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3.3.2 Site

Ground water in the vicinity of the CPC-Pontiac hazardous waste storage pad appears to be at 20 to 25 feet in depth and generally flows toward the west (Figure 4), in the general direction of the small lakes near the site. Topographic maps show that the elevation of the lakes are at about 940 feet, msl. This coincides with the water table elevation of 942 feet, msl,below the pad. This would indicate that the lakes are most likely a discharge point for the aquifer that underlies the CPC-Pontiac site.

4.0 SOIL CHEMISTRY

The soil samples collected from the four background borings were analyzed for the parameters listed in Table 1. The results are summarized in Table 4. All borings showed the presence of organic compounds at various depths.

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The soil samples from beneath the pad indicated the presence of all the compounds analyzed for except 1-butanol. Figures 6 through 12 illustrate the depth at which each compound was found and the amount detected. The line of each cross section is given on Figure 2.

Benzene was found at varying depths in each boring but seems to have the highest concentrations in lower lying areas of the pad (i.e., Borings 2 and 9). It also appears to be more prevalent in the center of the pad. Toluene and xylene concentrations follow the same general pattern as benzene. Boring #2 was the only place that 1,1,1-trichloroethane was encountered except for the 20 foot depth in Boring #4. However that result was only 0.3 mg/kg (the detection limit) which is considerably lower than the values in Boring #2.

Methylene chloride is widespread beneath the pad and does not appear to have a distinct pattern. Methylene chloride is a common laboratory contaminant and many of the low values may be laboratory artifacts.

MEK did not show up in any samples analyzed above 5 feet. However, from 5 to 20 feet there are moderate to high levels detected in several borings. The MEK seems to be concentrated in the center portion of the pad. It was not detected in any soil samples collected at the perimeter of the pad prior to monitor well installation.

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Lead was detected everywhere below the pad including the perimeter samples. The values vary greatly but for the most part are below 10 ppm. Lead was not detected in the TCLP extraction samples.

All samples submitted for TCLP zero headspace extraction for volatile organic compound were found to be below the treatment standards stated in 40 CFR Part 268.40. The following is a summary of the values and treatment standards.

Compound	Treatment Standard (mg/l)	Result (µg/l)
Toluene	0.33	10
Xylenes	0.15	4
Methylene chloride	0.96	4
MEK	0.75	50

Laboratory Quality Control/Quality Assurance (QA/QC) data for the soil samples is included in Appendix B.

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5.0 GROUND WATER CHEMISTRY

One ground water sample was collected from each well and submitted for laboratory analysis of the parameters listed in Table 2. The results of the analyses are summarized in Table 8. None of the compounds analyzed for were detected in wells MW-1 or MW-4 (the two upgradient wells).

In well MW-2, 3 µg/l of benzene and 4 µg/l xylenes were detected . In well MW-5, 3 µg/l of xylenes was detected. Well MW-3 showed 1.10 µg/l of lead and 9 µg/l and 20 µg/l of benzene and toluene, respectively. Another water sample collected from well MW-3 was submitted for analysis of a series of metals normally analyzed for in CPC-Pontiac's semi-annual outfall report. The results are presented in Table 9.

Laboratory QA/QC data for the water samples is included in Appendix B.

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6.0 STATISTICS

The closure plan stated that a statistical analysis would be performed to compare lead data from below the storage pad to background data for lead. The statistical test to be used was the Gosset Student T-test. An underlying assumption of this test is that the data populations be normally distributed. Upon review of the raw data (both pad and background) it did not appear that the data met this assumption. Two methods were employed to evaluate if the data are normally distributed. A cumulative frequency percentage was determined for each of the data sets. Probability graph paper was used to plot the cumulative frequency percentage versus the upper class boundaries determined for each data set. A normally distributed population should plot as a straight line on probability graph paper. However as the figures in Appendix D show, neither the pad data or the background data plot as a straight line.

As a second check to determine if the data is normally distributed, the chi-square test was performed to determine how well a normal distribution curve would fit the data. Tables 10 and 11 present the results of the test for the pad and background data respectively. As Table 10 shows the calculated chi-square value for the entire pad data set is considerably greater than the chi-square value at the 99% confidence level[1]. This indicates that the pad data is not normally distributed. The calculated chi-square value for the background data set is less than the chi-square value at the 99% confidence level. This indicates that the background data can be approximated by a normal distribution at a confidence level of 99%.

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The pad data were split into two samples, (zero to five feet and ten to twenty feet). This was done because inspection of the lead data showed that the samples from the upper five feet contained all of the high (above 100 mg/kg) values and the lower 10 to 20 feet contained no values above 38 mg/kg. The Chi-square test was applied to each sample set to determine if a normal curve could be fitted to that set. The Chi-square test showed that each separate sample set could have a normal curve fitted to it. Since the separate data sets passed the Chi-square test, the Gosset Student T test was performed on each data set. The results for the upper five feet (Table 12) indicate that the pad data is statistically different than the background data. The Chi-square test for the 10 to 20 foot interval is shown in

[1]Source: Catherine M. Thompson, Table of percentage points of the chi-square distribution, Brometrika, Vol. 32 (1941).

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Table 13. The Student T test is not presented for the 10 to 20 foot interval because the mean of the pad data set is significantly lower than the mean of the background data set, indicating samples from this area exhibit lower than background lead levels.

To determine which specific locations within the upper 5 foot data set could be considered to have significant concentrations of lead, a maximum allowable limit was calculated. This was done using the background data mean plus three standard deviations as suggested by WMD/MDNR guidance. The value obtained as a maximum was 67 mg/kg. The following table presents the lead values above this limit, their pad locations (Figure 2) and depths:

Boring Location	Depth (Ft.)	Lead Value, mg/kg
2	1	93
2	2	72
2	5	350
3	5	590
5	1	100
5	2	170
8	5	96
9	5	180

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TABLE 1

ANALYTICAL PARAMETERS FOR BACKGROUND SOIL SAMPLES

Parameter	Detection Limit (mg/kg)
Arsenic	0.4
Barium	1.8
Cadmium	0.8
Chromium	0.7
Copper	0.9
Lead	2.0
Mercury	0.02
Selenium	0.4
Zinc	0.9
Benzene	0.8
Toluene	2.0
Xylenes	2.0
1,1,1-Trichloroethane	2.0
Methylene Chloride	0.3
MEK	50.0
1-Butanol	500.0

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TABLE 2

ANALYTICAL PARAMETERS FOR STORAGE PAD SOIL SAMPLES AND WATER SAMPLES

Parameter	Detection Limit	
	Soil (mg/kg)	Water (ug/l)
Lead	2.0	0.05 (mg/l)
Benzene	2.0	2.0
Toluene	2.0	2.0
Xylenes	2.0	2.0
1,1,1-Trichloroethane	0.3	2.0
Methylene Chloride	2.0	2.0
MEK	50.0	50.0
1-Butanol	500.0	500.0

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TABLE 3

ANALYTICAL DATA
WIPE AND RINSATE SAMPLES

SAMPLE ID	BKGD	W-1	W-2	W-2A	W-3	W-3A	W-4	W-4A	W-5A
PARAMETER(µg/wipe)									
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methlyene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND
MEK	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Butanol	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead (mg/wipe)	<0.05	0.2	ND	ND	ND	ND	ND	ND	0.1

SAMPLE ID	W-5B	W-6A	W-6B	YELLOW DYE WIPE Y-1	Y-1B	EQUIPMENT WIPE EW-1	EW-2
PARAMETER (µg/wipe)							
Benzene	ND	ND	ND	-	ND	-	ND
Xylene	ND	ND	ND	-	ND	-	ND
Methlyene Chloride	ND	ND	ND	-	ND	-	16
Toluene	ND	ND	ND	-	ND	-	ND
MEK	ND	ND	ND	-	ND	-	ND
1,1,1-Trichloroethane	ND	ND	ND	-	ND	-	ND
1-Butanol	ND	ND	ND	-	ND	-	ND
Lead (mg/wipe)	-	ND	-	ND	-	ND	-

Note:
- Parameter not analyzed for.

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TABLE 3 (continued)

ANALYTICAL DATA
WIPE AND RINSATE SAMPLES

SAMPLE ID	R-1*	R-2**	H.W. Bldg.***	Sewer***	Pad***
PARAMETER (µg/l)					
Benzene	ND	ND	ND	14	ND
Toluene	12	ND	2	1400	22
Xylene	39	ND	ND	160	14
1,1,1-Trichloroethane	ND	ND	ND	210	1
Methlyene Chloride	ND	ND	4	70	4
MEK	ND	ND	ND	ND	ND
1-Butanol	ND	ND	ND	ND	ND
Lead	ND	ND	<0.05	0.07	<0.05

* - Rinsate sample from hazardous waste storage building.
** - Sample of water used for washing pad.
*** - Rinsate sample collected 7/25/88.

Note:
Further cleaning of the sewer lines and storage pad was suspended pending the results of the soil analysis. This was to avoid possible recontamination of the areas due to closure activities once they were clean.

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TABLE 4

ANALYTICAL DATA
BACKGROUND SAMPLES

LOCATION	BK-1:					BK-2:				
DEPTH (feet)	1	2	3	4	5	1	2	3	4	5
PARAMETER (mg/kg)										
Benzene	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methlyene Chloride	-	ND	ND	ND	ND	9	6	ND	3	ND
Toluene	-	ND	4	ND	ND	ND	ND	ND	ND	ND
MEK	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Butanol	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	5.5	4.8	4.5	6	3.5	3.2	3.5	4.3	1.8	3.6
Barium	42	89	73	37	22	40	22	27	14	32
Cadmium	0.8	0.6	0.5	<0.4	<0.3	<0.4	0.5	<0.4	<0.4	<0.8
Chromium	19	33	39	13	18	22	36	32	7.7	30
Copper	28	28	38	15	21	25	18	33	9.8	35
Lead	71	22	26	28	7.4	19	9.4	3.9	4.7	18
Mercury	0.06	0.11	0.03	0.03	<0.02	<0.02	0.02	0.11	<0.02	<0.02
Selenium	<0.4	0.9	<0.3	0.3	<0.3	<0.04	<0.04	<0.4	<0.4	<0.3
Silver	<0.9	<0.6	<0.6	<0.8	<0.6	<0.8	<0.8	<0.9	<0.7	<0.7
Zinc	320	77	74	23	17	38	20	10	8.3	16

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Note:
- Parameter not analyzed for, due to in sufficient sample.

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TABLE 4 (continued)

ANALYTICAL DATA
BACKGROUND SAMPLES

	BK-3:					BK-4:				
DEPTH (feet)	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
PARAMETER (mg/kg)										
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene	ND	ND	ND	ND	ND	ND	10	ND	ND	ND
Methlyene Chloride	3	ND	ND	ND	[illegible]	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	[illegible]	ND	[illegible]	ND	ND	ND
MEK	ND	ND	ND	[illegible]	[illegible]	[illegible]	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	[illegible]	ND	[illegible]	ND	ND	ND	ND
1-Butanol	ND	ND	[illegible]	[illegible]	ND	ND	ND	ND	ND	ND
Arsenic	3.2	9.8	1.4	[illegible]	1.9	4.6	11	3.3	4.4	3.6
Barium	88	18	8.9	18	17	100	270	140	200	150
Cadmium	0.8	0.8	0.8	0.8	0.8	4.1	0.8	0.8	0.8	0.8
Chromium	35	13	4.5	13	14	48	210	52	100	47
Copper	27	9.1	3.9	29	27	84	100	58	94	44
Lead	14	8.8	2.5	3.2	2	23	40	28	19	24
Mercury	0.04	0.02	0.02	0.22	0.09	0.04	0.02	0.05	0.02	0.02
Selenium	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Silver	0.9	0.9	0.9	0.9	0.9	0.9	1.2	1.5	1.6	0.9
Zinc	19	8.3	6.6	20	11	94	51	35	17	16

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Note:
- Parameter not analyzed for, due to in sufficient sample.

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TABLE 5

ANALYTICAL DATA
SOIL SAMPLES BENEATH CONCRETE PAD

LOCATION	1						2					
DEPTH (feet)	1	2	5	10	15	20	1	2	5	10	15	20
PARAMETER (mg/kg)												
Benzene	ND	ND	ND	ND	ND	ND	3	5	4	7	2	2
Toluene	ND	ND	ND	ND	ND	ND	100	140	110	290	ND	ND
Xylene	ND	ND	ND	ND	ND	ND	140	120	75	130	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	240	300	33	410	ND	ND
Methlyene Chloride	ND	5	ND	5	ND	ND	16	18	3	14	3	2
MEK	ND	ND	88	97	68	70	ND	ND	66	530	100	110
1-Butanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	5.7	52	5.5	3.2	2.9	ND	93	72	350	ND	10	ND
LOCATION	3						4					
DEPTH (feet)	1	2	5	10	15	20	1	2*	5	10	15	20
PARAMETER (mg/kg)												
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3
Methlyene Chloride	ND	ND	4	ND	3	2	44	34	ND	ND	ND	3
MEK	ND	ND	110	62	80	110	ND	ND	65	95	65	120
1-Butanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	3.1	61	590	7.9	2.4	3.2	67	9.4	18	7.7	7	ND

* - Elevated detection levels due sample matrix.

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TABLE 5 (continued)

ANALYTICAL DATA
SOIL SAMPLES BENEATH CONCRETE PAD

LOCATION	5						6					
DEPTH (feet)	1	2	5	10	15	20	1	2	5	10	15	20
PARAMETER (mg/kg)												
Benzene	ND	ND	ND	2	ND	ND	ND	ND	ND	2	2	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methlyene Chloride	ND	13	4	8	10	4	3	4	3	ND	6	6
MEK	ND	ND	110	190	120	60	ND	ND	75	65	90	60
1-Butanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	100	170	4.7	3	5.8	4.7	2	22	5.9	19	3.1	2.7

LOCATION	7						8					
DEPTH (feet)	1	2	5	10	15	20	1	2	5	10	15	20
PARAMETER (mg/kg)												
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	2	2	ND	ND
Toluene	8	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene	32	16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methlyene Chloride	ND	ND	ND	ND	18	ND	4	3	ND	ND	ND	9
MEK	ND	ND	76	90	55	ND	ND	ND	150	70	67	ND
1-Butanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	29	5.7	2.9	38	ND	4.6	5.5	4.4	96	ND	ND	3.8

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TABLE 5 (continued)

ANALYTICAL DATA
SOIL SAMPLES BENEATH CONCRETE PAD

LOCATION	9						10	
DEPTH (feet)	1	2	5	10	15	20	1	2
PARAMETER (mg/kg)								
Benzene	ND	ND	18	5	4	3	ND	ND
Toluene	5	28	220	230	2	ND	19	ND
Xylene	ND	13	600	360	24	ND	63	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
Methlyene Chloride	5	ND	78	ND	4	ND	8	68
MEK	ND	ND	770	150	130	97	ND	ND
1-Butanol	ND	ND	ND	ND	ND	ND	ND	ND
Lead	18	42	180	26	3.1	3.9	50	34

LOCATION	11						12
DEPTH (feet)	1	2	5	10	15	20	1
PARAMETER (mg/kg)							
Benzene	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	5
Xylene	ND	ND	ND	ND	ND	ND	36
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
Methlyene Chloride	ND	ND	4	3	5	4	16
MEK	ND	ND	83	ND	120	ND	ND
1-Butanol	ND	ND	ND	ND	ND	ND	ND
Lead	12	60	7.1	6.5	ND	6.5	5.6

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TABLE 6
ANALYTICAL DATA
CONCRETE CORE SAMPLES

LOCATION	1	2	3	4	5	6	7
ANALYSIS: (mg/kg)							
Benzene	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND
Xylene	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
Methlyene Chloride	ND	ND	ND	ND	ND	ND	ND
MEK	ND	ND	ND	ND	ND	ND	ND
1-Butanol	ND	ND	ND	ND	ND	ND	ND
Lead	2.5	ND	3.5	4.7	4.5	3	2.4

SAMPLE ID	8	9	10	11	12		CF* (µg/sq.cm)
PARAMETER (mg/kg)							
Benzene	ND	ND	ND	ND	ND		<0.2
Toluene	ND	ND	ND	ND	ND		3.6
Xylene	ND	ND	ND	ND	ND		1.9
1,1,1-Trichloroethane	ND	ND	ND	ND	ND		0.3
Methlyene Chloride	ND	ND	ND	ND	ND		2.2
MEK	ND	ND	ND	ND	ND		<0.2
1-Butanol	ND	ND	ND	ND	ND		<0.2
Lead	ND	ND	4.9	3.9	4.3		24 (mg/kg)

* - Concrete fissure sample from core CC-2

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TABLE 7

ANALYTICAL DATA
MONITORING WELL SOIL SAMPLES

LOCATION	MW-1						MW-2				
DEPTH (feet)	5	10	15	20	25	30	5	10	15*	20	25
PARAMETER (mg/kg)											
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene	ND	ND	ND	ND	ND	5	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methlyene Chloride	35	3	3	7	3	20	ND	ND	4	ND	3
MEK	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Butanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	7.4	5	4.8	4	64	ND	3.8	4.3	ND	2.2	ND

LOCATION	MW-3					MW-4				
DEPTH (feet)	5	10	15*	20	25	5	10	15	20	25
PARAMETER (mg/kg)										
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	15	10	ND	ND	8	ND	ND	ND	ND
Xylene	ND	35	4	ND	ND	40	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methlyene Chloride	10	5	4	ND	ND	ND	ND	ND	ND	ND
MEK	ND	ND	50	ND	ND	ND	ND	ND	ND	ND
1-Butanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	4.4	3.3	ND	3	ND	28	10	4.8	4.7	10

* -Sample submitted for TCLP extraction, results in µg/l.

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TABLE 7 (continued)

ANALYTICAL DATA
MONITORING WELL SOIL SAMPLES

LOCATION	MW-5				
DEPTH (feet)	5	10	15	20	25
PARAMETER (mg/kg)					
Benzene	ND	ND	20	ND	ND
Toluene	ND	ND	10	ND	ND
Xylene	5	ND	6	4	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND
Methlyene Chloride	ND	ND	ND	ND	ND
MEK	ND	ND	ND	ND	ND
1-Butanol	ND	ND	ND	ND	ND
Lead	ND	5.8	27	4	ND

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TABLE 8

WATER TABLE ELEVATIONS

Well No.	Top of Casing Elevation (Ft.,msl)	Depth to Water (Ft.)	Water Table Elevation (Ft., msl)
MW-1	962.06	19.44	942.62
MW-2	963.06	20.57	942.49
MW-3	963.01	20.48	942.53
MW-4	962.00	19.38	942.62
MW-5	963.23	20.78	942.45

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TABLE 9

RESULTS OF WATER ANALYSIS

Well ID	MW-1	MW-2	MW-3	MW-3A	MW-4	MW-5
Parameter **						
Benzene	ND	4	9	*	ND	ND
Toluene	ND	ND	20	*	ND	ND
Xylenes	ND	3	ND	*	ND	3
1,1,1-Trichloroethane	ND	ND	ND	*	ND	ND
Methylene Chloride	ND	ND	ND	*	ND	ND
MEK	ND	ND	ND	*	ND	ND
1-Butanol	ND	ND	ND	*	ND	ND
Lead	ND	ND	0.11	*	ND	ND
Aluminum	*	*	*	0.86	*	*
Arsenic	*	*	*	0.009	*	*
Barium	*	*	*	0.10	*	*
Cadmium	*	*	*	<0.01	*	*
Calcium	*	*	*	63	*	*
Chromium	*	*	*	<0.02	*	*
Copper	*	*	*	<0.02	*	*
Iron	*	*	*	3.6	*	*
Magnesium	*	*	*	10	*	*
Mercury	*	*	*	<0.0005	*	*
Nickel	*	*	*	0.03	*	*
Silver	*	*	*	<0.02	*	*
Zinc	*	*	*	0.07	*	*

Note: * - Not Requested
ND - Not Detected
** - Units for the organic compounds are µ/l, all other units are mg/l.

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TABLE 10

CHI-SQUARE TEST FOR PAD DATA

Sorted Pad Data

Pad Location	Depth (ft)	Lead (mg/kg)
P-2	10	0.0
P-4	20	0.0
P-8	10	0.0
P-11	15	0.0
P-1	20	0.0
P-2	20	2.0
P-6	1	2.0
P-7	15	2.0
P-8	15	2.0
P-3	15	2.4
P-6	20	2.7
P-1	15	2.9
P-7	5	2.9
P-5	10	3.0
P-3	1	3.1
P-6	15	3.1
P-9	15	3.1
P-1	10	3.2
P-3	20	3.2
P-8	20	3.8
P-9	20	3.9
P-8	2	4.4
P-7	20	4.6
P-5	5	4.7
P-5	20	4.7
P-1	5	5.5
P-8	1	5.5
P-12	1	5.6
P-1	1	5.7
P-7	2	5.7
P-5	15	5.8
P-6	5	5.9
P-11	10	6.5
P-11	20	6.5
P-4	15	7.0
P-11	5	7.1
P-4	10	7.7
P-3	10	7.9
P-4	2	9.4
P-2	15	10.0
P-11	1	12.0
P-4	5	18.0
P-9	1	18.0
P-6	10	19.0
P-6	2	22.0
P-9	10	26.0
P-7	1	29.0
P-10	2	34.0
P-7	10	38.0
P-9	2	42.0
P-10	1	50.0
P-1	2	52.0
P-11	2	60.0
P-3	2	61.0
P-4	1	67.0
P-2	2	72.0
P-2	1	93.0
P-8	5	96.0
P-5	1	100.0
P-5	2	170.0
P-9	5	180.0
P-2	5	350.0
P-3	5	590.0

Statistics

Number of Samples	63
Average	37.53
Standard deviation	89.95

Fit Normal Curve to Data

Lead (mg/kg)	Class Boundaries	z for class Boundaries	Area Under Normal curve from 0 to z	Area for each class	Expected Frequency	Observed Frequency	(O-E)^2/E
	–	–	0.5000				
< 10				0.3783	24	40	10.67
	10	-0.31	0.1217				
10 to 20				0.0463	3	4	0.33
	20	-0.19	0.0754				
20 to 30				0.0435	3	3	0.00
	30	-0.08	0.0319				
30 to 40				0.0439	3	2	0.33
	40	0.03	0.0120				
40 to 50				0.0437	3	2	0.33
	50	0.14	0.0557				
50 to 60				0.0430	3	2	0.33
	60	0.25	0.0987				
60 to 70				0.0419	3	2	0.33
	70	0.36	0.1406				
70 to 80				0.0402	3	1	1.33
	80	0.47	0.1808				
80 to 90				0.0382	2	0	2.00
	90	0.58	0.2190				
>90				0.2810	18	7	6.72
	–	–	0.5000				

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Chi-square test

Chi-square (Calculated)	22.389
Degrees of freedom (v)	7.000
Chi-square (99% confidence level)	18.500

Conclusion:
Since chi-square calculated is greater than chi-square at the 99% confidence level, the normal distribution curve does not have a good fit to the data.

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TABLE 11

CHI-SQUARE TEST FOR BACKGROUND DATA - LEAD

Sorted Background Data

Background Location	Depth (ft)	Lead (mg/kg)
BK-3	5	2.0
BK-3	3	2.5
BK-3	4	3.2
BK-2	3	3.9
BK-2	4	4.7
BK-1	5	7.4
BK-3	2	8.8
BK-2	2	9.4
BK-3	1	14.0
BK-2	5	18.0
BK-2	1	19.0
BK-4	4	19.0
BK-1	2	22.0
BK-4	1	23.0
BK-4	5	24.0
BK-1	3	26.0
BK-1	4	28.0
BK-4	3	28.0
BK-4	2	40.0
BK-1	1	71.0

Statistics

Number of Samples	20
Average	18.70
Standard deviation	16.23

Fit Normal Curve to Data

Lead (mg/kg)	Class Boundaries	z for class Boundaries	Area Under Normal curve from 0 to z	Area for each class	Expected Frequency	Observed Frequency	(O-E)^2/E
	–	–	0.5000				
< 7				0.2358	5	5	0.00
	7	-0.72	0.2642				
7 to14				0.1501	3	4	0.33
	14	-0.29	0.1141				
14 to 21				0.1698	3	3	0.00
	21	0.14	0.0557				
21 to 28				0.1600	3	6	3.00
	28	0.57	0.2157				
28 to 35				0.1256	3	0	3.00
	35	1.00	0.3413				
35 to 42				0.0838	2	1	0.50
	42	1.44	0.4251				
42 to 49				0.0442	1	0	1.00
	49	1.87	0.4693				
>49				0.0307	1	1	0.00
	–	–	0.5000				

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Chi-square test

Chi-square (Calculated)	7.833
Degrees of freedom (v)	5.000
Chi-square (99% confidence level)	15.100

Conclusion:
Since chi-square calculated is less than chi-square at the 99% confidence level, the normal distribution curve does fit the data.

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TABLE 12
RESULTS OF STATISTICAL ANALYSIS OF UPPER FIVE FEET OF SOIL BELOW STORAGE PAD

Bkgd Data	Pad Data (mg/kg)	Depth of Pad Data (ft)
2.0	2.0	1
2.5	3.1	1
3.2	5.5	1
3.9	5.6	1
4.7	5.7	1
7.4	12.0	1
8.8	18.0	1
9.4	29.0	1
14.0	50.0	1
18.0	67.0	1
19.0	93.0	1
19.0	100.0	1
22.0	4.4	2
23.0	5.7	2
24.0	9.4	2
26.0	22.0	2
28.0	34.0	2
28.0	42.0	2
40.0	52.0	2
71.0	60.0	2
	61.0	2
	72.0	2
	170.0	2
	2.9	5
	4.7	5
	5.5	5
	5.9	5
	7.1	5
	18.0	5
	96.0	5
	180.0	5
	350.0	5
	590.0	5

Statistics

	Bkgd	Pad
Number of Samples	20.00	33.00
Mean	18.70	66.17
Standard Deviation	16.23	117.65

Fit Normal Curve to Data

Lead (mg/kg)	Class Boundaries	z for class Boundaries	Area Under Normal curve from 0 to z	Area for each class	Expected Frequency	Observed Frequency	(O-E)^2/E
	–	–	0.5000				
<50				0.4443	15	21	2.40
	50	-0.14	0.0557				
50 to 100				0.1698	6	8	0.67
	100	0.29	0.1141				
100 to 150				0.1471	5	0	5.00
	150	0.71	0.2612				
150 to 200				0.1117	4	2	1.00
	200	1.14	0.3729				
200 to 250				0.0677	2	0	2.00
	250	1.56	0.4406				
250 to 300				0.0161	1	0	1.00
	300	1.99	0.4767				
>300				0.0233	1	2	1.00
	–	–	0.5000				

Chi-square test

Chi-square (Calculated)	13.067
Degrees of freedom (v)	9.000
Chi-square (99% confidence level)	21.700

Conclusion:
Since chi-square calculated is less than chi-square at the 99% confidence level, the normal distribution curve does have a good fit to the data.

Gosset Student T Test

Hypothesis: Pad and background values are of the same population.

Degrees of Freedom	51.00
T Critical at 99%	2.39
S Calculated	5.32
T Calculated	31.49

Conclusion: Since T critical at 99% < T calculated, the hypothesis is rejected.

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TABLE 13
RESULTS OF STATISTICAL ANALYSIS OF 10 TO 20 FOOT INTERVAL BELOW STORAGE PAD

Bkgd Data	Depth (ft)	Lead (mg/kg)
2.0	10	0.0
2.5	10	0.0
3.2	10	3.0
3.9	10	3.2
4.7	10	6.5
7.4	10	7.7
8.8	10	7.9
9.4	10	19.0
14.0	10	26.0
18.0	10	38.0
19.0	15	0.0
19.0	15	2.0
22.0	15	2.0
23.0	15	2.4
24.0	15	2.9
26.0	15	3.1
28.0	15	3.1
28.0	15	5.8
40.0	15	7.0
71.0	15	10.0
	20	0.0
	20	0.0
	20	2.0
	20	2.7
	20	3.2
	20	3.8
	20	3.9
	20	4.6
	20	4.7
	20	6.5

Statistics

	Bkgd	Pad
Number of Samples	20.00	30.00
Mean	18.70	6.03
Standard Deviation	16.23	8.16

Fit Normal Curve to Data

Lead (mg/kg)	Class Boundaries	z for class Boundaries	Area Under Normal curve from 0 to z	Area for each class	Expected Frequency	Observed Frequency	(O-E)^2/E
	–	–	0.5000				
<5				0.4483	13	20	3.77
	5	-0.13	0.0517				
5 to 10				0.2396	7	6	0.14
	10	0.49	0.1879				
10 to 15				0.1764	5	1	3.20
	15	1.10	0.3643				
15 to 20				0.0911	3	1	1.33
	20	1.71	0.4554				
>20				0.0446	1	2	1.00
	–	–	0.5000				

Chi-square test

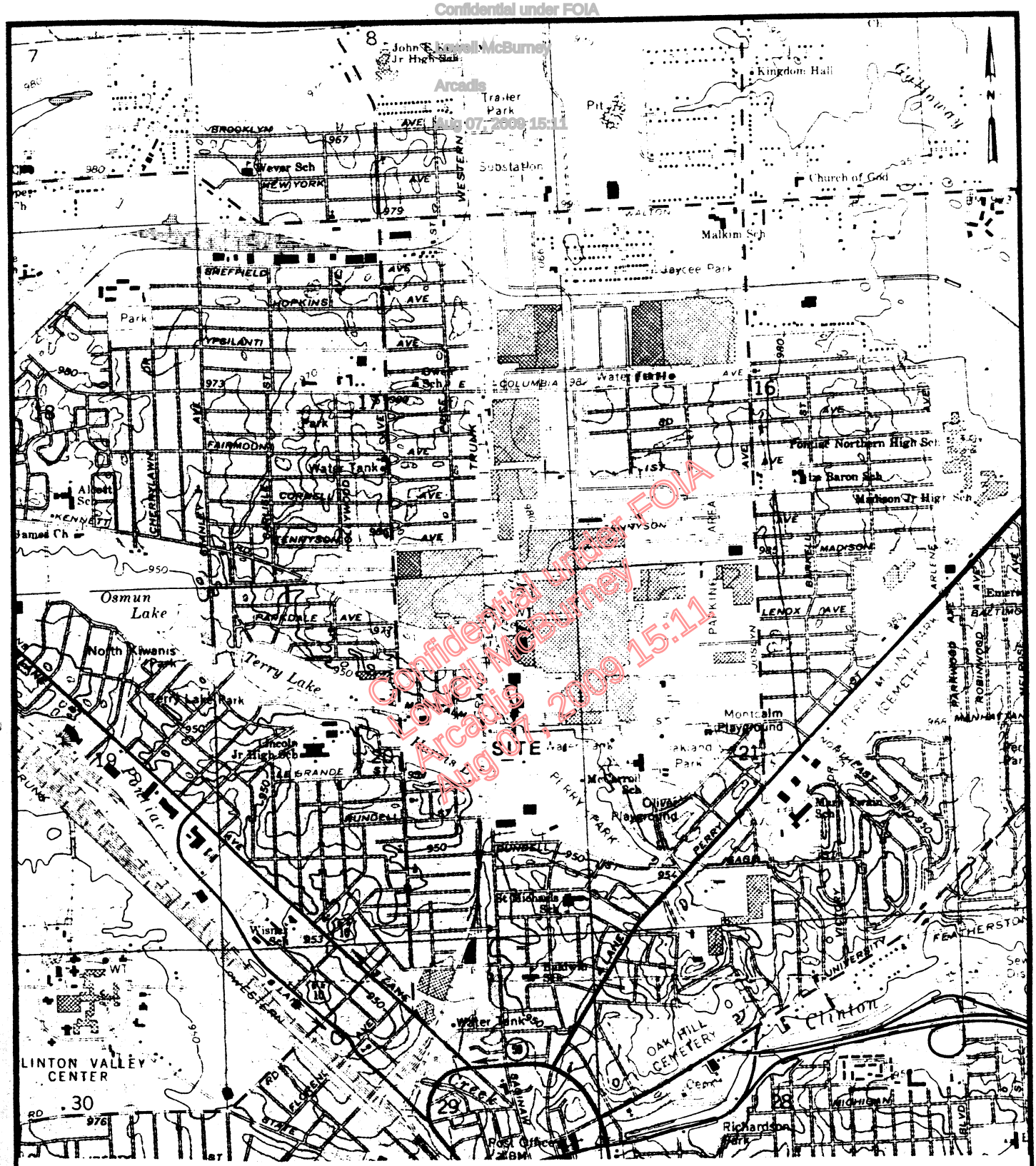
Chi-square (Calculated)	9.445
Degrees of freedom (v)	9.000
Chi-square (99% confidence level)	21.700

Conclusion:
Since chi-square calculated is less than chi-square at the 99% confidence level, the normal distribution curve does have a good fit to the data.

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BASE MAP SOURCE: USGS 7 1/2 minute topographic quadrange map: Pontiac North, Michigan 1968, photorevised 1983.

0 2000 4000

SCALE IN FEET

MI

Quadrangle location

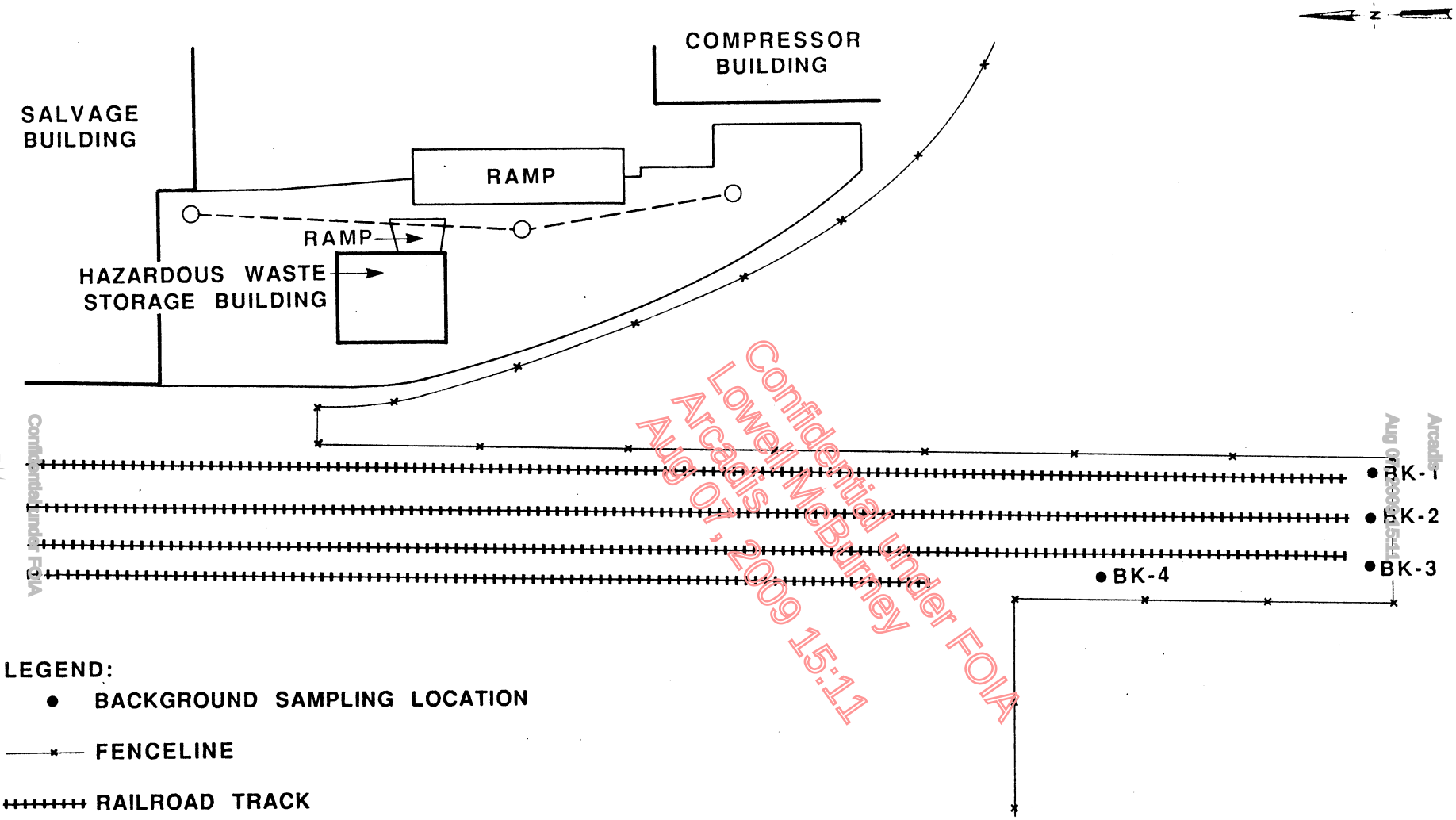
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Pontiac, Michigan

FIGURE 1

SITE VICINITY

Dames & Moore Job No. 299-164-14

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LEGEND:

- ● BACKGROUND SAMPLING LOCATION
- FENCELINE
- RAILROAD TRACK
- ○ MANHOLE
- SEWER

Chevr Pontiac-Canada Group
Pontiac, Michigan

GM Canada

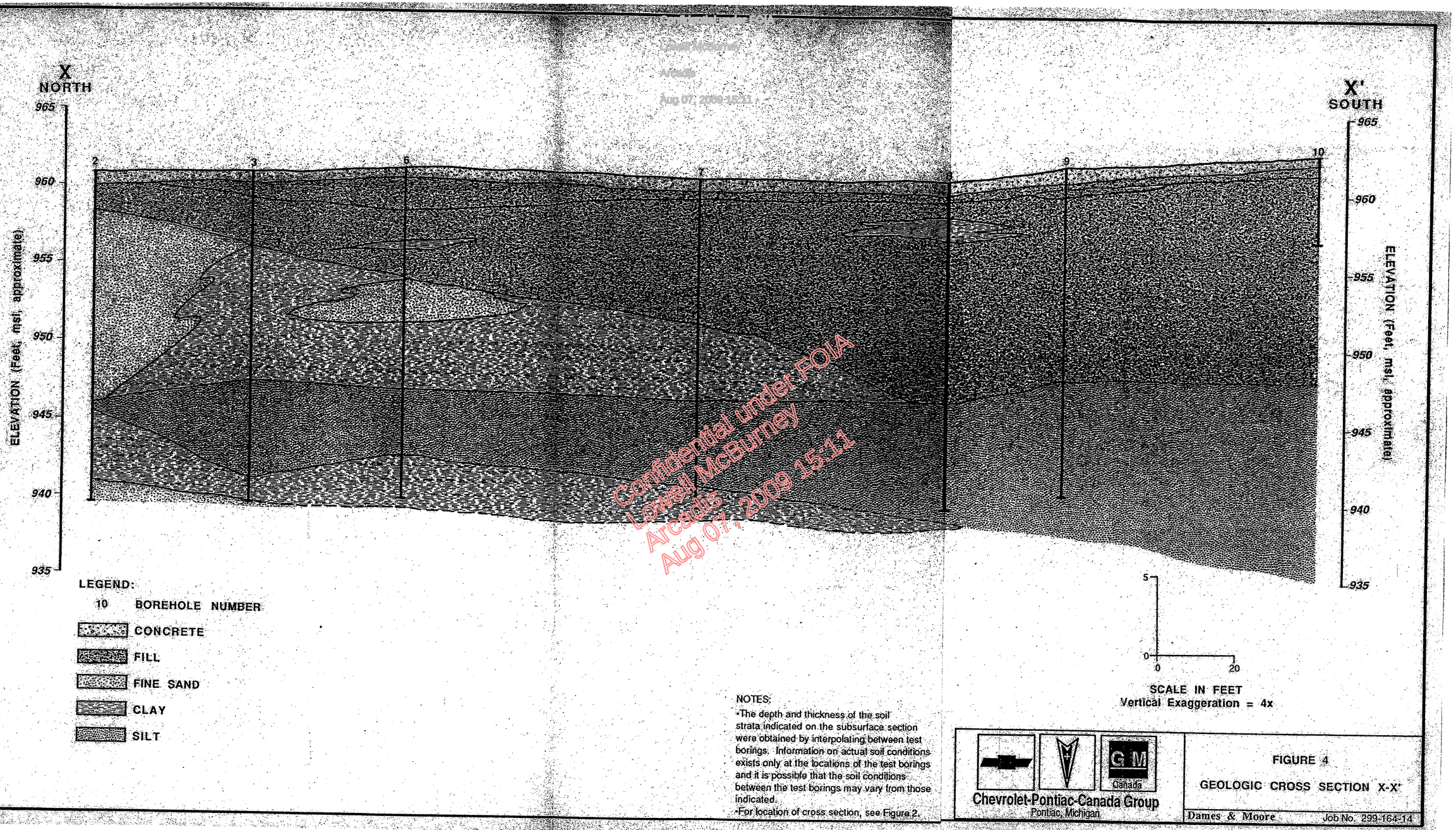
FIGURE 3

BACKGROUND SAMPLING LOCATIONS

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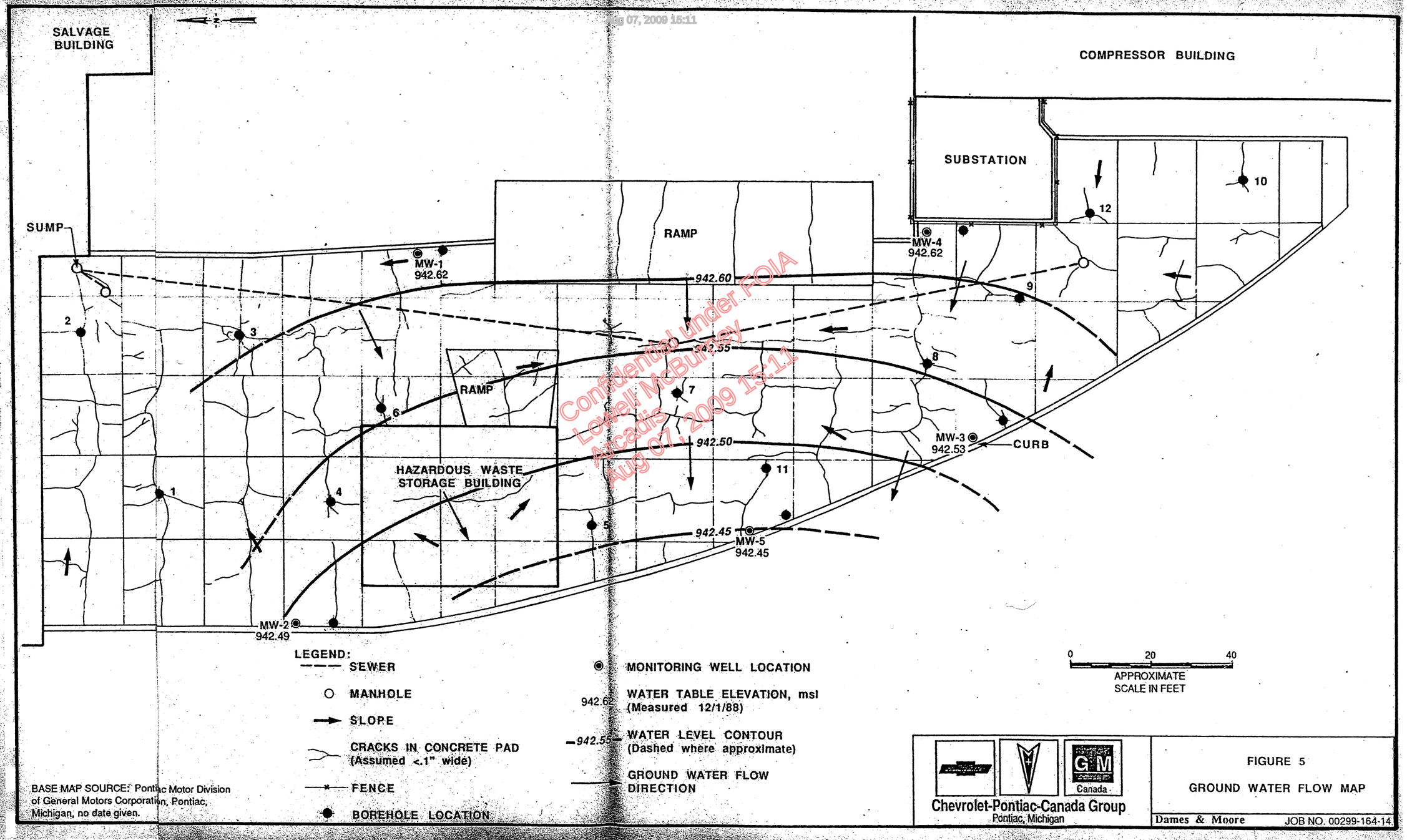
NOTES:
- The depth and thickness of the soil strata indicated on the subsurface section were obtained by interpolating between test borings. Information on actual soil conditions exists only at the locations of the test borings and it is possible that the soil conditions between the test borings may vary from those indicated.
- For location of cross section, see Figure 2.

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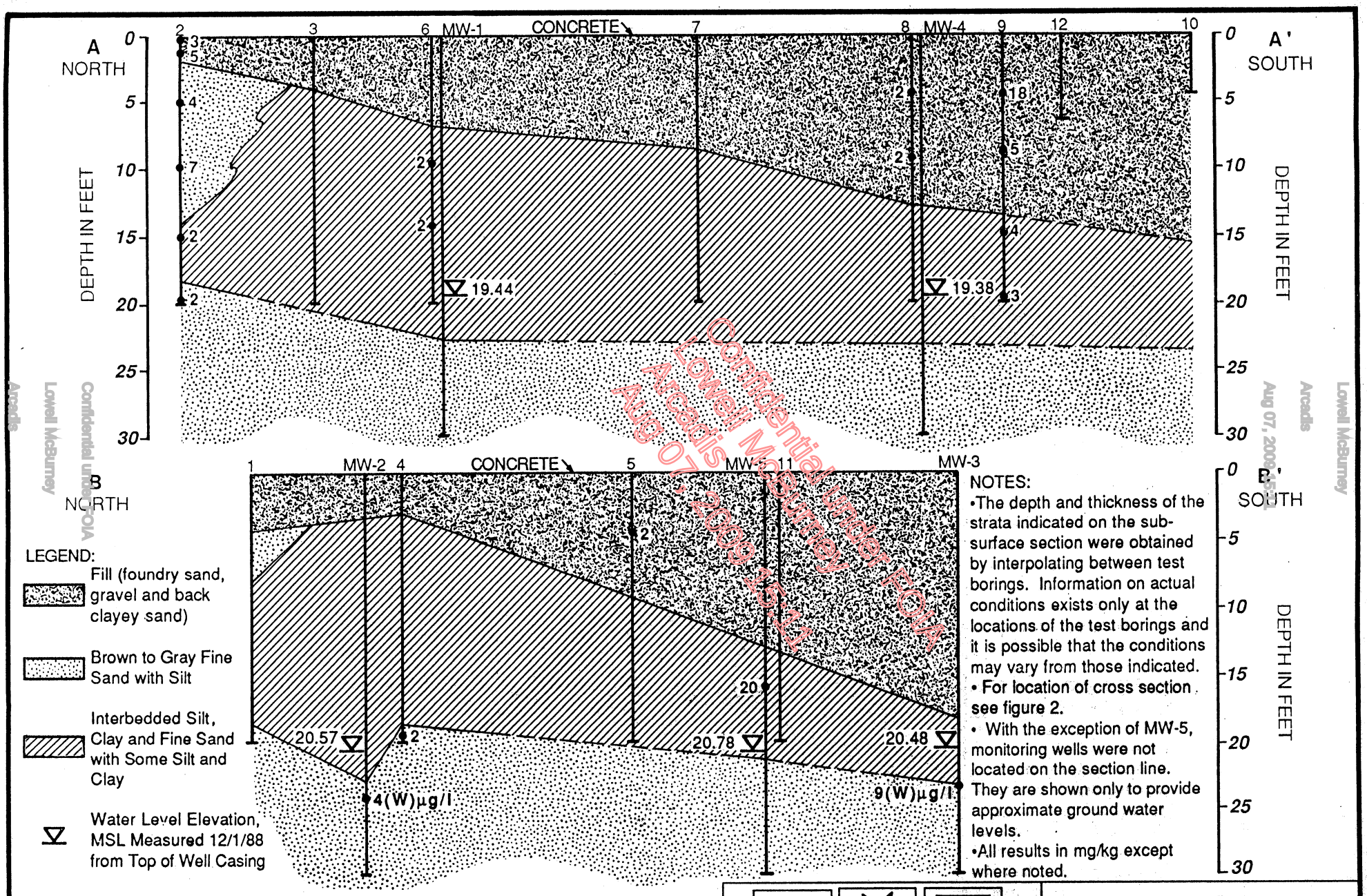
FIGURE 4
GEOLOGIC CROSS SECTION X-X'

Dames & Moore Job No. 299-164-14

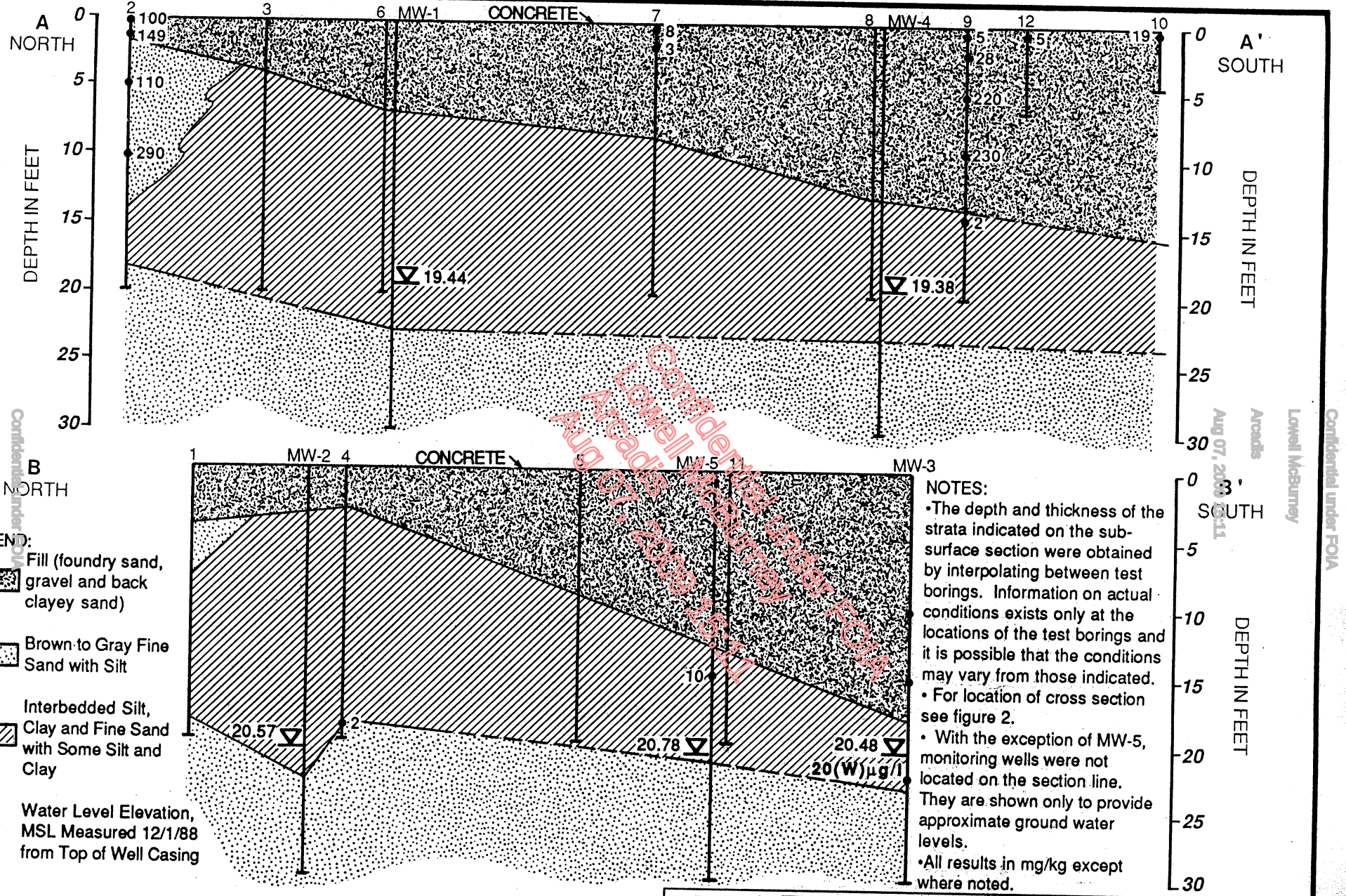
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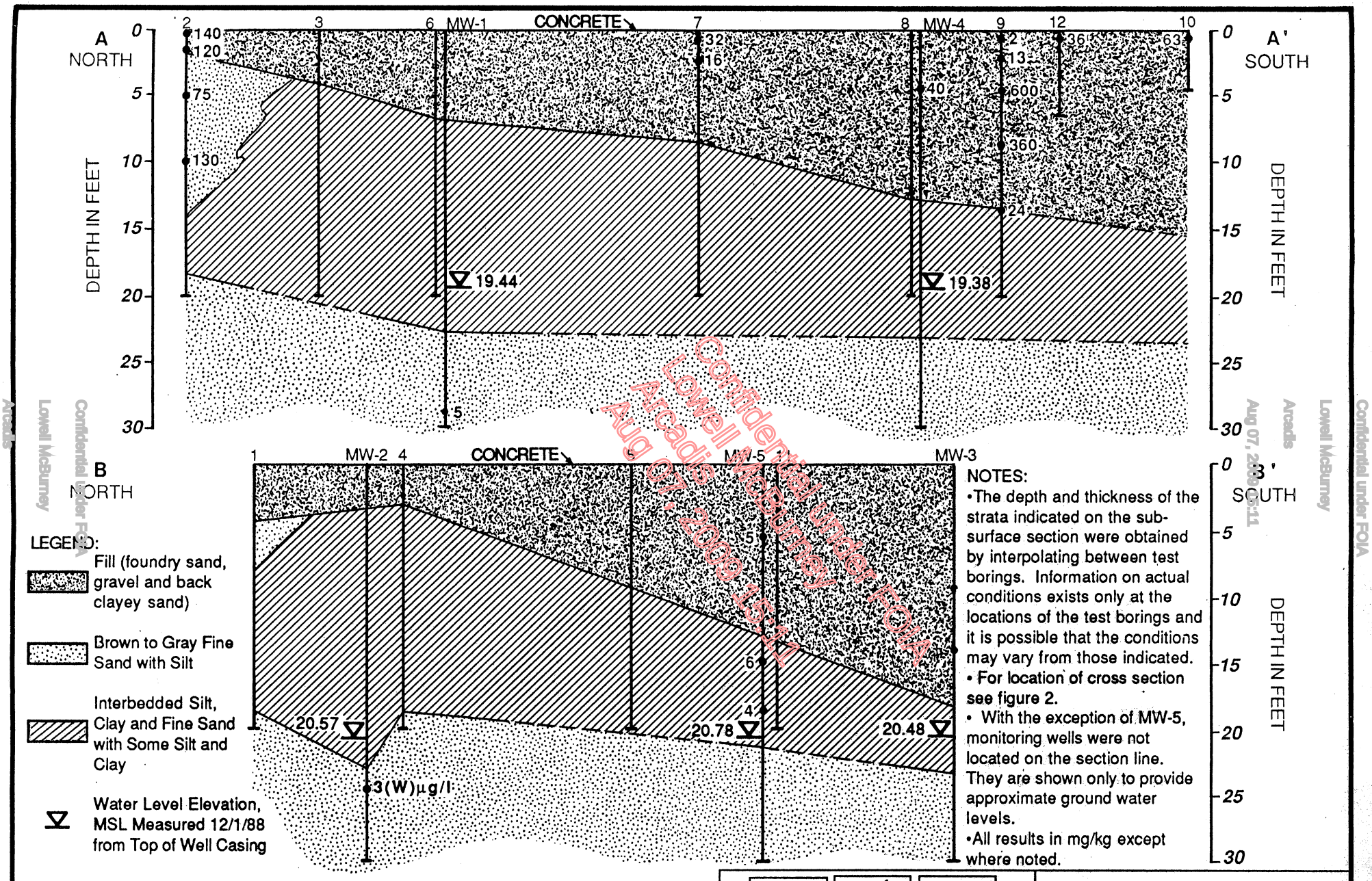
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LEGEND:

- Fill (foundry sand, gravel and back clayey sand)
- Brown to Gray Fine Sand with Silt
- Interbedded Silt, Clay and Fine Sand with Some Silt and Clay
- Water Level Elevation, MSL Measured 12/1/88 from Top of Well Casing

NOTES:

- The depth and thickness of the strata indicated on the sub-surface section were obtained by interpolating between test borings. Information on actual conditions exists only at the locations of the test borings and it is possible that the conditions may vary from those indicated.
- For location of cross section see figure 2.
- With the exception of MW-5, monitoring wells were not located on the section line. They are shown only to provide approximate ground water levels.
- All results in mg/kg except where noted.

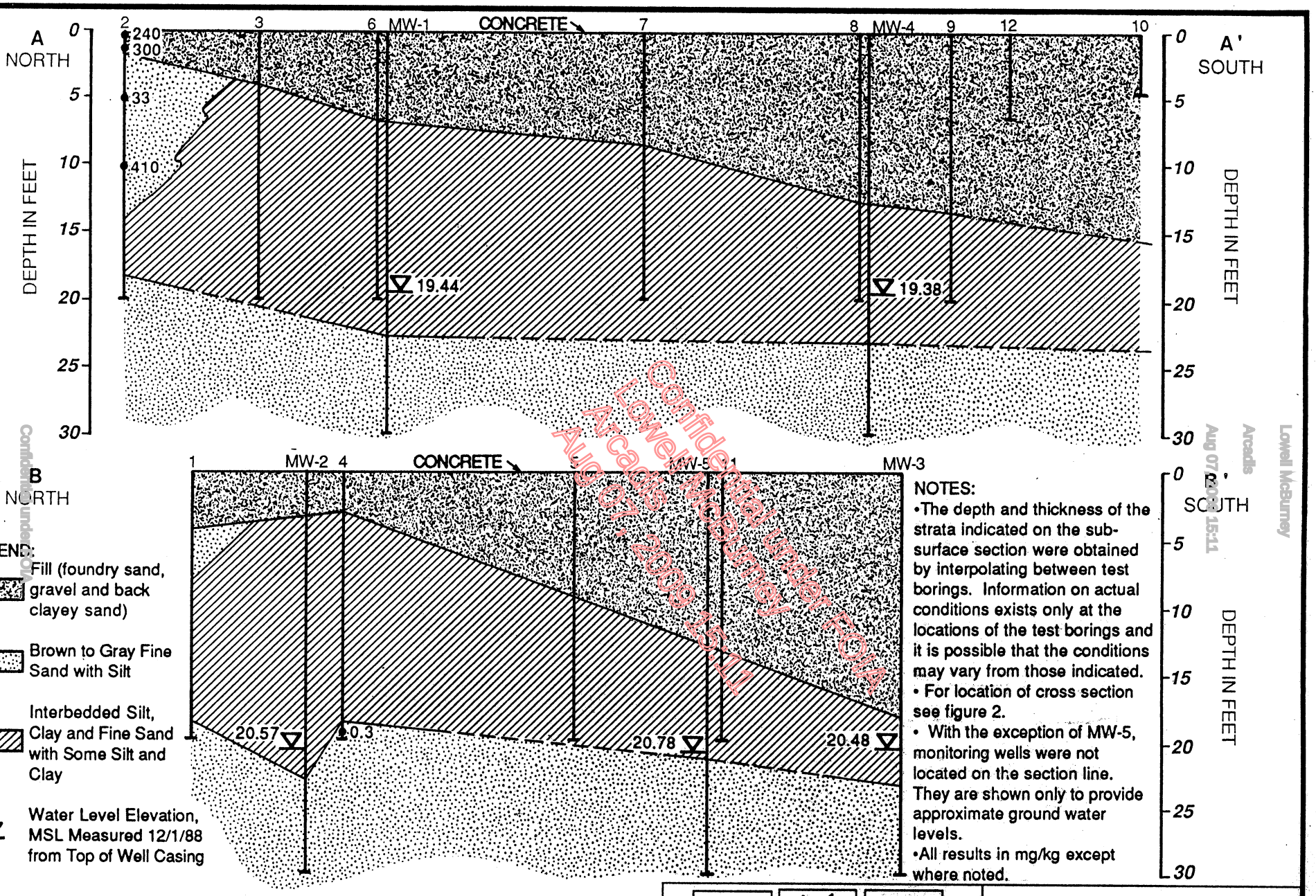
Vertical Scale: 1"=10'
Horizontal Scale: 1"=40'
Vertical Exaggeration = 4x

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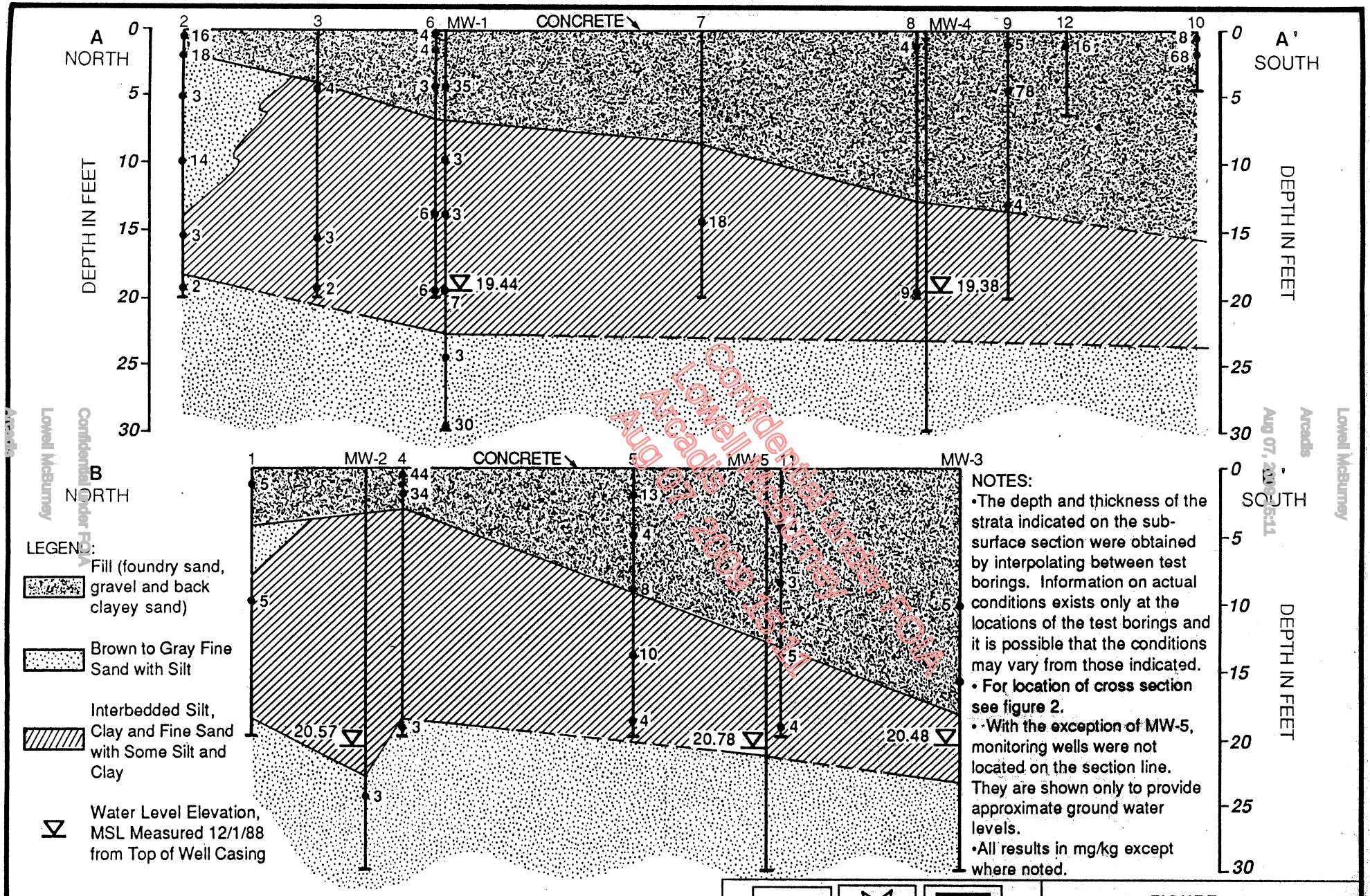
FIGURE 8
CROSS SECTION OF
ANALYTICAL DATA
XYLENE

Dames & Moore Job No. 299-164-14

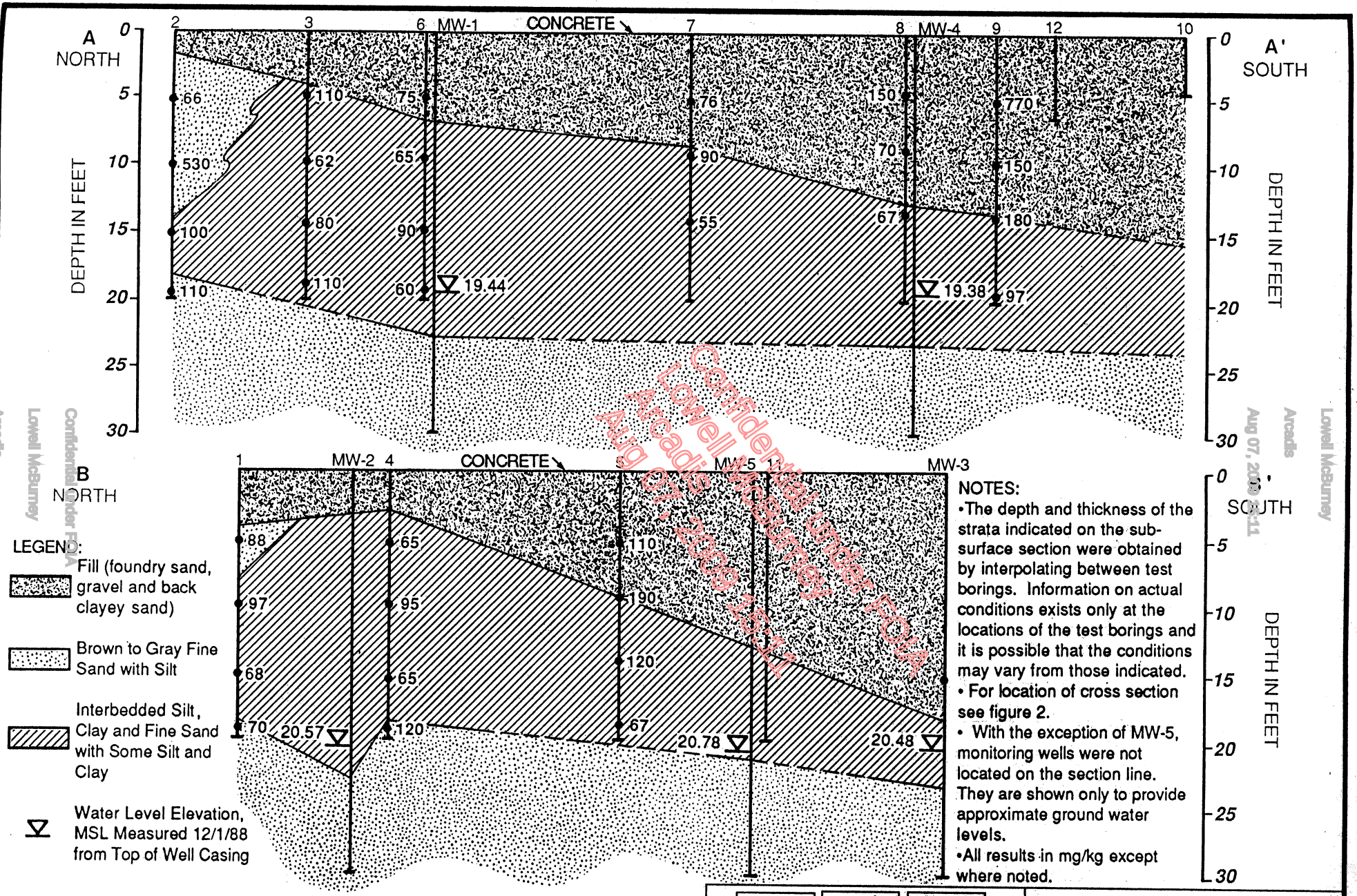
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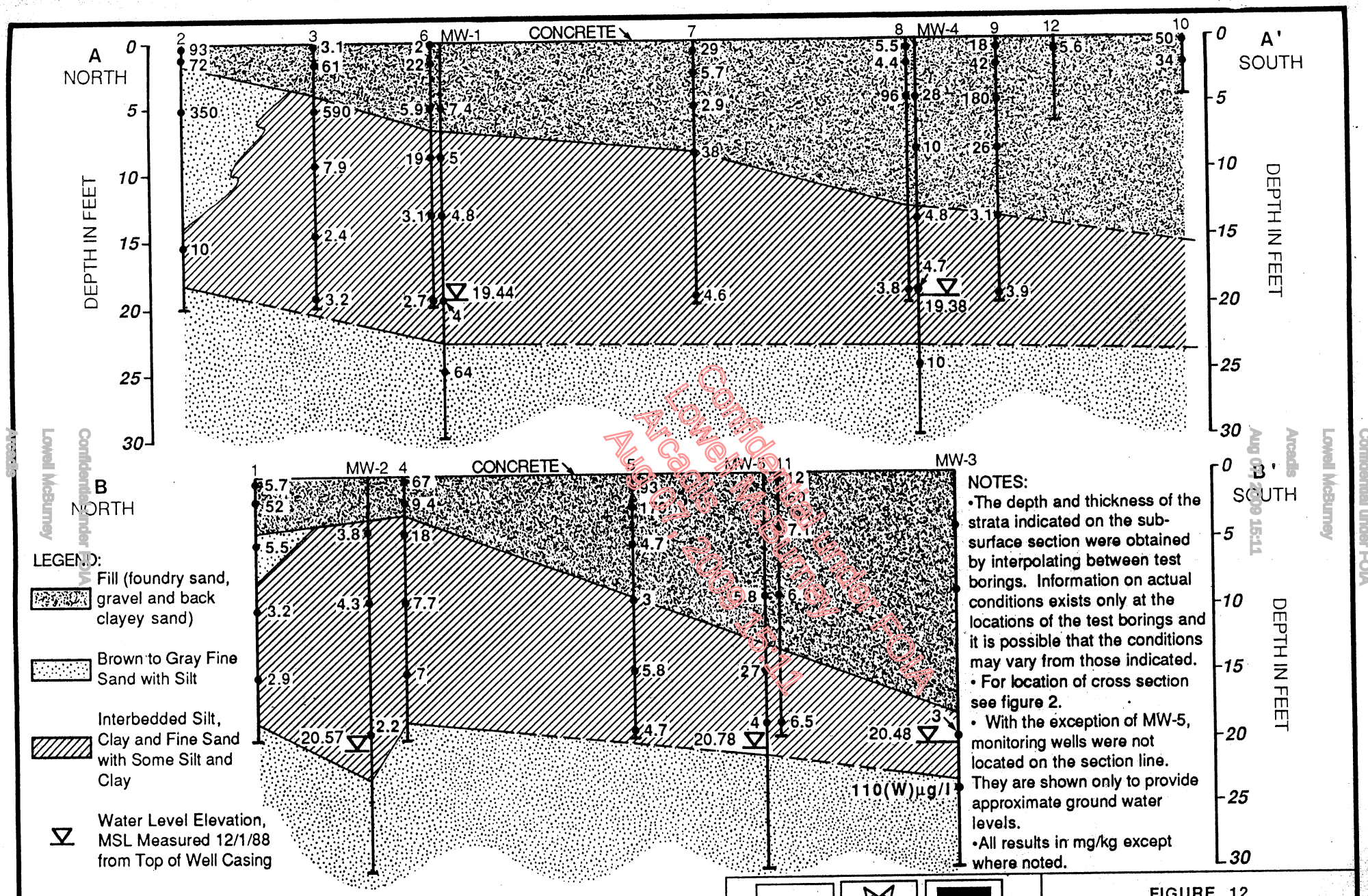
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APPENDIX A

FIELD INVESTIGATION

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SOIL SAMPLING - JULY 1988

Four background and 12 pad locations were selected for soil borings in accordance with the approved closure plan.

BACKGROUND

The four background samples were located at the south end of the railroad tracks to the west of the hazardous waste storage pad (Figure 3). The borings were advanced using 3 1/4 inch inside diameter (I.D.) hollow stem augers. Standard split spoon samples were collected at 1 foot intervals for the first 5 feet and at 5 foot intervals after that to a depth of 20 feet. Boring #4 was only able to be completed to 5 feet. Three attempts were made, however, some type of large steel debris obstructed all three holes. This was evidenced by the fact that one steel drill bit was ruined when it encountered a large steel casting that became lodged inside the bit itself. Due to obstructions such as railroad tracks, fences and wires another location for Boring #4 was not chosen. Samples were selected for laboratory analysis from each split spoon sample collected. The samples were placed in clean, laboratory supplied containers, labelled and placed in coolers for shipment to the laboratory within 8 hours of sampling.

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PAD SAMPLES - JULY 1988

The 12 locations for the borings on the storage pad were selected using the criteria outlined in the closure plan (Figure 2). The borings were installed using 3/4 inch I.D. hollow stem augers. Split spoon samples were collected at 1 foot intervals for the first 5 feet and at 5 foot intervals after that to a depth of 20 feet. A sample was selected from each split spoon sample collected. Borings 10 and 12 were only completed to a depth of 5 and

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6.5 feet, respectively. This was due to the same type of obstruction encountered in background Boring #4. The samples were placed in clean laboratory supplied containers, labelled and placed in coolers until shipment to Burmah Technical Services of Pontiac, Michigan within 8 hours of sampling. Chain of custody forms were maintained and accompanied the samples to the laboratory.

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SOIL SAMPLING AND MONITOR WELL INSTALLATION
NOVEMBER - DECEMBER 1988

Five locations were chosen for monitoring well installation (Figure 2). Initially wells MW-1, MW-2 and MW-3 were installed to determine ground water flow direction underneath the site. Once this was established the locations for wells MW-4 and MW-5 were selected. The configuration of the wells is such that two wells (MW-1 and MW-4) are upgradient of the site and the other three (MW-2, MW-3, MW-5) are downgradient. During the drilling of the boring for well MW-1 heaving sands were encountered at a depth of approximately 25 feet. It became necessary to drill one hole at each location for sampling purposes and another approximately 5 to 10 feet away for well installation. This was to ensure the quality of the well construction.

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The borings for the soil samples were installed using 3 3/4 inch I.D. hollow stem augers. Soil samples were selected from split spoon samples that were collected at 5 foot intervals to 25 or 30 feet, depending on the particular conditions in each hole. The borings were allowed to collapse naturally from the bottom to approximately 23 feet (top of the water table) and grouted with a cement bentonite grout from there to the surface. The samples were placed in clean glass jars, labelled and placed in coolers for shipment to the laboratory . Chain of custody forms were maintained and accompanied the samples to the laboratory.

The boring for the well itself was advanced using 6 1/4 inch I.D. hollow stem augers to a depth of 30 feet. To avoid having the sands below 23 feet heave up inside the

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auger, a wooden plug was made to act as a stopper in the bottom of the augers. It was made from a standard tree log and tapered to fit inside the auger. The augers were advanced to 30 feet, the well screen and riser were placed inside the augers, followed by 5 to 6 feet of coarse quartz sand. The drive hammer was used with the well casing to slowly drive the wooden plug out of the auger. The coarse sand inside the augers kept the natural sands from coming inside the augers when the plug was removed. The augers were then slowly pulled out and coarse sand was added, making sure that at least 1 foot of coarse sand was in the augers at all times. This procedure was continued until the coarse sand was 2 feet above the top of the screen. The sand was followed by a 2 foot bentonite chip seal and a cement bentonite grout to the surface. A protective locking cover was placed over the well casing and cemented into place. Two guard posts were located in front of the well and grouted into place. This procedure was used on all the wells, however for well MW-1 it had to be slightly modified due to drilling conditions at 30 feet. In well MW-1 the boring was drilled to 35 feet and a 5 foot extension pipe was attached below the screen section. This was necessary to allow the screen to be set at the proper depth and keep the sands from interfering with well construction.

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GROUND WATER SAMPLING

Prior to sampling the static water level in the well was measured using an electronic probe. Following measurement approximately three well volumes were removed using a stainless steel bailer. After the third volume was removed the next bailer was field tested for temperature, pH and specific conductance. The well was bailed and tested until the field parameters had stabilized (±0.5 degrees Celsius, ±0.25 pH units and± 50 µmohs/cm). The water sample was then collected and placed in clean laboratory supplied containers. For the metals portion nitric acid was added at the laboratory prior to sample collection.

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The samples were labelled and placed in coolers for transportation to the laboratory. Chain of custody forms were maintained and accompanied the samples.

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APPENDIX B

LABORATORY RESULTS

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Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: Bill Ward

GM CPC Pontiac

FAD CLOSURE PROJECT

Job #00299-158-14

Samples Collected 7-28-88

August 24, 1988

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Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
Attn: Bill Ward

August 24, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158-14

Date Received: 7-28-88

	Project Detection Limits As Received
Lead, Pb, mg/kg	2
Benzene, mg/kg	2
Toluene, mg/kg	2
Xylenes, mg/kg	2
1,1,1-Trichloroethane, mg/kg	0.3
Methylene Chloride, mg/kg	2
MEK, mg/kg	50
1-Butanol, mg/kg	500

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cpc5k

Susan K. Scott
Laboratory Supervisor

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Burmah

VOLATILE ORGANIC ANALYSIS BY GAS CHROMATOGRAPHY

These compounds were included in the volatile organic analysis. Unless noted in the body of the report, they were not detected. The method detection level is 10 ug/wipe.

Bromodichloromethane	1,1 Dichloroethane	Benzene
Bromoform	1,2-Dichloroethane	Ethyl Benzene
Bromomethane	1,1-Dichloroethene	Toluene
Carbon Tetrachloride	trans-1,2-Dichloroethene	Xylenes
Chlorobenzene	1,2-Dichloropropane	Styrene
Chloroethane	cis-1,3-Dichloropropene	Acetone
2-Chloroethylvinyl ether	trans-1,3-Dichloropropene	MEK
Chloroform	Methylene Chloride	MIBK
Chloromethane	1,1,2,2-Tetrachloroethane	Petroleum Distillates
Dibromochloromethane	Tetrachloroethene	
1,2-Dichlorobenzene	1,1,1-Trichloroethane	
1,3-Dichlorobenzene	1,1,2-Trichloroethane	
1,4-Dichlorobenzene	Trichloroethene	
Dichlorodifluoromethane	Trichlorofluoromethane	
	Vinyl Chloride	

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Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: Bill Ward

August 24, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: N00299-158-14

PROGRAM: Background Samples

Date Received: 7-25-88

ALD Number:	41652	41653	41654	41655	41656	Detection Limit
Client I.D.:	BK-1-1	BK-1-2	BK-1-3	BK-1-4	BK-1-5	
Arsenic, As, mg/kg	5.5	4.8	4.5	5.0	3.5	0.4
Barium, Ba, mg/kg	42	89	73	31	22	1.8
Cadmium, Cd, mg/kg	0.8	ND	ND	ND	ND	0.8
Chromium, Cr, mg/kg	19	33	32	13	18	0.7
Copper, Cu, mg/kg	28	28	38	15	21	0.9
Lead, Pb, mg/kg	71	22	26	28	7.4	2
Mercury, Hg, mg/kg	0.06	0.11	0.03	0.03	ND	0.02
Selenium, Se, mg/kg	ND	0.9	ND	ND	ND	0.4
Silver, Ag, mg/kg	ND	ND	ND	ND	ND	0.9
Zinc, Zn, mg/kg	320	77	74	23	17	0.8
Benzene, mg/kg	NR	ND	ND	ND	ND	2
Toluene, mg/kg	NR	2	4	ND	ND	2
Xylenes, mg/kg	NR	ND	ND	ND	ND	2
1,1,1-Trichloroethane, mg/kg	NR	ND	ND	ND	ND	0.3
Methylene Chloride, mg/kg	NR	ND	ND	ND	ND	2
MEK, mg/kg	NR	ND	ND	ND	ND	50
1-Butanol, mg/kg	NR	ND	ND	ND	ND	500

ND - Not detected at the detection limit listed.
NR - Not Requested

Susan K. Scott
Laboratory Supervisor

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Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue, Pontiac, Michigan 48058
700 S. Flower St., Burbank, C 502

CHAIN OF CUSTODY

Client: Damen + Moore
Address:

Contact person: LYNN CRAIG
Phone # 489-0770
PO #
Project: CPC - Phase II

Special Handling Request
☐ Rush SURCHARGE MAY APPLY
☐ Verbal
☐ Other

Sample ID	Date	Time	Grab	Comp	No. of Containers	Waste Type	Preservation	Analysis request
MW-4-5	11/28/88		✓		2	Soil		Lead, Benzene, Xylene, Toluene, MEK, 1-Butanol, Methylene chloride, 1,1,1 Trichlor Ethan
MW-4-10	"		✓		2	"		
MW-4-15	"		✓		2			
MW-4-20	"		✓		2			
MW-4-25	"		✓		2			

Collected by: Lynn Craig 11/28/88
Received by: Date Time
Received by: Date Time
Received for laboratory by: M G. Hyg Date 11/28/88 Time
Final disposition:

Delivery by: Date Time
Relinquished by: Date Time
Relinquished by: Date Time
Comments (Precautions/hazards)

AL-6

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Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue, Pontiac, Michigan 48058
700 S. Flower St., Burbank, CA 91502

CHAIN OF CUSTODY

Client: Dames + Moore
Address:

Contact person: Lynn Craig
Phone # 489-0170
PO #
Project: CPC Phase II

Special Handling Request
☐ Rush SURCHARGE MAY APPLY
☐ Verbal
☐ Other

Sample ID	Date	Time	Grab	Comp	No. of Containers	Waste Type	Preservation	Analysis request
MW-5-5	11/29/88				2	Soil		Lead, Benzene, Xylene, Toluene, 1-Butanol, MEK, Meth. Chloride, 111 Trichloro Ethan
MW-5-10	"				2	"		
MW-5-15	"				2	"		
MW-5-20	"				2	"		
MW-5-25	"				2	"		

Collected by: Lynn Craig 11/29/88
Received by: Date Time
Received by: Date Time
Received for laboratory by: M. A. Ayn 11/29 Date Time
Final disposition:

Delivery by: Date Time
Relinquished by: Date Time
Relinquished by: Date Time
Comments (Precautions/hazards)

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Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313-334-4747

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: William Ward

August 8, 1988

PROGRAM: CPC - PONTIAC

Date Received: 7-25-88

ALD Number:	41621	41622	41623	
Client I.D.: Rinsate	Sewer 7-25-88	Pad 7-25-88	H.W. Bldg 7-25-88	Detection Limits
Lead, Pb, mg/l	0.07	<0.05	<0.05	0.05
Benzene, ug/l	14	<2	<2	2
1-Butanol, ug/l	<500	<500	<500	500
MEK, ug/l	<5	<5	<5	5
Methylene Chloride, ug/l	30	4	4	2
1,1,1-Trichloroethane, ug/l	210	1	<0.3	0.03
Toluene, ug/l	1400	22	2	2
Xylenes, ug/l	160	14	<2	2

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AUG 12 1988

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Susan K. Scott
Laboratory Supervisor

Duplicate

DAMES & MOORE CHAIN-OF-CUSTODY RECORD

Sample Source & Client: DAMES + MOORE, Pontiac MI

Project Title: CPC

Job No. 00199-158-14

Field Personnel (Signature): Lynn Craig

Date	Time	Sample I.D. No.	Sample Type	No. of Containers	Sampling Site	Remarks
7/25/88		BK-1-1 X	SOIL	2	BACKGROUND	BLUE DOT ⇒ VOLATILES
		" -2 X				PLAIN ⇒ Pb
		" -3 X				*No VOA sample for BK-1-1
		" -4 X				
		" -5 X				
		" -6				
		" -7				
		" -8				
		DUPLICATE X				
		BK-2-1 X				
		" -2 X				
		" -3 X				
		" -4 X				
		" -5 X				
		" -6				X HOLD REMAINING SAMPLES

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
L Craig			M.G. Hyn	7/25							
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

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DAMES & MOORE CHAIN-OF-CUSTODY RECORD

Sample Source & Client: DAMES + MOORE, Pontiac MI

Project Title: CPC

Job No. 00299-158

Field Personnel (Signature): J. Craig

Date	Time	Sample I.D. No.	Sample Type	No. of Containers	Sampling Site	Remarks
7/25/88		BK-2-7	SOIL	2	BKGD	BLUE DOT ⇒ VOLATILES
		" -8				PLAIN ⇒ Pb
		BK-3-1X				
		" -2X				
		" -3X				
		" -4 Y				
		" -5 X				
		" -6				
		" -7				
		" -8				*No Pb sample for BK-3-8
		DUPLICATE X				
						XX HOLD REMAINING SAMPLES

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
J. Craig			M.C. Hyp	7/25							
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

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DAMES & MOORE CHAIN-OF-CUSTODY RECORD

Sample Source & Client: DAMES + MOORE, Pontiac MI

Project Title: CPC

Job No. 00299-158-14

Field Personnel (Signature): Lynn Craig

Date	Time	Sample I.D. No.	Sample Type	No. of Containers	Sampling Site	Remarks
7/26/88		Bk-4-1	Soil	2	BKGD	Blue Hot-> Yellow Bobcat I Background
		11-2		2		
		11-3		2		
		11-4		2		
		11-5		2		
		P-1-1		2	SECTION 1	
		P-1-2		2		Soil samples beneath pad
		P-2-1		2	SECTION 2	
		P-2-2		2		
						* Hold remaining samples

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
L. Craig	7/26/88			7/26/88							
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

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DAMES & MOORE CHAIN-OF-CUSTODY RECORD

Sample Source & Client: DAMES + MOORE, Pontiac MI

Project Title: GPC

Job No. 00249-158-14

Field Personnel (Signature): Lynn Craig

Date	Time	Sample I.D. No.	Sample Type	No. of Containers	Sampling Site	Remarks
7/27/88		P-3-1	SOIL	2		For Samples beneath Concrete pad
		P-3-2		2		
		P-4-1		2		
		P-4-2		2		
		P-6-1		2		
		P-6-2		2		
		DUPLICATE*		2		

* HOLD REMAINING SAMPLES

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Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
L Craig	7/27/88	4:05	M. G. Hyp	7/27/88							
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

DAMES & MOORE CHAIN-OF-CUSTODY RECORD

Sample Source & Client: DAMES + MOORE

Project Title: CPC

Job No. 00299-158

Field Personnel (Signature): Lynn Craig

Date	Time	Sample I.D. No.	Sample Type	No. of Containers	Sampling Site	Remarks
7/29/88		P-9-1	Soil	2		@ Soil Samples beneath pad
		P-9-2				
		P-10-1				
		P-10-2				
		P-12-1				
		DUP. VII				
		DUP. VIII				

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
L Craig	7/29/88			7/29							
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

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DAMES & MOORE CHAIN-OF-CUSTODY RECORD

Sample Source & Client: DAMES + MOORE, Pontiac MI

Project Title: CPC

Job No. 00299-158

Field Personnel (Signature): Lynn Craig

Date	Time	Sample I.D. No.	Sample Type	No. of Containers	Sampling Site	Remarks
7/28/88		P-5-1	Soil	2	H.W. Pad	Soil samples beneath pad
		" - 2				
		P-7-1				
		P-7-2				
		P-11-1				
		P-11-2				
		P-8-1				
		P-8-2				
		DUPLICATE II				* Hold remaining samples
		DUPLICATE III				

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
L. Craig			Jm. A. Hom	7/28/88							
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

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Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue, Pontiac, Michigan 48058 ☐
700 S. Flower St., Burbank, CA 91502 ☐
☐

CHAIN OF CUSTODY

Client: DAMES & MOORE
Address:

Contact person: LYNN
Phone #
PO #
Project: PAD CLOSURE CPC PONTIAC

Special Handling Request
☐ Rush SURCHARGE MAY APPLY
☐ Verbal
☐ Other

Sample ID	Date	Time	Grab	Comp	No. of Containers	Waste Type	Preservation	Analysis request
CORE #1								
CORE #2								
CORE #3								
CORE #4								
CORE #5								
CORE #6								

Collected by: SCHREEDER - HAMPTON REEC. 7/27

Received by: Date Time

Received by: Date Time

Received for laboratory by: M. Cr Hyp Date 8/27 Time

Final disposition:

Delivery by: ANDREW Date Time

Relinquished by: Date Time

Relinquished by: Date Time

Comments (Precautions/hazards)

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Burmah

Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue, Pontiac, Michigan 48058 ☐
700 S. Flower St., Burbank, CA 91502 ☐
☐

CHAIN OF CUSTODY

Client: Dames & Moore
Address:

Contact person: Lynn
Phone #
PO #
Project:

Special Handling Request
☐ Rush **SURCHARGE MAY APPLY**
☐ Verbal
☐ Other

Sample ID	Date	Time	Grab	Comp	No. of Containers	Waste Type	Preservation	Analysis request
7	7/28							
8								
9								
10								
11								
12								

Collected by: J IWANICKI 7/27/88 8:00 - 3:00

Received by: Date Time

Received by: Date Time

Received for laboratory by: M.A. Hyp Date 7/28 Time

Final disposition:

Delivery by: J IWANICKI Date 7/25/88 Time 11:00

Relinquished by: Date Time

Relinquished by: Date Time

Comments (Precautions/hazards)

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DAMES & MOORE CHAIN-OF-CUSTODY RECORD

Sample Source & Client: DAMES + MOORE

Project Title: CRC - Pontiac

Job No.:

Field Personnel (Signature): Lynn Craig

Date	Time	Sample I.D. No.	Sample Type	No. of Containers	Sampling Site	Remarks
7/11/88		BKGD	WIPE	2	WALL NEAR PAD	Pb, Volatiles
7/11/88		W-1	WIPE	2	Center of S. End of Pad	Pb, Volatiles

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Lynn Craig	7/11/88		M. A. Hoyt	7/11							

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Aug 07, 2009 15:11

Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue, Pontiac, Michigan 58
700 S. Flower St., Burbank, CA 502

CHAIN OF CUSTODY

Client: DAMES + MOORE

Address:

Contact person: L. Craig B. Ward

Phone # 489-0770

PO #

Project: CPC - Pontiac

Special Handling Request

- ☐ Rush SURCHARGE MAY APPLY
- ☐ Verbal
- ☐ Other

Sample ID	Date	Time	Grab	Comp	No. of Containers	Waste Type	Preservation	Analysis request
W-2					1	Wipe		Pb (D.I.)
W-2A					1	↓		Pb (Nitric)

Collected by: Lynn Craig 7/13/88 5:00pm

Received by: Kenneth Kaucic Date 7/13/88 Time 5:00pm

Received by: Date Time

Received for laboratory by: M. La Hyppa Date 7/13 Time

Final disposition:

Delivery by: Lynn Craig Date 7/13/88 Time

Relinquished by: Date Time

Relinquished by: Date Time

Comments (Precautions/hazards)

Sample location sketch on back (over)

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Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue, Pontiac, Michigan 48058
700 S. Flower St., Burbank, CA 91502

CHAIN OF CUSTODY

Client: Dames & Moore
Address:

Contact person: L. Craig or B. Ward
Phone # 489-0770
PO #
Project: CPC-Pontiac

Special Handling Request
- ☑ Rush SURCHARGE MAY APPLY
- ☐ Verbal
- ☐ Other

Sample ID	Date	Time	Grab	Comp	No. of Containers	Waste Type	Preservation	Analysis request
L-3	7/14/88	1515	✓		1		DI	UPAE Samples of Concrete
L-3a	"	1515	✓		1		HNO_3	"
L-4	"	"	✓		1		DI	"
L-4a	"	"	✓		1		HNO_3	"

Collected by: B. Ward 14 July 1988 1515

Received by: Date Time

Received by: Date Time

Received for laboratory by: M.G. Hoggs Date 7/14 Time

Final disposition:

Delivery by: Date 14 July 1988 Time 1550

Relinquished by: Date Time

Relinquished by: Date Time

Comments (Precautions/hazards)
[redacted] -OVER

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Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue, Pontiac, Michigan 58
700 S. Flower St., Burbank, CA 91502

CHAIN OF CUSTODY

Client: Dames - Moore

Address:

Contact person: Tom Craig / Bill Ward

Phone # 489-0770

PO #

Project:

Special Handling Request

- ☐ Rush SURCHARGE MAY APPLY
- ☐ Verbal
- ☐ Other

Sample ID	Date	Time	Grab	Comp	No. of Containers	Waste Type	Preservation	Analysis request
W-5a	7/14/88	1610	✓		1		HNO_3	- Pb — Composite Sample
W-5b	"	"	✓		1		CH_3OH	- Wet Scan
W-6a	"	"	✓		1		HNO_3	- Pb
W-6b	"	"	✓		1		CH_3OH	- Wet Scan

Collected by: W. WARD 14 July 1988 1610

Received by: Date Time

Received by: Date Time

Received for laboratory by: Date Time

Final disposition:

Delivery by: Date Time

Relinquished by: Date Time

Relinquished by: Date Time

Comments (Precautions/hazards)

W-5 -- Center of Slab Located 20' North of ~~West~~ N Bldg wall @ Center of wall

W-6 -- Top of wall @ Salvage Dock, ~2" Dia of Large Handrail post

x-ray [illegible]

AL-6

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Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue, Pontiac, Michigan 48058
700 S. Flower St., Burbank, CA 91502

CHAIN OF CUSTODY

Client: Dames & Moore
Address:

Contact person: L. Craig / B. Ward
Phone # 489-6770
PO #
Project: CPL-Pontiac

Special Handling Request
☒ Rush SURCHARGE MAY APPLY
☐ Verbal
☐ Other

Sample ID	Date	Time	Grab	Comp	No. of Containers	Waste Type	Preservation	Analysis request
Wipe Y-1	7/20/88	1715	✓		1	Wipe	DI water	Lead - GFS Received
Wipe Y-1b	"	"	✓		1	"	Methanol	VOA scan

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Delivered by: [signature] 20 July 88 1715
Received by:
Received by:
Received for laboratory by: Karen Mottin 7/20/88 17:35
Final disposition:

Delivery by: [signature] 20 July 88 1735
Relinquished by:
Relinquished by:

Comments (Precautions/hazards)

Could we please have results by noon tomorrow?
I thankyou very much!

[signature]

AL-6

Burmah **Burmah Technical Services, Inc.**
Analytical Laboratories Division

5 Days

408 Auburn Avenue, Pontiac, Michigan 58
700 S. Flower St., Burbank, CA 91502

CHAIN OF CUSTODY

Client: DAMES + MOORE
Address:

Contact person: L. Craig / B. Ward
Phone # 489-0700
PO #
Project: CRC - Pontiac

Special Handling Request
- ☐ Rush SURCHARGE MAY APPLY
- ☐ Verbal
- ☐ Other

AL# 41171

	Date	Time	Grab	Comp	No. of Containers	Waste Type	Preservation	Analysis request
EW-1	7/19/88		✓		1	Wipe	DI	Pb] Equipment
EW-2	"		✓		1	"		VOC] Wipe samples
AL# 41172								

Collected by: L Craig 7/19/88
Received by: Date Time
Received by: Date Time
Received for laboratory by: M.G. Hyps Date 7/19 Time
Final disposition:

Delivery by: L Craig Date 7/19/88 Time
Relinquished by: Date Time
Relinquished by: Date Time
Comments (Precautions/hazards)

AL-6

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Arcadis
Aug 07, 2009 15:11

Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue, Pontiac, Michigan 48058 ☐
700 S. Flower St., Burbank, CA 91502 ☐
☐

CHAIN OF CUSTODY

Client: DAMES & MOORE
Address:

Contact person: B. Ward / L. Craig
Phone # 482-0776
PO #
Project: CPC

Special Handling Request
☐ Rush SURCHARGE MAY APPLY
☐ Verbal
☐ Other

Sample ID	Date	Time	Grab	Comp	No. of Containers	Waste Type	Preservation	Analysis request
SEWER	7/25/88		✓		1	H_2O	N/A	VOA
"	"		✓		1	"	HNO_3	Pb
PAD			✓		1	"	N/A	VOA
"			✓		1	"	HNO_3	Pb
HW BLDG			✓		1	"	N/A	VOA
"	↓		✓		1	"	HNO_3	Pb

Collected by: L Craig 7/25/88
Received by: Date Time
Received by: Date Time
Received for laboratory by: M. G. Hyp 7/25 Date Time
Final disposition:

Delivery by: L Craig Date 7/25/88 Time
Relinquished by: Date Time
Relinquished by: Date Time
Comments (Precautions/hazards)

AL-6

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Burmah Technical Services, Inc.
Analytical Laboratories Division

ASAP

408 Auburn Avenue, Pontiac, Michigan 48058 ☒
700 S. Flower St., Burbank, CA 91502 ☐
☐

CHAIN OF CUSTODY

Client: DAMES + MOORE
Address:

Contact person: L Craig / B. Ward
Phone # 489-0790
PO #
Project: GPC Pontiac

Special Handling Request
☐ Rush (CHARGE MAY APPLY)
☐ Verbal
☐ Other

AL# 41169

	Date	Time	Grab	Comp	No. of Containers	Waste Type	Preservation	Analysis request
R-1	7/19/88		✓		2	H_2O	N/A	VOC
R-1	"		✓		1	"	HNO_3	Pb
R-2	"		✓		2	"	N/A	VOC
R-2	"		✓		1	"	HNO_3	Pb
AL# 41170								

Rinsate Samples

Collected by: L Craig 7/19/88
Received by: Date Time
Received by: Date Time
Received for laboratory by: M. G. Hoppe Date 7/19 Time
Final disposition:

Delivery by: L Craig Date Time
Relinquished by: Date Time
Relinquished by: Date Time
Comments (Precautions/hazards)

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Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue, Pontiac, Michigan 48058
700 S. Flower St., Burbank, CA 91502

CHAIN OF CUSTODY

Client: Dames + Moore
Address:

Contact person: Lynn Craig
Phone # 489-0470
PO #
Project: CPC - Phase II

Special Handling Request
- ☐ Rush
- ☐ Verbal
- ☐ Other

SURCHARGE MAY APPLY

Sample ID	Date	Time	Grab	Comp	No. of Containers	Waste Type	Preservation	Analysis request
MW-4	12/1/88				3	H2O		Lead, Benzene, Toluene, Xylene, 1-Butanol MEK, Meth-Chloride, 1,1,1-Trichloroethane
MW-5	"				3	H2O		

Collected by: Lynn Craig 12/1/88

Received by: Date Time

Received by: Date Time

Received for laboratory by: Date Time

Final disposition:

Delivery by: Date Time

Relinquished by: Date Time

Relinquished by: Date Time

Comments (Precautions/hazards)

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Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue, Pontiac, Michiga 3058 ☐
700 S. Flower St., Burbank, C. 91502 ☐
☐

CHAIN OF CUSTODY

Client: DAMES + MOORE.
Address: 34405 W 12 Mile Rd
Farmington Hills, MI

Contact person: LYNN CRAIG
Phone # 489-0770
PO # _____
Project: CPC - Phase II

Special Handling Request
☐ Rush SURCHARGE MAY APPLY
☐ Verbal
☐ Other

Sample ID	Date	Time	Grab	Comp	No. of Containers	Waste Type	Preservation	Analysis request
MW-2	11/17/88				3	H2O		Total lead, Benzene, Toluene, Xylene, 1-Butan MEK, Methylene Chloride, 1,1,1-Trichloroetha
MW-3	"				3	H2O		

Collected by: Lynn Craig 11/17/88

Received by: Date Time

Lisa Cernak 11/17/88

Received by: Date Time

Received for laboratory by: Date Time

Final disposition:

Delivery by: Date Time

Relinquished by: Date Time

Relinquished by: Date Time

Comments (Precautions/hazards)

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Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue, Pontiac, Michigan 48058 ☐
700 S. Flower St., Burbank, CA 91502 ☐
☐

CHAIN OF CUSTODY

Client: Domeo + Moore
Address: _____
_____
_____

Contact person: Lynn Craig
Phone # _____
PO # _____
Project: _____

Special Handling Request
☐ Rush SURCHARGE MAY APPLY
☐ Verbal
☐ Other

Sample ID	Date	Time	Grab	Comp	No. of Containers	Waste Type	Preservation	Analysis request
MW-3	11/18/88				2	H2O		Lead, Benzene, Toluene, Xylene, ~~1-Butanol, MEK, Methylene~~ Chloride, 1,1,1-Trichloroethane

Collected by: Lynn Craig 11/18/88
Received by: Date Time
Received by: Date Time
Received for laboratory by: M. G. Blyn Date 11/18/88 Time
Final disposition:

Delivery by: Date Time
Relinquished by: Date Time
Relinquished by: Date Time
Comments (Precautions/hazards)

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Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue, Pontiac, Michig 48058 ☐
700 S. Flower St., Burbank, C 91502 ☐
☐

CHAIN OF CUSTODY

Client: Dames + Moore

Address: _____

_____

_____

Contact person: L. Craig

Phone # 489-0770

PO # _____

Project: CPC - Phase II

Special Handling Request

☐ Rush SURCHARGE MAY APPLY
☐ Verbal
☐ Other

Sample ID	Date	Time	Grab	Comp	No. of Containers	Waste Type	Preservation	Analysis request
MW-3A	11/21/08		✓		1	H_2O		Ca, Fe, Mg, Cr-Total, Cu, Ni Al, As, Ba, Cd, Hg, Ag, Zn.
								All metals are to be run as total metals

Collected by: Lynn Craig 11/21/08

Received by: _____ Date _____ Time _____

Received by: _____ Date _____ Time _____

Received for laboratory by: _____ Date _____ Time _____

Final disposition:

Delivery by: _____ Date _____ Time _____

Relinquished by: _____ Date _____ Time _____

Relinquished by: _____ Date _____ Time _____

Comments (Precautions/hazards)

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NO.

CHAIN OF CUSTODY RECORD

Project No.: [illegible] | Project Name: [illegible] Phase II

Samplers: (signature) [signature]

Sta No	Date	Time	Comp	Grab	Station Location	Number of Containers	Remarks
MW-1-5	11/7/88		✓		MW-1	2	
MW-1-M	"		✓			2	
MW-1-15	"		✓			2	
MW-1-20	"		✓			2	
MW-1-25	"		✓			2	
MW-1-30	"		✓			2	

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
[signature]	11/7/88 1		
Relinquished by: (signature)	Date/Time	Received for Laboratory by: (signature)	Date/Time
		[signature]	11/7 9:00

Remarks: HOLD SAMPLES UNTIL FURTHER NOTICE LV

Distribution: Original accompanies shipment; Copy to: Field Files

Dames & Moore

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NO.

CHAIN OF CUSTODY RECORD

Project No.: (0227) [illegible]

Project Name: [illegible]

Samples: (signature)

Sta. No.	Date	Time	Comp.	Grab	Station Location	Number of Containers	Remarks
MW-2-5				✓		2	HOLD UNTIL FURTHER
MW-2-10				✓		2	NOTICE
MW-2-15				✓		2	
MW-2-20				✓		2	
MW-2-25				✓		2	
DUPLICATE I				✓		2	

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time	Remarks
Lynn Craig	11/9/88 | 4:00pm			
Relinquished by: (signature)	Date/Time	Received for Laboratory by: (signature)	Date/Time	
			11/9 | 4:00	

Distribution: Original accompanies shipment; Copy to: Field Files

Dames & Moore

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NO.

CHAIN OF CUSTODY RECORD

Project No.: 08299-164 | Project Name: CPC Phase II

Samplers: (signature)

Sta. No	Date	Time	Comp	Grab	Station Location	Number of Containers	Remarks
MW-3-5						2	
MW-3-10						2	HOLD UNTIL FURTHER
MW-3-15						2	NOTICE -
MW-3-20						2	
MW-3-25						2	PLEASE REFRIGERATE

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time	Remarks:
[signature]	11/10/08 5:10pm			
Relinquished by: (signature)	Date/Time	Received for Laboratory by: (signature)	Date/Time	
		[signature]	11/10 5:10	

Distribution: Original accompanies shipment; Copy to: Field Files

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Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
Attn: Bill Ward

August 24, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: N00299-158-14

PROGRAM: Background Samples

Date Received: 7-25-88

ALD Number:	41660	41661	41662	41663	41664	41665	Detection Limit
Client I.D.:	Dup	BK-2-1	BK-2-2	BK-2-3	BK-2-4	BK-2-5	
Arsenic, As, mg/kg	3.5	3.2	3.5	6.3	1.8	3.6	0.4
Barium, Ba, mg/kg	14	40	22	27	14	32	1.8
Cadmium, Cd, mg/kg	ND	ND	ND	ND	ND	ND	0.8
Chromium, Cr, mg/kg	13	22	36	32	7.7	30	0.7
Copper, Cu, mg/kg	14	25	18	33	9.8	35	0.9
Lead, Pb, mg/kg	10	19	9.4	3.9	4.7	18	2
Mercury, Hg, mg/kg	ND	ND	0.02	0.11	ND	ND	0.02
Selenium, Se, mg/kg	ND	ND	ND	ND	ND	ND	0.4
Silver, Ag, mg/kg	ND	ND	ND	ND	ND	ND	0.9
Zinc, Zn, mg/kg	11	38	20	10	8.3	16	0.8
Benzene, mg/kg	ND	ND	ND	ND	ND	ND	2
Toluene, mg/kg	ND	ND	ND	ND	ND	ND	2
Xylenes, mg/kg	ND	ND	ND	ND	ND	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	ND	ND	0.3
Methylene Chloride, mg/kg	6	9	6	ND	3	ND	2
MEK, mg/kg	ND	ND	ND	ND	ND	ND	50
1-Butanol, mg/kg	ND	ND	ND	ND	ND	ND	500

ND - Not detected at the detection limit listed.

cpc/7L

Susan K. Scott
Laboratory Supervisor

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Arcadis
Aug 07, 2009 15:11

Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
Attn: Bill Ward

August 24, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: N00299-158-14

PROGRAM: Background Samples

Date Received: 7-25-88

ALD Number:	41669	41670	41671	41672	41673	41677	Detection Limit
Client I.D.:	BK-3-1	BK-3-2	BK-3-3	BK-3-4	BK-3-5	Duplicate	
Arsenic, As, mg/kg	3.2	9.8	1.4	3.2	1.9	2.8	0.4
Barium, Ba, mg/kg	88	18	8.9	18	17	21	1.8
Cadmium, Cd, mg/kg	ND	ND	ND	ND	ND	ND	0.8
Chromium, Cr, mg/kg	35	13	4.5	13	14	13	0.7
Copper, Cu, mg/kg	27	9.1	3.9	26	27	17	0.9
Lead, Pb, mg/kg	14	8.8	2.5	3.2	ND	2.9	2
Mercury, Hg, mg/kg	0.04	ND	ND	0.22	0.09	0.08	0.02
Selenium, Se, mg/kg	ND	ND	ND	ND	ND	ND	0.4
Silver, Ag, mg/kg	ND	ND	ND	ND	ND	ND	0.9
Zinc, Zn, mg/kg	19	8.3	6.6	20	11	11	0.8
Benzene, mg/kg	ND	ND	ND	ND	ND	ND	2
Toluene, mg/kg	ND	ND	ND	ND	ND	ND	2
Xylenes, mg/kg	ND	ND	ND	ND	ND	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	ND	ND	0.3
Methylene Chloride, mg/kg	3	ND	ND	ND	ND	3	2
MEK, mg/kg	ND	ND	ND	ND	ND	ND	50
1-Butanol, mg/kg	ND	ND	ND	ND	ND	ND	500

ND - Not detected at the detection limit listed.

cpc/8L

Susan K. Scott
Laboratory Supervisor

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Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: Bill Ward

August 24, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158-14

PROGRAM: Background Samples

Date Received: 7-26-88

ADD Number:	41709	41710	41711	41712	41713	Detection
Client I.D.:	BK-4-1	BK-4-2	BK-4-3	BK-4-4	BK-4-5	Limit
Arsenic, As, mg/kg	4.6	11	3.3	4.4	3.6	0.4
Barium, Ba, mg/kg	100	270	140	200	150	1.8
Cadmium, Cd, mg/kg	4.1	ND	ND	ND	ND	0.8
Chromium, Cr, mg/kg	48	210	52	100	47	0.7
Copper, Cu, mg/kg	84	100	58	94	44	0.9
Lead, Pb, mg/kg	23	40	28	19	24	2
Mercury, Hg, mg/kg	0.04	ND	0.05	0.02	0.02	0.02
Selenium, Se, mg/kg	ND	ND	ND	ND	ND	0.4
Silver, Ag, mg/kg	ND	1.2	1.5	1.6	0.9	0.9
Zinc, Zn, mg/kg	94	51	35	17	16	0.8
Benzene, mg/kg	ND	ND	ND	ND	ND	2
Toluene, mg/kg	ND	3	ND	ND	ND	2
Xylenes, mg/kg	ND	10	ND	ND	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	ND	0.3
Methylene Chloride, mg/kg	ND	ND	ND	ND	ND	2
MEK, mg/kg	ND	ND	ND	ND	ND	50
1-Butanol, mg/kg	ND	ND	ND	ND	ND	500

ND - Not detected at the detection level listed.

cpc2k

Susan K. Scott
Laboratory Supervisor

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Burman Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
Attn: Bill Ward

August 24, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158-14

PROGRAM: Soil Samples Beneath Pad

Date Received: 7-26-88

ALD Number:	41714	41715	41722	41723	Detection Limit
Client I.D.:	P-1-1	P-1-2	P-2-1	P-2-2	
Lead, Pb, mg/kg	5.7	52	93	72	2
Benzene, mg/kg	ND	ND	3	5	2
Toluene, mg/kg	ND	ND	100	140	2
Xylenes, mg/kg	ND	ND	160	120	2
1,1,1-Trichloroethane, mg/kg	ND	ND	240	300	0.3
Methylene Chloride, mg/kg	ND	5	16	18	2
MEK, mg/kg	ND	ND	ND	ND	50
1-Butanol, mg/kg	ND	ND	ND	ND	500

ND - Not detected at the detection level listed.

Susan K. Scott
Laboratory Supervisor

cpc/3k

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Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: Bill Ward

August 24, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158-14

PROGRAM: Soil Sample Beneath Pad

Date Received: 8-10-88

ABD Number:	41730	
Client I.D.:	Duplicate III	Detection Limit
Lead, Pb, mg/kg	24	2
Benzene, mg/kg	ND	2
Toluene,mg/kg	ND	2
Xylenes, mg/kg	ND	2
1,1,1-Trichloroethane, mg/kg	ND	0.3
Methylene Chloride, mg/kg	ND	2
MEK, mg/kg	ND	50
1-Butanol, mg/kg	ND	500

cpc6k

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Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: Bill Ward

August 24, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158-14

PROGRAM: Soil Samples Beneath Pad

Date Received: 7-27-88

ALO Number:	41787	41788	41795	41796	41803	41804	41810	Detection Limit
Client I.D.:	P-3-1	P-3-2	P-4-1	P-4-2	P-6-1	P-6-2	Dup.IV	
Physical Description:	All 100% Soils							
Lead, Pb, mg/kg	3.1	61	67	9.4	2.0	22	4.5	2
Benzene, mg/kg	ND	ND	ND	ND	ND	ND	ND	2
Toluene, mg/kg	ND	ND	ND	ND	ND	ND	ND	2
Xylenes, mg/kg	ND	ND	ND	ND	ND	ND	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	ND	ND	ND	0.3
Methylene Chloride, mg/kg	ND	ND	44	34	3	4	4	2
MEK, mg/kg	ND	ND	ND	ND	ND	ND	ND	50
1-Butanol, mg/kg	ND	ND	ND	ND	ND	ND	ND	500

ND - Not detected at the detection level listed.

cpc/lk

Susan K. Scott
Laboratory Supervi

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Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
Attn: Bill Ward

August 22, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158

PROGRAM: Soil Samples Beneath Pad

Date Received: 7-28-88

ALD Number:	41881	41882	41889	41890	41897	Detection Limit
Client I.D.:	P-5-1	P-5-2	P-7-1	P-7-2	P-8-1	
Physical Description:	All 100% Soils					
Lead, Pb, mg/kg	100	170	29	5.7	5.5	2
Benzene, mg/kg	ND	ND	ND	ND	ND	2
Toluene, mg/kg	ND	ND	8	3	ND	2
Xylenes, mg/kg	ND	ND	32	16	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	ND	0.3
Methylene Chloride, mg/kg	ND	13	ND	ND	4	2
MEK, mg/kg	ND	ND	ND	ND	ND	50
1-Butanol, mg/kg	ND	ND	ND	ND	ND	500

ND - None Detected

cpc/3a

Susan K. Scott
Laboratory Supervisor

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Aug 07, 2009 15:11

Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
Attn: Bill Ward

August 22, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158

PROGRAM: Soil Samples Beneath Pad

Date Received: 7-28-88

ALD Number:	41898	41902	41903	41910	41911	Detection Limit
Client I.D.:	P-8-2	P-11-1	P-11-2	Dup. V	Dup. VI	
Physical Description: All 100% Soils						
Lead, Pb, mg/kg	4.4	12	60	1200	130	2
Benzene, mg/kg	ND	ND	ND	ND	ND	2
Toluene, mg/kg	ND	ND	ND	ND	ND	2
Xylenes, mg/kg	ND	ND	ND	ND	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	ND	0.3
Methylene Chloride, mg/kg	3	ND	ND	4	ND	2
MEK, mg/kg	ND	ND	ND	ND	ND	50
1-Butanol, mg/kg	ND	ND	ND	ND	ND	500

ND - None Detected

cpc/4a

Susan K. Scott
Laboratory Supervisor

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Burman Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
Attn: Bill Ward

August 22, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158

PROGRAM: Soil Samples Beneath Pad

Date Received: 7-29-88

ALD Number:	41978	41979	41986	41987	41990	41994	41995	Detection Limit
Client I.D.:	P-9-1	P-9-2	P-10-1	P-10-2	P-12-1	Dup. VII	Dup. VIII	
Physical Description:	All 100% Soils							
Lead, Pb, mg/kg	18	42	50	34	5.6	7.3	14	2
Benzene, mg/kg	ND	ND	ND	ND	ND	ND	ND	2
Toluene, mg/kg	5	28	19	ND	5	16	20	2
Xylenes, mg/kg	ND	13	63	ND	36	39	100	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	ND	ND	ND	0.3
Methylene Chloride, mg/kg	5	ND	8	68	16	11	12	2
MEK, mg/kg	ND	ND	ND	ND	ND	ND	ND	50
1-Butanol, mg/kg	ND	ND	ND	ND	ND	ND	ND	500

ND - None Detected

cpc/5a

Susan K. Scott
Laboratory Supervisor

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Arcadis
Aug 07, 2009 15:11

Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: Bill Ward

September 7, 1988

Follow-up Report

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158-14

PROGRAM: Soil Samples Beneath Pad

Date Received: 7-26-88

ALS Number:	41718	41719	41720	41721	Detection Limit
Client I.D.:	P-1-5	P-1-6	P-1-7	P-1-8	
Physical Description:	All 100% Soils				
Lead, Pb, mg/kg	5.5	3.2	2.9	ND	2
Benzene, mg/kg	ND	ND	ND	ND	2
Toluene, mg/kg	ND	ND	ND	ND	2
Xylenes, mg/kg	ND	ND	ND	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	0.3
Methylene Chloride, mg/kg	ND	5	ND	ND	2
MEK, mg/kg	88	97	68	70	50
1-Butanol, mg/kg	ND	ND	ND	ND	500

ND - Not detected at the detection level listed.

cc: Dale Gossiaux

cpc/lr

Susan K. Scott
Laboratory Supervisor

DAMES & MOORE
SEP 12 1988

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Arcadis
Aug 07, 2009 15:11

Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-[illegible]47

Dames & Moore
Attn: Bill Ward

September 7, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158-14

PROGRAM: Soil Samples Beneath Pad

Date Received: 7-26-88

ALD Number:	41726	41727	41728	41729	Detection Limit
Client I.D.:	P-2-5	P-2-6	P-2-7	P-2-8	
Physical Description:	All 100% Soils				
Lead, Pb, mg/kg	350	ND	10	ND	2
Benzene, mg/kg	4	7	2	2	2
Toluene, mg/kg	110	290	ND	ND	2
Xylenes, mg/kg	75	130	ND	ND	2
1,1,1-Trichloroethane, mg/kg	33	410	ND	ND	0.3
Methylene Chloride, mg/kg	3	14	3	2	2
MEK, mg/kg	66	530	100	110	50
1-Butanol, mg/kg	ND	ND	ND	ND	500

ND - Not detected at the detection level listed.

cpc/2r

Susan K. Scott
Laboratory Supervisor

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Arcadis
Aug 07, 2009 15:11

Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
Attn: Bill Ward

September 7, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158-14

PROGRAM: Soil Samples Beneath Pad

Date Received: 7-27-88

ALD Number:	41791	41792	41793	41794	Detection Limit
Client I.D.:	P-3-5	P-3-6	P-3-7	P-3-8	
Physical Description:	All 100% Soils				
Lead, Pb, mg/kg	590	7.9	2.4	3.2	2
Benzene, mg/kg	ND	ND	ND	ND	2
Toluene, mg/kg	ND	ND	ND	ND	2
Xylenes, mg/kg	ND	ND	ND	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	0.3
Methylene Chloride, mg/kg	4	ND	3	2	2
MEK, mg/kg	110	62	80	110	50
1-Butanol, mg/kg	ND	ND	ND	ND	500

ND - Not detected at the detection level listed.

cpc/3r

Susan K. Scott
Laboratory Supervisor

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Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/3[illegible] /47

Dames & Moore
Attn: Bill Ward

September 7, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158-14

PROGRAM: Soil Samples Beneath Pad

Date Received: 7-29-88

ALD Number:	41982	41983	41984	41985	Detection Limit
Client I.D.:	P-9-5	P-9-6	P-9-7	P-9-8	
Physical Description:	All 100% Soils				
Lead, Pb, mg/kg	180	26	3.1	3.9	2
Benzene, mg/kg	18	5	4	3	2
Toluene, mg/kg	220	230	2	ND	2
Xylenes, mg/kg	600	360	24	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	0.3
Methylene Chloride, mg/kg	78	ND	4	ND	2
MEK, mg/kg	770	150	180	97	50
1-Butanol, mg/kg	ND	ND	ND	ND	500

ND - Not detected at the detection level listed.

cpc/10r

Susan K. Scott
Laboratory Supervisor

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Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: Lynn Craig

December 22, 1988

Job#: 00299-164

PROJECT: CPC - PHASE II

PROGRAM: Soil Analyses

Date Received: 11-15-88

Samples Dated: 11-7-88

ALO Number:	48435	48436	48437	48438	48439	48440	Detection Limits
Client I.D.:	MW-1-5	MW-1-10	MW-1-15	MW-1-20	MW-1-25	MW-1-30	
Physical Description:	100% Brown Clay	100% Brown Clay	100% Brown Clay	100% Gray Clay	100% Brown Clay	100% Brown Clay	
Lead, Pb, mg/kg	7.4	5.0	4.8	4.0	64	ND	2
Benzene, mg/kg	ND	ND	ND	ND	ND	ND	2
Toluene, mg/kg	ND	ND	ND	ND	ND	ND	2
Xylenes, mg/kg	ND	ND	ND	ND	ND	5	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	ND	ND	2
Methylene Chloride, mg/kg	35	3	3	7	3	30	2
MEK, mg/kg	ND	ND	ND	ND	ND	ND	50
1-Butanol, mg/kg	ND	ND	ND	ND	ND	ND	500

ND - None Detected.

cpc/1r

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Burman
Analytical Laboratories Division
405 Auburn Avenue
Pontiac, Michigan 48058
313/? 4747

Dames & Moore
Attn: Lynn Craig

December 22, 1988

PROJECT: CPC - PHASE II

PROGRAM: Soil Analyses

Date Received: 11-15-88

Samples Dated: 11/9-10/88

ALD Number:	48441	48442	48443	48444	48445	48446	Detection Limits
Client I.D.:	MW-2-5	MW-2-10	MW-2-20	MW-2-25	MW-3-5	MW-3-10	
Physical Description:	100% Brown Soil	100% Brown Clay	100% Gray Clay	100% Brown Soil	100% Brown Soil	100% Brown Soil	
Lead, Pb, mg/kg	3.8	4.3	2.2	ND	4.4	3.3	2
Benzene, mg/kg	ND	ND	ND	ND	ND	ND	2
Toluene, mg/kg	ND	ND	ND	ND	ND	15	2
Xylenes, mg/kg	ND	ND	ND	ND	ND	35	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	ND	ND	2
Methylene Chloride, mg/kg	ND	ND	ND	3	10	5	2
MEK, mg/kg	ND	ND	ND	ND	ND	ND	50
1-Butanol, mg/kg	ND	ND	ND	ND	ND	ND	500

ND - None Detected.

cpc/2r

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Burman
Burman Technical Services, Inc.
Analytical Laboratories Division
406 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

DAMES & MOORE
DEC 30 1988

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: Lynn Craig

December 29, 1988

PROJECT: CPC - PHASE II

PROGRAM: Soil Analyses

Date Received: 11-15-88

Samples Dated: 11/9-10/88

ELD Number:	48447	48448	48449	Detection Limits
Client I.D.:	MW-3-20	MW-3-25	Duplicate I	
Physical Description:	100% Brown Clay	100% Brown Soil	100% Brown Clay	
Lead, Pb, mg/kg	3.0	ND	2.8	2
Benzene, mg/kg	ND	ND	ND	2
Toluene, mg/kg	ND	ND	ND	2
Xylenes, mg/kg	ND	ND	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	2
Methylene Chloride, mg/kg	ND	ND	ND	2
MEK, mg/kg	ND	ND	ND	50
1-Butanol, mg/kg	ND	ND	ND	500

ND - None Detected.

cpc/3r

Christopher P. Jeck
Laboratory Manager

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Burmah

Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue
Pontiac, Michigan 48058

313-334-4747

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: William Ward

July 14, 1988

PROGRAM: CPC - PONTIAC

Date Received: 7-13-88

ALD Number:	40954	40955
Client I.D.:	W-2	W-2A
Lead, Pb, mg/wipe	ND	ND

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ND - None Detected. Method detection level - 0.05 mg/wipe.

Q/3c

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Susan K. Scott
Laboratory Supervisor

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Burmah

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Analytical Laboratories Division

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Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: William Ward

July 26, 1988

PROGRAM: CPC - PONTIAC

Date Received: 7-14-88

ALD Number:	41006	41007
Client I.D.:	W-3 7-14-88	W-3A 7-14-88
Lead, Pb, mg/wipe	ND	ND

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ND - None Detected. Method detection level - 0.05 mg/wipe.

Q/7L

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Susan K. Scott
Laboratory Supervisor

Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
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313/33[illegible]4747

Dames & Moore
Attn: Bill Ward

September 7, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158-14

PROGRAM: Soil Samples Beneath Pad

Date Received: 7-28-88

ALD Number:	41893	41894	41895	41896	Detection Limit
Client I.D.:	P-7-3	P-7-6	P-7-7	P-7-8	
Physical Description: All 100% Soils					
Lead, Pb, mg/kg	2.9	38	ND	4.6	2
Benzene, mg/kg	ND	ND	ND	ND	2
Toluene, mg/kg	ND	ND	ND	ND	2
Xylenes, mg/kg	ND	ND	ND	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	0.3
Methylene Chloride, mg/kg	ND	ND	18	ND	2
MEK, mg/kg	76	90	55	ND	50
1-Butanol, mg/kg	ND	ND	ND	ND	500

ND - Not detected at the detection level listed.

cpc/7r

Susan K. Scott
Laboratory Supervisor

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Dames & Moore
Attn: Bill Ward

September 7, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158-14

PROGRAM: Soil Samples Beneath Pad

Date Received: 7-28-88

ALD Number:	41906	41907	41908	41909	Detection Limit
Client I.D.:	P-11-5	P-11-6	P-11-7	P-11-8	
Physical Description:	All 100% Soils				
Lead, Pb, mg/kg	7.1	6.5	ND	6.5	2
Benzene, mg/kg	ND	ND	ND	ND	2
Toluene, mg/kg	ND	ND	ND	ND	2
Xylenes, mg/kg	ND	ND	ND	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	0.3
Methylene Chloride, mg/kg	4	3	5	4	2
MEK, mg/kg	83	ND	120	ND	50
1-Butanol, mg/kg	ND	ND	ND	ND	500

ND - Not detected at the detection level listed.

cpc/9r

Susan K. Scott
Laboratory Supervisor

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Dames & Moore
Attn: Bill Ward

September 7, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158-14

PROGRAM: Soil Samples Beneath Pad

Date Received: 7-27-88

ALD Number:	41799	41800	41801	41802	Detection Limit
Client I.D.:	P-4-5	P-4-6	P-4-7	P-4-8	
Physical Description: All 100% Soils					
Lead, Pb, mg/kg	18	7.7	7.0	ND	2
Benzene, mg/kg	ND	ND	ND	2	2
Toluene, mg/kg	ND	ND	ND	2	2
Xylenes, mg/kg	ND	ND	ND	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	0.3	0.3
Methylene Chloride, mg/kg	ND	ND	ND	3	2
MEK, mg/kg	65	95	65	120	50
1-Butanol, mg/kg	ND	ND	ND	ND	500

ND - Not detected at the detection level listed.

cpc/4r

Susan K. Scott
Laboratory Supervisor

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Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
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313/334-4747

Dames & Moore
Attn: Bill Ward

September 7, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158-14

PROGRAM: Soil Samples Beneath Pad

Date Received: 7-27-88

ALD Number:	41806	41807	41808	41809	Detection Limit
Client I.D.:	P-6-5	P-6-6	P-6-7	P-6-8	
Physical Description: All 100% Soils					
Lead, Pb, mg/kg	5.9	19	3.1	2.7	2
Benzene, mg/kg	ND	2	2	ND	2
Toluene, mg/kg	ND	ND	ND	ND	2
Xylenes, mg/kg	ND	ND	ND	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	0.3
Methylene Chloride, mg/kg	3	ND	6	6	2
MEK, mg/kg	75	65	90	60	50
1-Butanol, mg/kg	ND	ND	ND	ND	500

ND - Not detected at the detection level listed.

cpc/5r

Susan K. Scott
Laboratory Supervisor

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Aug 07, 2009 15:11

Burman
Burman Technical Services, Inc.
Analytical Laboratories Division
406 Auburn Avenue
Pontiac, Michigan 48058
313/3 747

Dames & Moore
Attn: Lynn Craig

December 22, 1988

PROJECT: CPC - PHASE II

PROGRAM: Soil Analyses

Date Received: 11-15-88

Samples Dated: 11-10-88

ALD Number:	48450	48451	Detection Limits
Client I.D.:	MW-2-15	MW-3-15	
TCLP - Zero Headspace Extraction:			
Benzene, ug/l	ND	ND	2
Toluene, ug/l	ND	10	2
Xylenes, ug/l	ND	4	2
1,1,1-Trichloroethane, ug/l	ND	ND	2
Methylene Chloride, ug/l	4	4	2
MEK, ug/l	ND	50	50
1-Butanol, ug/l	ND	ND	500

ND - None Detected.

6 grams of each sample was individually leached into 120 mls of extraction fluid number one, (pH 4.93), for 18 hours under zero headspace conditions.

cpc/4r

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Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
Attn: Lynn Craig

December 22, 1988

PROJECT: CPC - PHASE II

PROGRAM: Soil Analyses

Date Received: 11-15-88

Samples Dated: 11-10-88

			Detection Limits
ALD Number:	48450	48451	
Client I.D.:	MW-2-15	MW-3-15	
Physical Description:	100% Tan Soil	100% Dk. Gray Clay	
TCLP - Leachate:			
Lead, Pb, mg/l	ND	ND	2

ND - None Detected.

48450: 50 grams of sample was leached into 100 mls of extraction fluid number 2, (pH 2.90). After 18 hours of leaching, final pH was 6.0.

48451: 50 grams of sample was leached into 100 mls of extraction fluid number 1, (pH 4.92). After 18 hours of leaching, final pH was 6.1.

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Dames & Moore
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Farmington Hills, MI 48331
Attn: Lynn Craig

December 20, 1988

PROJECT: CPC - PHASE II

PROGRAM: Soil Analyses

Date Received: 11-28-88

ALD Number:	49121	49122	49123	49124	49125	Detection Limits
Client I.D.:	MW-4-5	MW-4-10	MW-4-15	MW-4-20	MW-4-25	
Physical Description:	100% Dk. Brown Soil	100% Brown Clay	100% Brown Clay	100% Brown Clay	100% Brown Clay	
Lead, Pb, mg/kg	28	10	4.8	4.7	10	2
Benzene, mg/kg	ND	ND	ND	ND	ND	2
Toluene, mg/kg	8	ND	ND	ND	ND	2
Xylenes, mg/kg	40	ND	ND	ND	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	ND	2
Methylene Chloride, mg/kg	ND	ND	ND	ND	ND	2
MEK, mg/kg	ND	ND	ND	ND	ND	50
1-Butanol, mg/kg	ND	ND	ND	ND	ND	500

cpc/1r

Christopher P. Jack
Laboratory Manager

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Aug 07, 2009 15:11

Burman
Burman Technical Services, Inc.
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313/334-4747

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: Lynn Craig

December 20, 1988

PROJECT: CPC - PHASE II

PROGRAM: Soil Analyses

Date Received: 11-29-88

Samples Dated: 11-29-88

A&D Number:	49126	49127	49128	49129	49130	
Client I.D.:	MW-5-5	MW-5-10	MW-5-15	MW-5-20	MW-5-25	
Physical Description:	100% Black/ Brown Soil	100% Black Soil	100% Black Soil	100% Black Clay	100% Brown Soil	
						Detection Limits
Lead, Pb, mg/kg	ND	5.8	27	4.0	ND	2
Benzene, mg/kg	ND	ND	20	ND	ND	2
Toluene, mg/kg	ND	ND	10	ND	ND	2
Xylenes, mg/kg	5	ND	6	4	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	ND	2
Methylene Chloride, mg/kg	ND	ND	ND	ND	ND	2
MEK, mg/kg	ND	ND	ND	ND	ND	50
1-Butanol, mg/kg	ND	ND	ND	ND	ND	500

cpc/2r

Christopher P. Jerk
Laboratory Manager

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Burmah

Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue
Pontiac, Michigan 48058

313-334-4747

March 6, 1989

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: Lynn Craig

DAMES & MOORE
1989

Date Received: 11-18-88

ALD Number: 48722

Client I.D.: MW-1
11-18-88

Lead, Pb, mg/l	<0.05
Benzene, ug/l	<2
Toluene, ug/l	<2
Xylenes, ug/l	<2
1-Butanol, ug/l	<500
Methyl Ethyl Ketone, ug/l	<5
Methylene Chloride, ug/l	<2
1,1,1-Trichloroethene, ug/l	<2

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Orig. Date: 12/13/88

Misc/lr

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Burman
Analytical Laboratories Division
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: Lynn Craig

December 21, 1988

PROJECT: CPC - PHASE II

PROGRAM: Water Analyses

Date Received: 11-17-88

Samples Dated: 11-17-88

ALD Number:	48573	48574	
Client I.D.:	MW-2	MW-3	
			Detection Limits
Lead, Pb, mg/l	ND	0.11	0.05
Benzene, ug/l	4	9	2
Toluene, ug/l	ND	20	2
Xylenes, ug/l	3	ND	2
1,1,1-Trichloroethane, ug/l	ND	ND	2
Methylene Chloride, ug/l	ND	ND	2
MEK, ug/l	ND	ND	50
1-Butanol, ug/l	ND	ND	500

cpc/3r

Christopher P. Graf
Laboratory Manager

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Burmah

Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue
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313-334-4747

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: Lynn Craig

December 21, 1988

PROGRAM: CPC PHASE II

Date Received: 11-21-88
ALD Number: 48818
Client I.D.: MW-3A

Aluminum, Al, mg/l	0.86
Arsenic, As, mg/l	0.009
Barium, Ba, mg/l	0.10
Cadmium, Cd, mg/l	<0.01
Calcium, Ca, mg/l	63
Chromium, Cr, mg/l	<0.02
Copper, Cu, mg/l	<0.02
Iron, Fe, mg/l	3.6
Magnesium, Mg, mg/l	10
Mercury, Hg, mg/l	<0.0005
Nickel, Ni, mg/l	0.03
Silver, Ag, mg/l	<0.02
Zinc, Zn, mg/l	0.07

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Christopher P. Graf
Laboratory Manager

cpc.II/1a

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Burman
Analytical Laboratories Division
Pontiac, Michigan 48058
313/334-4747

DAMES & MOORE
1989

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: Lynn Craig

January 5, 1989

Amended Report

PROJECT: CPC - PHASE II

PROGRAM: Water Analyses

Date Received: 12-1-88

Samples Dated: 12-1-88

ALD Number:	49220	49221	Detection Limits
Client I.D.:	MW-4	MW-5	
Physical Description:			
Lead, Pb, mg/l	ND	ND	0.05
Benzene, ug/l	ND	ND	2
Toluene, ug/l	ND	ND	2
Xylenes, ug/l	ND	3	2
1,1,1-Trichloroethane, ug/l	ND	ND	2
Methylene Chloride, ug/l	ND	ND	2
MEK, ug/l	ND	ND	50
1-Butanol, ug/l	ND	ND	500

Orig. Date: 12-21-88

cpc/4r

Christopher P. Peck
Laboratory Manager

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Burmah Technical Services, Inc.
Analytical Laboratories Division
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313/334 .7

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: Bill Ward

August 22, 1988

DAMES & MOORE
AUG 23 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158

PROGRAM: Concrete Core Samples

Date Received: 7-27-88

ALD Number:	41842	41843	41844	41845	41846	41847	Detection Limit
Client I.D.:	#1	#2	#3	#4	#5	#6	
Physical Description:	All 100% Concrete Chunks						
Lead, Pb, mg/kg	2.5	ND	3.5	4.7	4.5	3.0	2
Benzene, mg/kg	ND	ND	ND	ND	ND	ND	2
Toluene, mg/kg	ND	ND	ND	ND	ND	ND	2
Xylenes, mg/kg	ND	ND	ND	ND	ND	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	ND	ND	0.3
Methylene Chloride, mg/kg	ND	ND	ND	ND	ND	ND	2
MEK, mg/kg	ND	ND	ND	ND	ND	ND	50
1-Butanol, mg/kg	ND	ND	ND	ND	ND	ND	500

ND - None Detected

cpc/1a

Susan K. Scott
Laboratory Supervisor

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Arcadis
Aug 07, 2009 15:11

Burmah
Burman Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

Dames & Moore
Attn: Bill Ward

August 22, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158

PROGRAM: Concrete Core Samples

Date Received: 7-28-88

ALD Number:	41848	41849	41850	41851	41852	41853	Detection Limit
Client I.D.:	#7	#8	#9	#10	#11	#12	
Physical Description: All 100% Concrete Chunks							
Lead, Pb, mg/kg	2.4	ND	ND	4.9	3.9	4.3	2
Benzene, mg/kg	ND	ND	ND	ND	ND	ND	2
Toluene, mg/kg	ND	ND	ND	ND	ND	ND	2
Xylenes, mg/kg	ND	ND	ND	ND	ND	ND	2
1,1,1-Trichloroethane, mg/kg	ND	ND	ND	ND	ND	ND	0.3
Methylene Chloride, mg/kg	ND	ND	ND	ND	ND	5	2
MEK, mg/kg	ND	ND	ND	ND	ND	ND	50
1-Butanol, mg/kg	ND	ND	ND	ND	ND	ND	500

ND - None Detected

cpc/2a

Susan K. Scott
Laboratory Supervisor

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Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-[illegible]47

Dames & Moore
Attn: Bill Ward

August 24, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158-14

PROGRAM: Concrete Fissure

Date Received: 7-28-88

ALD Number:	41871
Client I.D.:	#2
Lead, Pb, mg/kg (1)	24
Benzene, ug/cm² (2)	<0.2
Toluene, ug/cm² (2)	3.6
Xylenes, ug/cm² (2)	1.9
1,1,1-Trichloroethane, ug/cm² (2)	0.3
Methylene Chloride, ug/cm² (2)	2.2
MEK, ug/cm² (2)	<0.2
1-Butanol, ug/cm² (2)	<0.2

(1) As received, for entire sample
(2) Analysis of surface of concrete fissure to 1/4" depth

cpc4k

Susan K. Scott
Laboratory Supervisor

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Burmah

Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue
Pontiac, Michigan 48058

313-334-4747

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: William Ward

July 12, 1988

PROGRAM: CPC PONTIAC

Date Received: 7-11-88

ALD Number:	40826	40827
Client I.D.:	BKGD 7-11-88	W-1 7-11-88
Total Lead, Pb, mg/wipe	<0.05	0.20
Volatile Organic Analysis, ug/wipe	ND	ND

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ND - No Compounds Detected.

Please see attached sheet for additional notes, detection limits, and complete listing of compounds included in the volatile organic analysis.

Cpc/1L

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Laboratory Supervisor

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Burmah

Dames & Moore
Attn: William Ward

July 26, 1988

PROGRAM: CPC - PONTIAC

Date Received: 7-14-88

ALD Number:	41008	41009
Client I.D.:	W-4 7-14-88	W-4 7-14-88
Lead, Pb, mg/wipe	ND	ND

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ND - None Detected. Method detection level - 0.05 mg/wipe.

Q/8L

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Laboratory Supervisor

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Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313-334-4747

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: William Ward

July 21, 1988

DAMES & MOORE
JUL 25 1988

PROGRAM: CPC PONTIAC

Date Received: 7-14-88

ALD Number:	41013	41015
Client I.D.:	5-A 7-14-88	6-A 7-14-88
Total Lead, Pb, mg/wipe	0.10	ND

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ND - None Detected. Method detection level - 0.05 mg/wipe.

Cpc/4L

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Laboratory Supervisor

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Burmah

Dames & Moore
Attn: William Ward

July 21, 1988

PROGRAM: CPC PONTIAC

Date Received: 7-14-88

ALD Number:	41014	41016
Client I.D.:	5-B 7-14-88	6-B 7-14-88
Volatile Organic Analysis, ug/wipe	ND	ND

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ND - None Detected. Method detection level - 10 ug/wipe.

Please see attached sheet for additional notes, detection limits, and complete listing of compounds included in the volatile organic analysis.

Susan K. Scott
Laboratory Supervisor

Cpc/5L

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Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

August 24, 1988

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: Bill Ward

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158-14

PROGRAM: Wipe Sample

Date Received: 7-20-88

ALD Numbers:	**41308**
Client I.D.:	**W-1**
	7-20-88
As Received:	
Lead, Pb, mg/wipe	**ND**

ND-Not detected at the detection level of 0.05 mg/wipe.

cpc/7k

Susan K. Scott
Laboratory Supervisor

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Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334 [illegible]7

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: Bill Ward

August 24, 1988

PROJECT: CPC PONTIAC - PAD CLOSURE

Job#: 00299-158-14

PROGRAM: Wipe Sample

Date Received: 7-20-88

ALD Numbers:	41309
Client I.D.:	[illegible]-1b
	7-20-88
Volatile Organic Analysis, ug/wipe	ND

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ND-No Compounds Detected.

Please see attached sheet for additional notes, detection limits, and complete listing of compounds included in the volatile organic analysis.

cpc/8k

Susan K. Scott
Laboratory Supervisor

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Burmah

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Analytical Laboratories Division

408 Auburn Avenue
Pontiac, Michigan 48058

313-334-4747

Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: William Ward

July 25, 1988

PROGRAM: CPC - PONTIAC

Date Received: 7-19-88

ALD Number:	41169	41170	
Client I.D.:	R-1 7-19-88	R-2 7-19-88	
Lead, Pb, mg/l	ND	ND	2
Xylenes, ug/l	39	ND	2
Methylene Chloride, ug/l	ND	ND	2
1-Butanol, ug/	ND	ND	500
Benzene, ug/l	ND	ND	2
1,1,1-Trichloroethane, ug/l	ND	ND	0.3
MEK, ug/l	ND	ND	50
Toluene, ug/l	12	ND	2

ND - None Detected.

Cpc/9L

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Susan K. Scott
Laboratory Supervisor

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Analytical Laboratories Division
408 Auburn Avenue
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Dames & Moore
34405 West Twelve Mile Road
Farmington Hills, MI 48331
Attn: William Ward

July 27, 1988

PROGRAM: CPC - PONTIAC

Date Received: 7-19-88

ALD Number:	41171
Client I.D.:	EW-1 7-19-88
Lead, Pb, mg/wipe	ND

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ND - None Detected. Detection Level is 0.05 mg/wipe.

:pc/10r

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Laboratory Supervisor

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Burmah

Dames & Moore
Attn: William Ward

August 1, 1988

PROGRAM: CPC - PONTIAC

Date Received: 7-19-88

ALD Number:	41172
Client I.D.:	EW-2 7-19-88

Xylenes, ug/wipe	ND
Methylene Chloride, ug/wipe	16
1-Butanol, ug/wipe	ND
Benzene, ug/wipe	ND
1,1,1-Trichloroethane, ug/wipe	ND
MEK, ug/wipe	ND
Toluene, ug/wipe	ND

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ND - None Detected. Detection Level is 10 ug/wipe.

Cpc/11L

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	DATE & TIME	SPIKE(2)	WASTE TRT. COMPATIBLE YES OR NO	C.O.D.	W.T.P. OPERATOR'S SIG.
-	7-11-88-1PM	2	YES	1600	
-	7-11-88-2PM	2	YES		
-	7-12-88-10AM	2	YES	1520	
-	7-12-88-12PM	2	YES		
-	7-13-88	2	YES		
-	7-13-88	2	YES	1600	
-	7-13-88	2	YES		
-	7-14-88	2	YES	1200	
-	7-14-88	2	YES		
9 -	7-14-88	2	YES		
11	7-15-88	2	YES	1360	
12	7-15-88	2	Yes		JK
13	7-18-88	2	Yes	1200	JK
14	7-18-88	2	Yes		JK
15	7-19-88	2	Yes	1000	JK
16	7-20-88	2	Yes	1760	JK
17	7-20-88	2	Yes		JK
18	7-20-88	2	Yes	1120	
19	7-21	2	Yes	700	
20	7-21	2	Yes		
1	7-22-88	2	Yes	~~1220~~ 760	
2	7-25-88	2	YESS	960	

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2202-002 (12-75)

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 1
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. ____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Daniel Sample SIGNATURE TELEPHONE NO. (313) 479-0440

DATE SAMPLED 7-11-88 TIME SAMPLED 1230 am/pm

TYPE OF PROCESS PRODUCING WASTE: _____

FIELD INFORMATION: _____

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Arcadis
Aug 07, 2009 15:11

CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Daniel Sample	Labor	Inland	7-11-88	7-11-88
2)	Roger Gobo	EXPERIMENTAL CHEMIST	WASTE TREATMENT	7-11-88	7/12/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 2
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. ____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Daniel Sampson SIGNATURE TELEPHONE NO. (313)479-0440

DATE SAMPLED 7-11-88 TIME SAMPLED 1130 am/pm

TYPE OF PROCESS PRODUCING WASTE: _____

FIELD INFORMATION: _____

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CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Daniel Sampson	Intern	Enlands	7-11-88	7-11-88
2)	Roger Cooke	EXPERIMENTAL CHEMIST	WASTE MGMT	7-11-88	7/12/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 3
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. ____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Gibson SIGNATURE TELEPHONE NO. (313) / 675 - 0530

DATE SAMPLED 7/12/88 TIME SAMPLED 10100 am/pm

TYPE OF PROCESS PRODUCING WASTE: Lab pack drum Pkd

FIELD INFORMATION: _____

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CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Gibson	Foreman	H.W.C.	7/12/88	7/12/88
2)	Roger Potter	EXPERIMENTAL CHEMIST	WASTE TREATMENT	7-12-88	7/13/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 4
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. _____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Hilson TELEPHONE NO. (313) 675-0530
SIGNATURE

DATE SAMPLED 8/12/88 TIME SAMPLED 12:30 am/pm

TYPE OF PROCESS PRODUCING WASTE: Spent Jet-dry Rad

FIELD INFORMATION: _____

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CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Hilson	Foreman	Y.M.C.	8/12/88	8/12/88
2)	Roger Rathke	EXPERIMENTAL CHEMIST	WASTE TREATMENT	7-12-88	7/13/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
~~PLANT ENGINEERING~~-DESIGN

COLLECTOR'S SAMPLE NO. 5
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. ____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Nelson TELEPHONE NO. (313) / 675 - 0530
SIGNATURE

DATE SAMPLED 7/13/88 TIME SAMPLED 10:30 (am)/pm

TYPE OF PROCESS PRODUCING WASTE: Spent Test Develop Bath

FIELD INFORMATION: _____

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CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Nelson	Foreman	H.M.C.	7/13/88	7/13/88
2)	[signature]	Chemist	CPC	7/13/88	7/14/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
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COLLECTOR'S SAMPLE NO. 15
LABORATORY'S SAMPLE NO. 15

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. _____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Nelson TELEPHONE NO. (313) 675-0530
SIGNATURE

DATE SAMPLED 8/19/88 TIME SAMPLED 12:30 am/pm

TYPE OF PROCESS PRODUCING WASTE: [illegible] Rinse pad

FIELD INFORMATION: _____

CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Nelson	Foreman	H.M.C.	8/19/88	8/19/88
2)	B.J. Kung	Mon Tech	CPC	8/19/88	8/20/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 1C
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. _____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Gibson TELEPHONE NO. (313) 675-0580
SIGNATURE

DATE SAMPLED 7/20/88 TIME SAMPLED 8:30 (am) pm

TYPE OF PROCESS PRODUCING WASTE: [illegible] Rain pad

FIELD INFORMATION: _____

CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Gibson	Foreman	H.m.c.	7/20/88	7/20/88
2)	B.J. Long	Haz Tech.	C.P.C Pontiac	7/20/88	7/20/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 6
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. ____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Gibson SIGNATURE TELEPHONE NO. (313) 575-0530

DATE SAMPLED 7/13/88 TIME SAMPLED 2:30 am/pm

TYPE OF PROCESS PRODUCING WASTE: Solid SET Drums Pad

FIELD INFORMATION: _____

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CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Gibson	Foreman	H.M.C.	7/13/88	7/13/88
2)	Roger Barker	CHEMIST	CPC	7/13/88	7/14/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 3
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. _____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Gibson SIGNATURE TELEPHONE NO. (313) / 675 - 0530

DATE SAMPLED 7/14/88 TIME SAMPLED 9:30 am/pm

TYPE OF PROCESS PRODUCING WASTE: Spent Set Drum Pad

FIELD INFORMATION: _____

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CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Gibson	Foreman	H.M.C.	7/14/88	7/14/88
2)	Roger Potter	CHEMIST	CPC	7/14/88	7/15/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 9
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. ____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Nelson SIGNATURE TELEPHONE NO. (313) / 675 - 0530

DATE SAMPLED 8/14/88 TIME SAMPLED 2.00 am/pm

TYPE OF PROCESS PRODUCING WASTE: Spent Jet brushed

FIELD INFORMATION: _____

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CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Nelson	Foreman	H.M.C.	8/14/88	8/14/88
2)	Roger Potter	Chemist	CPC	8/14/88	8/15/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 10
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. ____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Wilson SIGNATURE TELEPHONE NO. (313) / 675 - 0530

DATE SAMPLED 8/14/88 TIME SAMPLED 12:00 am/pm

TYPE OF PROCESS PRODUCING WASTE: Drum

FIELD INFORMATION: _____

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Aug 07, 2009 15:11

CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Wilson	Foreman	H.M.C.	8/14/88	8/14/88
2)	Roger Potter	CHEMIST	CPC	8/14/88	8/15/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 11
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. _____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Gibson SIGNATURE TELEPHONE NO. (313) 675-0530

DATE SAMPLED 8/15/88 TIME SAMPLED 1:00 am/pm

TYPE OF PROCESS PRODUCING WASTE: _____

FIELD INFORMATION: _____

CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Gibson	Foreman	H.M.C.	8/15/88	8/15/88
2)	Roger Gatter	Chemist	CPC	7/15/88	7/18/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 12
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. _____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Gibson TELEPHONE NO. (313) / 625 - 0530
SIGNATURE

DATE SAMPLED 8/15/88 TIME SAMPLED 10:00 am/pm

TYPE OF PROCESS PRODUCING WASTE: _____

FIELD INFORMATION: _____

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CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Gibson	Foreman	H.M.C.	8/15/88	8/15/88
2)	B.J. Kmiec	Mon Tech	CPC	7-1588	7/15/88
3)					
4)					
5)					
6)					
7)					
8)					

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[redacted] P.C. PONTIAC PLANT
[redacted] ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 13
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. ____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Gibson TELEPHONE NO. (313) / 675 - 0530
SIGNATURE

DATE SAMPLED 8/18/88 TIME SAMPLED 8:00 am/pm

TYPE OF PROCESS PRODUCING WASTE: _____

FIELD INFORMATION: _____

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CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Gibson	Foreman	H.M.C.	8/18/88	8/18/88
2)	BJ Kang	How Tee	CPC	7-18/88	7/18/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 14
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. _____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Wilson TELEPHONE NO. (313) 675 - 0530
SIGNATURE

DATE SAMPLED 8/18/88 TIME SAMPLED 2:30 am/pm

TYPE OF PROCESS PRODUCING WASTE: _____

FIELD INFORMATION: _____

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CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Wilson	Foreman	H.M.C.	8/18/88	8/18/88
2)	B.J. Searcy	Man Tech	CPC	8/18/88	7/18/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 17
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. _____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Hudson TELEPHONE NO. (313) 675 - 0530
SIGNATURE

DATE SAMPLED 7 8/20/88 TIME SAMPLED 10:30 am pm

TYPE OF PROCESS PRODUCING WASTE: [illegible] Rear road

FIELD INFORMATION: _____

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CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Hudson	Foreman	H.M.C.	7 8/20/	- 8/20/88
2)	BJ Kemp	Mtn Tech	CPC Pontiac	7/20/88	7/20/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 18
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. _____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Gibson TELEPHONE NO. (313) 475-0530
SIGNATURE

DATE SAMPLED 8/20/88 TIME SAMPLED 2:30 am (pm)

TYPE OF PROCESS PRODUCING WASTE: Soil from ~2ft of drum yard

FIELD INFORMATION: _____

CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Gibson	Foreman	H.M.C.	8/20/88	8/20/88
2)	[signature]	Mon Tech	CPC Pontiac	7/21/88	7/21/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 19
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. ____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Nelson TELEPHONE NO. (313) 675-0536
SIGNATURE

DATE SAMPLED 7/21/88 TIME SAMPLED 8:30 (am)/pm

TYPE OF PROCESS PRODUCING WASTE: [illegible] of drum yard

FIELD INFORMATION: _____

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CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Nelson	Foreman	H.M.C.	7/21/88	7/21/88
2)	BJ Kemp	Mon. Tech	CPC Plant Eng	7/21/88	7/21/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 20
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. _____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Gibson TELEPHONE NO. (313) 475-0530
SIGNATURE

DATE SAMPLED 7/21/88 TIME SAMPLED 11:00 (am)/pm

TYPE OF PROCESS PRODUCING WASTE: [illegible]

FIELD INFORMATION: _____

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CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Gibson	Foreman	H.M.C.	7/21/88	7/21/88
2)	[signature]	Mgmt. Tech.	CPC Pontiac	7/21/88	7/21/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 21
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. _____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Gibson TELEPHONE NO. (313) 625-6530
SIGNATURE

DATE SAMPLED 7/22/88 TIME SAMPLED 10:00 (am)/pm

TYPE OF PROCESS PRODUCING WASTE: Liquid waste [illegible] by drum pad

FIELD INFORMATION: _____

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CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Gibson	Foreman	H.M.C.	7/22/88	7/22/88
2)	[signature]	Mon Tech	CPC	7/22/88	7/22/88
3)					
4)					
5)					
6)					
7)					
8)					

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C.P.C. PONTIAC PLANT
PLANT ENGINEERING-DESIGN

COLLECTOR'S SAMPLE NO. 22
LABORATORY'S SAMPLE NO. _____

CHAIN OF CUSTODY RECORD

HAZARDOUS MATERIALS

DEPARTMENT NO. _____ PROCESS NO. _____

PONTIAC WASTE CODE _____

LOCATION OF SAMPLING: PLANT NO. _____

FLOOR NO. ____ BAY NO. _____

GENERAL AREA DESCRIPTION: _____

COLLECTOR'S NAME Larry Nelson (SIGNATURE) TELEPHONE NO. (313) 675 - 0530

DATE SAMPLED 7/25/88 TIME SAMPLED 1:00 am/pm

TYPE OF PROCESS PRODUCING WASTE: [illegible] 1000 gal Rinse pad

FIELD INFORMATION: _____

CHAIN OF POSSESSION:

	SIGNATURE	TITLE	ORGANIZATION OR DEPT.	DATE RECEIVED	DATE RELINQUISHED
1)	Larry Nelson	Foreman	H.M.C.	7/25/88	7/25/88
2)	Roger Potter	Chemist	CPC	7/25/88	7/27/88
3)					
4)					
5)					
6)					
7)					
8)					

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Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-

CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 41669-73; 41677

BATCH QUALITY CONTROL DATA

Parameter	Methodology	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
Arsenic	7061	<0.005	117	NA	NA	NA	NA
Barium	6010	<0.05	89	NA	NA	NA	NA
Cadmium	6010	<0.01	91	NA	0.19	0.24	80
Chromium	6010	<0.02	102	NA	1.3	1.5	(A)
Copper	6010	<0.02	86	NA	0.24	0.62	(A)
Lead	6010	<0.05	96	NA	<0.05	<0.05	88
Mercury	7471	<0.0005	101	NA	NA	NA	NA
Selenium	7741	<0.005	99	NA	NA	NA	NA
Silver	6010	<0.02	91	NA	NA	NA	NA
Zinc	6010	0.02	96	NA	2.1	3.9	(A)

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Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

A) Sample was spiked at an inappropriate level, therefore, no recovery data is available.

NA - Not Applicable or QC not run on this batch.

Methodology: EPA SW 846, "Test Methods for Evaluating Solid Wastes", 2nd Edition

Laboratory Manager

Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 41709-14

BATCH QUALITY CONTROL DATA

Parameter	Methodology	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
Arsenic	7061	<0.005	99	NA	NA	NA	NA
Barium	6010	<0.05	98	NA	NA	NA	NA
Cadmium	6010	<0.01	98	NA	NA	NA	NA
Chromium	6010	<0.02	102	NA	NA	NA	NA
Copper	6010	<0.02	97	NA	NA	NA	NA
Lead	6010	<0.05	78	NA	NA	NA	NA
Mercury	7471	<0.0005	97	NA	NA	NA	NA
Selenium	7741	<0.005	93	NA	NA	NA	NA
Silver	6010	<0.02	99	NA	NA	NA	NA
Zinc	6010	<0.02	107	NA	NA	NA	NA

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Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

NA - Not Applicable or QC not run on this batch.

Methodology: EPA SW 846, "Test Methods for Evaluating Solid Wastes", 2nd Edition

Laboratory Manager

Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/33 17

CLIENT: DAMES & MOORE

February 27, 1989

PARAMETER: LEAD (Pb)

Method: 7420

BATCH QUALITY CONTROL DATA

ALD Numbers	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
41978-79; 41986-7; 41990; 41994-95	<0.05	111	NA	NA	NA	NA
48435-48	<0.05	104	NA	7.4	2.9	69
48449	<0.05	122	NA	NA	NA	NA
48450-1	<0.05	83	NA	NA	NA	NA
48473-4	<0.05	98	NA	0.11	0.11	55
48722	<0.05	98	NA	<0.05	<0.05	100
49121-30	<0.05	91	NA	4.8	6.0	80

Method: 6010

41169-70	<0.05	79	NA	NA	NA	NA

Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

NA - Not Applicable or QC not run on this batch.

Methodology: EPA SW 846, "Test Methods for Evaluating Solid Wastes", 2nd Edition

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Burmah

Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue
Pontiac, Michigan 48058

313-334-4747

GC Methodology

Quality Control Data

A surrogate standard was spiked into all samples submitted for volatile analysis. The surrogate analate used was 1-chlorobutane at a concentration of 36.8 ug/l. The following table lists the recovery values of the surrogate with the associated laboratory identification numbers:

ALD Number	Surrogate Recovery (%)
41014	77 (VOA wipe)
41016	77 (VOA wipe)
41169	112
41170	106
41309	112
41621	111
41622	109
41623	113
41653	80
41654	86
41655	130
41656	111
41660	85
41661	115
41662	101
41663	93
41664	101
41665	105
41669	97
41670	89
41671	100
41672	91
41673	83
41677	92
41709	72
41710	97
41711	100
41712	98
41713	104
41714	98

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No compounds were detectable in Method Blanks.

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CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 41309

BATCH QUALITY CONTROL DATA

Parameter	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
Bromodichloromethane	ND	NA	NA	NA	NA	NA
Bromoform	ND	NA	NA	NA	NA	NA
Bromomethane	ND	NA	NA	NA	NA	NA
Carbon Tetrachloride	ND	NA	NA	NA	NA	NA
Chlorobenzene	ND	NA	NA	NA	NA	NA
Chloroethane	ND	NA	NA	NA	NA	NA
2-Chloroethylvinyl ether	ND	NA	NA	NA	NA	NA
Chloroform	ND	NA	NA	36	33	93
Chloromethane	ND	NA	NA	NA	NA	NA
Dibromochloromethane	ND	NA	NA	NA	NA	NA
1,2 Dichlorobenzene	ND	NA	NA	NA	NA	NA
1,3 Dichlorobenzene	ND	NA	NA	NA	NA	NA
1,4 Dichlorobenzene	ND	NA	NA	NA	NA	NA
Dichlorodifluoromethane	ND	NA	NA	NA	NA	NA
1,1 Dichloroethane	ND	NA	NA	NA	NA	NA
1,2 Dichloroethane	ND	NA	NA	NA	NA	NA
1,1 Dichloroethene	ND	NA	NA	NA	NA	NA
Trans-1,2-Dichloroethene	ND	NA	NA	NA	NA	NA
1,2 Dichloropropane	ND	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	ND	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	ND	NA	NA	NA	NA	NA
Methylene Chloride	ND	NA	NA	37	35	97
1,1,2,2-Tetrachloroethane	ND	NA	NA	NA	NA	NA
Tetrachloroethene	ND	NA	NA	43	40	95
1,1,1 Trichloroethane	ND	NA	NA	33	34	104

Laboratory Manager

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Burmah
Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 41309

BATCH QUALITY CONTROL DATA

Parameter	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
1,1,2 Trichloroethane	ND	NA	NA	NA	NA	NA
Trichloroethene	ND	NA	NA	40	42	103
Trichlorofluoromethane	ND	NA	NA	NA	NA	NA
Vinyl Chloride	ND	NA	NA	NA	NA	NA
Benzene	ND	NA	NA	39	40	104
Ethyl Benzene	ND	41	<5	43	38	88
Toluene	ND	7	<5	46	44	96
Xylenes	ND	39	?	40	36	92
Styrene	ND	NA	NA	NA	NA	NA

Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

ND - None Detected

NA - Not applicable or QC not run on this batch.

Methodology: Analysis run according to GC conditions specified in EPA Methods 601 & 602. EPA 600/4-82-057 "Methods for Organic Analyses of Municiple and Industrial Wastewaters".

Christopher P. Jacob
Laboratory Manager

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Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/3[illegible] 747

CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 41656; 41660-65; 41669-73

BATCH QUALITY CONTROL DATA

Parameter	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
Benzene	<2	NA	NA	<2	<2	82
Toluene	<2	NA	NA	<2	<2	88
Xylenes	<2	NA	NA	<2	<2	24
1,1,1-Trichloroethane	<2	NA	NA	<2	<2	95
Methylene Chloride	<2	NA	NA	1700	2310	61
MEK	<50	NA	NA	NA	NA	NA
1-Butanol	<500	NA	NA	NA	NA	NA

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Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

NA - Not Applicable or QC not run on this batch.

Methodology: Analysis run according to GC conditions specified in EPA Methods 601 & 602. EPA 600/4-82-057 "Methods for Organic Analyses of Municiple and Industrial Wastewaters".

Laboratory Manager

Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-4747

CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 41677

BATCH QUALITY CONTROL DATA

Parameter	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
Benzene	<2	NA	NA	<2	<2	89
Toluene	<2	NA	NA	<2	<2	87
Xylenes	<2	NA	NA	<2	<2	86
1,1,1-Trichloroethane	<2	NA	NA	<2	<2	95
Methylene Chloride	<2	NA	NA	<2	<2	81
MEK	<50	NA	NA	NA	NA	NA
1-Butanol	<500	NA	NA	NA	NA	NA

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Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

NA - Not Applicable or QC not run on this batch.

Methodology: Analysis run according to GC conditions specified in EPA Methods 601 & 602. EPA 600/4-82-057 "Methods for Organic Analyses of Municiple and Industrial Wastewaters".

Christopher P. Jolt
Laboratory Manager

Burmah Technical Services, Inc.
Analytical Laboratories Division
408 Auburn Avenue
Pontiac, Michigan 48058
313/334-[illegible]47

CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 41709; 41842; 41848-52

BATCH QUALITY CONTROL DATA

Parameter	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
Benzene	<2	NA	NA	39	34	87
Toluene	<2	NA	NA	46	38	84
Xylenes	<2	NA	NA	40	40	86
1,1,1-Trichloroethane	<2	NA	NA	33	31	93
Methylene Chloride	<2	NA	NA	37	37	100
MEK	<50	NA	NA	NA	NA	NA
1-Butanol	<500	NA	NA	NA	NA	NA

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Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

NA - Not Applicable or QC not run on this batch.

Methodology: Analysis run according to GC conditions specified in EPA Methods 601 & 602. EPA 600/4-82-057 "Methods for Organic Analyses of Municiple and Industrial Wastewaters".

Laboratory Manager

Burmah

Burmah Technical Services, Inc.
Analytical Laboratories Division

408 Auburn Avenue
Pontiac, Michigan 48058

313/334-4747

CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 41730

BATCH QUALITY CONTROL DATA

Parameter	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
Benzene	<2	NA	NA	39	37	97
Toluene	<2	NA	NA	NA	NA	NA
Xylenes	<2	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	<2	NA	NA	NA	NA	NA
Methylene Chloride	<2	NA	NA	NA	NA	NA
MEK	<50	NA	NA	NA	NA	NA
1-Butanol	<500	NA	NA	NA	NA	NA

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Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

NA - Not Applicable or QC not run on this batch.

Methodology: Analysis run according to GC conditions specified in EPA Methods 601 & 602. EPA 600/4-82-057 "Methods for Organic Analyses of Municiple and Industrial Wastewaters".

Christopher P. Jacob

Laboratory Manager

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Pontiac, Michigan 48058
313/33- 47

CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 41795-96; 41803-4; 41853

BATCH QUALITY CONTROL DATA

Parameter	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
Benzene	<2	NA	NA	39	36	94
Toluene	<2	NA	NA	46	44	94
Xylenes	<2	NA	NA	40	38	95
1,1,1-Trichloroethane	<2	NA	NA	33	33	101
Methylene Chloride	<2	NA	NA	37	29	79
MEK	<50	NA	NA	NA	NA	NA
1-Butanol	<500	NA	NA	NA	NA	NA

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Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

NA - Not Applicable or QC not run on this batch.

Methodology: Analysis run according to GC conditions specified in EPA Methods 601 & 602. EPA 600/4-82-057 "Methods for Organic Analyses of Municiple and Industrial Wastewaters".

Laboratory Manager

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CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 48435-39

BATCH QUALITY CONTROL DATA

Parameter	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
Benzene	<2	NA	NA	<2	<2	88
Toluene	<2	NA	NA	<2	<2	85
Xylenes	<2	NA	NA	<2	<2	78
1,1,1-Trichloroethane	<2	NA	NA	<2	<2	106
Methylene Chloride	<2	NA	NA	3	2	93
MEK	<50	NA	NA	NA	NA	NA
1-Butanol	<500	NA	NA	NA	NA	NA

Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

NA - Not Applicable or QC not run on this batch.

Methodology: Analysis run according to GC conditions specified in EPA Methods 601 & 602. EPA 600/4-82-057 "Methods for Organic Analyses of Municiple and Industrial Wastewaters".

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CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 49121-24

BATCH QUALITY CONTROL DATA

Parameter	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
Benzene	<2	NA	NA	<2	<2	91
Toluene	<2	NA	NA	<2	<2	98
Xylenes	<2	NA	NA	<2	<2	128
1,1,1-Trichloroethane	<2	NA	NA	<2	<2	110
Methylene Chloride	<2	NA	NA	<2	<2	104
MEK	<50	NA	NA	NA	NA	NA
1-Butanol	<500	NA	NA	NA	NA	NA

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Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

NA - Not Applicable or QC not run on this batch.

Methodology: Analysis run according to GC conditions specified in EPA Methods 601 & 602. EPA 600/4-82-057 "Methods for Organic Analyses of Municiple and Industrial Wastewaters".

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CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 49126-30; 49125

BATCH QUALITY CONTROL DATA

Parameter	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
Benzene	<2	NA	NA	<2	<2	86
Toluene	<2	NA	NA	<2	<2	94
Xylenes	<2	NA	NA	<2	<2	101
1,1,1-Trichloroethane	<2	NA	NA	<2	<2	101
Methylene Chloride	<2	NA	NA	<2	<2	95
MEK	<50	NA	NA	NA	NA	NA
1-Butanol	<500	NA	NA	NA	NA	NA

Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

NA - Not Applicable or QC not run on this batch.

Methodology: Analysis run according to GC conditions specified in EPA Methods 601 & 602. EPA 600/4-82-057 "Methods for Organic Analyses of Municiple and Industrial Wastewaters".

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CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 41652-56

BATCH QUALITY CONTROL DATA

Parameter	Methodology	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
Arsenic	7061	<0.005	82	NA	<0.005	<0.005	40
Barium	6010	<0.05	182	NA	0.48	0.50	92
Cadmium	6010	<0.01	90	NA	<0.01	<0.01	190
Chromium	6010	<0.02	101	NA	0.03	0.03	95
Copper	6010	<0.02	83	NA	0.14	0.14	95
Lead	6010	<0.05	89	NA	<0.05	<0.05	94
Mercury	7471	<0.0005	92	NA	NA	NA	NA
Selenium	7741	<0.005	92	NA	<0.005	<0.005	76
Silver	6010	<0.02	94	NA	<0.02	<0.02	85
Zinc	6010	<0.02	88	NA	0.02	<0.02	86

Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

NA - Not Applicable or QC not run on this batch.

Methodology: EPA SW 846, "Test Methods for Evaluating Solid Wastes", 2nd Edition

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CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 41660-65

BATCH QUALITY CONTROL DATA

Parameter	Methodology	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
Arsenic	7061	<0.005	112	NA	0.006	<0.005	100
Barium	6010	<0.05	95	NA	0.09	0.08	90
Cadmium	6010	<0.01	98	NA	<0.01	<0.01	100
Chromium	6010	<0.02	110	NA	<0.02	<0.02	100
Copper	6010	<0.02	106	NA	<0.02	<0.02	110
Lead	6010	<0.05	90	NA	<0.05	<0.05	77
Mercury	7471	<0.0005	110	NA	<0.0005	<0.0005	102
Selenium	7741	<0.005	94	NA	<0.01	<0.01	90
Silver	6010	<0.02	85	NA	<0.02	<0.02	90
Zinc	6010	<0.02	105	NA	0.38	0.33	82

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Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

NA - Not Applicable or QC not run on this batch.

Methodology: EPA SW 846, "Test Methods for Evaluating Solid Wastes", 2nd Edition

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CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 41723

BATCH QUALITY CONTROL DATA

Parameter	Methodology	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
Arsenic	7061	<0.005	99	NA	3.6	3.7	(A)
Barium	6010	<0.05	98	NA	150	220	(A)
Cadmium	6010	<0.01	98	NA	<0.4	0.5	69
Chromium	6010	<0.02	102	NA	47	70	(A)
Copper	6010	<0.02	97	NA	44	110	(A)
Lead	6010	<0.05	111	NA	24	18	(A)
Mercury	7471	<0.0005	97	NA	0.02	0.02	142
Selenium	7741	<0.005	93	NA	<0.4	<0.3	(A)
Silver	6010	<0.02	99	NA	0.9	0.7	55
Zinc	6010	<0.02	107	NA	16	9.9	56

Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

A) Sample was spiked at an inappropriate level, therefore, no recovery data is available.

NA - Not Applicable or QC not run on this batch.

Methodology: EPA SW 846, "Test Methods for Evaluating Solid Wastes", 2nd Edition

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CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 48818

BATCH QUALITY CONTROL DATA

Parameter	Methodology	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
Aluminum	200.7	<0.05	95	NA	NA	NA	NA
Arsenic	206.3	<0.005	88	NA	NA	NA	NA
Barium	200.7	<0.05	119	NA	NA	NA	NA
Cadmium	200.7	<0.02	82	NA	<0.01	<0.01	100
Calcium	200.7	<0.02	92	NA	NA	NA	NA
Chromium	200.7	<0.02	108	NA	<0.02	<0.02	110
Copper	200.7	<0.02	85	NA	<0.02	<0.02	90
Iron	200.7	<0.02	89	NA	NA	NA	NA
Magnesium	200.7	<0.02	84	NA	NA	NA	NA
Mercury	245.1	<0.0005	92	NA	NA	NA	NA
Nickel	200.7	<0.02	75	NA	0.02	<0.02	90
Silver	200.7	<0.02	101	NA	NA	NA	NA
Sodium	200.7	<0.02	80	NA	NA	NA	NA
Zinc	200.7	<0.02	85	NA	0.09	0.10	98

Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

NA - Not Applicable or QC not run on this batch.

Methodology: EPA 600/4-79-020, "Methods for Chemical Analysis of Water & Wastes."

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CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 44360-44362, 44730-44731

BATCH QUALITY CONTROL DATA

Parameter	Methodology	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
Lindane	8080	<4	NA	NA	NA	NA	NA
Endrin	8080	<0.2	NA	NA	NA	NA	NA
Methoxychlor	8080	<100	NA	NA	NA	NA	NA
Toxaphene	8080	<5	NA	NA	NA	NA	NA

Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

NA - Not Applicable or QC not run on this batch.

Methodology: EPA SW 846, "Test Methods for Evaluating Solid Wastes", 2nd Edition

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CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 44360-44362

BATCH QUALITY CONTROL DATA

Parameter	Methodology	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
2,4-D	8150	<0.1	100	NA	NA	NA	NA
2,4,5-TP	8150	<0.01	104	NA	NA	NA	NA

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Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

NA - Not Applicable or QC not run on this batch.

Methodology: EPA SW 846, "Test Methods for Evaluating Solid Wastes", 2nd Edition

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CLIENT: DAMES & MOORE

February 27, 1989

ALD NUMBER: 44730-31

BATCH QUALITY CONTROL DATA

Parameter	Methodology	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
2,4-D	8150	<0.1	100	NA	NA	NA	NA
2,4,5-TP	8150	<0.01	104	NA	NA	NA	NA

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Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

NA - Not Applicable or QC not run on this batch.

Methodology: EPA SW 846, "Test Methods for Evaluating Solid Wastes", 2nd Edition.

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February 27, 1989

PARAMETER: LEAD (Pb)

Method: 7420

BATCH QUALITY CONTROL DATA

ALD Numbers	Method Blank Observed Value	Low Level Method Standard % Recovery	High Level Method Standard % Recovery	Original Sample Concentration	Replicate Sample Concentration	Spiked Sample % Recovery
41006-09, 41013, 41015	<0.05	100	NA	NA	NA	NA
41171	<0.05	106	NA	NA	NA	NA
41718-21; 41726-29; 41791-92; 41794 41799-802; 41806-09; 41885-8	<0.05	120	NA	NA	NA	NA
41821-33	<0.05	108	NA	NA	NA	NA
41822	<0.05	102	NA	0.14	0.16	73
41830	<0.05	98	NA	NA	NA	NA
41787-88; 41795-96; 41803-04; 41810	<0.05	112	NA	34	33	(A)
41842-53	<0.05	111	NA	24	18	6
41881-82; 41889-90; 41897-98 41902-03; 41910-11	<0.05	111	NA	NA	NA	NA

Please note that the data reported for the original sample concentration, replicates & spikes were analyzed in the same batch, but may not necessarily be that of your sample.

A) Sample was spiked at an inappropriate level, therefore, no recovery data is available.

NA - Not Applicable or QC not run on this batch.

Methodology: EPA SW 846, "Test Methods for Evaluating Solid Wastes", 2nd Edition

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GC Methodology

Quality Control Data

A surrogate standard was spiked into all samples submitted for volatile analysis. The surrogate analate used was 1-chlorobutane at a concentration of 36.8 ug/l. The following table lists the recovery values of the surrogate with the associated laboratory identification numbers:

ALD Number	Surrogate Recovery (%)
41715	98
41718	87
41719	86
41720	84
41721	79
41722	101
41723	104
41726	90
41727	93
41728	102
41729	102
41730	80
41791	88
41792	84
41793	98
41794	106
41799	109
41800	103
41801	88
41802	99
41803	84
41804	99
41806	104
41807	92
41808	102
41809	88
41810	94

No compounds were detectable in Method Blanks.

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Burmah

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GC Methodology

Quality Control Data

A surrogate standard was spiked into all samples submitted for volatile analysis. The surrogate analate used was 1-chlorobutane at a concentration of 36.8 ug/l. The following table lists the recovery values of the surrogate with the associated laboratory identification numbers:

ALD Number	Surrogate Recovery (%)
41842	82
41843	123
41844	127
41845	106
41846	115
41847	111
41848	81
41849	75
41850	55
41851	70
41852	75
41853	125
41871	NA
41881	99
41882	93
41885	97
41886	109
41887	100
41888	101
41889	96
41890	94
41893	99
41894	103

No compounds were detectable in Method Blanks.

NA - Not Available

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GC Methodology

Quality Control Data

A surrogate standard was spiked into all samples submitted for volatile analysis. The surrogate analate used was 1-chlorobutane at a concentration of 36.8 ug/l. The following table lists the recovery values of the surrogate with the associated laboratory identification numbers:

ALD Number	Surrogate Recovery (%)
41895	88
41896	97
41897	80
41898	102
41901	101
41902	93
41903	80
41906	89
41907	102
41908	107
41909	103
41910	91
41911	108
41975	99
41976	114
41977	97
41978	96
41979	101
41982	102
41983	102
41984	84
41986	94
41987	98

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No compounds were detectable in Method Blanks.

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GC Methodology

Quality Control Data

A surrogate standard was spiked into all samples submitted for volatile analysis. The surrogate analate used was 1-chlorobutane at a concentration of 36.8 ug/l. The following table lists the recovery values of the surrogate with the associated laboratory identification numbers:

ALD Number	Surrogate Recovery (%)
41990	95
41994	94
41995	96
48435	103
48436	116
48437	99
48438	122
48439	110
48440	104
48441	98
48442	70
48443	79
48444	108
48445	102
48446	92
48447	90
48448	92
48449	90
48450	85
48451	99
48573	106
48722	86

No compounds were detectable in Method Blanks.

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GC Methodology

Quality Control Data

A surrogate standard was spiked into all samples submitted for volatile analysis. The surrogate analate used was 1-chlorobutane at a concentration of 36.8 ug/l. The following table lists the recovery values of the surrogate with the associated laboratory identification numbers:

ALD Number	Surrogate Recovery (%)
49121	99
49122	95
49123	98
49124	96
49125	97
49126	98
49127	100
49128	99
49129	101
49130	104

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No compounds were detectable in Method Blanks.

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APPENDIX C

BORING LOGS

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Depth (Feet)	Sample Location	Sample Number	USCS Symbol	DESCRIPTION OF SUBSURFACE MATERIALS
0		1		Medium gravel FILL with some black fine foundry sand
		2		
		3		grades with more foundry sand, moist
		4		
5		5		grades to all black foundry sand, no gravel
10		6		
15		7		
20		8		Light brown fine SAND, loose, moist

Boring terminated st 20.5 feet on 7/25/88.
Hole dry.

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Dames & Moore

Job No.
00299-164-14

CPC
Pontiac, Michigan

BACKGROUND
SOIL BORING 1

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Depth (Feet)	Sample Location	Sample Number	USCS Symbol	DESCRIPTION OF SUBSURFACE MATERIALS
0		1		Black fine foundry sand, loose, dry
		2		
		3		with some fine to medium gravel
		4		
5		5		
10		6		
15		7		with some thin gray sand seams
20		8		

Boring terminated st 20.5 feet on 7/25/88.
Hole dry.

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Dames & Moore Job No. 00299-164-14	CPC Pontiac Michigan	BACKGROUND SOIL BORING 2

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Depth (Feet)	Sample Location	Sample Number	USCS Symbol	DESCRIPTION OF SUBSURFACE MATERIALS
0		1		Black fine foundry sand, loose, dry
		2		
		3		
		4		
5		5		
10		6		
				Light brown silty fine SAND, loose to medium dense, moist
15		7		
20		8		

Boring terminated st 20.5 feet on 7/25/88.
Hole dry.

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Dames & Moore

Job No.
00299-164-14

CPC
Pontiac, Michigan

BACKGROUND
SOIL BORING 3

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Depth (Feet)	Sample Location	Sample Number	USCS Symbol	DESCRIPTION OF SUBSURFACE MATERIALS
0		1		Black fine foundry sand, loose, dry
		2		
		3		with medium to large slag fragments
		4		
5		5		
10				
15				
20				

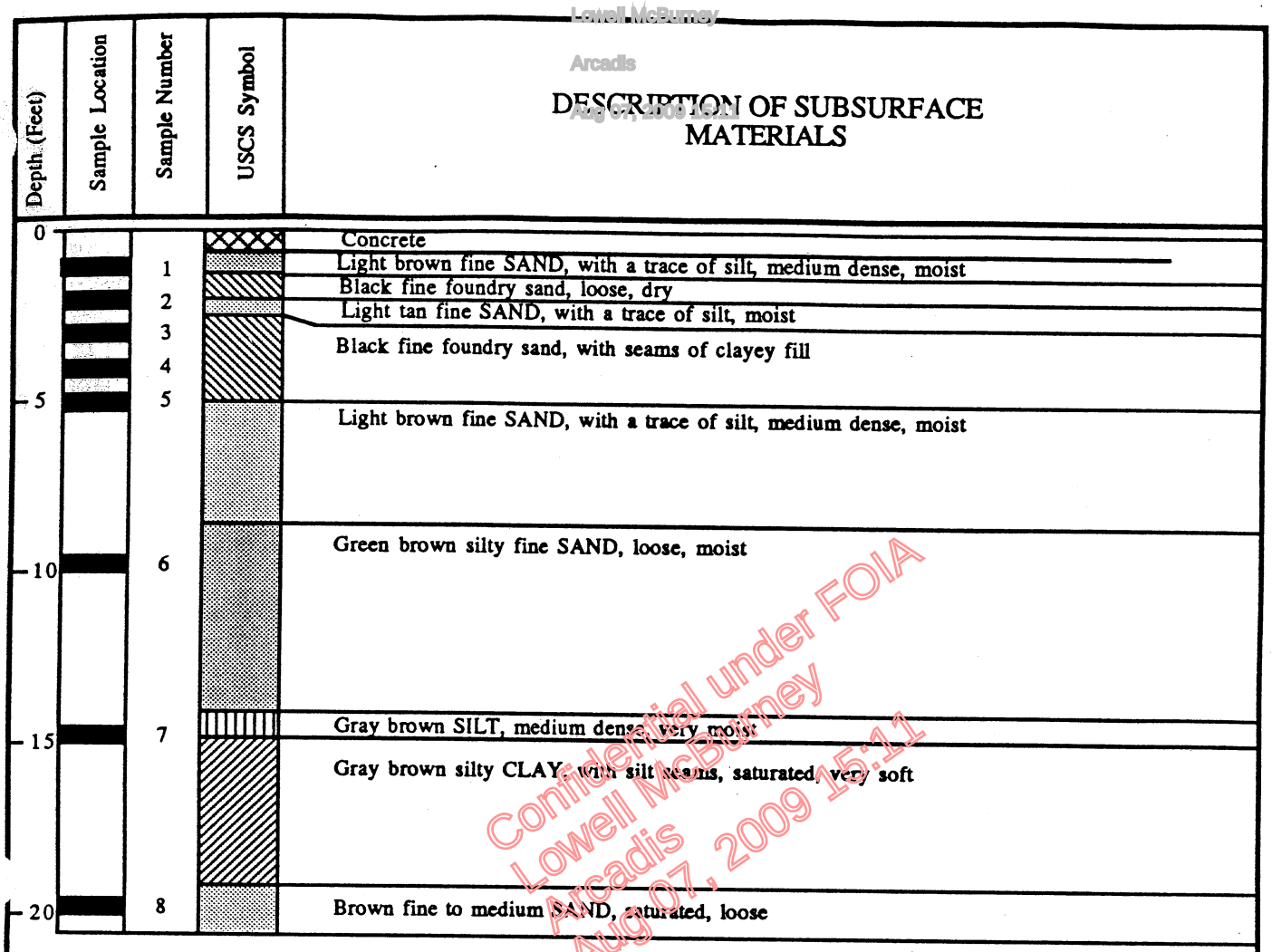
Auger refusal on three separate attempts; boring terminated st 5.0 feet on 7/25/88. Hole dry.

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Dames & Moore Job No. 00299-164-14	CPC Pontiac, Michigan	BACKGROUND SOIL BORING 4

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Boring terminated st 20.5 feet on 7/26/88.

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Dames & Moore Job No. 00299-164-14	CPC Pontiac, Michigan	STORAGE PAD SOIL BORING 1

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Depth (Feet)	Sample Location	Sample Number	USCS Symbol	DESCRIPTION OF SUBSURFACE MATERIALS
0		1		Concrete
		2		Black fine foundry sand, loose, dry
		3		Light brown fine SAND, with silt, loose, moist
		4		
5		5		grades black with a strong chemical odor
10		6		grades tan with same chemical odor
15		7		Gray SILT, medium dense, very moist
				Gray silty CLAY, with silt seams, saturated, soft
20		8		Brown fine to medium SAND, with some fine gravel, saturated, loose

Boring terminated st 20.5 feet on 7/26/88.

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Dames & Moore Job No. 00299-164-14	CPC Pontiac, Michigan	STORAGE PAD SOIL BORING 2

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Depth (Feet)	Sample Location	Sample Number	USCS Symbol	DESCRIPTION OF SUBSURFACE MATERIALS
0		1	XXXX	Concrete
		2		Light brown fine SAND, with a trace of silt, loose, slightly moist
		3		Black fine foundry sand, loose, moist
		4		grades brown and black
5		5		Gray very sandy CLAY, with a trace of coarse sand, medium stiff, moist
10		6		
				Brown SILT, medium dense, very moist to wet
15		7		Brown silty fine to very fine SAND, loose to medium dense, saturated
20		8		Gray CLAY, with a trace of silt, soft, saturated

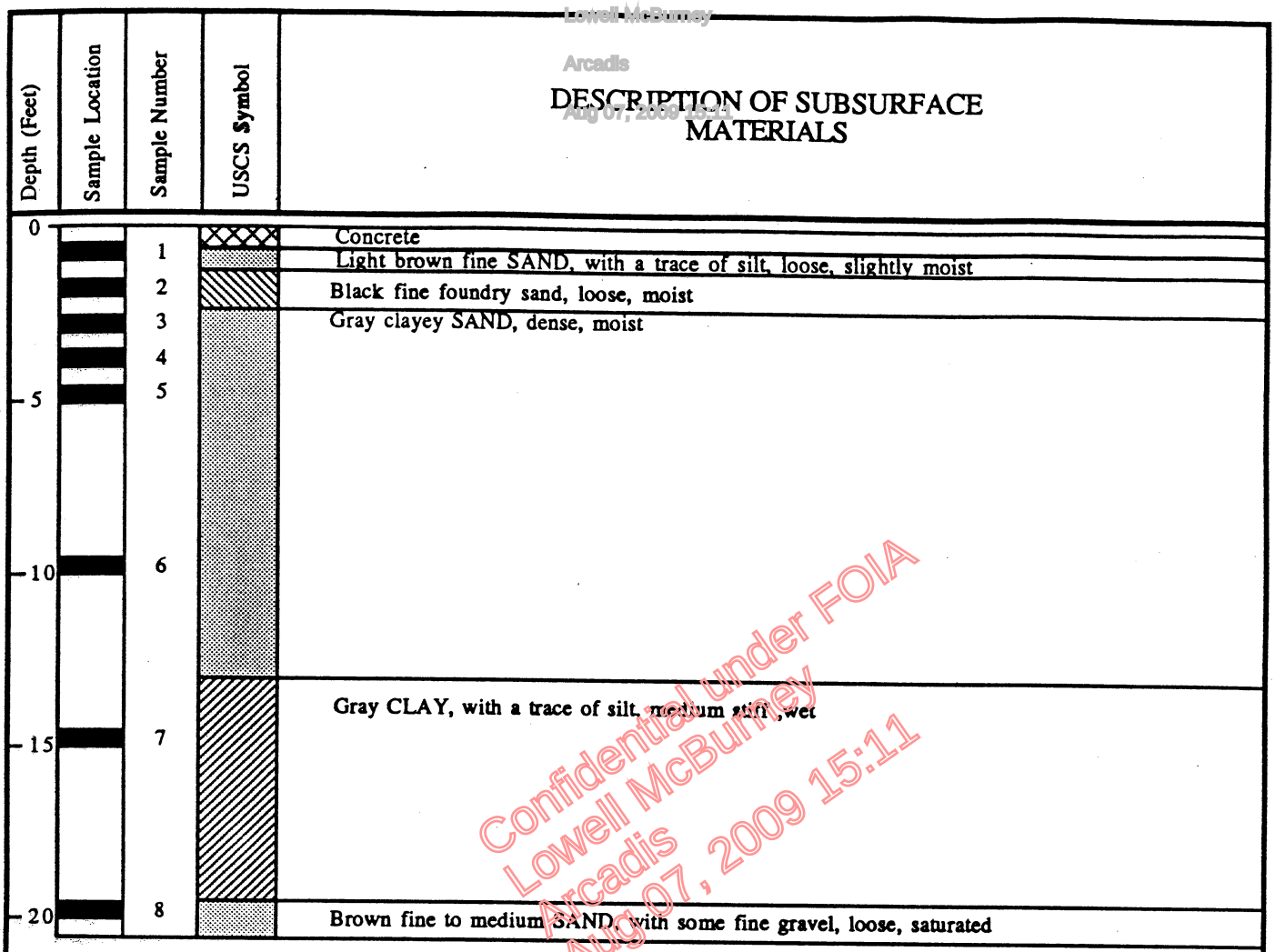
Boring terminated st 20.5 feet on 7/27/88.

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Dames & Moore Job No. 00299-164-14	CPC Pontiac Michigan	STORAGE PAD SOIL BORING 3

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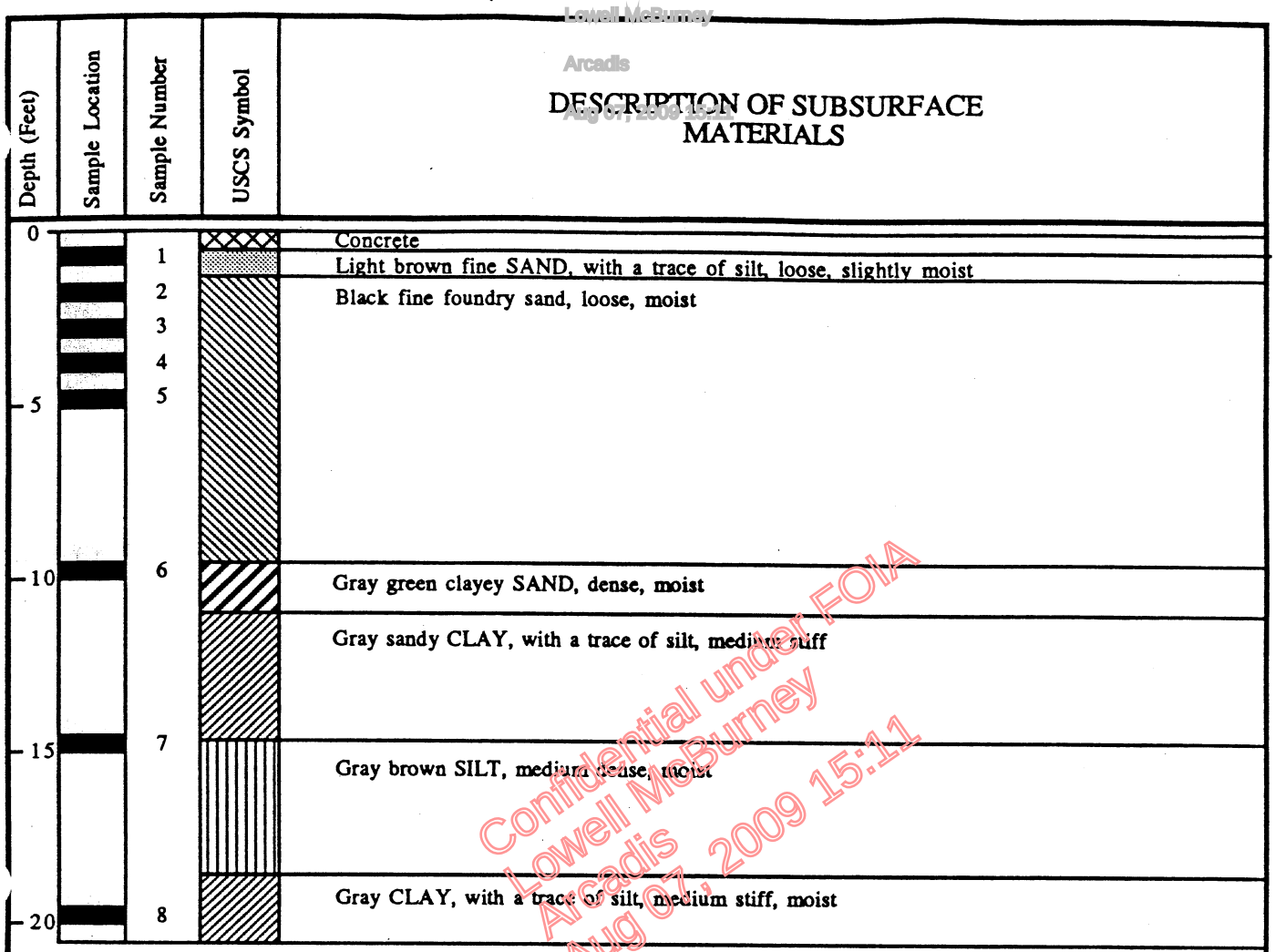
Boring terminated st 20.5 feet on 7/27/88.

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Dames & Moore Job No. 00299-164-14	CPC Pontiac, Michigan	STORAGE PAD SOIL BORING 4

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Depth (Feet)	Sample Location	Sample Number	USCS Symbol	DESCRIPTION OF SUBSURFACE MATERIALS
0				Concrete
		1		Light brown fine SAND, with a trace of silt, medium dense, moist
		2		
		3		Black fine foundry sand, loose, moist
		4		
		5		Gray sandy CLAY, soft to medium stiff, moist
5				Black fine foundry sand, medium dense, moist
				Light brown fine SAND, with a trace of silt, loose moist
10		6		Gray sandy CLAY, with some fine gravel, stiff, moist
				Gray green SILT, medium dense, saturated
15		7		Gray CLAY, with a trace of silt, soft, saturated
20		8		

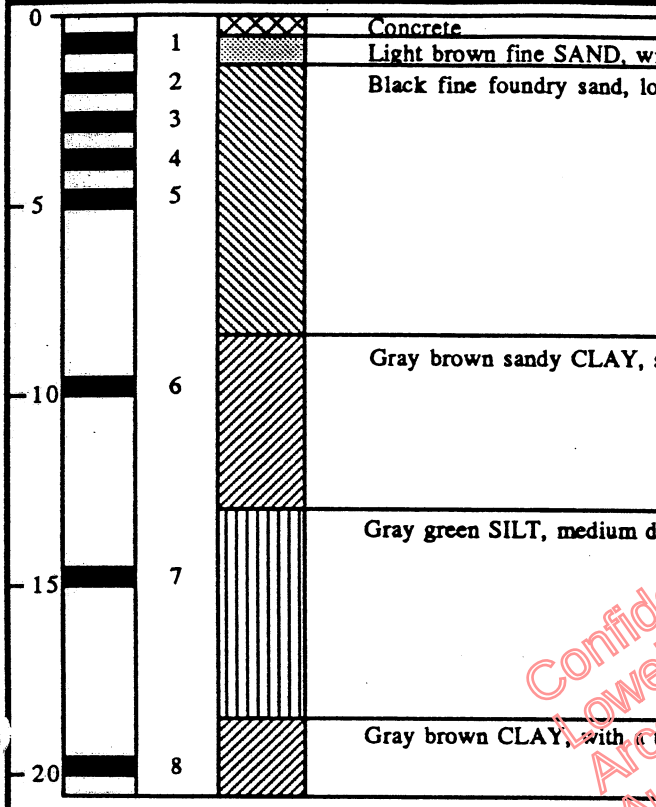
Boring terminated st 20.5 feet on 7/27/88.

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Dames & Moore Job No. 00299-164-14	CPC Pontiac, Michigan	STORAGE PAD SOIL BORING 6

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DESCRIPTION OF SUBSURFACE MATERIALS

Concrete

Light brown fine SAND, with a trace of silt, medium dense, moist

Black fine foundry sand, loose, moist

Gray brown sandy CLAY, stiff, moist

Gray green SILT, medium dense, very moist

Gray brown CLAY, with a trace of silt, soft, saturated

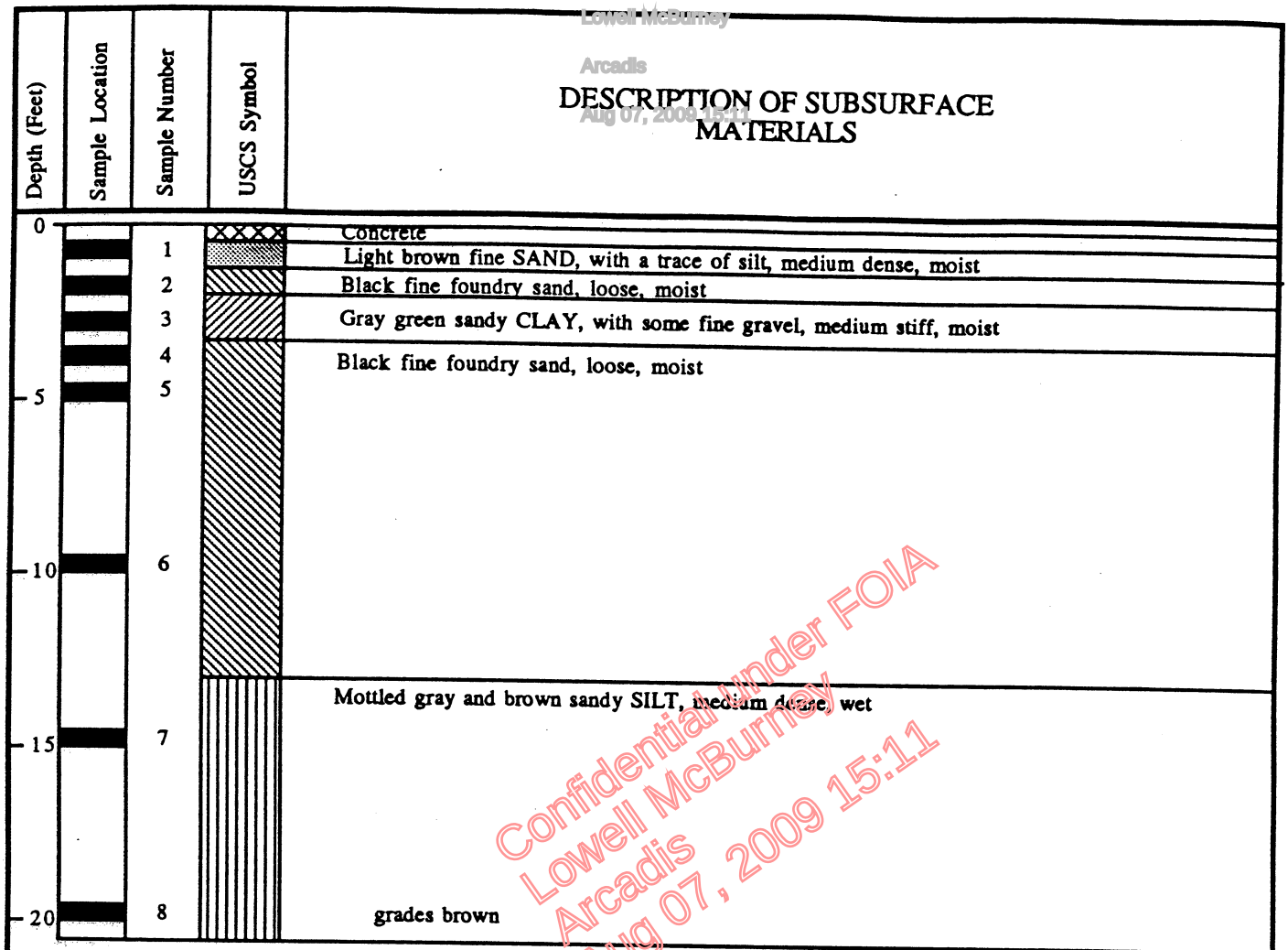
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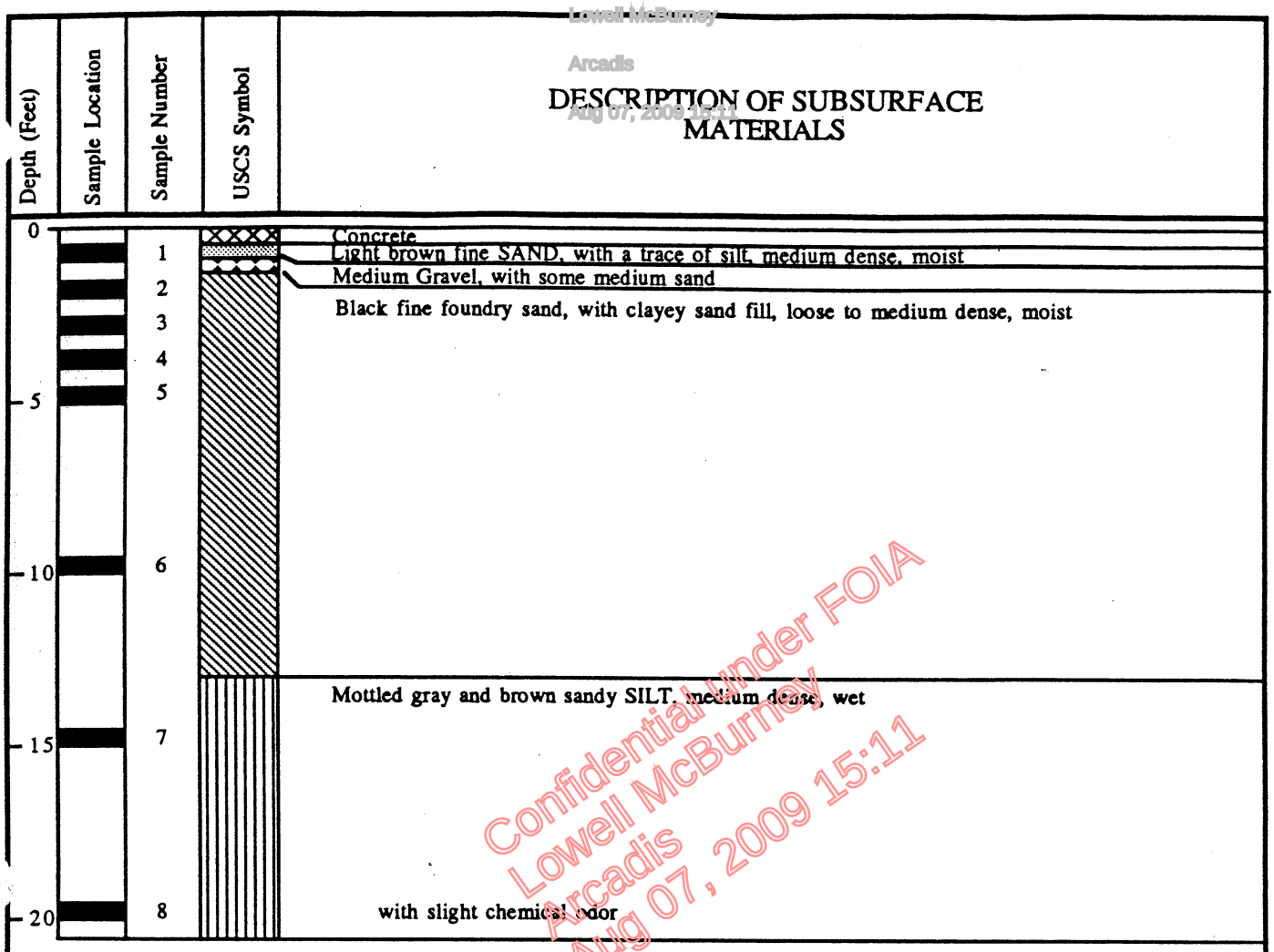
Boring terminated st 20.5 feet on 7/29/88.

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Dames & Moore Job No. 00299-164-14	CPC Pontiac, Michigan	STORAGE PAD SOIL BORING 8

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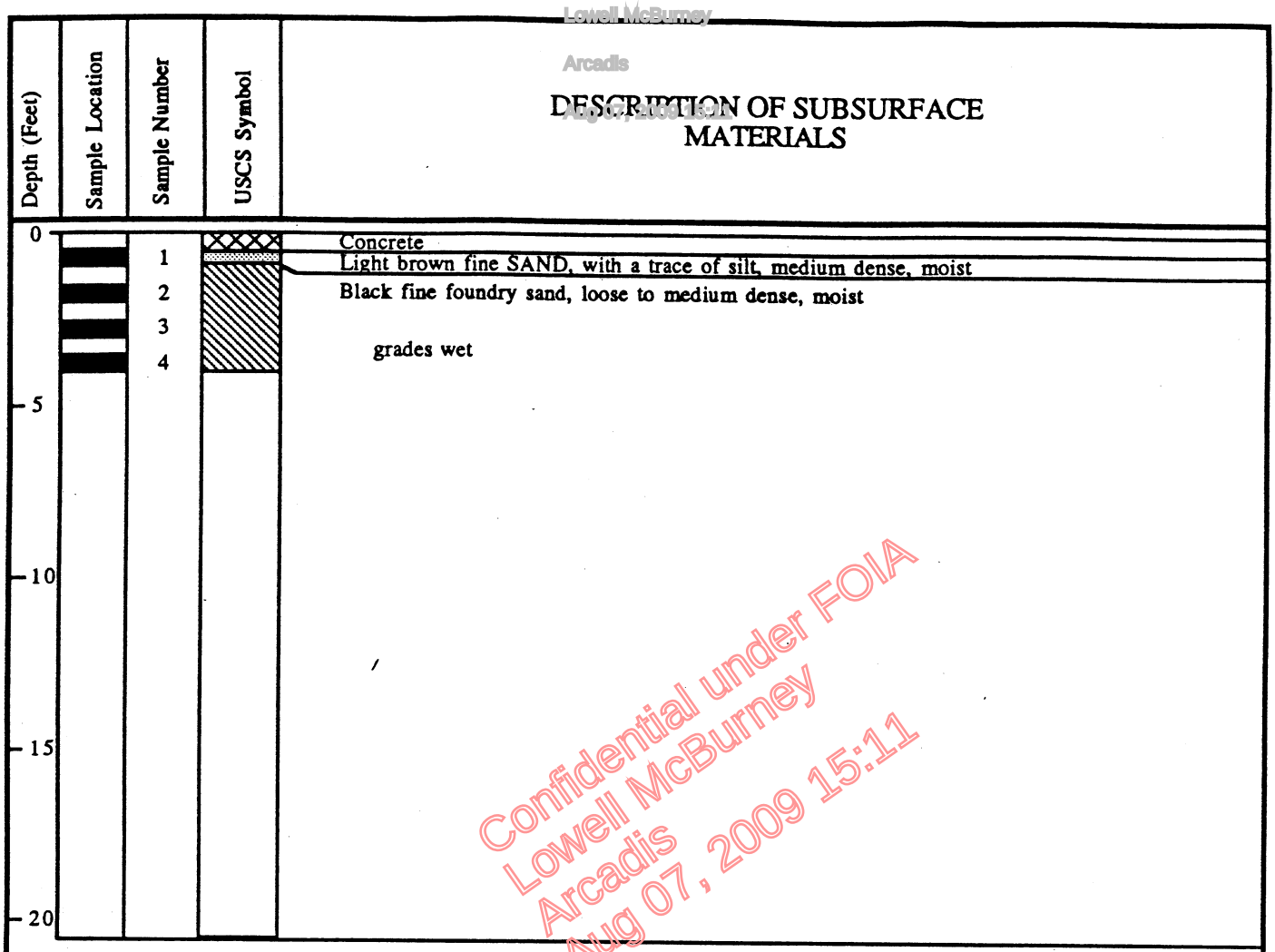
Boring terminated st 20.5 feet on 7/29/88.

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Dames & Moore Job No. 00299-164-14	CPC Pontiac, Michigan	STORAGE PAD SOIL BORING 9

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Boring terminated st 4.5 feet on 7/29/88 due to the same type of obstruction encountered in background boring 4.

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Depth (Feet)	Sample Location	Sample Number	USCS Symbol	DESCRIPTION OF SUBSURFACE MATERIALS
0				Concrete
		1		Light brown fine SAND, with a trace of silt, medium dense, moist
		2		Black fine foundry sand, loose, moist
		3		
		4		
5		5		
				void encountered at approimately 9.5 feet, cause unknown
10				
		6		Mottled gray and brown sandy SILT, medium dense, wet
15		7		grades dark green with an oily sheen
				Gray silty CLAY, very soft, wet
20		8		

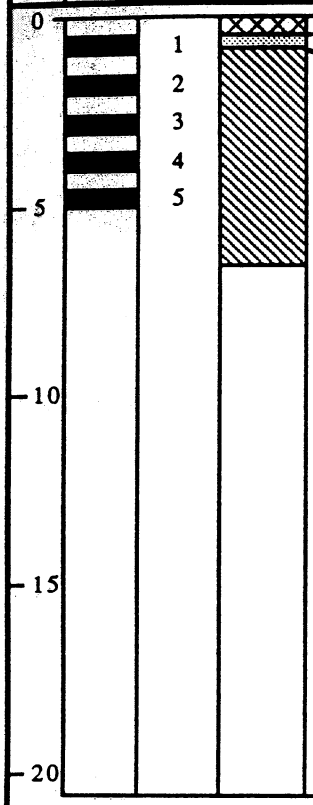
Boring terminated st 20.5 feet on 7/28/88.

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DESCRIPTION OF SUBSURFACE MATERIALS

Concrete

Light brown fine SAND, with a trace of silt, medium dense, moist

Black fine foundry sand, loose to medium dense, moist

grades clayey with a sweet chemical odor

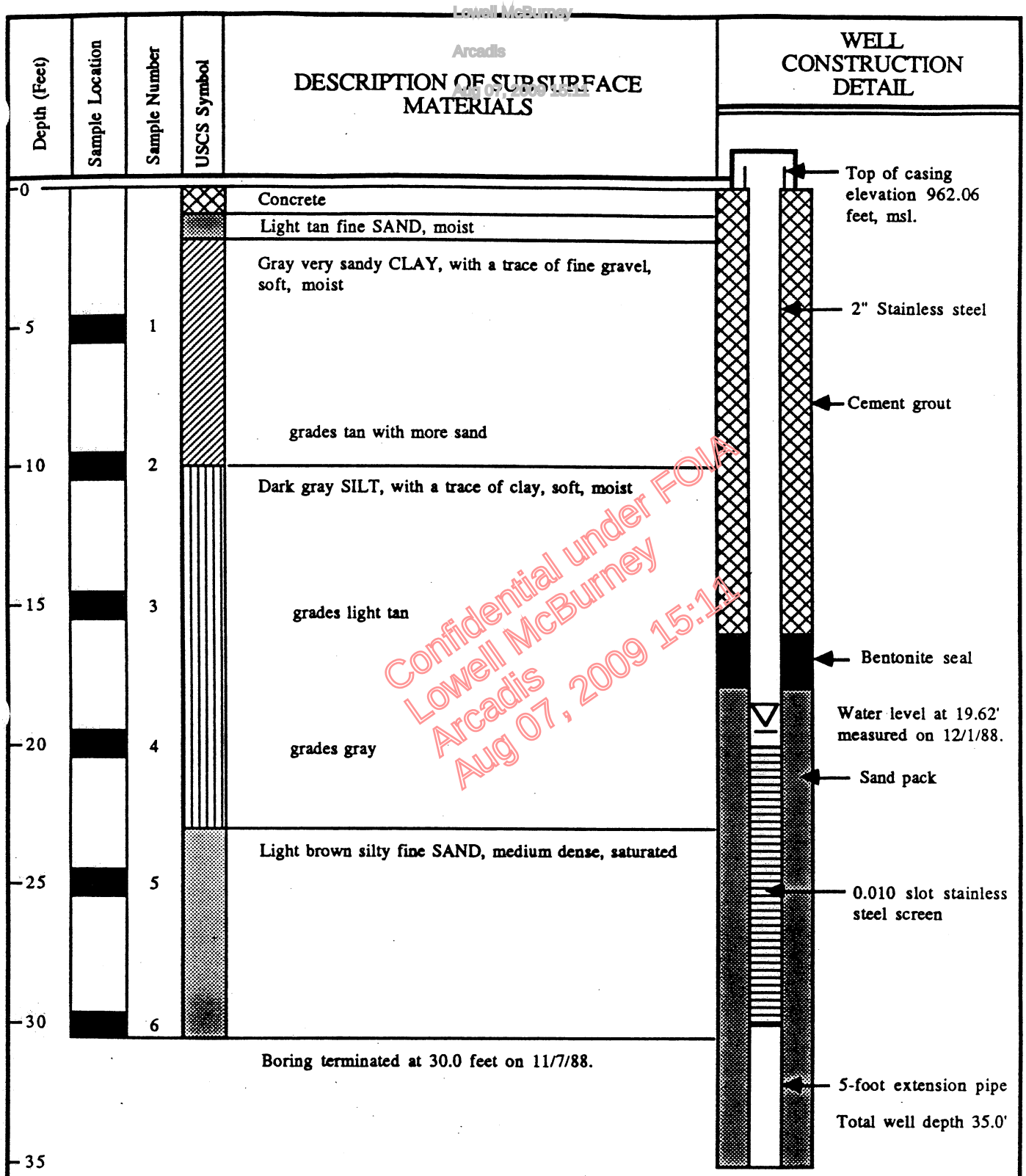
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Boring terminated st 6.5 feet on 7/29/88 due to the same type of obstruction encountered in background boring 4.

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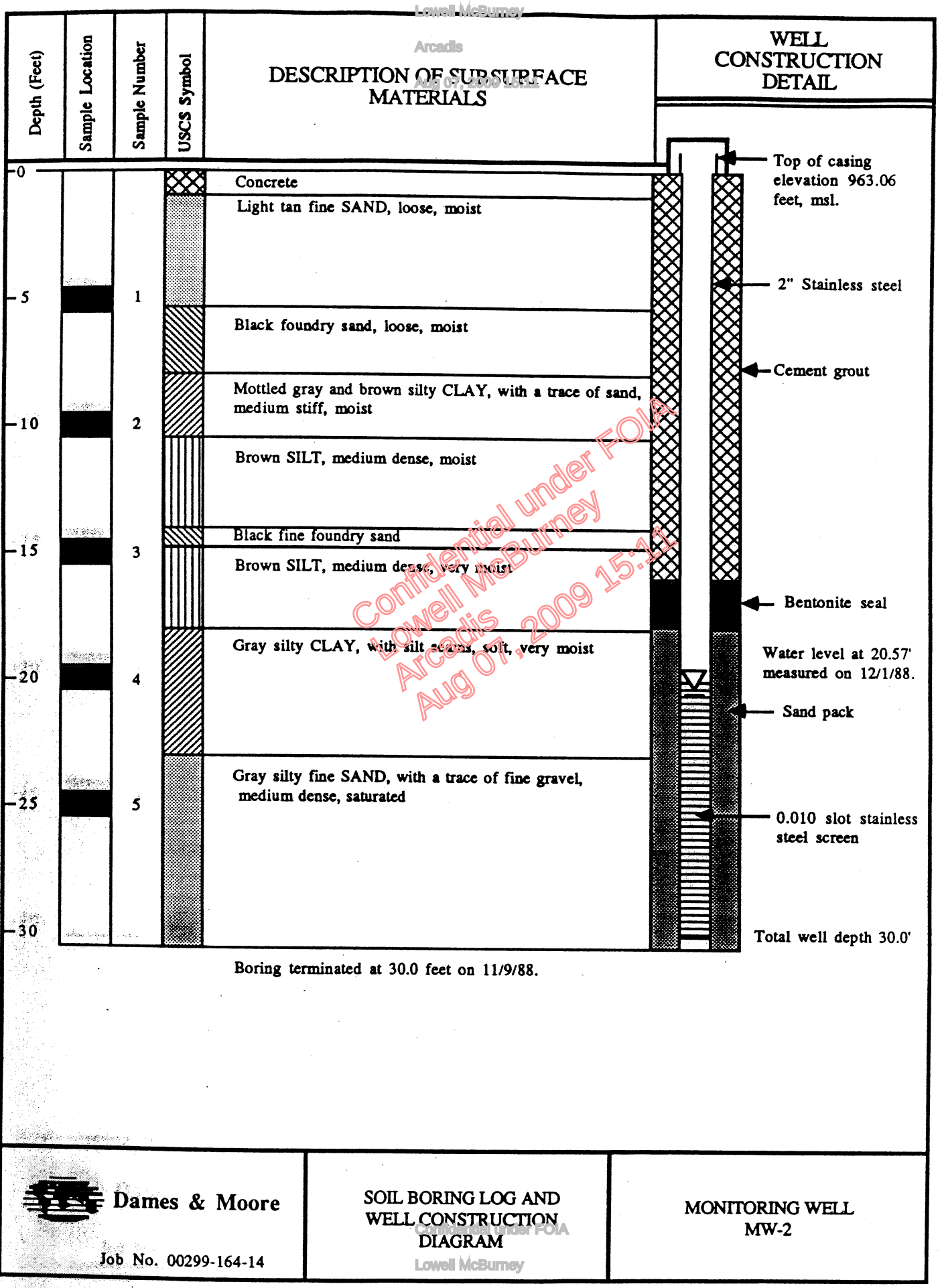
Job No. 00299-164-14

SOIL BORING LOG AND WELL CONSTRUCTION DIAGRAM

MONITORING WELL MW-1

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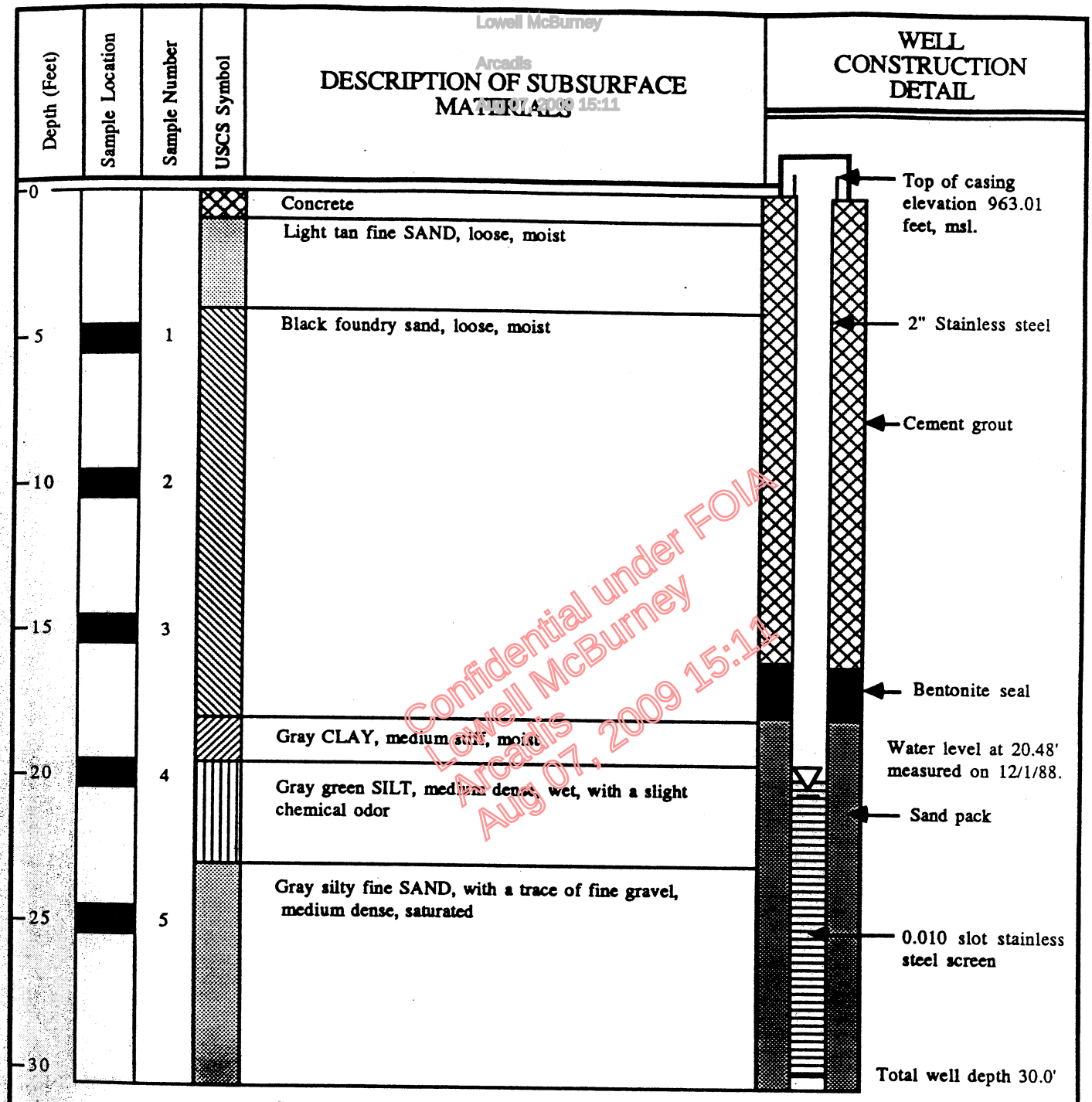
Boring terminated at 30.0 feet on 11/9/88.

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Dames & Moore Job No. 00299-164-14	SOIL BORING LOG AND WELL CONSTRUCTION DIAGRAM	MONITORING WELL MW-2

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Boring terminated at 30.0 feet on 11/10/88.

Dames & Moore

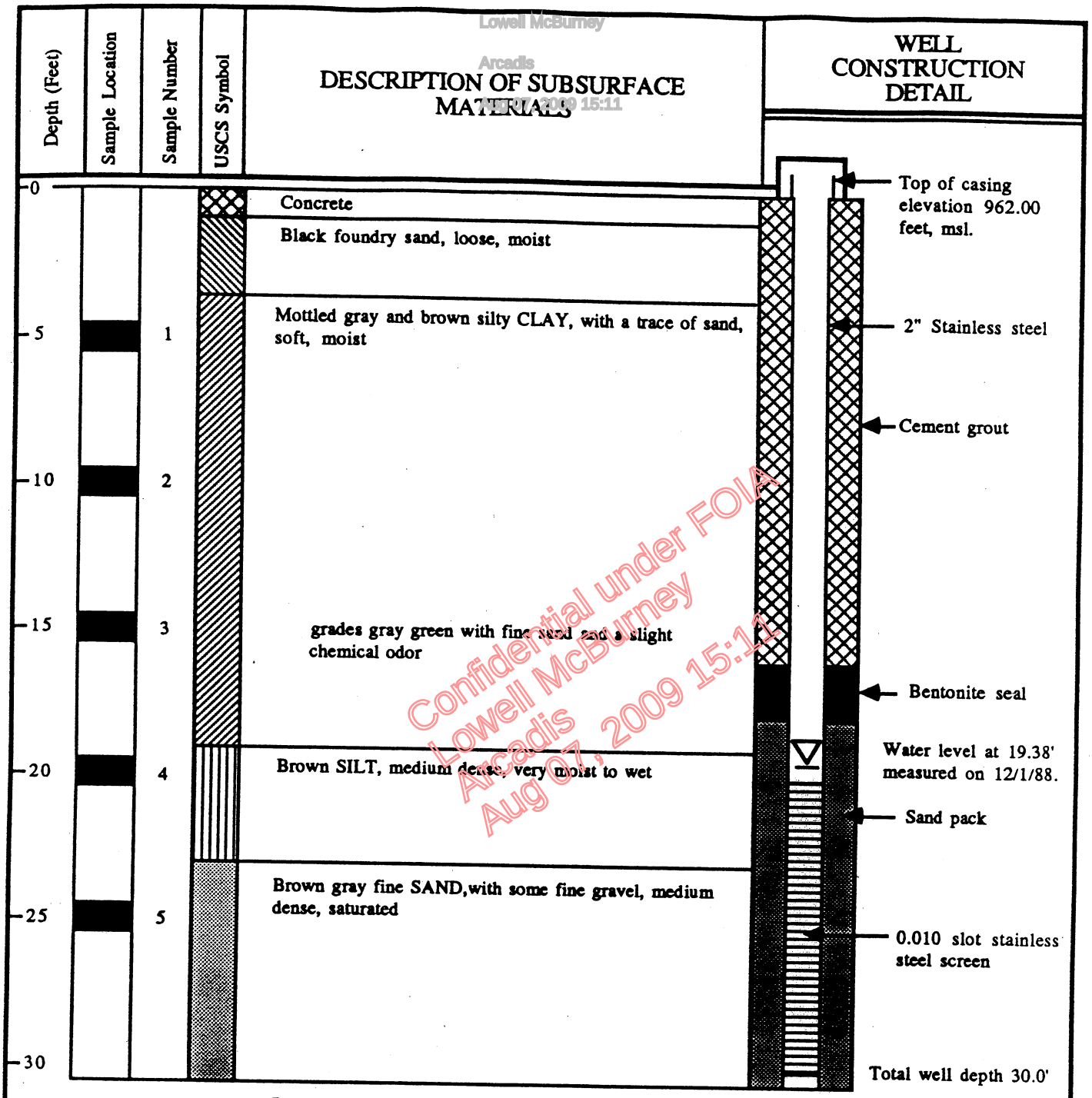
Job No. 00299-164-14

SOIL BORING LOG AND WELL CONSTRUCTION DIAGRAM

MONITORING WELL MW-3

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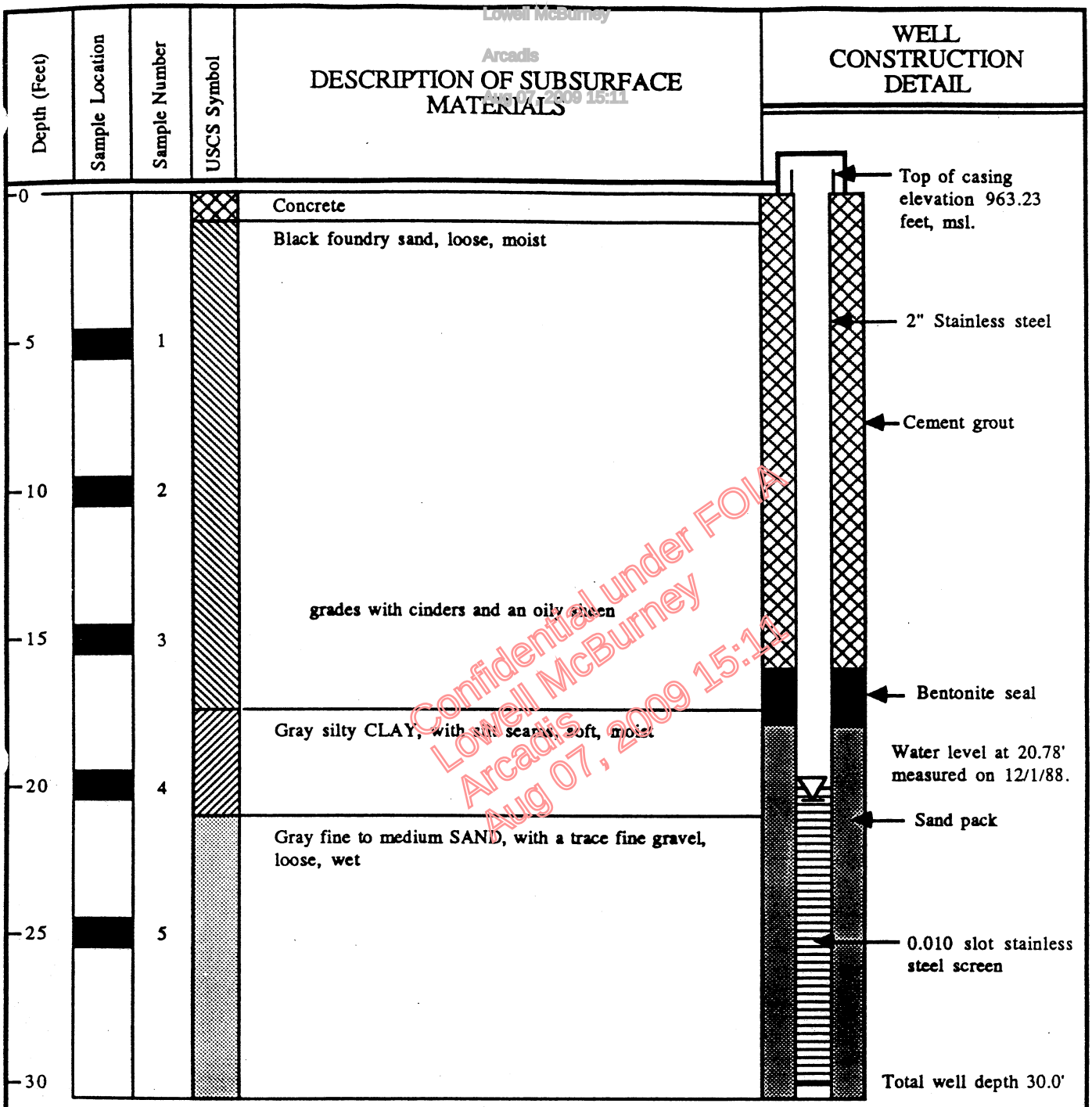
Boring terminated at 30.0 feet on 11/28/88.

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SOIL BORING LOG AND WELL CONSTRUCTION DIAGRAM

MONITORING WELL MW-5

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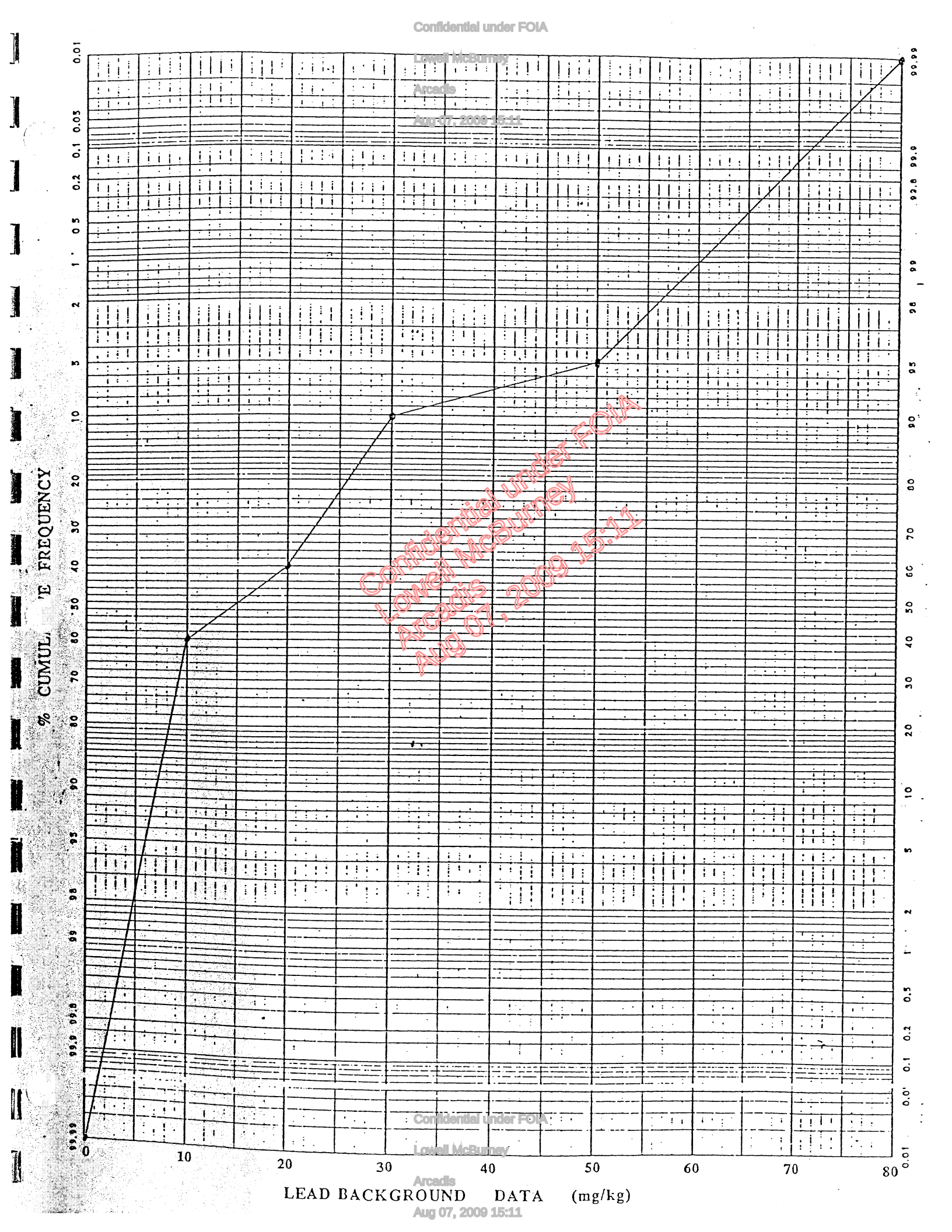
APPENDIX D

PROBABILITY GRAPHS

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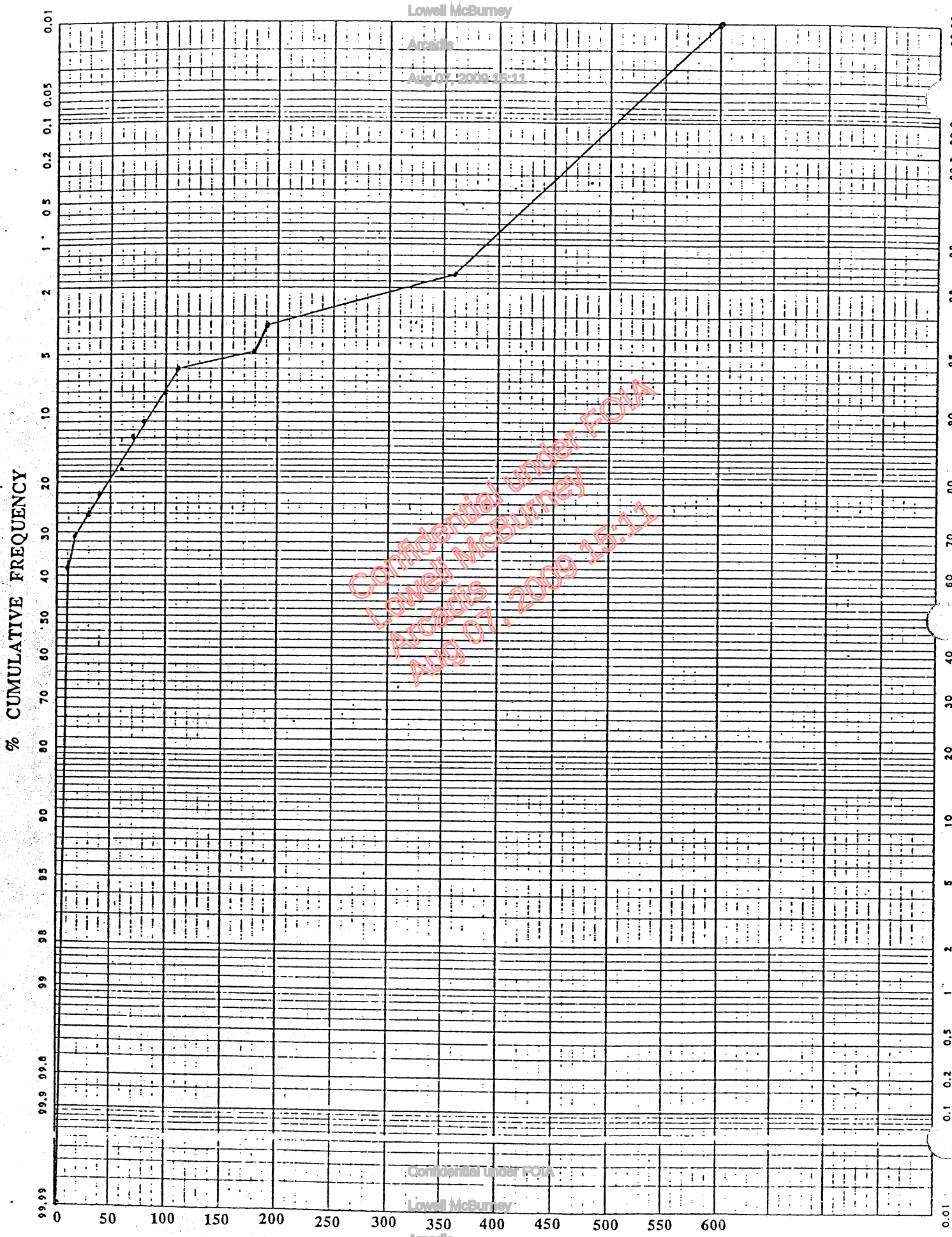
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NATURAL RESOURCES COMMISSION
MARLENE J. FLUHARTY
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RAYMOND POUPORE

STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING
P.O. BOX 30028
LANSING, MI 48909

DELBERT RECTOR, Director

July 31, 1991

Mr. Dale G. Gossiaux
CPC-Pontiac
General Motors Corporation
One Pontiac Plaza
Pontiac, Michigan 48058-3486

Dear Mr. Gossiaux:

SUBJECT: Closure Plan Amendment and Corrective Action
CPC-Pontiac Facility; MID 005 356 886

The December 6, 1990, closure plan amendment for the subject facility is not acceptable because the extent of contamination is not known, and the proposed groundwater and soil vapor extraction systems do not provide a final remediation for the contamination. General Motors Corporation, CPC-Pontiac (CPC) must comply with the approved closure plan and identify the extent of contamination around the container storage area. Upon identifying the full extent of contamination, CPC must remediate all contamination in accordance with the approved closure plan. CPC must submit for approval a schedule for completing these remaining closure activities.

As presented in this letter, CPC may pursue other remediation options for the contamination beneath the container storage area, but those options cannot be pursued until the extent of contamination has been defined. If subsequent environmental data is sufficient to demonstrate that it is not practical to remove all contaminated soils at closure, then the approved closure plan can be amended to authorize long-term containment measures. If the subsequent environmental data is sufficient to demonstrate that multiple sources contributed to the contamination, and that removal is not practical, then it may be appropriate to integrate the cleanup of contaminated soils beneath the container storage area with a comprehensive remediation strategy for all sources that contributed to the contamination. This latter approach, to integrate closure activities with the corrective action requirements for the solid waste management units at the facility, may be the most practical means to address the contamination.

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Unit Description

The hazardous waste management unit at issue is the outdoor container storage area located south of the salvage building, in the southwest corner of the property. The area is constructed of an 8-inch thick reinforced concrete pad, approximately 300 feet by 90 feet in size, with 4-inch high curbing and ramps. According to CPC, when the concrete pad was constructed in the early 1980's, visually-contaminated soils were excavated to depths averaging 5 feet, and replaced with foundry sand. The area was used to store spent solvents (F001 and F005), ignitable wastes (D001), and EP toxic wastes (D008; lead) in drums and roll-off boxes. Drum washing operations were conducted in the northern end of the storage area.

Approved Closure Plan

The closure plan for the storage area was modified and approved by the Michigan Department of Natural Resources (MDNR) on June 8, 1988. The objective of the approved closure plan, consistent with the closure performance standard of R 299.9601(3) and 40 CFR §265.111, is to close the area in a manner that is protective of the public health and environment, and in a manner that eliminates the need for any further maintenance or controls. The approved closure plan requires the decontamination of the hazardous waste container storage area and the removal of all contaminated structures and soils. Contamination is defined in the approved plan as heavy metals concentrations significantly above naturally-occurring background concentrations, and detectable concentrations of organic hazardous constituents (see note below). Soil (and groundwater) sampling and analysis is required to determine the extent of

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NOTE: *On August 4, 1988, General Motors Corporation filed a petition for a contested case hearing. The issue contested was the MDNR's stipulation for approval of the closure plan. The MDNR stipulated that the soils must be considered contaminated if detectable levels of organic hazardous constituents were present. The MDNR now considers the petition invalid. A recent court decision affirmed the MDNR position that closure plan stipulations cannot be contested via an administrative appeal. The State of Michigan, Court of Appeals, on May 7, 1991, affirmed a circuit court ruling that General Motors Corporation is not entitled to contested case hearing for a similar dispute at a another CPC facility.*

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contamination, and to verify the effectiveness of excavation activity.

Status of Closure

Based on reports from CPC, all hazardous wastes were removed from the storage area and disposed off-site. The pad was then decontaminated using high water pressure washing equipment. Initial soil samples were collected in July, 1988. The soil and groundwater sampling program was subsequently expanded after the initial samples showed the presence of contamination beneath the pad. CPC has not excavated or removed any contaminated soils, and the concrete pad remains intact.

Soil and Groundwater Contamination

The soil and groundwater sampling and analyses done as part of closure have been limited to the area immediately beneath the storage area. The horizontal and vertical extent of the contamination are not known. Hazardous waste management activities on the storage area clearly have caused contamination of underlying soils and groundwater.

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The maximum concentrations (mg/Kg) of constituents analyzed in the foundry sand backfill are benzene (18), methylene chloride (78), methyl ethyl ketone (770), toluene (230), 1,1,1-trichloroethane (300), xylenes (600), and lead (180). Soil borings extending below 20 feet, through other soil strata, do not define the vertical extent of this contamination.

The investigations also show that groundwater is impacted by hazardous waste management activities on the storage area. Concentrations (µg/l) of certain constituents analyzed in groundwater include benzene (110), ethylbenzene (8), toluene (375), xylenes (40), and lead (110). Separate phase hydrocarbons (free product) were detected in at least one well. A comparison with upgradient groundwater quality indicates that the source of contamination is leachate from the contaminated soils beneath the storage area.

Some contamination may be the result of multiple sources. Historical waste management practices at the CPC site (e.g., use of contaminated fill material), and continuing releases from active solid waste management units (unidentified) may contribute significantly to the contamination found at depth (i.e., below 10 - 20 feet) beneath the storage area.

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Provisions for Amending Approved Closure Plans

Formal procedures and substantive criteria for amending (modifying) approved closure plans are established in R 299.9601(1) and (3) and 40 CFR §265.112(c), which is adopted by reference in R 299.11003. The regulations stipulate that a modification to an approved closure plan must be requested within 30 days after an unexpected event has occurred during closure which affects the closure plan. Closure plan modifications are expected to be final in nature (e.g., in lieu of removal, providing treatment to acceptable contaminant concentrations or providing long-term containment).

Closure Plan Amendment

CPC proposes to amend the approved closure plan to authorize soil vapor and groundwater extraction in lieu of destroying the concrete pad and excavating the contaminated soils. While target concentrations are not specified, the apparent intent of the extraction system is to remove volatile organics to acceptable risk-based levels. The amendment does not include any proposal for remediating the lead contamination.

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The proposed extraction system cannot be endorsed by MDNR for the following reasons:

1) CPC has failed to define the extent of contamination (complete second phase of closure work). Without knowing the extent of contamination, and without fully investigating other potential sources for the contamination, the basis of design for the soil vapor and groundwater extraction systems cannot be justified.

2) CPC has failed to demonstrate that the soil vapor extraction system can remove volatile organics to acceptable, risk-based levels. The amendment does not propose any target levels for the extraction system, and pilot study results presented in the documents do not include sufficient performance data for concentrations of contaminants removed. In addition, the documents note that the extraction system will not be effective in the silty clay zone near extraction well SV-1.

3) CPC has failed to recognize its responsibility to remediate the lead contamination. Despite the claims presented in Dames & Moore's endangerment assessment,

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the lead concentrations in the soils do present a threat to human health and the environment. An acceptable risk-based concentration for lead is the naturally-occurring background concentration - not levels such as 590 mg/Kg. Under R 299.9601(3) and 40 CFR §265.111, the MDNR cannot approve a plan that does not propose either the removal or long-term containment of the lead-contaminated soils.

The amendment also is not acceptable because: CPC does not propose to define the extent of contamination (second phase of closure work); details on the types of environmental monitoring to confirm the effectiveness of the soil vapor and groundwater extraction systems were not provided; and sufficient technical information on the extraction system equipment, installation, and operation were not provided.

Given the extensive contamination at the storage area, and the potential for multiple sources [i.e., the hazardous waste container storage area and other solid waste management units (SWMUs)] contributing to this contamination, remediation activities may be beyond the scope of an Act 64 closure plan. The approved closure plan and Act 64 regulations require the excavation of all contaminated soils beneath and surrounding the storage area, and the remediation and monitoring of contaminated groundwater. However, if multiple sources for the contamination are in fact present, then it may not be practical to direct all remediation activities with a closure plan developed for the container storage area. (Even if multiple sources are not identified, if the extent of contamination is such that it cannot be practicably removed, then an alternate remediation method may be appropriate.) Under the unique circumstance at this site, it may be advisable to integrate the cleanup and monitoring activities for the storage area closure with a comprehensive corrective action strategy that addresses all contamination identified in that area of the facility.

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Corrective Action

Regardless of the cleanup approach for the container storage area, CPC may be required to remediate releases of hazardous wastes or hazardous constituents from solid waste management units at the CPC-Pontiac facility. Under the federal Hazardous and Solid Waste Amendments of 1984 (HSWA), such releases must be cleaned up or controlled to the extent necessary to protect the public health and the environment.

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The corrective action requirements include an assessment of all solid waste management units at the facility, an investigation of potential releases, a study of alternative corrective measures, and implementation of the selected alternative. The effectiveness of proposed corrective measures will be evaluated based on the cleanup standards provided for under applicable state and federal law, including, without limitation, 1982 PA 307, as amended (Act 307).

Within the next year, MDNR staff or representatives of the U.S. Environmental Protection Agency (EPA) will conduct an assessment and prepare a RCRA Facility Assessment (RFA) report. The RFA report will identify the potential for releases from solid waste management units. The RFA will be the basis for recommending any further investigations to determine the extent of releases of hazardous wastes or hazardous constituents at the facility, and for the remediation of those releases. The RFA will incorporate information obtained during closure of the storage area.

When the RFA is complete, CPC will be required to enter an enforceable agreement with the MDNR or EPA. The agreement will establish the requirements for investigating and remediating environmental contamination at the site. The agreement also will establish a schedule for developing and implementing the required investigations and cleanups.

Please note that interim measures may be implemented at certain units to minimize the migration of known releases, even though the RFA report and enforceable agreement have not been completed for the entire site. The soil vapor and groundwater extraction system proposed in the amendment may be an appropriate interim measure.

After CPC has identified the vertical and horizontal extent of contamination at the container storage area, and after other potential sources for the contamination have been assessed, CPC may propose an alternate remediation method (i.e., other than removal) for the container storage area. The alternate method must be consistent with the remediation proposed for all other solid waste management units in the area of concern (defined by "clean" perimeter soil samples). This comprehensive remediation strategy would be embodied in the enforceable agreement. The agreement would not necessarily cover remediation of SWMUs throughout the entire site, and could be specific to the southwest portion of the site. Upon entry of the enforceable agreement, the MDNR

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could release CPC from its responsibilities under the approved closure plan.

If CPC chooses to install the soil vapor and groundwater extraction system after the extent of contamination is defined, all necessary permits and approvals (i.e., air discharge and NPDES) under 1965 PA 348, as amended, and 1929 PA 245, as amended, must be obtained prior to installation. A risk in implementing the proposed extraction system now is that it may not complement the ultimate remediation method developed for the area of concern.

Financial Capability

CPC is currently required to maintain financial capability for liability coverage and the storage area closure costs under Act 64. As part of the enforceable agreement entered between CPC and MDNR, CPC will be required to submit a certification of the closure activities completed (i.e., decontamination and soil and groundwater investigations). Upon acceptance of the closure certification, the MDNR will release CPC from the financial capability requirements of R 299.9703 - R 299.9710.

Under HSWA, CPC must provide financial assurance for corrective action. The type of financial mechanism and level of funding is determined when a corrective action plan and enforceable agreement between the MDNR and CPC are developed. Therefore, concurrent with the release from closure and liability coverage financial requirements, corrective action financial requirements will be imposed.

Conclusion

The closure plan amendment is not acceptable. CPC must comply with the approved closure plan and conduct all additional soil and groundwater investigations necessary to define the extent of contamination around and beneath the container storage area, and remove all contaminated soils. A schedule for conducting these activities must be submitted for approval. The MDNR's approval or modification and approval of the schedule will constitute an amendment of the schedule in the approved closure plan, and an extension of the time allowed for closure under 40 CFR §265.113.

If the additional environmental data is sufficient to demonstrate that all contaminated soils cannot be practicably removed, then CPC may pursue on-site containment of

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contaminated soils and long-term monitoring and maintenance for the containment system. In addition, CPC may elect to integrate the additional soil and groundwater investigations with an evaluation of other potential sources for the contamination. If CPC successfully demonstrates that the contamination is the result of releases from multiple units, and that it is not practical to remove all contaminated soils, then it may be appropriate to adopt a comprehensive remediation strategy for the entire area. The comprehensive remediation strategy, when embodied in an enforceable agreement between CPC and MDNR, would replace the closure plan, and be the basis for all further remediation activities.

Please respond to me within 30 days after receipt of this letter with a schedule for completing the required closure activities. I can be contacted at Waste Management Division, Department of Natural Resources, P.O. Box 30241, Lansing, Michigan 48909, or at the telephone number below.

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Sincerely,

Steven R. Sliver
Environmental Engineer
Waste Management Division
517-373-1976

cc: Mr. Rich Traub, U.S. EPA
Mr. Dennis Drake, MDNR
Mr. Ken Burda, MDNR
Mr. Steve Buda, MDNR
HWP/C&E File

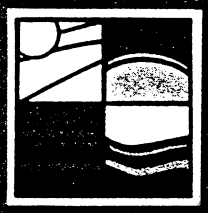
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Preliminary Soils Contamination Assessment Plant 8 Flammable Liquid Tank Farm Pontiac Motor Division General Motors Corporation Pontiac, Michigan September 27, 1984

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KECK consulting services, inc.



geology · hydrology · geophysics
meteorology · soil science

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INTRODUCTION

The Plant 8 tank farm at the Pontiac Motor Division facility has been used for storage of flammable liquids for many years. Over the years of use many minor spills of flammable liquids have occurred while filling the tanks. Until recently excess product in fill hoses was reported to be routinely emptied inside the diked area surrounding the tanks. The Plant 8 tank farm is located in the NE 1/4 of Section 20, Pontiac Township (T.3N., R.10E.), Oakland County, Michigan. The location of the tank farm is shown on the Site Location Map included as Figure 1. Keck Consulting Services has been retained to determine the extent of the fuel contaminated soils. The purpose of this report is to present the results of this preliminary investigation and provide recommendations for additional investigative work or remedial actions.

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FIELD PROCEDURES AND DATA COLLECTION

A field crew from Keck Consulting Services conducted the field portion of the investigation during the period of June 26 through July 3, 1984. Soil borings and soil samplings were conducted at eight sites. These sites, labeled B-1 through B-8, are shown on the Boring Location plan included as Figure 2. Because the soil samples were to be taken within the dike areas and near the flammable liquid tanks a truck mounted gasoline powered auger drill could not be used. To provide access to within the diked areas and safe operation in the hazardous area an Acker Drilling Equipment portable tripod

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A summary of the preliminary soils and hydrogeologic data collected thus far is included in Table 1. The borings at sites B-2, B-3, B-4, B-5, B-6 and B-7 encountered clay layers at depths between 8 and 16 feet below the ground surface within the diked areas. At these sites the clay layers appear to be impeding the downward flow of the contaminants as shown by the soil boring data and illustrated in Table 1. At the site of B-1 the silt layer found between 8.5 and 12.5 feet appears to be retarding the downward flow of the contaminants. At the site of B-8 the fine sand with clay interval between 8 and 16.5 feet is acting to somewhat check the vertical movement of the contaminants. At the site of B-1 contaminated soils were found below water level. Water levels could not accurately be determined at the other boring sites because of the bentonite drilling fluid used.

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CONCLUSIONS

The preliminary soils contamination assessment conducted within the Plant 8 flammable liquid tank farm diked areas indicated presence of hydrocarbon contaminated soils from ground surface to depths from 8 and 16 feet. Clay layers (or silt or clayey fine sand layers) appear to be impeding the downward flow of the contaminants at the sites tested. Contaminated soils were found below water level at the site of B-1. At this time it is felt that hydrocarbon contaminants

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Table 1

Summary of Preliminary Soils and Hydrogeologic Data
Plant 8 Flammable Tank Farm
Pontiac Motor Division, Pontiac, Michigan

Boring	Total Depth	Approximate Depth To Water	Depth to Top of Clay	Clay Thickness	Depth of Contamination*
B-1	15'	9.5'	N.D.	----	12.5'
B-2	19'	N.D.	16'	3'+	16'
B-3	17'	N.D.	11'	6'+	11'
B-4	17'	16.5'	14'	2.5'	14'
B-5	32'	15'	14'	1'	14'
B-6	22'	16'	9.5'	2.5'	9.5'
B-7	17'	14'	8'	6'	8'
B-8	17'	16.5'	N.D.	----	8' (16.5'?)

*Based on both laboratory analyses and fuel-type odor detected in field

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have not entered the groundwater system since other borings at the site show no evidence of contamination in the saturated sands at depth.

RECOMMENDATIONS

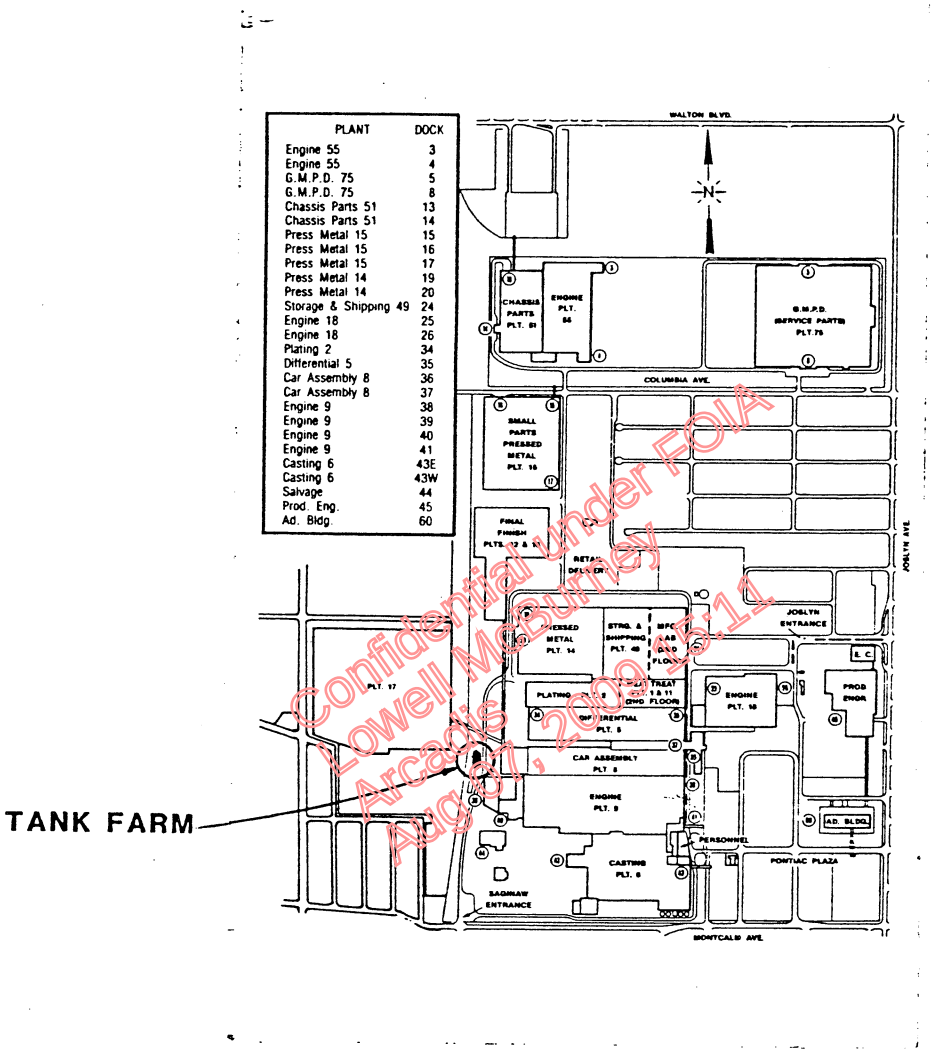
It is recommended that this preliminary investigation be expanded to determine the lateral extent of the contaminated soils outside the diked areas. This should be accomplished by additional borings and sampling work conducted radially outward from the diked areas. In addition at least three monitor wells should be installed in a triangular pattern with screens set in the first usable aquifer. Water samples from these wells should be analyzed for hydrocarbons to determine if contaminants from the tank farm have entered the groundwater system. A gas chromatograph with mass spectrometer should be used to determine if hydrocarbons less than C_7 range as well as C_7 through C_{14} are present.

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Upon completion of the expanded investigation recommendations for the remedial action procedures can be made. These may include: (1) excavation of contaminated soils, (2) surface flushing of soils with contaminant capture and treatment, (3) purging and treatment of contaminated groundwater, or (4) periodic monitoring of the first usable aquifer to verify that no groundwater degradation is occurring.

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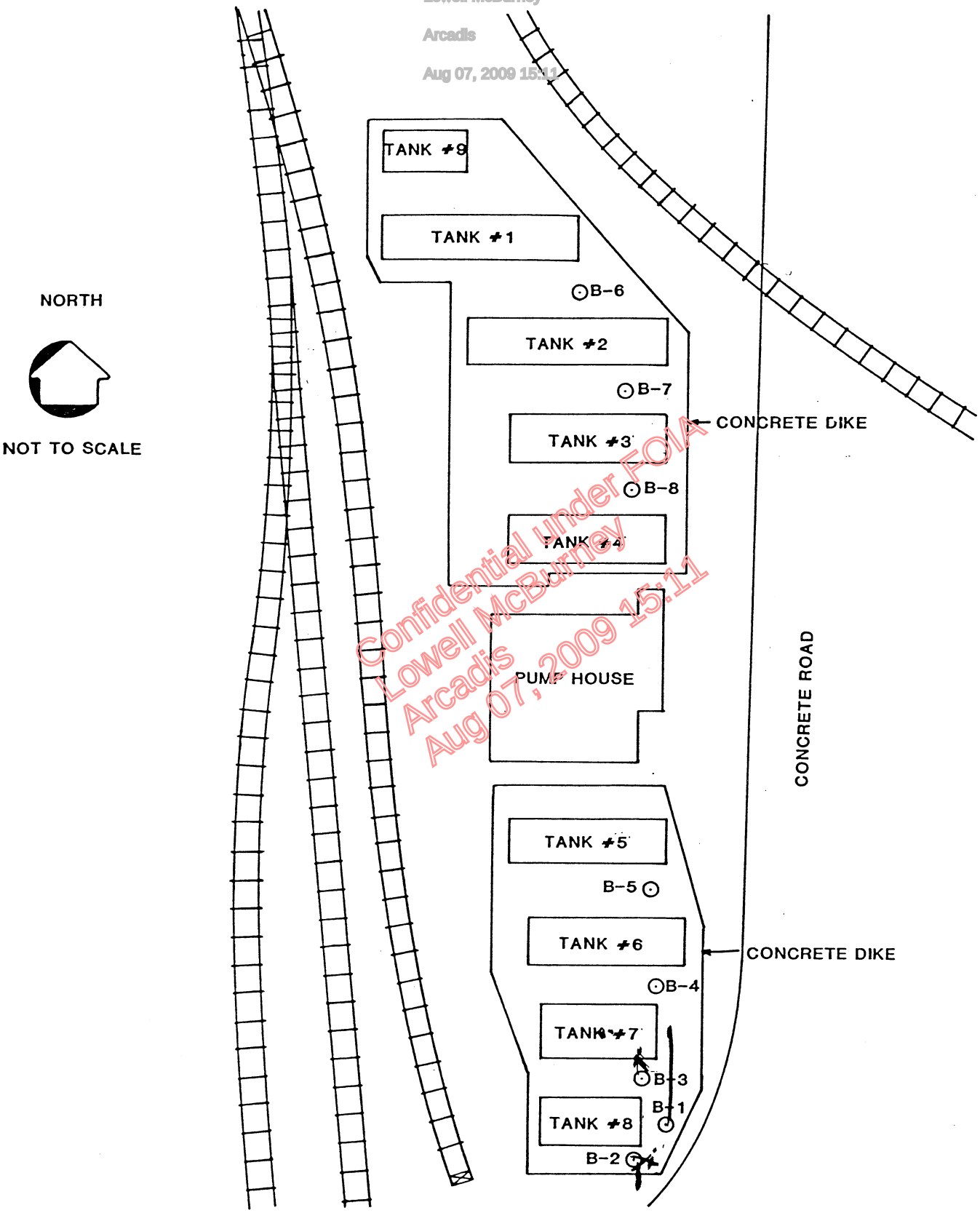
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SITE LOCATION MAP
PLANT 8 FLAMMABLE LIQUIDS TANK FARM
PONTIAC MOTOR DIVISION
GENERAL MOTORS CORPORATION
PONTIAC, MICHIGAN

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B-1
⊙— BORING & SOIL SAMPLE LOCATION

BORING LOCATIONS
PLANT 8 FLAMMABLE LIQUIDS TANK FARM
PONTIAC MOTOR DIVISION
GENERAL MOTORS CORPORATION
PONTIAC, MICHIGAN

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FINAL REPORT

PCB REMEDIATION
SUBSTATION D-1

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PROVIDED FOR

GENERAL MOTORS
CL-CD PONTIAC
PLANT 8
PONTIAC, MICHIGAN

SUNPRO

7392 Whipple Avenue, N.W.
North Canton, Ohio 44720

24 Hour (800) 488-0910

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UNPRO

24 Hour Phone (216) 966-0910
Fax (216) 966-1954

August 21, 1996

Mr. Dallas F. Geisler
Senor Environmental Engineer
General Motors
CL-CD Pontiac
1 Pontiac Plaza
Pontiac, Michigan 48340-2952
Mail Code: 483-049-201

RE: Final Report for Remediation Project No. 101813

Dear Mr. Geisler:

Please find enclosed your copy of the final report for the PCB remediation project conducted at Substation D-1 in plant 8 within your manufacturing complex located in Pontiac, Michigan. For your convenience, this report includes document copies for your records, which are required under EPA regulations 40 CFR 761.125 to be kept and maintained for a time period of not less than five (5) years.

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Please note that this report has been prepared for the exclusive use of General Motors. As a numbered, duplicate original, it is intended for use in its entirety by the client. Unauthorized copies of this report or parts of it for use by other parties is at their sole risk.

Services performed by SUNPRO, Inc., for this project have been conducted in a manner consistent with commonly accepted practices of the environmental industry. No warranty, expressed or implied, is made.

It was certainly our pleasure to be of service to you on this project. If we can be of further assistance in answering any questions or in providing additional services, kindly contact myself or Jack Lewis at the SUNPRO 24-HOUR HOTLINE (330) 966-0910.

Sincerely,

SUNPRO, Inc.

Larry Gaffga
Manager of Field Services

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1.0 EXECUTIVE SUMMARY

At the request of General Motors, SUNPRO provided environmental remediation services at the NAO Property Management facility in Pontiac, Michigan, to provide closure of a former PCB transformer substation area located in Plant 8 in which the PCB transformers had recently been removed. Following removal of the transformers by a third party contractor, visual staining was noted and the contractor performing the removal performed an initial cleaning and wipe sampling of the effected areas. The results of these initial wipe samples indicated further remediation would be required as they were in excess of USEPA allowable guidlines for PCB clean up.

On-site activities were initiated on August 6, 1996, and completed on August 9, 1996. The initial plan of action called for removal of concrete to a depth of 2 - 3 inches within the areas where the transformers formerly were sitting. Concrete removal was performed under a negative air environment to prevent dust migration. In addition, immunoassay sampling was performed outside of the removed areas to determine the extent of cross contamination. These samples indicated low level cross contamination which required cleaning of floor areas outside of the removed areas.

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Protocol laboratory analysis of all final samples documented the cleanup area to be less than 10 micrograms per 100 square centimeters, in full compliance of USEPA PCB cleanup requirements.

All waste products generated during the cleanup were containerized and labeled as PCB, for disposal by TSCA-approved facilities under a GM contract.

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2.0 CLOSURE SERVICES

BACKGROUND INFORMATION

General Motors, as part of a plant demolition project, contracted with ABB Services to remove PCB transformers from substation D-1 within Plant 8. Following the removal of the two transformers, staining was noted on the concrete floor indicating potential release of PCB on the floor. ABB was notified and performed an initial cleaning followed by wipe sampling. Results of the wipe sampling indicated high levels were still apparent at both transformer locations and ABB recommended that GM subcontract with an environmental firm to perform further remediation and clean closure. A copy of ABB's report is incorporated in this report. SUNPRO was contacted by a representative of GM to complete the remediation in compliance with applicable USEPA PCB clean up standards.

REGULATORY REVIEW

(1) Cleanup Area

The areas determined for removal of concrete were defined as the "footprint" of the transformer. Immunoassay wipe sampling outside of these "footprint" areas indicated low level cross contamination which would require cleaning. The cleanup standard for this project was determined to be 10 ug/100 sq. cm. based on the fact the area was not to be used as a substation. Encapsulation was not considered as an option because the facility is targeted for demolition.

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(2) *Cleanup Levels for Restricted Access Areas:*

(i) High-contact, indoor solid surfaces shall be cleaned to 10 ug/100 sq. cm.

(ii) Low-contact, indoor impervious solid surfaces will be decontaminated to 10 ug/100 sq. cm.

(iii) At the option of the responsible party, low-contact, indoor, non-impervious surfaces will be cleaned either to 10 ug/100 sq. cm. or to 100 ug/100 sq. cm. and encapsulated. The Regional Administrator, however, retains the authority to disallow the encapsulation option for a particular spill situation upon finding that the uncertainties associated with that option pose special concerns at that site.

(3) Sampling:

A statistically based sampling protocol to be conducted in accordance with EPA procedures outlined in SW846 and EPA 560/5-86-017.

(4) Records:

The responsible party shall document the cleanup with records of decontamination. The records must be maintained for a period of five (5) years.

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(5) *Waste Disposal and Manifesting.*

The requirements of this section apply only to PCB wastes, as defined in section 761.3. This includes PCB wastes with PCB concentrations below 50 ppm where the PCB concentration below 50 ppm was the result of dilution, These PCB wastes are required, under section 761.1(b), to be managed as if they contained PCB concentrations greater than 50 ppm. An example of such a PCB waste is spill cleanup material containing less than 50 ppm PCB's when the spill involved material containing greater than 50 ppm.

SUNPRO believes the information presented above to be an accurate interpretation of the complex US EPA rules for PCB cleanup. This information is not be considered a substitute for review of the actual regulations, nor for legal counsel.

HEALTH AND SAFETY

The site-specific Health and Safety Plan (HASP) was written upon arrival on site and was reviewed by SUNPRO personnel prior to the start of work. After review of the Health and Safety Plan, a safety meeting was conducted by SUNPRO project manager discussing the proper procedures for PCB cleanup. Daily health and safety meetings were conducted for SUNPRO personnel by the site supervisor, and encompassed topics such as heat exhaustion, electrical hazards, hearing protection, and personal protective equipment.

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WASTE MANAGEMENT

All waste produced from this project was considered to be PCB contaminated, and was managed as such. Solid waste (i.e., soil, debris, PPE, cleanup materials) was containerized in G.M.-supplied DOT approved 55 gallon steel drums, and remained on site for proper disposal by GM. A total of four (4) drums of solid waste and one (1) drum of liquid were generated.

Waste drums were sealed, and marked with PCB and Class 9 labels, storage date, estimated weight, unique serial number and generator specific information.

SITE SERVICES

SUNPRO mobilized personnel and equipment to the General Motors Plant 8 (former J-car) plant on August 6, 1996.

Upon arrival SUNPRO was escorted to substation D-1 by Dallas Geisler, Senior Environmental Engineer. Restricted access and neutral zones were established and the area was inspected for open bus work, wiring, and electrical fixtures. Active service was checked with a tic tracer.

Barrier tape was used to restrict access to the substation and a negative air enclosure was constructed in area 1 so as to prevent dust migration during concrete removal. The area for removal at area 1 was determined to be the 6′ x 4′ footprint formerly occupied by the ansformer. Depth of removal was to be 2″ over the entire footprint with an additional 1″ removed within heavily stained areas.

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While concrete was being removed at area 1, immunoassay wipe sampling was performed outside the removal area to determine a clean perimeter. Results of the sampling indicated there was low level contamination outside the removal area which required cleaning. An area from the west side of the removal to the wall was double cleaned with SUNPRO alkaline cleaner as was an area to the east of the removal area with approximate dimensions of 4′6″ x 5′.

Area 2 required concrete removal in a 4′ x 6′ area again to a 2″ depth with additional removal at heavily stained locations. As was the case at area 1, the concrete removal was performed under negative air to prevent dust migration. Immunoassay wipe sampling indicated concrete was required in a location south of the excavated concrete to the fence and wood block. Cleaning was also required in a 5′3″ x 3′ area directly to the north of the removed concrete.

Upon completion of the above referenced remediation activities, immunoassay and final wipe sampling was performed to verify compliance with EPA cleanup standard of < 10ug/100sq cm..

All waste generated as a result of this project was containerized in DOT approved containers and remained on site for proper disposal by General Motors.

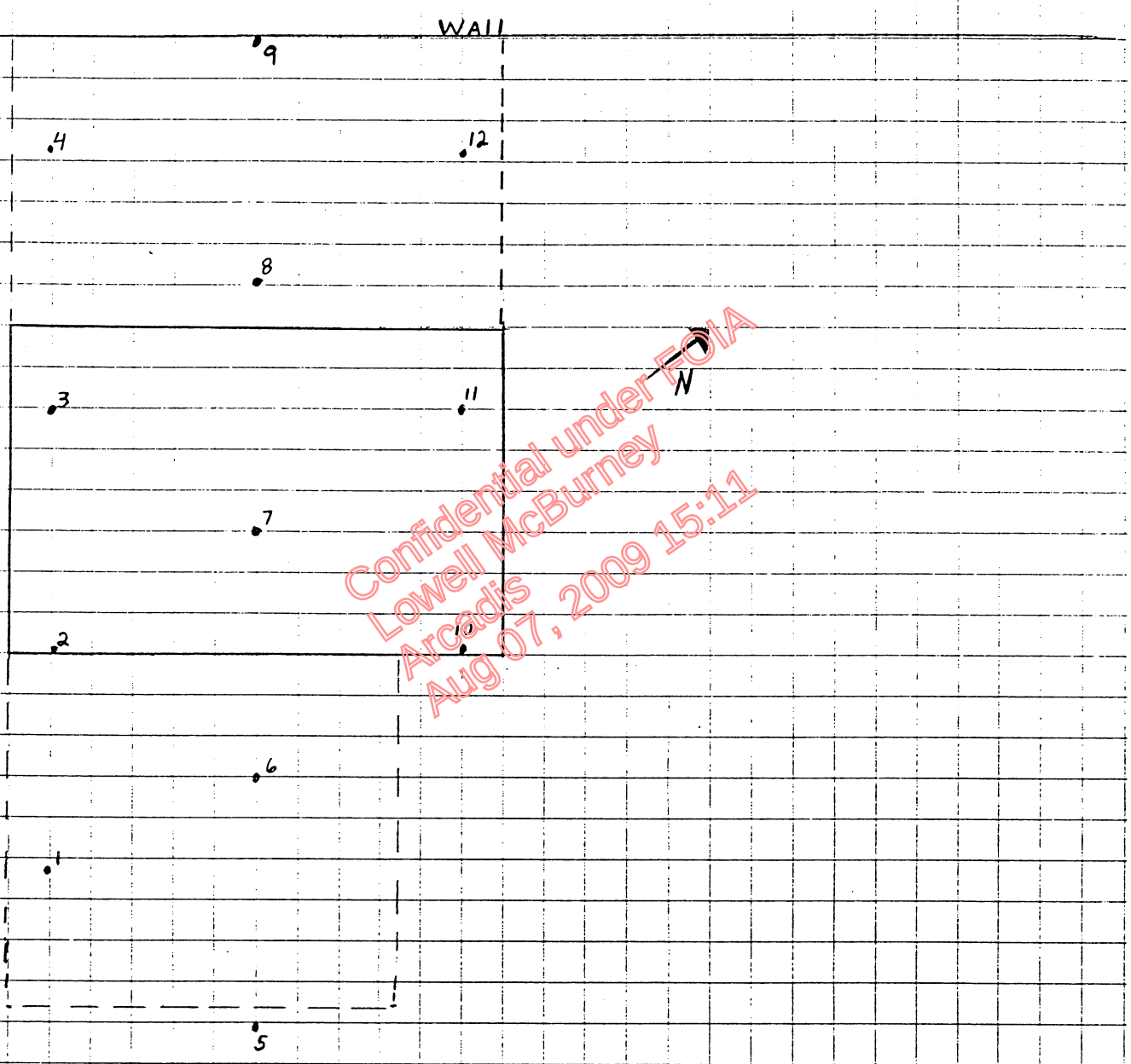
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FINAL SAMPLE LOCATIONS
AREA 1
SUNPRO PROJECT #101813

Scale 1" = 2'

Figure 1



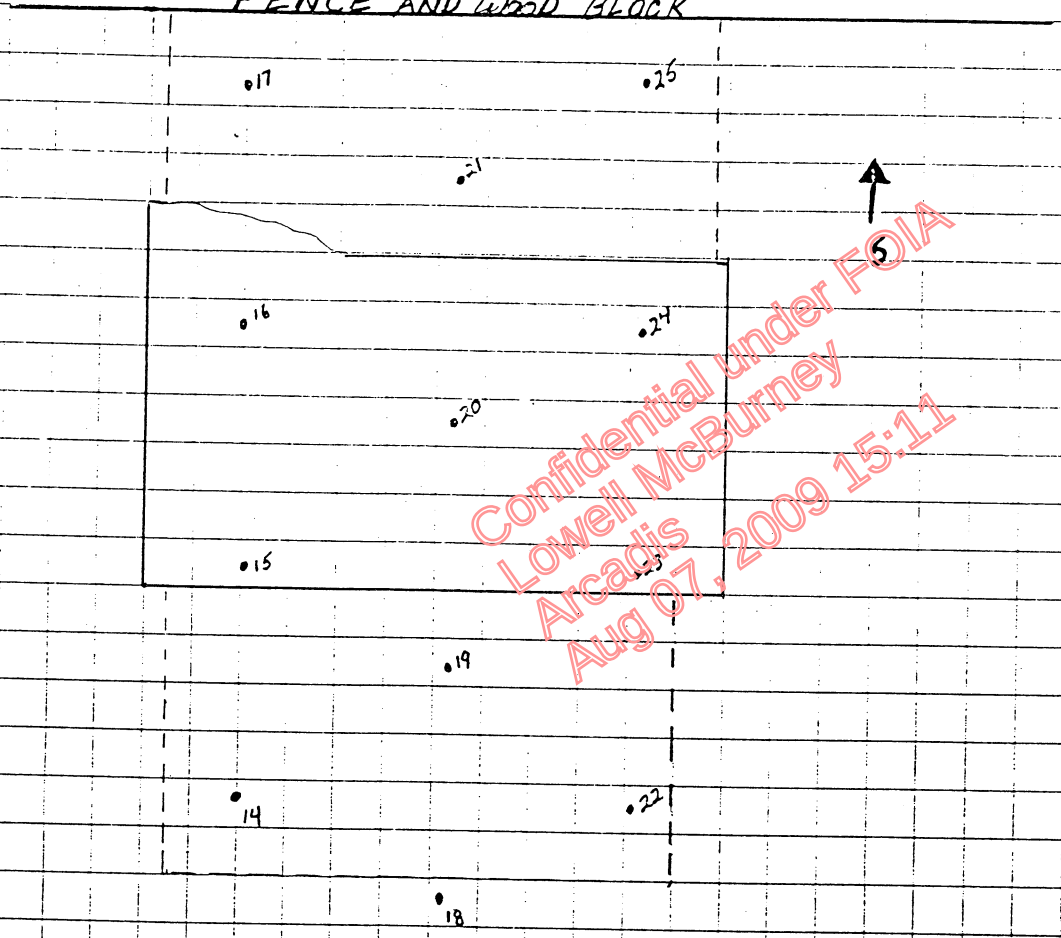
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AREA 2
SUNPRO PROJECT #101813

Scale 1" = 2'

Figure 2



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TABLE 1
GENERAL MOTORS
PONTIAC, MICHIGAN
PCB REMEDIATION - SUBSTATION D-1 - PLANT 8
PROJECT #101813
SAMPLE SUMMARY

SAMPLE I.D.	SAMPLE TYPE	ANALYSIS	DETECTION LIMIT
813AC 1	Floor Wipe	ND	.10
813AC 2	Floor Wipe	ND	.10
813AC 3	Floor Wipe	.86	.10
813AC 4	Floor Wipe	1.95	.10
813AC 5	Floor Wipe	.82	.10
813AC 6	Floor Wipe	.4	.10
813AC 7	Floor Wipe	1.1	.10
813AC 8	Floor Wipe	2.0	.10
813AC 9	Floor Wipe	.92	.10
813AC 10	Floor Wipe	.8	.10
813AC 11	Floor Wipe	2.1	.10
813AC 12	Floor Wipe	4.6	.10
813AC 13	Field Blank	ND	.10
813AC 14	Floor Wipe	1.26	.10
813AC 15	Floor Wipe	ND	.10
813AC 16	Floor Wipe	.82	.10
813AC 17	Floor Wipe	.2	.10
813AC 18	Floor Wipe	.6	.10
813AC 19	Floor Wipe	1.27	.10
813AC 20	Floor Wipe	1.17	.10
813AC 21	Floor Wipe	.8	.10
813AC 22	Floor Wipe	1.29	.10
813AC 23	Floor Wipe	ND	.10
813AC 24	Floor Wipe	1.2	.10
813AC 25	Floor Wipe	1.05	.10

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ND = Non Detectable
Above results stated in micrograms per 100 centimeter squared (ug/100 cm sq)

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Appendix N

N-1 Letter to Michigan State Fire Marshall Division, UST Division, re: Request for Tank Removal Closure (GM, 1990)
N-2 Letter to Michigan State Fire Marshall Division, UST Division, re: Request for Tank Removal Closure (GM, 1991)
N-3 Letter to Michigan State Fire Marshall Division, UST Division, re: Request for Tank Removal Closure (GM, 1992a)

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Chevrolet · Pontiac · Canada Group
Pontiac Engine & Axle Operations
General Motors Corporation
One Pontiac Plaza
Pontiac, Michigan 48058 · 3486

September 11, 1990

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

Lieutenant A. Nash
Michigan State Fire Marshal Division
UST Program
7150 Harris Drive
Lansing, MI. 48913

"Plant 9
Turbo Tank
Closure"

Dear Lt. Nash:

Enclosed please find the Underground Storage Tank Notification Form for the storage tank scheduled to be permanently closed at the following facility:

CPC-PONTIAC
ONE PONTIAC PLAZA
PONTIAC, MI. 48058

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The notification form is included as a reference and to serve as notification of General Motors Corporation's intent to permanently close the Underground Storage Tank (UST's). Only 1 Underground Storage Tank will be permanently closed with this notification.

If you have any questions, please call me at (313) 857-2287.

Sincerely,

Dallas F. Geisler
Manufacturing Laboratory

cc: M. Virostick
File

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APPENDIX I to §280.3

Notification for Underground Storage Tanks

OMB No. 2050-0049

STATE USE ONLY

I.D. Number

Date Received

GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information required is required by Section 9002 of the Resource Conservation and Recovery Act, (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or, in the absence of such records, your knowledge, belief, or estimation.

Who Must Notify? Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owners must notify

(a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances; and

(b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

What Tanks Are Included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing: 1. gasoline, used oil, or diesel fuel, and 2. industrial solvents, pesticides, herbicides or fumigants.

What Tanks Are Excluded? Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:

1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes,
2. tanks used for storing heating oil for consumptive use on the premises where stored,
3. septic tanks,
4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which are intrastate pipeline facilities regulated under State laws,
5. surface impoundments, pits, ponds, or lagoons,
6. storm water or wastewater collection systems,
7. flow-through process tanks,
8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations,
9. storage tanks situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

What Substances Are Covered? The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA. It also includes petroleum, (e.g., crude oil or any fraction thereof) which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Where To Notify? Completed notification forms should be sent to the address given at the top of this page.

When To Notify? 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 30 days of bringing the tanks into use.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed $10,000 for each tank for which notification is not given or for which false information is submitted.

INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. This form must be completed for each location containing underground storage tanks. If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached: 1

I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity)
CPC-PONTIAC OF GENERAL MOTORS CORP.

Street Address
ONE PONTIAC PLAZA

County
OAKLAND

City: PONTIAC State: MI. ZIP Code: 48058-3486

Area Code: 313 Phone Number: 857-2287

Type of Owner (Mark all that apply ☒)

- ☒ Current
- ☐ Former
- ☐ State or Local Gov't
- ☐ Federal Gov't (GSA facility I.D. no. _____)
- ☒ Private or Corporate
- ☐ Ownership uncertain

II. LOCATION OF TANK(S)

(If same as Section 1, mark box here ☒)

Facility Name or Company Site Identifier, as applicable

Street Address or State Road, as applicable

County

City (nearest) State ZIP Code

Indicate number of tanks at this location: 16

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands ☐

III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here ☐) DALLAS F. GEISLER

Job Title

Area Code Phone Number: 313-857-2287

IV. TYPE OF NOTIFICATION

☒ Mark box here only if this is an amended or subsequent notification for this location.

V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative: E. N. Hawley, Plant Manager

Date Signed: 9/13/85

CONTINUE ON REVERSE SIDE

EPA Form 7530-1 (11-85)

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Owner Name (from Section I) CPC-PONTIAC CPLM Location (from Section II) Page No. 1 of 1

VI DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)

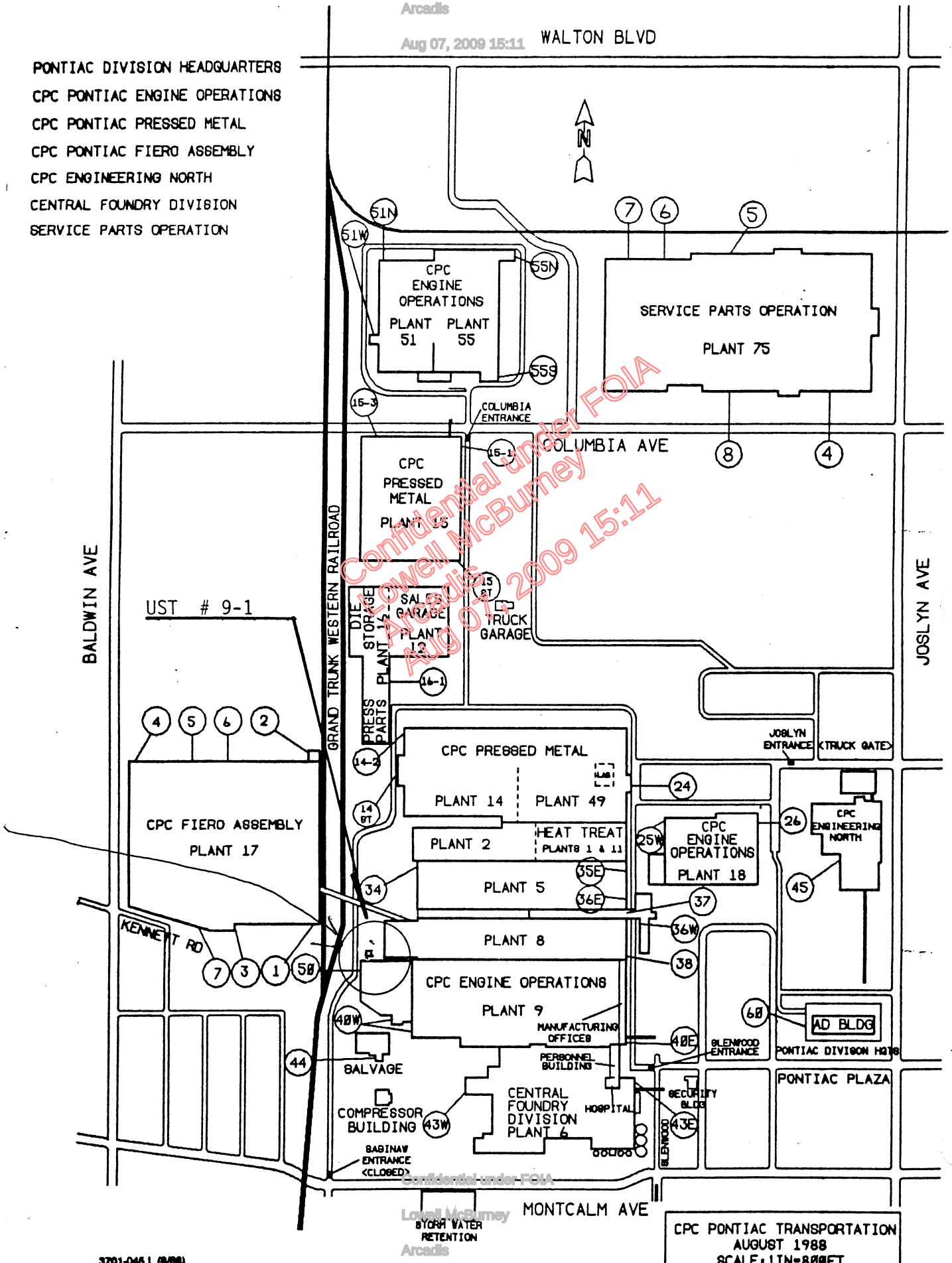
Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)		Tank No. 9-1	Tank No.	Tank No.	Tank No.	Tank No.
1. Status of Tank (Mark all that apply ☒)	Currently in Use	☐	☐	☐	☐	☐
	Temporarily Out of Use	☐	☐	☐	☐	☐
	Permanently Out of Use	☒	☐	☐	☐	☐
	Brought into Use after 5/8/86	☐	☐	☐	☐	☐
2. Estimated Age (Years)		4				
3. Estimated Total Capacity (Gallons)		550				
4. Material of Construction (Mark one ☒)	Steel	☐	☐	☐	☐	☐
	Concrete	☐	☐	☐	☐	☐
	Fiberglass Reinforced Plastic	☒	☐	☐	☐	☐
	Unknown	☐	☐	☐	☐	☐
	Other, Please Specify					
5. Internal Protection (Mark all that apply ☒)	Cathodic Protection	☐	☐	☐	☐	☐
	Interior Lining (e.g., epoxy resins)	☐	☐	☐	☐	☐
	None	☒	☐	☐	☐	☐
	Unknown	☐	☐	☐	☐	☐
	Other, Please Specify					
6. External Protection (Mark all that apply ☒)	Cathodic Protection	☐	☐	☐	☐	☐
	Painted (e.g., asphaltic)	☐	☐	☐	☐	☐
	Fiberglass Reinforced Plastic Coated	☐	☐	☐	☐	☐
	None	☒	☐	☐	☐	☐
	Unknown	☐	☐	☐	☐	☐
	Other, Please Specify					
7. Piping (Mark all that apply ☒)	Bare Steel	☐	☐	☐	☐	☐
	Galvanized Steel	☒	☐	☐	☐	☐
	Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
	Cathodically Protected	☐	☐	☐	☐	☐
	Unknown	☐	☐	☐	☐	☐
	Other, Please Specify					
8. Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply ☒)	a. Empty	☐	☐	☐	☐	☐
	b. Petroleum					
	Diesel	☐	☐	☐	☐	☐
	Kerosene	☐	☐	☐	☐	☐
	Gasoline (including alcohol blends)	☒	☐	☐	☐	☐
	Used Oil	☐	☐	☐	☐	☐
	Other, Please Specify					
	c. Hazardous Substance	☐	☐	☐	☐	☐
Please Indicate Name of Principal CERCLA Substance OR Chemical Abstract Service (CAS) No.						
Mark box ☒ if tank stores a mixture of substances	d. Unknown	☐	☐	☐	☐	☐
9. Additional Information (for tanks permanently taken out of service)	a. Estimated date last used (mo/yr)	8 / 90	/	/	/	/
	b. Estimated quantity of substance remaining (gal.)					
	c. Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)	☐	☐	☐	☐	☐

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CPC PONTIAC COMPLEX

PONTIAC DIVISION HEADQUARTERS
CPC PONTIAC ENGINE OPERATIONS
CPC PONTIAC PRESSED METAL
CPC PONTIAC FIERO ASSEMBLY
CPC ENGINEERING NORTH
CENTRAL FOUNDRY DIVISION
SERVICE PARTS OPERATION



CPC PONTIAC TRANSPORTATION
AUGUST 1988
SCALE: 1IN=800FT

3701-045 L (8/88)

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Chevrolet-Pontiac-Canada Group
General Motors Corporation
Pontiac Manufacturing Operations
One Pontiac Plaza
Pontiac, Michigan 48340-2952

June 27, 1991

// Plant 9
Turbo Tank
Closure //

Ms. Mary Ellen Parrott
Manager
Registration Unit
Michigan State Police
Fire Marshal Division
Hazardous Materials Section
3705 West Jolly Road
P.O. Box 30157
Lansing, Michigan. 48909

Dear Ms. Parrott:

Please find the attached document for the closure of 1 Underground Storage Tank known as 9-1. Also find the following;

UST CLOSURE SITE ASSESSMENT
TANK ID 9-1 (TURBO TANK)
FACILITY ID 0-001823
PONTIAC, MICHIGAN

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This assessment was prepared for us by Testing Engineers & Consultants, Inc., P.O. Box 249, 1333 Rochester Road, Troy, Michigan 48099. For informational purposes I am including a copy of our original "Notification for Underground Storage Tanks" forms.

According to the UST CLOSURE SITE ASSESSMENT the excavation was free of contamination, therefore, it is our opinion that the Underground Storage Tank known as 9-1 is closed and will require no further action to be taken by us.

If you have any questions, or require further information, please call me on (313) 857-2287.

Sincerely:

Dallas F. Geisler
Sr. Environmental Engineer
CPC-Pontiac
One Pontiac Plaza
Pontiac, Michigan 48340-2952
Mail Code 4915

cc: File

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IX. DESCRIPTION OF UNDERGROUND STORAGE TANKS (COMPLETE FOR EACH TANK AT THIS LOCATION)

TANK IDENTIFICATION NUMBER	TANK #	TANK #	TANK #	TANK #	TANK #	TANK #	TANK #
1. STATUS OF TANKS (CHECK ONE)	9-1						
CURRENTLY IN USE	☐	☐	☐	☐	☐	☐	☐
TEMPORARILY OUT OF USE **	☐	☐	☐	☐	☐	☐	☐
PERMANENTLY OUT OF USE **	☒	☐	☐	☐	☐	☐	☐
AMENDMENT OF INFORMATION	☐	☐	☐	☐	☐	☐	☐
**ALSO COMPLETE SECTION X							
2. DATE OF INSTALLATION	1983						
3. ESTIMATED TOTAL CAPACITY (GAL)	550						
4. MATERIAL OF CONSTRUCTION (MARK ALL THAT APPLY)							
ASPHALT COATED OR BARE STEEL	☐	☐	☐	☐	☐	☐	☐
CATHODICALLY PROTECTED STEEL	☐	☐	☐	☐	☐	☐	☐
EPOXY COATED STEEL	☐	☐	☐	☐	☐	☐	☐
COMPOSITE (STEEL WITH FIBERGLASS)	☐	☐	☐	☐	☐	☐	☐
FIBERGLASS REINFORCED PLASTIC	☒	☐	☐	☐	☐	☐	☐
LINED INTERIOR	☐	☐	☐	☐	☐	☐	☐
DOUBLE WALLED	☐	☐	☐	☐	☐	☐	☐
POLYETHYLENE TANK JACKET	☐	☐	☐	☐	☐	☐	☐
EXCAVATION LINER	☐	☐	☐	☐	☐	☐	☐
CONCRETE	☐	☐	☐	☐	☐	☐	☐
UNKNOWN	☐	☐	☐	☐	☐	☐	☐
OTHER, (PLEASE SPECIFY)							
HAS TANK BEEN REPAIRED?	☐	☐	☐	☐	☐	☐	☐
5. PIPING MATERIAL (MARK ALL THAT APPLY)							
BARE STEEL	☐	☐	☐	☐	☐	☐	☐
GALVANIZED STEEL	☒	☐	☐	☐	☐	☐	☐
FIBERGLASS REINFORCED PLASTIC	☐	☐	☐	☐	☐	☐	☐
COPPER	☐	☐	☐	☐	☐	☐	☐
CATHODICALLY PROTECTED	☐	☐	☐	☐	☐	☐	☐
DOUBLE WALLED	☐	☐	☐	☐	☐	☐	☐
SECONDARY CONTAINMENT	☐	☐	☐	☐	☐	☐	☐
UNKNOWN	☐	☐	☐	☐	☐	☐	☐
OTHER, (PLEASE SPECITY)							
6. PIPING (TYPE) (MARK ALL THAT APPLY)							
SUCTION: NO VALVE AT TANK	☐	☐	☐	☐	☐	☐	☐
SUCTION: VALVE AT TANK	☐	☐	☐	☐	☐	☐	☐
PRESSURE	☒	☐	☐	☐	☐	☐	☐
GRAVITY FED	☐	☐	☐	☐	☐	☐	☐
HAS PIPING BEEN REPAIRED?	☐	☐	☐	☐	☐	☐	☐
7. SUBSTANCE CURRENTLY OR LAST STORED IN GREATEST QUANTITY BY VOLUME							
GASOLINE	☒	☐	☐	☐	☐	☐	☐
DIESEL	☐	☐	☐	☐	☐	☐	☐
GASOHOL	☐	☐	☐	☐	☐	☐	☐
KEROSENE	☐	☐	☐	☐	☐	☐	☐
FUEL OIL (NOT FOR CONSUMPTIVE USE ON PREMISES)	☐	☐	☐	☐	☐	☐	☐
USED OIL	☐	☐	☐	☐	☐	☐	☐
OTHER (PLEASE SPECIFY)							
HAZARDOUS SUBSTANCE	☐	☐	☐	☐	☐	☐	☐
COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION & LIABILITY ACT(CERCLA) NAME AND/OR							
CHEMICAL ABSTRACT SERVICE (CAS) NUMBER							

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Chevrolet-Pontiac-Canada Group
General Motors Corporation
Pontiac Manufacturing Operations
One Pontiac Plaza
Pontiac, Michigan 48340-2952

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

March 6, 1992

Ms. Mary Ellen Parrott
Manager, Registration Unit
Michigan State Police
Fire Marshal Division
Hazardous Materials Section
7150 Harris Drive
P.O. Box 30157
Lansing, Michigan 48909

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Dear Ms. Parrott:

Please find the enclosed amended registration form for the facility known as CPC-Pontiac Manufacturing Operations, One Pontiac Plaza, Pontiac, Michigan 48340-2952. Also known as FACILITY NUMBER 0-001623 in your computer data base.

It is our intention to delete 10 Underground Storage Tanks from your database as they have been removed from the ground. The tanks have been undergoing closure since their removal. In order to keep your records and ours up to date we are amending the following information;

Facility #	Tank #	Description	Status
0-001623	9-1	550 Gal	Removed
0-001623	CW-1	20,000 Gal	Removed
0-001623	CW-2	20,000 Gal	Removed
0-001623	PE-A	10,000 Gal	Removed
0-001623	PE-B	10,000 Gal	Removed
0-001623	PE-C	5,000 Gal	Removed
0-001623	PE-D	5,000 Gal	Removed
0-001623	PE-E	1,700 Gal	Removed
0-001623	PE-F	1,700 Gal	Removed
0-001623	PE-G	1,700 Gal	Removed

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A. DESCRIPTION OF UNDERGROUND STORAGE TANKS (COMPLETE FOR EACH TANK AT THIS LOCATION)

TANK IDENTIFICATION NUMBER	TANK #	TANK #	TANK #	TANK #	TANK #	TANK #	TANK #
1. STATUS OF TANKS (CHECK ONE)	CW-1	CW-2	9-1	NL-1	NL-2	NL-3	NL-4
CURRENTLY IN USE	☐	☐	☐	☒	☒	☒	☒
TEMPORARILY OUT OF USE **	☐	☐	☐	☐	☐	☐	☐
PERMANENTLY OUT OF USE **	☒	☒	☒	☐	☐	☐	☐
AMENDMENT OF INFORMATION	☐	☐	☐	☐	☐	☐	☐
**ALSO COMPLETE SECTION X	*	*	*				
2. DATE OF INSTALLATION	1972	1972	1986	1990	1990	1990	1990
3. ESTIMATED TOTAL CAPACITY (GAL)	20,000	20,000	550	12,000	12,000	15,000	15,000
4. MATERIAL OF CONSTRUCTION (MARK ALL THAT APPLY)							
ASPHALT COATED OR BARE STEEL	☒	☒	☐	☐	☐	☐	☐
CATHODICALLY PROTECTED STEEL	☐	☒	☐	☐	☒	☒	☒
EPOXY COATED STEEL	☐	☐	☐	☐	☐	☐	☐
COMPOSITE (STEEL WITH FIBERGLASS)	☐	☐	☒	☐	☒	☒	☒
FIBERGLASS REINFORCED PLASTIC	☐	☐	☐	☐	☐	☐	☐
LINED INTERIOR	☐	☐	☐	☐	☐	☐	☐
DOUBLE WALLED	☐	☐	☐	☐	☒	☐	☐
POLYETHYLENE TANK JACKET	☐	☐	☐	☐	☐	☐	☐
EXCAVATION LINER	☐	☐	☐	☐	☐	☒	☒
CONCRETE	☐	☐	☐	☐	☐	☐	☐
UNKNOWN	☐	☐	☐	☐	☐	☐	☐
OTHER, (PLEASE SPECIFY)				STI-P3	STI-P3	STI-P3	STI-P3
HAS TANK BEEN REPAIRED?	☐	☐	☐	☐	☐	☐	☐
5. PIPING MATERIAL (MARK ALL THAT APPLY)							
BARE STEEL	☐	☒	☒	☒	☒	☒	☒
GALVANIZED STEEL	☐	☐	☐	☐	☐	☐	☐
FIBERGLASS REINFORCED PLASTIC	☐	☐	☐	☐	☐	☐	☐
COPPER	☐	☐	☐	☐	☐	☐	☐
CATHODICALLY PROTECTED	☐	☐	☐	☐	☐	☐	☐
DOUBLE WALLED	☐	☐	☐	☐	☐	☐	☐
SECONDARY CONTAINMENT	☐	☐	☐	☐	☐	☐	☐
UNKNOWN	☐	☐	☐	☐	☐	☐	☐
OTHER, (PLEASE SPECIFY)	XXX	WRAPPED		NO BURIED	NO BURIED	NO BURIED	NO BURIED
6. PIPING (TYPE) (MARK ALL THAT APPLY)				PIPE	PIPE	PIPE	PIPE
SUCTION: NO VALVE AT TANK	☐	☐	☐	☐	☐	☐	☐
SUCTION: VALVE AT TANK	☐	☐	☐	☒	☒	☒	☒
PRESSURE	☐	☐	☐	☐	☐	☐	☐
GRAVITY FED	☐	☐	☐	☐	☐	☐	☐
HAS PIPING BEEN REPAIRED?	☐	☐	☐	☐	☐	☐	☐
7. SUBSTANCE CURRENTLY OR LAST STORED IN GREATEST QUANTITY BY VOLUME							
GASOLINE	☒	☒	☒	☒	☒	☒	☒
DIESEL	☐	☐	☐	☐	☐	☐	☐
GASOHOL	☐	☐	☐	☐	☐	☐	☐
KEROSENE	☐	☐	☐	☐	☐	☐	☐
FUEL OIL (NOT FOR CONSUMPTIVE USE ON PREMISES)	☐	☐	☐	☐	☐	☐	☐
USED OIL	☐	☐	☐	☐	☐	☐	☐
OTHER (PLEASE SPECIFY)							
HAZARDOUS SUBSTANCE	☐	☐	☐	☐	☐	☐	☐
COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION & LIABILITY ACT(CERCLA) NAME							
CHEMICAL ABSTRACT SERVICE (CAS) NUMBER							

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X. TANKS OUT OF USE OR CHANGE IN SERVICE

TANK IDENTIFICATION NUMBER	TANK #	TANK #	TANK #	TANK #	TANK #	TANK #	TANK #
1. CLOSING OF TANK							
A. ESTIMATED DATE LAST USED (MO/DAY/YR)	CW-1 11-01-90	CW-2 11-1-90	9-1 11-1-90				
B. ESTIMATED DATE TANK CLOSED (MO/DAY/YR)	X	X	06-27-91				
C. TANK WAS REMOVED FROM GROUND	X	X	X	☐	☐	☐	☐
D. TANK FILLED WITH INERT MATERIAL (SAND, CONCRETE, ETC.)	☐	☐	☐	☐	☐	☐	☐
DESCRIBE TYPE OF FILL USED AND REASON TANK WAS NOT REMOVED.							
E. CHANGE IN SERVICE	☐	☐	☐	☐	☐	☐	☐
2. SITE ASSESSMENT COMPLETED	X	X	X	☐	☐	☐	☐
EVIDENCE OF A LEAK DETECTED	☐	☐	☐	☐	☐	☐	☐

XI. CERTIFICATION OF COMPLIANCE (COMPLETE FOR ALL NEW AND UPGRADED TANKS AT THIS LOCATION)

1. INSTALLATION													
A. INSTALLER CERTIFIED BY TANK AND PIPING MANUFACTURERS.	☐		☐		☐		☐		☐		☐		☐
B. INSTALLER CERTIFIED OR LICENSED BY THE STATE FIRE MARSHAL.	☐		☐		☐		☐		☐		☐		☐
C. INSTALLATION INSPECTED BY A REGISTERED ENGINEER.	☐		☐		☐		☐		☐		☐		☐
D. INSTALLATION INSPECTED AND APPROVED BY STATE FIRE MARSHAL.	☐		☐		☐		☐		☐		☐		☐
E. ANOTHER METHOD ALLOWED BY STATE FIRE MARSHAL. (PLEASE SPECIFY).													
2. RELEASE DETECTION	TANK	PIPE	TANK	PIPE	TANK	PIPE	TANK	PIPE	TANK	PIPE	TANK	PIPE	TANK	PIPE
A. MANUAL (STATIC) TANK GAUGING	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. TANK TIGHTNESS TESTING	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. INVENTORY CONTROL	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. AUTOMATIC TANK GAUGING	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. VAPOR MONITORING	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
F. GROUNDWATER MONITORING	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
G. INTERSTITIAL MONITORING DOUBLE WALLED TANK/PIPING	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
H. INTERSTITIAL MONITORING SECONDARY CONTAINMENT	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I. AUTOMATIC LINE LEAK DETECTORS	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
J. LINE TIGHTNESS TESTING	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
K. OTHER METHOD ALLOWED BY IMPLEMENTING AGENCY (SPECIFY)														
3. SPILL AND OVERFILL PROTECTION														
A. OVERFILL DEVICE INSTALLED	☐		☐		☐		☐		☐		☐		☐	
B. SPILL DEVICE INSTALLED	☐		☐		☐		☐		☐		☐		☐	

PLEDGE: I CERTIFY THE INFORMATION CONCERNING INSTALLATION THAT IS PROVIDED IN SECTION XI IS TRUE TO THE BEST OF MY BELIEF AND KNOWLEDGE.

INSTALLER

NAME PRINTED _____ SIGNATURE _____ DATE _____

POSITION _____ COMPANY _____

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UNDERGROUND STORAGE TANK STATUS

PLANT: C.P.C. - PONTIAC DATE: 5/8/87

CONTACT: D. Gossiaux / V. Strausser PHONE NO: 8-237-2287 / 8-237-2286

TANK DESIGNATION*: 9-1 (550 gals) AGE: 3 yrs

MATERIAL STORED: Gasoline
HAZARDOUS WASTE (SUBTITLE C)

PETROLEUM PRODUCT (SUBTITLE I)

REGULATED SUBSTANCE (SUBTITLE I)

OUT OF SERVICE. DATE TAKEN OUT OF SERVICE:___

EMPTY

OTHER: (DESCRIBE) _____

TANK CONSTRUCTION: METAL___ FIBERGLASS X CONCRETE___ OTHER___

CORROSION PROTECTION: YES___ NO X
TYPE_____

PIPING: STEEL___ GALVANIZED X FIBERGLASS___ OTHER___

TANK TEST DATE:_____ CONTRACTOR:_____

TEST RESULTS: TANK LEAKING___ PIPING LEAKING_____

NOT LEAKING___

DESCRIPTION OF REMEDIAL ACTION:
(INVESTIGATION, CLEANUP, TANK REPLACE/REPAIR, RETESTING ETC..)_____

COST OF PROJECT: $_____

* PLEASE INCLUDE PLOT PLAN SHOWING TANK LOCATION

SEND COMPLETED COPY TO CPC HEADQUARTERS, FACILITIES PLANNING - ENVIRONMENTAL GROUP

ABC1/UNDERGRD.TMS

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Appendix O – AOI W-9 Former Central Foundry (Plant 6) Resin Spill and UST

O-1 Department 671 Resin Storage Facility - Results of Final Soil Sampling and Analysis for Clean-Up Verification (SHA, 1989)
O-2 Letter to GM, re: Department 671 Resin Storage Facility (MDNR, 1989)
O-3 PCB Sampling (Chester, 1996)

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DEPARTMENT 671 RESIN STORAGE FACILITY RESULTS OF FINAL SOIL SAMPLING AND ANALYSIS FOR CLEAN UP VERIFICATION





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GENERAL MOTORS CORPORATION
CENTRAL FOUNDRY DIVISION
PONTIAC PLANT

SUBMITTED FOR APPROVAL TO THE
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

JUNE 1989

PREPARED BY

SCHLEEDE-HAMPTON ASSOCIATES, INC.
ELDREDGE ENGINEERING ASSOCIATES, INC.
CONSULTING ENGINEERS

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Central Foundry Division
General Motors Corporation
Divisional Offices
77 W. Center St.
Saginaw, Michigan 48605-1829

JUNE 14, 1989

MICHIGAN DEPARTMENT OF
NATURAL RESOURCES
SURFACE WATER QUALITY DIVISION
505 W. MAIN STREET
NORTHVILLE, MI. 48167

ATTENTION: MR. R. SCHRAMECK
SUPERVISOR, COMPLIANCE SECTION

DEAR MR. SCHRAMECK,

THIS LETTER IS TO TRANSMIT TWO (2) COPIES OF THE "DEPARTMENT 671 RESIN STORAGE FACILITY RESULTS OF FINAL SOIL SAMPLING AND ANALYSIS FOR CLEANUP VERIFICATION".

THE REPORT INCLUDES THE INTENT OF THE PROJECT, PROJECT ORGANIZATION, PROJECT, CLEAN UP OPERATIONS, AND CLEAN UP VERIFICATION.

BASED UPON THE DATA AND DISCUSSION CONTAINED IN THIS REPORT, WE BELIEVE THE RESIN RELEASED FROM THE DEPARTMENT 671 STORAGE FACILITY HAS BEEN REMOVED AND WE ARE REQUESTING YOUR WRITTEN CONCURRENCE.

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SINCERELY,

G. KEITH WEST
SENIOR ENGINEER
ENVIRONMENTAL ACTIVITIES

CC W. BARROTT
D. SCHIEMANN
J. WHEELER
FILE

Lets Get It Together
SAFETY BELTS SAVE LIVES

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DEPARTMENT 671 RESIN STORAGE FACILITY
RESULTS OF FINAL SOIL SAMPLING AND ANALYSIS
FOR CLEAN UP VERIFICATION

CENTRAL FOUNDRY DIVISION
GENERAL MOTORS CORPORATION

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PREPARED BY
SCHLEEDE-HAMPTON ASSOCIATES, INC.
BIRMINGHAM, MICHIGAN

SUBMITTED FOR APPROVAL TO
THE MICHIGAN DEPARTMENT OF NATURAL RESOURCES

JUNE 1989

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Introduction

This report presents the results of the final round of soil sampling at the former Department 671 resin storage facility at the General Motors Central Foundry Plant in Pontiac, Michigan. The work represents the final step of a spill clean up project began with an initial investigation over three years ago. The project proceeded from the initial investigation to include a site exploration and environmental action plan (submitted to MDNR 6/88), development of plans and specifications for spill clean up, contracting to perform the clean up work, administration and documentation of clean up activities, and final clean up verification. This report represents the final step in this process.

The final soil sampling program was conducted in accordance with the project specifications. The scope of the sampling included establishing a sample location grid for a small area in accordance with MDNR guidelines as noted in the Draft Guidance for Act 64 RCRA Clean Closure document of April 30, 1987. After the sampling grid was in place, soil samples were selected from the center of each grid cell and analyzed for the resin indicator species, specifically phenol, naphthalene, chloroform, and anthracene.

This report presents a brief synopsis of work performed during the clean up operations as well as the final sample locations and results. It contains two plan drawings, ENV-2 and ENV-3 which show the excavation work area and the soil sampling grid.

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Project Intent

The purpose of the project was to clean up the resin spill that occurred at the former Department 671 Resin Storage Facility. In response to a request by MDNR, the owner also agreed to map the presence of kerosene in the immediate area.

Project Organization

The project was directly managed by the owner who was responsible for overall project coordination and administration. A general contractor was responsible for performing the field work and supervising the work force on the project in accordance with the contract documents. Several subcontractors reported to the general contractor and handled various aspects of the work.

Schleede-Hampton Associates, Inc., an independent consulting engineering firm, was retained by the owner as a consultant and to provide on-site administration and inspection services.

An earthwork subcontractor performed all demolition and excavation of building materials and soils on site. They also coordinated on-site trucking of material from the excavation to the staging sites.

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An environmental subcontractor was responsible for monitoring the excavation and removal of material. This firm provided preliminary classification of materials removed from the excavation for staging and final classification. They also assisted the owner with disposal options and coordinated off-site trucking.

An analytical testing services firm acted as a subcontractor responsible for sampling and testing of excavated soils, building materials, and waste water. They produced all waste characterization reports. They provided an on-site laboratory with a full time staff who administered the continuous air quality monitoring program in accordance with the project specifications.

Clean Up Operations

Prior to project start up, the general contractor provided work plan and an quality assurance document in accordance with the project specifications. The environmental subcontractor provided a health and safety plan and a contingency plan in accordance with the specifications also.

Initial work on the site consisted of demolition of what remained of the resin storage building, excavation along the existing building lines of the sand storage building and the compressor building to facilitate the installation of sheet piling to protect the foundations of these buildings.

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Eight staging sites were constructed to separate excavated material and store it until final classification and shipment off-site. The staging sites were constructed near the excavation in areas paved with concrete. A 30 mil thick PVC liner was placed as a vertical barrier at each site to prevent materials from penetrating into the pavement. Soils imported from off-site were placed as dikes around each staging site and coated with a sprayed on waterproofing compound to make them impermeable. All storm sewer manhole covers in the vicinity were fitted with solid covers and welded shut prior to job start up.

Storm water retention structures were installed on the site to collect run off from the roads used by the trucks and excavation equipment. Storm water or groundwater accumulating in the excavation was pumped into a Frac tank parked in the area. All of the water collected in the tanks or structures was sampled and tested to determined appropriate disposal or treatment requirements periodically throughout the project as required by the contract specifications.

To control dust and airborne particulates during the project, a dust control compound was applied periodically over all roads and traffic areas. They were swept with power equipment on a daily basis also.

An air monitoring program was established in accordance with the contract specifications. It included continuous real time measurements in the work area, occasional physical sampling and analysis, and particulate monitoring in accordance with the project specifications.

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The excavation and staging began with material in the area of the former resin building area and proceeded north into the basement area. Final work included excavation and removal from the area west of the basement. The scope of the excavation was based upon the Site Exploration and Environmental Action Plan and further described in the project specifications. Plan sheet ENV-2 (enclosed) shows the excavation area and the construction sequence.

All excavated material stockpiled in the staging sites was labeled and covered at the end of each work day. A sign was placed in front of each staging site which identified each load of material from the excavation by position based upon a soil removal grid. Each sign was updated daily.

Disposal Operations

The staged material was sampled and tested in 100 cubic yard increments to characterize it for disposal. Waste characterization reports were generated by the analytical subcontractor and submitted by the environmental subcontractor to disposal sites for approval.

At the direction of the owner, special shipping documents were developed and issued to track all of the non-hazardous waste materials shipped off-site. These documents were sequentially numbered and issued by the owner at the time of shipment.

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All hazardous waste materials were shipped in strict accordance with state and federal regulations.

Clean Up Verification

A soil sampling grid was established for the excavation area in accordance with MDNR guidelines for a small area as noted in the Draft Guidance for Act 64 RCRA Clean Closure document of April 30, 1987. The grid is shown in Plan Sheet ENV-3 contained in this report. The grid was established in the field by a registered land surveyor, and sampling points were staked and labeled prior to sampling.

When the excavation had reached a nominal depth of 18 feet over the entire area, an initial set of soil samples were obtained. These samples were analyzed for resin constituents as defined in the Site Exploration and Environmental Action Plan and acknowledged by the MDNR in a letter of August 22, 1988 by Mr. Schramek of the Surface Water Quality Division - Northville Office. In addition to these resin constituents, the presence of kerosene was also identified.

The results of the initial round of sampling and testing is shown in Table 1. Trace concentrations of naphthalene and Kerosene were noted in five grid sections near the former resin storage building. None of the samples showed the presence of all of the resin constituents.

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To produce a suitable buffer zone, the excavation was extended to and into the underlying clay soil found over the site. An additional sampling program was conducted at a nominal depth of 20 feet below the surface to check for the presence of resin constituents and kerosene. The results of this round of samples showed no evidence of resin constituents or kerosene in any of the grid positions to the method detection limits. The results are shown in Table 2.

Conclusions

We believe that the analytical test results contained in this report provide full verification of the complete clean up of the resin spill that occurred at Department 671 Resin storage facility. We respectfully request your concurrence and submit this information for your written approval.

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APPENDIX

CONTAINS TABLES AND PLAN DRAWINGS

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Table 1

SUMMARY OF THE DETECTION OF RESIN CONTAMINANT INDICATORS IN SOIL SAMPLING GRID

NOMINAL ELEVATION 60 FEET

SAMPLING GRID NUMBER*

Resin Indicator Species	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15
CONCENTRATION EXPRESSED IN MILLIGRAMS PER LITER mg/l (PPM)															
PHENOL	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
NAPHTHALENE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	8.2	<1.0	<1.0	<1.0	<1.0	<1.0	12	<1.0	<1.0
CHLOROFORM	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ANTHRACENE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ADDITIONAL MAPPED COMPOUNDS															
KEROSENE	<10	<10	<10	<10	<10	<10	140	180	<10	<10	<10	<10	5000	<10	<10

* FOR SITE PLAN SHOWING GRID LOCATIONS, REFER TO SHA DRAWING ENV-3

TESTS PERFORMED IN ACCORDANCE WITH EPA SW 846 or ASTM METHOD NUMBERS:

8250	PHENOL	8010	CHLOROFORM	ASTM D3540	KEROSENE
8250	NAPHTHALENE			8250	ANTHRACENE

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Table 1

SUMMARY OF THE DETECTION OF RESIN CONTAMINANT INDICATORS IN SOIL SAMPLING GRID

NOMINAL ELEVATION 60 FEET

SAMPLING GRID NUMBER*

Resin Indicator Species	#16	#17	#18	#19	#20	#21	#22	#23	#24	#25	#26	#27	#28	#29	#30
CONCENTRATION EXPRESSED IN MILLIGRAMS PER LITER mg/l (PPM)															
PHENOL	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
NAPHTHALENE	<1.0	<1.0	<1.0	<1.0	6.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.0
CHLOROFORM	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ANTHRACENE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ADDITIONAL MAPPED COMPOUNDS															
KEROSENE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

* FOR SITE PLAN SHOWING GRID LOCATIONS, REFER TO SHA DRAWING ENV-3

TESTS PERFORMED IN ACCORDANCE WITH EPA SW 846 or ASTM METHOD NUMBERS:

8250 PHENOL 8010 CHLOROFORM ASTM D 3540 KEROSENE
8250 NAPHTHALENE 8250 ANTHRACENE

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Table 2

SUMMARY OF THE DETECTION OF RESIN CONTAMINANT INDICATORS IN SOIL SAMPLING GRID

NOMINAL ELEVATION 58 FEET

SAMPLING GRID NUMBER *

Resin Indicator Species	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15
CONCENTRATION EXPRESSED IN MILLIGRAMS PER LITER mg/l (PPM)															
PHENOL	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
NAPHTHALENE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CHLOROFORM	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ANTHRACENE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ADDITIONAL MAPPED COMPOUNDS															
KEROSENE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

* FOR SITE PLAN SHOWING GRID LOCATIONS, REFER TO SHA DRAWING ENV-3

TESTS PERFORMED IN ACCORDANCE WITH EPA SW 846 or ASTM METHOD NUMBERS:

8250	PHENOL	8010	CHLOROFORM	ASTM D 3540	KEROSENE
8250	NAPHTHALENE			8250	ANTHRACENE

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Table 2

SUMMARY OF THE DETECTION OF RESIN CONTAMINANT INDICATORS IN SOIL SAMPLING GRID

NOMINAL ELEVATION 58 FEET

SAMPLING GRID NUMBER*

Resin Indicator Species	#16	#17	#18	#19	#20	#21	#22	#23	#24	#25	#26	#27	#28	#29	#30
CONCENTRATION EXPRESSED IN MILLIGRAMS PER LITER mg/l (PPM)															
PHENOL	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
NAPHTHALENE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CHLOROFORM	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ANTHRACENE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ADDITIONAL MAPPED COMPOUNDS															
KEROSENE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

* FOR SITE PLAN SHOWING GRID LOCATIONS, REFER TO SHA DRAWING ENV-3

TESTS PERFORMED IN ACCORDANCE WITH EPA SW 846 or ASTM METHOD NUMBERS:

8250 PHENOL 8010 CHLOROFORM ASTM D 3540 KEROSENE
8250 NAPHTHALENE 8250 ANTHRACENE

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Table 2

SUMMARY OF THE DETECTION OF RESIN CONTAMINANT INDICATORS IN SOIL SAMPLING GRID

NOMINAL ELEVATION 58 FEET

SAMPLING GRID NUMBER *

Resin Indicator Species	#31	#32	#33	#34	#35	#36	#37	#38	#39	#40	#41	#42	#43	#44	#45
CONCENTRATION EXPRESSED IN MILLIGRAMS PER LITER mg/l (PPM)															
PHENOL	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
NAPHTHALENE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CHLOROFORM	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ANTHRACENE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ADDITIONAL MAPPED COMPOUNDS															
KEROSENE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

* FOR SITE PLAN SHOWING GRID LOCATIONS, REFER TO SHA DRAWING ENV-3

TESTS PERFORMED IN ACCORDANCE WITH EPA SW 846 or ASTM METHOD NUMBERS:

8250 PHENOL 8010 CHLOROFORM ASTM D 3540 KEROSENE
8250 NAPHTHALENE 8250 ANTHRACENE

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Table 2

SUMMARY OF THE DETECTION OF RESIN CONTAMINANT INDICATORS IN SOIL SAMPLING GRID

NOMINAL ELEVATION 58 FEET

	SAMPLING GRID NUMBER*			
	#46	#47	#48	#49
Resin Indicator Species	CONCENTRATION EXPRESSED IN MILLIGRAMS PER LITER mg/l (PPM)			
PHENOL	<1.0	<1.0	<1.0	<1.0
NAPHTHALENE	<1.0	<1.0	<1.0	<1.0
CHLOROFORM	<1.0	<1.0	<1.0	<1.0
ANTHRACENE	<1.0	<1.0	<1.0	<1.0
ADDITIONAL MAPPED COMPOUNDS				
KEROSENE	<10	<10	<10	<10

* FOR SITE PLAN SHOWING GRID LOCATIONS, REFER TO SHA DRAWING ENV-3

TESTS PERFORMED IN ACCORDANCE WITH EPA SW 846 or ASTM METHOD NUMBERS:

8250 PHENOL 8010 CHLOROFORM ASTM D 3540 KEROSENE
8250 NAPHTHALENE 8250 ANTHRACENE

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JAMES J. BLANCHARD, Governor

DEPARTMENT OF NATURAL RESOURCES

DAVID F. HALES, Director

cc G. Bauman
D. Hess
J. Wheeler
J. Berry SHD

December 11, 1989

Central Foundry Division
General Motors Corporation
Divisional Offices
77 W. Center Street
Saginaw, MI 48065-1629

Attention: Mr. G. Keith West, Senior Engineer - Environmental Activities

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Aug 07, 2009 15:11

Dear Mr. West,

In response to your June 14, 1989, letter and submitted report" Department 671 Resin Storage Facility Results of Final Soil Sampling and Analysis for Clean Up Verification", a final inspection visit and meeting took place at the site on June 30, 1989. Tim Jaski from this office met with you in order to verify the actions taken during the cleanup process, especially the monitoring and close out activities. An earlier visit by Mr. Jaski on May 8, 1989, had been made to observe the status of the cleanup as it related to the contaminated soil removal, staging and disposal.

The meeting involved reviewing the chronological documentation (computer logs, manifest forms, lab sample analyses, photographs, etc.) of the clean up project from start up to the present. The excavated area was also looked at again and no visible signs of contamination were observed. The clay layer preventing downward migration of the resin was clearly visible during our inspection. The grid markers, that had been installed for soil sampling purposes, were also still in place. Based on all this information and observation, verbal approval was given to fill in the excavation with clean fill and close out the project.

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By copy of this letter it is again concurred that this project as proposed and approved has been satisfactorily completed and can be closed out. If you have any comments or questions regarding this letter, please contact this office at your convenience.

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Sincerely,

Roy E. Schrameck, Supervisor
Surface Water Quality Division
Compliance Section

By:

Timothy S. Jaski
Environmental Quality Analyst

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GENERAL MOTORS CORPORATION
PONTIAC FOUNDRY (PLANT 6)
PONTIAC, MICHIGAN

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PCB Sampling

Project No.: 5082-09

January 1996

CHESTER
ENVIRONMENTAL

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PONTIAC, MICHIGAN

GENERAL MOTORS CORPORATION
PONTIAC FOUNDRY (PLANT 6)
PONTIAC, MICHIGAN

PCB SAMPLING

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INTRODUCTION

In May of 1987, General Motors Corporation had ceased operation activities at the Pontiac Foundry (Plant 6) located at 701 Glenwood Avenue in Pontiac, Michigan. The foundry building, compressor building, salvage building and ancillary structures covered approximately 900,000 sq. ft. at the south end of the site. In January 1995, deactivation and demolition activities commenced.

On May 22 through May 24, 1995, at the request of USEPA Regional 5's, Mr. Paul A. Novak, Jr. and Mr. Lawrence J. Lins, representatives from the USEPA Eastern District Office, performed a PCB soil and/or debris sampling inspection. The inspection was conducted in conjunction with a fugitive soil and/or debris inspection.

This report documents the PCB soil and/or debris sampling activities that were conducted including the analytical results, actions taken and conclusion.

SAMPLING PROGRAM

At the time of the inspection, the foundry was partially demolished. The structures that remained were the compressor, salvage, melt shop buildings and part of the core storage, office and loading dock areas on the east side of the site. After a discussion with General Motors' personnel, the representatives from EPA collected five (5) soil and/or debris samples at locations throughout the demolition site where PCB's had been identified during a GM conducted Facility Assessment. The location descriptions, corresponding sample numbers and analysis are shown in Table 1. The approximate sample locations are identified on the attached Site Map.

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Four samples were collected by means of removing soil and/or debris from the top of concrete slabs. The fifth sample, collected from the Molding area, was collected at the grade surface. The Molding area surface was soil and not a concrete surface.

The samples were collected and placed in the sample container by the EPA representative. The collection procedure consisted of the sampler physically pushing soil and/or debris into the sample container. The container was laid on its side and the material sampled was pushed into the container. The sampler wore a latex glove on the hand used to push the material into the sample container.

The procedure used by the EPA sample collector to obtain two samples were to have two separate sample containers at each sample location. The first sample container was filled and sealed, then the second sample container was filled and sealed. The second sample was obtained from the same location as the first sample. However, the samples were not composited prior to being placed into separate containers for analysis. The sample collector removed the latex gloves and put on new ones for each new area sampled.

Four samples were collected in this manner. The fifth sample, "East Loading Dock", was collected in a different manner. The procedure for the collection of this sample consisted of the scooping of soil/and or debris from the grade surface from four (4) separate sampling locations in the area and placing each one of these four samples in a common container. Again this sample was not composited, but remained in the original individual sample containers.

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The samples obtained for General Motors were submitted to Chester LabNet for analysis.

At the time of the sampling demolition had not started in the "East Loading Dock" area, and all the related structures were intact.

ANALYTICAL RESULTS

The analytical results of the soil and/or debris samples were summarized in Table 1, with complete analytical reports presented in Attachment 1.

Aroclor 1242 was the only Aroclor detected. The highest concentration of PCBs was found at the East Loading Dock area. EPA had a result of 82 ug/g whereas GM had a result of 36 mg/kg. The next highest concentration of PCB was in the sample from the Molding area. The EPA had a result of 32 ug/g whereas GM had a result of 24 ml/kg. All other samples had a concentration less than 8 mg/kg as reported by both the EPA and GM.

ACTION TAKEN

The Eastern District office representatives of the EPA informed General Motors on the necessary steps to be taken on handling the soil and/or debris that had a PCB

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concentration greater than 50 mg/kg. As shown on Table 1, the East Loading Dock had a concentration of 80 ug/g (EPA analysis results). The EPA informed GM that this was the only area of concern.

The clean-up steps required by the EPA are shown in Attachment 2.

Prior to the start of demolition, the East Loading Dock area was cleaned by sweeping. The sweeping were placed into 55 gallon drums. The drums were sealed and removed from the site to an EPA approved landfill.

To confirm the cleanliness of the East Loading Dock area prior to demolition EPA requested that approximately four (4) wipe samples be taken. After the soil and/or debris piles were removed, five (5) wipe samples were taken from the concrete surface. These samples were numbered 33 through 37 and submitted to Chester LabNet for analysis of PCB. The results from this sampling exercise are shown in Table 2, with a complete analytical report presented in Attachment 1. As shown in Table 2, the highest concentration of PCB was 4.4 ug/wipe.

Attachment 3 includes the manifests on the waste material removed from the site during this activity.

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GENERAL MOTORS CORPORATION
PONTIAC FOUNDRY (PLANT 6)
PONTIAC, MICHIGAN
PCB SAMPLING

TABLE 1
SAMPLING PROGRAM

EPA SAMPLE NO.	GM SAMPLE NO.	EPA ANALYSIS RESULTS (ug/g)	GM ANALYSIS RESULTS (mg/kg)	LOCATION (COLUMN LINES)	LOCATION DESCRIPTION
S01	501	82	36	L94 to L95	East Loading Dock
S02	502	2.0	1.6	L86	Casting Storage Area
S03	503	2.0	2.6	DD83	Maintenance Area
S04	504	8.0	7.2	JJ88	Finish Room "Crib Area"
S05	505	32	24	AA62	Molding Area

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GENERAL MOTORS CORPORATION
PONTIAC FOUNDRY (PLANT 6)
PONTIAC, MICHIGAN
PCB SAMPLING

TABLE 2

PCB WIPE SAMPLE RESULTS

SAMPLE NO.	LOCATION	ANALYSIS RESULTS
33	Wipe samples at east loading dock of foundry. This was temp. storage area for drumming of PCB ballasts, sampled after drums disposed and area cleaned.	<l ug/wipe
34	Wipe samples at east loading dock of foundry. This was temp. storage area for drumming of PCB ballasts, sampled after drums disposed and area cleaned.	4.4 ug/wipe
35	Wipe samples at east loading dock of foundry. This was temp. storage area for drumming of PCB ballasts, sampled after drums disposed and area cleaned.	<1 ug/wipe
36	Wipe samples at east loading dock of foundry. This was temp. storage area for drumming of PCB ballasts, sampled after drums disposed and area cleaned.	1.8 ug/wipe
37	Wipe samples at east loading dock of foundry. This was temp. storage area for drumming of PCB ballasts, sampled after drums disposed and area cleaned.	1.2 ug/wipe

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ENVIRONMENTAL EVALUATION REPORT

PLANT GENERAL

DATE 8-5-71

LOCATION WEST YARD

TIME

REQ. BY

ENVIRONMENTAL FACTOR K - INDUSTRIAL WATER-POLLUTION CONTROL

RESULTS GIVEN

DESCRIPTION:

CARL BURNSIDE, PUNTAL SCHOOL DISTRICT, 334-4996, REPORTED TO B. HANSEN VIA PHONE THAT AN OILY DISCHARGE WAS SEEN COMING FROM THE CULVERT WHICH DRAINS ONTO SCHOOL PROPERTY NEAR MONTEALM & SABINAW ON EITHER 7/18 OR 7/25.

INVESTIGATION SHOWED R.R. BOXCAR WITH MACHINE TURNINGS & CHIPS WERE DRIPPING CUTTING OIL ON THE GROUND IN THE VICINITY OF THE R.R. SCALE & THE SUBSTATION, WEST OF THE STORAGE BUILDING. THERE WAS VISUAL EVIDENCE THAT THE OIL HAD RUN DOWN THE ROADWAY TO A MANHOLE AT THE SW CORNER OF SUBSTATION & ENTERED THE STORM DRAIN.

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RECOMMENDED ACTION:

ON 8-6-71, A TEMPORARY SUMP & THE MANHOLE WERE BOTH PUMPED OUT & PROVISIONS MADE FOR A DAILY MONITORING OF THE AREA. TENTATIVE PLANS ARE TO: (1) INSTALL DRAIN TILE & PERMANENT SUMPS FOR PUMPING OIL DRIPPINGS TO SUMP AT OIL STORAGE BLDG. FOR DRAIN TO WASTE TREATMENT PLANT, (2) CHECK STATUS OF CHIP WRINGER OPERATION, & (3) PERMANENT CONCRETE DRAIN DECK INSTALLATION ON R.R. SPURS AT R.R. SCALE AREA.

SIGNED: [illegible]

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PS-30-16 5-71

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Ron Jeanes, Oakland County Environmental Health Dept., 332-6055, EXT 35, contacted Mr. Collins re drainage from PMD property contaminating the ditch bounding the Pontiac Motor Property which drains into Harris Lake. Results of coliform test on sample taken of drain culvert effluent on 8-3-09 showed over 200,000 coliforms whereas maximum allowed for this particular test is 1000.

Jeanes was shown area and he took 3 test samples with him. (Met with B. Jeanes, Bill Ladd, C. Collins & R. Cattle.) Results to be reported to PMD as soon as tests have been run.

B. Jeanes

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Oakland County Environmental Health Dept took 3 samples from PMD manhole & catch basins on 8-9-71. Results are as follows per Ron Grams, 332-9255 Ext 35:

1. Oil dump, North of substation & West of R.R. Track — 1,400,000 coliforms

2. North dump, truck marshalling yard at Dequindre Gate — 100,000

3. Drain catch basin at head of culvert draining across Montcalm Ave — 1,100,000

I informed Ron that we were considering putting in a pump station at the drain catch basin & pumping the normal acreage to the ~~[illegible]~~ sanitary sewer manhole approx 600' east (near city water booster pump house by Hayden Mott)

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During flood or heavy rainfall periods the ramps would overflow to the culvert. He suggested that we defer any expenditures until the problem is cleared with the Michigan State Water Resources representative sometime during that week.

B. Hansen

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D. ASHTON
~~TOM FLUENT~~

RE "HOT" JOB ASSIGNMENT

Surface drainage from the perimeter road catch basins at SW corner of PMD running from the main substation west of the Salvage building around to the Foundry Arc Melt area floors into the ditch by the Pontiac School property across Montcalm and eventually ends up in Harris Lake.

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On 8-5-71, I rec'd a call from Carl Burnside at that school building who reported a heavy discharge of oil had been discovered coming from the drain culvert on either the 18th or 25th of July. Investigation on 8-6-71 disclosed that it was cutting oil from the R.R. spur area by the substation, & R.R. scale site. A sump that Maguire had

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for collecting this oil drippings had either overflowed or broken and oil had flowed into the catch basin near the SW corner of the substation. Collins, Murphy, myself and others including Bill Hard have looked the site over and everyone agrees that the cutting oil should be drained from the saturated R.R. bed and pumped to a catch basin by the oil storage bldg which is tied into the waste treatment Plant. Murphy suggests utilizing some abandoned pipe lines paralleling the RR tracks in order to minimize the extent of detailing through the concrete roadway.

The R.R. scale sump pump & possibly some additional sumps on the east side of the tracks would have to be piped into the proposed system possibly by way of the old utility

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tunnel under the R.R. tracks from the N W corner of the salvage bldg. The tunnel or tunnels would also require sump pumps.

Now comes the clincher. On 8/9/71, a Mr. Ron Grimes from the Richland County Environmental Health Dept visited us to check the S W part of our property. A test of the water at the culvert discharge into the ditch by the school on 8/3/71 showed 214,000 coliforms which is a hell of a lot higher than the 1000 allowed. He took some samples on 8/9/71 of the cutting oil, from the catch basin at the north edge of the truck marshalling yard at Saginaw Gate and the catch basin at the head end of the culvert on PMD property which leads to the ditch.

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It appears there is some slight ground seepage into the drain system which continues to provide the media for the algae, slime & cutting oil to be carried into the ditch and keep the reaction going. (THE ANIMAL & VEGETABLE FATS IN THE CUTTING OILS ARE THE PRIME POLLUTANTS.)

We should get some confirmation of this today from Quinex & if this is the case, we plan to:

1. Install a small pump station at the last catch basin on our property & pump the normal seepage & runoff up the hill to one of the two sanitary sewer manholes by the City Water Booster Pump Station near the Ice Melt. However, overflow to the ditch would ~~be~~ take place during periods of heavy

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rainfall.

This would have top priority.

2. Provide ~~se~~ drain tiles & sump system for collecting the cutting oil & getting it into the Waste Treatment system.

3. Possibly install a concrete drain deck under the PR tracks for a long-term solution.

Dave Durand has been doing some pumping out of catch basins, etc for us. You might contact him and also look the situation over in the field. I'll see you to go over assignment in detail as soon as we can get together an estimate, we'll want to get a project or DP request started.

Scott

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Committee on 9-23-71 Confidential under FOIA

Cutting Oil Pollution Problems

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Pontiac Motor has a problem of pollution of Harris Lake caused by oil coming from our property. Harris Lake is located south west of the Saginaw St. gate. (Point to area) The pollution is both in the form of free floating oil and soluble oil.

Attention was focused on this problem by Mr. Carl Burnside of the Pontiac School Bus Garage.

Mr. Burnside called Bud Hansen on Aug. 5, 1971 to report that his men had observed a quantity of float oil being discharged from the Pontiac Motor drain into the open ditch which crosses the school property and leads to Harris Lake. His men were working in the parking lot connecting a new drain to the ditch on Sunday July 25 when the oil was observed.

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Subsequent investigation by Plant Engineering personnel did not reveal the exact source of the oil on this particular day. However, the only logical area which could be found for the oil source was from the railroad

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yard at the railroad scale area northwest of the Salvage Building. (Plt. area) Oil was observed dripping onto the ground from railroad cars loaded with machining chips and parked in this area. An earth sump had been dug just west of the tracks near this area some time ago and oil had been seeping from the ground and collecting in the pit. We assume that this pit either overflowed or was pumped out onto the adjacent roadway and allowed to enter the roadway storm drains nearby. The roadway storm drains are connected to the open ditch which flows thru the school property and into Harris Lake. (Trace route on map).

On Aug. 9, 1971 Mr. Grimes of the Oakland County Health Dept. came to Pontiac Motor and took samples of the liquid in the earth pit at the railroad scale area and two manholes in the roadway drainage system. We are not sure if anyone called the Health Dept. or if their man just happened to come in at this time.

Tests on the samples by the Health Dept.

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showed coliform bacteria counts of 110,000 to 1,400,000 bacteria per 100 milliliters. The last month's on Pontiac Motor properly tested 1,100,000. The allowable count for any effluent being discharged into a stream or lake is 1000. ∴ Our effluent discharge on Aug 9 was 1100 times over allowable. Coliform bacteria ordinarily only grow on human or animal waste and the Health Department was quite concerned that Pontiac Motor was dumping raw sewage into the storm drains. Roger Little (one of Plant Engr. GMI student) has checked possible sources of sewage, mainly the Saginaw Gate pump house, by using dye in the water closets. However, no dye showed up in the storm drain. Therefore we assumed, and the Health Dept. agrees, that the bacteria are feeding on the animal fats in the soluble cutting oils from the railroad yard. So we see that both free floating oil as well as soluble oil is or has been discharged into Harris lake.

There are two sources of wet machining chips, namely Plants 5 & 9. Plant 9 has no chip dryers and Plant 5 has partial drying but on occasion even must bypass this equipment due to downtime. All wet chips from both areas are loaded in railroad cars and sent

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to the railroad scales prior to shipping. The foundry cannot use wet chips and they must be sold. Chips from Plants 18 and 51 are dried sufficiently to not cause any problem.

On Aug 26, 1971 a meeting was held at Pontiac Motor with people from the Oakland County Health Dept, Michigan State Water Resources Commission, General Motor Plant Engineering group, and our Plant Engineering to discuss the Harris Lake pollution problem. After some discussion it was agreed that the following measures should be taken by Pontiac to alleviate the pollution.

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1. Install a temporary pump in the earth pit west (point on map) of the railroad tracks immediately. The purpose of this pump is to keep the pit from filling and overflowing into the surface storm drains. The pump discharge is to be piped to the nearby Flammable Liquid Storage Building which has facilities for pumping the liquid to Waste Treatment Plant. This pump was installed on Sept. 1. and has kept the oil pumped out sufficiently. A pump was also installed

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in a pipe tunnel at the northwest corner of the Salvage Building. This tunnel was completely filled and presents a fire hazard because it is open to the inside of the building.

2. Install a permanent pumping station at the last manhole on Pontiac Motor property in the roadway storm drain. (point on map) The purpose of this pump station is to catch all dry weather flow and pump it to a sanitary sewer. The dry weather flow is mainly ground seepage and quite highly polluted. During storm periods, the excess water would overflow into the lake. GM Plant Engineering recommends that all flow presently discharging into a lake or stream be directed to city sewers or our own treatment facilities. However, sewer elevations prevent connecting the roadway drains into a city combination sewer without a pump station to handle all storm water. Also, the city combination sewer serving this area is presently undersized and pumping more water into it is impractical. The city sanitary sewer serving this area (point on map) is also undersized and the city engineer will only allow a very small additional

or our own treatment plant

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amount of water to be pumped into this line. At present a metering device has been installed in the roadway sewer line to determine exactly what the dry weather flow rate is. If this flow rate is not too high, the city engineer will allow pumping into their sanitary sewer. The other alternative is to pump to our Waste Treatment Plant ½ mile north.

3. Replace the oil saturated railroad ballast and install perforated drain tile in the railroad yard (point on map.). The purpose of the drain tile is to remove the oil from the saturated earth and catch any future railroad car leakage. The drain tile will be routed to a permanent sump and pump station. The pump discharge will be to our Waste Treatment plant via the Flammable Liquid Storage Building pump station. Engineering for this portion of the job is in process.

4. The ultimate solution to this problem is to stop placing oily chips in railroad cars. The above steps are mainly immediate measures to stop the oil from entering the lake until a more permanent

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solution is implemented. Chip dryers of some type must be installed in Plants 5 & 9 to provide adequate chip drying. Both Plant Engineering and Plant Layout Depts. are doing preliminary work on this phase of the project. A new and better type of chip wringer is now on the market which does not give the maintenance problems plaguing our present Plant 5 wringers. These new wringers have been installed at other G/P divisions and are being checked by Plant Engineering at present.

The State Water Resources Commission people agreed with these plans. There only stipulation is that they will want to inspect all drawings prior to installation. Money for this project has been forecasted and an appropriation request will be prepared as soon as preliminary engineering is complete.

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OFFICE MEMORANDUM

MUST RECEIVE PROMPT ATTENTION

PONTIAC MOTOR DIVISION

FOR THE ATTENTION OF

Messrs:

G. Robinson
L. Greenwood
R. Jaycox
D. Long
J. Gibson
R. Kieft
A. Ellis
K. Rosewall
T. Guinn
M.P. Benoit, M.D.
B. Hansen

DATE September 20, 1971

SUBJECT

ENVIRONMENTAL CONTROL
COMMITTEE MEETING

Thursday, September 23, 1971
10:30 A.M. to 12:00 Noon
Large Mfg. Conference Room

MEETING AGENDA:

C. Collins	Review of Assignments
Nick Kachman G.M. Plant & Environmental Eng.	Corporate approach to Plant Environmental Testing
Safety Dept.	Occupational Health & Safety Act as applied to P.M.D.
	Noise Survey Status
Dennis Ashton	Cutting Oil Pollution Problems
Art Evans	Noise Abatement Progress in Sheet Mtl. Plants
Einar Jensen	Car Water Test Noise Enclosure
Roger Little	Air Nozzle & Blow-Off Demonstration
Bud Hansen	Noise Program Status
C. Collins	Open discussion - new environmental problems requiring action.

CHC:be

C. H. COLLINS

cc:

Messrs. D. R. Bell, J. F. Blamy, R. B. Gould, M. L. Leighton, R. A. Weil, R. F. Weil, D. L. Burger, C. D. Fifield, W. G. Finlayson, D. E. Folkerson, W. C. Killen, W. H. Knisley, N. B. Luther, W. L. Ott, T. J. Studnicki, R. M. Williar, D. G. Upton

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1-10-1

C. H. Collins

Re: Pollution of Harris Lake

Per John Delos, the Michigan Water Resources people will be at TMD 7 Feb 17 at 2:00 PM to discuss the reported continued pollution of Harris Lake by Pontiac Motors.

I talked to Roy Steinmetz from the State who reported they had a complaint that Pontiac Motors was dumping oil into the sewer line to Harris Lake every Sunday. I admitted that there may have been some flow into this Lake in late July, but none since to our knowledge.

As you know, the State, County & Corporate people were in here on Aug 26 and we've been watching this pretty close. The coliform

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Count dropped from 1,100,000 to less than 250 over a period of time.

I suggested that he check on the reliability of his towers which he agreed to do.

I believe they'll also be meeting with Fisher Body sometime next week, date ? which is in preparation for some Pontiac City Hearing on Feb 24. Can't find out about it as the City Offices are closed for Lincoln's Birthday Holiday.

Mike Tyra from Delox' group will be out Monday or Tuesday to meet with us. In the meantime we're running more coliform tests.

D. Damen

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K. LITTLE

C.H. COLLINS

RE: PMD INVOLVEMENT IN POLLUTION OF HARRIS LAK.

CHRONOLOGICAL HISTORY

JANUARY 1971 — Standards proposed canceling of PM-973, FACILITIES TO REMOVE CONTAMINANTS FROM C.I. BORINGS, pollution unknown at that time.

August 5, 1971 — Carl Burnside, Pontiac School District, Supt of Bus Garage Facility at corner of Saginaw & Mercalm, called me to report that an oily discharge was seen coming from the culvert on PMD property to the Harris Lake drain ditch.

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August 6, 1971 — Earthen sump a R.R. track area pumped out & provisions made for a daily monitoring of the area by Salvage Bldg, RR Yard & substation

August 6, 1971 — Ron Grimes, Oakland County Health Dept., contacted C. Collins by phone to report a high coliform count from test sample taken Aug 3, 1971 at drain culvert from our property. (200,000 coliforms vs allowable of 1000)

August 9, 1971 — Ron Grimes visited PMD & took samples which showed a coliform

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count of 1400,000 from earthen sump at 1st traffic & 1,100,000 from last catch basin on our property.

August 26, 1971 — Mtg at PMTD with Michigan Water Resources Commission, Oakland County Health Dept & Corporation personnel.

Tentatively agreed to the installation of a small pump station at last manhole to pump normal & early rainwater run-off into sanitary sewer line across the road (Montcalm Ave.) & to follow-up on chlorinating as req'd to eliminate source.

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About August 31 — City of Pontiac stated the Montcalm sanitary sewer was overloaded & it was undesirable to try to pump into it. (Via Phone to D. Ashton)

SEPT 1, 1971 — Sump pump placed in operation at earthen sump to pump oil to waste treatment plant.

SEPT 15, 1971 — Overflow weir installed in drain pipe to measure flow of drain water to Harris Lake.

SEPT 20, 1971 — Rained 1.2" in 10 hours. H_2O level 5½" above notch in weir. Flow 90 GPM.

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October 1, 1971 — Lowest flow rate of 1.3 GPM noted. Generally runs below 5 GPM during normal weather.

October 13, 1971 — Coliform count 240,000 per test run at Bunds.

October 25, 1971 — Count down to 240 or less.

October 29, 1971 — Leakage from clip core noted southeast of substation. Maintenance soaked up oil with sand to prevent run-off.

October 28, 1971 — Article appeared in Pontiac Press stating EPA was attempting to work out a solution with the City of Pontiac to stop pollution of Harris Lake.

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November 5, 1971 — Coliform count showed maximum of 240.

November 22, 1971 — Clip Handling Meeting.

December 13, 1971 — Flow rate to Harris Lake 5.13 GPM.

December 16, 1971 — Flow rate 6.15 GPM. Earthen sump and pump still in operation. Ground not frozen at sump & oil from track bed still flowing into sump.

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Abt January 10, 1972 — Earthen sump and ground frozen. Pump inoperative.

Lab had rec'd equipment for coliform testing. Test showed coliform count insignificant

February 2, 1972 — Second chip handling meeting.

February 11, 1972 — Advised by John Zelos that Mich. State Water Resources Comm. says we are still polluting Harris Lake and that he will be at TMD on 2-17-72 Thurs. 9:00 am.

Checked effluent & found it to be clear. Took sample for coliform test.

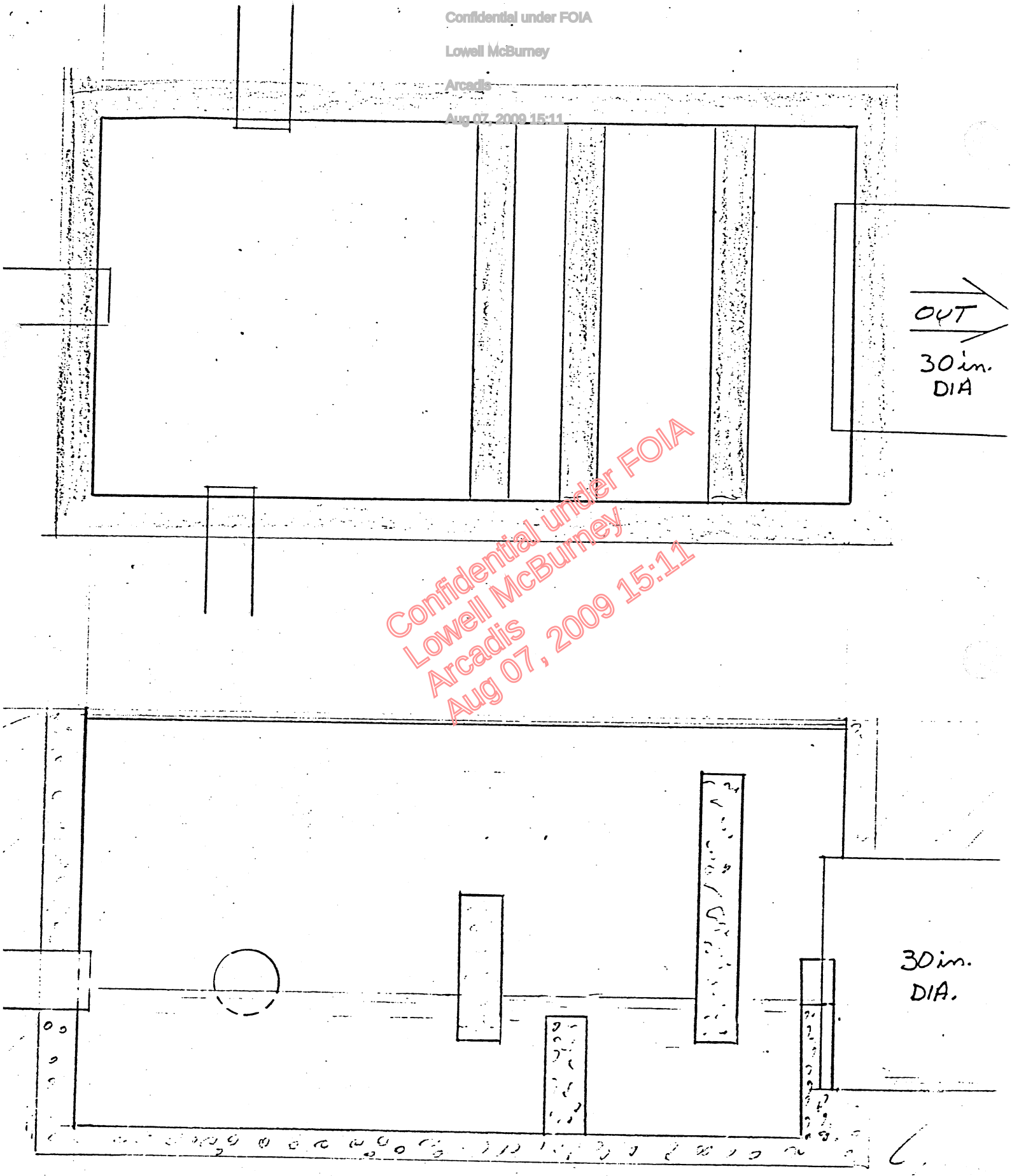
February 14, 1972 — Found oil trapped in two sumps north of the last one which drains to Harris Lake.

This had apparently been accumulating ever since the overflow weir was installed in the drain pipe which resulted in a rise in water level to the point where sumps were acting as oil traps.

February 15, 1972 — Had oil skimmed and arranged to have baffle installed in the last pump ahead of weir and in the next north sump so as to provide a more effective oil trap.

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PROPOSED SEDIMENT AND OIL TRAP FOR [illegible] YARD DRAIN TO HARRIS LAKE

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Chevrolet-Pontiac-Canada Group

Date: 9-24-85

Subject: Barrel Dumping at Salvage

To: D. Gossiaux
V. Straussser

Sixty-nine barrels containing various products were dumped down the Salvage sump during late June and early July, 1985. Many of these products contained parameters which the City Sewer Ordinance sets limits on. A schedule of dumping was set up with these parameters increasing in concentration each day. Samples of water taken from the influent tank and the effluent tank at Waste Treatment each day of the dumping and one day after were tested for these specific parameters.

This is a brief summary of the results. It evaluates what the Waste Treatment Plant can presently handle.

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Parameter	Brief Evaluation
TKN	The City limit of 40mg/l is exceeded ocassionally without extra dumping of products. Watch out for products of this sort.
Phosphorus	No problem treating this.
Zinc	No problem treating this.
Nickel	The City limit of 1.4mg/l can be easily esceeded by a small amount- be careful of products containing this.
Chloride	There are problems handling this even without dumping. The city limit of 30mg/l is exceeded all the time. Be Careful .
Oil & Grease	No problem handling this.

Ann Luyckx
Environmental Group

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CP 153 Rev. 11 ...D
Prtd. U.S.A.

30-eff	6/21	6/21	6/26		6/27		6/28		7/1		7/2		7/3
mg/l	41	30	41	30	41	30	41	30	41	30	41	30	30
TKN	33	3.3	42	84	53	52	52	41	25	71	51	53	47
P	6.5	1.6	27	2.3	76	2.4	60	2.1	81	2	75	1.9	2.0
Zn	.21	.39	3.7	0.39	2.7	.28	4.2	0.2	15	.28	11	.49	0.1
Ni	.48	.36	.36	.58	7.6	.74	5.5	1.2	9.5	1.9	5.8	2.2	1.1
Cl	130	130	110	160	210	130	200	180	110	142	510	130	150
Oil & Grease	59	31	930	56	57	29	860	13	3780	14	1790	16	5
ppm to W.T. Contents of Products Dumped on ~~Free~~ day	TKN	44	TKN*	66	TKN*	152	TKN*	176	TKN*	198	TKN*	66	TKN
	Ni	86	Ni	86	Ni	102	Ni	102	Ni*	102	Ni*	188	
	P	71	P	120	P	319	P	276	P	341	P	283	
					Zn	131	Zn	131	Zn	131	Zn	131	

City Limit	days	eff. exceeded limit*					City Limit	days	eff. exceeded limit			
TKN-40	6/26	6/27	6/28	7/1	7/2	7/3	Cl-30	all	days			
Ni - 1.4	7/1	7/2					O&G 100	none				
P - 15	none											
Zn - 2.5	none											

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Water Management Division
Clow Corporation
408 Auburn Avenue
Pontiac, MI 48058
313 334-1630
313 334-4747

September 3, 1985

General Motors Corporation
CPC Group - Pontiac Operations
One Pontiac Plaza
Pontiac, MI 48053
Attn: Valory Strausser
Plant Engineering

Sample Received: June 21, 1985

Hydro Number:	94228
Client I.D.:	6/21/85 - 4:00 pm T-41
Total Kjeldahl Nitrogen, mg/l	33
Nickel, Ni, mg/l	0.48
Zinc, Zn, mg/l	0.21
Total Phosphorus, P, mg/l	6.5
Chloride, Cl, mg/l	130
Oil & Grease, mg/l	59

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Sample Received: June 24, 1985

Hydro Number:	94246
Client I.D.:	6/24/85 Clarify-30
Total Kjeldahl Nitrogen, mg/l	3.3
Total Phosphorus, P, mg/l	1.6
Nickel, Ni, mg/l	0.36
Zinc, Zn, mg/l	0.39
Chloride, Cl, mg/l	130
Oil & Grease, mg/l	31

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Sample Received: June 26, 1985

Hydro Number:	94315	94316
Client I.D.:	Clarify-30	Clarify-41
Total Kjeldahl Nitrogen, mg/l	84	42
Total Phosphorus, P, mg/l	2.3	27
Chloride, Cl, mg/l	160	110
Nickel, Ni, mg/l	0.58	0.36
Zinc, Zn, mg/l	0.39	3.7
Oil & Grease, mg/l	56	930

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September 3, 1985

Samples Received:	6-27-85	
Hydro Numbers:	94372	94373
Client I.D.:	6-27-85 Clarify 30	6-27-85 Composite 41
Nitrogen, Total Kjeldahl, N, mg/l	32	53
Total Phosphorus, P, mg/l	2.4	76
Zinc, Zn, mg/l	0.28	2.7
Nickel, Ni, mg/l	0.74	7.6
Chloride, Cl, mg/l	130	210
Oil & Grease, mg/l	29	57

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cc: Don Edmunds

Susan K. Scott
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Pontiac, Michigan 48058
Attn: Valory Stausser
Plant Engineering

September 3, 1985

Samples Received:	6-28-85	
Hydro Numbers:	94459	94460
Client I.D.:	Clarify 30	Composite 41
Nitrogen, Total Kjeldahl, N, mg/l	41	52
Total Phosphorus, P, mg/l	2.1	60
Zinc, Zn, mg/l	0.20	4.2
Nickel, Ni, mg/l	1.2	5.5
Chloride, Cl, mg/l	180	200
Oil & Grease, mg/l	13	860

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CPC Group Pontiac Operations
One Pontiac Plaza
Pontiac, Michigan 48058
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September 3, 1985

Samples Received:	7-1-85	
Hydro Numbers:	94512	94513
Client I.D.:	Clarify 30	Composite 41
Nitrogen, Total Kjeldahl, N, mg/l	71	25
Total Phosphorus, P, mg/l	2.0	81
Zinc, Zn, mg/l	0.28	15
Nickel, Ni, mg/l	1.9	9.5
Chloride, Cl, mg/l	142	110
Oil & Grease, mg/l	14	3780

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Pontiac, Michigan 48058
Attn: Valory Strausser
Plant Engineering

September 3, 1985

Samples Received:	7-2-85	
Hydro Numbers:	94530	94531
Client I.D.:	Clarify 30	Composite 41
Nitrogen, Total Kjeldahl, N, mg/l	53	51
Total Phosphorus, P, mg/l	1.9	75
Zinc, Zn, mg/l	0.49	11
Nickel, Ni, mg/l	2.2	5.8
Chloride, Cl, mg/l	130	510
Oil & Grease, mg/l	16	1790

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CPC Group Pontiac Operations
One Pontiac Plaza
Pontiac, Michigan 48053
Attn: Valory Strausser
Plant Engineering

September 3, 1985

Samples Received:	7-3-85
Hydro Numbers:	94588
Client I.D.:	Clarify 30
Nitrogen, Total Kjeldahl, N, mg/l	47
Total Phosphorus, P, mg/l	2.0
Zinc, Zn, mg/l	0.17
Nickel, Ni, mg/l	1.1
Chloride, Cl, mg/l	150
Oil & Grease, mg/l	5

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Appendix R

R-1 Letter to MDNR, re: Catalina Substation (GM, 1986j)
R-2 Letter to GM, re: PCB Oil Spill Catalina Substation (MDNR, 1987b)

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Central Foundry Division
General Motors Corporation
Pontiac Plant
701 North Glenwood
Pontiac, Michigan 48056-0900

October 23, 1986

Virginia Loselle
Geologist
Michigan Dept. of Natural Resources
Southeast Michigan District
15500 Sheldon Road
Northville, Michigan 48167

Dear Ms. Loselle,

On August 19, 1985, in response to a PCB spill August 15, 1985, you sent a letter to Central Foundry Division - Pontiac requesting information regarding soil and water testing locations and results. You also requested we contact you prior to backfilling the area.

Pursuant to your request, I am forwarding a summary report of all soils testing performed and a drawing, H-3062 sheet 1 of 1, of the site to indicate soil sample locations.

If you should have any questions, please contact me at 313-857-6436.

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G. Keith West
Environmental Coordinator

F:DNRPCB

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Central Foundry Division
General Motors Corporation
Pontiac Plant
701 North Glenwood
Pontiac, Michigan 48056-0900

CENTRAL FOUNDRY DIVISION - PONTIAC
CATALINA SUBSTATION
SUMMARY PCB SOIL SAMPLE RESULTS

LOCATION	TEST DATE	FINAL RESULTS (mg/kg)
1	5/28/86	0.62
2	8/20/85	0.46
3	8/20/85	0.63
4	8/20/85	0.39
5A	8/20/85	6.80
5B	6/10/85	0.45
6A	9/5/86	<1.00
6B	6/10/85	0.67
7	9/5/86	<1.00
8	10/3/85	ND
9	5/28/86	1.50
10A	9/5/86	<1.00
10B	10/3/85	0.08
11	10/3/85	4.70
12	1/17/86	1.60
13A	9/5/86	<1.00
13B	9/5/86	<1.00
14	9/5/86	<1.00
15	5/28/86	ND
16A	10/3/85	5.80
16B	10/3/85	0.15
17	10/3/85	7.10
18A	9/5/86	12.00
18B	9/5/86	2.50
19	5/28/86	6.70
20	10/3/85	3.10
21	1/17/86	0.76
22	1/17/86	0.35
23	1/17/86	0.98
24	1/17/86	3.20
25	5/28/86	2.80
26	1/17/86	0.70
27	1/17/86	6.10
28	1/17/86	0.13
29	1/17/86	1.00

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JUN 24 1987

RAL RESOURCES COMMISSION
OMAS J. ANDERSON
RLENE J. FLUHARTY
:PI MONSMA
ST MYERS
/ID SON
'MOND POUPORE
RY H. WHITELEY

STATE OF MICHIGAN

JAMES J. BLANCHARD, Governor

DEPARTMENT OF NATURAL RESOURCES

Gordon E. Guyer, Director
SOUTHEAST MICHIGAN FIELD OFFICE
ENVIRONMENTAL RESPONSE DIVISION
505 W. Main Street
Northville, Michigan 48167
May 27, 1987

Mr. G. Keith West
General Motors
Central Foundry Division-Pontiac Plant
701 N. Glenwood
Pontiac, Michigan 48056-0900

RE: 8/15/85 PCB oil spill Catalina Substation

Dear Mr. West:

Our office has evaluated your PCB laboratory analyses, dated October 23, 1986, submitted to verify soil cleanup levels accomplished at the above referenced spill site. Assuming, as you verified by phone, that soils removed at Location 16 proceeded down to the deeper elevation, identified as Depth "B", your soils cleanup appears complete. As such, you may backfill the excavation area.

Should you have any questions on this matter, please feel free to contact our office at (313) 344-9440.

Sincerely,

Virginia Loselle

Virginia Loselle, Geologist
Environmental Response Division

VL/aw
cc: H. Shakir

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FINAL REPORT

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Completion Report for a Part 201 Generic Industrial/TSCA Restricted Access Remediation, Track 31 Site - GM Metal Fabricating Division Pontiac, Michigan

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General Motors Corporation
Detroit, Michigan

January 1997

O'BRIEN & GERE
ENGINEERS, INC.

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1. Introduction

1.1. Purpose and scope

The purpose of this Completion Report is to document the implementation of O'Brien & Gere Engineers, Inc.'s (O'Brien & Gere) Remedial Action Plan (RAP) dated July 1996. Certification statements associated with this report are included in Appendix A. The RAP addressed polychlorinated biphenyl (PCB) impact to soil at the General Motors Corporation, Metal Fabricating Division (GM) Track 31 site in Pontiac, Oakland County, Michigan. The facility location is shown on Figure 1 and the Track 31 site is shown on Figure 2.

This report documents a cleanup that is consistent with:

- Generic industrial criteria in accordance with Part 201, section 20120a(1)(d) per MDEQ's Operational Memorandum #14, Revision 2, Generic Industrial Cleanup Criteria dated June 6, 1995;
- Part 111 interim corrective measures in accordance with MDEQ's letter dated September 26, 1996 (Appendix B); and
- The Restricted Access Area criteria and spill cleanup requirements in TSCA, 40 CFR 761.125(c)(3).

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1.2. Facility description and background

The GM facility has included engine, axle, mid-size car assembly, pressed metal and plating operations. The facility started operations in 1928 and currently comprises 477 acres of total property. The facility is located in a mixed residential, commercial, and industrial area. Access to the GM facility is limited with admittance at secured gates.

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The soil impacted with PCBs is near a rail spur identified as Track 31, which is the subject of this Report. The Track 31 area occupies a small area within this GM facility. To the west of Track 31 is another GM manufacturing facility.

1.3. Track 31 background

In October 1986, GM personnel reported surficial oil staining on Track 31. According to GM personnel, the source of the release is likely to be a historical (i.e. pre 1987) spill of PCB-containing fluid. Five surface soil samples were collected and analyzed for PCBs. The results indicated the presence of PCBs, predominantly Aroclor 1260.

From December 1986 to January 1989, additional soil and ground water investigations were conducted to evaluate the presence of PCBs and potential presence of USEPA priority pollutants. Based on these investigations, the vertical and lateral extent of PCB (Aroclor 1260 and 1242) impact was assessed below the Generic Residential Direct Contact Value for PCBs of 2.3 mg/kg or parts per million (ppm). The concentrations of total PCBs in soil ranged from non-detect to 20,100 ppm. Soil samples collected from within the area of impact did not indicate the presence of other USEPA priority pollutants in exceedance of the Generic Residential Direct Contact Values. The impacted area extended along Track 31 in a north - south direction.

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Eight ground water monitoring wells were installed in 1988. Two of the monitoring wells were initially tested for the USEPA priority pollutants list of constituents while the remaining six wells were tested for PCBs. Only bis (2-ethylhexyl) phthalate exceeded the MDEQ Health Based Drinking Water Criteria from the ground water samples; however, this compound was determined by the laboratory to be a laboratory-induced contaminant.

Quarterly ground water monitoring for PCBs was conducted from November 1988 to April 1993. During the first round of sampling at three monitoring wells, PCBs were detected at trace concentrations that were below the regulatory levels. Subsequently, filtered ground water sampling analyses at these three wells were non-detect for PCBs. Ground water sampling at the other five monitoring wells indicated that PCBs were not detected since quarterly sampling began in November 1988.

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1.4. Evaluation and selection of remedial alternatives

The remedial alternatives considered in the RAP were identified and evaluated in accordance with Michigan PA Act 451, Part 201, as amended, Section 20118 and using the PCB data obtained during several investigations at the Track 31 site.

Based on the ground water analyses performed at the Track 31 site (i.e., analyses below the MCL), combined with the absence of current and foreseeable use of this ground water, it is apparent that ground water is not a media of potential concern.

The remedial alternative list was developed based on remedial technologies available to address soil impacted with PCBs. Remedial response alternatives were identified from the following categories: On-site treatment, off-site disposal, no action/site monitoring. The RAP concluded that excavation and disposal was the most feasible remedial option to obtain a cleanup at Track 31 that meets both the Part 201 Generic Industrial land use and TSCA Restricted Access Area criteria.

Prior to implementation of the RAP, analysis of the impacted soil was conducted according to the Toxicity Characteristics Leaching Procedure (TCLP), reactivity, corrosivity, and ignitability methods. The purpose of this testing was to evaluate the RCRA regulatory status of these materials prior to disposal. The results indicate that the materials are not a hazardous waste (Appendix C). Previous testing however, identified the soil above 50 ppm PCBs as potentially TSCA regulated.

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1.5. Cleanup criteria

The cleanup criteria developed for the Track 31 site was consistent with Part 201 and TSCA, and is based on the current industrial usage of that area. The Part 201 Generic Industrial Direct Contact Value for PCBs is 21 ppm, as listed in Operational Memorandum #14, Revision 2, dated June 6, 1995. The Part 201 Generic Industrial soil cleanup criteria of 21 ppm is more stringent than the TSCA cleanup criteria of 25 ppm of PCBs for regulated spills in restricted access areas after May 4, 1987 (40 CFR 761.120 to 761.135). Furthermore, it should be noted that the PCB release at this site is historical (i.e., pre 1987). Therefore, utilizing a PCB cleanup criteria of 21 ppm satisfied both Part 201 and TSCA. In addition, this action satisfies Part 111 interim corrective measures provisions which may be applicable.

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2. Site remediation

As discussed in Section 1.4, the selected remedial option is soil excavation and off-site disposal. This section details the methods used to remediate this site to Generic Industrial land use and TSCA Restricted Access Area criteria by excavation and off-site disposal of PCB impacted soil.

2.1. Remedial action plan modifications

Following MDEQ and USEPA review of the RAP and prior to mobilization, a preconstruction meeting was held between GM and Laidlaw/United States Pollution Control, Inc. (Laidlaw/USPCI) representatives to discuss project details and construction schedules. Several changes to the RAP were requested by GM and they are the following:

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- Laidlaw/USPCI was responsible for executing the RAP, backfilling the excavation and restoring the site
- O'Brien & Gere was responsible for executing the air monitoring portion of the Health and Safety Plan, collecting confirmatory sampling of the excavation and preparing the completion report
- PCB immunoassay sampling was not performed based on the duration of construction and rush laboratory turnaround
- The concrete spread footings adjacent to Track 31 were not removed during the excavation since they were outside the limits of PCB impact in soil
- The completeness of the soil removal was further characterized by analyzing verification samples for the Target Analyte List (TAL) inorganics and Target Compound List (TCL) organics (minus pesticides) at a frequency of 10% of the PCB verification samples.

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One additional change to the RAP was made during the soil removal process:

- The RAP was prepared based on a remediation area greater than 0.25 acre (10,890 ft^2). The actual area remediated totals 8567 ft^2. As a result, soil verification sampling was completed in accordance with the MDEQ Verification of Soil Remediation (VSR) Guidance for a "small area" (<0.25 acre).

2.2. Health and safety plan

Concurrent with preconstruction planning, a Health and Safety Plan (HASP) was developed to outline the responsibilities, training requirements, protective equipment and standard operating procedures to be used by O'Brien & Gere and Laidlaw/USPCI personnel to address potential health and safety concerns while on-site. The HASP specified procedures and equipment to be used by personnel during work activities and emergency response to minimize exposures to impacted media.

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2.2.1 Air monitoring

In accordance with the HASP, on-site air monitoring of dust focused on workers breathing zone and the site perimeter. Monitoring was conducted daily during on-site activities which involved the handling of soil.

Dust monitoring was performed at several perimeter locations with portable, Real Time Aerosol Monitors (RAMs), to assess the background and downwind concentrations of total dust generated during on-site activities.

In addition, the worker breathing zone and the downwind site perimeter were monitored with Low Volume Air Samplers (LVASs). The LVAS is a vacuum pump that draws a known volume of air through a chemically active, sorbent surface, contained inside a sample tube. Samples from the LVASs documented breathing zone and downwind air quality conditions for total PCBs. The LVASs were continuously operated over the 6 to 8-hr sampling period at a pumping rate of 1.5 L/min.

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2.2.2 Dust control

Dust control procedures outlined in the RAP were implemented. Several days of rain during the excavation activities resulted in such minimal dust generation that the action level of 5 ug/m^3 was not exceeded during implementation of the removal activities.

2.3. Construction and remediation activities

Construction activities began after site control issues, including site security and work zone designation, were implemented as specified in the HASP. Approximately 80% of the 8 inch reinforced concrete pad located immediately east of Track 31 was broken up for potential removal by Laidlaw/USPCI's subcontractor. The concrete was later excavated with the impacted soil. After the concrete was broken up, the railroad track and ties for Track 31 south of the junction with Track 20 were cut and removed. The ties were placed in Laidlaw/USPCI rail cars for disposal and the rails were stockpiled on polyethylene sheeting for subsequent recycling.

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2.4. Excavation and backfill

Excavation at the site commenced on September 29, 1996 and continued through October 15, 1996. The excavation commenced on the south terminus of Track 31 (Area 1) and progressed to the north (Area 4). Soil within the limits of extent of PCB impact (outlined on Figure 2) was excavated using a backhoe. To minimize the spread of PCB impact, impacted soil was temporarily stockpiled on areas remaining to be excavated. From the temporary stockpiles, the impacted soil was loaded into Laidlaw/USPCI rail cars for off-site transportation and disposal. Track 35 was used for staging Laidlaw/USPCI rail cars. Excavation continued following this methodology until the limit of impacted soil near the northern end of Track 31 was reached. Portions of the track and ties of Track 35 and 20 at the northern limit of impact also were cut and removed to facilitate the removal activities. Figure 3 shows the limits of excavation and the location of the railroad tracks.

While the excavation continued in Area 2/3, a limited quantity of infiltrating ground water collected overnight as ground water recharged into the excavation. A sheen on the water was visible at six to eight of these deeper locations across the bottom of the excavation.

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Prior to backfilling, standing water was pumped out of the excavation. The water in the bottom of the excavation was directed to a sump area in the bottom of the excavation which was used for placement of the dewatering pump, and then pumped to eight 55-gal drums and staged.

Two grab samples of the water in the drums were analyzed for PCBs prior to transferring the water to the on-site waste water treatment facility. The results of this testing indicated PCBs were not detected at a detection limit of 1 ug/L.

A loader was used to transfer the stockpiled soil into the rail cars. The impacted soil was loaded into 100 ton capacity railroad gondola cars. A visqueen liner was placed inside the gondola car prior to loading and a cover was placed on top after loading. This process continued until the impacted soil was removed. Following loading activities, the stockpile and loading area were decontaminated by removing the upper 1 ft of soil.

As loading of the gondola rail cars continued, a train was assembled and prepared to transport the impacted soil to the TSCA permitted Grassy Mountain Facility, Lakepoint, Utah, for disposal. It was estimated that approximately 3609 tons of soil and debris was loaded into the rail cars. Documentation of the rail car identification, quantity and type of waste placed in the rail car along with completed waste manifests are included in Appendix D.

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After soil excavation was completed, the eight existing ground water monitoring wells were decommissioned in accordance with ASTM Standard D 5299 and Michigan Department of Public Health requirements. Above grade well casings were also removed.

Upon receipt of soil analytical data confirming site remediation, the equipment and rails were decontaminated. The equipment and rails were placed on visqueen sheeting and decontaminated through the use of a power wash and scrub completed by Laidlaw/USPCI. The decon water was contained by the visqueen. One 55-gal drum of wastewater/sufficant was generated during decontamination procedures. The drum is being held in a storage area awaiting transportation and disposal. The drum will be transported to Clive Incineration for disposal. Decontamination of the rails was confirmed by the collection of wipe samples by O'Brien & Gere personnel. Sampling is further discussed in section 2.5.4.

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Upon receipt of the soil sampling results verifying attainment of the cleanup criteria, the excavation was backfilled with equipment brought on-site exclusively for that purpose. The backfill equipment was not used to load or handle soil impacted with PCBs. The fill was placed and brought to existing grade. Upon completion of the backfilling activities, the site was restored and Laidlaw/USPCI demobilized.

2.5. Environmental monitoring and sampling

The approach to achieve and document attainment of the cleanup criteria included a two-stage process. The first stage used the limits of extent of PCB impact developed in previous investigations. The second stage involved collection of samples from an established grid, pursuant to MDEQ VSR Guidance dated April 1994, Revision 1, for laboratory analysis.

An O'Brien & Gere inspector was on-site during excavation activities to perform environmental monitoring and sampling. The limits of extent were staked out for excavation. Field screening techniques using visual, olfactory, and a photoionization detector (PID) were also employed by the inspector.

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When the excavation reached the estimated limit of extent, discrete soil samples were collected from the sidewalls and floor of the excavation in accordance with VSR Guidance. See Appendix E for Verification Sampling Data. This guidance provided for verification of cleanup below the 21 mg/kg criteria, using a biased sampling grid. In addition, USEPA requested that individual verification samples be no greater than the TSCA restricted area criteria of 25 mg/kg. Soil samples were collected using latex gloves. The samples were collected from the bucket of the backhoe or by reaching over the edge of the excavation to collect the sample.

The excavation was divided into three areas labeled, Area 1, Area 2/3, and Area 4. See Figure 3 for a site plan that includes sample locations.

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2.5.1 Soil sampling and analysis

Soil samples collected from the excavation were placed in glass sample containers and capped with a teflon lined lid then placed in an iced cooler. The soil samples were transported under chain-of-custody documentation to Fire and Environmental Consulting (FEC) Laboratories in East Lansing, Michigan for analysis of PCBs by USEPA Method 8081. For quality control purposes, duplicates were also collected and analyzed. One duplicate sample per area was collected from the three excavation areas and analyzed for PCBs. Table 1 contains tabulated soil analytical data. Laboratory analytical data sheets are included in Appendix E.

At three sampling locations in Area 2/3, the analytical results indicated that the PCB concentrations in soil were above 25 ppm. These locations (B-4, B-6, and B-8) were further excavated and resampled. The new samples were labeled with an "A" added to the sample name. After further excavation, only one round of resampling was required to reach PCB concentrations below the cleanup criteria of 25 ppm for individual samples.

Upon completion of the soil removal, analytical data from the VSR samples in Area 1, Area 2/3, and Area 4 were evaluated. The PCB results were determined to be below the 25 mg/kg TSCA criteria for individual verification samples and the MDEQ 21 mg/kg generic industrial land use criteria. In addition, all but two of the samples were below the 10 mg/kg non-restricted access criteria in TSCA. Pursuant to the specifications in the RAP, the 95% UCL concentration for the complete verification sample set was performed yielding a result of 3.4 mg/kg PCB, which is significantly below the 21 mg/kg MDEQ criteria and the TSCA non-restricted access criteria of 10 mg/kg. See Appendix F for VSR sampling calculations and statistical calculations associated with the 95% UCL calculation. Verification sampling using the TAL/TCL methods (except the PCB/ pesticide fraction) was also conducted on 10% of the PCB verification samples (four samples). This sampling was conducted to address future Part 111 or Part 201 issues regarding the effectiveness of the cleanup. A lower sampling frequency for these parameters was warranted because:

- Limited sampling previously conducted indicated that PCBs were the only constituents which exceeded direct contact levels
- The other constituents detected had similar physical characteristics (i.e., low volatility and migration potential)
- Ground water was not adversely affected by PCBs or other constituents analyzed
- The removal of PCB contaminated soil would also address other commingled constituents.

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The 10% frequency was selected as it is similar to that approved by the MDEQ at other sites. The results of this testing are included in Appendix G. The analytical data for VOCs and SVOCs were below the MDEQ soil/water partitioning values, with the exception of sample from Area 2/3, B-9. The soil sample from Area 2/3, B-9 was found to marginally exceed the soil/water partitioning values, for the semivolatile constituent phenanthrene. However, the concentration is below MDEQ generic industrial direct contact criteria. Analytical results for metals indicated concentrations below the MDEQ statewide default values.

2.5.2 Ground water sampling and analysis

A limited quantity of ground water collected in the bottom of the excavation was transferred to drums for dewatering purposes. The water samples collected from the drums were placed in glass sample containers and capped with a teflon lined lid then placed in an iced cooler. The water samples were transported under chain-of-custody to FEC Laboratory for analysis of PCBs by USEPA Method 8081. Table 3 contains tabulated ground water analytical data. Analytical results indicated the two water samples were non-detect for PCBs at a detection limit of 0.001 ppm. The laboratory analytical data sheets are included in Appendix E.

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2.5.3 Air sampling and analysis

Air sampling was performed near the workers breathing zone and the downwind site perimeter with LVASs. The air sampler documented breathing zone and down wind air quality conditions for total PCBs. The LVASs were in continuous operation over the 6 to 8-hr sampling period. The sampler tubes were boxed and transported under chain-of-custody to Wisconsin Occupational Health Laboratory for analysis of PCBs by Method Pest60 based on NIOSH 5503. Table 4 contains tabulated air sampling analytical data. Analytical results indicated the eight air samples were non-detect for PCBs at a detection limit of 0.002 mg/m^3. The laboratory analytical data sheets are included in Appendix H.

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2.5.4 Surface wipe sampling and analysis

Surface wipe samples were collected from the rails to confirm decontamination activities performed by Laidlaw/USPCI. The wipe samples were collected in accordance with USEPA guidance "Verification of PCB Spill Cleanup by Sampling and Analysis" dated August 1985. Wipe samples were placed in glass sample containers and capped with a teflon lined lid then placed in an iced cooler. The samples were transported under chain-of-custody to FEC Laboratory for analysis of total PCBs by USEPA Method 8081. For quality control purposes, equipment, field and solvent blanks were also collected and analyzed. Table 4 contains tabulated wipe sampling analytical data. The laboratory analytical data sheets are included in Appendix I.

A total of three wipe samples were collected. Analytical results indicated that one wipe contained total PCBs of 13 ug/100cm^2. The cleanup requirements for surfaces are outlined in 40 CFR 761.125(c)(3)(iv). The rail surfaces, which are classified as a low contact outdoor surface, have a cleanup criteria of 100 ug/100cm^2. Therefore, the sample result is below the cleanup criteria. The other two samples were non-detect for PCBs at a detection limit of 10 ug/100cm^2.

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3. Conclusions

The soil excavation and removal activities at the Track 31 site have been completed. Laidlaw/USPCI conducted the excavation, transportation and disposal. Environmental monitoring, verification sampling and reporting was provided by O'Brien & Gere. Based on the analytical results of the soil samples collected around the Track 31 site, remediation is considered complete in accordance with Michigan PA Act 451, Part 201, as amended, Part 111 interim corrective measures and the Toxic Substances Control Act (40 CFR 761.125).

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Table 1

Soil Analytical Results
GM Metal Fabricating Division - Track 31 Site
Pontiac, Michigan
Polychlorinated Biphenyls Analytical Data
USEPA Method 8081

Location		Area 1 B-1	Area 1 B-2	Area 1 B-2	Area 1 NEW	Area 1 SEW	Area 1 SWW	Area 1 NWW	Area 2/3 B-1	Area 2/3 B-2	Area 2/3 B-3	Area 2/3 B-4A	Area 2/3 B-5	Area 2/3 B-6A	Area 2/3 B-7	Area 2/3 B-8A	Area 2/3 B-9	Area 2/3 B-10	Area 2/3 B-11	MDEQ Generic Criteria	TSCA
Analytical Parameter	Depth	4.5	4.5	4.5	2.0	2.5	2.0	2.5	6.5	5.0	6.0	8.0	7.5	8.5	8.0	9.0	9.5	10.0	8.5	Industrial Direct Contact Value	Restricted Access Value
Aroclors / PCBs	TMDL			duplicate																	
PCB-1016	0.330	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	21	25
PCB-1221	0.330	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	21	25
PCB-1232	0.330	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	21	25
PCB-1242	0.330	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	8.3	21	25
PCB-1248	0.330	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	21	25
PCB-1254	0.330	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	21	25
PCB-1260	0.330	nd	nd	nd	0.55	nd	0.33	nd	nd	nd	nd	7.2	nd	nd	nd	4.2	nd	nd	nd	21	25

Notes: nd - non-detect

TMDL - Target method detection limit defined in MDEQ MERA Operational Memorandum #6, Revision #8, September 13 1995.

Generic Industrial Criteria Defined in MDEQ MERA Operational Memorandum #14, Revision #2, June 5, 1995.

TSCA Restricted Access Criteria Defined by 40 CFR 761.120 to 761.135.

The following samples were found to be above the cleanup criteria: Area 2/3 B-4, PCB -1260 at 40 ppm; Area 2/3 B-6, PCB -1260 at 440 ppm; and Area 2/3 B-8, PCB -1260 at 900 ppm. Additional Soil was excavated and new samples labeled "A" were collected. The results are listed in the table above.

Criteria is reported in parts per million (ppm).

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Table 1

Soil Analytical Results
GM Metal Fabricating Division - Track 31 Site
Pontiac, Michigan
Polychlorinated Biphenyls Analytical Data
USEPA Method 8081

Location		Area 2/3 NW-1	Area 2/3 NW-2	Area 2/3 NW-2	Area 2/3 NW-3	Area 2/3 EW-1	Area 2/3 EW-2	Area 2/3 EW-3	Area 2/3 SW-1	Area 2/3 SW-2	Area 2/3 WW-1	Area 2/3 WW-2	Area 2/3 WW-3	Area 4 B-1	Area 4 B-2	Area 4 NW-1	Area 4 EW-1	Area 4 SW-1	Area 4 WW-1	MDEQ Generic Criteria	TSCA
Analytical Parameter	Depth	6.0	4.0	4.0	5.0	5.5	4.5	5.5	4.5	3.5	4.0	4.0	5.0	9.5	9.0	5.0	4.0	5.5	5.0	Industrial Direct Contact Value	Restricted Access Value
Aroclors / PCBs	TMDL			duplicate																	
PCB-1016	0.330	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	21	25
PCB-1221	0.330	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	21	25
PCB-1232	0.330	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	21	25
PCB-1242	0.330	nd	4	4	4.7	nd	nd	nd	nd	nd	nd	nd	nd	11	6	19	5	2	nd	21	25
PCB-1248	0.330	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	21	25
PCB-1254	0.330	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	21	25
PCB-1260	0.330	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	21	25

Notes: nd - non-detect

TMDL - Target method detection limit defined in MDEQ MERA Operational Memorandum #6, Revision #6, September 13 1995.

Generic Industrial Criteria Defined in MDEQ MERA Operational Memorandum #14, Revision #2, June 5, 1995.

TSCA Restricted Access Criteria Defined by 40 CFR 761.120 to 761.135.

Criteria is reported in parts per million (ppm).

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Ground Water Analytical Results
GM Metal Fabricating Division - Track 31 Site
Pontiac, Michigan

Location	Area 2/3 EX WTR	Area 2/3 EX WTR	Laboratory Detection Limit
Analytical Parameter Aroclors / PCBs			
PCB-1016	nd	nd	1
PCB-1221	nd	nd	1
PCB-1232	nd	nd	1
PCB-1242	nd	nd	1
PCB-1248	nd	nd	1
PCB-1254	nd	nd	1
PCB-1260	nd	nd	1

Notes: nd - non-detect
Criteria is reported in parts per billion (ppb).
Laboratory analysis completed by FEC Labortory, East Lansing, Michigan, By USEPA Method 8081

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Air Sampling Analytical Results
GM Metal Fabricating Division - Track 31 Site
Pontiac, Michigan

Location/Date	A - 10/1/96	B - 10/1/96	A - 10/8/96	B - 10/8/96	A - 10/10/96	B - 10/10/96	A - 10/11/96	A - 10/14/96	Laboratory Detection Limit
Analytical Parameter Aroclors / PCBs									
PCB-1016	nd	nd	nd	nd	nd	nd	nd	nd	<0.002
PCB-1221	nd	nd	nd	nd	nd	nd	nd	nd	<0.002
PCB-1232	nd	nd	nd	nd	nd	nd	nd	nd	<0.002
PCB-1242	nd	nd	nd	nd	nd	nd	nd	nd	<0.002
PCB-1248	nd	nd	nd	nd	nd	nd	nd	nd	<0.002
PCB-1254	nd	nd	nd	nd	nd	nd	nd	nd	<0.002
PCB-1260	nd	nd	nd	nd	nd	nd	nd	nd	<0.002

Notes: nd - non-detect
Analysis completed by Wisconsin Occupational Health Laboratory in Madison, WI by USEPA Method Pest.mth based on NIOSH Method 5503
Limits are reported in mg/m3

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Wipe Sampling Analytical Results
GM Metal Fabricating Division - Track 31 Site
Pontiac, Michigan

Location/Date	Confirmation Sample #1	Confirmation Sample #2	Confirmation Sample #3	Equipment Blank	Field Blank	Solvent Blank	TSCA Cleanup Criteria	Detection Limit
Analytical Parameter Aroclors / PCBs								
PCB (Total)	13	nd	nd	nd	nd	nd	100	10

Notes: nd - non-detect
Values are reported in ug/100cm2
Analysis completed by FEC Laboratory in East Lansing, MI by USEPA 8081

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Table 5

Soil Analytical Results
GM Metal Fabricating Division - Track 31 Site
Pontiac, Michigan
TAL/TCL Volatile Organic Compounds Analytical Data
USEPA Method 8260

ation		Area 1 B-2	Area 2/3 B-9	Area 2/3 NW-2	Area 4 B-2	MDEQ Criteria	MDEQ Generic Criteria
ytical Parameter	Depth	4.5	9.5	4.0	9.0	Soil/Water Partition Values	Industrial Direct Contact Value
romethane		bdl	bdl	bdl	bdl	0.240	1900
l chloride		bdl	bdl	bdl	bdl	0.0067	11
nomethane		bdl	bdl	bdl	bdl	ID	1000
roethane		bdl	bdl	bdl	bdl	ID	6500
one		bdl	J	0.1	J	1.3	74000
)ichloroethene		bdl	bdl	bdl	bdl	0.032	740
ylene chloride		J	J	J	J	0.011	3300
on disulfide		bdl	bdl	bdl	bdl	3.5	82000
s-1,2-Dichloroethene		bdl	bdl	J	bdl	0.380	13000
)ichloroethane		bdl	bdl	J	bdl	2.3	89000
tanone		bdl	bdl	bdl	bdl	23	100000
,2-Dichloroethene		bdl	bdl	bdl	bdl	0.210	8200
roform		bdl	bdl	bdl	bdl	0.310	4100
)ichloroethane		bdl	bdl	bdl	bdl	0.012	270
-Trichloroethane		bdl	bdl	bdl	bdl	1.2	21000
on tetrachloride		bdl	bdl	bdl	bdl	0.042	190
ene		bdl	bdl	bdl	bdl	0.019	850
)ichloropropane		bdl	bdl	bdl	bdl	0.016	360
loroethene		bdl	bdl	bdl	bdl	0.037	1600
nodichloromethane		bdl	bdl	bdl	bdl	0.350	400
,3-Dichloropropene		bdl	bdl	bdl	bdl	0.018	140
thyl-2-pentanone		bdl	bdl	bdl	bdl	0.800	37000
s-1,3-Dichloropropene		bdl	bdl	bdl	bdl	0.018	140
-Trichloroethane		bdl	bdl	bdl	bdl	0.017	440
ene		bdl	bdl	0.018	bdl	6.2	160000
omochloromethane		bdl	bdl	bdl	bdl	0.380	300
xanone		bdl	bdl	bdl	bdl	ID	100000
achloroethene		bdl	bdl	J	bdl	0.037	490
robenzene		bdl	bdl	bdl	bdl	0.890	14000
lbenzene		bdl	bdl	J	bdl	1	72000
noform		bdl	bdl	bdl	bdl	0.450	3100
ne (total)		bdl	bdl	0.029	bdl	3.7	1000000
ene		bdl	bdl	bdl	bdl	2.7	830
,2-Tetrachloroethane		bdl	bdl	bdl	bdl	0.020	120

s: nd - non-detect J - compound present below detection limit NA - criteria not established
ID - inadequate data to develop criterion NL - Non leaching under most conditions
Water Partition Values Defined by MDEQ in Part 201 Soil/Water Partition Criteria Protective of Drinking Water: Technical Support Document, dated October 9,1996
eric Industrial Criteria Defined by MDEQ in MERA Operational Memorandum #14, Revision #2, June 5, 1995.
and criteria are reported in parts per million (ppm).

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Table 6

Soil Analytical Results
GM Metal Fabrication Division - Track 31 Site
Pontiac, Michigan
TAL/TCL Semi Volatile Organic Compounds Analytical Data
USEPA Method 8270

Location	Area 1 B-2	Area 2/3 B-9	Area 2/3 NW-2	Area 4 B-2	MDEQ Criteria Soil/Water Partition Values	MDEQ Generic Criteria Industrial Direct Contact Value
Analytical Parameter / Depth	4.5	9.5	4.0	9.0		
Acenaphthene	bdl	bdl	3.3	bdl	350	810000
Acenaphthylene	bdl	bdl	bdl	bdl	ID	16000
Anthracene	bdl	bdl	8.9	J	6900	1000000
Benzo[a]anthracene	bdl	bdl	bdl	bdl	NL	210
Benzo[a]pyrene	bdl	bdl	bdl	bdl	NL	21
Benzo[b]fluoranthene	bdl	bdl	bdl	bdl	NL	210
Benzo[g,h,i]perylene	bdl	bdl	bdl	bdl	NL	16000
Benzo[k]fluoranthene	bdl	bdl	bdl	bdl	NL	2100
bis(2-Chloroethoxy)methane	bdl	bdl	bdl	bdl	ID	ID
bis(2-Chloroethyl)ether	bdl	bdl	bdl	bdl	0.016	23
bis(2-Ethylhexyl)phthalate	bdl	bdl	bdl	bdl	NL	11000
4-Bromophenyl phenyl ether	bdl	bdl	bdl	bdl	NA	NA
Butyl benzyl phthalate	bdl	bdl	bdl	bdl	2200	720000
Carbazole	bdl	bdl	bdl	bdl	4.7	NA
4-Chloroaniline	bdl	bdl	bdl	bdl	NA	NA
4-Chloro-3-methylphenol	bdl	bdl	bdl	bdl	ID	15000
2-Chloronaphthalene	bdl	bdl	bdl	bdl	ID	1900000
2-Chlorophenol	bdl	bdl	bdl	bdl	0.640	4600
4-Chlorophenyl phenyl ether	bdl	bdl	bdl	bdl	NA	NA
Chrysene	bdl	bdl	bdl	bdl	NL	21000
Dibenzofuran	bdl	bdl	bdl	bdl	ID	ID
Dibenz[a,h]anthracene	bdl	bdl	bdl	bdl	NL	21
Di-n-butyl phthalate	J	J	bdl	J	9600	540000
1,2-Dichlorobenzene	bdl	bdl	bdl	bdl	13	64000
1,3-Dichlorobenzene	bdl	bdl	bdl	bdl	ID	64000
1,4-Dichlorobenzene	bdl	bdl	bdl	bdl	1.6	1000
3,3'-Dichlorobenzidine	bdl	bdl	bdl	bdl	0.047	55
2,4-Dichlorophenol	bdl	bdl	bdl	bdl	0.470	45000
Diethyl phthalate	bdl	bdl	bdl	bdl	60	1000000
2,4-Dimethylphenol	bdl	bdl	bdl	bdl	3.1	230000
4,6-Dinitro-2-methylphenol	bdl	bdl	bdl	bdl	NA	NA
2,4-Dinitrophenol	bdl	bdl	bdl	bdl	NA	NA
2,4-Dinitrotoluene	bdl	bdl	bdl	bdl	4	220
2,6-Dinitrotoluene	bdl	bdl	bdl	bdl	NA	NA
Di-n-octyl phthalate	bdl	bdl	bdl	bdl	180000	81000
Dimethyl phthalate	bdl	bdl	bdl	bdl	220	1000000
Fluoranthene	bdl	bdl	6.4	J	3000	540000
Fluorene	bdl	bdl	43	0.26	390	540000
Hexachlorobenzene	bdl	bdl	bdl	bdl	1.8	94
Hexachlorobutadiene	bdl	bdl	bdl	bdl	19	1900
Hexachlorocyclopentadiene	bdl	bdl	bdl	bdl	36	32000
Hexachloroethane	bdl	bdl	bdl	bdl	17	1800
Indeno[1,2,3-cd]pyrene	bdl	bdl	bdl	bdl	NL	210
Isophorone	bdl	bdl	bdl	bdl	2.9	26000
2-Methylnaphthalene	bdl	bdl	2.2	J	ID	ID
2-Methylphenol	bdl	bdl	bdl	bdl	1.2	37000
4-Methylphenol	bdl	bdl	bdl	bdl	0.110	23000
2-Nitroaniline	bdl	bdl	bdl	bdl	NA	NA
3-Nitroaniline	bdl	bdl	bdl	bdl	NA	NA
4-Nitroaniline	bdl	bdl	bdl	bdl	NA	NA
2-Nitrophenol	bdl	bdl	bdl	bdl	ID	13000
4-Nitrophenol	bdl	bdl	bdl	bdl	NA	NA
N-Nitroso-di-n-propylamine	bdl	bdl	bdl	bdl	0.0003	3.500
N-Nitrosodiphenylamine	bdl	bdl	bdl	bdl	2.4	5100
Naphthalene	bdl	bdl	J	bdl	17	160000
Nitrobenzene	bdl	bdl	bdl	bdl	0.013	340
2,2'-oxybis(1-Chloropropane)	bdl	bdl	bdl	bdl	NA	NA
Pentachlorophenol	bdl	bdl	bdl	bdl	0.021	1300
Phenanthrene	bdl	J	43	0.45	12	16000
Phenol	bdl	bdl	bdl	bdl	10	450000
Pyrene	bdl	bdl	10	J	1800	340000
1,2,4-Trichlorobenzene	bdl	J	bdl	bdl	4.1	68000
2,4,5-Trichlorophenol	bdl	bdl	bdl	bdl	39	450000
2,4,6-Trichlorophenol	bdl	bdl	bdl	bdl	1.1	14000

Notes: bdl - below detection limit J - compound present below detection limit NA - criteria not established
ID - inadequate data to develop criterion NL - Non leaching under most conditions
Soil/Water Partition Values Defined by MDEQ in Part 201 Soil/Water Partition Criteria Protective of Drinking Water: Technical Support Document, dated October 9,1996
Generic Industrial Criteria Defined by MDEQ in MERA Operational Memorandum #14, Revision #2, June 5, 1995.
Data and criteria are reported in parts per million (ppm).

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Table 7

Soil Analytical Results
GM Metal Fabricating Division - Track 31 Site
Pontiac, Michigan
TAL/TCL Metals Analytical Data
USEPA Methods 6000/7000

Location	Area 1 B-2	Area 2/3 B-9	Area 2/3 NW-2	Area 4 B-2	MDEQ SOIL Criteria Default Cleanup Criteria
Analytical Parameter / Depth	4.5	9.5	4.0	9.0	
Aluminum	2000	4900	3700	1300	6900
Antimony	<7	<8	<7	<7	120*
Arsenic	2.3	5.0	3.7	1.8	5.8
Barium	6	19	11	6	75
Beryllium	<1	<1	<1	<1	80*
Cadmium	<0.6	<0.6	<0.6	<0.5	1.2
Calcium	54000	85000	1300	31000	7000-500000**
Chromium	5	9	9	4	18
Cobalt	<6	<6	<6	<5	6.8
Copper	8	13	13	5	32
Iron	5200	12000	10000	3600	12000
Lead	3	6	6	2	21
Magnesium	14000	19000	1100	6400	8400000*
Manganese	140	280	200	140	440
Mercury	<0.1	<0.1	<0.1	<0.1	0.13
Nickel	<6	12	10	<5	20
Potassium	<600	900	<600	<500	400-30000**
Selenium	<0.6	<0.6	<0.6	<0.5	0.41
Silver	<0.6	<0.6	<0.6	<0.5	1
Sodium	100	200	100	<100	3200000*
Thallium	<0.6	<0.6	<0.6	<0.5	40*
Vanadium	7	13	16	<5	1300*
Zinc	25	32	38	12	47

Notes: bdl - below detection limit

* 20x Drinking Water Defined by MDEQ in MERA Operational Memorandum #8, Revision #4, June 5, 1995.

** No MDEQ criteria established. Values are common concentrations found in soil and were established by USEPA, 1987

Default Cleanup Criteria = Criteria for metals based naturally occurring concentrations found in soil statewide. Defined by MDEQ in MERA Operational

Data and criteria are reported in parts per million (ppm).

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CRA

SITE INVESTIGATION REPORT

DRAFT FOR REVIEW

GENERAL MOTORS CORPORATION
PONTIAC NORTH COMPLEX
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

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LIST OF ACRONYMS/SHORT FORMS

bgs	Below Ground Surface
BH	Borehole
CAS	Columbia Analytical Services, Inc.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CPC	Chevrolet-Pontiac-Canada
GM	General Motors Corporation
MW	Monitoring Well
PCBs	Polychlorinated Biphenyls
PID	Photoionization Detector
PVC	Polyvinyl chloride
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
Report	Site Investigation Report
Site	Former A-2 Area
SOW	Scope of Work
SVOCs	Semi-Volatile Organic Compounds
TAL	Target Analyte List
TCL	Target Compound List
U.S.EPA	United States Environmental Protection Agency
USCS	Unified Soil Classification System
VOCs	Volatile Organic Compounds
Work Plan	Site Investigation Work Plan

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1.0 INTRODUCTION

1.1 PURPOSE

This Site Investigation Report (Report) has been prepared by Conestoga-Rovers & Associates (CRA) on behalf of General Motors Corporation (GM) for the Former A-2 Fill Area (Site) located at the Pontiac North Complex (Complex) located in Pontiac, Michigan. The Site location is presented on Figure 1.1. A Site Plan is presented on Figure 1.2.

The purpose of this Report is to document the activities and results of the Site investigation conducted to investigate and characterize the material within the Former A-2 Fill Area. The Site Investigation was performed consistent with the Site Investigation Work Plan (August, 1999) (Work Plan) prepared by Conestoga-Rovers & Associates.

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1.2 SITE DESCRIPTION

The Site is located within the northern portion of the GM Pontiac North Complex (formerly the CPC and Central Foundry Division Pontiac Complex) in Pontiac, Michigan. The Site is bound to the east by Joslyn Avenue, to the south by Columbia Avenue, and to the north and west by the Grand Trunk Western Railroad.

The Site is currently developed and occupied by the Metal Fabricating Division Engine Operation Plants 51 and 55, the Service Parts Operation Plant 75, and their associated parking area. The Site Plan is presented on Figure 1.2.

1.3 SITE BACKGROUND

The Site, formerly a low lying area, was reportedly utilized historically by GM for placement of fill, including construction debris and residual waste materials from the waste handling/management activities conducted in the West Yard area of the Complex. The following manufacturing related activities were historically conducted at the Complex:

- engine assembly;
- car assembly;
- foundry operations;
- painting and stamping;
- engine machining;

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- metal plating;
- waste water treatment; and
- waste incineration.

Development of the Site began in the 1960s with the construction of the eastern portion of the current Service Parts Operations Plant 75. Several expansions of Plant 75 occurred until the 1990s. The western portion of the Site was developed in the late 1960s with the construction of the Engine Operations Plant 51, which was later expanded to include the Engine Operations Plant 55 by 1985. Aerial photographs taken of the Site between 1937 and 1990 indicate that the extent of waste may be limited to the areas of Plant 51/55 and all parking areas between Plant 51/55 and Plant 75. In addition, the western most quarter of Plant 75 may contain waste materials placed prior to the final Plant 75 extension. The extent of fill beneath the western portion of Plant 75 is unknown. Copies of the aerial photographs with an overlay of the current buildings are presented on Figures 1.3 and 1.4.

A CERCLA 103(c) notification for the A-2 Fill Area was submitted to the U.S. EPA in the early 1980's. No further field investigation is believed to have been conducted to date.

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1.4 REPORT ORGANIZATION

This Report has been organized as follows:

1.0 Introduction
2.0 Field Investigation
3.0 Result of Investigation
4.0 Conclusions/Recommendations
5.0 References

This Report also includes the following appendices:

Appendix A Stratigraphic Logs
Appendix B Well Development, Purging, and Sampling Forms
Appendix C Laboratory Analytical Data
Appendix D Data Validation Report

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2.0 FIELD INVESTIGATION

The purpose of this section is to provide a summary of the Site Investigation activities which were completed at the Site in December 1999.

2.1 SCOPE OF WORK

The Scope of Work (SOW) for the Site Investigation included the installation of 9 boreholes and two monitoring wells. A total of [illegible] soil samples (including QA/QC) were collected during the installation of the boreholes. Two groundwater samples were collected from the monitoring wells.

The purpose of the investigation was to investigate and evaluate the fill material and groundwater within the Former A-2 Fill Area.

Investigation activities were conducted on December 16, 17, 20, and 21, 1999 and January 4, 2000.

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2.2 SOIL BORINGS

A total of 9 soil borings were installed by Carlo Environmental Technologies, Inc. on December 16, 17, 20, and 21, 1999. The approximate locations of these borings are presented on Figure 2.1. The boring locations focused on Plants 51 and 55 and the parking lot, since these areas comprised the majority of the areas believed to have been filled. Borings were not completed beneath Plant 75 during this investigation. The focus of this investigation was to evaluate the environmental conditions of the soil/fill and groundwater in order to determine if additional investigation is necessary. Drilling locations were chosen in the field in consultation with GM personnel. Prior to commencing drilling operations, utility clearance was received and confirmed with GM personnel. Borings were advanced through surficial concrete, asphalt, and subsurface fill/waste material and into the underlying native clay, to depths of 13.6 to 20 feet below ground surface (bgs). Three of the borings were advanced further to depths of approximately 30 to 32 feet bgs to further characterize the Site stratigraphy.

Borings were advanced by means of a drilling rig equipped with hollow-stem augers (HSA). Split spoon samples were taken continuously at 2-foot intervals in advance of the augers and were described and recorded in accordance with the Unifed Soil Classification System (USCS). Soil boring stratigraphic logs are presented in Appendix A.

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Two of the borings (BH2-99, BH3-99) were advanced inside Plant 51 and 55. For these 2 borings, coring was required to get through the concrete floor. The interior drilling was conducted under well-ventilated conditions. A four-gas meter was used to confirm the air quality. It should be noted that drilling was restricted to the western portion of the building to avoid interruption with current processes and activities conducted in the eastern half of the building.

One soil sample from each boring was submitted to Columbia Analytical Services, Inc. (CAS) for analysis on the basis of visual staining and/or elevated levels of organic vapors identified through field screening (i.e., PID response). Soil samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs), TCL Semi-Volatile Organic Compounds (SVOCs), Target Analyte List (TAL) metals, TCL pesticides/PCBs, and cyanide. VOC sampling was completed using an EnCore Sampler ™ and methanol preservation methods in accordance with the Work Plan. All sampling and analysis was completed in accordance with the Quality Assurance Project Plan (QAPP) identified in the Work Plan (i.e. RCRA Facility Investigation QAPP for the GM Truck Group location at the Centerpoint Business Campus). A summary of the field observations identified at each borehole is presented in Table 2.1. A summary of the samples collected is presented in Table 2.2.

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A new pair of disposable nitrile gloves was used for each sample collected. Soil samples were collected using a pre-cleaned split-spoon. All sampling equipment that may have come in contact with potentially impacted materials was decontaminated before each sample was collected to prevent cross-contamination of the samples. Decontamination consisted of removing visible foreign matter with a brush and a clean water and non-phosphate detergent wash. The equipment was then rinsed with potable water, pesticide residue grade isopropyl alcohol, and rinsed thoroughly with deionized water.

Soil borings that were not completed as monitoring wells were abandoned, by filling with the drill cuttings and bentonite pellets. Excess soil cuttings were scattered on existing soil piles west of Plant 51 and 55 that were situated on a concrete pad approximately 300 feet south of a diesel above ground storage tank.

2.3 MONITORING WELL INSTALLATION

Two of the borings were completed as monitoring wells at the locations presented on Figure 2.1. Please note that only 2 monitoring wells were installed since groundwater was only encountered in 2 locations. A third monitoring well, as identified in the Work Plan, was not installed since no groundwater was encountered. A 2-inch diameter

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Schedule 40 flush joint, threaded PVC casing and Schedule 40 machine slotted PVC 5-foot well screen connected to the casing was installed true to line and plumb at each location.

A sand pack was installed around each screen to a minimum of 3 feet above the screen. A 2-foot bentonite pellet seal was installed above the sand pack. The remainder of the annulus was filled with bentonite grout to within 3 feet of the ground surface. The monitoring wells were completed with a 3-foot concrete collar and a flush-mounted lockable steel protective casing. The protective casing was set a minimum of 1-foot into the concrete collar. Locking covers were utilized to prevent access by unauthorized personnel. The concrete around the well casing was constructed so that surface water is drained away from the monitoring well.

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Based on soil moisture observed during split spoon sampling, the 5-foot slotted screen was set at depths that straddled the apparent groundwater surface. Notably, the groundwater at the time of drilling was identified below the horizon of the fill. The monitoring wells were used to determine if the groundwater had been impacted by the overlying fill materials.

Following completion, the bentonite grout was allowed to set for a minimum of 12 hours prior to commencing well development. The monitoring wells were developed to a silt-free condition on December 21, 1999. Water generated from development was discharged to the ground surface in a grassy area in the vicinity of the well from which it originated and was allowed to infiltrate to the subsurface. Well development details are presented in Appendix B.

2.4 MONITORING WELL SAMPLING

Well purging and sampling was completed on January 4, 2000. The two monitoring wells were sampled using low flow purging methods. Water samples, including a field duplicate, were collected and analyzed for TCL VOCs, TCL SVOCs, TAL metals, TCL pesticides/PCBs and cyanide (see Table 2.2). Two Trip Blanks were tested for VOCs. Rinsate blanks were not taken because new dedicated equipment was used. Field analyses included water elevation to the nearest 0.01 feet, pH, dissolved oxygen, temperature, specific conductance and turbidity during purging.

All the water samples were collected using a peristaltic pump (with new poly tubing for each sample) with the exception of the TCL VOCs. These samples were collected with a disposable polyethylene baile[illegible] The electric water level tape was cleaned prior to use at each monitoring well location by rinsing with deionized water. The TAL metal samples

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3.0 RESULTS OF INVESTIGATION

This section presents a summary of the results of the investigation.

3.1 SOIL BORINGS

Nine soil borings were used to investigate the nature of the fill and to collect soil samples for analysis of TCL VOCs, TCL SVOCs, TAL metals, TCL pesticides/PCBs, and cyanide. The results are discussed as follows:

Nature of the Fill

In a majority of the borehole locations, the underlying fill material consisted of sand and clay. However, at BH5-99 and BH8-99 in the parking lot area between Plant 51/55 and Plant 75, foundry sand and slag were encountered. Fill material in these boreholes ranged in depth from 4 to 14 feet. The stratigraphy for each borehole is summarized in the stratigraphic logs presented in Appendix A.

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Soil Analytical Results

The analytical data for the soil samples is presented in Appendix C. Data Validation reports are presented in Appendix D. Table 3.1 presents a summary of the soil analytical data. A number of chemical compounds were detected in the fill material at the Site. The results were compared to applicable Act 451, Part 201 Generic Industrial Cleanup Criteria Guidelines. Specifically, the Industrial Direct Contact and Volatilization to Indoor Air Inhalation Criteria were determined to be the only applicable criteria. The concentrations were all well below the identified Part 201 Generic Industrial Cleanup Criteria.

The VOCs detected include ethylbenzene and xylenes at BH8. Chloroform was detected at low levels in BH2, BH4, BH5, and BH6.

SVOCs were detected in the soil under Plant 51 and 55 and in the southern portion of the parking lot at BH1, BH2, BH3, BH5, and BH8.

PCBs were identified in the southern portion of the Site at BH1, BH3, BH5, BH8, and BH9. The highest concentration measured was 3.9 mg/kg in BH8. The remaining samples were below 1 mg/kg.

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Pesticides were only found in the parking lot at boreholes BH5, BH8, and BH9.

Metals present in the soils were all below the applicable Industrial Direct Contact Criteria.

Cyanide was detected below applicable criteria in the soil in the parking lot, and to the west of Plant 51 and 55 at boreholes BH1, BH5, BH7, BH8, and BH9.

3.2 MONITORING WELLS

Monitoring wells MW1-99 and MW2-99 were installed in boreholes BH8-99 and BH5-99, respectively. The monitoring wells were subsequently sampled on January 4, 2000 as discussed in Section 2.2.3 (see Table 2.2).

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Groundwater Analytical Results

Table 3.2 presents a summary of the groundwater analytical results. A number of compounds were detected in the groundwater, however, the concentrations were all below the Act 451, Part 201 Generic Industrial Cleanup Criteria Guidelines for groundwater with the exception of bis (2-ethylhexyl) phthalate. Bis (2-ethylhexyl) phthalate was detected at MW1-99 at a concentration of 510 µg/L which is above the Groundwater Direct Contact Criteria of 47 µg/L.

Low levels of other VOCs, SVOCs, and pesticides were detected in the groundwater, but at concentrations below applicable criteria. Notably, no PCBs were detected.

Analytical data is presented in Appendix C. Data validation reports are presented in Appendix D.

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4.0 CONCLUSIONS/RECOMMENDATIONS

Based on the Site Investigation, groundwater in an aquifer does not exist in the Former A-2 Fill Area. The groundwater encountered at MW1-99 and MW2-99 appears to be isolated perched groundwater (7 of 9 boreholes were dry, and as a result is considered groundwater not in an aquifer.). Information obtained during the Site Investigation is summarized as follows:

- The fill encountered during intrusive activities was mainly sand and clay, however, foundry sand and slag were encountered in areas of the parking lot between Plants 51/55 and Plant 75;
- The fill does not contain any compounds above the applicable Act 451, Part 201 Generic Industrial Cleanup Criteria; and
- Only bis (2-ethylhexyl) phthalate was detected in groundwater above the Act 451, Part 201 Generic Industrial Direct Contact Criteria.

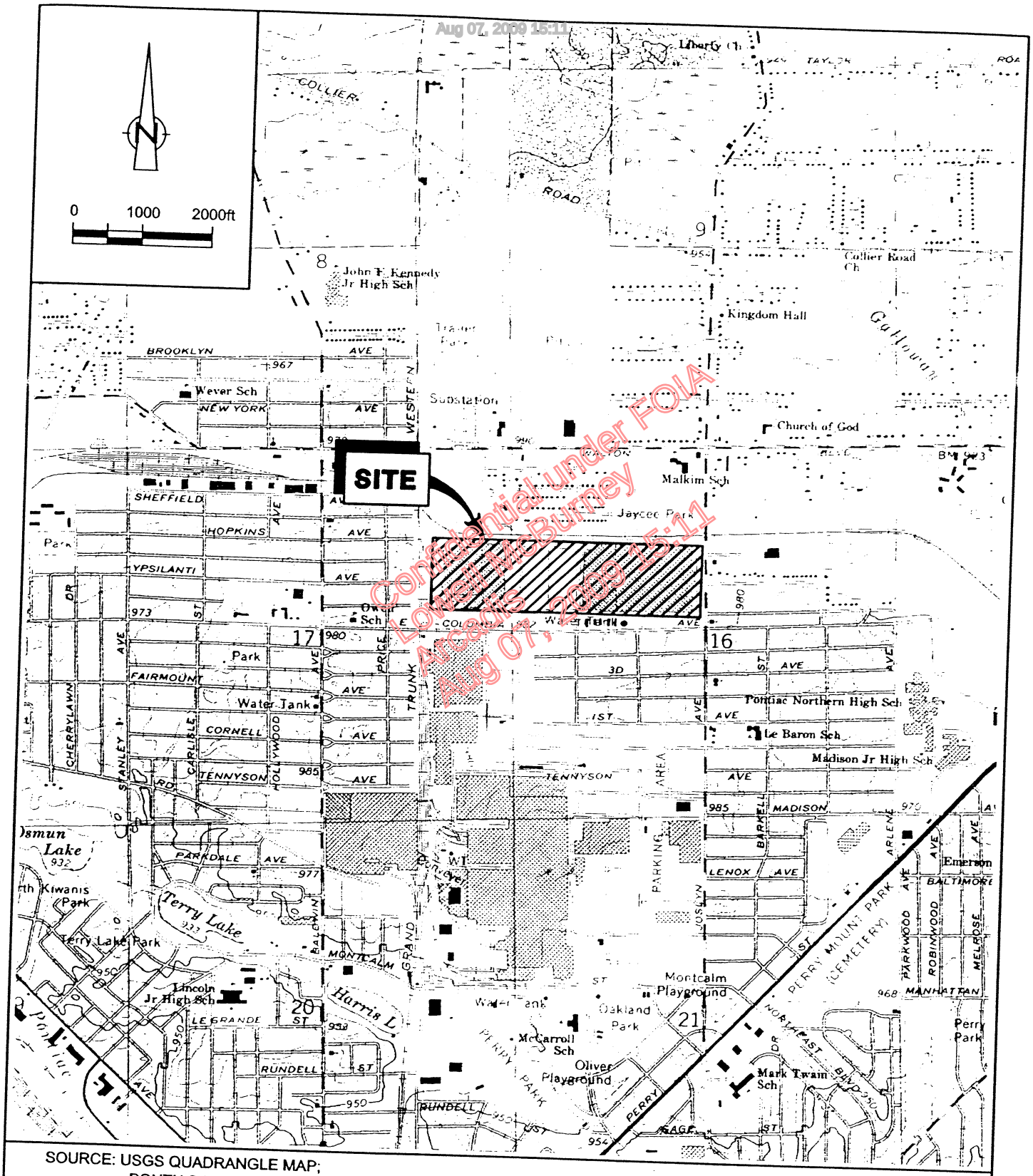
The results of the Site Investigation indicate that the fill materials currently present in the Former A-2 Fill Area have not resulted in any significant environmental impacts that require further investigation or remediation.

The only compound present in perched groundwater is bis (2-ethylhexyl) phthalate. Since other compounds above applicable criteria were not encountered, it is possible that bis (2-ethylhexyl) phthalate may be present naturally or may be due to laboratory contamination. A confirmatory sample should be collected to verify the existence of this compound.

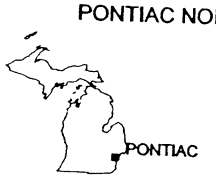
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SOURCE: USGS QUADRANGLE MAP;
PONTIAC NORTH, MICHIGAN



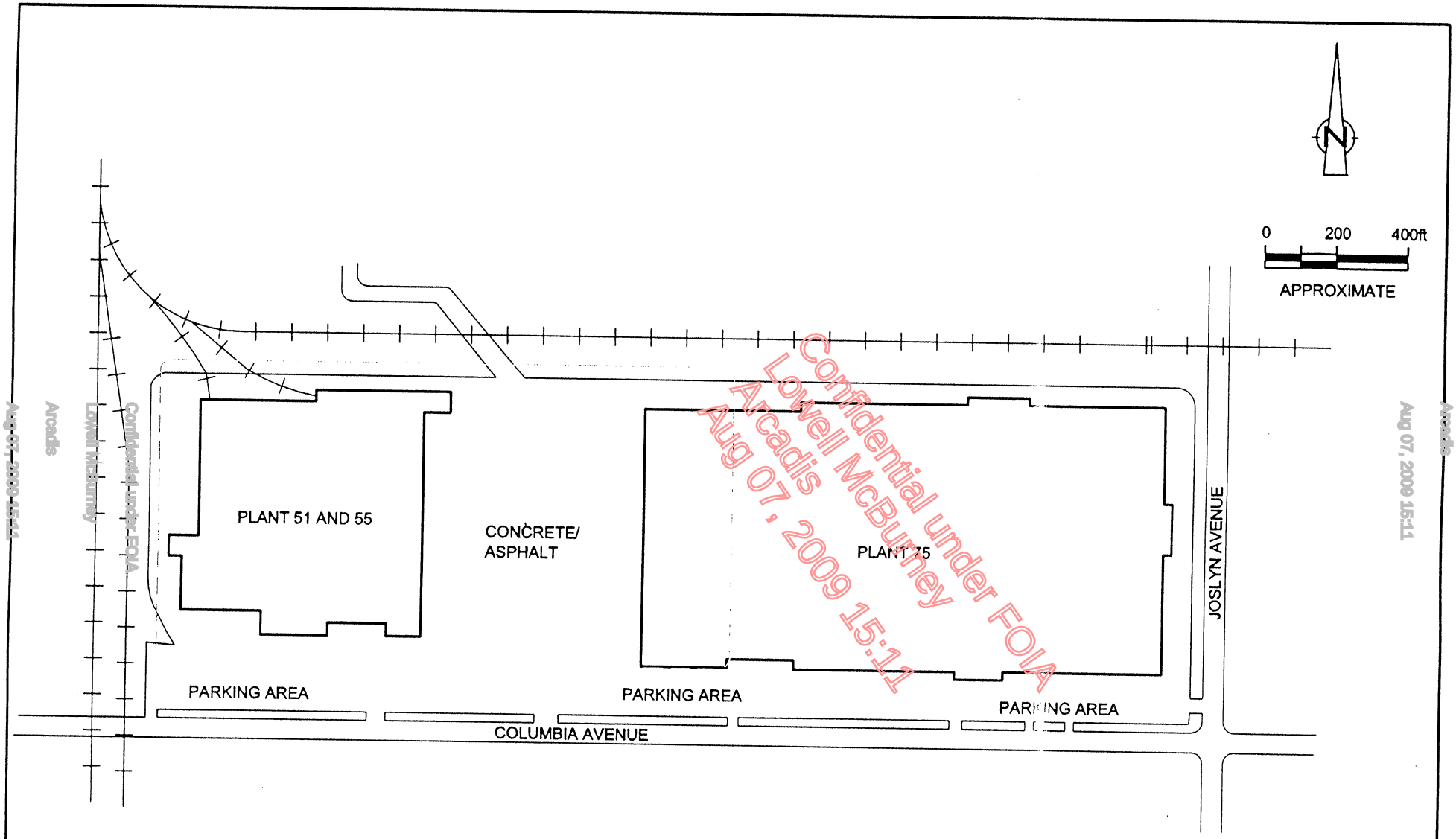
CRA

13509-00(003)GN-WA001 MAR 03/2000

figure 1.1

SITE LOCATION
FORMER A-2 FILL AREA
Pontiac, Michigan

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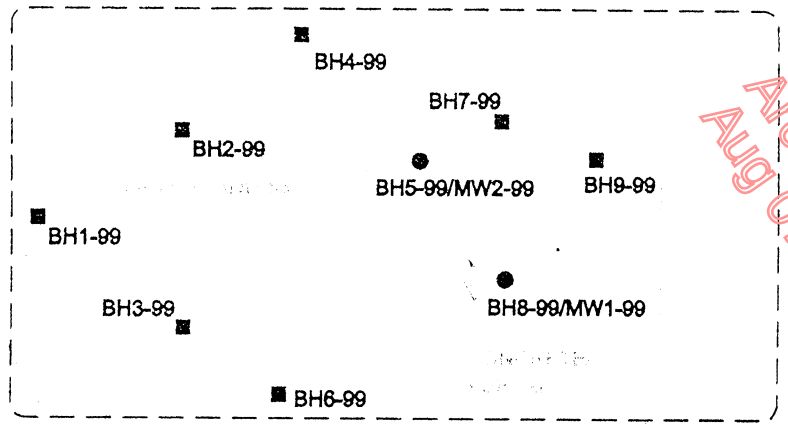
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figure 1.2

SITE PLAN
FORMER A-2 FILL AREA
Pontiac, Michigan

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13509-00(003)GN-WA002 MAR 03/2000





0 200 400ft

APPROXIMATE

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LEGEND

NOTE: MONITORING WELL AND BOREHOLE LOCATIONS ARE APPROXIMATE BASED ON FIELD MEASUREMENTS.

figure 2.1

- – – – – ESTIMATED LIMIT OF FORMER A-2 FILL AREA
- ■ BH1-99 BOREHOLE LOCATION
- ● BH8-99/MW1-99 MONITORING WELL LOCATION

SAMPLE LOCATIONS
FORMER A-2 FILL AREA
Pontiac, Michigan

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13509-00(SOURCE)GN-DE001 MAR 08/2000

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TABLE 2.2

SAMPLE SUMMARY
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

Sample Identification	*QA/QC*	*Location*	*Depth (ft. bgs.)*	*Matrix*	*Parameters*
S-13509-121699-TJ-001		BH7-99	2-4	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-121699-TJ-002		BH9-99	4-6	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-121699-TJ-003		BH8-99	4-6	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-121699-TJ-004		BH1-99	2-4	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-121799-TJ-005		BH3-99	10-12	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-121799-TJ-006	Duplicate of 005	BH3-99	10-12	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-122099-TJ-007		BH2-99	3-5	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-122099-TJ-008		BH4-99	4-6	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-122099-TJ-009	MS/MSD	BH5-99	4-6	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-122099-TJ-010		BH6	4-6	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
W-13509-010400-TJ-011		MW1-99	---	Groundwater	VOC, SVOC, Pesticides, PCB, Inorganics
W-13509-010400-TJ-012	Duplicate of 011	MW1-99	---	Groundwater	VOC, SVOC, Pesticides, PCB, Inorganics
W-13509-010400-TJ-013	MS/MSD	MW2-99	---	Groundwater	VOC, SVOC, Pesticides, PCB, Inorganics
Trip Blank-1	Trip Blank	---	---	Water	VOC
Trip Blank-2	Trip Blank	---	---	Water	VOC

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Notes:

VOC - Target Compound List (TCL) Volatile Organic Compounds (VOC).
SVOC - TCL Semi-Volatile Organic Compounds (SVOC).
Inorganics - Target Analyte List (TAL) Mteals and Cyanide
PCB - Polychlorinated Byphenyl
Pesticides - TCL Pesticides
ft. - feet below ground surface

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TABLE 3.1

ANALYTICAL RESULTS FOR SOIL SAMPLES
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

Sample Number			*001*	*002*	*003*	*004*	*005*	*006*	*007*	*008*	*009*	*010*
Sample Date			*12/16/99*	*12/16/99*	*12/16/99*	*12/16/99*	*12/16/99*	*12/16/99*	*12/20/99*	*12/20/99*	*12/20/99*	*12/20/99*
Sample Location			*BH7-99*	*BH9-99*	*BH8-99*	*BH1-99*	*BH3-99*	*BH3-99*	*BH2-99*	*BH4-99*	*BH5-99*	*BH6-99*
Interval Depth (ft. bgs)			*2-4*	*4-6*	*4-6*	*2-4*	*10-12*	*10-12*	*3-5*	*4-6*	*4-6*	*4-6*
Analyte	*Soil Volatilization to Indoor Air Inhalation Criteria (1)*	*Industrial Direct Contact Criteria (1)*										
VOCs (ug/kg)												
Chloromethane	12,000	1.10E+06	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Vinyl Chloride	150	11,000	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Bromomethane	1,600	1.00E+06	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Chloroethane	9.70E+05	9.70E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Acetone	1.10E+08	7.40E+07	ND(2200) UJ	ND(2500) UJ	ND(2400) UJ	ND(2300) UJ	ND(2700) UJ	ND(2500) UJ	ND(1100)	ND(1200)	ND(1100)	ND(1200)
1,1-dichloroethene	330	2.60E+06	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Carbon Disulfide	1.40E+05	2.80E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Methylene Chloride	2.40E+05	2.30E+06	ND(110) UJ	ND(120) UJ	ND(120) UJ	ND(120) UJ	ND(140) UJ	ND(130) UJ	ND(260)	ND(300)	ND(280)	ND(290)
trans-1,2-Dichloroethene	1.40E+06	1.40E+06	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
1,1-Dichloroethane	7.90E+05	7.90E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
2-Butanone (MEK)	2.70E+07	2.70E+07	ND (2200) UJ	ND(2500) UJ	ND(2400) UJ	ND(2300) UJ	ND(2700) UJ	ND(2500) UJ	ND(1100)	ND(1200)	ND(1100)	ND(1200)
cis-1,2-Dichloroethene	6.40E+05	6.40E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Chloroform	38,000	1.50E+06	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
1,1,1-Trichloroethane (TCA)	4.60E+05	4.60E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Carbon Tetrachloride	990	1.90E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
1,2-Dichlorothane (EDC)	11,000	2.70E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Benzene	8,400	4.00E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Trichloroethene (TCE)	37,000	5.00E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
1,2-Dichloropropane	7,400	3.60E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Bromodichloromethane	6,400	4.00E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
2-Hexanone	1.80E+06	2.50E+06	ND (2200) UJ	ND(2500) UJ	ND(2400) UJ	ND(2300) UJ	ND(2700) UJ	ND(2500) UJ	ND(1100)	ND(1200)	ND(1100)	ND(1200)
cis-1,3-Dichloropropene	420	1.40E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Toluene	2.50E+05	2.50E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
trans-1,3-Dichloropropene	420	1.40E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
1,1,2-Trichloroethane	24,000	4.40E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
4-Methyl-2-pentanone	2.70E+06	2.70E+06	ND (2200) UJ	ND(2500) UJ	ND(2400) UJ	ND(2300) UJ	ND(2700) UJ	ND(2500) UJ	ND(1100)	ND(1200)	ND(1100)	ND(1200)
Tetrachloroethene (PCE)	60,000	88,000	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Dibromochloromethane	21,000	3.00E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Chlorobenzene	2.20E+05	2.60E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Ethylbenzene	1.40E+05	1.40E+05	ND (55) UJ	ND(62) UJ	66 J	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
m,p-xylenes	--	--	ND (55) UJ	ND(62) UJ	110 J	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
o-xylene	--	--	ND (55) UJ	ND(62) UJ	79 J	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Xylene, total	1.50E+05	1.50E+05	ND (110) UJ	ND(124) UJ	189 J	ND(116) UJ	ND(138) UJ	ND(126) UJ	ND(106)	ND(120)	ND(110)	DN(120)
Styrene	5.20E+05	5.20E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
Bromoform	7.70E+05	8.70E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)
1,1,2,2-Tetrachloroethane	23,000	1.20E+05	ND (55) UJ	ND(62) UJ	ND(60) UJ	ND(58) UJ	ND(69) UJ	ND(63) UJ	ND(53)	ND(60)	ND(55)	ND(58)

NOTES

NLV = chemical not likely to volatilize under most conditions
ID = inadequate data to develop criterion
J = estimated value
UJ = Qualified as an estimated reporting limit.
ND = not detected at reporting limit
"--"=no criteria available or not tested
(1) MDEQ Part 201 Generic Cleanup Criteria and Screening Levels, Soil: Industrial and Commercial II, III, and IV, May 28, 1999

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TABLE 3.1

ANALYTICAL RESULTS FOR SOIL SAMPLES
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

Sample Number			*001*	*002*	*003*	*004*	*005*
Sample Date			*12/16/99*	*12/16/99*	*12/16/99*	*12/16/99*	*12/16/99*
Sample Location			*BH7-99*	*BH9-99*	*BH8-99*	*BH1-99*	*BH3-99*
Interval Depth (ft. bgs)			*2-4*	*4-6*	*4-6*	*2-4*	*10-12*
Analyte	*Soil Volatilization to Indoor Air Inhalation Criteria (1)*	*Industrial Direct Contact Criteria (1)*					
SVOCs (mg/kg)							
Bis(2-chloroethyl) Ether	44	23	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Phenol	NLV	1.20E+04	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2-Chlorophenol	ID	4.60E+03	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
1,3-Dichlorobenzene	ID	2.00E+02	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
1,4-Dichlorobenzene	60	1.00E+03	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
1,2-Dichlorobenzene	2.10E+02	2.10E+02	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Bis(2-chloroisopropyl) Ether	--	--	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2-Methylphenol	NLV	3.70E+04	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Hexachloroethane	4.10E+02	1.80E+03	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
N-Nitrosodi-n-propylamine	NLV	3.5	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
3-and 4-Methylphenol Coelute	NLV	2.30E+04	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Nitrobenzene	4.90E+02	3.40E+02	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Isophorone	NLV	2.40E+03	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2-Nitrophenol	NLV	1.30E+04	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2,4-Dimethylphenol	NLV	2.30E+05	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Bis(2-chloroethoxy)methane	--	--	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2,4-Dichlorophenol	NLV	1.00E+04	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
1,2,4-Trichlorobenzene	1.10E+03	1.10E+03	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Napthalene	7.70E+04	1.80E+05	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
4-Chloroaniline	--	--	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Hexachlorobutadiene	3.50E+05	3.50E+05	ND(0.3)	ND(0.3)	ND(0.3)	0.2 J	ND(0.3)
4-Chloro-3-methylphenol	ID	4.60E+03	ND(0.3)	ND(0.3)	ND(0.3)	0.1 J	ND(0.3)
2-Methylnapthalene	ID	4.30E+05	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Hexachlorocyclopentadiene	ID	87	ND(0.3)	ND(0.3)	ND(0.3)	0.1 J	ND(0.3)
2,4,6-Trichlorophenol	NLV	1.60E+04	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2,4,5-Trichlorophenol	NLV	4.80E+05	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2-Chloronaphthalene	--	--	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2-Nitroaniline	--	--	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Acenaphthylene	--	--	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Dimethyl Phthalate	3.00E+03	1.60E+04	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2,6-Dinitrotoluene	NLV	7.40E+02	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Acenaphthene	--	--	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
3-Nitroaniline	3.50E+05	8.10E+05	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2,4-Dinitrophenol	--	--	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Dibenzofuran	--	--	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
4-Nitrophenol	ID	2.10E+04	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2,4-Dinitrotoluene	--	--	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Fluorene	NLV	2.20E+02	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
1-Chlorophenol Phenyl Ether	1.00E+06	5.40E+05	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Diethyl Phthalate	--	--	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
4-Nitroaniline	NLV	7.40E+02	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2-Methyl-4,6-dinitrophenol	--	--	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
N-Nitrosodiphenylamine	NLV	1.60E+03	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
4-Bromophenyl Phenyl Ether	6.00E+02	5.10E+03	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Hexachlorobenzene	--	--	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Pentachlorophenol (PCP)	2.20E+02	94	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Phenanthrene	NLV	63	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)
Anthracene	2.80E+04	1.60E+03	ND(0.3)	ND(0.3)	0.6	0.6	ND(0.3)
Carbazole	1.00E+06	1.00E+06	ND(0.3)	ND(0.3)	0.09 J	0.09 J	ND(0.3)
Di-n-butyl Phthalate	NLV	1.20E+03	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Fluoranthene	NLV	7.60E+02	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Pyrene	1.00E+06	5.40E+05	ND(0.3)	ND(0.3)	0.5	0.7	ND(0.3)
Butyl Benzyl Phthalate	1.00E+06	3.40E+05	ND(0.3)	ND(0.3)	0.6	0.7	ND(0.3)
3,3'-Dichlorobenzidine	NLV	3.10E+02	ND(0.3)	0.2 J	0.4	0.1 J	ND(0.3)
Benz(a)anthracene	NLV	55	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)
Chrysene	NLV	2.10E+02	ND(0.3)	ND(0.3)	0.2 J	0.3 J	ND(0.3)
Bis(2-ethylhexyl) Phthalate	ID	2.10E+04	ND(0.3)	ND(0.3)	0.3 J	0.4	ND(0.3)
Di-n-octyl Phthalate	NLV	1.00E+04	ND(0.3)	0.1 J	0.2 J	0.1 J	0.5
Benzo(b)fluoanthene	NLV	8.10E+04	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Benzo(k)fluoanthene	ID	2.10E+05	ND(0.3)	ND(0.3)	0.2 J	0.3	ND(0.3)
Benzo(a)pyrene	NLV	2.10E+03	ND(0.3)	ND(0.3)	0.2 J	0.3 J	ND(0.3)
Ideno(1,2,3-od)pyrene	NLV	21	ND(0.3)	ND(0.3)	0.1 J	0.3 J	ND(0.3)
Dibenz(a,h)anthracene	NLV	2.10E+03	ND(0.3)	ND(0.3)	0.09 J	0.2 J	ND(0.3)
Benzo(g,h,i)perylene	NLV	21	ND(0.3)	ND(0.3)	ND(0.3)	0.04 J	ND(0.3)
		1.60E+04	ND(0.3)	ND(0.3)	0.09 J	0.2 J	ND(0.3)

NOTES

NLV = chemical not likely to volatilize under most conditions
ID = inadequate data to develop criterion
J = estimated value
ND = not detected at reporting limit
"--"=no criteria available or not tested
(1) MDEQ Part 201 Generic Cleanup Criteria and Screening Levels, Soil: Industrial and Commercial II, III, and IV, May 28, 1999

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TABLE 3.1

ANALYTICAL RESULTS FOR SOIL SAMPLES
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

Sample Number			*006*	*007*	*008*	*009*	*010*
Sample Date			*12/16/99*	*12/20/99*	*12/20/99*	*12/20/99*	*12/20/99*
Sample Location			*BH3-99*	*BH2-99*	*BH4-99*	*BH5-99*	*BH6-99*
Interval Depth (ft. bgs)			*10-12*	*3-5*	*4-6*	*4-6*	*4-6*
			Duplicate				
Analyte	*Soil Volatilization to Indoor Air Inhalation Criteria (1)*	*Industrial Direct Contact Criteria (1)*					
SVOCs (mg/kg)							
Bis(2-chloroethyl) Ether	44	23	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Phenol	NLV	1.20E+04	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2-Chlorophenol	ID	4.60E+03	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
1,3-Dichlorobenzene	ID	2.00E+02	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
1,4-Dichlorobenzene	60	1.00E+03	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
1,2-Dichlorobenzene	2.10E+02	2.10E+02	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Bis(2-chloroisopropyl) Ether	–	–	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2-Methylphenol	1.40E+04	3.70E+04	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Hexachloroethane	4.10E+02	1.80E+03	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
N-Nitrosodi-n-propylamine	NLV	3.5	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
3-and 4-Methylphenol Coehr	–	–	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Nitrobenzene	4.90E+02	3.40E+02	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Isophorone	NLV	2.40E+03	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2-Nitrophenol	NLV	1.30E+04	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2,4-Dimethylphenol	NLV	2.30E+05	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Bis(2-chloroethoxy)methane	–	–	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2,4-Dichlorophenol	NLV	1.00E+04	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
1,2,4-Trichlorobenzene	–	–	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Napthelene	7.70E+04	1.80E+05	ND(0.3)	ND(0.3)	ND(0.3)	0.7	ND(0.3)
4-Chloroaniline	–	–	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Hexachlorobutadiene	3.50E+05	3.50E+05	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
4-Chloro-3-methylphenol	ID	4.60E+03	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2-Methylnapthalene	ID	4.30E+05	ND(0.3)	ND(0.3)	ND(0.3)	0.8	ND(0.3)
Hexachlorocyclopentadiene	ID	81	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2,4,6-Trichlorophenol	NLV	1.40E+04	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2,4,5-Trichlorophenol	NLV	4.50E+06	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2-Chloronapthalene	–	–	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2-Nitroaniline	–	–	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Acenaphthylene	3.00E+03	1.60E+04	ND(0.3)	ND(0.3)	ND(0.3)	0.3 J	ND(0.3)
Dimethyl Phthalate	NLV	7.30E+02	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
2,6-Dinitrotoluene	–	–	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Acenaphthene	3.50E+05	8.10E+05	ND(0.3)	ND(0.3)	ND(0.3)	0.6	ND(0.3)
3-Nitroaniline	–	–	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
2,4-Dinitrophenol	–	–	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Dibenzofuran	ID	2.10E+04	ND(0.3)	ND(0.3)	ND(0.3)	0.5	ND(0.3)
4-Nitrophenol	–	–	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
2,4-Dinitrotoluene	NLV	2.20E+02	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Fluorene	1.00E+06	5.40E+05	ND(0.3)	0.2 J	ND(0.3)	1.2	ND(0.3)
1-Chlorophenol Phenyl Ether	–	–	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Diethyl Phthalate	NLV	7.40E+02	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
4-Nitroaniline	–	–	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
2-Methyl-4,6-dinitrophenol	NLV	1.60E+03	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
N-Nitrosodiphenylamine	6.00E+02	5.10E+03	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
4-Bromophenyl Phenyl Ether	–	–	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Hexachlorobenzene	2.20E+02	94	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Pentachlorophenol (PCP)	NLV	63	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)
Phenanthrene	2.80E+04	1.60E+03	ND(0.3)	0.7	ND(0.3)	5.4	ND(0.3)
Anthracene	1.00E+06	1.00E+06	ND(0.3)	0.1 J	ND(0.3)	1.4	ND(0.3)
Carbazole	NLV	1.20E+03	ND(0.3)	ND(0.3)	ND(0.3)	0.7	ND(0.3)
Di-n-butyl Phthalate	NLV	7.60E+02	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Fluoranthene	1.00E+06	5.40E+05	ND(0.3)	0.08 J	ND(0.3)	5.8	ND(0.3)
Pyrene	1.00E+06	3.40E+05	ND(0.3)	0.1 J	ND(0.3)	5.6	ND(0.3)
Butyl Benzyl Phthalate	NLV	3.10E+02	ND(0.3)	ND(0.3)	ND(0.3)	0.4	ND(0.3)
3,3'-Dichlorobenzidine	NLV	55	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)
Benz(a)anthracene	NLV	2.10E+02	ND(0.3)	ND(0.3)	ND(0.3)	3.6	ND(0.3)
Chrysene	ID	2.10E+04	ND(0.3)	ND(0.3)	ND(0.3)	3.3	ND(0.3)
Bis(2-ethylhexyl) Phthalate	NLV	1.00E+04	0.4	0.1 J	0.2 J	0.2 J	ND(0.3)
Di-n-octyl Phthalate	NLV	8.10E+04	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)
Benzo(b)fluoanthene	ID	2.10E+05	ND(0.3)	ND(0.3)	ND(0.3)	3.0	ND(0.3)
Benzo(k)fluoanthene	NLV	2.10E+03	ND(0.3)	ND(0.3)	ND(0.3)	2.2	ND(0.3)
Benzo(a)pyrene	NLV	21	ND(0.3)	ND(0.3)	ND(0.3)	2.8	ND(0.3)
Ideno(1,2,3-od)pyrene	NLV	2.10E+03	ND(0.3)	ND(0.3)	ND(0.3)	1.2	ND(0.3)
Dibenz(a,h)anthracene	NLV	21	ND(0.3)	ND(0.3)	ND(0.3)	0.4	ND(0.3)
Benzo(g,h,i)perylene	NLV	1.60E+04	ND(0.3)	ND(0.3)	ND(0.3)	0.9	ND(0.3)

NOTES

NLV = chemical not likely to volatilize under most conditions
ID = inadequate data to develop criterion
J = Estimated value
ND = not detected at reporting limit
"–"=no criteria available or not tested
(1) MDEQ Part 201 Generic Cleanup Criteria and Screening Levels, Soil: Industrial Direct Contact, II, III, and IV, May 28, 1999

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TABLE 3.1

ANALYTICAL RESULTS FOR SOIL SAMPLES
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

Sample Number				*001*	*002*	*003*	*004*	*005*	*006*	*007*	*008*	*009*	*0*
Sample Date				*12/16/99*	*12/16/99*	*12/16/99*	*12/16/99*	*12/16/99*	*12/16/99*	*12/20/99*	*12/20/99*	*12/20/99*	*12/2*
Sample Location				*BH7-99*	*BH9-99*	*BH8-99*	*BH1-99*	*BH3-99*	*BH3-99*	*BH2-99*	*BH4-99*	*BH5-99*	*BH(*
Interval Depth (ft. bgs)				*2-4*	*4-6*	*4-6*	*2-4*	*10-12*	*10-12*	*3-5*	*4-6*	*4-6*	*4-*
Analyte		*Soil Volatilization to Indoor Air Inhalation Criteria (1)*	*Industrial Direct Contact Criteria (1)*										
Polychlorinated Biphenyls (PCBs) (mg/kg)													
Aroclor 1016		NLV	9.9	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(
Aroclor 1221		NLV	9.9	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(
Aroclor 1232		NLV	9.9	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(
Aroclor 1242		NLV	9.9	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(
Aroclor 1248		NLV	9.9	ND(0.1)	0.7	3.9	0.3	0.3	0.3	0.05 J	0.05 J	0.8	ND(
Aroclor 1254		NLV	9.9	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(
Aroclor 1260		NLV	9.9	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(
Pesticides (µg/kg)													
alpha-BHC		–	–	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1
beta-BHC		–	–	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1
gamma-BHC (Lindane)		ID	1.20E+05	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1
delta-BHC		–	–	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1
Heptachlor		1.90E+03	5.30E+04	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1
Aldrin		7.10E+03	8600	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1
Heptachlor Epoxide		NLV	16	ND(10)	ND(10)	ND(20)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1
gamma-Chlordane		–	–	ND(10)	ND(10)	ND(12)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1
Endosulfan I		ID	3.90E+06	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1
alpha-Chlordane		5.90E+04	1.70E+05	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1
Dieldrin		7.30E+02	8400	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1
4,4'-DDE		ID	3.40E+05	ND(10)	16	67	6 J	6 J	6 J	ND(10)	1 J	1.5	ND(1
Endrin		NLV	7.70E+05	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1
Endosulfan II		ID	1.00E+06	ND(10)	ND(10)	ND(60)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND (13)	ND(1
4,4'-DDD		NLV	6.30E+05	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	3 J	ND(1
Endrin Aldehyde		–	–	ND(10)	ND(10)	36	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1
Endosulfan Sulfate		–	–	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1
4,4'-DDT		NLV	4.40E+05	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1
Endrin Ketone		–	–	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	2 J	ND(1
Methoxychlor		ID	2.30E+07	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(2
Toxaphene		NLV	23	ND(300)	ND(300)	ND(550)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(3
Total Solids	%	–	–	89.3	86.8	87	88.9	84.5	87	94.8	83.3	90.2	85.9

NOTES

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"–"=no criteria available or not tested
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TABLE 3.1

ANALYTICAL RESULTS FOR SOIL SAMPLES
FORMER GAS FIELD AREA
PONTIAC, MICHIGAN

Sample Number					*001*	*002*	*003*	*004*	*005*	*006*	*007*	*008*	*009*	*010*
Sample Date					*12/16/99*	*12/16/99*	*12/16/99*	*12/16/99*	*12/16/99*	*12/16/99*	*12/20/99*	*12/20/99*	*12/20/99*	*12/20/99*
Sample Location					*BH7-99*	*BH9-99*	*BH8-99*	*BH1-99*	*BH3-99*	*BH3-99*	*BH2-99*	*BH4-99*	*BH5-99*	*BH6-99*
Interval Depth (ft. bgs)					*2-4*	*4-6*	*4-6*	*2-4*	*10-12*	*10-12*	*3-5*	*4-6*	*4-6*	*4-6*
Analyte	*Industrial Direct Contact Criteria (1)*	*Statewide Default Background Levels*	*Michigan Background Soil Survey (2)* Sand	Clay										
Metals (mg/kg)														
Aluminum	3.0E+05	6900	--	8369	6520	10400	5450	6980	10300	9730	3050	10400	5740	8460
Antimony	1,600	NA	--	--	0.14	0.24	1.79	0.92	0.17	0.36	0.05	0.10	0.53	0.12
Arsenic	100	5.8	2.3	12.1	5.0	6.0	6.8	5.7	1.1	2.8	1.7	2.5	3.3	9.4
Barium	3.2E+05	75	125.9	91.9	36.7	63	101	111	61.2	86.4	12.9	60.4	79.6	39.8
Beryllium	2.3E+04	NA	--	--	0.37	0.48	0.37	0.37	0.52	0.52	0.15	0.52	0.27	0.64
Cadmium	4,500	1.2	0.2	1	0.16	0.27	2.65	2.22	0.26	0.45	0.06	0.16	0.37	0.16
Calcium	--	--	--	--	75800	23800	28300	32000	2490	13600	11800	3060	25500	1820
Chromium	1.0E+06	18	3.3	23.6	11.5	41.1	152	46.2	20	73.4	6.56	17.1	52.9	15.7
Cobalt	2.2E+04	6.8	--	9.5	6.04	6.74	7.47	6.85	7.21	5.31	1.96	3.68	4.36	9.38
Copper	2.3E+04	32	8.7	19.2	12.0	113	69	102	37.8	183	4.43	20.1	137	23.2
Iron	ID	1.20E+04	--	20212	14500	22400	51700	24300	19100	17600	5010	12800	26600	16900
Lead	900	21	4.5	10.9	6.74	20.0	73.1	48.9	14.7	37.6	2.94	10.1	27.4	14.1
Magnesium	1.0E+06	NA	--	--	18800	9750	7440	7910	2580	4400	3310	2350	4750	2870
Manganese	2.1E+05	440	--	387.7	412 J	353 J	768 J	617 J	251 J	543 J	102 J	77.3 J	682 J	404 J
Mercury	1,400	0.13	0.02	0.05	ND (0.01)	0.03	0.08	0.05	0.03	0.02 J	ND(0.01)	0.03	0.03	0.01 J
Nickel	3.4E+05	20	18	26.1	16.1	53.5	165	52.4	43.0	168	5.2	13.1	63.3	27.7
Potassium	--	--	--	--	898	975	648	867	680	590	217 J	658	652	922
Selenium	2.3E+04	0.41	0.2	--	ND (0.6)	ND (0.6)	0.7 J	0.6 J	ND (0.6)	ND (0.6)	ND (0.6)	ND (0.6)	ND (0.6)	ND (0.6)
Silver	2.1E+04	1	0.17	0.99	0.040	0.081	0.294	0.144	0.046	0.319	0.020	0.058	0.156	0.045
Sodium	1.0E+06	NA	--	--	1710	1800	2370	1110	236	280	50.7	783	566	156
Thallium	300	NA	--	0.38	0.16	0.21	0.15	0.15	0.14	0.12	0.04	0.07	0.09	0.3
Vanadium	3.9E+04	NA	--	--	17.9	24.3	18.4	19.5	27.8	18.5	8.12	22.7	14.6	20.5
Zinc	1.0E+06	47	25.2	--	33.1	75.8	206	109	42.8	212	13.3	42.2	72.3	40.2
Cyanide, Total (mg/kg)														
Cyanide, Total	2.50E+02	NA	--	--	0.5	0.2 J	2.8	1.6	ND(0.5)	0.1 J	ND (0.2)	ND (0.2)	0.5	ND (0.2)

NOTES

ID = inadequate data to develop criterion
ND = not detected at reporting limit
J = Qualified as anestimated value
NA= criterion value is not available
"--"=no criteria available or not tested
(1) MDEQ Part 201 Generic Cleanup Criteria and Screening Levels, Soil: Industrial and Commercial II, III, and IV, May 28, 1999
(2) Michigan Department of Natural Resources, Michigan Background Soil Survey, Erie Lobe, April 1991

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TABLE 3.2

ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

Sample Number		*011*	*012*	*013*	*Trip Blank - 1*	*Trip Blank - 2*
Sample Date		*1/4/00*	*1/4/00*	*1/4/00*	*1/4/00*	*1/4/00*
Sample Location		*MW1-99*	*MW1-99*	*MW2-99*		
	Groundwater Contact Criteria(1)					
Analyte						
VOCs (µg/L)						
Chloromethane	1.1E+5	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Vinyl Chloride	290	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Bromomethane	65,000	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Chloroethane	2.0E+5	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Acetone	3.1E+7	17J	18J	ND(20)	ND(20)	ND(20)
1,1-dichloroethene	9,000	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
CarbonDisulfide	1.1E+6	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Methylene Chloride	1.1E+5	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
trans-1,2-Dichloroethene	1.9E+5	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
1,1-Dichloroethane	2.1E+6	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
2-Butanone (MEK)	2.4E+8	6.5J	6.6J	ND(20)	ND(20)	ND(20)
cis-1,2-Dichloroethene	1.7E+5	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Chloroform	96,000	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
1,1,1-Trichloroethane (TCA)	2.2E+5	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Carbon Tetrachloride	1,600	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
1,2-Dichlorothane (EDC)	11,000	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Benzene	9,400	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Trichloroethene (TCE)	11,000	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
1,2-Dichloropropane	7,500	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Bromodichloromethane	11,000	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
2-Hexanone	4.8E+6	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)
cis-1,3-Dichloropropene	2,600	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Toluene	5.3E+5	NS (5.0) U	NS (5.0) U	NS (5.0) U	0.6	ND(0.5)
trans-1,3-Dichloropropene	2,600	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
1,1,2-Trichloroethane	9,500	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
4-Methyl-2-pentanone	1.2E+7	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)
Tetrachloroethene (PCE)	5,100	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Dibromochloromethane	9,500	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Chlorobenzene	68,000	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Ethylbenzene	1.7E+5	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
m,p-xylenes	-	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
o-xylene	-	0.2J	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Total xylenes	1.9E+5	0.2J	-	-	-	-
Styrene	3,200	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Bromoform	1.0E+5	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
1,1,2,2-Tetrachloroethane	2,100	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

NOTES

ND = not detected at reporting limit

ND ( ) U = Qualified as not detected above the reporting limit in parenthesis.

J = Qualified as an estimated value

" - " =no criteria available or not tested

(1) MDEQ Part 201 Generic Cleanup Criteria and Screening Levels, Groundwater: Residential and Industrial - Commercial, Groundwater Contact Criteria, May 28, 1999

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TABLE 3.2

ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES
FORMER A-2 FILL AREA
LONTZ AIR FORCE BASE, CANTON, OHIO

Sample Number		*011*	*012*	*013*
Sample Date		*01/04/00*	*01/04/00*	*01/04/00*
Sample Location		*MW1-99*	*MW1-99*	*MW2-99*
	Groundwater Contact Criteria (1)			
Analyte				
SVOCs (µg/L)				
Bis(2-chloroethyl) Ether	2,100	ND(5)	ND(5)	ND(5)
Phenol	2.8E+7	0.5J	0.7J	0.6J
2-Chlorophenol	82,000	ND(5)	ND(5)	ND(5)
1,3-Dichlorobenzene	1.1E+5	ND(1)	ND(1)	ND(1)
1,4-Dichlorobenzene	2,800	ND(1)	ND(1)	ND(1)
1,2-Dichlorobenzene	1.6E+5	ND(1)	ND(1)	ND(1)
Bis(2-chloroisopropyl) Ether	-	ND(5)	ND(5)	ND(5)
2-Methylphenol	7.3E+6	ND(5)	ND(5)	ND(5)
Hexachloroethane	1,5000	ND(2)	ND(2)	ND(2)
N-Nitrosodi-n-propylamine	220	ND(5)	ND(5)	ND(5)
3-and 4-Methylphenol Coehr	75,000	ND(5)	ND(5)	ND(5)
Nitrobenzene	9,600	ND(5)	ND(5)	ND(5)
Isophorone	1.1E+5	ND(5)	ND(5)	ND(5)
2-Nitrophenol	72,000	ND(5)	ND(5)	ND(5)
2,4-Dimethylphenol	4.4E+5	ND(5)	ND(5)	ND(5)
Bis(2-chloroethoxy)methane	-	ND(5)	ND(5)	ND(5)
2,4-Dichlorophenol	40,000	ND(5)	ND(5)	ND(5)
1,2,4-Trichlorobenzene	-	ND(5)	ND(5)	ND(5)
Napthelene	34,000	ND(5)	ND(5)	ND(5)
4-Chloroaniline	-	ND(20)	ND(20)	ND(20)
Hexachlorobutadiene	200	ND(5)	ND(5)	ND(5)
4-Chloro-3-methylphenol	62,000	ND(5)	ND(5)	ND(5)
2-Methylnapthalene	32,000	ND(5)	ND(5)	ND(5)
Hexachlorocyclopentadiene	400	ND(5)	ND(5)	ND(5)
2,4,6-Trichlorophenol	5,800	ND(5)	ND(5)	ND(5)
2,4,5-Trichlorophenol	1.5E+5	ND(50)	ND(50)	ND(50)
2-Chloronapthalene	-	ND(5)	ND(5)	ND(5)
2-Nitroaniline	-	ND(20)	ND(20)	ND(20)
Acenaphthylene	3,900	ND(5)	ND(5)	ND(5)
Dimethyl Phthalate	4.2E+6	ND(5)	ND(5)	ND(5)
2,6-Dinitrotoluene	-	ND(5)	ND(5)	ND(5)
Acenaphthene	4,200	ND(5)	ND(5)	ND(5)
3-Nitroaniline	-	ND(20)	ND(20)	ND(20)
2,4-Dinitrophenol	-	ND(5)	ND(20)	ND(20)
Dibenzofuran	ID	ND(5)	ND(5)	ND(5)
4-Nitrophenol	72,000	ND(5)	ND(20)	ND(20)
2,4-Dinitrotoluene	1,200	ND(5)	ND(5)	ND(5)
Fluorene	2,000	ND(5)	ND(5)	ND(5)
1-Chlorophenol Phenyl Ether	-	ND(5)	ND(5)	ND(5)
Diethyl Phthalate	ID	0.6J	0.7 J	ND(5)
4-Nitroaniline	-	ND(20)	ND(20)	ND(20)
2-Methyl-4,6-dinitrophenol	8,800	ND(20)	ND(20)	ND(20)
N-Nitrosodiphenylamine	30,000	ND(5)	ND(5)	ND(5)
4-Bromophenyl Phenyl Ether	-	ND(5)	ND(5)	ND(5)
Hexachlorobenzene	2.0	ND(5)	ND(5)	ND(5)
Pentachlorophenol (PCP)	85	ND(20)	ND(20)	ND(20)
Phenanthrene	1,000	ND(5)	ND(5)	ND(5)
Anthracene	43	ND(5)	ND(5)	ND(5)
Carbazole	2,900	ND(10)	ND(10)	ND(10)
Di-n-butyl Phthalate	11,000	ND(5)	ND(5)	ND(5)
Fluoranthene	210	ND(5)	ND(5)	ND(5)
Pyrene	140	ND(5)	ND(5)	ND(5)
Butyl Benzyl Phthalate	2,700	ND(5)	ND(5)	ND(5)
3,3'-Dichlorobenzidine	270	ND(20)	ND(20)	ND(20)
Benz(a)anthracene	5.0	ND(5)	ND(5)	ND(5)
Chrysene	5.0	ND(5)	ND(5)	ND(5)
Bis(2-ethylhexyl) Phthalate	47	510	510	ND(5)
Di-n-octyl Phthalate	250	ND(5)	ND(5)	ND(5)
Benzo(b)fluoanthene	5.0	ND(5)	ND(5)	ND(5)
Benzo(k)fluoanthene	5.0	ND(5)	ND(5)	ND(5)
Benzo(a)pyrene	5.0	ND(5)	ND(5)	ND(5)
Ideno(1,2,3-od)pyrene	5.0	ND(5)	ND(5)	ND(5)
Dibenz(a,h)anthracene	5.0	ND(5)	ND(5)	ND(5)
Benzo(g,h,i)perylene	5.0	ND(5)	ND(5)	ND(5)

NOTES

ND = not detected at reporting limit
ID = inadequate data to develop criterion
J = Estimated value
" - " =no criteria available or not tested
(1) MDEQ Part 201 Generic Cleanup Criteria and Screening Levels, Groundwater: Residential and Industrial - Commercial, Groundwater Contact Criteria, May 28, 1999

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TABLE 3.2

ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

Sample Number		*011*	*012*	*013*
Sample Date		*01/04/00*	*01/04/00*	*01/04/00*
Sample Location		*MW1-99*	*MW1-99*	*MW2-99*
Analyte	*Groundwater Contact Criteria (1)*			
Polychlorinated Biphenyls (PCBs)/Pesticides (µg/L)				
Aroclor 1016	2.3	ND(0.2)	ND(0.2)	ND(0.2)
Aroclor 1221	2.3	ND(0.4)	ND(0.4)	ND(0.4)
Aroclor 1232	2.3	ND(0.2)	ND(0.2)	ND(0.2)
Aroclor 1242	2.3	ND(0.2)	ND(0.2)	ND(0.2)
Aroclor 1248	2.3	ND(0.2)	ND(0.2)	ND(0.2)
Aroclor 1254	2.3	ND(0.2)	ND(0.2)	ND(0.2)
Aroclor 1260	2.3	ND(0.2)	ND(0.2)	ND(0.2)
alpha-BHC	-	ND(0.04)	ND(0.04)	ND(0.04)
beta-BHC	-	ND(0.04)	ND(0.04)	ND(0.04)
gamma-BHC (Lindane)	86	ND(0.04)	ND(0.04)	ND(0.04)
delta-BHC	-	ND(0.04)	ND(0.04)	ND(0.04)
Heptachlor	0.7	ND(0.04)	ND(0.04)	ND(0.04)
Aldrin	180	ND(0.04)	ND(0.04)	ND(0.04)
Heptachlor Epoxide	3.1	ND(0.04)	ND(0.04)	ND(0.04)
gamma-Chlordane	11	ND(0.04)	ND(0.04)	ND(0.04)
Endosulfan I	510	ND(0.04)	ND(0.04)	ND(0.04)
alpha-Chlordane	11	ND(0.04)	ND(0.04)	ND(0.04)
Dieldrin	0.9	ND(0.04)	ND(0.04)	ND(0.04)
4,4'-DDE	11	ND(0.04)	ND(0.04)	ND(0.04)
Endrin	120	ND(0.04)	ND(0.04)	ND(0.04)
Endosulfan II	510	ND(0.04)	ND(0.04)	ND(0.04)
4,4'-DDD	12	ND(0.04)	ND(0.04)	ND(0.04)
Endrin Aldehyde	-	ND(0.04)	ND(0.04)	ND(0.04)
Endosulfan Sulfate	-	ND(0.04)	ND(0.04)	ND(0.04)
4,4'-DDT	5.3	ND(0.04)	ND(0.04)	ND(0.04)
Endrin Ketone	-	ND(0.04)	ND(0.04)	ND(0.04)
Methoxychlor	45	0.01J	0.01J	ND(0.04)
Toxaphene	13	ND(0.1)	ND(0.1)	ND(0.1)
		ND(1)	ND(1)	ND(1)

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NOTES

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(1) MDEQ Part 201 Generic Cleanup Criteria and Screening Levels, Groundwater: Residential and Industrial - Commercial, Groundwater Contact Criteria, May 28, 1999

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TABLE 3.2

ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

Sample Number		*011*	*012*	*013*
Sample Date		*01/04/00*	*01/04/00*	*01/04/00*
Sample Location		*MW1-99*	*MW1-99*	*MW2-99*
Analyte	*Groundwater Contact Criteria (1)*			
Metals (µg/L)				
Aluminum	7.0E+7	38.1 J	47.6 J	95.4 J
Antimony	75,000	1.12 J	1.02 J	1.56 J
Arsenic	4,700	ND (2.00)	ND (2.00)	2.40 J
Barium	1.5E+7	3440	3690	1010
Beryllium	1.1E+6	ND (0.20)	ND (0.20)	ND (0.20)
Cadmium	2.1E+5	3.39	4.04	0.93
Calcium	-	551000	584000	352000
Chromium	1.0E+6	ND (4.00)	ND (4.00)	ND (4.00)
Cobalt	8.1E+6	4.57 J	4.78 J	7.57 J
Copper	8.1E+6	5.74 J	ND (4.00)	ND (4.00)
Iron	ID	1470	1600	10800
Lead	ID	0.23 J	0.31 J	0.54 J
Magnesium	1.0E+9	61300	66500	70800
Manganese	1.0E+7	629	682	1180
Mercury	56	ND (0.10)	ND (0.10)	ND (0.10)
Nickel	1.6E+7	ND (4.00)	ND (4.00)	ND (4.00)
Potassium	-	33400	31500	7610
Selenium	1.1E+6	ND (4.00)	ND (4.00)	ND (2.00)
Silver	1.0E+6	0.410 J	0.217 J	0.630
Sodium	1.0E+9	8190000	8730000	3140000
Thallium	14,000	ND (0.20)	ND (0.20)	ND (0.20)
Vanadium	1.9E+6	ND (4.00)	ND (4.00)	9.25 J
Zinc	7.0E+7	3.54 J	2.52 J	9.91 J
Cyanide, Total (mg/L)				
Cyanide, Total	6.5E+5	0.03	0.03	0.006J

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NOTES

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(1) MDEQ Part 201 Generic Cleanup Criteria and Screening Levels, Groundwater: Residential and Industrial - Commercial, Groundwater Contact Criteria, May 28, 1999

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APPENDIX A

STRATIGRAPHIC LOGS

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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

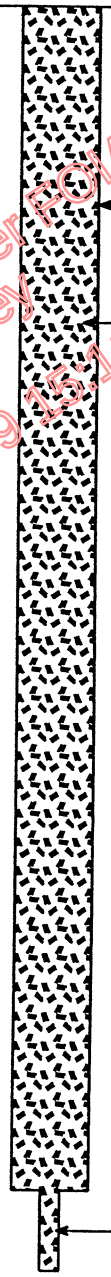
(DL-01)
Page 1 of 1

PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH7-99
DATE COMPLETED: DECEMBER 16, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.
	GROUND SURFACE	0.00
	ASPHALT, gravel mixed, black, weathered	-.5
	SP-SANDS (FILL), trace silts, loose, fine grained, poorly graded, brown-black, very moist, historic asphalt, parking lot staining	-.9
2.5		
	CL-CLAY (FILL), with sands, trace silts and fine, subrounded gravels, firm, low plasticity, banded, fractured, olive-brown, moist, slight petroleum-like (oil) odor and historic staining	-4.0
5.0	- root fractures, gray with olive	
	CL-CLAY (NATIVE), trace sands and fine, subrounded gravels, stiff to very stiff, low plasticity, banded, mottled, brown-gray, moist	
7.5	- very stiff, homogeneous, brown	
	- no recovery, pushing coarse, subrounded stone (quartizite)	
10.0	- stiff	
	- low to medium plasticity, increased moisture, moist to very moist	
12.5		
	- very stiff, interbedded, intermittent, very fine grained sand seams <1/2" thick	
15.0		
	- stiff, low plasticity, brown to gray, slightly mottled	
17.5		
	- gray with olive banding	
	- with fine rounded and subrounded gravels	
20.0		
22.5		
25.0		
27.5		
30.0	- very stiff	
32.5	END OF HOLE @ 32.0ft BGS	-32.0

MONITOR INSTALLATION



SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
1SS		4	0.0
2SS		7	0.0
3SS		15	0.0
4SS		17	0.0
5SS		26	NA
6SS		9	0.0
7SS		14	0.0
8SS		18	0.0
9SS		12	0.0
10SS		10	0.0
11SS		10	0.0
12SS		12	0.0
13SS		14	0.0
14SS		12	0.0
15SS		13	0.0
16SS		16	0.0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BHI-99
DATE COMPLETED: DECEMBER 16, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	0.00					
	CONCRETE, gravel mixed, white-gray						
	SP-SANDS (FILL), trace silts, loose, fine grained, poorly graded, brown to olive gray, moist	-1.0		1SS		4	0.0
2.5	SC-SANDY CLAY (FILL), trace silts and fine, rounded gravels, stiff, slight plasticity, olive-gray, moist, fine grained	-2.6		2SS		9	14.8
5.0	CL-CLAY (NATIVE), with silts, trace fine, subrounded gravels, very stiff, low plasticity, homogeneous, brown, moist	-5.0	8"Ø BOREHOLE	3SS		16	5.7
7.5	- stiff			4SS		10	5.6
	- trace coarse, rounded gravels, slightly oxidized, brown-orange		CUTTINGS AND BENTONITE MIX	5SS		11	2.8
10.0				6SS		11	4.8
12.5	- very stiff - silty clay, trace fine grained sands, gray, no oxidation			7SS		16	1.9
15.0	- stiff		2"Ø SPLIT SPOON	8SS		11	0.8
	END OF HOLE @ 16.0ft BGS	-16.0					
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH3-99
DATE COMPLETED: DECEMBER 17, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	0.00					
	CONCRETE, gravel mixed, white-gray, chemically treated with sealant			1SS		NA	NA
		-2.0					
2.5	SP-SANDS (FILL), trace silts, loose to very loose, fine grained, poorly graded, orange-brown, moist			2SS		15	0.0
5.0			8"Ø BOREHOLE	3SS		35	0.0
7.5				4SS		55	0.0
	- black, high grade poly liner		CUTTINGS AND BENTONITE MIX				
10.0	- olive-brown, musty-like odor			5SS		33	NA
		-11.6		6SS		52	NA
12.5	CL-CLAY (FILL), with silts and fine grained sands, hard, low plasticity, homogeneous, brown, moist			7SS		33	NA
		-14.0					
15.0	CL-SILTY CLAY (NATIVE), trace fine grained sands, peat, stiff, low plasticity, homogeneous, dark brown, moist, root fractures, vegetative layer believed to be original ground surface	-16.0		8SS		11	NA
17.5	SC-SANDY CLAY (NATIVE), trace silts and fine rounded gravels, firm, low plasticity, homogeneous, gray, moist, fine grained			9SS		6	NA
20.0				10SS		8	NA
		-20.6		11SS		7	NA
22.5	ML-SILTS (NATIVE), trace fine grained sands and clay, fine, rounded gravels, loose, poorly graded, gray, moist	-22.0		12SS		20	NA
	SP-SANDS (NATIVE), trace silts, compact, very fine grained, poorly graded, olive-brown, moist, lacustrine						
25.0	- silty sands, very moist			13SS		24	NA
27.5				14SS		20	NA
		-29.6	2"Ø SPLIT SPOON	15SS		20	NA
30.0	CL-SILTY CLAYS (NATIVE), trace fine grained sands, very stiff, slight plasticity to low plasticity, homogeneous, gray, very moist	-30.0					
32.5	END OF HOLE @ 30.0ft BGS						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH2-99
DATE COMPLETED: DECEMBER 17, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	0.00					
2.5	CONCRETE, gravel mixed, white-gray, chemically treated with sealant			1SS		NA	NA
	SP-SANDS (FILL), trace silts, dense, fine grained, poorly graded, oilve gray to brown, moist, faint petroleum-like odor	-3.0		2SS		33	30.5
5.0	CL-SILTY CLAY (NATIVE), trace fine grained sands and roots, stiff, low plasticity, banded, brown with gray, moist, slightly oxidized	-5.0	8"Ø BOREHOLE	3SS		11	2.9
7.5	– very stiff, homogeneous			4SS		16	2.4
10.0	– stiff, increased plasticity with increased moisture		CUTTINGS AND BENTONITE MIX	5SS		10	3.2
12.5	– very stiff, gray – trace fine, rounded gravels – interbedded medium grained sand seam, very moist			6SS		18	1.9
15.0	– interbedded medium and coarse grained sand seam, very moist	-15.0	2"Ø SPLIT SPOON	7SS		17	0.4
	END OF HOLE @ 15.0ft BGS						
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH4-99
DATE COMPLETED: DECEMBER 20, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	0.00					
	CONCRETE, gravel mixed, white-gray, steel rebar	-1.0		1SS		6	4.4
2.5	SW-SANDS (FILL), with silts and fine, subrounded gravels, loose, fine grained, well graded, gray-black, ,oist			2SS		NA	NA
	- concrete obstruction	-4.0					
5.0	SC-SANDY CLAY (FILL), trace silts, vegetation, roots, pieces of railroad tie (wood) and fine, rounded gravels, firm, low plasticity, gray, moist, black historic petroleum staining, fine grained	-6.0	8"Ø BOREHOLE	3SS		8	4.7
7.5	SP-SANDS (FILL), trace silts, compact, fine and medium grained, poorly graded, gray-black to brown, moist	-8.6	CUTTINGS AND BENTONITE MIX	4SS		10	1.9
10.0	- loose			5SS		6	2.1
	SC-SANDY CLAY (NATIVE), trace silts and fine, rounded gravels, firm to stiff, low plasticity, gray-brown, moist, fine grained			6SS		10	0.9
12.5	- with fine grained sands		2"Ø SPLIT SPOON	7SS		11	0.7
	END OF HOLE @ 14.0ft BGS	-14.0					
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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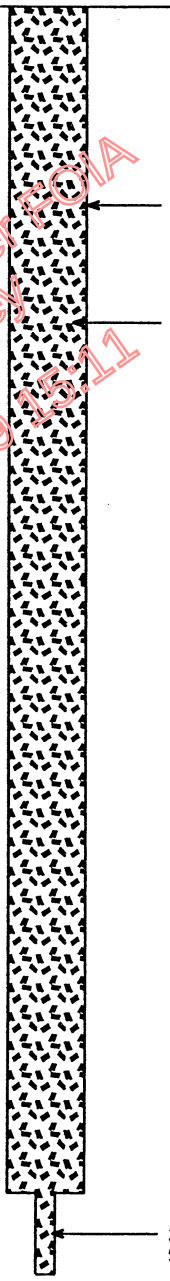
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PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH6-99
DATE COMPLETED: DECEMBER 20, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.
	GROUND SURFACE	0.00
	ASPHALT, gravel mixed, black, weathered	-.5
	SW-SANDS and GRAVELS (FILL), trace silts, compact, fine grained, fine and coarse, subrounded, well graded, brown, moist	-1.8
2.5	CL-CLAY (FILL), with silts and sands, fine grained, firm to stiff, low plasticity, dark brown with olive, banding, moist	
5.0	CL-CLAY (NATIVE), with fine grained sands, trace fine, rounded gravels and silts, stiff, low plasticity, brown, moist	-5.0
7.5	- firm	
	SP/SM-SILTY SANDS (NATIVE), loose to compact, very fine grained, poorly graded, brown, very moist	-9.0
10.0	CL-SILTY CLAY (NATIVE), trace fine grained sands, firm to stiff, low plasticity, homogeneous, brown, moist	-10.6
12.5	- very soft/very loose, fine grained sand seam/lens, very moist	
15.0	ML/SM-SANDY SILTS (NATIVE), trace clays, loose, very fine grained/slight plasticity, poorly graded, brown, very moist	-14.6
	SP-SANDS (NATIVE), with silts, compact, very fine and fine grained, poorly graded, yellow-brown, very moist, lacustrine	-16.0
17.5		
20.0		
22.5	- yellow to gray-brown - fine and medium grained - gray	
25.0	- medium grained, very moist to wet	
27.5		
30.0	CL-CLAY (NATIVE), with to trace fine grained sands and fine, rounded gravels, firm to stiff, low plasticity, homogeneous, gray, moist	-29.8
32.5	- interbedded intermittent, fine and medium sand seams <6" thick, very moist	-32.0
	END OF HOLE @ 32.0ft BGS	

MONITOR INSTALLATION



SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
1SS		14	0.0
2SS		8	0.0
3SS		11	0.0
4SS		15	0.2
5SS		8	0.0
6SS		8	0.0
7SS		2	0.0
8SS		5	0.0
9SS		12	0.0
10SS		18	0.0
11SS		11	0.0
12SS		12	0.0
13SS		11	0.0
14SS		21	0.0
15SS		6	0.0
16SS		12	0.0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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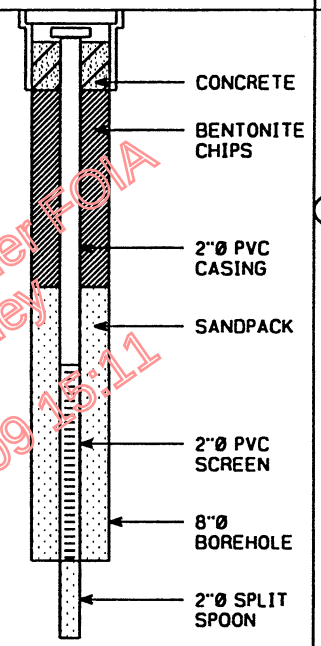
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PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH5-99/MW2-99
DATE COMPLETED: DECEMBER 20, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.
	GROUND SURFACE	0.00
	CONCRETE, gravel mixed, white-gray, steel rebar	-.9
2.5	SW/GW-SANDS and GRAVELS (FILL), trace silts, loose, fine grained/fine and coarse, subrounded, well graded, brown, moist	-2.0
5.0	SC-SANDY CLAY (FILL), trace fine subrounded gravels, silt and fragments of glass, compact, slight plasticity, gray-black, moist, faint petroleum-like odor, fine grained	
	- pieces of wood, oil staining	
7.5	- with slag and foundary sands, black	-6.6
	SP-SANDS (NATIVE), with silts, trace roots, compact, fine grained, poorly graded, gray, moist	
10.0	- very moist	
	- wet	
12.5	- loose, medium and coarse grained	
	SC-SANDY CLAY (NATIVE), trace silts and fine, rounded gravels, firm to stiff, slight plasticity, gray, very moist, fine grained	-13.6
15.0	- interbedded intemittent medium grained sand seams, wet	-16.0
17.5	END OF HOLE @ 16.0ft BGS	
20.0		
22.5		
25.0		
27.5		
30.0		
32.5		



SCREEN DETAILS
Screened interval:
9.0 to 14.0ft BGS
Length: 5.0ft
Diameter: 2"
Slot Size: #10
Material: PVC
Sand Pack:
7.0 to 16.0ft BGS
Material: Sand

SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
1SS		8	0.0
2SS		16	4.1
3SS		18	9.7
4SS		19	0.0
5SS		11	0.0
6SS		13	0.0
7SS		6	0.0
8SS		9	0.0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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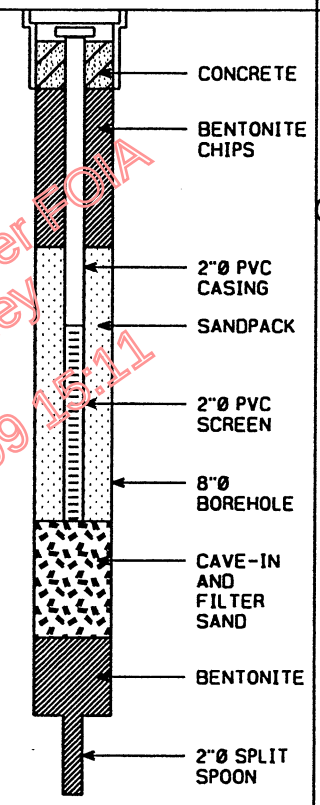
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PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH8-99/MW1-99
DATE COMPLETED: DECEMBER 16, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.
	GROUND SURFACE	0.00
	ASPHALT, gravel mixed, black, weathered	-.5
2.5	SP-SANDS (FILL), trace silts, loose, fine grained, poorly graded, olive-brown to gray, very moist, historic asphalt-like odor	-2.6
	– faint petroleum-like odor	-3.6
5.0	SLAG (FILL), with fine grained sand, loose, black, moist, moderate petroleum-like odor	
	SLAG (FILL), with foundry sand, trace glass fragments, clay, silt, brick fragments and gravels, loose, black, moist, strong petroleum-like odor	-5.8
7.5	CL-CLAY (FILL), with silt, trace fragments and brick, stiff, low plasticity, olive-gray, moist, faint petroleum-like odor	-8.0
10.0	SP-SANDS (NATIVE), with clay, trace silt and fine, subrounded gravels, compact, fine grained, poorly graded, homogeneous, olive-gray, moist, faint petroleum-like odor	
12.5	– gray	
	– loose, very moist to wet	-12.5
15.0	CL-SILTY CLAY (NATIVE), with to trace fine grained sands, trace fine, rounded gravel, stiff, low plasticity, homogeneous, gray, moist	-14.0
	SP-SANDS (NATIVE), trace silts, loose, fine grained, poorly graded, gray, wet	-16.0
17.5	CL-SILTY CLAY (NATIVE), trace fine grained sands and fine, rounded gravels, firm, low plasticity, homogeneous, gray, moist	
	– stiff	
20.0	END OF HOLE @ 20.0ft BGS	-20.0
22.5		
25.0		
27.5		
30.0		
32.5		



SCREEN DETAILS
Screened interval:
8.0 to 13.0ft BGS
Length: 5.0ft
Diameter: 2"
Slot Size: #10
Material: PVC
Sand Pack:
6.0 to 20.0ft BGS
Material: Sand

SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
1SS		7	0.0
2SS		13	28.5
3SS		18	34.9
4SS		10	21.3
5SS		16	15.4
6SS		8	13.2
7SS		10	16.9
8SS		9	16.3
9SS		7	14.9
10SS		13	12.8

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH9-99
DATE COMPLETED: DECEMBER 16, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	0.00					
	ASPHALT, gravel mixed, black, weathered	-.5		1SS		9	0.0
	SP-SANDS (FILL), trace silts, loose, fine grained, poorly graded, brown to olive-gray, very moist	-1.5					
2.5	- black-gray, historic oil staining/asphalt staining			2SS		7	0.0
5.0	CL-CLAY (FILL), with sands, trace silt and fine rounded gravels, firm, low plasticity, banded, olive-gray, moist, historic oil staining, fine grained		8"Ø BOREHOLE	3SS		8	0.0
7.5	- black to olive gray, historic staining, faint petroleum-like odor	-7.4		4SS		21	0.0
	- sandy clay, brown-orange, moist to very moist		CUTTINGS AND BENTONITE MIX	5SS		14	0.0
10.0	CL-CLAY (NATIVE), with silts, trace fine grained sands and fine, subrounded gravels, very stiff, low plasticity, slightly banded, brown, moist			6SS		16	0.0
12.5	- stiff, gray-brown, mottled			7SS		15	0.0
	- very stiff, oxidized seams <1/4" thick, root fractures						
15.0	- stiff, gray, homogeneous			8SS		18	0.0
	- very stiff		2"Ø SPLIT SPOON				
	- with fine subrounded gravels	-16.0					
	END OF HOLE @ 16.0ft BGS						
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH7-99
DATE COMPLETED: DECEMBER 16, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	0.00					
	ASPHALT, gravel mixed, black, weathered	-.5					
	SP-SANDS (FILL), trace silts, loose, fine grained, poorly graded, brown-black, very moist, historic asphalt, parking lot staining	-.9					
2.5				1SS		4	0.0
				2SS		7	0.0
	CL-CLAY (FILL), with sands, trace silts and fine, subrounded gravels, firm, low plasticity, banded, fractured, olive-brown, moist, slight petroleum-like (oil) odor and historic staining	-4.0					
5.0	- root fractures, gray with olive		8"Ø BOREHOLE	3SS		15	0.0
	CL-CLAY (NATIVE), trace sands and fine, subrounded gravels, stiff to very stiff, low plasticity, banded, mottled, brown-gray, moist			4SS		17	0.0
7.5	- very stiff, homogeneous, brown		CUTTINGS AND BENTONITE MIX				
	- no recovery, pushing coarse, subrounded stone (quartizite)			5SS		26	NA
10.0	- stiff			6SS		9	0.0
	- low to medium plasticity, increased moisture, moist to very moist						
12.5				7SS		14	0.0
	- very stiff, interbedded, intermittent, very fine grained sand seams <1/2" thick						
15.0				8SS		18	0.0
	- stiff, low plasticity, brown to gray, slightly mottled						
17.5				9SS		12	0.0
	- gray with olive banding						
	- with fine rounded and subrounded gravels			10SS		10	0.0
20.0							
				11SS		10	0.0
22.5							
				12SS		12	0.0
25.0							
				13SS		14	0.0
27.5							
				14SS		12	0.0
30.0	- very stiff						
				15SS		13	0.0
			2"Ø SPLIT SPOON	16SS		16	0.0
32.5	END OF HOLE @ 32.0ft BGS	-32.0					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH1-99
DATE COMPLETED: DECEMBER 16, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	0.00					
	CONCRETE, gravel mixed, white-gray	-1.0		1SS		4	0.0
2.5	SP-SANDS (FILL), trace silts, loose, fine grained, poorly graded, brown to olive gray, moist	-2.8		2SS		9	14.8
5.0	SC-SANDY CLAY (FILL), trace silts and fine, rounded gravels, stiff, slight plasticity, olive-gray, moist, fine grained	-5.0	8"Ø BOREHOLE	3SS		16	5.7
7.5	CL-CLAY (NATIVE), with silts, trace fine, subrounded gravels, very stiff, low plasticity, homogeneous, brown, moist - stiff			4SS		10	5.6
10.0	- trace coarse, rounded gravels, slightly oxidized, brown-orange		CUTTINGS AND BENTONITE MIX	5SS		11	2.8
12.5	- very stiff - silty clay, trace fine grained sands, gray, no oxidation			6SS		11	4.8
15.0	- stiff			7SS		16	1.9
	END OF HOLE @ 16.0ft BGS	-16.0	2"Ø SPLIT SPOON	8SS		11	0.8
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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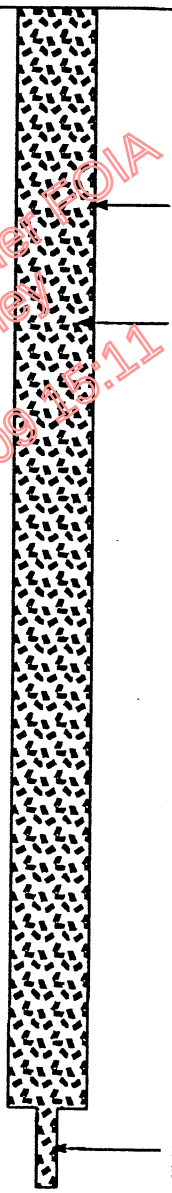
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(OL-03)
Page 1 of 1

PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH3-99
DATE COMPLETED: DECEMBER 17, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.
	GROUND SURFACE	0.00
2.5	CONCRETE, gravel mixed, white-gray, chemically treated with sealant	
	SP-SANDS (FILL), trace silts, loose to very loose, fine grained, poorly graded, orange-brown, moist	-2.0
5.0		
7.5		
10.0	- black, high grade poly liner - olive-brown, musty-like odor	
12.5	CL-CLAY (FILL), with silts and fine grained sands, hard, low plasticity, homogeneous, brown, moist	-11.8
15.0	CL-SILTY CLAY (NATIVE), trace fine grained sands, peat, stiff, low plasticity, homogeneous, dark brown, moist, root fractures, vegetative layer believed to be original ground surface	-14.0 -16.0
17.5	SC-SANDY CLAY (NATIVE), trace silts and fine rounded gravels, firm, low plasticity, homogeneous, gray, moist, fine grained	
20.0		
22.5	ML-SILTS (NATIVE), trace fine grained sands and clay, fine, rounded gravels, loose, poorly graded, gray, moist	-20.6 -22.0
25.0	SP-SANDS (NATIVE), trace silts, compact, very fine grained, poorly graded, olive-brown, moist, lacustrine - silty sands, very moist	
27.5		
30.0	CL-SILTY CLAYS (NATIVE), trace fine grained sands, very stiff, slight plasticity to low plasticity, homogeneous, gray, very moist	-29.6 -30.0
32.5	END OF HOLE @ 30.0ft BGS	



SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
1SS		NA	NA
2SS		15	0.0
3SS		35	0.0
4SS		55	0.0
5SS		33	NA
6SS		52	NA
7SS		33	NA
8SS		11	NA
9SS		8	NA
10SS		8	NA
11SS		7	NA
12SS		20	NA
13SS		24	NA
14SS		20	NA
15SS		20	NA

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH2-99
DATE COMPLETED: DECEMBER 17, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	0.00					
2.5	CONCRETE, gravel mixed, white-gray, chemically treated with sealant			1SS		NA	NA
	SP-SANDS (FILL), trace silts, dense, fine grained, poorly graded, olive gray to brown, moist, faint petroleum-like odor	-3.0		2SS		33	30.5
5.0	CL-SILTY CLAY (NATIVE), trace fine grained sands and roots, stiff, low plasticity, banded, brown with gray, moist, slightly oxidized	-5.0	8"Ø BOREHOLE	3SS		11	2.8
7.5	- very stiff, homogeneous			4SS		16	2.4
10.0	- stiff, increased plasticity with increased moisture		CUTTINGS AND BENTONITE MIX	5SS		10	3.2
	- very stiff, gray						
12.5	- trace fine, rounded gravels			6SS		18	1.9
	- interbedded medium grained sand seam, very moist						
15.0	- interbedded medium and coarse grained sand seam, very moist		2"Ø SPLIT SPOON	7SS		17	0.4
	END OF HOLE @ 15.0ft BGS	-15.0					
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

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PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH4-99
DATE COMPLETED: DECEMBER 20, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	0.00					
	CONCRETE, gravel mixed, white-gray, steel rebar	-1.0		1SS		6	4.4
2.5	SW-SANDS (FILL), with silts and fine, subrounded gravels, loose, fine grained, well graded, gray-black, ,oist			2SS		NA	NA
	- concrete obstruction	-4.0					
5.0	SC-SANDY CLAY (FILL), trace silts, vegetation, roots, pieces of railroad tie (wood) and fine, rounded gravels, firm, low plasticity, gray, moist, black historic petroleum staining, fine grained	-6.0	8"Ø BOREHOLE	3SS		8	4.7
7.5	SP-SANDS (FILL), trace silts, compact, fine and medium grained, poorly graded, gray-black to brown, moist	-8.0	CUTTINGS AND BENTONITE MIX	4SS		10	1.9
10.0	- loose			5SS		6	2.1
	SC-SANDY CLAY (NATIVE), trace silts and fine, rounded gravels, firm to stiff, low plasticity, gray-brown, moist, fine grained			6SS		10	0.9
12.5	- with fine grained sands			7SS		11	0.7
	END OF HOLE @ 14.0ft BGS	-14.0	2"Ø SPLIT SPOON				
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

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PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH6-99
DATE COMPLETED: DECEMBER 20, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.
	GROUND SURFACE	0.00
	ASPHALT, gravel mixed, black, weathered	-.5
	SW-SANDS and GRAVELS (FILL), trace silts, compact, fine grained, fine and coarse, subrounded, well graded, brown, moist	-1.8
2.5	CL-CLAY (FILL), with silts and sands, fine grained, firm to stiff, low plasticity, dark brown with olive, banding, moist	
5.0	CL-CLAY (NATIVE), with fine grained sands, trace fine, rounded gravels and silts, stiff, low plasticity, brown, moist	-5.0
7.5	- firm	
	SP/SM-SILTY SANDS (NATIVE), loose to compact, very fine grained, poorly graded, brown, very moist	-8.0
10.0	CL-SILTY CLAY (NATIVE), trace fine grained sands, firm to stiff, low plasticity, homogeneous, brown, moist	-10.6
12.5	- very soft/very loose, fine grained sand seam/lens, very moist	
15.0	ML/SM-SANDY SILTS (NATIVE), trace clays, loose, very fine grained/slight plasticity, poorly graded, brown, very moist	-14.6
	SP-SANDS (NATIVE), with silts, compact, very fine and fine grained, poorly graded, yellow-brown, very moist, lacustrine	-16.0
17.5		
20.0		
22.5	- yellow to gray-brown - fine and medium grained - gray	
25.0	- medium grained, very moist to wet	
27.5		
30.0	CL-CLAY (NATIVE), with to trace fine grained sands and fine, rounded gravels, firm to stiff, low plasticity, homogeneous, gray, moist	-29.8
32.5	- interbedded intermittent, fine and medium sand seams <6" thick, very moist	-32.0
	END OF HOLE @ 32.0ft BGS	

MONITOR INSTALLATION



SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
1SS		14	0.0
2SS		8	0.0
3SS		11	0.0
4SS		15	0.2
5SS		8	0.0
6SS		8	0.0
7SS		2	0.0
8SS		5	0.0
9SS		12	0.0
10SS		18	0.0
11SS		11	0.0
12SS		12	0.0
13SS		11	0.0
14SS		21	0.0
15SS		6	0.0
16SS		12	0.0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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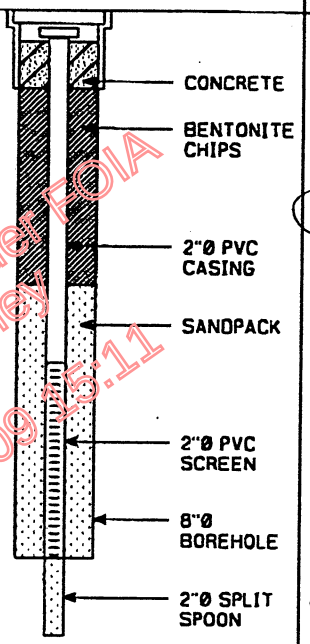
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PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH5-99/MW2-99
DATE COMPLETED: DECEMBER 20, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.
	GROUND SURFACE	0.00
	CONCRETE, gravel mixed, white-gray, steel rebar	-.9
2.5	SW/GW-SANDS and GRAVELS (FILL), trace silts, loose, fine grained/fine and coarse, subrounded, well graded, brown, moist	-2.0
5.0	SC-SANDY CLAY (FILL), trace fine subrounded gravels, silt and fragments of glass, compact, slight plasticity, gray-black, moist, faint petroleum-like odor, fine grained - pieces of wood, oil staining	
7.5	- with slag and foundary sands, black	-6.6
10.0	SP-SANDS (NATIVE), with silts, trace roots, compact, fine grained, poorly graded, gray, moist - very moist - wet	
12.5	- loose, medium and coarse grained	
15.0	SC-SANDY CLAY (NATIVE), trace silts and fine, rounded gravels, firm to stiff, slight plasticity, gray, very moist, fine grained	-13.6
	- interbedded intemittent medium grained sand seams, wet	-16.0
17.5	END OF HOLE @ 16.0ft BGS	
20.0		
22.5		
25.0		
27.5		
30.0		
32.5		



SCREEN DETAILS
Screened interval:
9.0 to 14.0ft BGS
Length: 5.0ft
Diameter: 2"
Slot Size: #10
Material: PVC
Sand Pack:
7.0 to 16.0ft BGS
Material: Sand

SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
1SS		8	0.0
2SS		16	4.1
3SS		18	9.7
4SS		19	0.0
5SS		11	0.0
6SS		13	0.0
7SS		6	0.0
8SS		9	0.0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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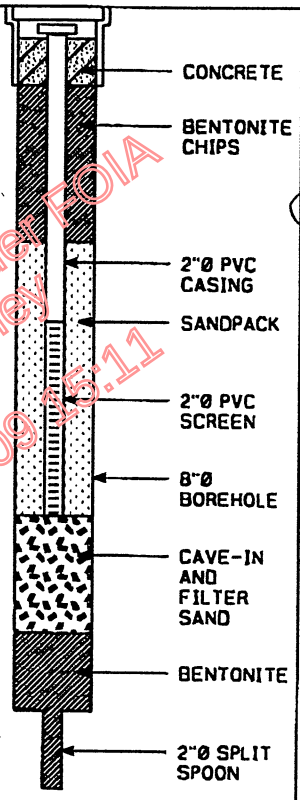
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PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH8-99/MW1-99
DATE COMPLETED: DECEMBER 16, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.
	GROUND SURFACE	0.00
	ASPHALT, gravel mixed, black, weathered	-.5
2.5	SP-SANDS (FILL), trace silts, loose, fine grained, poorly graded, olive-brown to gray, very moist, historic asphalt-like odor	
	- faint petroleum-like odor	-2.6
	SLAG (FILL), with fine grained sand, loose, black, moist, moderate petroleum-like odor	-3.6
5.0	SLAG (FILL), with foundry sand, trace glass fragments, clay, silt, brick fragments and gravels, loose, black, moist, strong petroleum-like odor	-5.8
7.5	CL-CLAY (FILL), with silt, trace fragments and brick, stiff, low plasticity, olive-gray, moist, faint petroleum-like odor	-8.0
10.0	SP-SANDS (NATIVE), with clay, trace silt and fine, subrounded gravels, compact, fine grained, poorly graded, homogeneous, olive-gray, moist, faint petroleum-like odor	
12.5	- gray	
	- loose, very moist to wet	-12.8
15.0	CL-SILTY CLAY (NATIVE), with to trace fine grained sands, trace fine, rounded gravel, stiff, low plasticity, homogeneous, gray, moist	-14.0
	SP-SANDS (NATIVE), trace silts, loose, fine grained, poorly graded, gray, wet	-16.0
17.5	CL-SILTY CLAY (NATIVE), trace fine grained sands and fine, rounded gravels, firm, low plasticity, homogeneous, gray, moist	
20.0	- stiff	
	END OF HOLE @ 20.0ft BGS	-20.0
22.5		
25.0		
27.5		
30.0		
32.5		



SCREEN DETAILS
Screened interval:
8.0 to 13.0ft BGS
Length: 5.0ft
Diameter: 2"
Slot Size: #10
Material: PVC
Sand Pack:
8.0 to 20.0ft BGS
Material: Sand

SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
1SS		7	0.0
2SS		13	28.5
3SS		18	34.9
4SS		10	21.3
5SS		16	15.4
6SS		8	13.2
7SS		10	16.9
8SS		9	16.3
9SS		7	14.9
10SS		13	12.8

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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PROJECT NAME: GM PONTIAC A-2 FILL AREA
PROJECT NUMBER: 13509-00
CLIENT: GENERAL MOTORS
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH9-99
DATE COMPLETED: DECEMBER 16, 1999
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: T. JOHNSON

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	0.00					
	ASPHALT, gravel mixed, black, weathered	-.5		1SS		9	0.0
	SP-SANDS (FILL), trace silts, loose, fine grained, poorly graded, brown to olive-gray, very moist	-1.5		2SS		7	0.0
2.5	- black-gray, historic oil staining/asphalt staining						
5.0	CL-CLAY (FILL), with sands, trace silt and fine rounded gravels, firm, low plasticity, banded, olive-gray, moist, historic oil staining, fine grained		8"Ø BOREHOLE	3SS		8	0.0
7.5	- black to olive gray, historic staining, faint petroleum-like odor	-7.4		4SS		21	0.0
	- sandy clay, brown-orange, moist to very moist		CUTTINGS AND BENTONITE MIX	5SS		14	0.0
10.0	CL-CLAY (NATIVE), with silts, trace fine grained sands and fine, subrounded gravels, very stiff, low plasticity, slightly banded, brown, moist			6SS		16	0.0
12.5	- stiff, gray-brown, mottled			7SS		15	0.0
	- very stiff, oxidized seams <1/4" thick, root fractures						
15.0	- stiff, gray, homogeneous			8SS		18	0.0
	- very stiff		2"Ø SPLIT SPOON				
	- with fine subrounded gravels	-16.0					
17.5	END OF HOLE @ 16.0ft BGS						
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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APPENDIX E

WELL DEVELOPMENT, PURGING, AND SAMPLING FORMS

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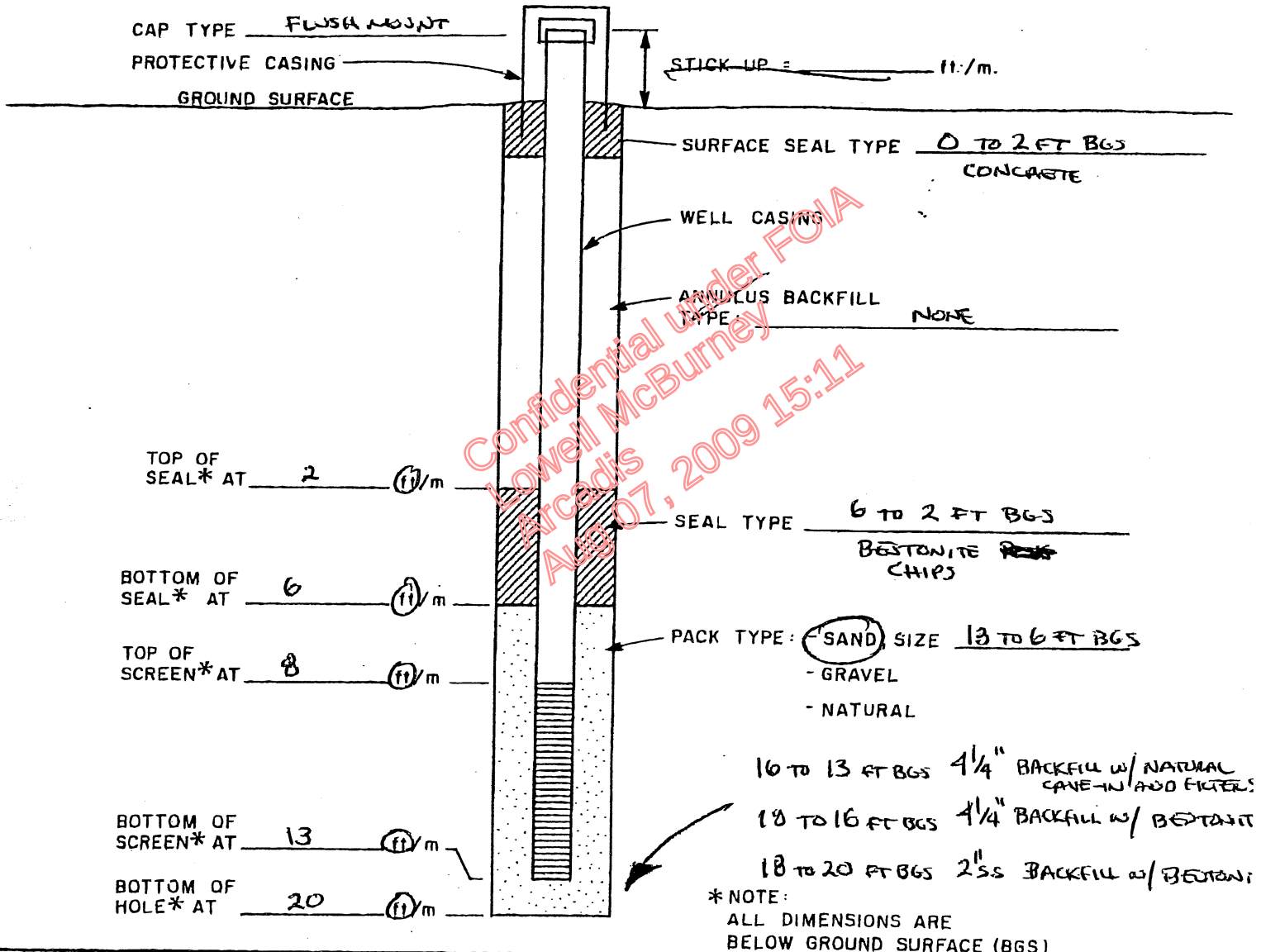
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WELL INSTRUMENTATION LOG

PROJECT NAME: GM - PONTIAC NORTH COMPLEX - FORMER A-2 FILL AREA
HOLE DESIGNATION: BH8-99 / MW1-99
PROJECT Nº: # 13509
DATE COMPLETED: 12-16-99
CLIENT: GM
DRILLING METHOD: 4¼" HSA
LOCATION: PONTIAC, MICHIGAN
CRA SUPERVISOR: T. JOHNSON



SCREEN TYPE: ☑ continuous slot ☐ perforated ☐ louvre ☐ other:
SCREEN MATERIAL: ☐ stainless steel ☐ plastic ☑ other: PVC
SCREEN LENGTH: 5 ft/m SCREEN DIAMETER: 2 in/cm SCREEN SLOT SIZE: 0.010"
CASING MATERIAL: PVC WELL CASING DIAMETER: 2 in cm
HOLE DIAMETER: 4¼" HSA (8" OD)
DEVELOPMENT: METHOD: S.S. BAILER / WHALER PULLP (SUBMERSIBLE) DURATION: >10 WELL VOLUMES

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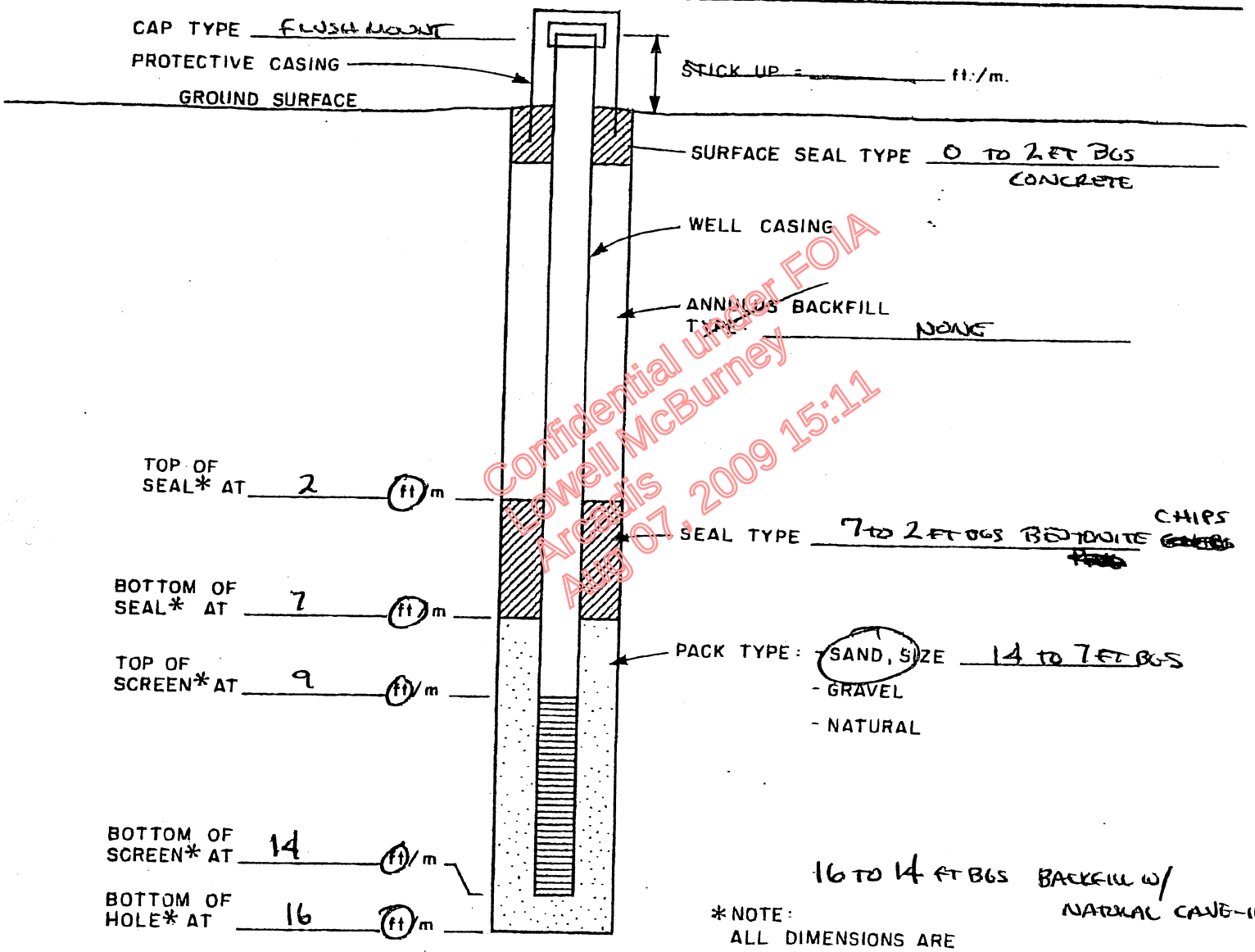
WELL INSTRUMENTATION LOG

JECT NAME: GM-PONTIAC NORTH COMPLEX FORMER LANDFILL AREA
HOLE DESIGNATION: BH5-99 / MW2-99

PROJECT Nº: #13509
DATE COMPLETED: 12-20-99

CLIENT: GM
DRILLING METHOD: 4 1/4" HSA

LOCATION: PONTIAC, MICHIGAN
CRA SUPERVISOR: T. JOHNSON



SCREEN TYPE: ☑ continuous slot ☐ perforated ☐ louvre ☐ other: _____

SCREEN MATERIAL: ☐ stainless steel ☐ plastic ☑ other: PVC

SCREEN LENGTH: 5 (ft)/m SCREEN DIAMETER: 2 (in)/cm SCREEN SLOT SIZE: 0.010"

WELL CASING MATERIAL: PVC WELL CASING DIAMETER: 2 (in)/cm

BOREHOLE DIAMETER: 4 1/4" HSA (8" OD)

DEVELOPMENT: METHOD: SS. BAILER / WHALE PUMP (SUBMERSIBLE) DURATION: >20 WELL VOLUMES

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WELL PURGING AND SAMPLING FORM

PROJECT NAME:	GM PONTIAC NORTH COMPLEX A-2 FILL AREA	**PROJECT NO.:**	13509
DATE OF WELL DEVELOPMENT:	12-21-99		
DEVELOPMENT CREW MEMBERS:	T. JOHNSON		
PURGING METHOD:	S.S. BAILER/SUBMERSIBLE PUMP		
SAMPLE NO.:	W-13509-010400-TJ-011 W-13509-010400-TJ-012		
SAMPLE TIME:	011 12:30 012 1:15		
WELL INFORMATION	DEVELOPMENT ON 12/21/99 GW SAMPLING 01/04/00 GW SAMPLING PERISTALTIC PUMP – TCL VOCs DISP. BAILER		
WELL NUMBER:	MW1-99		
WELL TYPE (diameter/material)	2" PVC		
MEASURING POINT ELEVATION:	FT BTOR		
STATIC WATER DEPTH:	8.21 FT BTOR	**ELEVATION:**	----
BOTTOM DEPTH:	13 FT BTOR	**ELEVATION:**	----
WATER COLUMN LENGTH:	4.79 FT		
SCREENED INTERVAL:	5 FT (0.10 SLOT)		
WELL VOLUME:	0.766 GALLON		

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Note: For 2-inch diameter well: 1 foot = 0.14 gallons (imp) or 0.16 gallons (us)
1 meter = 2 liters

	UNITS	*1*	*2*	*3*	*4*	*5*	*TOTAL/ AVERAGE*
VOLUME PURGED (volume/total volume):	GALLONS	1	2				
FIELD pH:		7.61	7.6				
FIELD TEMPERATURE °C:		11.1	11.4				
FIELD CONDUCTIVITY MS/CM:		41.5	40.5				
CLARITY/TURBIDITY VALUES:		999	999				
COLOR:		BROWN SILTY	BROWN SILTY				
ODOR:		NONE	NONE				
DO:		3.94	6.81				

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COPIES TO: WELL WENT DRY AFTER 2 GALLONS ALLOW RECHARGE PRIOR TO SAMPLE

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WELL PURGING AND SAMPLING FORM

PROJECT NAME:	GM PONTIAC NORTH COMPLEX A-2 FILL AREA	**PROJECT NO.:**	13509
DATE OF WELL DEVELOPMENT:	12-21-99		
DEVELOPMENT CREW MEMBERS:	T. JOHNSON		
PURGING METHOD:	S.S. BAILER/SUBMERSIBLE PUMP		
SAMPLE NO.:	W-13509-010400-TJ-013		
SAMPLE TIME:	2:30		
WELL INFORMATION	DEVELOPMENT ON 12/21/99 GW SAMPLING 01/04/00 GW SAMPLING PERISTALTIC PUMP – TCL VOCs DISP BAILER		
WELL NUMBER:	MW2-99		
WELL TYPE (diameter/material)	2" PVC		
MEASURING POINT ELEVATION:	FT BTOR		
STATIC WATER DEPTH:	7.34 FT BTOR	**ELEVATION:**	----
BOTTOM DEPTH:	12.94 FT BTOR	**ELEVATION:**	----
WATER COLUMN LENGTH:	5.6 FT		
SCREENED INTERVAL:	5 FT (0.010 SLOT)		
WELL VOLUME:	0.896 GALLON		

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Note: For 2-inch diameter well: 1 foot = 0.14 gallons (imp) or 0.16 gallons (us)
1 meter = 2 liters

	UNITS	*1*	*2*	*3*	*4*	*5*	*TOTAL/ AVERAGE*
VOLUME PURGED (volume/total volume):	GALLONS	1	2	3	4	5	
FIELD pH:		6.91	6.88	6.89	6.88	6.89	
FIELD TEMPERATURE °C:		11.0	11.4	11.5	11.6	11.5	
FIELD CONDUCTIVITY MS/CM:		17.3	17.2	17.1	17.0	16.9	
CLARITY/TURBIDITY VALUES:		306	79	40	20	17	
COLOR:		YELLOW	YELLOW	YELLOW	YELLOW	SLIGHTLY YELLOW	
ODOR:		NONE	NONE	NONE	NONE	NONE	
)O:		0.84	0.65	1.35	1.09	0.71	

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COPIES TO: WELL SUFFICIENT RECHARGE

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APPENDIX C

LABORATORY ANALYTICAL DATA

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0109

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
11100 Metro Airport Center Drive - Suite 160
Romulus, MI 48174 (734) 942-0909

SHIPPED TO (Laboratory ne): CAS - KELSO

REFERENCE NUMBER: 13509

PROJECT NAME: PONTIAC NORTH COMPLEX - A-2 LANDFILL

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: THOMAS JOHNSON

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOCs	TCL SVOCs	TCL PESTICIDES	PCBs	CYANIDE	TAL METALS	REMARKS
1	12-16-99	10:30	S-13509-121699-TJ-001	SOIL	2	X	X	X	X	X	X	2 WK. STANDARD T.A.T
2	"	11:30	S-13509-121699-TJ-002	"	2	X	X	X	X	X	X	
3	"	13:30	S 13509-121699-TJ-003	"	2	X	X	X	X	X	X	CRA CONTACT: PAUL WISEMAN
4	12-16-99	14:30	S-13509-121699-TJ-004	"	2	X	X	X	X	X	X	
5	12-17-99	10:00	S-13509-121799-TJ-005	"	2	X	X	X	X	X	X	
6	12-17-99	11:00	S-13509-121799-TJ-006	SOIL	2	X	X	X	X	X	X	ENCORE SAMPLER FOR VOC ANALYSIS

TOTAL NUMBER OF CONTAINERS: 12

RELINQUISHED BY: 1. [signature]	DATE: 12-17-99 TIME: 15:00	RECEIVED BY: 1. [signature] Lori Hann CAS-K	DATE: 12/18/99 TIME: 1000
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: FED EX

AIR BILL No.

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: T. JOHNSON

RECEIVED FOR LABORATORY BY:

DATE: _____ TIME: _____

7967

CT 5.2

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CRA

CONESTOGA-ROVERS & ASSOCIATES, INC.
11100 Metro Airport Center Drive - Suite 160
Romulus, MI 48174 (734) 942-0909

SHIPPED TO (Laboratory Name): CAS - KELSO

REFERENCE NUMBER: 13509

PROJECT NAME: PONTIAC NORTH COMPLEX A-2 LANDFILL

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: THOMAS JOHNSON

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	TCL VOCs	TCL SVOCs	TCL PEST.	TAL METALS	PCBs	CYANIDE	REMARKS
1	12-20-99	10:00	S-13509-122099-TJ-007	SOIL	2	X	X	X	X	X	X	2 WK. T.A.T STANDARD
2	"	11:00	S-13509-122099-TJ-008	"	2	X	X	X	X	X	X	
3	"	12:00	S-13509-122099-TJ-009 MS/MSD *	"	4	X	X	X	X	X	X	CRA CONTACT: PAUL WISEMAN
4	12-20-99	13:00	S-13509-122099-TJ-010	SOIL	2	X	X	X	X	X	X	* 2X VOLUME FOR MS/MSD

TOTAL NUMBER OF CONTAINERS: 10

RELINQUISHED BY: 1. [signature]	DATE: 12-20-99 TIME: 17:00	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: FED EX AIR BILL No.

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SAMPLE TEAM: T. JOHNSON

RECEIVED FOR LABORATORY BY: [signature] [signature] CAS

DATE: 12/21/99 TIME: 1000

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11100 Metro Airport Center Drive - Suite 160
Romulus, MI 48174 (734) 942-0909

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): CAS - KELSO

REFERENCE NUMBER: # 13509

PROJECT NAME: PONTIAC NORTH COMPLEX A-2 LANDFILL

SAMPLER'S SIGNATURE: T. D. PRINTED NAME: THOMAS JOWSEY

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOCs	TCL SVOCs	TCL PEST.	PCBs	CYANIDE	TAL METALS	REMARKS
1	010400	12:30	W-13509-010400-TJ-011	WATER	9	X	X	X	X	X	X	STANDARD T.A.T
2	010400	13:15	W-13509-010400-TJ-012	WATER	9	X	X	X	X	X	X	CRA CONTACT: PAUL WISEMAN
3	010400	—	TRIP BLANK	WATER	1	X						* INORGANICS WERE FIELD FILTERED W/ 0.45 MICRON FILTER
												CT = -0.5

TOTAL NUMBER OF CONTAINERS: 19

RELINQUISHED BY: 1. T. D.	DATE: 010400 TIME: 17:00	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex

AIR BILL No. 273 0829 823

White -Fully Executed Copy
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Goldenrod -Sampler Copy

SAMPLE TEAM: T. Jowsey

RECEIVED FOR LABORATORY BY: Debi Wood
DATE: 1/5/00 TIME: 0945

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CRA
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11100 Metro Airport Center Drive - Suite 160
Romulus, MI 48174 (734) 942-0909

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): CAS-KALSO

REFERENCE NUMBER: #13509

PROJECT NAME: PONTIAC NORTH COMPLEX A-2 LANDFILL

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: THOMAS JOWSU

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOCs	TCL SVOCs	TCL PEST.	PCBs	CYANIDE	TAL METALS	REMARKS
1	010400	14:30	W-13509-010900-TJ-013 * MS/MSD	WATER	18	X	X	X	X	X	X	STANDARD T.A.T
2	010400	—	TRIP BLANK	WATER	1	X						CRA CONTACT: PAUL WISEMAN
												* MS/MSD 2X VOLUME
												INORGANICS WERE FIELD FILTERED W/ 0.45 MICRON FILTER
												CT-2.3

TOTAL NUMBER OF CONTAINERS 19

RELINQUISHED BY: 1. [signature]	DATE: 010400 TIME: 17:00	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: FED EX AIR BILL No. 273 5824 156

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: T. JOWSU

RECEIVED FOR LABORATORY BY: Debi Wood
DATE: 1/5/00 TIME: 0945

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

lient: Conestoga Rovers & Assoc.
roject: Pontiac North Complex A-2 Landfill/13509
ample Matrix: Water

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

Cyanide, Total

Units: mg/L (ppm)
Basis: NA

rep Method: NONE
nalysis Method: 335.2
est Notes:

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
W-13509-010400-TJ-011	K2000053-001	0.01	0.003	1	NA	1/11/00	0.03	
W-13509-010400-TJ-012	K2000053-002	0.01	0.003	1	NA	1/11/00	0.03	
W-13509-010400-TJ-013	K2000053-004	0.01	0.003	1	NA	1/11/00	0.006	J
Method Blank	K2000053-MB	0.01	0.003	1	NA	1/11/00	ND	

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Approved By: _____ Date: 1/12/00

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1A/020597p
00053WET.LJ1 - SAMPLE 1/12/00

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TOTAL METALS
- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

SDG No.: K2000053

:ract: Conestoga Rovers & Assoc.

SAS No.:

Case No.: 13509

Code: KLAB

No.: SW846

Sample No.	Lab Sample ID.
010400-TJ-011	K2000053-001
010400-TJ-012	K2000053-002
010400-TJ-013	K2000053-004
010400-TJ-013D	K2000053-004D
010400-TJ-013S	K2000053-004S

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Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature]

Name: JEFF CURRADO

Date: 1/19/00

Title: METALS LAB MANAGER

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TOTAL METALS

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.: 010400-TJ-011

tract: Conestoga Rovers & Assoc.

Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K2000053

rix (soil/water): WATER Lab Sample ID: K2000053-001

el (low/med): LOW Date Received: 01/05/00

olids: 0.0

Concentration Units (ug/L or mg/kg dry weight): µG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	38.1	B		P
7440-36-0	Antimony	4.12	B		MS
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	3440			P
7440-41-7	Beryllium	0.20	U		MS
7440-43-9	Cadmium	3.39			MS
7440-70-2	Calcium	551000			P
7440-47-3	Chromium	4.00	U		P
7440-48-4	Cobalt	4.57	B		MS
7440-50-8	Copper	5.74	B		P
7439-89-6	Iron	1470			P
7439-92-1	Lead	0.23	B		MS
7439-95-4	Magnesium	61300			P
7439-96-5	Manganese	629			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	4.00	U		P
7440-09-7	Potassium	33400			P
7782-49-2	Selenium	4.00	U		F
7440-22-4	Silver	0.410	B		MS
7440-23-5	Sodium	8190000			P
7440-28-0	Thallium	0.20	U		MS
7440-62-2	Vanadium	4.00	U		P
7440-66-6	Zinc	3.54	B		P

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TOTAL METALS

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.: 010400-TJ-012

tract: Conestoga Rovers & Assoc.

Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K2000053

rix (soil/water): WATER Lab Sample ID: K2000053-002

el (low/med): LOW Date Received: 01/05/00

olids: 0.0

Concentration Units (ug/L or mg/kg dry weight): µG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	47.6	B		P
7440-36-0	Antimony	1.92	B		MS
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	3690			P
7440-41-7	Beryllium	0.20	U		MS
7440-43-9	Cadmium	4.04			MS
7440-70-2	Calcium	584000			P
7440-47-3	Chromium	4.00	U		P
7440-48-4	Cobalt	4.78	B		MS
7440-50-8	Copper	4.00	U		P
7439-89-6	Iron	1600			P
7439-92-1	Lead	0.31	B		MS
7439-95-4	Magnesium	66500			P
7439-96-5	Manganese	682			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	4.00	U		P
7440-09-7	Potassium	31500			P
7782-49-2	Selenium	4.00	U		F
7440-22-4	Silver	0.217	B		MS
7440-23-5	Sodium	8730000			P
7440-28-0	Thallium	0.20	U		MS
7440-62-2	Vanadium	4.00	U		P
7440-66-6	Zinc	2.52	B		P

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TOTAL METALS

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.: 010400-TJ-013

tract: Conestoga Rovers & Assoc.

Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K2000053

rix (soil/water): WATER Lab Sample ID: K2000053-004

el (low/med): LOW Date Received: 01/05/00

olids: 0.0

Concentration Units (ug/L or mg/kg dry weight): µG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	95.4	B		P
7440-36-0	Antimony	[illegible]	B		MS
7440-38-2	Arsenic	2.40	B		F
7440-39-3	Barium	1010			P
7440-41-7	Beryllium	0.20	U		MS
7440-43-9	Cadmium	0.93			MS
7440-70-2	Calcium	352000			P
7440-47-3	Chromium	4.00	U		P
7440-48-4	Cobalt	7.57	B		MS
7440-50-8	Copper	4.00	U		P
7439-89-6	Iron	10800			P
7439-92-1	Lead	0.54	B		MS
7439-95-4	Magnesium	70800			P
7439-96-5	Manganese	1180			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	4.00	U		P
7440-09-7	Potassium	7610			P
7782-49-2	Selenium	2.00	U	W	F
7440-22-4	Silver	0.630			MS
7440-23-5	Sodium	3140000			P
7440-28-0	Thallium	0.20	U		MS
7440-62-2	Vanadium	9.25	B		P
7440-66-6	Zinc	9.91	B		P

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Color After: Clarity After: Artifacts:

Comments:

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

lient: Conestoga Rovers & Assoc.
roject: Pontiac North Complex A-2 Landfill/13509
ample Matrix: Water

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

Organochlorine Pesticides

Units: ug/L (ppb)
Basis: NA

Sample Name: W-13509-010400-TJ-011
Lab Code: K2000053-001
Test Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3520C	8081A	0.04	0.004	1	1/11/00	1/13/00	ND	
beta-BHC	EPA 3520C	8081A	0.04	0.005	1	1/11/00	1/13/00	ND	
gamma-BHC (Lindane)	EPA 3520C	8081A	0.04	0.004	1	1/11/00	1/13/00	ND	
d BHC	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
H chlor	EPA 3520C	8081A	0.04	0.003	1	1/11/00	1/13/00	ND	
Aldrin	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
Heptachlor Epoxide	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/13/00	ND	
gamma-Chlordane	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
Endosulfan I	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
alpha-Chlordane	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/13/00	ND	
Dieldrin	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/13/00	ND	
4,4'-DDE	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/13/00	ND	
Endrin	EPA 3520C	8081A	0.04	0.004	1	1/11/00	1/13/00	ND	
Endosulfan II	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/13/00	ND	
4,4'-DDD	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
Endrin Aldehyde	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
Endosulfan Sulfate	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
4,4'-DDT	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	0.01	J
Endrin Ketone	EPA 3520C	8081A	0.1	0.003	1	1/11/00	1/13/00	ND	
Methoxychlor	EPA 3520C	8081A	1	0.05	1	1/11/00	1/13/00	ND	
Toxaphene									

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

ient: Conestoga Rovers & Assoc.
oject: Pontiac North Complex A-2 Landfill/13509
mple Matrix: Water

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

Organochlorine Pesticides

Units: ug/L (ppb)
Basis: NA

ample Name: W-13509-010400-TJ-012
ab Code: K2000053-002
'est Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3520C	8081A	0.04	0.004	1	1/11/00	1/13/00	ND	
beta-BHC	EPA 3520C	8081A	0.04	0.005	1	1/11/00	1/13/00	ND	
gamma-BHC (Lindane)	EPA 3520C	8081A	0.04	0.004	1	1/11/00	1/13/00	ND	
delta-BHC	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
Heptachlor	EPA 3520C	8081A	0.04	0.003	1	1/11/00	1/13/00	ND	
Aldrin	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
Heptachlor Epoxide	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/13/00	ND	
gamma-Chlordane	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
Endosulfan I	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
alpha-Chlordane	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/13/00	ND	
Dieldrin	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/13/00	ND	
4,4'-DDE	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/13/00	ND	
Endrin	EPA 3520C	8081A	0.04	0.004	1	1/11/00	1/13/00	ND	
Endosulfan II	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/13/00	ND	
4,4'-DDD	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
Endrin Aldehyde	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
Endosulfan Sulfate	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	0.01	J
4,4'-DDT	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
Endrin Ketone	EPA 3520C	8081A	0.1	0.003	1	1/11/00	1/13/00	ND	
Methoxychlor	EPA 3520C	8081A	1	0.05	1	1/11/00	1/13/00	ND	
Toxaphene									

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

lient: Conestoga Rovers & Assoc.
roject: Pontiac North Complex A-2 Landfill/13509
ample Matrix: Water

Organochlorine Pesticides

Units: ug/L (ppb)
Basis: NA

ample Name: W-13509-010400-TJ-013
ab Code: K2000053-004
Test Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3520C	8081A	0.04	0.004	1	1/11/00	1/13/00	ND	
beta-BHC	EPA 3520C	8081A	0.04	0.005	1	1/11/00	1/13/00	ND	
gamma-BHC (Lindane)	EPA 3520C	8081A	0.04	0.004	1	1/11/00	1/13/00	ND	
d HC	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
Heptachlor	EPA 3520C	8081A	0.04	0.003	1	1/11/00	1/13/00	ND	
Aldrin	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
Heptachlor Epoxide	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/13/00	ND	
gamma-Chlordane	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
Endosulfan I	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
alpha-Chlordane	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/13/00	ND	
Dieldrin	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/13/00	ND	
4,4'-DDE	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/13/00	ND	
Endrin	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/13/00	ND	
Endosulfan II	EPA 3520C	8081A	0.04	0.004	1	1/11/00	1/13/00	ND	
4,4'-DDD	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/13/00	ND	
Endrin Aldehyde	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
Endosulfan Sulfate	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
4,4'-DDT	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
Endrin Ketone	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/13/00	ND	
Methoxychlor	EPA 3520C	8081A	0.1	0.003	1	1/11/00	1/13/00	ND	
Toxaphene	EPA 3520C	8081A	1	0.05	1	1/11/00	1/13/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Service Request: K2000053
Date Collected: NA
Date Received: NA

lient: Conestoga Rovers & Assoc.
roject: Pontiac North Complex A-2 Landfill/13509
ample Matrix: Water

Organochlorine Pesticides

Units: ug/L (ppb)
Basis: NA

Sample Name: Method Blank
Lab Code: KWG2000068-13
Test Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3520C	8081A	0.04	0.004	1	1/11/00	1/12/00	ND	
beta-BHC	EPA 3520C	8081A	0.04	0.005	1	1/11/00	1/12/00	ND	
gamma-BHC (Lindane)	EPA 3520C	8081A	0.04	0.004	1	1/11/00	1/12/00	ND	
[illegible] BHC	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/12/00	ND	
[illegible]achlor	EPA 3520C	8081A	0.04	0.003	1	1/11/00	1/12/00	ND	
Aldrin	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/12/00	ND	
Heptachlor Epoxide	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/12/00	ND	
gamma-Chlordane	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/12/00	ND	
Endosulfan I	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/12/00	ND	
alpha-Chlordane	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/12/00	ND	
Dieldrin	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/12/00	ND	
4,4'-DDE	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/12/00	ND	
Endrin	EPA 3520C	8081A	0.04	0.004	1	1/11/00	1/12/00	ND	
Endosulfan II	EPA 3520C	8081A	0.04	0.002	1	1/11/00	1/12/00	ND	
4,4'-DDD	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/12/00	ND	
Endrin Aldehyde	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/12/00	ND	
Endosulfan Sulfate	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/12/00	ND	
4,4'-DDT	EPA 3520C	8081A	0.04	0.001	1	1/11/00	1/12/00	ND	
Endrin Ketone	EPA 3520C	8081A	0.1	0.003	1	1/11/00	1/12/00	ND	
Methoxychlor	EPA 3520C	8081A	1	0.05	1	1/11/00	1/12/00	ND	
Toxaphene									

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

lient: Conestoga Rovers & Assoc.
roject: Pontiac North Complex A-2 Landfill/13509
ample Matrix: Water

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

Polychlorinated Biphenyls (PCBs)

Units: ug/L (ppb)
Basis: NA

Sample Name: W-13509-010400-TJ-011
Lab Code: K2000053-001
Test Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	
Aroclor 1221	EPA 3520C	8082	0.4	0.06	1	1/11/00	1/12/00	ND	
Aroclor 1232	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	
Aroclor 1242	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	
Aroclor 1248	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	
Aroclor 1254	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	
Aroclor 1260	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Water

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

Polychlorinated Biphenyls (PCBs)

Sample Name: W-13509-010400-TJ-012
Lab Code: K2000053-002
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	
Aroclor 1221	EPA 3520C	8082	0.4	0.06	1	1/11/00	1/12/00	ND	
Aroclor 1232	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	
Aroclor 1242	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	
Aroclor 1248	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	
Aroclor 1254	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	
Aroclor 1260	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	

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Analytical Report

lient:	Conestoga Rovers & Assoc.	**Service Request:**	K2000053
roject:	Pontiac North Complex A-2 Landfill/13509	**Date Collected:**	1/4/00
ample Matrix:	Water	**Date Received:**	1/5/00

Polychlorinated Biphenyls (PCBs)

ample Name:	W-13509-010400-TJ-013	Units:	ug/L (ppb)
ab Code:	K2000053-004	Basis:	NA
est Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/13/00	ND	
Aroclor 1221	EPA 3520C	8082	0.4	0.06	1	1/11/00	1/13/00	ND	
Aroclor 1232	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/13/00	ND	
Aroclor 1242	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/13/00	ND	
Aroclor 1248	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/13/00	ND	
Aroclor 1254	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/13/00	ND	
Aroclor 1260	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/13/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Service Request: K2000053
Date Collected: NA
Date Received: NA

ient: Conestoga Rovers & Assoc.
oject: Pontiac North Complex A-2 Landfill/13509
mple Matrix: Water

Polychlorinated Biphenyls (PCBs)

Units: ug/L (ppb)
Basis: NA

ample Name: Method Blank
ab Code: KWG2000068-13
'est Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	
Aroclor 1221	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	
Aroclor 1232	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	
Ar - 1242	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	
Ar . 1248	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	
Aroclor 1254	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	
Aroclor 1260	EPA 3520C	8082	0.2	0.06	1	1/11/00	1/12/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Water

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

Volatile Organic Compounds by GC/MS

Units: ug/L (ppb)
Basis: NA

Sample Name: W-13509-010400-TJ-011
Lab Code: K2000053-001
Test Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Vinyl Chloride	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
Bromomethane	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
Chloroethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Acetone	EPA 5030B	8260B	20	8	1	1/14/00	1/14/00	17	J
1,1-Dichloroethene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Carbon Disulfide	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Methylene Chloride	EPA 5030B	8260B	1	0.3	1	1/14/00	1/14/00	ND	
trans-1,2-Dichloroethene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,1-Dichloroethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	6.5	J
2-Butanone (MEK)	EPA 5030B	8260B	20	6	1	1/14/00	1/14/00	ND	
cis-1,2-Dichloroethene	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
Chloroform	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,1,1-Trichloroethane (TCA	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
Carbon Tetrachloride	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
2-Dichloroethane (EDC)	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Benzene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Trichloroethene (TCE)	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
1,2-Dichloropropane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Bromodichloromethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
2-Hexanone	EPA 5030B	8260B	20	6	1	1/14/00	1/14/00	ND	
cis-1,3-Dichloropropene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	0.4	J
Toluene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
trans-1,3-Dichloropropene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,1,2-Trichloroethane	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
4-Methyl-2-pentanone (MIB	EPA 5030B	8260B	20	7	1	1/14/00	1/14/00	ND	
Tetrachloroethene (PCE)	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Dibromochloromethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Chlorobenzene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Ethylbenzene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
m,p-Xylenes	EPA 5030B	8260B	0.5	0.4	1	1/14/00	1/14/00	0.2	J
o-Xylene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Styrene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Bromoform	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,1,2,2-Tetrachloroethane									

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Aug 07, 2009 15:11

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

nt: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Water

Volatile Organic Compounds by GC/MS

Units: ug/L (ppb)
Basis: NA

Sample Name: W-13509-010400-TJ-012
Lab Code: K2000053-002
Test Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Vinyl Chloride	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
Bromomethane	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
Chloroethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Acetone	EPA 5030B	8260B	20	8	1	1/14/00	1/14/00	18	J
1,1-Dichloroethene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Carbon Disulfide	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Methylene Chloride	EPA 5030B	8260B	1	0.3	1	1/14/00	1/14/00	ND	
trans-1,2-Dichloroethene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,1-Dichloroethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
2-Butanone (MEK)	EPA 5030B	8260B	20	6	1	1/14/00	1/14/00	6.6	J
cis-1,2-Dichloroethene	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
Chloroform	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,1,1-Trichloroethane (TCA	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
Carbon Tetrachloride	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
2-Dichloroethane (EDC)	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
nzene	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
richloroethene (TCE)	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,2-Dichloropropane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Bromodichloromethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
2-Hexanone	EPA 5030B	8260B	20	6	1	1/14/00	1/14/00	ND	
cis-1,3-Dichloropropene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	0.5	
Toluene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
trans-1,3-Dichloropropene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,1,2-Trichloroethane	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
4-Methyl-2-pentanone (MIB	EPA 5030B	8260B	20	7	1	1/14/00	1/14/00	ND	
Tetrachloroethene (PCE)	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Dibromochloromethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Chlorobenzene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Ethylbenzene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
m,p-Xylenes	EPA 5030B	8260B	0.5	0.4	1	1/14/00	1/14/00	ND	
o-Xylene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Styrene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Bromoform	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	

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1S44/121597a

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Water

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

Volatile Organic Compounds by GC/MS

Units: ug/L (ppb)
Basis: NA

Sample Name: Trip Blank-1
Lab Code: K2000053-003
Test Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Vinyl Chloride	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Bromomethane	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Chloroethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Acetone	EPA 5030B	8260B	20	8	1	1/13/00	1/13/00	ND	
1,1-Dichloroethene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Carbon Disulfide	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Methylene Chloride	EPA 5030B	8260B	1	0.3	1	1/13/00	1/13/00	ND	
trans-1,2-Dichloroethene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
1,1-Dichloroethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
2-Butanone (MEK)	EPA 5030B	8260B	20	5	1	1/13/00	1/13/00	ND	
cis-1,2-Dichloroethene	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Chloroform	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
1,1,1-Trichloroethane (TCA	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Carbon Tetrachloride	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
2-Dichloroethane (EDC)	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Benzene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Trichloroethene (TCE)	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
1,2-Dichloropropane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Bromodichloromethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
2-Hexanone	EPA 5030B	8260B	20	6	1	1/13/00	1/13/00	ND	
cis-1,3-Dichloropropene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	0.6	
Toluene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
trans-1,3-Dichloropropene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
1,1,2-Trichloroethane	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
4-Methyl-2-pentanone (MIB	EPA 5030B	8260B	20	7	1	1/13/00	1/13/00	ND	
Tetrachloroethene (PCE)	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Dibromochloromethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Chlorobenzene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Ethylbenzene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
m,p-Xylenes	EPA 5030B	8260B	0.5	0.4	1	1/13/00	1/13/00	ND	
o-Xylene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Styrene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Bromoform	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Water

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

Volatile Organic Compounds by GC/MS

Units: ug/L (ppb)
Basis: NA

Sample Name: W-13509-010400-TJ-013
Lab Code: K2000053-004
Test Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Vinyl Chloride	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Bromomethane	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Chloroethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Acetone	EPA 5030B	8260B	20	8	1	1/13/00	1/13/00	ND	
1,1-Dichloroethene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Carbon Disulfide	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Methylene Chloride	EPA 5030B	8260B	1	0.3	1	1/13/00	1/13/00	ND	
trans-1,2-Dichloroethene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
1,1-Dichloroethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
2-Butanone (MEK)	EPA 5030B	8260B	20	6	1	1/13/00	1/13/00	ND	
cis-1,2-Dichloroethene	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Chloroform	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
1,1,1-Trichloroethane (TCA	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Carbon Tetrachloride	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
2-Dichloroethane (EDC)	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Benzene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Trichloroethene (TCE)	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
1,2-Dichloropropane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Bromodichloromethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
2-Hexanone	EPA 5030B	8260B	20	6	1	1/13/00	1/13/00	ND	
cis-1,3-Dichloropropene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	0.5	J
Toluene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
trans-1,3-Dichloropropene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
1,1,2-Trichloroethane	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
4-Methyl-2-pentanone (MIB	EPA 5030B	8260B	20	7	1	1/13/00	1/13/00	ND	
Tetrachloroethene (PCE)	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Dibromochloromethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Chlorobenzene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Ethylbenzene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
m,p-Xylenes	EPA 5030B	8260B	0.5	0.4	1	1/13/00	1/13/00	ND	
o-Xylene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Styrene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Bromoform	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Water

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

Volatile Organic Compounds by GC/MS

Units: ug/L (ppb)
Basis: NA

Sample Name: Trip Blank-2
Lab Code: K2000053-005
Test Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Vinyl Chloride	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Bromomethane	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Chloroethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Acetone	EPA 5030B	8260B	20	8	1	1/13/00	1/13/00	ND	
1,1-Dichloroethene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Carbon Disulfide	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Methylene Chloride	EPA 5030B	8260B	1	0.3	1	1/13/00	1/13/00	ND	
trans-1,2-Dichloroethene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
1,1-Dichloroethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
2-Butanone (MEK)	EPA 5030B	8260B	20	6	1	1/13/00	1/13/00	ND	
cis-1,2-Dichloroethene	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Chloroform	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
1,1,1-Trichloroethane (TCA	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Carbon Tetrachloride	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
-Dichloroethane (EDC)	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
enzene	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Trichloroethene (TCE)	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
1,2-Dichloropropane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Bromodichloromethane	EPA 5030B	8260B	20	6	1	1/13/00	1/13/00	ND	
2-Hexanone	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
cis-1,3-Dichloropropene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Toluene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
trans-1,3-Dichloropropene	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
1,1,2-Trichloroethane	EPA 5030B	8260B	20	7	1	1/13/00	1/13/00	ND	
4-Methyl-2-pentanone (MIB	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Tetrachloroethene (PCE)	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Dibromochloromethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Chlorobenzene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Ethylbenzene	EPA 5030B	8260B	0.5	0.4	1	1/13/00	1/13/00	ND	
m,p-Xylenes	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
o-Xylene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Styrene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Bromoform	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
1,1,2,2-Tetrachloroethane									

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Water

Service Request: K2000053
Date Collected: NA
Date Received: NA

Volatile Organic Compounds by GC/MS

Units: ug/L (ppb)
Basis: NA

Sample Name: Method Blank
Lab Code: KWG2000114-4
Test Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Vinyl Chloride	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Bromomethane	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Chloroethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Acetone	EPA 5030B	8260B	20	8	1	1/13/00	1/13/00	ND	
1,1-Dichloroethene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Carbon Disulfide	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Methylene Chloride	EPA 5030B	8260B	1	0.3	1	1/13/00	1/13/00	ND	
trans-1,2-Dichloroethene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
1,1-Dichloroethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
2-Butanone (MEK)	EPA 5030B	8260B	20	6	1	1/13/00	1/13/00	ND	
cis-1,2-Dichloroethene	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Chloroform	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
1,1,1-Trichloroethane (TCA	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
Carbon Tetrachloride	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
-Dichloroethane (EDC)	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Benzene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Trichloroethene (TCE)	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
1,2-Dichloropropane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Bromodichloromethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
2-Hexanone	EPA 5030B	8260B	20	6	1	1/13/00	1/13/00	ND	
cis-1,3-Dichloropropene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Toluene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
trans-1,3-Dichloropropene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
1,1,2-Trichloroethane	EPA 5030B	8260B	0.5	0.3	1	1/13/00	1/13/00	ND	
4-Methyl-2-pentanone (MIB	EPA 5030B	8260B	20	7	1	1/13/00	1/13/00	ND	
Tetrachloroethene (PCE)	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Dibromochloromethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Chlorobenzene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Ethylbenzene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
m,p-Xylenes	EPA 5030B	8260B	0.5	0.4	1	1/13/00	1/13/00	ND	
o-Xylene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Styrene	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
Bromoform	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5030B	8260B	0.5	0.2	1	1/13/00	1/13/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Water

Service Request: K2000053
Date Collected: NA
Date Received: NA

Volatile Organic Compounds by GC/MS

Units: ug/L (ppb)
Basis: NA

Sample Name: Method Blank
Lab Code: KWG2000129-4
Test Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Vinyl Chloride	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
Bromomethane	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
Chloroethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Acetone	EPA 5030B	8260B	20	8	1	1/14/00	1/14/00	ND	
1,1-Dichloroethene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Carbon Disulfide	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Methylene Chloride	EPA 5030B	8260B	1	0.3	1	1/14/00	1/14/00	ND	
trans-1,2-Dichloroethene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,1-Dichloroethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
2-Butanone (MEK)	EPA 5030B	8260B	20	5	1	1/14/00	1/14/00	ND	
cis-1,2-Dichloroethene	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
Chloroform	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,1,1-Trichloroethane (TCA	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
Carbon Tetrachloride	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
1,2-Dichloroethane (EDC)	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Benzene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Trichloroethene (TCE)	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
1,2-Dichloropropane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Bromodichloromethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
2-Hexanone	EPA 5030B	8260B	20	6	1	1/14/00	1/14/00	ND	
cis-1,3-Dichloropropene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Toluene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
trans-1,3-Dichloropropene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,1,2-Trichloroethane	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
4-Methyl-2-pentanone (MIB	EPA 5030B	8260B	20	7	1	1/14/00	1/14/00	ND	
Tetrachloroethene (PCE)	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Dibromochloromethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Chlorobenzene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Ethylbenzene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
m,p-Xylenes	EPA 5030B	8260B	0.5	0.4	1	1/14/00	1/14/00	ND	
o-Xylene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Styrene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Bromoform	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Water

Service Request: K2000053
Date Collected: NA
Date Received: NA

Volatile Organic Compounds by GC/MS

Units: ug/L (ppb)
Basis: NA

Sample Name: Method Blank
Lab Code: KWG2000122-4
Test Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Vinyl Chloride	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
Bromomethane	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
Chloroethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Acetone	EPA 5030B	8260B	20	8	1	1/14/00	1/14/00	ND	
1,1-Dichloroethene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Carbon Disulfide	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Methylene Chloride	EPA 5030B	8260B	1	0.3	1	1/14/00	1/14/00	ND	
trans-1,2-Dichloroethene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,1-Dichloroethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
2-Butanone (MEK)	EPA 5030B	8260B	20	6	1	1/14/00	1/14/00	ND	
cis-1,2-Dichloroethene	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
Chloroform	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,1,1-Trichloroethane (TCA	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
Carbon Tetrachloride	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
-Dichloroethane (EDC)	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
enzene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Trichloroethene (TCE)	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
1,2-Dichloropropane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Bromodichloromethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
2-Hexanone	EPA 5030B	8260B	20	6	1	1/14/00	1/14/00	ND	
cis-1,3-Dichloropropene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Toluene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
trans-1,3-Dichloropropene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,1,2-Trichloroethane	EPA 5030B	8260B	0.5	0.3	1	1/14/00	1/14/00	ND	
4-Methyl-2-pentanone (MIB	EPA 5030B	8260B	20	7	1	1/14/00	1/14/00	ND	
Tetrachloroethene (PCE)	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Dibromochloromethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Chlorobenzene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Ethylbenzene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
m,p-Xylenes	EPA 5030B	8260B	0.5	0.4	1	1/14/00	1/14/00	ND	
o-Xylene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Styrene	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
Bromoform	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5030B	8260B	0.5	0.2	1	1/14/00	1/14/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

ient: Conestoga Rovers & Assoc.
oject: Pontiac North Complex A-2 Landfill/13509
mple Matrix: Water

Base Neutral/Acid Semivolatile Organic Compounds

Units: ug/L (ppb)
Basis: NA

mple Name: W-13509-010400-TJ-011
ıb Code: K2000053-001
:st Notes:

nalyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
is(2-chloroethyl) Ether	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
ıenol	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	0.5	J
-Chlorophenol	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
,3-Dichlorobenzene	EPA 3520C	8270C	1	0.8	1	1/6/00	1/11/00	ND	
,4-Dichlorobenzene	EPA 3520C	8270C	1	0.9	1	1/6/00	1/11/00	ND	
,2-Dichlorobenzene	EPA 3520C	8270C	1	0.6	1	1/6/00	1/11/00	ND	
is(2-chloroisopropyl) Ether	EPA 3520C	8270C	5	0.8	1	1/6/00	1/11/00	ND	
-Methylphenol	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
Iexachloroethane	EPA 3520C	8270C	2	0.7	1	1/6/00	1/11/00	ND	
I-Nitrosodi-n-propylamine	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
- and 4-Methylphenol Coelut	EPA 3520C	8270C	5	0.7	1	1/6/00	1/11/00	ND	
Nitrobenzene	EPA 3520C	8270C	5	0.6	1	1/6/00	1/11/00	ND	
sophorone	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
?-Nitrophenol	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
?,? ethylphenol	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Bi? loroethoxy)methane	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
2,4-Dichlorophenol	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
1,2,4-Trichlorobenzene	EPA 3520C	8270C	5	0.8	1	1/6/00	1/11/00	ND	
Naphthalene	EPA 3520C	8270C	5	0.6	1	1/6/00	1/11/00	ND	
4-Chloroaniline	EPA 3520C	8270C	20	2	1	1/6/00	1/11/00	ND	
Hexachlorobutadiene	EPA 3520C	8270C	5	2	1	1/6/00	1/11/00	ND	
4-Chloro-3-methylphenol	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
2-Methylnaphthalene	EPA 3520C	8270C	5	0.8	1	1/6/00	1/11/00	ND	
Hexachlorocyclopentadiene	EPA 3520C	8270C	6	6	1	1/6/00	1/11/00	ND	
2,4,6-Trichlorophenol	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
2,4,5-Trichlorophenol	EPA 3520C	8270C	50	0.6	1	1/6/00	1/11/00	ND	
2-Chloronaphthalene	EPA 3520C	8270C	5	0.5	1	1/6/00	1/11/00	ND	
2-Nitroaniline	EPA 3520C	8270C	20	6	1	1/6/00	1/11/00	ND	
Acenaphthylene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Dimethyl Phthalate	EPA 3520C	8270C	6	6	1	1/6/00	1/11/00	ND	
2,6-Dinitrotoluene	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
Acenaphthene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
3-Nitroaniline	EPA 3520C	8270C	20	5	1	1/6/00	1/11/00	ND	
2,4-Dinitrophenol	EPA 3520C	8270C	20	3	1	1/6/00	1/11/00	ND	
Dibenzofuran	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
4-Nitrophenol	EPA 3520C	8270C	20	5	1	1/6/00	1/11/00	ND	
2,4-Dinitrotoluene	EPA 3520C	8270C	5	2	1	1/6/00	1/11/00	ND	
Fluorene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
4-Chlorophenyl Phenyl Ether	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	0.6	J
Diethyl Phthalate	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
4-Nitroaniline	EPA 3520C	8270C	20	3	1	1/6/00	1/11/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3520C	8270C	20	5	1	1/6/00	1/11/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

ient: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Water

Base Neutral/Acid Semivolatile Organic Compounds

Units: ug/L (ppb)
Basis: NA

Sample Name: W-13509-010400-TJ-011
Lab Code: K2000053-001
Test Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodiphenylamine	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Hexachlorobenzene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Pentachlorophenol (PCP)	EPA 3520C	8270C	20	3	1	1/6/00	1/11/00	ND	
Phenanthrene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
Anthracene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Carbazole	EPA 3520C	8270C	10	2	1	1/6/00	1/11/00	ND	
Di-n-butyl Phthalate	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
Fluoranthene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
Pyrene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Butyl Benzyl Phthalate	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
3,3'-Dichlorobenzidine	EPA 3520C	8270C	20	4	1	1/6/00	1/11/00	ND	
Benz(a)anthracene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Chrysene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3520C	8270C	50	6	10	1/6/00	1/21/00	510	
Di-n-octyl Phthalate	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Benzo(b)fluoranthene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
Benzo(k)fluoranthene	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
Benzo(a)pyrene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Indeno(1,2,3-cd)pyrene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
Dibenz(a,h)anthracene	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
Benzo(g,h,i)perylene	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

ient: Conestoga Rovers & Assoc.
oject: Pontiac North Complex A-2 Landfill/13509
mple Matrix: Water

Base Neutral/Acid Semivolatile Organic Compounds

Units: ug/L (ppb)
Basis: NA

mple Name: W-13509-010400-TJ-012
b Code: K2000053-002
st Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
is(2-chloroethyl) Ether	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
henol	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	0.7	J
-Chlorophenol	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
,3-Dichlorobenzene	EPA 3520C	8270C	1	0.8	1	1/6/00	1/11/00	ND	
,4-Dichlorobenzene	EPA 3520C	8270C	1	0.9	1	1/6/00	1/11/00	ND	
,2-Dichlorobenzene	EPA 3520C	8270C	1	0.6	1	1/6/00	1/11/00	ND	
is(2-chloroisopropyl) Ether	EPA 3520C	8270C	5	0.8	1	1/6/00	1/11/00	ND	
-Methylphenol	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
Hexachloroethane	EPA 3520C	8270C	2	0.7	1	1/6/00	1/11/00	ND	
N-Nitrosodi-n-propylamine	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
- and 4-Methylphenol Coelut	EPA 3520C	8270C	5	0.7	1	1/6/00	1/11/00	ND	
Nitrobenzene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
sophorone	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
2-Nitrophenol	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
2, ethylphenol	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
Bis(chloroethoxy)methane	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
2,4-Dichlorophenol	EPA 3520C	8270C	5	0.8	1	1/6/00	1/11/00	ND	
1,2,4-Trichlorobenzene	EPA 3520C	8270C	5	0.6	1	1/6/00	1/11/00	ND	
Naphthalene	EPA 3520C	8270C	20	2	1	1/6/00	1/11/00	ND	
4-Chloroaniline	EPA 3520C	8270C	5	2	1	1/6/00	1/11/00	ND	
Hexachlorobutadiene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
4-Chloro-3-methylphenol	EPA 3520C	8270C	5	0.8	1	1/6/00	1/11/00	ND	
2-Methylnaphthalene	EPA 3520C	8270C	6	6	1	1/6/00	1/11/00	ND	
Hexachlorocyclopentadiene	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
2,4,6-Trichlorophenol	EPA 3520C	8270C	50	0.6	1	1/6/00	1/11/00	ND	
2,4,5-Trichlorophenol	EPA 3520C	8270C	5	0.5	1	1/6/00	1/11/00	ND	
2-Chloronaphthalene	EPA 3520C	8270C	20	6	1	1/6/00	1/11/00	ND	
2-Nitroaniline	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Acenaphthylene	EPA 3520C	8270C	6	6	1	1/6/00	1/11/00	ND	
Dimethyl Phthalate	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
2,6-Dinitrotoluene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Acenaphthene	EPA 3520C	8270C	20	5	1	1/6/00	1/11/00	ND	
3-Nitroaniline	EPA 3520C	8270C	20	3	1	1/6/00	1/11/00	ND	
2,4-Dinitrophenol	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
Dibenzofuran	EPA 3520C	8270C	20	5	1	1/6/00	1/11/00	ND	
4-Nitrophenol	EPA 3520C	8270C	5	2	1	1/6/00	1/11/00	ND	
2,4-Dinitrotoluene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
Fluorene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	0.7	J
4-Chlorophenyl Phenyl Ether	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
Diethyl Phthalate	EPA 3520C	8270C	20	3	1	1/6/00	1/11/00	ND	
4-Nitroaniline	EPA 3520C	8270C	20	5	1	1/6/00	1/11/00		
2-Methyl-4,6-dinitrophenol									

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

ient: Conestoga Rovers & Assoc.
oject: Pontiac North Complex A-2 Landfill/13509
mple Matrix: Water

Base Neutral/Acid Semivolatile Organic Compounds

Units: ug/L (ppb)
Basis: NA

mple Name: W-13509-010400-TJ-012
ab Code: K2000053-002
est Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
-Nitrosodiphenylamine	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
-Bromophenyl Phenyl Ether	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Hexachlorobenzene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
entachlorophenol (PCP)	EPA 3520C	8270C	20	3	1	1/6/00	1/11/00	ND	
henanthrene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
nthracene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Carbazole	EPA 3520C	8270C	10	2	1	1/6/00	1/11/00	ND	
Di-n-butyl Phthalate	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
luoranthene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
Pyrene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Butyl Benzyl Phthalate	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
3,3'-Dichlorobenzidine	EPA 3520C	8270C	20	4	1	1/6/00	1/11/00	ND	
Benz(a)anthracene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Chrysene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/21/00	510	
Bis(2-ethylhexyl) Phthalate	EPA 3520C	8270C	50	6	10	1/6/00	1/11/00	ND	
Di-n-octyl Phthalate	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Benzo(b)fluoranthene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
Benzo(k)fluoranthene	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
Benzo(a)pyrene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Indeno(1,2,3-cd)pyrene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
Dibenz(a,h)anthracene	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
Benzo(g,h,i)perylene	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

ient: Conestoga Rovers & Assoc.
oject: Pontiac North Complex A-2 Landfill/13509
mple Matrix: Water

Base Neutral/Acid Semivolatile Organic Compounds

Units: ug/L (ppb)
Basis: NA

mple Name: W-13509-010400-TJ-013
ab Code: K2000053-004
est Notes:

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
s(2-chloroethyl) Ether	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
enol	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	0.6	J
Chlorophenol	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
3-Dichlorobenzene	EPA 3520C	8270C	1	0.8	1	1/6/00	1/11/00	ND	
4-Dichlorobenzene	EPA 3520C	8270C	1	0.9	1	1/6/00	1/11/00	ND	
2-Dichlorobenzene	EPA 3520C	8270C	1	0.6	1	1/6/00	1/11/00	ND	
is(2-chloroisopropyl) Ether	EPA 3520C	8270C	5	0.8	1	1/6/00	1/11/00	ND	
-Methylphenol	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
Hexachloroethane	EPA 3520C	8270C	2	0.7	1	1/6/00	1/11/00	ND	
N-Nitrosodi-n-propylamine	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
- and 4-Methylphenol Coelut	EPA 3520C	8270C	5	0.7	1	1/6/00	1/11/00	ND	
Nitrobenzene	EPA 3520C	8270C	5	0.7	1	1/6/00	1/11/00	ND	
sophorone	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
-Nitrophenol	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
2,4 - methylphenol	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Bi loroethoxy)methane	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
2,4-Dichlorophenol	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
1,2,4-Trichlorobenzene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Naphthalene	EPA 3520C	8270C	5	0.6	1	1/6/00	1/11/00	ND	
4-Chloroaniline	EPA 3520C	8270C	20	2	1	1/6/00	1/11/00	ND	
Hexachlorobutadiene	EPA 3520C	8270C	5	2	1	1/6/00	1/11/00	ND	
4-Chloro-3-methylphenol	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
2-Methylnaphthalene	EPA 3520C	8270C	5	0.8	1	1/6/00	1/11/00	ND	
Hexachlorocyclopentadiene	EPA 3520C	8270C	6	6	1	1/6/00	1/11/00	ND	
2,4,6-Trichlorophenol	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
2,4,5-Trichlorophenol	EPA 3520C	8270C	50	0.6	1	1/6/00	1/11/00	ND	
2-Chloronaphthalene	EPA 3520C	8270C	5	0.5	1	1/6/00	1/11/00	ND	
2-Nitroaniline	EPA 3520C	8270C	20	6	1	1/6/00	1/11/00	ND	
Acenaphthylene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Dimethyl Phthalate	EPA 3520C	8270C	6	6	1	1/6/00	1/11/00	ND	
2,6-Dinitrotoluene	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
Acenaphthene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
3-Nitroaniline	EPA 3520C	8270C	20	5	1	1/6/00	1/11/00	ND	
2,4-Dinitrophenol	EPA 3520C	8270C	20	3	1	1/6/00	1/11/00	ND	
Dibenzofuran	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
4-Nitrophenol	EPA 3520C	8270C	20	5	1	1/6/00	1/11/00	ND	
2,4-Dinitrotoluene	EPA 3520C	8270C	5	2	1	1/6/00	1/11/00	ND	
Fluorene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
4-Chlorophenyl Phenyl Ether	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
Diethyl Phthalate	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
4-Nitroaniline	EPA 3520C	8270C	20	3	1	1/6/00	1/11/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3520C	8270C	20	5	1	1/6/00	1/11/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Service Request: K2000053
Date Collected: 1/4/00
Date Received: 1/5/00

ent: Conestoga Rovers & Assoc.
oject: Pontiac North Complex A-2 Landfill/13509
mple Matrix: Water

Base Neutral/Acid Semivolatile Organic Compounds

Units: ug/L (ppb)
Basis: NA

mple Name: W-13509-010400-TJ-013
ıb Code: K2000053-004
ɔst Notes:

nalyte	**Prep Method**	**Analysis Method**	**MRL**	**MDL**	**Dilution Factor**	**Date Extracted**	**Date Analyzed**	**Result**	**Result Notes**
-Nitrosodiphenylamine	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
Bromophenyl Phenyl Ether	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
exachlorobenzene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
entachlorophenol (PCP)	EPA 3520C	8270C	20	3	1	1/6/00	1/11/00	ND	
henanthrene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
ınthracene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
ˈarbazole	EPA 3520C	8270C	10	2	1	1/6/00	1/11/00	ND	
)i-n-butyl Phthalate	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
ˈluoranthene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
›yrene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
3utyl Benzyl Phthalate	EPA 3520C	8270C	5	0.5	1	1/6/00	1/11/00	ND	
ɜ,3'-Dichlorobenzidine	EPA 3520C	8270C	20	4	1	1/6/00	1/11/00	ND	
3enz(a)anthracene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Chrysene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Bi[illegible]thylhexyl) Phthalate	EPA 3520C	8270C	5	6	1	1/6/00	1/11/00	ND	
D[illegible]tyl Phthalate	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Benzo(b)fluoranthene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
Benzo(k)fluoranthene	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
Benzo(a)pyrene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/11/00	ND	
Indeno(1,2,3-cd)pyrene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/11/00	ND	
Dibenz(a,h)anthracene	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	
Benzo(g,h,i)perylene	EPA 3520C	8270C	5	0.4	1	1/6/00	1/11/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Water

Service Request: K2000053
Date Collected: NA
Date Received: NA

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG2000038-6
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Bis(2-chloroethyl) Ether	EPA 3520C	8270C	5	0.4	1	1/6/00	1/12/00	ND	
Phenol	EPA 3520C	8270C	5	0.4	1	1/6/00	1/12/00	ND	
2-Chlorophenol	EPA 3520C	8270C	5	0.3	1	1/6/00	1/12/00	ND	
1,3-Dichlorobenzene	EPA 3520C	8270C	1	0.8	1	1/6/00	1/12/00	ND	
1,4-Dichlorobenzene	EPA 3520C	8270C	1	0.9	1	1/6/00	1/12/00	ND	
1,2-Dichlorobenzene	EPA 3520C	8270C	1	0.6	1	1/6/00	1/12/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3520C	8270C	5	0.8	1	1/6/00	1/12/00	ND	
2-Methylphenol	EPA 3520C	8270C	5	0.4	1	1/6/00	1/12/00	ND	
Hexachloroethane	EPA 3520C	8270C	2	0.7	1	1/6/00	1/12/00	ND	
N-Nitrosodi-n-propylamine	EPA 3520C	8270C	5	0.3	1	1/6/00	1/12/00	ND	
3- and 4-Methylphenol Coelut	EPA 3520C	8270C	5	0.7	1	1/6/00	1/12/00	ND	
Nitrobenzene	EPA 3520C	8270C	5	0.7	1	1/6/00	1/12/00	ND	
Isophorone	EPA 3520C	8270C	5	0.2	1	1/6/00	1/12/00	ND	
2-Nitrophenol	EPA 3520C	8270C	5	0.3	1	1/6/00	1/12/00	ND	
2,4-Dimethylphenol	EPA 3520C	8270C	5	3	1	1/6/00	1/12/00	ND	
Bis(2-chloroethoxy)methane	EPA 3520C	8270C	5	0.2	1	1/6/00	1/12/00	ND	
2,4-Dichlorophenol	EPA 3520C	8270C	5	0.4	1	1/6/00	1/12/00	ND	
,4-Trichlorobenzene	EPA 3520C	8270C	5	0.8	1	1/6/00	1/12/00	ND	
phthalene	EPA 3520C	8270C	5	0.6	1	1/6/00	1/12/00	ND	
4-Chloroaniline	EPA 3520C	8270C	20	2	1	1/6/00	1/12/00	ND	
Hexachlorobutadiene	EPA 3520C	8270C	5	2	1	1/6/00	1/12/00	ND	
4-Chloro-3-methylphenol	EPA 3520C	8270C	5	0.3	1	1/6/00	1/12/00	ND	
2-Methylnaphthalene	EPA 3520C	8270C	5	0.8	1	1/6/00	1/12/00	ND	
Hexachlorocyclopentadiene	EPA 3520C	8270C	6	6	1	1/6/00	1/12/00	ND	
2,4,6-Trichlorophenol	EPA 3520C	8270C	5	0.4	1	1/6/00	1/12/00	ND	
2,4,5-Trichlorophenol	EPA 3520C	8270C	50	0.6	1	1/6/00	1/12/00	ND	
2-Chloronaphthalene	EPA 3520C	8270C	5	0.5	1	1/6/00	1/12/00	ND	
2-Nitroaniline	EPA 3520C	8270C	20	6	1	1/6/00	1/12/00	ND	
Acenaphthylene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/12/00	ND	
Dimethyl Phthalate	EPA 3520C	8270C	6	6	1	1/6/00	1/12/00	ND	
2,6-Dinitrotoluene	EPA 3520C	8270C	5	0.4	1	1/6/00	1/12/00	ND	
Acenaphthene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/12/00	ND	
3-Nitroaniline	EPA 3520C	8270C	20	5	1	1/6/00	1/12/00	ND	
2,4-Dinitrophenol	EPA 3520C	8270C	20	3	1	1/6/00	1/12/00	ND	
Dibenzofuran	EPA 3520C	8270C	5	0.2	1	1/6/00	1/12/00	ND	
4-Nitrophenol	EPA 3520C	8270C	20	5	1	1/6/00	1/12/00	ND	
2,4-Dinitrotoluene	EPA 3520C	8270C	5	2	1	1/6/00	1/12/00	ND	
Fluorene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/12/00	ND	
4-Chlorophenyl Phenyl Ether	EPA 3520C	8270C	5	0.2	1	1/6/00	1/12/00	ND	
Diethyl Phthalate	EPA 3520C	8270C	5	0.2	1	1/6/00	1/12/00	ND	
4-Nitroaniline	EPA 3520C	8270C	20	3	1	1/6/00	1/12/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3520C	8270C	20	5	1	1/6/00	1/12/00	ND	

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Approved By: MB Date: 1/26/00

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Land...13503
Sample Matrix: Water

Service Request: K2000053
Date Collected: NA
Date Received: NA

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG2000038-6
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodiphenylamine	EPA 3520C	8270C	5	0.4	1	1/6/00	1/12/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3520C	8270C	5	0.3	1	1/6/00	1/12/00	ND	
Hexachlorobenzene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/12/00	ND	
Pentachlorophenol (PCP)	EPA 3520C	8270C	20	3	1	1/6/00	1/12/00	ND	
Phenanthrene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/12/00	ND	
Anthracene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/12/00	ND	
Carbazole	EPA 3520C	8270C	10	2	1	1/6/00	1/12/00	ND	
Di-n-butyl Phthalate	EPA 3520C	8270C	5	0.4	1	1/6/00	1/12/00	ND	
Fluoranthene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/12/00	ND	
Pyrene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/12/00	ND	
Butyl Benzyl Phthalate	EPA 3520C	8270C	5	0.3	1	1/6/00	1/12/00	ND	
3,3'-Dichlorobenzidine	EPA 3520C	8270C	20	4	1	1/6/00	1/12/00	ND	
Benz(a)anthracene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/12/00	ND	
Chrysene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/12/00	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3520C	8270C	5	6	1	1/6/00	1/12/00	ND	
Di-n-octyl Phthalate	EPA 3520C	8270C	5	0.3	1	1/6/00	1/12/00	ND	
Benzo(b)fluoranthene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/12/00	ND	
Benzo(k)fluoranthene	EPA 3520C	8270C	5	0.4	1	1/6/00	1/12/00	ND	
...zo(a)pyrene	EPA 3520C	8270C	5	0.3	1	1/6/00	1/12/00	ND	
...eno(1,2,3-cd)pyrene	EPA 3520C	8270C	5	0.2	1	1/6/00	1/12/00	ND	
Dibenz(a,h)anthracene	EPA 3520C	8270C	5	0.4	1	1/6/00	1/12/00	ND	
Benzo(g,h,i)perylene	EPA 3520C	8270C	5	0.4	1	1/6/00	1/12/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Soil

Service Request: K9909171
Date Collected: 12/20/99
Date Received: 12/21/99

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: Percent
Basis: WET

Sample Name	Lab Code	Date Analyzed	Result	Result Notes
S-13509-122099-TJ-007	K9909171-001	12/21/99	94.8	
S-13509-122099-TJ-008	K9909171-002	12/21/99	83.3	
S-13509-122099-TJ-009	K9909171-003	12/21/99	90.2	
S-13509-122099-TJ-010	K9909171-004	12/21/99	85.9	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Soil

Service Request: K9909171
Date Collected: 12/20/99
Date Received: 12/21/99

Cyanide, Total

Prep Method: NONE
Analysis Method: 9010
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
S-13509-122099-TJ-007	K9909171-001	0.2	0.2	1	NA	12/22/99	ND	
S-13509-122099-TJ-008	K9909171-002	0.2	0.2	1	NA	12/22/99	ND	
S-13509-122099-TJ-009	K9909171-003	0.2	0.2	1	NA	12/22/99	0.5	
S-13509-122099-TJ-010	K9909171-004	0.2	0.2	1	NA	12/22/99	ND	
Method Blank	K9909171-MB	0.2	0.2	1	NA	12/22/99	ND	

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TOTAL METALS
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INORGANIC ANALYSIS DATA PACKAGE

Contract: Conestoga Rovers & Assoc. SDG No.: K9909171

Lab Code: KLAB Case No.: 13509 SAS No.:

SOW No.: SW846

Sample No.	Lab Sample ID.
122099-TJ-007	K9909171-001
122099-TJ-008	K9909171-002
122099-TJ-009	K9909171-003
122099-TJ-009D	K9909171-003D
122099-TJ-009S	K9909171-003S
122099-TJ-010	K9909171-004

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Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: JEFF CORONADO

Date: 1/10/09 Title: METALS LAB MANAGER

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-053

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/20/98	**ENCOTEC QC Set ID:**	PCBC1106S
Analysis Date:	03/23/98	**ENCOTEC Submission ID:**	100009956
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068140
Method Reference:	8080	**Percent Total Solids:**	80.0
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-056

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/11/98	**ENCOTEC QC Set ID:**	PCBC1106S
Analysis Date:	03/13/98	**ENCOTEC Submission ID:**	100009956
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068143
Method Reference:	8080	**Percent Total Solids:**	82.9
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-057

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/11/98	**ENCOTEC QC Set ID:**	PCBC1106S
Analysis Date:	03/13/98	**ENCOTEC Submission ID:**	100009956
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068144
Method Reference:	8080	**Percent Total Solids:**	84.2
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-028

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	N/A	**ENCOTEC QC Set ID:**	VORC2001S
Analysis Date:	03/20/98	**ENCOTEC Submission ID:**	100009954
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068115
Method Reference:	8260	**Percent Total Solids:**	83.3
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	VOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	Acetone	67-64-1	100	1.0	U	
2	Benzene	71-43-2	10	1.0	U	
3	Bromodichloromethane	75-27-4	10	1.0	U	
4	Bromoform	75-25-2	10	1.0	U	
5	Bromomethane	74-83-9	10	1.0	U	
6	2-Butanone (MEK)	78-93-3	100	1.0	U	
7	Carbon disulfide	75-15-0	100	1.0	U	
8	Carbon tetrachloride	56-23-5	10	1.0	U	
9	Chlorobenzene	108-90-7	10	1.0	U	
10	Chloroethane	75-00-3	10	1.0	U	
11	Chloroform	67-66-3	10	1.0	U	
12	Chloromethane	74-87-3	10	1.0	U	
13	Dibromochloromethane	124-48-1	10	1.0	U	
14	1,2-Dichlorobenzene	95-50-1	10	1.0	U	
15	1,4-Dichlorobenzene	106-46-7	10	1.0	U	
16	1,3-Dichlorobenzene	541-73-1	10	1.0	U	
17	1,2-Dichloroethane	107-06-2	10	1.0	U	
18	1,1-Dichloroethane	75-34-3	10	1.0	U	
19	total 1,2-Dichloroethene	540-59-0	10	1.0	U	
20	1,1-Dichloroethene	75-35-4	10	1.0	U	
21	1,2-Dichloropropane	78-87-5	10	1.0	U	
22	trans-1,3-Dichloropropene	10061-02-6	10	1.0	U	
23	cis-1,3-Dichloropropene	10061-01-5	10	1.0	U	
24	Ethylbenzene	100-41-4	10	1.0	U	
25	2-Hexanone	591-78-6	100	1.0	U	
26	4-Methyl-2-pentanone (MIBK)	108-10-1	100	1.0	U	
27	Methylene chloride	75-09-2	10	1.0	U	
28	Styrene	100-42-5	10	1.0	U	
29	1,1,2,2-Tetrachloroethane	79-34-5	10	1.0	U	
30	Tetrachloroethene	127-18-4	10	1.0	U	
31	Toluene	108-88-3	10	1.0	U	
32	1,1,2-Trichloroethane	79-00-5	10	1.0	U	
33	1,1,1-Trichloroethane	71-55-6	10	1.0	U	
34	Trichloroethene	79-01-6	10	1.0	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-028

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	N/A	**ENCOTEC QC Set ID:**	VORC2001S
Analysis Date:	03/20/98	**ENCOTEC Submission ID:**	100009954
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068115
Method Reference:	8260	**Percent Total Solids:**	83.3
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	VOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
35	Vinyl chloride	75-01-4	10	1.0	U	
36	total Xylenes	1330-20-7	30	1.0	U	

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CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-053

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	N/A	**ENCOTEC QC Set ID:**	VORC2001S
Analysis Date:	03/20/98	**ENCOTEC Submission ID:**	100009956
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068140
Method Reference:	8260	**Percent Total Solids:**	80.0
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	VOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	Acetone	67-64-1	100	1.0	U	
2	Benzene	71-43-2	10	1.0	U	
3	Bromodichloromethane	75-27-4	10	1.0	U	
4	Bromoform	75-25-2	10	1.0	U	
5	Bromomethane	74-83-9	10	1.0	U	
6	2-Butanone (MEK)	78-93-3	100	1.0	U	
7	Carbon disulfide	75-15-0	100	1.0	U	
8	Carbon tetrachloride	56-23-5	10	1.0	U	
9	Chlorobenzene	108-90-7	10	1.0	U	
10	Chloroethane	75-00-3	10	1.0	U	
11	Chloroform	67-66-3	10	1.0	U	
12	Chloromethane	74-87-3	10	1.0	U	
13	Dibromochloromethane	124-48-1	10	1.0	U	
14	1,2-Dichlorobenzene	95-50-1	10	1.0	U	
15	1,4-Dichlorobenzene	106-46-7	10	1.0	U	
16	1,3-Dichlorobenzene	541-73-1	10	1.0	U	
17	1,2-Dichloroethane	107-06-2	10	1.0	U	
18	1,1-Dichloroethane	75-34-3	10	1.0	U	
19	total 1,2-Dichloroethene	540-59-0	10	1.0	U	
20	1,1-Dichloroethene	75-35-4	10	1.0	U	
21	1,2-Dichloropropane	78-87-5	10	1.0	U	
22	trans-1,3-Dichloropropene	10061-02-6	10	1.0	U	
23	cis-1,3-Dichloropropene	10061-01-5	10	1.0	U	
24	Ethylbenzene	100-41-4	10	1.0	U	
25	2-Hexanone	591-78-6	100	1.0	U	
26	4-Methyl-2-pentanone (MIBK)	108-10-1	100	1.0	U	
27	Methylene chloride	75-09-2	10	1.0	62	B
28	Styrene	100-42-5	10	1.0	U	
29	1,1,2,2-Tetrachloroethane	79-34-5	10	1.0	U	
30	Tetrachloroethene	127-18-4	10	1.0	U	
31	Toluene	108-88-3	10	1.0	U	
32	1,1,2-Trichloroethane	79-00-5	10	1.0	U	
33	1,1,1-Trichloroethane	71-55-6	10	1.0	U	
34	Trichloroethene	79-01-6	10	1.0	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-053

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	N/A	**ENCOTEC QC Set ID:**	VORC2001S
Analysis Date:	03/20/98	**ENCOTEC Submission ID:**	100009956
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068140
Method Reference:	8260	**Percent Total Solids:**	80.0
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	VOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
35	Vinyl chloride	75-01-4	10	1.0	U	
36	total Xylenes	1330-20-7	30	1.0	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-056

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	N/A	**ENCOTEC QC Set ID:**	VORC1101S
Analysis Date:	03/11/98	**ENCOTEC Submission ID:**	100009956
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068143
Method Reference:	8260	**Percent Total Solids:**	82.9
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	VOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	Acetone	67-64-1	100	1.0	U	
2	Benzene	71-43-2	10	1.0	U	
3	Bromodichloromethane	75-27-4	10	1.0	U	
4	Bromoform	75-25-2	10	1.0	U	
5	Bromomethane	74-83-9	10	1.0	U	
6	2-Butanone (MEK)	78-93-3	100	1.0	U	
7	Carbon disulfide	75-15-0	100	1.0	U	
8	Carbon tetrachloride	56-23-5	10	1.0	U	
9	Chlorobenzene	108-90-7	10	1.0	U	
10	Chloroethane	75-00-3	10	1.0	U	
11	Chloroform	67-66-3	10	1.0	U	
12	Chloromethane	74-87-3	10	1.0	U	
13	Dibromochloromethane	124-48-1	10	1.0	U	
14	1,2-Dichlorobenzene	95-50-1	10	1.0	U	
15	1,4-Dichlorobenzene	106-46-7	10	1.0	U	
16	1,3-Dichlorobenzene	541-73-1	10	1.0	U	
17	1,2-Dichloroethane	107-06-2	10	1.0	U	
18	1,1-Dichloroethane	75-34-3	10	1.0	U	
19	total 1,2-Dichloroethene	540-59-0	10	1.0	U	
20	1,1-Dichloroethene	75-35-4	10	1.0	U	
21	1,2-Dichloropropane	78-87-5	10	1.0	U	
22	trans-1,3-Dichloropropene	10061-02-6	10	1.0	U	
23	cis-1,3-Dichloropropene	10061-01-5	10	1.0	U	
24	Ethylbenzene	100-41-4	10	1.0	U	
25	2-Hexanone	591-78-6	100	1.0	U	
26	4-Methyl-2-pentanone (MIBK)	108-10-1	100	1.0	U	
27	Methylene chloride	75-09-2	10	1.0	U	
28	Styrene	100-42-5	10	1.0	U	
29	1,1,2,2-Tetrachloroethane	79-34-5	10	1.0	U	
30	Tetrachloroethene	127-18-4	10	1.0	U	
31	Toluene	108-88-3	10	1.0	U	
32	1,1,2-Trichloroethane	79-00-5	10	1.0	U	
33	1,1,1-Trichloroethane	71-55-6	10	1.0	U	
34	Trichloroethene	79-01-6	10	1.0	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-056

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	N/A	**ENCOTEC QC Set ID:**	VORC1101S
Analysis Date:	03/11/98	**ENCOTEC Submission ID:**	100009956
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068143
Method Reference:	8260	**Percent Total Solids:**	82.9
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	VOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
35	Vinyl chloride	75-01-4	10	1.0	U	
36	total Xylenes	1330-20-7	30	1.0	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-028

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/10/98	**ENCOTEC QC Set ID:**	BNAC0302S
Analysis Date:	03/12/98	**ENCOTEC Submission ID:**	100009954
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068115
Method Reference:	8270	**Percent Total Solids:**	83.3
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	SEMIVOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	Acenaphthene	83-32-9	330	1.0	U	
2	Acenaphthylene	208-96-8	330	1.0	U	
3	Anthracene	120-12-7	330	1.0	U	
4	Benzo(a)anthracene	56-55-3	330	1.0	U	
5	Benzo(a)pyrene	50-32-8	330	1.0	U	
6	Benzo(b)fluoranthene	205-99-2	330	1.0	450	
7	Benzo(g,h,i)perylene	191-24-2	330	1.0	U	
8	Benzo(k)fluoranthene	207-08-9	330	1.0	U	
9	4-Bromophenyl phenyl ether	101-55-3	330	1.0	U	
10	Butyl benzyl phthalate	85-68-7	330	1.0	U	
11	Carbazole	86-74-8	330	1.0	U	
12	4-Chloro-3-methylphenol	59-50-7	330	1.0	U	
13	4-Chloroaniline	106-47-8	330	1.0	U	
14	bis(2-Chloroethoxy)methane	111-91-1	330	1.0	U	
15	bis(2-Chloroethyl) ether	111-44-4	330	1.0	U	
16	bis(2-Chloroisopropyl) ether	108-60-1	330	1.0	U	
17	2-Chloronaphthalene	91-58-7	330	1.0	U	
18	2-Chlorophenol	95-57-8	330	1.0	U	
19	4-Chlorophenyl phenyl ether	7005-72-3	330	1.0	U	
20	Chrysene	218-01-9	330	1.0	350	
21	Di-n-butyl phthalate	84-74-2	330	1.0	U	
22	Di-n-octyl phthalate	117-84-0	330	1.0	U	
23	Dibenz(a,h)anthracene	53-70-3	330	1.0	U	
24	Dibenzofuran	132-64-9	330	1.0	U	
25	1,4-Dichlorobenzene	106-46-7	330	1.0	U	
26	1,3-Dichlorobenzene	541-73-1	330	1.0	U	
27	1,2-Dichlorobenzene	95-50-1	330	1.0	U	
28	3,3'-Dichlorobenzidine	91-94-1	330	1.0	U	
29	2,4-Dichlorophenol	120-83-2	330	1.0	U	
30	Diethyl phthalate	84-66-2	330	1.0	U	
31	Dimethyl phthalate	131-11-3	330	1.0	U	
32	2,4-Dimethylphenol	105-67-9	330	1.0	U	
33	4,6-Dinitro-2-methylphenol	534-52-1	800	1.0	U	
34	2,4-Dinitrophenol	51-28-5	800	1.0	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-028

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/10/98	**ENCOTEC QC Set ID:**	BNAC0302S
Analysis Date:	03/12/98	**ENCOTEC Submission ID:**	100009954
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068115
Method Reference:	8270	**Percent Total Solids:**	83.3
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	SEMIVOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
35	2,6-Dinitrotoluene	606-20-2	330	1.0	U	
36	2,4-Dinitrotoluene	121-14-2	330	1.0	U	
37	bis(2-Ethylhexyl) phthalate	117-81-7	330	1.0	U	
38	Fluoranthene	206-44-0	330	1.0	430	
39	Fluorene	86-73-7	330	1.0	U	
40	Hexachlorobenzene	118-74-1	330	1.0	U	
41	Hexachlorobutadiene	87-68-3	330	1.0	U	
42	Hexachlorocyclopentadiene	77-47-4	330	1.0	U	
43	Hexachloroethane	67-72-1	330	1.0	U	
44	Indeno(1,2,3-c,d)pyrene	193-39-5	330	1.0	U	
45	Isophorone	78-59-1	330	1.0	U	
46	2-Methylnaphthalene	91-57-6	330	1.0	350	
47	2-Methylphenol	95-48-7	330	1.0	U	
48	4-Methylphenol	106-44-5	330	1.0	U	
49	N-Nitroso-di-n-propylamine	621-64-7	330	1.0	U	
50	N-Nitrosodiphenylamine	86-30-6	330	1.0	U	
51	Naphthalene	91-20-3	330	1.0	U	
52	4-Nitroaniline	100-01-6	800	1.0	U	
53	3-Nitroaniline	99-09-2	800	1.0	U	
54	2-Nitroaniline	88-74-4	800	1.0	U	
55	Nitrobenzene	98-95-3	330	1.0	U	
56	4-Nitrophenol	100-02-7	800	1.0	U	
57	2-Nitrophenol	88-75-5	330	1.0	U	
58	Pentachlorophenol	87-86-5	800	1.0	U	
59	Phenanthrene	85-01-8	330	1.0	U	
60	Phenol	108-95-2	330	1.0	U	
61	Pyrene	129-00-0	330	1.0	450	
62	1,2,4-Trichlorobenzene	120-82-1	330	1.0	U	
63	2,4,6-Trichlorophenol	88-06-2	330	1.0	U	
64	2,4,5-Trichlorophenol	95-95-4	800	1.0	U	

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CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-053

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/20/98	**ENCOTEC QC Set ID:**	BNAC1806S
Analysis Date:	03/21/98	**ENCOTEC Submission ID:**	100009956
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068140
Method Reference:	8270	**Percent Total Solids:**	80.0
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	SEMIVOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	Acenaphthene	83-32-9	330	1.0	U	
2	Acenaphthylene	208-96-8	330	1.0	U	
3	Anthracene	120-12-7	330	1.0	U	
4	Benzo(a)anthracene	56-55-3	330	1.0	U	
5	Benzo(a)pyrene	50-32-8	330	1.0	U	
6	Benzo(b)fluoranthene	205-99-2	330	1.0	U	
7	Benzo(g,h,i)perylene	191-24-2	330	1.0	U	
8	Benzo(k)fluoranthene	207-08-9	330	1.0	U	
9	4-Bromophenyl phenyl ether	101-55-3	330	1.0	U	
10	Butyl benzyl phthalate	85-68-7	330	1.0	U	
11	Carbazole	86-74-8	330	1.0	U	
12	4-Chloro-3-methylphenol	59-50-7	330	1.0	U	
13	4-Chloroaniline	106-47-8	330	1.0	U	
14	bis(2-Chloroethoxy)methane	111-91-1	330	1.0	U	
15	bis(2-Chloroethyl) ether	111-44-4	330	1.0	U	
16	bis(2-Chloroisopropyl) ether	108-60-1	330	1.0	U	
17	2-Chloronaphthalene	91-58-7	330	1.0	U	
18	2-Chlorophenol	95-57-8	330	1.0	U	
19	4-Chlorophenyl phenyl ether	7005-72-3	330	1.0	U	
20	Chrysene	218-01-9	330	1.0	U	
21	Di-n-butyl phthalate	84-74-2	330	1.0	U	
22	Di-n-octyl phthalate	117-84-0	330	1.0	U	
23	Dibenz(a,h)anthracene	53-70-3	330	1.0	U	
24	Dibenzofuran	132-64-9	330	1.0	U	
25	1,4-Dichlorobenzene	106-46-7	330	1.0	U	
26	1,3-Dichlorobenzene	541-73-1	330	1.0	U	
27	1,2-Dichlorobenzene	95-50-1	330	1.0	U	
28	3,3'-Dichlorobenzidine	91-94-1	330	1.0	U	
29	2,4-Dichlorophenol	120-83-2	330	1.0	U	
30	Diethyl phthalate	84-66-2	330	1.0	U	
31	Dimethyl phthalate	131-11-3	330	1.0	U	
32	2,4-Dimethylphenol	105-67-9	330	1.0	U	
33	4,6-Dinitro-2-methylphenol	534-52-1	800	1.0	U	
34	2,4-Dinitrophenol	51-28-5	800	1.0	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-053

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/20/98	**ENCOTEC QC Set ID:**	BNAC1806S
Analysis Date:	03/21/98	**ENCOTEC Submission ID:**	100009956
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068140
Method Reference:	8270	**Percent Total Solids:**	80.0
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	SEMIVOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
35	2,6-Dinitrotoluene	606-20-2	330	1.0	U	
36	2,4-Dinitrotoluene	121-14-2	330	1.0	U	
37	bis(2-Ethylhexyl) phthalate	117-81-7	330	1.0	U	
38	Fluoranthene	206-44-0	330	1.0	U	
39	Fluorene	86-73-7	330	1.0	U	
40	Hexachlorobenzene	118-74-1	330	1.0	U	
41	Hexachlorobutadiene	87-68-3	330	1.0	U	
42	Hexachlorocyclopentadiene	77-47-4	330	1.0	U	
43	Hexachloroethane	67-72-1	330	1.0	U	
44	Indeno(1,2,3-c,d)pyrene	193-39-5	330	1.0	U	
45	Isophorone	78-59-1	330	1.0	U	
46	2-Methylnaphthalene	91-57-6	330	1.0	U	
47	2-Methylphenol	95-48-7	330	1.0	U	
48	4-Methylphenol	106-44-5	330	1.0	U	
49	N-Nitroso-di-n-propylamine	621-64-7	330	1.0	U	
50	N-Nitrosodiphenylamine	86-30-6	330	1.0	U	
51	Naphthalene	91-20-3	330	1.0	U	
52	4-Nitroaniline	100-01-6	800	1.0	U	
53	3-Nitroaniline	99-09-2	800	1.0	U	
54	2-Nitroaniline	88-74-4	800	1.0	U	
55	Nitrobenzene	98-95-3	330	1.0	U	
56	4-Nitrophenol	100-02-7	800	1.0	U	
57	2-Nitrophenol	88-75-5	330	1.0	U	
58	Pentachlorophenol	87-86-5	800	1.0	U	
59	Phenanthrene	85-01-8	330	1.0	U	
60	Phenol	108-95-2	330	1.0	U	
61	Pyrene	129-00-0	330	1.0	U	
62	1,2,4-Trichlorobenzene	120-82-1	330	1.0	U	
63	2,4,6-Trichlorophenol	88-06-2	330	1.0	U	
64	2,4,5-Trichlorophenol	95-95-4	800	1.0	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-056

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/10/98	**ENCOTEC QC Set ID:**	BNAC0302S
Analysis Date:	03/12/98	**ENCOTEC Submission ID:**	100009956
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068143
Method Reference:	8270	**Percent Total Solids:**	82.9
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	SEMIVOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	Acenaphthene	83-32-9	330	1.0	U	
2	Acenaphthylene	208-96-8	330	1.0	U	
3	Anthracene	120-12-7	330	1.0	U	
4	Benzo(a)anthracene	56-55-3	330	1.0	480	
5	Benzo(a)pyrene	50-32-8	330	1.0	560	
6	Benzo(b)fluoranthene	205-99-2	330	1.0	900	
7	Benzo(g,h,i)perylene	191-24-2	330	1.0	360	
8	Benzo(k)fluoranthene	207-08-9	330	1.0	U	
9	4-Bromophenyl phenyl ether	101-55-3	330	1.0	U	
10	Butyl benzyl phthalate	85-68-7	330	1.0	460	
11	Carbazole	86-74-8	330	1.0	U	
12	4-Chloro-3-methylphenol	59-50-7	330	1.0	U	
13	4-Chloroaniline	106-47-8	330	1.0	U	
14	bis(2-Chloroethoxy)methane	111-91-1	330	1.0	U	
15	bis(2-Chloroethyl) ether	111-44-4	330	1.0	U	
16	bis(2-Chloroisopropyl) ether	108-60-1	330	1.0	U	
17	2-Chloronaphthalene	91-58-7	330	1.0	U	
18	2-Chlorophenol	95-57-8	330	1.0	U	
19	4-Chlorophenyl phenyl ether	7005-72-3	330	1.0	U	
20	Chrysene	218-01-9	330	1.0	620	
21	Di-n-butyl phthalate	84-74-2	330	1.0	U	
22	Di-n-octyl phthalate	117-84-0	330	1.0	U	
23	Dibenz(a,h)anthracene	53-70-3	330	1.0	U	
24	Dibenzofuran	132-64-9	330	1.0	U	
25	1,4-Dichlorobenzene	106-46-7	330	1.0	U	
26	1,3-Dichlorobenzene	541-73-1	330	1.0	U	
27	1,2-Dichlorobenzene	95-50-1	330	1.0	U	
28	3,3'-Dichlorobenzidine	91-94-1	330	1.0	U	
29	2,4-Dichlorophenol	120-83-2	330	1.0	U	
30	Diethyl phthalate	84-66-2	330	1.0	U	
31	Dimethyl phthalate	131-11-3	330	1.0	U	
32	2,4-Dimethylphenol	105-67-9	330	1.0	U	
33	4,6-Dinitro-2-methylphenol	534-52-1	800	1.0	U	
34	2,4-Dinitrophenol	51-28-5	800	1.0	U	

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QUALITY ASSESSMENT REPORT - METHOD BLANK Analysis

Extraction Date	N/A	**ENCOTEC Project ID:**	33000
Analysis Date:	See Below	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Second Analysis Date:	N/A	**ENCOTEC QC Set ID:**	See Below
Method Reference:	See Below	**ENCOTEC Submission ID:**	100009956

	Analyte	QC Set ID	Date Analyzed	Method Ref.	Units	Quant Limit	Dil	Conc	Flag
1	Aluminum	ICPC2303	03/24/98	6010	ug/Kg	10000	1	U	
2	Aluminum	ICPC0907	03/09/98	6010	ug/Kg	10000	1	U	
3	Antimony	IMSC2304	03/24/98	6020	ug/Kg	500	1	U	
4	Antimony	IMSC0901	03/11/98	6020	ug/Kg	500	1	U	
5	Arsenic	IMSC2304	03/24/98	6020	ug/Kg	100	1	U	
6	Arsenic	IMSC0901	03/11/98	6020	ug/Kg	100	1	U	
7	Barium	ICPC2303	03/24/98	6010	ug/Kg	1000	1	U	
8	Barium	ICPC0907	03/09/98	6010	ug/Kg	1000	1	U	
9	Beryllium	IMSC2304	03/24/98	6020	ug/Kg	200	1	U	
10	Beryllium	IMSC0901	03/11/98	6020	ug/Kg	200	1	U	
11	Cadmium	IMSC2304	03/24/98	6020	ug/Kg	50	1	U	
12	Cadmium	IMSC0901	03/11/98	6020	ug/Kg	50	1	U	
13	Calcium	ICPC2303	03/24/98	6010	ug/Kg	10000	1	U	
14	Calcium	ICPC0907	03/09/98	6010	ug/Kg	10000	1	U	
15	Chromium	ICPC2303	03/24/98	6010	ug/Kg	2500	1	U	
16	Chromium	ICPC0907	03/09/98	6010	ug/Kg	2500	1	U	
17	Cobalt	IMSC2304	03/24/98	6020	ug/Kg	500	1	U	
18	Cobalt	IMSC0901	03/11/98	6020	ug/Kg	500	1	U	
9	Copper	ICPC2303	03/24/98	6010	ug/Kg	1000	1	U	
20	Copper	ICPC0907	03/09/98	6010	ug/Kg	1000	1	U	
21	Iron	ICPC2303	03/24/98	6010	ug/Kg	2000	1	U	
22	Iron	ICPC0907	03/09/98	6010	ug/Kg	2000	1	U	
23	Lead	IMSC2304	03/24/98	6020	ug/Kg	1000	1	U	
24	Lead	IMSC0901	03/11/98	6020	ug/Kg	1000	1	U	
25	Magnesium	ICPC2303	03/24/98	6010	ug/Kg	5000	1	U	
26	Magnesium	ICPC0907	03/10/98	6010	ug/Kg	5000	1	U	
27	Manganese	ICPC2303	03/24/98	6010	ug/Kg	2000	1	U	
28	Manganese	ICPC0907	03/09/98	6010	ug/Kg	2000	1	U	
29	Mercury	CVAC2501	03/25/98	7471	ug/Kg	100	1	U	
30	Mercury	CVAC1003	03/11/98	7471	ug/Kg	100	1	U	
31	Nickel	ICPC2303	03/24/98	6010	ug/Kg	1000	1	U	
32	Nickel	ICPC0907	03/09/98	6010	ug/Kg	1000	1	U	
33	Potassium	ICPC2303	03/24/98	6010	ug/Kg	10000	1	U	
34	Potassium	ICPC0907	03/09/98	6010	ug/Kg	10000	1	U	
35	Selenium	IMSC2304	03/24/98	6020	ug/Kg	500	1	U	
36	Selenium	IMSC0901	03/11/98	6020	ug/Kg	500	1	U	
37	Silver	IMSC2304	03/24/98	6020	ug/Kg	500	1	U	
38	Silver	IMSC0901	03/11/98	6020	ug/Kg	500	1	U	
39	Sodium	ICPC2303	03/24/98	6010	ug/Kg	10000	1	U	
40	Sodium	ICPC0907	03/09/98	6010	ug/Kg	10000	1	U	
41	Thallium	IMSC2304	03/24/98	6020	ug/Kg	500	1	U	
42	Thallium	IMSC0901	03/11/98	6020	ug/Kg	500	1	U	

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QUALITY ASSESSMENT REPORT - METHOD BLANK Analysis

Extraction Date	N/A	**ENCOTEC Project ID:**	33000
Analysis Date:	See Below	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Second Analysis Date:	N/A	**ENCOTEC QC Set ID:**	See Below
Method Reference:	See Below	**ENCOTEC Submission ID:**	100009956

	Analyte	QC Set ID	Date Analyzed	Method Ref.	Units	Quant Limit	Dil	Conc	Flag
43	Vanadium	ICPC2303	03/24/98	6010	ug/Kg	1000	1	U	
44	Vanadium	ICPC0907	03/09/98	6010	ug/Kg	1000	1	U	
45	Zinc	ICPC2303	03/24/98	6010	ug/Kg	1000	1	U	
46	Zinc	ICPC0907	03/09/98	6010	ug/Kg	1000	1	U	

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QUALITY ASSESSMENT REPORT - LCS Analysis

ENCOTEC Project ID: 33000
ENCOTEC SDG ID: CRA-GMF-98C1
ENCOTEC QC Set ID: See Below
ENCOTEC Submission ID: 100009954

	Analyte	QC Set ID	Conc Spiked	Conc LCS	Units	Percent Recovery (%)	Flag	Quality Control Windows (%)
1	Aluminum	ICPC0907	2500	2520	mg/Kg	101		80-120
2	Antimony	IMSC0901	2.50	2.37	mg/Kg	95		80-120
3	Arsenic	IMSC0901	2.50	2.48	mg/Kg	99		80-120
4	Barium	ICPC0907	50.0	49.3	mg/Kg	99		80-120
5	Beryllium	IMSC0901	2.50	2.34	mg/Kg	94		80-120
6	Cadmium	IMSC0901	2.50	2.44	mg/Kg	98		80-120
7	Calcium	ICPC0907	2500	2390	mg/Kg	96		80-120
8	Chromium	ICPC0907	50.0	47.8	mg/Kg	96		80-120
9	Cobalt	IMSC0901	2.50	2.45	mg/Kg	98		80-120
10	Copper	ICPC0907	50.0	48.1	mg/Kg	96		80-120
11	Iron	ICPC0907	250	237	mg/Kg	95		80-120
12	Lead	IMSC0901	2.50	2.55	mg/Kg	102		80-120
13	Magnesium	ICPC0907	2500	2550	mg/Kg	102		80-120
14	Manganese	ICPC0907	10.0	9.55	mg/Kg	96		80-120
15	Mercury	CVAC1403	0.108	0.110	mg/Kg	102		80-120
16	Nickel	ICPC0907	50.0	46.0	mg/Kg	92		80-120
17	Potassium	ICPC0907	2500	2460	mg/Kg	98		80-120
18	Selenium	IMSC0901	2.50	2.46	mg/Kg	98		80-120
19	Silver	IMSC0901	2.50	2.40	mg/Kg	96		80-120
20	Sodium	ICPC0907	2500	2480	mg/Kg	99		80-120
21	Thallium	IMSC0901	2.50	2.51	mg/Kg	100		80-120
22	Vanadium	ICPC0907	50.0	48.6	mg/Kg	97		80-120
23	Zinc	ICPC0907	50.0	47.6	mg/Kg	95		80-120

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D = Detected, result must be greater than zero.
Recovery: 0 out of 23 outside QC Windows

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QUALITY ASSESSMENT REPORT - LCS Analysis

ENCOTEC Project ID: 33000
ENCOTEC SDG ID: CRA-GMF-98C1
ENCOTEC QC Set ID: See Below
ENCOTEC Submission ID: 100009956

	Analyte	QC Set ID	Conc Spiked	Conc LCS	Units	Percent Recovery (%)	Flag	Quality Control Windows (%)
1	Aluminum	ICPC2303	2500	2580	mg/Kg	103		80-120
2	Aluminum	ICPC0907	2500	2520	mg/Kg	101		80-120
3	Antimony	IMSC2304	2.50	2.85	mg/Kg	114		80-120
4	Antimony	IMSC0901	2.50	2.37	mg/Kg	95		80-120
5	Arsenic	IMSC2304	2.50	2.42	mg/Kg	97		80-120
6	Arsenic	IMSC0901	2.50	2.48	mg/Kg	99		80-120
7	Barium	ICPC2303	50.0	52.3	mg/Kg	105		80-120
8	Barium	ICPC0907	50.0	49.3	mg/Kg	99		80-120
9	Beryllium	IMSC2304	2.50	2.66	mg/Kg	106		80-120
10	Beryllium	IMSC0901	2.50	2.34	mg/Kg	94		80-120
11	Cadmium	IMSC2304	2.50	2.42	mg/Kg	97		80-120
12	Cadmium	IMSC0901	2.50	2.44	mg/Kg	98		80-120
13	Calcium	ICPC2303	2500	2580	mg/Kg	103		80-120
14	Calcium	ICPC0907	2500	2390	mg/Kg	96		80-120
15	Chromium	ICPC2303	50.0	50.4	mg/Kg	101		80-120
16	Chromium	ICPC0907	50.0	47.8	mg/Kg	96		80-120
17	Cobalt	IMSC2304	2.50	2.82	mg/Kg	113		80-120
18	Cobalt	IMSC0901	2.50	2.45	mg/Kg	98		80-120
19	Copper	ICPC2303	50.0	49.8	mg/Kg	100		80-120
20	Copper	ICPC0907	50.0	48.1	mg/Kg	96		80-120
21	Iron	ICPC2303	250	238	mg/Kg	95		80-120
22	Iron	ICPC0907	250	237	mg/Kg	95		80-120
23	Lead	IMSC2304	2.50	2.99	mg/Kg	120		80-120
24	Lead	IMSC0901	2.50	2.55	mg/Kg	102		80-120
25	Magnesium	ICPC2303	2500	2600	mg/Kg	104		80-120
26	Magnesium	ICPC0907	2500	2550	mg/Kg	102		80-120
27	Manganese	ICPC2303	10.0	10.0	mg/Kg	100		80-120
28	Manganese	ICPC0907	10.0	9.55	mg/Kg	96		80-120
29	Mercury	CVAC2501	0.108	0.112	mg/Kg	104		80-120
30	Mercury	CVAC1003	0.108	0.110	mg/Kg	102		80-120
31	Nickel	ICPC2303	50.0	47.4	mg/Kg	95		80-120
32	Nickel	ICPC0907	50.0	46.0	mg/Kg	92		80-120
33	Potassium	ICPC2303	2500	2450	mg/Kg	98		80-120
34	Potassium	ICPC0907	2500	2460	mg/Kg	98		80-120
35	Selenium	IMSC2304	2.50	2.05	mg/Kg	82		80-120
36	Selenium	IMSC0901	2.50	2.46	mg/Kg	98		80-120
37	Silver	IMSC2304	2.50	2.67	mg/Kg	107		80-120
38	Silver	IMSC0901	2.50	2.40	mg/Kg	96		80-120
39	Sodium	ICPC2303	2500	2480	mg/Kg	99		80-120
40	Sodium	ICPC0907	2500	2480	mg/Kg	99		80-120
41	Thallium	IMSC2304	2.50	2.94	mg/Kg	118		80-120
42	Thallium	IMSC0901	2.50	2.51	mg/Kg	100		80-120

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-056

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/10/98	**ENCOTEC QC Set ID:**	BNAC0302S
Analysis Date:	03/12/98	**ENCOTEC Submission ID:**	100009956
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068143
Method Reference:	8270	**Percent Total Solids:**	82.9
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	SEMIVOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
35	2,6-Dinitrotoluene	606-20-2	330	1.0	U	
36	2,4-Dinitrotoluene	121-14-2	330	1.0	U	
37	bis(2-Ethylhexyl) phthalate	117-81-7	330	1.0	U	
38	Fluoranthene	206-44-0	330	1.0	760	
39	Fluorene	86-73-7	330	1.0	U	
40	Hexachlorobenzene	118-74-1	330	1.0	U	
41	Hexachlorobutadiene	87-68-3	330	1.0	U	
42	Hexachlorocyclopentadiene	77-47-4	330	1.0	U	
43	Hexachloroethane	67-72-1	330	1.0	U	
44	Indeno(1,2,3-c,d)pyrene	193-39-5	330	1.0	U	
45	Isophorone	78-59-1	330	1.0	U	
46	2-Methylnaphthalene	91-57-6	330	1.0	430	
47	2-Methylphenol	95-48-7	330	1.0	U	
48	4-Methylphenol	106-44-5	330	1.0	U	
49	N-Nitroso-di-n-propylamine	621-64-7	330	1.0	U	
50	N-Nitrosodiphenylamine	86-30-6	330	1.0	U	
51	Naphthalene	91-20-3	330	1.0	U	
52	4-Nitroaniline	100-01-6	800	1.0	U	
53	3-Nitroaniline	99-09-2	800	1.0	U	
54	2-Nitroaniline	88-74-4	800	1.0	U	
55	Nitrobenzene	98-95-3	330	1.0	U	
56	4-Nitrophenol	100-02-7	800	1.0	U	
57	2-Nitrophenol	88-75-5	330	1.0	U	
58	Pentachlorophenol	87-86-5	800	1.0	U	
59	Phenanthrene	85-01-8	330	1.0	380	
60	Phenol	108-95-2	330	1.0	U	
61	Pyrene	129-00-0	330	1.0	970	
62	1,2,4-Trichlorobenzene	120-82-1	330	1.0	U	
63	2,4,6-Trichlorophenol	88-06-2	330	1.0	U	
64	2,4,5-Trichlorophenol	95-95-4	800	1.0	U	

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QUALITY ASSESSMENT REPORT - METHOD BLANK Analysis

Extraction Date	N/A	**ENCOTEC Project ID:**	3300
Analysis Date:	See Below	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Second Analysis Date:	N/A	**ENCOTEC QC Set ID:**	See Below
Method Reference:	See Below	**ENCOTEC Submission ID:**	100009954

	Analyte	QC Set ID	Date Analyzed	Method Ref.	Units	Quant Limit	Dil	Conc	Flag
1	Aluminum	ICPC0907	03/09/98	6010	ug/Kg	10000	1	U	
2	Antimony	IMSC0901	03/11/98	6020	ug/Kg	500	1	U	
3	Arsenic	IMSC0901	03/11/98	6020	ug/Kg	100	1	U	
4	Barium	ICPC0907	03/09/98	6010	ug/Kg	1000	1	U	
5	Beryllium	IMSC0901	03/11/98	6020	ug/Kg	200	1	U	
6	Cadmium	IMSC0901	03/11/98	6020	ug/Kg	50	1	U	
7	Calcium	ICPC0907	03/09/98	6010	ug/Kg	10000	1	U	
8	Chromium	ICPC0907	03/09/98	6010	ug/Kg	2500	1	U	
9	Cobalt	IMSC0901	03/11/98	6020	ug/Kg	500	1	U	
10	Copper	ICPC0907	03/09/98	6010	ug/Kg	1000	1	U	
11	Iron	ICPC0907	03/09/98	6010	ug/Kg	2000	1	U	
12	Lead	IMSC0901	03/11/98	6020	ug/Kg	1000	1	U	
13	Magnesium	ICPC0907	03/10/98	6010	ug/Kg	5000	1	U	
14	Manganese	ICPC0907	03/09/98	6010	ug/Kg	2000	1	U	
15	Mercury	CVAC1003	03/11/98	7471	ug/Kg	100	1	U	
16	Nickel	ICPC0907	03/09/98	6010	ug/Kg	1000	1	U	
17	Potassium	ICPC0907	03/09/98	6010	ug/Kg	10000	1	U	
18	Selenium	IMSC0901	03/11/98	6020	ug/Kg	500	1	U	
19	Silver	IMSC0901	03/11/98	6020	ug/Kg	500	1	U	
20	Sodium	ICPC0907	03/09/98	6010	ug/Kg	10000	1	U	
21	Thallium	IMSC0901	03/11/98	6020	ug/Kg	500	1	U	
22	Vanadium	ICPC0907	03/09/98	6010	ug/Kg	1000	1	U	
23	Zinc	ICPC0907	03/09/98	6010	ug/Kg	1000	1	U	

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QUALITY ASSESSMENT REPORT - LCS Analysis

ENCOTEC Project ID: 33000
ENCOTEC SDG ID: CRA-GMF-98C1
ENCOTEC QC Set ID: See Below
ENCOTEC Submission ID: 100009956

	Analyte	QC Set ID	Conc Spiked	Conc LCS	Units	Percent Recovery (%)	Flag	Quality Control Windows (%)
43	Vanadium	ICPC2303	50.0	51.3	mg/Kg	103		80-120
44	Vanadium	ICPC0907	50.0	48.6	mg/Kg	97		80-120
45	Zinc	ICPC2303	50.0	49.2	mg/Kg	98		80-120
46	Zinc	ICPC0907	50.0	47.6	mg/Kg	95		80-120

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Recovery: 0 out of 46 outside QC Windows

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QUALITY ASSESSMENT REPORT - MS Analysis

ENCOTEC SDG ID: CRA-GMF-98C1
ENCOTEC QC Set ID: See Below
ENCOTEC Submission ID: 100009954
ENCOTEC Sample ID: See Below
Matrix: N/A

	Analyte	ENCOTEC Sample ID	QC Set ID	Conc. Spiked	Sample Result	Conc. MS	Units	Percent Recovery (%)	Flag	QC Windows (%)
1	Aluminum	200067933	ICPC0907	4200	4300	9640	mg/Kg	127 *		80-120
2	Antimony	200067933	IMSC0901	4.25	U	1.80	mg/Kg	42 *		75-125
3	Arsenic	200067933	IMSC0901	4.25	5.0	7.98	mg/Kg	70 *		75-125
4	Barium	200067933	ICPC0907	84.1	49	135	mg/Kg	102		80-120
5	Beryllium	200067933	IMSC0901	4.25	U	4.30	mg/Kg	101		75-125
6	Cadmium	200067933	IMSC0901	4.25	1.2	4.81	mg/Kg	85		75-125
7	Calcium	200067933	ICPC0907	4200	26000	31500	mg/Kg	131	A	80-120
8	Chromium	200067933	ICPC0907	84.1	16	97.5	mg/Kg	97		80-120
9	Cobalt	200067933	IMSC0901	4.25	4.3	7.79	mg/Kg	82		75-125
10	Copper	200067933	ICPC0907	84.1	23	102	mg/Kg	94		80-120
11	Iron	200067933	ICPC0907	420	9500	10200	mg/Kg	167	A	80-120
12	Lead	200067933	IMSC0901	4.25	U	120	mg/Kg	2824 *		75-125
13	Magnesium	200067933	ICPC0907	4200	11000	15400	mg/Kg	105		80-120
14	Manganese	200067933	ICPC0907	16.8	260	282	mg/Kg	131	A	80-120
15	Mercury	200067934	CVAC1003	0.386	U	0.422	mg/Kg	109		75-125
16	Nickel	200067933	ICPC0907	84.1	11	85.9	mg/Kg	89		80-120
17	Potassium	200067933	ICPC0907	4200	550	4630	mg/Kg	97		80-120
18	Selenium	200067933	IMSC0901	4.25	U	1.89	mg/Kg	44 *		75-125
19	Silver	200067933	IMSC0901	4.25	U	0.461	mg/Kg	11 *		75-125
20	Sodium	200067933	ICPC0907	4200	220	4170	mg/Kg	94		80-120
21	Thallium	200067933	IMSC0901	4.25	U	4.69	mg/Kg	110		75-125
22	Vanadium	200067933	ICPC0907	84.1	13	96.7	mg/Kg	100		80-120
23	Zinc	200067933	ICPC0907	84.1	160	250	mg/Kg	107		80-120

D=Detected, result must be greater than zero.
Recovery: 6 out of 20 outside QC Windows

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QUALITY ASSESSMENT REPORT - MS Analysis

ENCOTEC SDG ID: CRA-GMF-98C1
ENCOTEC QC Set ID: See Below
ENCOTEC Submission ID: 100009956
ENCOTEC Sample ID: See Below
Matrix: N/A

	Analyte	ENCOTEC Sample ID	QC Set ID	Conc. Spiked	Sample Result	Conc. MS	Units	Percent Recovery (%)	Flag	QC Windows (%)
1	Aluminum	200068140	ICPC2303	2500	2200	4880	mg/Kg	107		80-120
2	Aluminum	200067933	ICPC0907	4200	4300	9640	mg/Kg	127 *		80-120
3	Antimony	200068140	IMSC2304	2.52	U	1.50	mg/Kg	60 *		75-125
4	Antimony	200067933	IMSC0901	4.25	U	1.80	mg/Kg	42 *		75-125
5	Arsenic	200068140	IMSC2304	2.52	1.9	3.52	mg/Kg	64 *		75-125
6	Arsenic	200067933	IMSC0901	4.25	5.0	7.98	mg/Kg	70 *		75-125
7	Barium	200068140	ICPC2303	50.0	15	65.7	mg/Kg	101		80-120
8	Barium	200067933	ICPC0907	84.1	49	135	mg/Kg	102		80-120
9	Beryllium	200068140	IMSC2304	2.52	U	2.96	mg/Kg	117		75-125
10	Beryllium	200067933	IMSC0901	4.25	U	4.30	mg/Kg	101		75-125
11	Cadmium	200068140	IMSC2304	2.52	0.10	2.83	mg/Kg	108		75-125
12	Cadmium	200067933	IMSC0901	4.25	1.2	4.81	mg/Kg	85		75-125
13	Calcium	200068140	ICPC2303	2500	1500	3930	mg/Kg	97		80-120
14	Calcium	200067933	ICPC0907	4200	26000	31500	mg/Kg	131	A	80-120
15	Chromium	200068140	ICPC2303	50.0	4.4	53.6	mg/Kg	98		80-120
16	Chromium	200067933	ICPC0907	84.1	16	97.5	mg/Kg	97		80-120
17	Cobalt	200068140	IMSC2304	2.52	3.3	5.93	mg/Kg	104		75-125
18	Cobalt	200067933	IMSC0901	4.25	4.3	7.79	mg/Kg	82		75-125
19	Copper	200068140	ICPC2303	50.0	9.6	56.4	mg/Kg	94		80-120
20	Copper	200067933	ICPC0907	84.1	23	102	mg/Kg	94		80-120
21	Iron	200068140	ICPC2303	250	5000	5270	mg/Kg	108		80-120
22	Iron	200067933	ICPC0907	420	9500	10200	mg/Kg	167	A	80-120
23	Lead	200068140	IMSC2304	2.52	5.2	7.51	mg/Kg	92		75-125
24	Lead	200067933	IMSC0901	4.25	U	120	mg/Kg	2824 *		75-125
25	Magnesium	200068140	ICPC2303	2500	750	3260	mg/Kg	100		80-120
26	Magnesium	200067933	ICPC0907	4200	11000	15400	mg/Kg	105		80-120
27	Manganese	200068140	ICPC2303	10.0	390	405	mg/Kg	150	A	80-120
28	Manganese	200067933	ICPC0907	16.8	260	282	mg/Kg	131	A	80-120
29	Mercury	200068140	CVAC2501	0.362	U	0.365	mg/Kg	101		75-125
30	Mercury	200067934	CVAC1003	0.386	U	0.422	mg/Kg	109		75-125
31	Nickel	200068140	ICPC2303	50.0	7.2	53.2	mg/Kg	92		80-120
32	Nickel	200067933	ICPC0907	84.1	11	85.9	mg/Kg	89		80-120
33	Potassium	200068140	ICPC2303	2500	210	2360	mg/Kg	86		80-120
34	Potassium	200067933	ICPC0907	4200	550	4630	mg/Kg	97		80-120
35	Selenium	200068140	IMSC2304	2.52	U	1.70	mg/Kg	67 *		75-125
36	Selenium	200067933	IMSC0901	4.25	U	1.89	mg/Kg	44 *		75-125
37	Silver	200068140	IMSC2304	2.52	U	2.27	mg/Kg	90		75-125
38	Silver	200067933	IMSC0901	4.25	U	0.461	mg/Kg	11 *		75-125
39	Sodium	200068140	ICPC2303	2500	35	2290	mg/Kg	90		80-120
40	Sodium	200067933	ICPC0907	4200	220	4170	mg/Kg	94		80-120
41	Thallium	200068140	IMSC2304	2.52	U	2.93	mg/Kg	116		75-125

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QUALITY ASSESSMENT REPORT - MS Analysis

ENCOTEC SDG ID: CRA-GMF-98C1
ENCOTEC QC Set ID: See Below
ENCOTEC Submission ID: 100009956
ENCOTEC Sample ID: See Below
Matrix: N/A

	Analyte	ENCOTEC Sample ID	QC Set ID	Conc. Spiked	Sample Result	Conc. MS	Units	Percent Recovery (%)	Flag	QC Windows (%)
42	Thallium	200067933	IMSC0901	4.25	U	4.69	mg/Kg	110		75-125
43	Vanadium	200068140	ICPC2303	50.0	7.3	58.3	mg/Kg	102		80-120
44	Vanadium	200067933	ICPC0907	84.1	13	96.7	mg/Kg	100		80-120
45	Zinc	200068140	ICPC2303	50.0	29	73.6	mg/Kg	89		80-120
46	Zinc	200067933	ICPC0907	84.1	160	250	mg/Kg	107		80-120

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Recovery: 9 out of 42 outside QC Windows

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QUALITY ASSESSMENT REPORT - MD Analysis

ENCOTEC SDG ID: CRA-GMF-98C1
ENCOTEC QC Set ID: See Below
ENCOTEC Submission ID: 100009954
ENCOTEC Sample ID: See Below
Matrix: N/A

	Analyte	ENCOTEC Sample ID	QC Set ID	Sample Result	Conc. MD	Units	RPD (%)	Flag	Quality Control Windows (%)
1	Aluminum	200067933	ICPC0907	4300	4300	mg/Kg	0		20
2	Antimony	200067933	IMSC0901	U	U	mg/Kg	NC		35
3	Arsenic	200067933	IMSC0901	5.0	5.0	mg/Kg	0		35
4	Barium	200067933	ICPC0907	49	49	mg/Kg	0		20
5	Beryllium	200067933	IMSC0901	U	U	mg/Kg	NC		35
6	Cadmium	200067933	IMSC0901	1.2	1.4	mg/Kg	15		35
7	Calcium	200067933	ICPC0907	26000	25000	mg/Kg	4		20
8	Chromium	200067933	ICPC0907	16	14	mg/Kg	13		20
9	Cobalt	200067933	IMSC0901	4.3	4.2	mg/Kg	2		35
10	Copper	200067933	ICPC0907	23	23	mg/Kg	0		20
11	Iron	200067933	ICPC0907	9500	9500	mg/Kg	0		20
12	Lead	200067933	IMSC0901	U	U	mg/Kg	NC		35
13	Magnesium	200067933	ICPC0907	11000	10000	mg/Kg	10		20
14	Manganese	200067933	ICPC0907	260	260	mg/Kg	0		20
15	Mercury	200067934	CVAC1003	U	U	mg/Kg	NC		35
16	Nickel	200067933	ICPC0907	11	11	mg/Kg	0		20
17	Potassium	200067933	ICPC0907	550	550	mg/Kg	0		20
18	Selenium	200067933	IMSC0901	U	U	mg/Kg	NC		35
19	Silver	200067933	IMSC0901	U	U	mg/Kg	NC		35
20	Sodium	200067933	ICPC0907	220	220	mg/Kg	0		20
21	Thallium	200067933	IMSC0901	U	U	mg/Kg	NC		35
22	Vanadium	200067933	ICPC0907	13	13	mg/Kg	0		20
23	Zinc	200067933	ICPC0907	160	170	mg/Kg	6		20

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RPD: 0 out of 16 outside QC Windows

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QUALITY ASSESSMENT REPORT - MD Analysis

ENCOTEC SDG ID: CRA-GMF-98C1
ENCOTEC QC Set ID: See Below
ENCOTEC Submission ID: 100009956
ENCOTEC Sample ID: See Below
Matrix: N/A

	Analyte	ENCOTEC Sample ID	QC Set ID	Sample Result	Conc. MD	Units	RPD (%)	Flag	Quality Control Windows (%)
1	Aluminum	200068140	ICPC2303	2200	3000	mg/Kg	31 *		20
2	Aluminum	200067933	ICPC0907	4300	4300	mg/Kg	0		20
3	Antimony	200068140	IMSC2304	U	U	mg/Kg	NC		35
4	Antimony	200067933	IMSC0901	U	U	mg/Kg	NC		35
5	Arsenic	200068140	IMSC2304	1.9	1.6	mg/Kg	17		35
6	Arsenic	200067933	IMSC0901	5.0	5.0	mg/Kg	0		35
7	Barium	200068140	ICPC2303	15	12	mg/Kg	22 *		20
8	Barium	200067933	ICPC0907	49	49	mg/Kg	0		20
9	Beryllium	200068140	IMSC2304	U	U	mg/Kg	NC		35
10	Beryllium	200067933	IMSC0901	U	U	mg/Kg	NC		35
11	Cadmium	200068140	IMSC2304	0.10	0.13	mg/Kg	26		35
12	Cadmium	200067933	IMSC0901	1.4	1.4	mg/Kg	15		35
13	Calcium	200068140	ICPC2303	1500	1100	mg/Kg	31 *		20
14	Calcium	200067933	ICPC0907	26000	25000	mg/Kg	4		20
15	Chromium	200068140	ICPC2303	4.4	6.0	mg/Kg	31 *		20
16	Chromium	200067933	ICPC0907	16	14	mg/Kg	13		20
17	Cobalt	200068140	IMSC2304	3.3	4.3	mg/Kg	26		35
18	Cobalt	200067933	IMSC0901	4.3	4.2	mg/Kg	2		35
19	Copper	200068140	ICPC2303	9.5	14	mg/Kg	37 *		20
20	Copper	200067933	ICPC0907	23	23	mg/Kg	0		20
21	Iron	200068140	ICPC2303	5000	8300	mg/Kg	50 *		20
22	Iron	200067933	ICPC0907	9500	9500	mg/Kg	0		20
23	Lead	200068140	IMSC2304	5.2	5.1	mg/Kg	2		35
24	Lead	200067933	IMSC0901	U	77	mg/Kg	NC		35
25	Magnesium	200068140	ICPC2303	750	850	mg/Kg	12		20
26	Magnesium	200067933	ICPC0907	11000	10000	mg/Kg	10		20
27	Manganese	200068140	ICPC2303	390	300	mg/Kg	26 *		20
28	Manganese	200067933	ICPC0907	260	260	mg/Kg	0		20
29	Mercury	200068140	CVAC2501	U	U	mg/Kg	NC		35
30	Mercury	200067934	CVAC1003	U	U	mg/Kg	NC		35
31	Nickel	200068140	ICPC2303	7.2	9.3	mg/Kg	25 *		20
32	Nickel	200067933	ICPC0907	11	11	mg/Kg	0		20
33	Potassium	200068140	ICPC2303	210	280	mg/Kg	29 *		20
34	Potassium	200067933	ICPC0907	550	550	mg/Kg	0		20
35	Selenium	200068140	IMSC2304	U	U	mg/Kg	NC		35
36	Selenium	200067933	IMSC0901	U	U	mg/Kg	NC		35
37	Silver	200068140	IMSC2304	U	U	mg/Kg	NC		35
38	Silver	200067933	IMSC0901	U	U	mg/Kg	NC		35
39	Sodium	200068140	ICPC2303	35	40	mg/Kg	13		20
40	Sodium	200067933	ICPC0907	220	220	mg/Kg	0		20
41	Thallium	200068140	IMSC2304	U	U	mg/Kg	NC		35

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QUALITY ASSESSMENT REPORT - MD Analysis

ENCOTEC SDG ID: CRA-GMF-98C1
ENCOTEC QC Set ID: See Below
ENCOTEC Submission ID: 100009956
ENCOTEC Sample ID: See Below
Matrix: N/A

	Analyte	ENCOTEC Sample ID	QC Set ID	Sample Result	Conc. MD	Units	RPD (%)	Flag	Quality Control Windows (%)
42	Thallium	200067933	IMSC0901	U	U	mg/Kg	NC		35
43	Vanadium	200068140	ICPC2303	7.3	12	mg/Kg	49 *		20
44	Vanadium	200067933	ICPC0907	13	13	mg/Kg	0		20
45	Zinc	200068140	ICPC2303	29	46	mg/Kg	45 *		20
46	Zinc	200067933	ICPC0907	160	170	mg/Kg	6		20

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RPD: 11 out of 33 outside QC Windows

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QUALITY ASSESSMENT REPORT - METHOD BLANK Analysis

Extraction Date:	03/09/98	**ENCOTEC Project ID:**	33000
Analysis Date:	03/10/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Second Analysis Date:	N/A	**ENCOTEC QC Set ID:**	PCBC0602S
Method Reference:	8080	**ENCOTEC Submission ID:**	100009932
Matrix:	SOLID	**ENCOTEC Method Blank ID:**	200066730

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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QUALITY ASSESSMENT REPORT - METHOD BLANK Analysis

Extraction Date:	03/06/98	**ENCOTEC Project ID:**	33000
Analysis Date:	03/07/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Second Analysis Date:	N/A	**ENCOTEC QC Set ID:**	PCBC0603S
Method Reference:	8080	**ENCOTEC Submission ID:**	100009932
Matrix:	SOLID	**ENCOTEC Method Blank ID:**	200066724

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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QUALITY ASSESSMENT REPORT - METHOD BLANK Analysis

Extraction Date:	03/10/98	**ENCOTEC Project ID:**	3300C
Analysis Date:	03/11/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Second Analysis Date:	N/A	**ENCOTEC QC Set ID:**	PCBC1005S
Method Reference:	8080	**ENCOTEC Submission ID:**	100009954
Matrix:	SOIL	**ENCOTEC Method Blank ID:**	200066731

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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QUALITY ASSESSMENT REPORT - METHOD BLANK Analysis

Extraction Date:	03/12/98	**ENCOTEC Project ID:**	33000
Analysis Date:	03/13/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Second Analysis Date:	N/A	**ENCOTEC QC Set ID:**	PCBC1005S
Method Reference:	8080	**ENCOTEC Submission ID:**	100009954
Matrix:	SOIL	**ENCOTEC Method Blank ID:**	200066740

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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QUALITY ASSESSMENT REPORT - METHOD BLANK Analysis

Extraction Date:	03/11/98	**ENCOTEC Project ID:**	3300
Analysis Date:	03/12/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Second Analysis Date:	N/A	**ENCOTEC QC Set ID:**	PCBC1106S
Method Reference:	8080	**ENCOTEC Submission ID:**	100009956
Matrix:	SOIL	**ENCOTEC Method Blank ID:**	200066733

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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QUALITY ASSESSMENT REPORT - METHOD BLANK Analysis

Extraction Date:	03/20/98	**ENCOTEC Project ID:**	33000
Analysis Date:	03/23/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Second Analysis Date:	N/A	**ENCOTEC QC Set ID:**	PCBC1106S
Method Reference:	8080	**ENCOTEC Submission ID:**	100009956
Matrix:	SOIL	**ENCOTEC Method Blank ID:**	200066759

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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SOILS\SOLIDS MATRIX SURROGATE RECOVERY
POLYCHLORINATED BIPHENYLS

Project Name: CONESTOGA-ROVERS & ASSOCIATES
Project Number: 33000
Method: 8080
Report Date: March 13, 1998
QC Set I.D.: PCBC0602S

ENCOTEC Sample Number	Percent Recovery 2,4,5,6-TCMX (40 - 130)	Percent Recovery Decachlorobiphenyl (32 - 136)
200067949	65	81
200066730 MB	89	117
200066994 LCS	75	102
200067733 MS	90	125
200067733 MSD	92	120

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* Value outside of established quality control windows.
DL = Sample matrix diluted, therefore surrogate recoveries are not applicable.
M = Matrix interferences caused distortion to recovery value.

RECOVERY: __0__ out of __10__ outside QC Windows.

Note:

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SOILS\SOLIDS MATRIX SURROGATE RECOVERY
POLYCHLORINATED BIPHENYLS

Project Name: CONESTOGA - ROVERS & ASSOCIATES
Project Number: 33000
Method: 8080
Report Date: March 16, 1998
QC Set I.D.: PCBC1005S

ENCOTEC Sample Number	Percent Recovery 2,4,5,6-TCMX (40 - 130)	Percent Recovery Decachlorobiphenyl (32 - 136)
200068126	64	88
200068127	85	119
200068132	92	118
200068133	77	100
200066731 MB	81	114
200066998 LCS	83	120
200068133 MS	58	70
200068133 MSD	64	78

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* Value outside of established quality control windows.
DL = Sample matrix diluted, therefore surrogate recoveries are not applicable.
M = Matrix interferences caused distortion to recovery value.

RECOVERY: 0 out of 16 outside QC Windows.

Note:

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SOILS\SOLIDS MATRIX SURROGATE RECOVERY
POLYCHLORINATED BIPHENYLS

Project Name: CONESTOGA - ROVERS & ASSOCIATES
Project Number: 33000
Method: 8080
Report Date: March 18, 1998
QC Set I.D.: PCBC1106S

ENCOTEC Sample Number	Percent Recovery 2,4,5,6-TCMX (40 - 130)	Percent Recovery Decachlorobiphenyl (32 - 136)
200068138	99	130
200068139	88	106
200068140	63	78
200068143	79	93
200068144	99	128
200066733 MB	79	113
200066759 MB	73	92
200066999 LCS	90	123
200068144 MS	90	113
200068144 MSD	76	87

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* Value outside of established quality control windows.
DL = Sample matrix diluted, therefore surrogate recoveries are not applicable.
M = Matrix interferences caused distortion to recovery value.

RECOVERY: 0 out of 20 outside QC Windows.

Note:

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SOILS\SOLIDS MATRIX SURROGATE RECOVERY
POLYCHLORINATED BIPHENYLS

Project Name: CONESTOGA - ROVERS & ASSOCIATES
Project Number: 33000
Method: 8080
Report Date: March 11, 1998
QC Set I.D.: PCBC0603S

ENCOTEC Sample Number	Percent Recovery 2,4,5,6-TCMX (50-150)	Percent Recovery Decachlorobiphenyl (32-136)
200067946	96	124
200067947	89	120
200067948	93	118
200067950	DL	DL
200067951	91	114
200067955	88	117
200067956	91	122
200067961	90	120
200067962	90	118
200066724 MB	92	119
200066995 LCS	87	116
200067961 MS	93	124
200067961 MSD	92	120

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M = Matrix interferences caused distortion to recovery value.

RECOVERY: 0 out of 24 outside QC Windows.

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SOILS\SOLIDS MATRIX SURROGATE RECOVERY
POLYCHLORINATED BIPHENYLS

Project Name: CONESTOGA - ROVERS & ASSOCIATES
Project Number: 33000
Method: 8080
Report Date: March 17, 1998
QC Set I.D.: PCBC1005S

ENCOTEC Sample Number	Percent Recovery 2,4,5,6-TCMX (40 - 130)	Percent Recovery Decachlorobiphenyl (32 - 136)
200068109	17 M	24 M
200068110	21 M	31 M
200068115	49	68
200068116	52	70
200068120	20 M	30 M
200068121	31 M	54 M
200066731 MB	81	114
200066740 MB	76	104
200066998 LCS	83	120
200068133 MS	58	70
200068133 MSD	64	78

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DL = Sample matrix diluted, therefore surrogate recoveries are not applicable.
M = Matrix interferences caused distortion to recovery value.

RECOVERY: 0 out of 14 outside QC Windows.

Note:

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LABORATORY CONTROL SAMPLE
POLYCHLORINATED BIPHENYLS - SOIL/SOLID MATRIX

Project Name: ENCOTEC
Project Number: 10000
QC Set ID: PCBC0602S

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ENCOTEC ID: 200066994

AROCLOR	Amount Spiked (ug/kg)	Amount Recovered (ug/kg)	Percent Recovered (percent)	QC Limits Range (percent)
PCB 1221	2500	2210	88	48-163
PCB 1248	2500	2480	99	39-155
PCB 1260	2500	2290	92	37-166

Recovery: 0 Out of 3 outside QC windows

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LABORATORY CONTROL SAMPLE
POLYCHLORINATED BIPHENYLS - SOIL/SOLID MATRIX

Project Name: ENCOTEC
Project Number: 10000
QC Set ID: PCBC0603S

ENCOTEC ID: 200066995

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AROCLOR	Amount Spiked (ug/kg)	Amount Recovered (ug/kg)	Percent Recovered (percent)	QC Limits Range (percent)
PCB 1221	2500	2480	99	48-163
PCB 1248	2500	2710	108	39-155
PCB 1260	2500	2410	96	37-166

Recovery: 0 Out of 3 outside QC windows

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LABORATORY CONTROL SAMPLE
POLYCHLORINATED BIPHENYLS - SOIL/SOLID MATRIX

Project Name: ENCOTEC
Project Number: 10000
QC Set ID: PCBC1005S

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ENCOTEC ID: 200066998

AROCLOR	Amount Spiked (ug/kg)	Amount Recovered (ug/kg)	Percent Recovered (percent)	QC Limits Range (percent)
PCB 1221	2500	2350	94	48-163
PCB 1248	2500	2640	106	39-155
PCB 1260	2500	2360	94	37-166

Recovery: 0 Out of 3 outside QC windows

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LABORATORY CONTROL SAMPLE (LCS)
POLYCHLORINATED BIPHENYLS - SOIL MATRIX

Project Name: ENCOTEC
Project Number: 10000
QC Set I.D.: PCBC1106S

ENCOTEC I.D.: 200066999

AROCLOR	AMOUNT SPIKED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERED (percent)	QC LIMITS RANGE (percent)
PCB 1221	2500	2610	104	48 - 163
PCB 1248	2500	2650	106	39 - 155
PCB 1260	2500	2370	95	37 - 166

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RECOVERY: __0__ out of __3__ outside QC Windows

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MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD)
POLYCHLORINATED BIPHENYLS - SOIL MATRIX

Project Name: ENCOTEC
Project Number: 10000
QC Set I.D.: PCBC0602S

SAMPLE SPIKED - ENCOTEC ID: 200067733

Aroclor	Concentration Spiked (ug/Kg)	Sample Result (ug/Kg)	MS Conc (ug/Kg)	% Rec	MSD Conc (ug/Kg)	% Rec	RPD	QUALITY CONTROL WINDOWS RPD	QUALITY CONTROL WINDOWS %Recovery
PCB 1221	2500	U	2590	104	2600	104	0.4	20	48-153
PCB 1248	2500	U	3160	126	3260	130	3.1	19	39-155
PCB 1260	2500	U	2650	106	2610	104	1.5	23	37-156

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RPD: 0 out of 3 outside QC Windows.
RECOVERY: 0 out of 6 outside QC Windows.

Note:

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MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD)
POLYCHLORINATED BIPHENYLS - SOIL MATRIX

Project Name: ENCOTEC
Project Number: 10000
QC Set I.D.: PCBC0603S

SAMPLE SPIKED - ENCOTEC ID: 200067961

Aroclor	Concentration Spiked (ug/Kg)	Sample Result (ug/Kg)	MS Conc (ug/Kg)	% Rec	MSD Conc (ug/Kg)	% Rec	RPD	QUALITY CONTROL WINDOWS RPD	QUALITY CONTROL WINDOWS %Recovery
PCB 1221	2500	U	2590	104	2620	105	1.2	20	48-163
PCB 1248	2500	U	2820	113	2670	107	5.5	19	39-155
PCB 1260	2500	U	2580	103	2580	103	0	23	37-156

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RPD: 0 out of 3 outside QC Windows.
RECOVERY: 0 out of 6 outside QC Windows.

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MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD)
POLYCHLORINATED BIPHENYLS - SOIL MATRIX

Project Name: ENCOTEC
Project Number: 10000
QC Set I.D.: PCBC1005S

SAMPLE SPIKED - ENCOTEC ID: 200068133

Aroclor	Concentration Spiked (ug/Kg)	Sample Result (ug/Kg)	MS Conc (ug/Kg)	% Rec	MSD Conc (ug/Kg)	% Rec	RPD	QUALITY CONTROL WINDOWS RPD	QUALITY CONTROL WINDOWS %Recovery
PCB 1221	2500	U	1130	45*	1330	53	16	20	48-153
PCB 1248	2500	U	1120	45	1310	52	16	19	39-155
PCB 1260	2500	U	975	39	1120	45	14	23	37-126

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RPD: 0 out of 3 outside QC Windows.
RECOVERY: 1 out of 6 outside QC Windows.

Note:

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MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD)
POLYCHLORINATED BIPHENYLS - SOIL MATRIX

Project Name: ENCOTEC
Project Number: 10000
QC Set I.D.: PCBC1106S

SAMPLE SPIKED - ENCOTEC ID: 200068144

Aroclor	Concentration Spiked (ug/Kg)	Sample Result (ug/Kg)	MS Conc (ug/Kg)	% Rec	MSD Conc (ug/Kg)	% Rec	RPD	QUALITY CONTROL WINDOWS RPD	QUALITY CONTROL WINDOWS %Recovery
PCB 1221	2500	U	2500	100	2000	80	22*	20	48-263
PCB 1248	2500	U	2500	100	1900	76	27*	19	39-155
PCB 1260	2500	U	2500	68	1700	68	26*	23	37-366

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RPD: 3 out of 3 outside QC Windows.
RECOVERY: 0 out of 6 outside QC Windows.

Note:

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QUALITY ASSESSMENT REPORT - METHOD BLANK Analysis

Extraction Date:	N/A	**ENCOTEC Project ID:**	33000
Analysis Date:	03/11/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Second Analysis Date:	N/A	**ENCOTEC QC Set ID:**	VORC1101S
Method Reference:	8260	**ENCOTEC Submission ID:**	100009956
Matrix:	SOIL	**ENCOTEC Method Blank ID:**	200066758

	VOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	Acetone	67-64-1	100	1.0	U	
2	Benzene	71-43-2	10	1.0	U	
3	Bromodichloromethane	75-27-4	10	1.0	U	
4	Bromoform	75-25-2	10	1.0	U	
5	Bromomethane	74-83-9	10	1.0	U	
6	2-Butanone (MEK)	78-93-3	100	1.0	U	
7	Carbon disulfide	75-15-0	100	1.0	U	
8	Carbon tetrachloride	56-23-5	10	1.0	U	
9	Chlorobenzene	108-90-7	10	1.0	U	
10	Chloroethane	75-00-3	10	1.0	U	
11	Chloroform	67-66-3	10	1.0	U	
12	Chloromethane	74-87-3	10	1.0	U	
13	Dibromochloromethane	124-48-1	10	1.0	U	
14	1,2-Dichlorobenzene	95-50-1	10	1.0	U	
15	1,4-Dichlorobenzene	106-46-7	10	1.0	U	
16	1,3-Dichlorobenzene	541-73-1	10	1.0	U	
17	1,2-Dichloroethane	107-06-2	10	1.0	U	
18	1,1-Dichloroethane	75-34-3	10	1.0	U	
19	total 1,2-Dichloroethene	540-59-0	10	1.0	U	
20	1,1-Dichloroethene	75-35-4	10	1.0	U	
21	1,2-Dichloropropane	78-87-5	10	1.0	U	
22	trans-1,3-Dichloropropene	10061-02-6	10	1.0	U	
23	cis-1,3-Dichloropropene	10061-01-5	10	1.0	U	
24	Ethylbenzene	100-41-4	10	1.0	U	
25	2-Hexanone	591-78-6	100	1.0	U	
26	4-Methyl-2-pentanone (MIBK)	108-10-1	100	1.0	U	
27	Methylene chloride	75-09-2	10	1.0	1.1	J
28	Styrene	100-42-5	10	1.0	U	
29	1,1,2,2-Tetrachloroethane	79-34-5	10	1.0	U	
30	Tetrachloroethene	127-18-4	10	1.0	U	
31	Toluene	108-88-3	10	1.0	U	
32	1,1,2-Trichloroethane	79-00-5	10	1.0	U	
33	1,1,1-Trichloroethane	71-55-6	10	1.0	U	
34	Trichloroethene	79-01-6	10	1.0	U	
35	Vinyl chloride	75-01-4	10	1.0	U	
36	total Xylenes	1330-20-7	30	1.0	U	

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QUALITY ASSESSMENT REPORT - METHOD BLANK Analysis

Extraction Date:	N/A	**ENCOTEC Project ID:**	33000
Analysis Date:	03/20/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Second Analysis Date:	N/A	**ENCOTEC QC Set ID:**	VORC2001S
Method Reference:	8260	**ENCOTEC Submission ID:**	100009956
Matrix:	SOIL	**ENCOTEC Method Blank ID:**	200066799

	VOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	Acetone	67-64-1	100	1.0	U	
2	Benzene	71-43-2	10	1.0	U	
3	Bromodichloromethane	75-27-4	10	1.0	U	
4	Bromoform	75-25-2	10	1.0	U	
5	Bromomethane	74-83-9	10	1.0	U	
6	2-Butanone (MEK)	78-93-3	100	1.0	U	
7	Carbon disulfide	75-15-0	100	1.0	U	
8	Carbon tetrachloride	56-23-5	10	1.0	U	
9	Chlorobenzene	108-90-7	10	1.0	U	
10	Chloroethane	75-00-3	10	1.0	U	
11	Chloroform	67-66-3	10	1.0	U	
12	Chloromethane	74-87-3	10	1.0	U	
13	Dibromochloromethane	124-48-1	10	1.0	U	
14	1,2-Dichlorobenzene	95-50-1	10	1.0	U	
15	1,4-Dichlorobenzene	106-46-7	10	1.0	U	
16	1,3-Dichlorobenzene	541-73-1	10	1.0	U	
17	1,2-Dichloroethane	107-06-2	10	1.0	U	
18	1,1-Dichloroethane	75-34-3	10	1.0	U	
19	total 1,2-Dichloroethene	540-59-0	10	1.0	U	
20	1,1-Dichloroethene	75-35-4	10	1.0	U	
21	1,2-Dichloropropane	78-87-5	10	1.0	U	
22	trans-1,3-Dichloropropene	10061-02-6	10	1.0	U	
23	cis-1,3-Dichloropropene	10061-01-5	10	1.0	U	
24	Ethylbenzene	100-41-4	10	1.0	U	
25	2-Hexanone	591-78-6	100	1.0	U	
26	4-Methyl-2-pentanone (MIBK)	108-10-1	100	1.0	U	
27	Methylene chloride	75-09-2	10	1.0	1.5	J
28	Styrene	100-42-5	10	1.0	U	
29	1,1,2,2-Tetrachloroethane	79-34-5	10	1.0	U	
30	Tetrachloroethene	127-18-4	10	1.0	U	
31	Toluene	108-88-3	10	1.0	U	
32	1,1,2-Trichloroethane	79-00-5	10	1.0	U	
33	1,1,1-Trichloroethane	71-55-6	10	1.0	U	
34	Trichloroethene	79-01-6	10	1.0	U	
35	Vinyl chloride	75-01-4	10	1.0	U	
36	total Xylenes	1330-20-7	30	1.0	U	

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SOIL MATRIX SURROGATE RECOVERY
VOLATILE ORGANICS

Project Name: CONESTOGA - ROVERS & ASSOCIATES
Project Number: 33000
Method: 8240 ___ 8260 _X_ 8260A ___
Report Date: March 25, 1998
QC Set I.D.: VORC2001S

ENCOTEC Sample I.D.	% Recovery Dibromofluoromethane (80-120)	% Recovery D4-1,2-Dichloroethane (70-121)	% Recovery D8-Toluene (81-117)	% Recovery BFB (74-121)
200068115	103	112	102	112
200068140	103	110	102	111
200066799 MB	104	111	100	101
200066934 LCS	102	106	101	102
200069160 MS	92	114	102	110
200069160 MSD	91	119	101	108

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DL = Sample matrix diluted, therefore surrogate recoveries are not applicable.
M = Matrix interferences caused distortion to recovery value.

RECOVERY: 0 out of 24 outside QC Windows.

Note:

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SOIL MATRIX SURROGATE RECOVERY
VOLATILE ORGANICS

Project Name: CONESTOGA-ROVERS & ASSOCIATES
Project Number: 33000
Method: 8240 ___ 8260 _X_ 8260A ___
Report Date: March 13, 1998
QC Set I.D.: VORC1101S

ENCOTEC Sample I.D.	% Recovery Dibromofluoromethane (80-120)	% Recovery D4-1,2-Dichloroethane (70-121)	% Recovery D8-Toluene (81-117)	% Recovery BFB (74-121)
200068143	120M	140M	144M	156M
200066758 MB	104	108	112	97
200066896 LCS	112	116	101	96
200068143 MS	127M	140M	141M	169M
200068143 MSD	116	127M	118M	147M

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M = Matrix interferences caused distortion to recovery value.

RECOVERY: __0___ out of ___9__ outside QC Windows.

Note:

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LABORATORY CONTROL SAMPLE (LCS)
VOLATILE ORGANICS - SOIL MATRIX

Project Name: ENCOTEC
Project Number: 10000
QC Set ID: VORC1101S

ENCOTEC ID: 200066896

Compound	Conc. Spiked (mg/Kg)	Conc. LCS (mg/Kg)	Percent Recovery (%)		Quality Control Windows Recovery (%)
Benzene	0.0500	0.0602	120		76-136
Bromodichloromethane	0.0500	0.0564	113		78-131
Bromoform	0.0500	0.0392	78		68-124
Carbon tetrachloride	0.0500	0.0572	114		70-136
Chlorobenzene	0.0500	0.0532	106		73-127
Chloroform	0.0500	0.0605	121		78-126
Dibromochloromethane	0.0500	0.0488	98		67-133
1,1-Dichloroethane	0.0500	0.0547	109		66-140
1,2-Dichloroethane	0.0500	0.0601	120		63-140
1,1-Dichloroethene	0.0500	0.0573	115		47-187
trans-1,2-Dichloroethene	0.0500	0.0559	112		69-143
1,2-Dichloropropane	0.0500	0.0586	117		70-122
Ethylbenzene	0.0500	0.0525	105		73-129
Methylene chloride	0.0500	0.0483	97		61-163
1,1,2,2-Tetrachloroethane	0.0500	0.0456	91		68-120
Tetrachloroethene	0.0500	0.0549	110		61-135
Toluene	0.0500	0.0506	101		71-133
1,1,1-Trichloroethane	0.0500	0.0649	130	*	67-129
1,1,2-Trichloroethane	0.0500	0.0480	96		73-125
Trichloroethene	0.0500	0.0619	124		64-152

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Recovery: 1 out of 20 outside QC windows

Note:

SAVED AS: C:\HPCHEM\1\DATA\QC\VLC11S1R.XLS

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LABORATORY CONTROL SAMPLE (LCS)
VOLATILE ORGANICS - SOIL MATRIX

Project Name: ENCOTEC
Project Number: 10000
QC Set ID: VORC2001S

ENCOTEC ID: 200066934

Compound	Conc. Spiked (mg/Kg)	Conc. LCS (mg/Kg)	Percent Recovery (%)	Quality Control Windows Recovery (%)
Benzene	0.0500	0.0585	117	76-136
Bromodichloromethane	0.0500	0.0526	105	78-131
Bromoform	0.0500	0.0476	95	68-124
Carbon tetrachloride	0.0500	0.0552	110	70-136
Chlorobenzene	0.0500	0.0573	115	73-127
Chloroform	0.0500	0.0624	125	78-126
Dibromochloromethane	0.0500	0.0508	102	67-133
1,1-Dichloroethane	0.0500	0.0642	128	66-140
1,2-Dichloroethane	0.0500	0.0593	119	63-140
1,1-Dichloroethene	0.0500	0.0574	115	47-187
trans-1,2-Dichloroethene	0.0500	0.0557	111	69-143
1,2-Dichloropropane	0.0500	0.0597	119	70-122
Ethylbenzene	0.0500	0.0608	122	73-129
Methylene chloride	0.0500	0.0526	105	61-163
1,1,2,2-Tetrachloroethane	0.0500	0.0577	115	68-120
Tetrachloroethene	0.0500	0.0585	117	61-135
Toluene	0.0500	0.0551	110	71-133
1,1,1-Trichloroethane	0.0500	0.0625	125	67-129
1,1,2-Trichloroethane	0.0500	0.0574	115	73-125
Trichloroethene	0.0500	0.0618	124	64-152

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Recovery: 0 out of 20 outside QC windows

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Note:

SAVED AS: C:\HPCHEM\1\DATA\QC\VLC20S1R.XLS

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MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD)

VOLATILE ORGANICS - SOIL MATRIX

Project Name: ENCOTEC
Project Number: 10000
QC Set ID: VORC1101S

ENCOTEC ID: 200068143

Compound	Conc. Spiked (mg/Kg)	Sample Result (mg/Kg)	Conc. MS (mg/Kg)	Percent Recovery (%)	Conc. MSD (mg/Kg)	Percent Recovery (%)	RPD (%)	Quality Control Limits RPD (%)	Quality Control Limits Recovery (%)
1,1 Dichloroethene	0.0500	U	0.0602	120	0.0561	112	6.90	22	59-172
Trichloroethene	0.0500	U	0.0429	86	0.0477	95	10.42	24	62-137
Chlorobenzene	0.0500	U	0.0517	103	0.0523	105	1.14	21	60-133
Toluene	0.0500	U	0.0669	134	0.0559	112	17.82	21	59-139
Benzene	0.0500	U	0.0663	133	0.0609	122	8.48	21	66-142

RPD: 0 out of 5 outside of quality control limits.
Recovery: 0 out of 10 outside of quality control limits.

Note:

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MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD)

VOLATILE ORGANICS - SOIL MATRIX

Project Name: ENCOTEC
Project Number: 10000
QC Set ID: VORC2001S

ENCOTEC ID: 200069160

Compound	Conc. Spiked (mg/Kg)	Sample Result (mg/Kg)	Conc. MS (mg/Kg)	Percent Recovery (%)	Conc. MSD (mg/Kg)	Percent Recovery (%)	RPD (%)	Quality Control Limits RPD (%)	Quality Control Limits Recovery (%)
1,1-Dichloroethene	0.0500	U	0.0464	93	0.0454	91	2.09	22	59-172
Trichloroethene	0.0500	U	0.0479	96	0.0476	95	0.59	24	62-137
Chlorobenzene	0.0500	U	0.0507	101	0.0507	101	0.02	21	60-133
Toluene	0.0500	U	0.0477	95	0.0474	95	0.53	21	59-139
Benzene	0.0500	U	0.0540	108	0.0540	108	0.02	21	66-142

RPD: 0 out of 5 outside of quality control limits.
Recovery: 0 out of 10 outside of quality control limits.

Note:
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QUALITY ASSESSMENT REPORT - METHOD BLANK Analysis

Extraction Date:	03/10/98	**ENCOTEC Project ID:**	33000
Analysis Date:	03/11/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Second Analysis Date:	N/A	**ENCOTEC QC Set ID:**	BNAC0302S
Method Reference:	8270	**ENCOTEC Submission ID:**	100009956
Matrix:	SOIL	**ENCOTEC Method Blank ID:**	200066732

	SEMIVOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	Acenaphthene	83-32-9	330	1.0	U	
2	Acenaphthylene	208-96-8	330	1.0	U	
3	Anthracene	120-12-7	330	1.0	U	
4	Benzo(a)anthracene	56-55-3	330	1.0	U	
5	Benzo(a)pyrene	50-32-8	330	1.0	U	
6	Benzo(b)fluoranthene	205-99-2	330	1.0	U	
7	Benzo(g,h,i)perylene	191-24-2	330	1.0	U	
8	Benzo(k)fluoranthene	207-08-9	330	1.0	U	
9	4-Bromophenyl phenyl ether	101-55-3	330	1.0	U	
10	Butyl benzyl phthalate	85-68-7	330	1.0	U	
11	Carbazole	86-74-8	330	1.0	U	
12	4-Chloro-3-methylphenol	59-50-7	330	1.0	U	
13	4-Chloroaniline	106-47-8	330	1.0	U	
14	bis(2-Chloroethoxy)methane	111-91-1	330	1.0	U	
15	bis(2-Chloroethyl) ether	111-44-4	330	1.0	U	
16	bis(2-Chloroisopropyl) ether	108-60-1	330	1.0	U	
17	2-Chloronaphthalene	91-58-7	330	1.0	U	
18	2-Chlorophenol	95-57-8	330	1.0	U	
19	4-Chlorophenyl phenyl ether	7005-72-3	330	1.0	U	
20	Chrysene	218-01-9	330	1.0	U	
21	Di-n-butyl phthalate	84-74-2	330	1.0	U	
22	Di-n-octyl phthalate	117-84-0	330	1.0	U	
23	Dibenz(a,h)anthracene	53-70-3	330	1.0	U	
24	Dibenzofuran	132-64-9	330	1.0	U	
25	1,4-Dichlorobenzene	106-46-7	330	1.0	U	
26	1,3-Dichlorobenzene	541-73-1	330	1.0	U	
27	1,2-Dichlorobenzene	95-50-1	330	1.0	U	
28	3,3'-Dichlorobenzidine	91-94-1	330	1.0	U	
29	2,4-Dichlorophenol	120-83-2	330	1.0	U	
30	Diethyl phthalate	84-66-2	330	1.0	U	
31	Dimethyl phthalate	131-11-3	330	1.0	U	
32	2,4-Dimethylphenol	105-67-9	330	1.0	U	
33	4,6-Dinitro-2-methylphenol	534-52-1	800	1.0	U	
34	2,4-Dinitrophenol	51-28-5	800	1.0	U	
35	2,6-Dinitrotoluene	606-20-2	330	1.0	U	
36	2,4-Dinitrotoluene	121-14-2	330	1.0	U	
37	bis(2-Ethylhexyl) phthalate	117-81-7	330	1.0	U	
38	Fluoranthene	206-44-0	330	1.0	U	
39	Fluorene	86-73-7	330	1.0	U	
40	Hexachlorobenzene	118-74-1	330	1.0	U	
41	Hexachlorobutadiene	87-68-3	330	1.0	U	
42	Hexachlorocyclopentadiene	77-47-4	330	1.0	U	

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QUALITY ASSESSMENT REPORT - METHOD BLANK Analysis

Extraction Date:	03/10/98	**ENCOTEC Project ID:**	3300
Analysis Date:	03/11/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Second Analysis Date:	N/A	**ENCOTEC QC Set ID:**	BNAC0302S
Method Reference:	8270	**ENCOTEC Submission ID:**	100009956
Matrix:	SOIL	**ENCOTEC Method Blank ID:**	200066732

	SEMIVOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
43	Hexachloroethane	67-72-1	330	1.0	U	
44	Indeno(1,2,3-c,d)pyrene	193-39-5	330	1.0	U	
45	Isophorone	78-59-1	330	1.0	U	
46	2-Methylnaphthalene	91-57-6	330	1.0	U	
47	2-Methylphenol	95-48-7	330	1.0	U	
48	4-Methylphenol	106-44-5	330	1.0	U	
49	N-Nitroso-di-n-propylamine	621-64-7	330	1.0	U	
50	N-Nitrosodiphenylamine	86-30-6	330	1.0	U	
51	Naphthalene	91-20-3	330	1.0	U	
52	4-Nitroaniline	100-01-6	800	1.0	U	
53	3-Nitroaniline	99-09-2	800	1.0	U	
54	2-Nitroaniline	88-74-4	800	1.0	U	
55	Nitrobenzene	98-95-3	330	1.0	U	
56	4-Nitrophenol	100-02-7	800	1.0	U	
57	2-Nitrophenol	88-75-5	330	1.0	U	
58	Pentachlorophenol	87-86-5	800	1.0	U	
59	Phenanthrene	85-01-8	330	1.0	U	
60	Phenol	108-95-2	330	1.0	U	
61	Pyrene	129-00-0	330	1.0	U	
62	1,2,4-Trichlorobenzene	120-82-1	330	1.0	U	
63	2,4,6-Trichlorophenol	88-06-2	330	1.0	U	
64	2,4,5-Trichlorophenol	95-95-4	800	1.0	U	

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QUALITY ASSESSMENT REPORT - METHOD BLANK Analysis

Extraction Date:	03/20/98	**ENCOTEC Project ID:**	33000
Analysis Date:	03/21/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Second Analysis Date:	N/A	**ENCOTEC QC Set ID:**	BNAC1806S
Method Reference:	8270	**ENCOTEC Submission ID:**	100009956
Matrix:	SOIL	**ENCOTEC Method Blank ID:**	200066760

	SEMIVOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	Acenaphthene	83-32-9	330	1.0	U	
2	Acenaphthylene	208-96-8	330	1.0	U	
3	Anthracene	120-12-7	330	1.0	U	
4	Benzo(a)anthracene	56-55-3	330	1.0	U	
5	Benzo(a)pyrene	50-32-8	330	1.0	U	
6	Benzo(b)fluoranthene	205-99-2	330	1.0	U	
7	Benzo(g,h,i)perylene	191-24-2	330	1.0	U	
8	Benzo(k)fluoranthene	207-08-9	330	1.0	U	
9	4-Bromophenyl phenyl ether	101-55-3	330	1.0	U	
10	Butyl benzyl phthalate	85-68-7	330	1.0	U	
11	Carbazole	86-74-8	330	1.0	U	
12	4-Chloro-3-methylphenol	59-50-7	330	1.0	U	
13	4-Chloroaniline	106-47-8	330	1.0	U	
14	bis(2-Chloroethoxy)methane	111-91-1	330	1.0	U	
15	bis(2-Chloroethyl) ether	111-44-4	330	1.0	U	
16	bis(2-Chloroisopropyl) ether	108-60-1	330	1.0	U	
17	2-Chloronaphthalene	91-58-7	330	1.0	U	
18	2-Chlorophenol	95-57-8	330	1.0	U	
19	4-Chlorophenyl phenyl ether	7005-72-3	330	1.0	U	
20	Chrysene	218-01-9	330	1.0	U	
21	Di-n-butyl phthalate	84-74-2	330	1.0	U	
22	Di-n-octyl phthalate	117-84-0	330	1.0	U	
23	Dibenz(a,h)anthracene	53-70-3	330	1.0	U	
24	Dibenzofuran	132-64-9	330	1.0	U	
25	1,4-Dichlorobenzene	106-46-7	330	1.0	U	
26	1,3-Dichlorobenzene	541-73-1	330	1.0	U	
27	1,2-Dichlorobenzene	95-50-1	330	1.0	U	
28	3,3'-Dichlorobenzidine	91-94-1	330	1.0	U	
29	2,4-Dichlorophenol	120-83-2	330	1.0	U	
30	Diethyl phthalate	84-66-2	330	1.0	U	
31	Dimethyl phthalate	131-11-3	330	1.0	U	
32	2,4-Dimethylphenol	105-67-9	330	1.0	U	
33	4,6-Dinitro-2-methylphenol	534-52-1	800	1.0	U	
34	2,4-Dinitrophenol	51-28-5	800	1.0	U	
35	2,6-Dinitrotoluene	606-20-2	330	1.0	U	
36	2,4-Dinitrotoluene	121-14-2	330	1.0	U	
37	bis(2-Ethylhexyl) phthalate	117-81-7	330	1.0	U	
38	Fluoranthene	206-44-0	330	1.0	U	
39	Fluorene	86-73-7	330	1.0	U	
40	Hexachlorobenzene	118-74-1	330	1.0	U	
41	Hexachlorobutadiene	87-68-3	330	1.0	U	
42	Hexachlorocyclopentadiene	77-47-4	330	1.0	U	

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QUALITY ASSESSMENT REPORT - METHOD BLANK Analysis

Extraction Date:	03/20/98	**ENCOTEC Project ID:**	33000
Analysis Date:	03/21/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Second Analysis Date:	N/A	**ENCOTEC QC Set ID:**	BNAC1806S
Method Reference:	8270	**ENCOTEC Submission ID:**	100009956
Matrix:	SOIL	**ENCOTEC Method Blank ID:**	200066760

	SEMIVOLATILE ORGANICS Target Compound List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
43	Hexachloroethane	67-72-1	330	1.0	U	
44	Indeno(1,2,3-c,d)pyrene	193-39-5	330	1.0	U	
45	Isophorone	78-59-1	330	1.0	U	
46	2-Methylnaphthalene	91-57-6	330	1.0	U	
47	2-Methylphenol	95-48-7	330	1.0	U	
48	4-Methylphenol	106-44-5	330	1.0	U	
49	N-Nitroso-di-n-propylamine	621-64-7	330	1.0	U	
50	N-Nitrosodiphenylamine	86-30-6	330	1.0	U	
51	Naphthalene	91-20-3	330	1.0	U	
52	4-Nitroaniline	100-01-6	800	1.0	U	
53	3-Nitroaniline	99-09-2	800	1.0	U	
54	2-Nitroaniline	88-74-4	800	1.0	U	
55	Nitrobenzene	98-95-3	330	1.0	U	
56	4-Nitrophenol	100-02-7	800	1.0	U	
57	2-Nitrophenol	88-75-5	330	1.0	U	
58	Pentachlorophenol	87-86-5	800	1.0	U	
59	Phenanthrene	85-01-8	330	1.0	U	
60	Phenol	108-95-2	330	1.0	U	
61	Pyrene	129-00-0	330	1.0	U	
62	1,2,4-Trichlorobenzene	120-82-1	330	1.0	U	
63	2,4,6-Trichlorophenol	88-06-2	330	1.0	U	
64	2,4,5-Trichlorophenol	95-95-4	800	1.0	U	

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SOIL MATRIX SURROGATE RECOVERY
SEMIVOLATILE ORGANICS

Project Name: CONESTOGA-ROVERS & ASSOCIATES
Project Number: 33000
Method: 8270 X 8270B ___
Report Date: March 24, 1998
QC Set I.D.: BNAC0302S

	BASE-NEUTRAL EXTRACTABLE ANALYTES			ACID EXTRACTABLE ANALYTES		
ENCOTEC Sample I. D.	% Recovery Nitrobenzene -d5 (23-120)	% Recovery 2-Fluorobi-phenyl (30-115)	% Recovery Terphenyl -d14 (18-137)	% Recovery Phenol-d5 (24-113)	% Recovery 2-Fluoro-phenol (25-121)	% Recovery 2,4,6-Tribromo-phenol (19-122)
200068115	57	63	67	67	60	65
200066732 MB	72	89	85	82	73	85
200066990 LCS	96	92	101	99	106	106
200067434 MS	72	73	90	92	95	105
200067434 MSD	74	75	97	92	86	104

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* Value outside of quality control windows.
DL = Sample extract diluted, therefore surrogate recoveries not applicable.
M = Matrix interferences caused distortion to recovery value.

RECOVERY: 0 out of 30 outside QC Windows

Note:

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SOIL MATRIX SURROGATE RECOVERY
SEMIVOLATILE ORGANICS

Project Name: CONESTOGA - ROVERS & ASSOCIATES
Project Number: 33000
Method: 8270 X 8270B ___
Report Date: March 13, 1998
QC Set I.D.: BNAC0302S

	BASE-NEUTRAL EXTRACTABLE ANALYTES			ACID EXTRACTABLE ANALYTES		
ENCOTEC Sample I. D.	% Recovery Nitrobenzene -d5 (23-120)	% Recovery 2-Fluorobi-phenyl (30-115)	% Recovery Terphenyl -d14 (18-137)	% Recovery Phenol-d5 (24-113)	% Recovery 2-Fluoro-phenol (25-121)	% Recovery 2,4,6-Tribromo-phenol (19-122)
200068143	63	67	79	73	69	80
200066732 MB	72	89	85	82	73	85
200066990 LCS	96	92	101	99	106	106
200067434 MS	72	73	90	92	95	105
200067434 MSD	74	75	97	92	86	104

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* Value outside of quality control windows.
DL = Sample extract diluted, therefore surrogate recoveries not applicable.
M = Matrix interferences caused distortion to recovery value.

RECOVERY: 0 out of 30 outside QC Windows

Note:

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SOIL MATRIX SURROGATE RECOVERY
SEMIVOLATILE ORGANICS

Project Name: CONESTOGA-ROVERS & ASSOCIATES
Project Number: 33000
Method: 8270 X 8270B ___
Report Date: March 25, 1998
QC Set I.D.: BNAC1806S

	BASE-NEUTRAL EXTRACTABLE ANALYTES			ACID EXTRACTABLE ANALYTES		
ENCOTEC Sample I. D.	% Recovery Nitrobenzene -d5 (23-120)	% Recovery 2-Fluorobi-phenyl (30-115)	% Recovery Terphenyl -d14 (18-137)	% Recovery Phenol-d5 (24-113)	% Recovery 2-Fluoro-phenol (25-121)	% Recovery 2,4,6-Tribromo-phenol (19-122)
200068140	62	55	58	63	57	65
200066760 MB	66	65	62	65	62	68
200066870 LCS	71	66	73	75	59	78
200068974 MS	64	61	68	67	51	71
200068974 MSD	66	60	66	67	53	68

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* Value outside of quality control windows.
DL = Sample extract diluted, therefore surrogate recoveries not applicable.
M = Matrix interferences caused distortion to recovery value.

RECOVERY: __0__ out of __30__ outside QC Windows

Note:

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LABORATORY CONTROL SAMPLE (LCS)
SEMIVOLATILE ORGANICS - SOIL MATRIX

Project Name: ENCOTEC
Project Number: 10000
QC Set ID: BNAC1806S

ENCOTEC ID: 200066870

Compound	Conc. pike (mg/kg)	Conc. LCS (mg/kg)	Percent Recovery (%)		Quality Control Windows Recovery (%)
2-Chlorophenol	2.00	1.44	72		57-112
bis(2-Chloroethyl)ether	2.00	1.62	81		61-123
Phenol	2.00	1.50	75		58-120
1,3-Dichlorobenzene	2.00	1.42	71		68-114
1,4-Dichlorobenzene	2.00	1.47	74		67-119
1,2-Dichlorobenzene	2.00	1.55	78		71-116
bis(2-Chloroisopropyl)ether	2.00	1.62	81		52-151
Hexachloroethane	2.00	1.57	79		69-126
n-Nitroso-di-n-propylamine	2.00	1.98	99		79-114
Nitrobenzene	2.00	1.67	84		46-137
Isophorone	2.00	1.47	74		61-126
2-Nitrophenol	2.00	1.56	78		62-113
2,4-Dimethylphenol	2.00	1.55	77		54-121
bis(2-Chloroethoxy)methane	2.00	1.64	82		74-127
2,4-Dichlorophenol	2.00	1.68	84		61-116
1,2,4-Trichlorobenzene	2.00	1.48	74		74-120
Naphthalene	2.00	1.57	79		75-119
Hexachlorobutadiene	2.00	1.55	78		58-162
4-Chloro-3-methylphenol	2.00	1.71	86		80-117
2,4,6-Trichlorophenol	2.00	1.40	70		62-116
2-Chloronaphthalene	2.00	1.46	73		70-124
Acenaphthylene	2.00	1.33	67	*	69-118
2,6-Dinitrotoluene	2.00	1.82	91		30-167
Acenaphthene	2.00	1.48	74		68-131
2,4-Dinitrophenol	2.00	0.700	35		D-113
2,4-Dinitrotoluene	2.00	1.66	83		78-121
4-Nitrophenol	2.00	1.38	69		56-109
Fluorene	2.00	1.59	80		74-132
4-Chlorophenyl phenyl ether	2.00	1.46	73	*	74-128
Diethylphthalate	2.00	1.46	73		72-128
4,6-Dinitro-2-methylphenol	2.00	0.990	50		2-175
n-Nitrosodiphenylamine	2.00	1.63	82		30-171
4-Bromophenyl phenyl ether	2.00	1.45	73		68-131
Hexachlorobenzene	2.00	1.50	75		68-128
Pentachlorophenol	2.00	1.25	63		18-100
Phenanthrene	2.00	1.45	73	*	74-126
Anthracene	2.00	1.69	85		75-132
Di-n-butyl phthalate	2.00	1.56	78		77-126
Fluoranthene	2.00	1.55	78		69-141
Pyrene	2.00	1.38	69		65-145
Butyl benzyl phthalate	2.00	1.64	82		71-143
Benzo(a)anthracene	2.00	1.63	82		69-139
Chrysene	2.00	1.61	81		48-182
3-3'-Dichlorobenzidine	2.00	2.24	112		D-292
bis(2-Ethylhexyl)phthalate	2.00	1.62	81		38-188
Di-n-octyl phthalate	2.00	1.70	85		21-173
Benzo(b)fluoranthene	2.00	1.76	88		50-135
Benzo(k)fluoranthene	2.00	1.28	64		62-141
Benzo(a)pyrene	2.00	1.40	70		70-134
Indeno(1,2,3-cd)pyrene	2.00	1.45	73		35-169
Dibenz(a,h)anthracene	2.00	1.30	65		41-171
Benzo(ghi)perylene	2.00	1.60	80		2-192

Recovery: 3 out of 52 outside QC windows

Note:
SAVED AS: D:\DATA\QC\BLC18SO6X.XLS

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3985 Research Park Blvd. Ann Arbor, MI 48108
313 / 761-1389

LABORATORY CONTROL SAMPLE (LCS)
SEMIVOLATILE ORGANICS - SOIL MATRIX

Project Name: ENCOTEC
Project Number: 10000
QC Set ID: BNAC0302S

ENCOTEC ID: 200066990

Compound	Conc. Spike (mg/kg)	Conc. LCS (mg/kg)	Percent Recovery (%)	Quality Control Windows Recovery (%)
2-Chlorophenol	2.00	2.10	105	57-112
bis(2-Chloroethyl)ether	2.00	1.96	98	61-123
Phenol	2.00	1.54	77	58-120
1,3-Dichlorobenzene	2.00	2.01	101	68-114
1,4-Dichlorobenzene	2.00	1.81	91	67-119
1,2-Dichlorobenzene	2.00	1.99	100	71-116
bis(2-Chloroisopropyl)ether	2.00	1.96	98	52-151
Hexachloroethane	2.00	2.02	101	69-126
n-Nitroso-di-n-propylamine	2.00	1.83	92	79-114
Nitrobenzene	2.00	1.94	97	46-137
Isophorone	2.00	2.05	103	61-126
2-Nitrophenol	2.00	1.98	99	62-113
2,4-Dimethylphenol	2.00	2.18	109	54-121
bis(2-Chloroethoxy)methane	2.00	2.13	107	74-127
2,4-Dichlorophenol	2.00	2.02	101	61-116
1,2,4-Trichlorobenzene	2.00	1.99	100	74-120
Naphthalene	2.00	2.18	109	75-119
Hexachlorobutadiene	2.00	2.16	108	58-162
4-Chloro-3-methylphenol	2.00	2.12	106	80-117
2,4,6-Trichlorophenol	2.00	1.84	92	62-116
2-Chloronaphthalene	2.00	1.71	86	70-124
Acenaphthylene	2.00	1.70	85	69-119
2,6-Dinitrotoluene	2.00	1.78	89	30-167
Acenaphthene	2.00	1.77	89	68-131
2,4-Dinitrophenol	2.00	0.600	30	D-113
2,4-Dinitrotoluene	2.00	1.86	93	78-121
4-Nitrophenol	2.00	1.60	80	56-109
Fluorene	2.00	1.95	98	74-132
4-Chlorophenyl phenyl ether	2.00	1.91	96	74-128
Diethylphthalate	2.00	1.90	95	72-128
4,6-Dinitro-2-methylphenol	2.00	1.07	54	2-175
n-Nitrosodiphenylamine	2.00	2.07	104	30-171
4-Bromophenyl phenyl ether	2.00	2.12	106	68-131
Hexachlorobenzene	2.00	2.08	104	68-128
Pentachlorophenol	2.00	1.45	73	18-100
Phenanthrene	2.00	2.03	102	74-126
Anthracene	2.00	1.99	100	75-132
Di-n-butyl phthalate	2.00	2.08	104	77-126
Fluoranthene	2.00	2.08	104	69-141
Pyrene	2.00	1.93	97	65-145
Butyl benzyl phthalate	2.00	1.99	100	71-143
Benzo(a)anthracene	2.00	2.02	101	69-139
Chrysene	2.00	2.09	105	48-182
3-3'-Dichlorobenzidine	2.00	1.24	62	D-292
bis(2-Ethylhexyl)phthalate	2.00	2.20	110	38-188
Di-n-octyl phthalate	2.00	1.94	97	21-173
Benzo(b)fluoranthene	2.00	1.86	93	50-135
Benzo(k)fluoranthene	2.00	1.95	98	62-141
Benzo(a)pyrene	2.00	2.07	104	70-134
Indeno(1,2,3-cd)pyrene	2.00	1.65	83	35-169
Dibenz(a,h)anthracene	2.00	1.81	91	41-171
Benzo(ghi)perylene	2.00	1.93	97	2-192

Recovery: 0 out of 52 outside QC windows

Note:
SAVED AS: C:\HPCHEM\1\DATA\QC\BLC0302S.XLS

Form 3910SSM4G.XLS Rev.10/01/96

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3985 Research Park Drive * Ann Arbor, MI 48108
313 / 761-1389

MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD)
SEMIVOLATILE ORGANICS - SOIL MATRIX

Project Name: ENCOTEC
Project Number: 10000
QC Set ID: BNAC0302S

SAMPLE SPIKED - ENCOTEC ID: 200067434

Compound	Conc. Spiked (mg/Kg)	Sample Result (mg/Kg)	Conc. MS (mg/Kg)	Percent Recovery (%)	Conc. MSD (mg/Kg)	Percent Recovery (%)	RPD (%)	Quality Control Limits RPD (%)	Quality Control Limits Recovery (%)
1,2,4-Trichlorobenzene	2.00	U	1.56	78	1.68	84	7.33	23	43-113
Acenaphthene	2.00	U	1.46	73	1.62	81	10.41	19	45-124
2,4-Dinitrotoluene	2.00	U	1.56	78	1.69	84	7.94	47	47-119
Pyrene	2.00	U	1.71	86	1.80	90	4.80	36	24-132
N-Nitroso-di-*n*-propylamine	2.00	U	1.70	85	1.77	89	4.25	38	44-115
1,4-Dichlorobenzene	2.00	U	1.67	83	1.68	84	0.72	27	40-108
Pentachlorophenol	3.00	U	2.01	67	2.32	77	14.67	47	33-129
Phenol	3.00	U	1.95	65	2.01	67	3.28	35	60-97
2-Chlorophenol	3.00	U	2.67	89	2.85	95	6.50	50	49-111
4-Chloro-3-methylphenol	3.00	U	2.65	88	2.82	94	6.23	33	49-120
4-Nitrophenol	3.00	U	2.00	67	2.18	73	8.61	50	41-133

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96

RPD: 0 out of 11 outside of QC Limits.
Recovery: 0 out of 22 outside of QC Limits.

Note:
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MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD)
SEMIVOLATILE ORGANICS - SOIL MATRIX

roject Name: ENCOTEC
Project Number: 10000
QC Set ID: BNAC1806S

SAMPLE SPIKED - ENCOTEC ID: 200068974

Compound	Conc. Spiked (mg/Kg)	Sample Result (mg/Kg)	Conc. MS (mg/Kg)	Percent Recovery (%)	Conc. MSD (mg/Kg)	Percent Recovery (%)	RPD (%)	Quality Control Limits RPD (%)	Quality Control Limits Recovery (%)
1,2,4-Trichlorobenzene	2.00	U	1.21	61	1.46	73	18.78	23	43-113
Acenaphthene	2.00	U	1.22	61	1.32	66	7.96	19	45-124
2,4-Dinitrotoluene	2.00	U	1.34	67	1.47	74	9.58	47	44-109
Pyrene	2.00	U	0.894	45	0.868	43	2.95	36	24-142
N-Nitroso-di-*n*-propylamine	2.00	U	1.43	71	1.54	77	7.34	38	44-115
1,4-Dichlorobenzene	2.00	U	0.874	44	1.20	60	31.36 *	27	40-108
Pentachlorophenol	3.00	U	1.81	60	1.81	60	0.13	47	33-129
Phenol	3.00	U	1.84	61	1.80	60	1.97	35	60-97
2-Chlorophenol	3.00	U	1.87	62	2.02	67	7.36	50	49-111
4-Chloro-3-methylphenol	3.00	U	2.24	75	2.21	74	1.65	33	49-120
4-Nitrophenol	3.00	U	1.89	63	1.80	60	4.75	50	41-133

RPD: 1 out of 11 outside of QC Limits.
Recovery: 0 out of 22 outside of QC Limits.

Note:
SAVED AS: D:\DATA\QC\BMC18S06X.XLS

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1 of 2

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
11100 Metro Airport Center Drive - Suite 160
Romulus, MI 48174 (313) 942-0909

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Encotec

REFERENCE NUMBER: 10491

PROJECT NAME: Track 26, GM Metal Fab. Div.

SAMPLER'S SIGNATURE: Susan Felek PRINTED NAME: Susan Felek

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: PCB	REMARKS
1	030598	1220	C-10491-030598-SF-001	concrete	1	✓	7 day TAT
2		1345	-002		1	✓	
3		1350	-003		1	✓	① Place on hold until notified by CRA to run analysis.
4		1410	-004		1	✓	
5		1430	S -005	soil	1	✓	
6		1435	-006		1	✓	
7		1450	-007 ①		1	✓	
8		1458	-008 ①		1	✓	
9		1503	-009 ①		1	✓	
10		1530	-010		1	✓	
11		1538	-011		1	✓	
12		1543	-012 ①		1	✓	
13		1550	-013 ①		1	✓	
14		1558	-014 ①		1	✓	
TOTAL NUMBER OF CONTAINERS					14		

RELINQUISHED BY: 1. Susan Felek	DATE: 030698 TIME: 0630	RECEIVED BY: 1. Joseph L Koenman	DATE: 3/6/98 TIME: 0730
RELINQUISHED BY: 2. Joseph L Koenman	DATE: 03 06 98 TIME: 1140	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Pick up by Encotec AIR BILL No.

White -Fully Executed Copy Pink -Shipper Copy
Yellow -Receiving Laboratory Copy Goldenrod -Sampler Copy

5499

SAMPLE TEAM: S. Felek

RECEIVED FOR LABORATORY BY: S Kawlinski

DATE: 3-6-98 TIME: 11:45 am

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SHIPPED TO (Laboratory Name): Encotec

2 of 2

REFERENCE NUMBER: 10491

PROJECT NAME: Track 26, GM Metal Fab. Div.

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: Susan Fielek PRINTED NAME: Susan Fielek

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: PCB	REMARKS
15	030598	1603	S-10491-030598-SF-015 ①	soil	1	✓	7 day TAT
16		1622	-016 MS/MSD		1	✓	① place on hold until notified by CRA to run analysis.
17		1628	-017		1	✓	
18		1635	-018 ①		1	✓	
19		1640	-019 ①		1	✓	
20		1645	-020 ①		1	✓	
21	↓	1649	-021 ①	↓	1	✓	

SF 03/05/98

TOTAL NUMBER OF CONTAINERS: 7

RELINQUISHED BY 1. Susan Fielek	DATE: 03/06/98 TIME: 0630	RECEIVED BY: 1. Joseph L. Kaemerman	DATE: 3/6/98 TIME: 0952
RELINQUISHED BY: 2. Joseph L. Kaemerman	DATE: 3/6/98 TIME: 1140	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Pick up by Encotec AIR BILL No.

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

5500

SAMPLE TEAM: S. Fielek

RECEIVED FOR LABORATORY BY: S Pawlowski

DATE: 3-6-98 TIME: 11:45 am

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CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Encotec

REFERENCE NUMBER: 10491

PROJECT NAME: Track 26, GM Metal Fab. Div.

SAMPLER'S SIGNATURE: Susan Fielek PRINTED NAME: Susan Fielek

SEQ. No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: PCB, TAL ①, TCL VOC ①, TCL SVOC ①	REMARKS
1	030698	0832	S-10491-030698-SF-022	soil	1	✓	7day TAT
2		0838	-023		1	✓	
3		0842	-024 ①		1	✓	① place on hold.
4		0846	-025 ①		1	✓	
5		0850	-026 ①		1	✓	
6		0855	-027 ①		1	✓	
7		0912	-028 ①		3	✓ ✓ ✓ ✓	
8		0920	-029		1	✓	
9		0930	-030 ①		1	✓	
10		0938	-031 ①		1	✓	
11		0944	-032 ①		1	✓	
12		0958	-033		1	✓	
13		1003	-034		1	✓	
14	↓	1008	-035 ①	↓	1	✓	
			TOTAL NUMBER OF CONTAINERS		15		

RELINQUISHED BY: 1. Susan Fielek	DATE: 030698 TIME: 1700	RECEIVED BY: 1. Joseph L. Koenemann	DATE: 3/6/98 TIME: 5:45
RELINQUISHED BY: 2. Joseph L. Koenemann	DATE: 030698 TIME: 5:30	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Pick up by Encotec AIR BILL No.

White -Fully Executed Copy Yellow -Receiving Laboratory Copy Pink -Shipper Copy Goldenrod -Sampler Copy

5505

SAMPLE TEAM: S. Fielek

RECEIVED FOR LABORATORY BY: S Davlin

DATE: 3-6-98 TIME: 6.15

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11100 Metro Airport Center Drive - Suite 160
Romulus, MI 48174 (313) 942-0909

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Encofec

REFERENCE NUMBER: 10491

PROJECT NAME: Truck 26, GM Metal Fab. Div.

SAMPLER'S SIGNATURE: Susan Filek PRINTED NAME: Susan filek

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: BTEX	REMARKS
15	030698	1012	S-10491-030698-SF-036 ①	Soil	1	✓	7day TAT
16		1017	-037 ①		1	✓	
17		1022	-038 ①		1	✓	① place on hold
18		1045	-039		1	✓	
19		1050	-040		1	✓	
20		1056	-041 ①		1	✓	
21		1100	-042 ①		1	✓	
22		1105	-043 ①		1	✓	
23		1112	-044 ①		1	✓	
24		1215	-045		1	✓	
25		1220	-046 MS/MSD		1	✓	
26		1225	-047 ①		1	✓	
27		1230	-048 ①		1	✓	
28	↓	1234	-049 ①	↓	1	✓	
			TOTAL NUMBER OF CONTAINERS		14		

RELINQUISHED BY: 1. Susan Filek	DATE: 030698 TIME: 1700	RECEIVED BY: 1.	DATE: 3/6/98 TIME: 5:05
RELINQUISHED BY: 2.	DATE: 030698 TIME: 5:50	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: pick up by Encofec AIR BILL No.

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

5506

SAMPLE TEAM: S. Filek

RECEIVED FOR LABORATORY BY: S Davlunoska

DATE: 3-6-98 TIME: 5:15

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CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Encotec

REFERENCE NUMBER: 10491

PROJECT NAME: Truck 76, GM Metal Fab Div.

SAMPLER'S SIGNATURE: Susan Fielek PRINTED NAME: Susan Fielek

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: PCB	TPH	TCL VOC	TCL SVOC	REMARKS
29	030698	1238	S-10491-030698-SL-050 (1)	soil	1	✓				7 day TAT
30		1258	-051		1	✓				
31		1305	-052		1	✓				(1) place on hold.
32		1312	-053 (1)		2	✓	✓	✓	✓	
33		1320	-054 (1)		1	✓				
34		1325	-055 (1)		1	✓				
35		1335	-056		3	✓	✓	✓	✓	
36		1340	-057 MS/MSD		1	✓				
37		1345	-058 (1)		1	✓				
38		1350	-059 (1)		1	✓				
39	↓	1355	-060 (1)	↓	1	✓				
			SL 03/06/98							
			TOTAL NUMBER OF CONTAINERS		13					

RELINQUISHED BY: 1. Susan Fielek	DATE: 030698 TIME: 1700	RECEIVED BY: 1. Joseph Kaemmerer	DATE: 3/6/98 TIME: 505
RELINQUISHED BY: 2. Joseph Kaemmerer	DATE: 030698 TIME: 5:30	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: pick up by Encotec AIR BILL No.

White -Fully Executed Copy Pink -Shipper Copy
Yellow -Receiving Laboratory Copy Goldenrod -Sampler Copy

5507

SAMPLE TEAM: S. Fielek

RECEIVED FOR LABORATORY BY: S Dawson
DATE: 3-6-98 TIME: 6:15

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ATTACHMENT C

DATA VALIDATION

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Aug 07, 2009 15:11

CRA MEMO

11100 Metro Airport Center Drive
Suite 160
Romulus, MI 48174
(313) 942-0909

TO: Frank Ring

REFERENCE NO: 10491

FROM: Mary Cameron/lr/7/Det. MSC

DATE: May 7, 1998

RE: Data Quality Assessment and Validation for Soil Samples Collected from the GM Metal Fabricating Division, Track 26 Site in Pontiac, Michigan

---

The following details a quality assessment and validation of the analytical data resulting from the March 5 and 6, 1998, collection of 25 soil samples from the GM Metal Fabricating Division, Track 26 Site in Pontiac, Michigan. The samples identified in Table 1 were selectively analyzed for target compound list (TCL) volatile organic compounds (VOC); TCL semi-volatile organic compounds (SVOC); polychlorinated biphenyl (PCB); and target analyte list (TAL) metals. Sample analysis was completed at Laidlaw Environmental, Inc./Encotec Ann Arbor, Michigan facility (Encotec) in accordance with the methodologies presented in Table 2. The quality control criteria used to assess the data were established by the methods.[1]

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Holding Time Period and Sample Analysis

The holding time periods are presented in Table 3. The samples, as indicated by the sample collection, extraction and analysis dates on the chain-of-custody forms and analytical reports provided by Encotec, were prepared and analyzed within the required holding time periods.

Method Blank Samples

Contamination of samples contributed by laboratory conditions or procedures was monitored by concurrent preparation and analysis of method blank samples. Methylene chloride was reported detected in the TCL VOC method blanks. Methylene chloride reported in the associated samples (flagged by the laboratory with a "B") was either ten times the method blank or non-detected. Therefore, no qualification was required. The remaining method blank samples were reported to be free from detectable levels of target analytes, indicating no additional laboratory-attributable contamination occurred.

Laboratory Control Sample Analysis

The laboratory control sample (LCS) analyses serve as a monitor of the overall performance in all steps of the sample analysis. Table 4 summarizes sample results qualified due to violation of LCS percent recovery acceptance criteria. The remaining LCS percent recoveries were within the laboratory control limits, indicating that an acceptable level of overall performance was achieved.

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[1] Application of quality assurance criteria was consistent with "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", EPA-540/R-94/012, February 1994 and "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Review", EPA-540/R-94/013, February 1997.

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Surrogate Compound Percent Recoveries (Surrogate Recoveries)

Individual sample performance for the organic analyses was monitored by assessing the results of surrogate compound percent recoveries. The surrogate percent recovery was exceeded for one sample, but the sample results were non-detect. No qualification was required. The surrogate recovery acceptance criteria was met for the remaining samples.

Matrix Spike Analysis - Metals Analyses

Matrix spike samples were monitored to determine the effects of sample matrix on the laboratories digestion and measurement methods. The samples that should be qualified due to violation of matrix spike recovery criteria are outlined in Table 5. The remainder of the data were within the acceptance criteria.

Duplicate Sample Analyses - Metals Analyses

The laboratory precision of matrix-specific metals methods was monitored by the analyses of duplicate samples. The duplicate relative percent difference (RPD) data for the samples outlined in Table 6 violated the acceptance criteria. The remaining samples were within the acceptance criteria.

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Matrix Spike/Matrix Spike Duplicate Percent Recoveries - Organic Analyses

To assess the long term accuracy and precision of the analytical methods on various matrices, matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and the RPD of the recoveries were determined. The MS/MSD percent recoveries and RPDs acceptance criteria were met for all analyses.

Sample Quantitation - Metal Analyses

Sample analyses, requiring laboratory dilutions due to matrix effects, were identified by the laboratory with a "M", no further qualification was required.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision, based on the provided information, and may be used with the qualifications noted.

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TABLE 1

SAMPLE IDENTIFICATION NUMBERS
GM METAL FABRICATING DIVISION, TRACK 26 SITE
PONTIAC, MICHIGAN

C-10491-030598-SF-001
C-10491-030598-SF-002
C-10491-030598-SF-003
C-10491-030598-SF-004
S-10491-030598-SF-005
S-10491-030598-SF-006
S-10491-030598-SF-010
S-10491-030598-SF-011
S-10491-030598-SF-016
S-10491-030598-SF-017
S-10491-030698-SF-022
S-10491-030698-SF-023
S-10491-030698-SF-028
S-10491-030698-SF-029
S-10491-030698-SF-033
S-10491-030698-SF-034
S-10491-030698-SF-039
S-10491-030698-SF-040
S-10491-030698-SF-045
S-10491-030698-SF-046
S-10491-030698-SF-051
S-10491-030698-SF-052
S-10491-030698-SF-053
S-10491-030698-SF-056
S-10491-030698-SF-057

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TABLE 2

SUMMARY OF ANALYTICAL METHODS
GM METAL FABRICTING DIVISION, TRACK 26 SITE
PONTIAC, MICHIGAN

Parameter	*Method*
TCL VOC	SW-846 8260[1]
TCL SVOC	SW-846 8270
PCB	SW-846 8080
TAL Metals	
Aluminum	SW-846 6010
Antimony	SW-846 6020
Arsenic	SW-846 6020
Barium	SW-846 6010
Beryllium	SW-846 6020
Cadmium	SW-846 6020
Calcium	SW-846 6010
Chromium	SW-846 6010
Cobalt	SW-846 6020
Copper	SW-846 6010
Iron	SW-846 6010
Lead	SW-846 6020
Magnesium	SW-846 6010
Manganese	SW-846 6010
Mercury	SW-846 7471
Nickel	SW-846 6010
Potassium	SW-846 6010
Selenium	SW-846 6020
Silver	SW-846 6020
Sodium	SW-846 6010
Thallium	SW-846 6020
Vanadium	SW-846 6010
Zinc	SW-846 6010

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[1] "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd Edition, and promulgated updates, November 1986.

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TABLE 3

HOLDING TIME PERIODS
GM METAL FABRICATING DIVISION, TRACK 26 SITE
PONTIAC, MICHIGAN

Analysis	*Holding Time Period*
TCL VOC	- 14 days from sample collection to completion of analysis
TCL SVOC, PCB	- 14 days from sample collection to extraction - 40 days from extraction to completion of analysis
TAL Metals -	
Metals (except Mercury)	- 180 days from sample collection to completion of analysis
Mercury	- 28 days from sample collection to completion of analysis

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TABLE 4

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO LABORATORY CONTROL SAMPLE PERCENT RECOVERY VIOLATION GM METAL FABRICATING DIVISION, TRACH 26 SITE PONTIAC, MICHIGAN

Analysis	*Parameters*	*Associated Sample*	*Qualifier*[1]
TCL SVOC	Acenaphthylene	S-10491-030698-SF-053	R
	4-Chlorophenylphenyl ether		R
	Phenanthene		R

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[1]The analysis parameter results should be qualified for the listed sample as:

R – The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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TABLE 5

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO OUTLYING MATRIX SPIKE RECOVERY DATA-METALS GM METAL FABRICATING DIVISION, TRACK 26 SITE PONTIAC, MICHIGAN

Analysis	*Parameters*	*Associated Sample*	*Qualifier*[1]
TAL Metals	Antimony	S-10491-030698-SF-053	UJ
	Arsenic		J
	Selenium		UJ

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[1] The analysis results should be qualified for the listed sample as:

J - The associated value is an estimated quantity.

UJ - The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

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TABLE 6

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO OUTLYING DUPLICATE RPDS-METALS GM METAL FABRICATING DIVISION, TRACK 26 SITE PONTIAC, MICHIGAN

Analysis	*Parameters*	*Associated Sample*	*Qualifier*[1]
TAL Metals	Aluminum	S-10491-030698-SF-053	J
	Barium		J
	Calcium		J
	Chromium		J
	Copper		J
	Iron		J
	Manganese		J
	Nickel		J
	Potassium		J
	Vanadium		J
	Zinc		J

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[1] The analysis results should be qualified for the listed sample as:

J - The associated value is an estimated quantity.

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TOTAL METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.: 122099-TJ-007

Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909171

Matrix (soil/water): SOIL Lab Sample ID: K9909171-001

Level (low/med): LOW Date Received: 12/21/99

% Solids: 94.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3050			P
7440-36-0	Antimony	0.05			MS
7440-38-2	Arsenic	1.7			MS
7440-39-3	Barium	12.9			P
7440-41-7	Beryllium	0.15			MS
7440-43-9	Cadmium	0.06			MS
7440-70-2	Calcium	11800			P
7440-47-3	Chromium	6.56			P
7440-48-4	Cobalt	1.96			MS
7440-50-8	Copper	4.43			MS
7439-89-6	Iron	5010			P
7439-92-1	Lead	2.94			MS
7439-95-4	Magnesium	3310			P
7439-96-5	Manganese	102		*	P
7439-97-6	Mercury	0.01	U		CV
7440-02-0	Nickel	5.20			MS
7440-09-7	Potassium	217	B		P
7782-49-2	Selenium	0.6	U		MS
7440-22-4	Silver	0.020			MS
7440-23-5	Sodium	50.7			P
7440-28-0	Thallium	0.04			MS
7440-62-2	Vanadium	8.12			P
7440-66-6	Zinc	13.3		*	P

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TOTAL METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.: 122099-TJ-008

Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909171

Matrix (soil/water): SOIL Lab Sample ID: K9909171-002

Level (low/med): LOW Date Received: 12/21/99

% Solids: 83.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10400			P
7440-36-0	Antimony	0.10			MS
7440-38-2	Arsenic	2.5			MS
7440-39-3	Barium	60.4			P
7440-41-7	Beryllium	0.52			MS
7440-43-9	Cadmium	0.16			MS
7440-70-2	Calcium	3060			P
7440-47-3	Chromium	17.1			P
7440-48-4	Cobalt	3.68			MS
7440-50-8	Copper	20.1			MS
7439-89-6	Iron	12800			P
7439-92-1	Lead	10.1			MS
7439-95-4	Magnesium	2350			P
7439-96-5	Manganese	77.3		*	P
7439-97-6	Mercury	0.03			CV
7440-02-0	Nickel	13.1			MS
7440-09-7	Potassium	658			P
7782-49-2	Selenium	0.6	U		MS
7440-22-4	Silver	0.058			MS
7440-23-5	Sodium	783			P
7440-28-0	Thallium	0.07			MS
7440-62-2	Vanadium	22.7			P
7440-66-6	Zinc	42.2		*	P

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TOTAL METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.: 122099-TJ-009

Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909171

Matrix (soil/water): SOIL Lab Sample ID: K9909171-003

Level (low/med): LOW Date Received: 12/21/99

% Solids: 90.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5740			P
7440-36-0	Antimony	0.53			MS
7440-38-2	Arsenic	3.3			MS
7440-39-3	Barium	79.6			P
7440-41-7	Beryllium	0.27			MS
7440-43-9	Cadmium	0.37			MS
7440-70-2	Calcium	25500			P
7440-47-3	Chromium	52.9			P
7440-48-4	Cobalt	4.36			MS
7440-50-8	Copper	137			MS
7439-89-6	Iron	26600			P
7439-92-1	Lead	27.4			MS
7439-95-4	Magnesium	4750			P
7439-96-5	Manganese	682		*	P
7439-97-6	Mercury	0.03			CV
7440-02-0	Nickel	63.3			MS
7440-09-7	Potassium	652			P
7782-49-2	Selenium	0.6	U		MS
7440-22-4	Silver	0.156			MS
7440-23-5	Sodium	566			P
7440-28-0	Thallium	0.09			MS
7440-62-2	Vanadium	14.6			P
7440-66-6	Zinc	72.3		*	P

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TOTAL METALS

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.: 122099-TJ-010

Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909171

Matrix (soil/water): SOIL Lab Sample ID: K9909171-004

Level (low/med): LOW Date Received: 12/21/99

% Solids: 85.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8460			P
7440-36-0	Antimony	0.12			MS
7440-38-2	Arsenic	9.4			MS
7440-39-3	Barium	39.8			P
7440-41-7	Beryllium	0.64			MS
7440-43-9	Cadmium	0.16			MS
7440-70-2	Calcium	1820			P
7440-47-3	Chromium	15.7			P
7440-48-4	Cobalt	9.38			MS
7440-50-8	Copper	23.2			MS
7439-89-6	Iron	16900			P
7439-92-1	Lead	14.1			MS
7439-95-4	Magnesium	2870			P
7439-96-5	Manganese	404		*	P
7439-97-6	Mercury	0.01	B		CV
7440-02-0	Nickel	27.7			MS
7440-09-7	Potassium	922			P
7782-49-2	Selenium	0.6	U		MS
7440-22-4	Silver	0.045			MS
7440-23-5	Sodium	156			P
7440-28-0	Thallium	0.30			MS
7440-62-2	Vanadium	20.5			P
7440-66-6	Zinc	40.2		*	P

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Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909171
Project:	Pontiac North Complex A-2 Landfill/13509	**Date Collected:**	12/20/99
Sample Matrix:	Soil	**Date Received:**	12/21/99

Organochlorine Pesticides

Sample Name:	S-13509-122099-TJ-007	Units:	ug/Kg (ppb)
Lab Code:	K9909171-001	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
beta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
gamma-BHC (Lindane)	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
delta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Heptachlor	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Aldrin	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Heptachlor Epoxide	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Gamma-Chlordane	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan I	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
alpha-Chlordane	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Dieldrin	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
4,4'-DDE	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan II	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
4,4'-DDD	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Aldehyde	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
Endosulfan Sulfate	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
4,4'-DDT	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Ketone	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Methoxychlor	EPA 3545	8081A	20	0.3	1	12/29/99	1/5/00	ND	
Toxaphene	EPA 3545	8081A	300	20	1	12/29/99	1/5/00	ND	

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Analytical Report

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Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909171
Project:	Pontiac North Complex A-2 Landfill/13509	**Date Collected:**	12/20/99
Sample Matrix:	Soil	**Date Received:**	12/21/99

Organochlorine Pesticides

Sample Name:	S-13509-122099-TJ-008	Units:	ug/Kg (ppb)
Lab Code:	K9909171-002	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
beta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
gamma-BHC (Lindane)	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
delta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Heptachlor	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Aldrin	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Heptachlor Epoxide	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
gamma-Chlordane	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan I	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
alpha-Chlordane	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Dieldrin	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
4,4'-DDE	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	1	J
Endrin	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan II	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
4,4'-DDD	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Aldehyde	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
Endosulfan Sulfate	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
4,4'-DDT	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Ketone	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Methoxychlor	EPA 3545	8081A	20	0.3	1	12/29/99	1/5/00	ND	
Toxaphene	EPA 3545	8081A	300	20	1	12/29/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909171
Project:	Pontiac North Complex A-2 Landfill/13509	**Date Collected:**	12/20/99
Sample Matrix:	Soil	**Date Received:**	12/21/99

Organochlorine Pesticides

Sample Name:	S-13509-122099-TJ-009	Units:	ug/Kg (ppb)
Lab Code:	K9909171-003	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3545	8081A	10	0.5	1	12/29/99	1/6/00	ND	
beta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/6/00	ND	
gamma-BHC (Lindane)	EPA 3545	8081A	10	0.5	1	12/29/99	1/6/00	ND	
delta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/6/00	ND	
Heptachlor	EPA 3545	8081A	10	0.7	1	12/29/99	1/6/00	ND	
Aldrin	EPA 3545	8081A	10	0.7	1	12/29/99	1/6/00	ND	
Heptachlor Epoxide	EPA 3545	8081A	10	0.4	1	12/29/99	1/6/00	ND	
Gamma-Chlordane	EPA 3545	8081A	10	0.4	1	12/29/99	1/6/00	ND	
Endosulfan I	EPA 3545	8081A	10	0.3	1	12/29/99	1/6/00	ND	
alpha-Chlordane	EPA 3545	8081A	10	0.3	1	12/29/99	1/6/00	ND	
Dieldrin	EPA 3545	8081A	10	0.6	1	12/29/99	1/6/00	ND	
4,4'-DDE	EPA 3545	8081A	10	0.3	1	12/29/99	1/6/00	15	
Endrin	EPA 3545	8081A	10	0.4	1	12/29/99	1/6/00	ND	
Endosulfan II	EPA 3545	8081A	13	0.4	1	12/29/99	1/6/00	ND	B
4,4'-DDD	EPA 3545	8081A	10	0.3	1	12/29/99	1/6/00	3	J
Endrin Aldehyde	EPA 3545	8081A	10	0.6	1	12/29/99	1/6/00	ND	
Endosulfan Sulfate	EPA 3545	8081A	10	0.3	1	12/29/99	1/6/00	ND	
4,4'-DDT	EPA 3545	8081A	10	0.3	1	12/29/99	1/6/00	2	J
Endrin Ketone	EPA 3545	8081A	10	0.3	1	12/29/99	1/6/00	ND	
Methoxychlor	EPA 3545	8081A	20	0.3	1	12/29/99	1/6/00	ND	
Toxaphene	EPA 3545	8081A	300	20	1	12/29/99	1/6/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909171
Project:	Pontiac North Complex A-2 Landfill/13509	**Date Collected:**	12/20/99
Sample Matrix:	Soil	**Date Received:**	12/21/99

Organochlorine Pesticides

Sample Name:	S-13509-122099-TJ-010	Units:	ug/Kg (ppb)
Lab Code:	K9909171-004	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3545	8081A	10	0.5	1	12/29/99	1/6/00	ND	
beta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/6/00	ND	
gamma-BHC (Lindane)	EPA 3545	8081A	10	0.5	1	12/29/99	1/6/00	ND	
delta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/6/00	ND	
Heptachlor	EPA 3545	8081A	10	0.7	1	12/29/99	1/6/00	ND	
Aldrin	EPA 3545	8081A	10	0.7	1	12/29/99	1/6/00	ND	
Heptachlor Epoxide	EPA 3545	8081A	10	0.4	1	12/29/99	1/6/00	ND	
gamma-Chlordane	EPA 3545	8081A	10	0.4	1	12/29/99	1/6/00	ND	
Endosulfan I	EPA 3545	8081A	10	0.3	1	12/29/99	1/6/00	ND	
alpha-Chlordane	EPA 3545	8081A	10	0.3	1	12/29/99	1/6/00	ND	
Dieldrin	EPA 3545	8081A	10	0.6	1	12/29/99	1/6/00	ND	
4,4'-DDE	EPA 3545	8081A	10	0.3	1	12/29/99	1/6/00	ND	
Endrin	EPA 3545	8081A	10	0.4	1	12/29/99	1/6/00	ND	
Endosulfan II	EPA 3545	8081A	10	0.4	1	12/29/99	1/6/00	ND	
4,4'-DDD	EPA 3545	8081A	10	0.3	1	12/29/99	1/6/00	ND	
Endrin Aldehyde	EPA 3545	8081A	10	0.6	1	12/29/99	1/6/00	ND	
Endosulfan Sulfate	EPA 3545	8081A	10	0.3	1	12/29/99	1/6/00	ND	
4,4'-DDT	EPA 3545	8081A	10	0.3	1	12/29/99	1/6/00	ND	
Endrin Ketone	EPA 3545	8081A	10	0.3	1	12/29/99	1/6/00	ND	
Methoxychlor	EPA 3545	8081A	20	0.3	1	12/29/99	1/6/00	ND	
Toxaphene	EPA 3545	8081A	300	20	1	12/29/99	1/6/00	ND	

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lient:	Conestoga Rovers & Assoc.	**Service Request:**	K9909171
Project:	Pontiac North Complex A-2 Landfill/13509	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA

Organochlorine Pesticides

Sample Name:	Method Blank	Units:	ug/Kg (ppb)
Lab Code:	K991229-MB	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
beta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
gamma-BHC (Lindane)	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
delta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Heptachlor	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Aldrin	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
ptachlor Epoxide	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
amma-Chlordane	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan I	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
alpha-Chlordane	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Dieldrin	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
4,4'-DDE	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan II	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
4,4'-DDD	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Aldehyde	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
Endosulfan Sulfate	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
4,4'-DDT	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Ketone	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Methoxychlor	EPA 3545	8081A	20	0.3	1	12/29/99	1/5/00	ND	
Toxaphene	EPA 3545	8081A	300	20	1	12/29/99	1/5/00	ND	

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Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909171
Project:	Pontiac North Complex A-2 Landfill/13509	**Date Collected:**	12/20/99
Sample Matrix:	Soil	**Date Received:**	12/21/99

Polychlorinated Biphenyls (PCBs)

Sample Name:	S-13509-122099-TJ-007	Units:	mg/Kg (ppm)
Lab Code:	K9909171-001	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1221	EPA 3545	8082	0.2	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1232	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1242	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1248	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	0.05	J
Aroclor 1254	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1260	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909171
Project:	Pontiac North Complex A-2 Landfill/13509	**Date Collected:**	12/20/99
Sample Matrix:	Soil	**Date Received:**	12/21/99

Polychlorinated Biphenyls (PCBs)

Sample Name: S-13509-122099-TJ-008
Lab Code: K9909171-002
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	ND	
Aroclor 1221	EPA 3545	8082	0.2	0.03	1	12/29/99	1/6/00	ND	
Aroclor 1232	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	ND	
Aroclor 1242	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	ND	
Aroclor 1248	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	0.05	J
Aroclor 1254	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	ND	
roclor 1260	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	ND	

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Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909171
Project:	Pontiac North Complex A-2 Landfill/13509	**Date Collected:**	12/20/99
Sample Matrix:	Soil	**Date Received:**	12/21/99

Polychlorinated Biphenyls (PCBs)

Sample Name: S-13509-122099-TJ-009
Lab Code: K9909171-003
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	ND	
Aroclor 1221	EPA 3545	8082	0.2	0.03	1	12/29/99	1/6/00	ND	
Aroclor 1232	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	ND	
Aroclor 1242	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	ND	
Aroclor 1248	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	0.8	
Aroclor 1254	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	ND	
Aroclor 1260	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	ND	

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Analytical Report

lient:	Conestoga Rovers & Assoc.	**Service Request:**	K9909171
Project:	Pontiac North Complex A-2 Landfill/13509	**Date Collected:**	12/20/99
Sample Matrix:	Soil	**Date Received:**	12/21/99

Polychlorinated Biphenyls (PCBs)

Sample Name:	S-13509-122099-TJ-010	Units:	mg/Kg (ppm)
Lab Code:	K9909171-004	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	ND	
Aroclor 1221	EPA 3545	8082	0.2	0.03	1	12/29/99	1/6/00	ND	
Aroclor 1232	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	ND	
Aroclor 1242	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	ND	
Aroclor 1248	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	ND	
Aroclor 1254	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	ND	
roclor 1260	EPA 3545	8082	0.1	0.03	1	12/29/99	1/6/00	ND	

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Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909171
Project:	Pontiac North Complex A-2 Landfill/13509	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA

Polychlorinated Biphenyls (PCBs)

Sample Name:	Method Blank	Units:	mg/Kg (ppm)
Lab Code:	K991229-MB	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1221	EPA 3545	8082	0.2	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1232	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1242	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1248	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1254	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1260	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	

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Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909171
Project:	Pontiac North Complex A-2 Landfill/13509	**Date Collected:**	12/20/99
Sample Matrix:	Soil	**Date Received:**	12/21/99

Volatile Organic Compounds by GC/MS

Sample Name: S-13509-122099-TJ-007
Lab Code: K9909171-001
Test Notes:

Units: ug/Kg (ppb)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
Vinyl Chloride	EPA 5035	8260B	53	30	1	12/21/99	1/3/00	ND	
Bromomethane	EPA 5035	8260B	53	30	1	12/21/99	1/3/00	ND	
Chloroethane	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
Acetone	EPA 5035	8260B	1100	800	1	12/21/99	1/3/00	ND	
1,1-Dichloroethene	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
Carbon Disulfide	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
Methylene Chloride	EPA 5035	8260B	260	30	1	12/21/99	1/3/00	ND	
trans-1,2-Dichloroethene	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
1,1-Dichloroethane	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
2-Butanone (MEK)	EPA 5035	8260B	1100	600	1	12/21/99	1/3/00	ND	
cis-1,2-Dichloroethene	EPA 5035	8260B	53	30	1	12/21/99	1/3/00	ND	
Chloroform	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	33	J,E
1,1,1-Trichloroethane (TCA	EPA 5035	8260B	53	30	1	12/21/99	1/3/00	ND	
Carbon Tetrachloride	EPA 5035	8260B	53	30	1	12/21/99	1/3/00	ND	
1,2-Dichloroethane (EDC)	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
Benzene	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
Trichloroethene (TCE)	EPA 5035	8260B	53	30	1	12/21/99	1/3/00	ND	
1,2-Dichloropropane	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
Bromodichloromethane	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
2-Hexanone	EPA 5035	8260B	1100	600	1	12/21/99	1/3/00	ND	
cis-1,3-Dichloropropene	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
Toluene	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
trans-1,3-Dichloropropene	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
1,1,2-Trichloroethane	EPA 5035	8260B	53	30	1	12/21/99	1/3/00	ND	
4-Methyl-2-pentanone (MIB	EPA 5035	8260B	1100	700	1	12/21/99	1/3/00	ND	
Tetrachloroethene (PCE)	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
Dibromochloromethane	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
Chlorobenzene	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
Ethylbenzene	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
m,p-Xylenes	EPA 5035	8260B	100	40	1	12/21/99	1/3/00	ND	
o-Xylene	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
Styrene	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
Bromoform	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5035	8260B	53	20	1	12/21/99	1/3/00	ND	

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E Estimated concentration; see case narrative.

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Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Soil

Service Request: K9909171
Date Collected: 12/20/99
Date Received: 12/21/99

Volatile Organic Compounds by GC/MS

Sample Name: S-13509-122099-TJ-008
Lab Code: K9909171-002
Test Notes:

Units: ug/Kg (ppb)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
Vinyl Chloride	EPA 5035	8260B	60	30	1	12/21/99	1/3/00	ND	
Bromomethane	EPA 5035	8260B	60	30	1	12/21/99	1/3/00	ND	
Chloroethane	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
Acetone	EPA 5035	8260B	1200	800	1	12/21/99	1/3/00	ND	
1,1-Dichloroethene	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
Carbon Disulfide	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
Methylene Chloride	EPA 5035	8260B	300	30	1	12/21/99	1/3/00	ND	
trans-1,2-Dichloroethene	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
1,1-Dichloroethane	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
2-Butanone (MEK)	EPA 5035	8260B	1200	600	1	12/21/99	1/3/00	ND	
cis-1,2-Dichloroethene	EPA 5035	8260B	60	30	1	12/21/99	1/3/00	ND	
Chloroform	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	46	J,E
1,1,1-Trichloroethane (TCA	EPA 5035	8260B	60	30	1	12/21/99	1/3/00	ND	
Carbon Tetrachloride	EPA 5035	8260B	60	30	1	12/21/99	1/3/00	ND	
1,2-Dichloroethane (EDC)	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
Benzene	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
Trichloroethene (TCE)	EPA 5035	8260B	30	30	1	12/21/99	1/3/00	ND	
1,2-Dichloropropane	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
Bromodichloromethane	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
2-Hexanone	EPA 5035	8260B	1200	600	1	12/21/99	1/3/00	ND	
cis-1,3-Dichloropropene	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
Toluene	EPA 5035	8260B	30	20	1	12/21/99	1/3/00	ND	
trans-1,3-Dichloropropene	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
1,1,2-Trichloroethane	EPA 5035	8260B	60	30	1	12/21/99	1/3/00	ND	
4-Methyl-2-pentanone (MIB	EPA 5035	8260B	1200	700	1	12/21/99	1/3/00	ND	
Tetrachloroethene (PCE)	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
Dibromochloromethane	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
Chlorobenzene	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
Ethylbenzene	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
m,p-Xylenes	EPA 5035	8260B	120	40	1	12/21/99	1/3/00	ND	
o-Xylene	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
Styrene	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
Bromoform	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5035	8260B	60	20	1	12/21/99	1/3/00	ND	

E Estimated concentration; see case narrative.

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Soil

Service Request: K9909171
Date Collected: 12/20/99
Date Received: 12/21/99

Volatile Organic Compounds by GC/MS

Sample Name: S-13509-122099-TJ-009
Lab Code: K9909171-003
Test Notes:

Units: ug/Kg (ppb)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
Vinyl Chloride	EPA 5035	8260B	55	30	1	12/21/99	1/3/00	ND	
Bromomethane	EPA 5035	8260B	55	30	1	12/21/99	1/3/00	ND	
Chloroethane	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
Acetone	EPA 5035	8260B	1100	800	1	12/21/99	1/3/00	ND	
1,1-Dichloroethene	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
Carbon Disulfide	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
Methylene Chloride	EPA 5035	8260B	280	30	1	12/21/99	1/3/00	ND	
trans-1,2-Dichloroethene	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
1,1-Dichloroethane	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
2-Butanone (MEK)	EPA 5035	8260B	1100	600	1	12/21/99	1/3/00	ND	
cis-1,2-Dichloroethene	EPA 5035	8260B	55	30	1	12/21/99	1/3/00	ND	
Chloroform	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	33	J,E
1,1,1-Trichloroethane (TCA	EPA 5035	8260B	55	30	1	12/21/99	1/3/00	ND	
Carbon Tetrachloride	EPA 5035	8260B	55	30	1	12/21/99	1/3/00	ND	
1,2-Dichloroethane (EDC)	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
Benzene	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
Trichloroethene (TCE)	EPA 5035	8260B	55	30	1	12/21/99	1/3/00	ND	
1,2-Dichloropropane	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
Bromodichloromethane	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
2-Hexanone	EPA 5035	8260B	1100	600	1	12/21/99	1/3/00	ND	
cis-1,3-Dichloropropene	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
Toluene	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
trans-1,3-Dichloropropene	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
1,1,2-Trichloroethane	EPA 5035	8260B	55	30	1	12/21/99	1/3/00	ND	
4-Methyl-2-pentanone (MIB	EPA 5035	8260B	1100	700	1	12/21/99	1/3/00	ND	
Tetrachloroethene (PCE)	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
Dibromochloromethane	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
Chlorobenzene	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
Ethylbenzene	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
m,p-Xylenes	EPA 5035	8260B	110	40	1	12/21/99	1/3/00	ND	
o-Xylene	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
Styrene	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
Bromoform	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5035	8260B	55	20	1	12/21/99	1/3/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill
Sample Matrix: Soil

Service Request: K9909171
Date Collected: 12/20/99
Date Received: 12/21/99

Volatile Organic Compounds by GC/MS

Sample Name: S-13509-122099-TJ-010
Lab Code: K9909171-004
Test Notes:

Units: ug/Kg (ppb)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
Vinyl Chloride	EPA 5035	8260B	58	30	1	12/21/99	1/3/00	ND	
Bromomethane	EPA 5035	8260B	58	30	1	12/21/99	1/3/00	ND	
Chloroethane	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
Acetone	EPA 5035	8260B	1200	800	1	12/21/99	1/3/00	ND	
1,1-Dichloroethene	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
Carbon Disulfide	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
Methylene Chloride	EPA 5035	8260B	290	30	1	12/21/99	1/3/00	ND	
trans-1,2-Dichloroethene	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
1,1-Dichloroethane	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
2-Butanone (MEK)	EPA 5035	8260B	1200	600	1	12/21/99	1/3/00	ND	
cis-1,2-Dichloroethene	EPA 5035	8260B	58	30	1	12/21/99	1/3/00	ND	
Chloroform	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	38	J,E
1,1,1-Trichloroethane (TCA	EPA 5035	8260B	58	30	1	12/21/99	1/3/00	ND	
Carbon Tetrachloride	EPA 5035	8260B	58	30	1	12/21/99	1/3/00	ND	
1,2-Dichloroethane (EDC)	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
Benzene	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
Trichloroethene (TCE)	EPA 5035	8260B	58	30	1	12/21/99	1/3/00	ND	
1,2-Dichloropropane	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
Bromodichloromethane	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
2-Hexanone	EPA 5035	8260B	1200	600	1	12/21/99	1/3/00	ND	
cis-1,3-Dichloropropene	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
Toluene	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
trans-1,3-Dichloropropene	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
1,1,2-Trichloroethane	EPA 5035	8260B	58	30	1	12/21/99	1/3/00	ND	
4-Methyl-2-pentanone (MIB	EPA 5035	8260B	1200	700	1	12/21/99	1/3/00	ND	
Tetrachloroethene (PCE)	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
Dibromochloromethane	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
Chlorobenzene	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
Ethylbenzene	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
m,p-Xylenes	EPA 5035	8260B	120	40	1	12/21/99	1/3/00	ND	
o-Xylene	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
Styrene	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
Bromoform	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5035	8260B	58	20	1	12/21/99	1/3/00	ND	

E Estimated concentration; see case narrative.

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Soil

Service Request: K9909171
Date Collected: NA
Date Received: NA

Volatile Organic Compounds by GC/MS

Sample Name: Method Blank
Lab Code: KWG2000010-4
Test Notes:

Units: ug/Kg (ppb)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
Vinyl Chloride	EPA 5035	8260B	50	30	1	12/21/99	1/4/00	ND	
Bromomethane	EPA 5035	8260B	50	30	1	12/21/99	1/4/00	ND	
Chloroethane	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
Acetone	EPA 5035	8260B	1000	800	1	12/21/99	1/4/00	ND	
1,1-Dichloroethene	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
Carbon Disulfide	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
Methylene Chloride	EPA 5035	8260B	250	30	1	12/21/99	1/4/00	ND	
trans-1,2-Dichloroethene	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
1,1-Dichloroethane	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
2-Butanone (MEK)	EPA 5035	8260B	1000	600	1	12/21/99	1/4/00	ND	
cis-1,2-Dichloroethene	EPA 5035	8260B	50	30	1	12/21/99	1/4/00	ND	
Chloroform	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	35	J
1,1,1-Trichloroethane (TCA	EPA 5035	8260B	50	30	1	12/21/99	1/4/00	ND	
Carbon Tetrachloride	EPA 5035	8260B	50	30	1	12/21/99	1/4/00	ND	
1,2-Dichloroethane (EDC)	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
Benzene	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
Trichloroethene (TCE)	EPA 5035	8260B	50	30	1	12/21/99	1/4/00	ND	
1,2-Dichloropropane	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
Bromodichloromethane	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
2-Hexanone	EPA 5035	8260B	1000	600	1	12/21/99	1/4/00	ND	
cis-1,3-Dichloropropene	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
Toluene	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
trans-1,3-Dichloropropene	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
1,1,2-Trichloroethane	EPA 5035	8260B	50	30	1	12/21/99	1/4/00	ND	
4-Methyl-2-pentanone (MIB	EPA 5035	8260B	1000	700	1	12/21/99	1/4/00	ND	
Tetrachloroethene (PCE)	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
Dibromochloromethane	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
Chlorobenzene	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
Ethylbenzene	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
m,p-Xylenes	EPA 5035	8260B	100	40	1	12/21/99	1/4/00	ND	
o-Xylene	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
Styrene	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
Bromoform	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5035	8260B	50	20	1	12/21/99	1/4/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Soil

Service Request: K9909171
Date Collected: 12/20/99
Date Received: 12/21/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-122099-TJ-007
Lab Code: K9909171-001
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Bis(2-chloroethyl) Ether	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Phenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Chlorophenol	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
1,3-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,4-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,2-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
2-Methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Hexachloroethane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
N-Nitrosodi-n-propylamine	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
3- and 4-Methylphenol Coelut	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Nitrobenzene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Isophorone	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Nitrophenol	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dimethylphenol	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Bis(2-chloroethoxy)methane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
1,2,4-Trichlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Naphthalene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
4-Chloroaniline	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Hexachlorobutadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chloro-3-methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Methylnaphthalene	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Hexachlorocyclopentadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4,6-Trichlorophenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2,4,5-Trichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Chloronaphthalene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
2-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
Acenaphthylene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Dimethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
2,6-Dinitrotoluene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Acenaphthene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
3-Nitroaniline	EPA 3550B	8270C	1.7	0.07	1	12/23/99	1/5/00	ND	
2,4-Dinitrophenol	EPA 3550B	8270C	1.7	0.09	1	12/23/99	1/5/00	ND	
Dibenzofuran	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Nitrophenol	EPA 3550B	8270C	1.7	0.08	1	12/23/99	1/5/00	ND	
2,4-Dinitrotoluene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluorene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	0.2	J
4-Chlorophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Diethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
4-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3550B	8270C	1.7	0.03	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909171
Project:	Pontiac North Complex A-2 Landfill/13509	**Date Collected:**	12/20/99
Sample Matrix:	Soil	**Date Received:**	12/21/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-122099-TJ-007
Lab Code: K9909171-001
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodiphenylamine	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Hexachlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Pentachlorophenol (PCP)	EPA 3550B	8270C	2	0.05	1	12/23/99	1/5/00	ND	
Phenanthrene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	0.7	
Anthracene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	0.1	J
Carbazole	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Di-n-butyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	0.08	J
Pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	0.1	J
Butyl Benzyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
3,3'-Dichlorobenzidine	EPA 3550B	8270C	2	0.04	1	12/23/99	1/5/00	ND	
Benz(a)anthracene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Chrysene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	0.1	J
Di-n-octyl Phthalate	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Benzo(b)fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Benzo(k)fluoranthene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
[illegible]nzo(a)pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
[illegible]eno(1,2,3-cd)pyrene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	
Dibenz(a,h)anthracene	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Benzo(g,h,i)perylene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13502
Sample Matrix: Soil

Service Request: K9909171
Date Collected: 12/20/99
Date Received: 12/21/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-122099-TJ-008
Lab Code: K9909171-002
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Bis(2-chloroethyl) Ether	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Phenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Chlorophenol	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
1,3-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,4-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,2-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
2-Methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Hexachloroethane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
N-Nitrosodi-n-propylamine	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
3- and 4-Methylphenol Coelut	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Nitrobenzene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Isophorone	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Nitrophenol	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dimethylphenol	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Bis(2-chloroethoxy)methane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
1,2,4-Trichlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Naphthalene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
4-Chloroaniline	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Hexachlorobutadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chloro-3-methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Methylnaphthalene	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Hexachlorocyclopentadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4,6-Trichlorophenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2,4,5-Trichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Chloronaphthalene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
2-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
Acenaphthylene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Dimethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
2,6-Dinitrotoluene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Acenaphthene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
3-Nitroaniline	EPA 3550B	8270C	1.7	0.07	1	12/23/99	1/5/00	ND	
2,4-Dinitrophenol	EPA 3550B	8270C	1.7	0.09	1	12/23/99	1/5/00	ND	
Dibenzofuran	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Nitrophenol	EPA 3550B	8270C	1.7	0.08	1	12/23/99	1/5/00	ND	
2,4-Dinitrotoluene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluorene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chlorophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Diethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
4-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3550B	8270C	1.7	0.03	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Soil

Service Request: K9909171
Date Collected: 12/20/99
Date Received: 12/21/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-122099-TJ-008
Lab Code: K9909171-002
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodiphenylamine	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Hexachlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Pentachlorophenol (PCP)	EPA 3550B	8270C	2	0.05	1	12/23/99	1/5/00	ND	
Phenanthrene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Anthracene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Carbazole	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Di-n-butyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Butyl Benzyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
3,3'-Dichlorobenzidine	EPA 3550B	8270C	2	0.94	1	12/23/99	1/5/00	ND	
Benz(a)anthracene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Chrysene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	0.2	J
Di-n-octyl Phthalate	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Benzo(b)fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Benzo(k)fluoranthene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
nzo(a)pyrene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
leno(1,2,3-cd)pyrene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	
Dibenz(a,h)anthracene	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Benzo(g,h,i)perylene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Soil

Service Request: K9909171
Date Collected: 12/20/99
Date Received: 12/21/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-122099-TJ-009
Lab Code: K9909171-003
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Bis(2-chloroethyl) Ether	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Phenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Chlorophenol	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
1,3-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,4-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,2-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
2-Methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Hexachloroethane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
N-Nitrosodi-n-propylamine	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
3- and 4-Methylphenol Coelut	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Nitrobenzene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Isophorone	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Nitrophenol	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dimethylphenol	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Bis(2-chloroethoxy)methane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
1,2,4-Trichlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Naphthalene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	0.7	
4-Chloroaniline	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Hexachlorobutadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chloro-3-methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Methylnaphthalene	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	0.8	
Hexachlorocyclopentadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4,6-Trichlorophenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2,4,5-Trichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Chloronaphthalene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
2-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
Acenaphthylene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	0.3	J
Dimethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
2,6-Dinitrotoluene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Acenaphthene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	0.6	
3-Nitroaniline	EPA 3550B	8270C	1.7	0.07	1	12/23/99	1/5/00	ND	
2,4-Dinitrophenol	EPA 3550B	8270C	1.7	0.09	1	12/23/99	1/5/00	ND	
Dibenzofuran	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	0.5	
4-Nitrophenol	EPA 3550B	8270C	1.7	0.08	1	12/23/99	1/5/00	ND	
2,4-Dinitrotoluene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluorene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	1.2	
4-Chlorophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Diethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
4-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3550B	8270C	1.7	0.03	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Soil

Service Request: K9909171
Date Collected: 12/20/99
Date Received: 12/21/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-122099-TJ-009
Lab Code: K9909171-003
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodiphenylamine	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Hexachlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Pentachlorophenol (PCP)	EPA 3550B	8270C	2	0.05	1	12/23/99	1/5/00	ND	
Phenanthrene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	5.4	
Anthracene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	1.4	
Carbazole	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	0.7	
Di-n-butyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	5.8	
Pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	5.6	
Butyl Benzyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	0.4	
3,3'-Dichlorobenzidine	EPA 3550B	8270C	2	0.04	1	12/23/99	1/5/00	ND	
Benz(a)anthracene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	3.6	
Chrysene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	3.3	
Bis(2-ethylhexyl) Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	0.2	J
Di-n-octyl Phthalate	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Benzo(b)fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	3.0	
Benzo(k)fluoranthene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	2.2	
Benzo(a)pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	2.8	
Indeno(1,2,3-cd)pyrene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	1.2	
Dibenz(a,h)anthracene	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	0.4	
Benzo(g,h,i)perylene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	0.9	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Soil

Service Request: K9909171
Date Collected: 12/20/99
Date Received: 12/21/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-122099-TJ-010
Lab Code: K9909171-004
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Bis(2-chloroethyl) Ether	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Phenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Chlorophenol	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
1,3-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,4-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,2-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
2-Methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Hexachloroethane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
N-Nitrosodi-n-propylamine	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
3- and 4-Methylphenol Coelut	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Nitrobenzene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Isophorone	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Nitrophenol	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dimethylphenol	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Bis(2-chloroethoxy)methane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
1,2,4-Trichlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Naphthalene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
4-Chloroaniline	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Hexachlorobutadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chloro-3-methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Methylnaphthalene	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Hexachlorocyclopentadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4,6-Trichlorophenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2,4,5-Trichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Chloronaphthalene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
2-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
Acenaphthylene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Dimethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
2,6-Dinitrotoluene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Acenaphthene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
3-Nitroaniline	EPA 3550B	8270C	1.7	0.07	1	12/23/99	1/5/00	ND	
2,4-Dinitrophenol	EPA 3550B	8270C	1.7	0.09	1	12/23/99	1/5/00	ND	
Dibenzofuran	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Nitrophenol	EPA 3550B	8270C	1.7	0.08	1	12/23/99	1/5/00	ND	
2,4-Dinitrotoluene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluorene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chlorophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Diethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
4-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3550B	8270C	1.7	0.03	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
mple Matrix: Soil

Service Request: K9909171
Date Collected: 12/20/99
Date Received: 12/21/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-122099-TJ-010
Lab Code: K9909171-004
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodiphenylamine	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Hexachlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Pentachlorophenol (PCP)	EPA 3550B	8270C	2	0.05	1	12/23/99	1/5/00	ND	
Phenanthrene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Anthracene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Carbazole	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Di-n-butyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Butyl Benzyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
3,3'-Dichlorobenzidine	EPA 3550B	8270C	2	0.04	1	12/23/99	1/5/00	ND	
Benz(a)anthracene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Chrysene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
Di-n-octyl Phthalate	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Benzo(b)fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Benzo(k)fluoranthene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
ızo(a)pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
eno(1,2,3-cd)pyrene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	
Dibenz(a,h)anthracene	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Benzo(g,h,i)perylene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/13509
Sample Matrix: Soil

Service Request: K9909171
Date Collected: NA
Date Received: NA

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG9904537-8
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Bis(2-chloroethyl) Ether	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Phenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Chlorophenol	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
1,3-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,4-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,2-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
2-Methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Hexachloroethane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
N-Nitrosodi-n-propylamine	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
3- and 4-Methylphenol Coelut	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Nitrobenzene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Isophorone	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Nitrophenol	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dimethylphenol	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Bis(2-chloroethoxy)methane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
1,2,4-Trichlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Naphthalene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
4-Chloroaniline	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Hexachlorobutadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chloro-3-methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Methylnaphthalene	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Hexachlorocyclopentadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4,6-Trichlorophenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2,4,5-Trichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Chloronaphthalene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
2-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
Acenaphthylene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Dimethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
2,6-Dinitrotoluene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Acenaphthene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
3-Nitroaniline	EPA 3550B	8270C	1.7	0.07	1	12/23/99	1/5/00	ND	
2,4-Dinitrophenol	EPA 3550B	8270C	1.7	0.09	1	12/23/99	1/5/00	ND	
Dibenzofuran	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Nitrophenol	EPA 3550B	8270C	1.7	0.08	1	12/23/99	1/5/00	ND	
2,4-Dinitrotoluene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluorene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chlorophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Diethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
4-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3550B	8270C	1.7	0.03	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex A-2 Landfill/013509
Sample Matrix: Soil

Service Request: K9909171
Date Collected: NA
Date Received: NA

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG9904537-8
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodiphenylamine	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Hexachlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Pentachlorophenol (PCP)	EPA 3550B	8270C	2	0.05	1	12/23/99	1/5/00	ND	
Phenanthrene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Anthracene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Carbazole	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Di-n-butyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Butyl Benzyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
3,3'-Dichlorobenzidine	EPA 3550B	8270C	2	0.04	1	12/23/99	1/5/00	ND	
Benz(a)anthracene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Chrysene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
Di-n-octyl Phthalate	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Benzo(b)fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Benzo(k)fluoranthene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
zo(a)pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
no(1,2,3-cd)pyrene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	
Dibenz(a,h)anthracene	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Benzo(g,h,i)perylene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909132
Project:	Pontiac North Complex-A-Z Landfill/13509	**Date Collected:**	12/16 - 12/17/99
Sample Matrix:	Soil	**Date Received:**	12/18/99

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Analyzed	Result	Result Notes
S-13509-121699-TJ-001	K9909132-001	12/20/99	89.3	
S-13509-121699-TJ-002	K9909132-002	12/20/99	86.8	
S-13509-121699-TJ-003	K9909132-003	12/20/99	87.0	
S-13509-121699-TJ-004	K9909132-004	12/20/99	88.9	
S-13509-121799-TJ-005	K9909132-005	12/20/99	84.5	
S-13509-121799-TJ-006	K9909132-006	12/20/99	87.0	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/16/99
Date Received: 12/18/99

Cyanide, Total

Prep Method: NONE
Analysis Method: 9010
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
S-13509-121699-TJ-001	K9909132-001	0.5	0.1	1	NA	12/20/99	0.5	
S-13509-121699-TJ-002	K9909132-002	0.5	0.1	1	NA	12/20/99	0.2	J
S-13509-121699-TJ-003	K9909132-003	0.5	0.1	1	NA	12/20/99	2.8	
S-13509-121699-TJ-004	K9909132-004	0.5	0.1	1	NA	12/20/99	1.6	
S-13509-121799-TJ-005	K9909132-005	0.5	0.1	1	NA	12/20/99	ND	
S-13509-121799-TJ-006	K9909132-006	0.5	0.1	1	NA	12/20/99	0.1	J
Method Blank	K9909132-MB	0.5	0.1	1	NA	12/20/99	ND	

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TOTAL METALS
- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

Contract: Conestoga Rovers & Assoc. SDG No.: K9909132

Lab Code: KLAB Case No.: 13509 SAS No.:

SOW No.: SW846

Sample No.	Lab Sample ID.
121699-TJ-001	K9909132-001
121699-TJ-002	K9909132-002
121699-TJ-003	K9909132-003
121699-TJ-004	K9909132-004
121799-TJ-005	K9909132-005
121799-TJ-006	K9909132-006
Batch QC	K9909171-003D
Batch QC	K9909171-003S

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Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name: JEFF CORONADO

Date: 1/10/08 Title: METALS LAB MANAGER

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TOTAL METALS

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.: 121699-TJ-001

Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909132

Matrix (soil/water): SOIL Lab Sample ID: K9909132-001

Level (low/med): LOW Date Received: 12/18/99

% Solids: 89.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6520			P
7440-36-0	Antimony	0.14			MS
7440-38-2	Arsenic	5.0			MS
7440-39-3	Barium	36.7			P
7440-41-7	Beryllium	0.28			MS
7440-43-9	Cadmium	0.16			MS
7440-70-2	Calcium	7580			P
7440-47-3	Chromium	11.5			P
7440-48-4	Cobalt	6.04			MS
7440-50-8	Copper	12.0			MS
7439-89-6	Iron	14500			P
7439-92-1	Lead	6.74			MS
7439-95-4	Magnesium	18800			P
7439-96-5	Manganese	412		*	P
7439-97-6	Mercury	0.01	U		CV
7440-02-0	Nickel	16.1			MS
7440-09-7	Potassium	898			P
7782-49-2	Selenium	0.6	U		MS
7440-22-4	Silver	0.040			MS
7440-23-5	Sodium	1710			P
7440-28-0	Thallium	0.16			MS
7440-62-2	Vanadium	17.8			P
7440-66-6	Zinc	33.1		*	P

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SAMPLE NO.: 121699-TJ-002

Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909132

Matrix (soil/water): SOIL Lab Sample ID: K9909132-002

Level (low/med): LOW Date Received: 12/18/99

% Solids: 86.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10400			P
7440-36-0	Antimony	0.24			MS
7440-38-2	Arsenic	6.0			MS
7440-39-3	Barium	63.0			P
7440-41-7	Beryllium	0.48			MS
7440-43-9	Cadmium	0.27			MS
7440-70-2	Calcium	2380			P
7440-47-3	Chromium	41.1			P
7440-48-4	Cobalt	6.74			MS
7440-50-8	Copper	113			MS
7439-89-6	Iron	22400			P
7439-92-1	Lead	20.0			MS
7439-95-4	Magnesium	9750			P
7439-96-5	Manganese	353		*	P
7439-97-6	Mercury	0.03			CV
7440-02-0	Nickel	53.3			MS
7440-09-7	Potassium	975			P
7782-49-2	Selenium	0.6	U		MS
7440-22-4	Silver	0.081			MS
7440-23-5	Sodium	1800			P
7440-28-0	Thallium	0.21			MS
7440-62-2	Vanadium	24.3			P
7440-66-6	Zinc	75.8		*	P

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.: 121699-TJ-003

Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909132

Matrix (soil/water): SOIL Lab Sample ID: K9909132-003

Level (low/med): LOW Date Received: 12/18/99

% Solids: 87.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5450			P
7440-36-0	Antimony	1.79			MS
7440-38-2	Arsenic	6.8			MS
7440-39-3	Barium	101			P
7440-41-7	Beryllium	0.37			MS
7440-43-9	Cadmium	2.65			MS
7440-70-2	Calcium	28300			P
7440-47-3	Chromium	152			P
7440-48-4	Cobalt	7.47			MS
7440-50-8	Copper	693			MS
7439-89-6	Iron	51700			P
7439-92-1	Lead	73.1			MS
7439-95-4	Magnesium	7440			P
7439-96-5	Manganese	768		*	P
7439-97-6	Mercury	0.08			CV
7440-02-0	Nickel	165			MS
7440-09-7	Potassium	648			P
7782-49-2	Selenium	0.7	B		MS
7440-22-4	Silver	0.294			MS
7440-23-5	Sodium	2370			P
7440-28-0	Thallium	0.15			MS
7440-62-2	Vanadium	18.4			P
7440-66-6	Zinc	206		*	P

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.: 121699-TJ-004

Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909132

Matrix (soil/water): SOIL Lab Sample ID: K9909132-004

Level (low/med): LOW Date Received: 12/18/99

% Solids: 88.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6980			P
7440-36-0	Antimony	0.92			MS
7440-38-2	Arsenic	5.7			MS
7440-39-3	Barium	111			P
7440-41-7	Beryllium	0.37			MS
7440-43-9	Cadmium	2.22			MS
7440-70-2	Calcium	32000			P
7440-47-3	Chromium	16.2			P
7440-48-4	Cobalt	6.85			MS
7440-50-8	Copper	102			MS
7439-89-6	Iron	24300			P
7439-92-1	Lead	48.9			MS
7439-95-4	Magnesium	7910			P
7439-96-5	Manganese	617		*	P
7439-97-6	Mercury	0.05			CV
7440-02-0	Nickel	52.4			MS
7440-09-7	Potassium	867			P
7782-49-2	Selenium	0.6	B		MS
7440-22-4	Silver	0.144			MS
7440-23-5	Sodium	1110			P
7440-28-0	Thallium	0.15			MS
7440-62-2	Vanadium	19.5			P
7440-66-6	Zinc	109		*	P

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SAMPLE NO.

121799-TJ-005

Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909132

Matrix (soil/water): SOIL Lab Sample ID: K9909132-005

Level (low/med): LOW Date Received: 12/18/99

% Solids: 84.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10300			P
7440-36-0	Antimony	0.17			MS
7440-38-2	Arsenic	1.1			MS
7440-39-3	Barium	61.2			P
7440-41-7	Beryllium	0.52			MS
7440-43-9	Cadmium	0.26			MS
7440-70-2	Calcium	2490			P
7440-47-3	Chromium	20.0			P
7440-48-4	Cobalt	7.21			MS
7440-50-8	Copper	37.8			MS
7439-89-6	Iron	19100			P
7439-92-1	Lead	14.7			MS
7439-95-4	Magnesium	2580			P
7439-96-5	Manganese	251		*	P
7439-97-6	Mercury	0.03			CV
7440-02-0	Nickel	43.0			MS
7440-09-7	Potassium	680			P
7782-49-2	Selenium	0.6	U		MS
7440-22-4	Silver	0.046			MS
7440-23-5	Sodium	236			P
7440-28-0	Thallium	0.14			MS
7440-62-2	Vanadium	27.8			P
7440-66-6	Zinc	42.8		*	P

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SAMPLE NO.: 121799-TJ-006

Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909132

Matrix (soil/water): SOIL Lab Sample ID: K9909132-006

Level (low/med): LOW Date Received: 12/18/99

% Solids: 87.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9730			P
7440-36-0	Antimony	0.36			MS
7440-38-2	Arsenic	2.8			MS
7440-39-3	Barium	86.4			P
7440-41-7	Beryllium	0.52			MS
7440-43-9	Cadmium	0.45			MS
7440-70-2	Calcium	13600			P
7440-47-3	Chromium	73.4			P
7440-48-4	Cobalt	5.31			MS
7440-50-8	Copper	183			MS
7439-89-6	Iron	17600			P
7439-92-1	Lead	37.6			MS
7439-95-4	Magnesium	4400			P
7439-96-5	Manganese	543		*	P
7439-97-6	Mercury	0.02	B		CV
7440-02-0	Nickel	168			MS
7440-09-7	Potassium	590			P
7782-49-2	Selenium	0.6	U		MS
7440-22-4	Silver	0.319			MS
7440-23-5	Sodium	280			P
7440-28-0	Thallium	0.12			MS
7440-62-2	Vanadium	18.5			P
7440-66-6	Zinc	212		*	P

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TOTAL METALS
- 2a -
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909132

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: CAS CCV

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Antimony	50	51.8	104	25	26.0	104	25.0	100	MS
Silver	25	25.0	100	25	25.1	100	25.4	102	MS

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TOTAL METALS
- 2a -
INITIAL AND CONTINUING CALIBRATION VERIFICATION

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Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909132

Initial Calibration Source:

Continuing Calibration Source: CAS CCV

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Antimony				25	24.3	97			MS
Silver				25	25.9	104			MS

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TOTAL METALS
- 2a -
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909132

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: CAS CCV

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Aluminum	5000	5070	101	5000	5120	102	5090	102	P
Antimony	50	53.3	107	25	25.6	102	25.0	100	MS
Arsenic	50	51.5	103	25	24.7	99	24.4	98	MS
Barium	5000	5090	102	500	509	102	505	101	P
Beryllium	5.0	5.18	104	25	24.5	98	25.8	103	MS
Cadmium	25	26.1	104	25	24.9	100	24.8	99	MS
Calcium	12500	12800	102	5000	4990	100	5130	103	P
Chromium	500	524	105	5000	5100	102	5140	103	P
Cobalt	50	51.6	103	25	24.6	98	24.2	97	MS
Copper	25	25.9	104	25	24.8	99	24.1	96	MS
Iron	2500	2530	101	5000	5000	100	5070	101	P
Lead	50	53.2	106	25	25.4	102	25.2	101	MS
Magnesium	12500	12500	100	5000	5020	100	5070	101	P
Magnesium	12500	12500	100	5000	5060	101	5130	103	P
Manganese	1250	1220	98	500	496	99	502	100	P
Mercury	5.0	4.99	100	5.0	4.98	100	4.89	98	CV
Nickel	50	51.2	102	25	24.6	98	24.0	96	MS
Potassium	12500	13300	106	25000	25600	102	25900	104	P
Selenium	50	52.1	104	25	24.5	98	25.0	100	MS
Silver	25	26.0	104	25	25.2	101	25.0	100	MS
Sodium	12500	13000	104	25000	25600	102	25600	102	P
Thallium	50	52.7	105	25	25.8	103	25.7	103	MS
Vanadium	1250	1260	101	500	500	100	501	100	P
Zinc	1250	1290	103	2500	2500	100	2550	102	P

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TOTAL METALS
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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909132

Initial Calibration Source:

Continuing Calibration Source: CAS CCV

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Aluminum				5000	5140	103			P
Antimony				25	25.0	100	24.7	99	MS
Arsenic				25	25.1	100	24.8	99	MS
Barium				500	507	101			P
Beryllium				25	27.1	108	26.0	104	MS
Cadmium				25	25.0	100	24.8	99	MS
Calcium				5000	5120	102			P
Chromium				5000	5090	102			P
Cobalt				25	24.8	99	24.2	97	MS
Copper				25	24.9	100	24.2	97	MS
Iron				5000	5010	100			P
Lead				25	25.8	103	25.3	101	MS
Magnesium				5000	5090	102			P
Magnesium				5000	5190	104			P
Manganese				500	494	99			P
Mercury				5.0	5.00	100			CV
Nickel				25	24.7	99	23.9	96	MS
Potassium				25000	25600	102			P
Selenium				25	25.4	102	24.8	99	MS
Silver				25	25.3	101	24.9	100	MS
Sodium				25000	25800	103			P
Thallium				25	26.1	104	25.3	101	MS
Vanadium				500	495	99			P
Zinc				2500	2520	101			P

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CRDL STANDARD FOR AA AND ICP

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Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG No.: K9909132

AA CRDL Standard Source:

ICP CRDL Standard Source: ICP Std Source

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Antimony				1.0	0.98	98		
Silver				1.0	0.97	97		

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TOTAL METALS
- 2b -
CRDL STANDARD FOR AA AND ICP

Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG No.: K9909132

AA CRDL Standard Source:

ICP CRDL Standard Source: ICP Std Source

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum				100	103	103		
Antimony				1.0	0.98	98		
Arsenic				1.0	1.08	108		
Barium				10	11.0	110		
Beryllium				1.0	1.06	106		
Cadmium				1.0	1.05	105		
Calcium				100	107	107		
Chromium				10	11.4	114		
Cobalt				1.0	1.03	103		
Copper				1.0	1.05	105		
Iron				40	43.2	108		
Lead				1.0	1.05	105		
Magnesium				20	21.9	110		
Manganese				10	9.31	93		
Mercury	0.20	0.11	55					
Nickel				1.0	1.05	105		
Potassium				4000	4640	116		
Selenium				1.0	1.02	102		
Silver				1.0	0.97	97		
Sodium				200	221	111		
Thallium				1.0	1.05	105		
Vanadium				20	20.0	100		
Zinc				20	20.9	104		

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BLANKS

Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909132

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Antimony					0.04	U	0.04	U			MS
Silver					0.008	U	0.008	U			MS

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BLANKS

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Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909132

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Antimony			0.04	U	0.04	U	0.04	U	0.02	U	MS
Arsenic			0.4	U	0.4	U	0.4	U	0.2	U	MS
Beryllium			0.02	U	0.02	U	0.02	U	0.01	U	MS
Cadmium			0.04	U	0.04	U	0.04	U	0.02	U	MS
Cobalt			0.02	U	0.02	U	0.02	U	0.03		MS
Copper			0.06	U	0.06	U	0.06	U	0.03	U	MS
Lead			0.04	U	0.04	U	0.04	U	0.03		MS
Mercury			0.10	U	-0.14	B	0.10	U	0.05	U	CV
Nickel			0.40	U	0.40	U	0.40	U	0.20	U	MS
Selenium			1.20	U	1.20	U	1.20	U	0.6	U	MS
Silver			0.008	U	0.008	B	0.008	U	0.004	U	MS
Thallium			0.01	B	0.01	U	0.01	U	0.01	B	MS

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BLANKS

Contract: Conestoga Rovers & Assoc.

Lab Code: KLAB Case No.: 13509 SAS No.: SDG NO.: K9909132

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	20.0	U	20.0	U	20.0	U	20.0	U	4.00	U	P
Antimony			0.04	U							MS
Arsenic			0.4	U							MS
Barium	2.00	U	2.00	U	2.00	U	2.00	U	0.40	U	P
Beryllium			0.02	U							MS
Cadmium			0.04	U							MS
Calcium	10.0	U	10.0	U	10.0	B	10.0	U	2.00	U	P
Chromium	2.00	U	2.00	U	2.00	U	2.00	U	0.40	U	P
Cobalt			0.02	U							MS
Copper			0.06	U							MS
Iron	10.0	U	10.0	U	16.1	B	10.0	U	2.00	U	P
Lead			0.04	U							MS
Magnesium	4.00	U	4.00	U	4.49	B	4.00	U	2.12		P
Magnesium	42.2		66.0		4.00	U	26.4				P
Manganese	2.00	U	2.00	U	2.00	U	2.00	U	0.40	U	P
Nickel			0.40	U							MS
Potassium	1000	U	1000	U	1000	U	1000	U	200	U	P
Selenium			1.20	U							MS
Silver			0.008	U							MS
Sodium	100	U	100	U	100	U	100	U	20.0	U	P
Thallium			0.01	U							MS
Vanadium	2.00	U	2.00	U	2.00	U	2.00	U	0.40	U	P
Zinc	2.00	U	2.00	U	2.00	U	2.00	U	0.40	U	P

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909132
Project:	Pontiac North Complex-A-Z Landfill/13509	**Date Collected:**	12/16/99
Sample Matrix:	Soil	**Date Received:**	12/18/99

Organochlorine Pesticides

Sample Name:	S-13509-121699-TJ-001	Units:	ug/Kg (ppb)
Lab Code:	K9909132-001	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
beta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
gamma-BHC (Lindane)	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
delta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Heptachlor	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Aldrin	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Heptachlor Epoxide	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
gamma-Chlordane	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan I	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
alpha-Chlordane	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Dieldrin	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
4,4'-DDE	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan II	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
4,4'-DDD	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Aldehyde	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
Endosulfan Sulfate	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
4,4'-DDT	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Ketone	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Methoxychlor	EPA 3545	8081A	20	0.3	1	12/29/99	1/5/00	ND	
Toxaphene	EPA 3545	8081A	300	20	1	12/29/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

lient: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/16/99
Date Received: 12/18/99

Organochlorine Pesticides

Sample Name: S-13509-121699-TJ-002
Lab Code: K9909132-002
Test Notes:

Units: ug/Kg (ppb)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
beta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
gamma-BHC (Lindane)	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
delta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Heptachlor	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Aldrin	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Heptachlor Epoxide	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Gamma-Chlordane	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan I	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
alpha-Chlordane	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Dieldrin	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
4,4'-DDE	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	16	
Endrin	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan II	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
4,4'-DDD	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Aldehyde	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
Endosulfan Sulfate	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
4,4'-DDT	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Ketone	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Methoxychlor	EPA 3545	8081A	20	0.3	1	12/29/99	1/5/00	ND	
Toxaphene	EPA 3545	8081A	300	20	1	12/29/99	1/5/00	ND	

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Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909132
Project:	Pontiac North Complex-A-Z Landfill/13509	**Date Collected:**	12/16/99
Sample Matrix:	Soil	**Date Received:**	12/18/99

Organochlorine Pesticides

Sample Name:	S-13509-121699-TJ-003	Units:	ug/Kg (ppb)
Lab Code:	K9909132-003	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
beta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
gamma-BHC (Lindane)	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
delta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Heptachlor	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Aldrin	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Heptachlor Epoxide	EPA 3545	8081A	20	0.4	1	12/29/99	1/5/00	ND	B
gamma-Chlordane	EPA 3545	8081A	12	0.4	1	12/29/99	1/5/00	ND	B
Endosulfan I	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
alpha-Chlordane	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Dieldrin	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
4,4'-DDE	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	67	
Endrin	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan II	EPA 3545	8081A	60	0.4	1	12/29/99	1/5/00	ND	B
4,4'-DDD	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Aldehyde	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	36	
Endosulfan Sulfate	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
4,4'-DDT	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Ketone	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Methoxychlor	EPA 3545	8081A	20	0.3	1	12/29/99	1/5/00	ND	
Toxaphene	EPA 3545	8081A	550	20	1	12/29/99	1/5/00	ND	B

B The MRL is elevated because of matrix interferences.

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Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/16/99
Date Received: 12/18/99

Organochlorine Pesticides

Sample Name: S-13509-121699-TJ-004
Lab Code: K9909132-004
Test Notes:

Units: ug/Kg (ppb)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
beta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
gamma-BHC (Lindane)	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
delta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Heptachlor	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Aldrin	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Heptachlor Epoxide	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
gamma-Chlordane	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan I	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
alpha-Chlordane	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Dieldrin	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
4,4'-DDE	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	6	J
Endrin	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan II	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
4,4'-DDD	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Aldehyde	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
Endosulfan Sulfate	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
4,4'-DDT	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Ketone	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Methoxychlor	EPA 3545	8081A	20	0.3	1	12/29/99	1/5/00	ND	
Toxaphene	EPA 3545	8081A	300	20	1	12/29/99	1/5/00	ND	

Approved By: VA Date: 1-7-00

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/17/99
Date Received: 12/18/99

Organochlorine Pesticides

Sample Name: S-13509-121799-TJ-005
Lab Code: K9909132-005
Test Notes:

Units: ug/Kg (ppb)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
beta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
gamma-BHC (Lindane)	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
delta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Heptachlor	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Aldrin	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Heptachlor Epoxide	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
gamma-Chlordane	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan I	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
alpha-Chlordane	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Dieldrin	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
4,4'-DDE	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	6	J
Endrin	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan II	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
4,4'-DDD	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Aldehyde	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
Endosulfan Sulfate	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
4,4'-DDT	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Ketone	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Methoxychlor	EPA 3545	8081A	20	0.3	1	12/29/99	1/5/00	ND	
Toxaphene	EPA 3545	8081A	300	20	1	12/29/99	1/5/00	ND	

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Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/17/99
Date Received: 12/18/99

Organochlorine Pesticides

Sample Name: S-13509-121799-TJ-006
Lab Code: K9909132-006
Test Notes:

Units: ug/Kg (ppb)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
beta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
gamma-BHC (Lindane)	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
delta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Heptachlor	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Aldrin	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Heptachlor Epoxide	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Gamma-Chlordane	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan I	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
alpha-Chlordane	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Dieldrin	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
4,4'-DDE	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	6	J
Endrin	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan II	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
4,4'-DDD	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Aldehyde	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
Endosulfan Sulfate	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
4,4'-DDT	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Ketone	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Methoxychlor	EPA 3545	8081A	20	0.3	1	12/29/99	1/5/00	ND	
Toxaphene	EPA 3545	8081A	300	20	1	12/29/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909132
Project:	Pontiac North Complex-A-Z Landfill/13509	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA

Organochlorine Pesticides

Sample Name: Method Blank
Lab Code: K991229-MB
Test Notes:

Units: ug/Kg (ppb)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
beta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
gamma-BHC (Lindane)	EPA 3545	8081A	10	0.5	1	12/29/99	1/5/00	ND	
delta-BHC	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Heptachlor	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Aldrin	EPA 3545	8081A	10	0.7	1	12/29/99	1/5/00	ND	
Heptachlor Epoxide	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
gamma-Chlordane	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan I	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
alpha-Chlordane	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Dieldrin	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
4,4'-DDE	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
Endosulfan II	EPA 3545	8081A	10	0.4	1	12/29/99	1/5/00	ND	
4,4'-DDD	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Aldehyde	EPA 3545	8081A	10	0.6	1	12/29/99	1/5/00	ND	
Endosulfan Sulfate	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
4,4'-DDT	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Endrin Ketone	EPA 3545	8081A	10	0.3	1	12/29/99	1/5/00	ND	
Methoxychlor	EPA 3545	8081A	20	0.3	1	12/29/99	1/5/00	ND	
Toxaphene	EPA 3545	8081A	300	20	1	12/29/99	1/5/00	ND	

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Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909132
Project:	Pontiac North Complex-A-Z Landfill/13509	**Date Collected:**	12/16/99
Sample Matrix:	Soil	**Date Received:**	12/18/99

Polychlorinated Biphenyls (PCBs)

Sample Name:	S-13509-121699-TJ-001	Units:	mg/Kg (ppm)
Lab Code:	K9909132-001	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1221	EPA 3545	8082	0.2	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1232	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1242	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1248	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1254	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
roclor 1260	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	

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Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909132
Project:	Pontiac North Complex-A-Z Landfill/13509	**Date Collected:**	12/16/99
Sample Matrix:	Soil	**Date Received:**	12/18/99

Polychlorinated Biphenyls (PCBs)

Sample Name:	S-13509-121699-TJ-002	Units:	mg/Kg (ppm)
Lab Code:	K9909132-002	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1221	EPA 3545	8082	0.2	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1232	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1242	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1248	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	0.7	
Aroclor 1254	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1260	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/16/99
Date Received: 12/18/99

Polychlorinated Biphenyls (PCBs)

Sample Name: S-13509-121699-TJ-003
Lab Code: K9909132-003
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1221	EPA 3545	8082	0.2	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1232	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1242	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1248	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	3.9	
Aroclor 1254	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1260	EPA 3545	8082	0.1	0.02	1	12/29/99	1/5/00	ND	

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Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909132
Project:	Pontiac North Complex-A-Z Landfill/13509	**Date Collected:**	12/16/99
Sample Matrix:	Soil	**Date Received:**	12/18/99

Polychlorinated Biphenyls (PCBs)

Sample Name:	S-13509-121699-TJ-004	Units:	mg/Kg (ppm)
Lab Code:	K9909132-004	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1221	EPA 3545	8082	0.2	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1232	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1242	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1248	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	0.3	
Aroclor 1254	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1260	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/17/99
Date Received: 12/18/99

Polychlorinated Biphenyls (PCBs)

Sample Name: S-13509-121799-TJ-005
Lab Code: K9909132-005
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1221	EPA 3545	8082	0.2	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1232	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1242	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1248	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	0.3	
Aroclor 1254	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1260	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	

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Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909132
Project:	Pontiac North Complex-A-Z Landfill/13509	**Date Collected:**	12/17/99
Sample Matrix:	Soil	**Date Received:**	12/18/99

Polychlorinated Biphenyls (PCBs)

Sample Name: S-13509-121799-TJ-006
Lab Code: K9909132-006
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1221	EPA 3545	8082	0.2	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1232	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1242	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1248	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	0.3	
Aroclor 1254	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1260	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	

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Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909132
Project:	Pontiac North Complex-A-Z Landfill/13509	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA

Polychlorinated Biphenyls (PCBs)

Sample Name:	Method Blank	Units:	mg/Kg (ppm)
Lab Code:	K991229-MB	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1221	EPA 3545	8082	0.2	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1232	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1242	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1248	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1254	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	
Aroclor 1260	EPA 3545	8082	0.1	0.03	1	12/29/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/16/99
Date Received: 12/18/99

Volatile Organic Compounds by GC/MS

Sample Name: S-13509-121699-TJ-001
Lab Code: K9909132-001
Test Notes:

Units: ug/Kg (ppb)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
Vinyl Chloride	EPA 5035	8260B	55	30	1	12/21/99	12/29/99	ND	
Bromomethane	EPA 5035	8260B	55	30	1	12/21/99	12/29/99	ND	
Chloroethane	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
Acetone	EPA 5035	8260B	2200	800	1	12/21/99	12/29/99	ND	
1,1-Dichloroethene	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
Carbon Disulfide	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
Methylene Chloride	EPA 5035	8260B	110	30	1	12/21/99	12/29/99	ND	
trans-1,2-Dichloroethene	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
1,1-Dichloroethane	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
2-Butanone (MEK)	EPA 5035	8260B	2200	600	1	12/21/99	12/29/99	ND	
cis-1,2-Dichloroethene	EPA 5035	8260B	55	30	1	12/21/99	12/29/99	ND	
Chloroform	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
1,1,1-Trichloroethane (TCA	EPA 5035	8260B	55	30	1	12/21/99	12/29/99	ND	
Carbon Tetrachloride	EPA 5035	8260B	55	30	1	12/21/99	12/29/99	ND	
1,2-Dichloroethane (EDC)	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
Benzene	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
richloroethene (TCE)	EPA 5035	8260B	55	30	1	12/21/99	12/29/99	ND	
,2-Dichloropropane	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
Bromodichloromethane	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
2-Hexanone	EPA 5035	8260B	2200	600	1	12/21/99	12/29/99	ND	
cis-1,3-Dichloropropene	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
Toluene	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
trans-1,3-Dichloropropene	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
1,1,2-Trichloroethane	EPA 5035	8260B	55	30	1	12/21/99	12/29/99	ND	
4-Methyl-2-pentanone (MIB	EPA 5035	8260B	2200	700	1	12/21/99	12/29/99	ND	
Tetrachloroethene (PCE)	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
Dibromochloromethane	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
Chlorobenzene	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
Ethylbenzene	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
m,p-Xylenes	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
o-Xylene	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
Styrene	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
Bromoform	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5035	8260B	55	20	1	12/21/99	12/29/99	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/16/99
Date Received: 12/18/99

Volatile Organic Compounds by GC/MS

Sample Name: S-13509-121699-TJ-002
Lab Code: K9909132-002
Test Notes:

Units: ug/Kg (ppb)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
Vinyl Chloride	EPA 5035	8260B	62	30	1	12/21/99	12/29/99	ND	
Bromomethane	EPA 5035	8260B	62	30	1	12/21/99	12/29/99	ND	
Chloroethane	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
Acetone	EPA 5035	8260B	2500	800	1	12/21/99	12/29/99	ND	
1,1-Dichloroethene	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
Carbon Disulfide	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
Methylene Chloride	EPA 5035	8260B	120	30	1	12/21/99	12/29/99	ND	
trans-1,2-Dichloroethene	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
1,1-Dichloroethane	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
2-Butanone (MEK)	EPA 5035	8260B	2500	600	1	12/21/99	12/29/99	ND	
cis-1,2-Dichloroethene	EPA 5035	8260B	62	30	1	12/21/99	12/29/99	ND	
Chloroform	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
1,1,1-Trichloroethane (TCA	EPA 5035	8260B	62	30	1	12/21/99	12/29/99	ND	
Carbon Tetrachloride	EPA 5035	8260B	62	30	1	12/21/99	12/29/99	ND	
1,2-Dichloroethane (EDC)	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
Benzene	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
Trichloroethene (TCE)	EPA 5035	8260B	62	30	1	12/21/99	12/29/99	ND	
1,2-Dichloropropane	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
Bromodichloromethane	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
2-Hexanone	EPA 5035	8260B	2500	600	1	12/21/99	12/29/99	ND	
cis-1,3-Dichloropropene	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
Toluene	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
trans-1,3-Dichloropropene	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
1,1,2-Trichloroethane	EPA 5035	8260B	62	30	1	12/21/99	12/29/99	ND	
4-Methyl-2-pentanone (MIB	EPA 5035	8260B	2500	700	1	12/21/99	12/29/99	ND	
Tetrachloroethene (PCE)	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
Dibromochloromethane	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
Chlorobenzene	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
Ethylbenzene	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
m,p-Xylenes	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
o-Xylene	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
Styrene	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
Bromoform	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5035	8260B	62	20	1	12/21/99	12/29/99	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/16/99
Date Received: 12/18/99

Volatile Organic Compounds by GC/MS

Sample Name: S-13509-121699-TJ-003
Lab Code: K9909132-003
Test Notes:

Units: ug/Kg (ppb)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
Vinyl Chloride	EPA 5035	8260B	60	30	1	12/21/99	12/29/99	ND	
Bromomethane	EPA 5035	8260B	60	30	1	12/21/99	12/29/99	ND	
Chloroethane	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
Acetone	EPA 5035	8260B	2400	800	1	12/21/99	12/29/99	ND	
1,1-Dichloroethene	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
Carbon Disulfide	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
Methylene Chloride	EPA 5035	8260B	120	30	1	12/21/99	12/29/99	ND	
trans-1,2-Dichloroethene	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
1,1-Dichloroethane	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
2-Butanone (MEK)	EPA 5035	8260B	2400	600	1	12/21/99	12/29/99	ND	
cis-1,2-Dichloroethene	EPA 5035	8260B	60	30	1	12/21/99	12/29/99	ND	
Chloroform	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
1,1,1-Trichloroethane (TCA	EPA 5035	8260B	60	30	1	12/21/99	12/29/99	ND	
Carbon Tetrachloride	EPA 5035	8260B	60	30	1	12/21/99	12/29/99	ND	
1,2-Dichloroethane (EDC)	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
Benzene	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
Trichloroethene (TCE)	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
1,2-Dichloropropane	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
Bromodichloromethane	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
2-Hexanone	EPA 5035	8260B	2400	600	1	12/21/99	12/29/99	ND	
cis-1,3-Dichloropropene	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
Toluene	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
trans-1,3-Dichloropropene	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
1,1,2-Trichloroethane	EPA 5035	8260B	60	30	1	12/21/99	12/29/99	ND	
4-Methyl-2-pentanone (MIB	EPA 5035	8260B	2400	700	1	12/21/99	12/29/99	ND	
Tetrachloroethene (PCE)	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
Dibromochloromethane	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
Chlorobenzene	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
Ethylbenzene	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	66	
m,p-Xylenes	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	110	
o-Xylene	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	79	
Styrene	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
Bromoform	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5035	8260B	60	20	1	12/21/99	12/29/99	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/16/99
Date Received: 12/18/99

Volatile Organic Compounds by GC/MS

Sample Name: S-13509-121699-TJ-004
Lab Code: K9909132-004
Test Notes:

Units: ug/Kg (ppb)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
Vinyl Chloride	EPA 5035	8260B	58	30	1	12/21/99	12/29/99	ND	
Bromomethane	EPA 5035	8260B	58	30	1	12/21/99	12/29/99	ND	
Chloroethane	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
Acetone	EPA 5035	8260B	2300	800	1	12/21/99	12/29/99	ND	
1,1-Dichloroethene	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
Carbon Disulfide	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
Methylene Chloride	EPA 5035	8260B	120	30	1	12/21/99	12/29/99	ND	
trans-1,2-Dichloroethene	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
1,1-Dichloroethane	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
2-Butanone (MEK)	EPA 5035	8260B	2300	600	1	12/21/99	12/29/99	ND	
cis-1,2-Dichloroethene	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
Chloroform	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
1,1,1-Trichloroethane (TCA	EPA 5035	8260B	58	30	1	12/21/99	12/29/99	ND	
Carbon Tetrachloride	EPA 5035	8260B	58	30	1	12/21/99	12/29/99	ND	
1,2-Dichloroethane (EDC)	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
Benzene	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
Trichloroethene (TCE)	EPA 5035	8260B	58	30	1	12/21/99	12/29/99	ND	
1,2-Dichloropropane	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
Bromodichloromethane	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
2-Hexanone	EPA 5035	8260B	2300	600	1	12/21/99	12/29/99	ND	
cis-1,3-Dichloropropene	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
Toluene	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
trans-1,3-Dichloropropene	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
1,1,2-Trichloroethane	EPA 5035	8260B	58	30	1	12/21/99	12/29/99	ND	
4-Methyl-2-pentanone (MIB	EPA 5035	8260B	2300	700	1	12/21/99	12/29/99	ND	
Tetrachloroethene (PCE)	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
Dibromochloromethane	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
Chlorobenzene	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
Ethylbenzene	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
m,p-Xylenes	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
o-Xylene	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
Styrene	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
Bromoform	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5035	8260B	58	20	1	12/21/99	12/29/99	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/17/99
Date Received: 12/18/99

Volatile Organic Compounds by GC/MS

Sample Name: S-13509-121799-TJ-005
Lab Code: K9909132-005
Test Notes:

Units: ug/Kg (ppb)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
Vinyl Chloride	EPA 5035	8260B	69	30	1	12/21/99	12/30/99	ND	
Bromomethane	EPA 5035	8260B	69	30	1	12/21/99	12/30/99	ND	
Chloroethane	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
Acetone	EPA 5035	8260B	2700	800	1	12/21/99	12/30/99	ND	
1,1-Dichloroethene	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
Carbon Disulfide	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
Methylene Chloride	EPA 5035	8260B	140	30	1	12/21/99	12/30/99	ND	
trans-1,2-Dichloroethene	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
1,1-Dichloroethane	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
2-Butanone (MEK)	EPA 5035	8260B	2700	600	1	12/21/99	12/30/99	ND	
cis-1,2-Dichloroethene	EPA 5035	8260B	69	30	1	12/21/99	12/30/99	ND	
Chloroform	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
1,1,1-Trichloroethane (TCA	EPA 5035	8260B	69	30	1	12/21/99	12/30/99	ND	
Carbon Tetrachloride	EPA 5035	8260B	69	30	1	12/21/99	12/30/99	ND	
1,2-Dichloroethane (EDC)	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
Benzene	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
Trichloroethene (TCE)	EPA 5035	8260B	69	30	1	12/21/99	12/30/99	ND	
1,2-Dichloropropane	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
Bromodichloromethane	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
2-Hexanone	EPA 5035	8260B	2700	600	1	12/21/99	12/30/99	ND	
cis-1,3-Dichloropropene	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
Toluene	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
trans-1,3-Dichloropropene	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
1,1,2-Trichloroethane	EPA 5035	8260B	69	30	1	12/21/99	12/30/99	ND	
4-Methyl-2-pentanone (MIB	EPA 5035	8260B	2700	700	1	12/21/99	12/30/99	ND	
Tetrachloroethene (PCE)	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
Dibromochloromethane	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
Chlorobenzene	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
Ethylbenzene	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
m,p-Xylenes	EPA 5035	8260B	69	40	1	12/21/99	12/30/99	ND	
o-Xylene	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
Styrene	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
Bromoform	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5035	8260B	69	20	1	12/21/99	12/30/99	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909132
Project:	Pontiac North Complex-A-Z Landfill/13509	**Date Collected:**	12/17/99
Sample Matrix:	Soil	**Date Received:**	12/18/99

Volatile Organic Compounds by GC/MS

Sample Name:	S-13509-121799-TJ-006	Units:	ug/Kg (ppb)
Lab Code:	K9909132-006	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
Vinyl Chloride	EPA 5035	8260B	63	30	1	12/21/99	12/30/99	ND	
Bromomethane	EPA 5035	8260B	63	30	1	12/21/99	12/30/99	ND	
Chloroethane	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
Acetone	EPA 5035	8260B	2500	800	1	12/21/99	12/30/99	ND	
1,1-Dichloroethene	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
Carbon Disulfide	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
Methylene Chloride	EPA 5035	8260B	130	30	1	12/21/99	12/30/99	ND	
trans-1,2-Dichloroethene	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
1,1-Dichloroethane	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
2-Butanone (MEK)	EPA 5035	8260B	2500	600	1	12/21/99	12/30/99	ND	
cis-1,2-Dichloroethene	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
Chloroform	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
1,1,1-Trichloroethane (TCA	EPA 5035	8260B	63	30	1	12/21/99	12/30/99	ND	
Carbon Tetrachloride	EPA 5035	8260B	63	30	1	12/21/99	12/30/99	ND	
1,2-Dichloroethane (EDC)	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
Benzene	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
Trichloroethene (TCE)	EPA 5035	8260B	63	30	1	12/21/99	12/30/99	ND	
1,2-Dichloropropane	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
Bromodichloromethane	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
2-Hexanone	EPA 5035	8260B	2500	600	1	12/21/99	12/30/99	ND	
cis-1,3-Dichloropropene	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
Toluene	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
trans-1,3-Dichloropropene	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
1,1,2-Trichloroethane	EPA 5035	8260B	63	30	1	12/21/99	12/30/99	ND	
4-Methyl-2-pentanone (MIB	EPA 5035	8260B	2500	700	1	12/21/99	12/30/99	ND	
Tetrachloroethene (PCE)	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
Dibromochloromethane	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
Chlorobenzene	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
Ethylbenzene	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
m,p-Xylenes	EPA 5035	8260B	63	40	1	12/21/99	12/30/99	ND	
o-Xylene	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
Styrene	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
Bromoform	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5035	8260B	63	20	1	12/21/99	12/30/99	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: NA
Date Received: NA

Volatile Organic Compounds by GC/MS

Sample Name: Method Blank
Lab Code: KWG9904608-3
Test Notes:

Units: ug/Kg (ppb)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
Vinyl Chloride	EPA 5035	8260B	50	30	1	12/21/99	12/29/99	ND	
Bromomethane	EPA 5035	8260B	50	30	1	12/21/99	12/29/99	ND	
Chloroethane	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
Acetone	EPA 5035	8260B	2000	800	1	12/21/99	12/29/99	ND	
1,1-Dichloroethene	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
Carbon Disulfide	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
Methylene Chloride	EPA 5035	8260B	30	30	1	12/21/99	12/29/99	ND	
trans-1,2-Dichloroethene	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
1,1-Dichloroethane	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
2-Butanone (MEK)	EPA 5035	8260B	2000	600	1	12/21/99	12/29/99	ND	
cis-1,2-Dichloroethene	EPA 5035	8260B	50	30	1	12/21/99	12/29/99	ND	
Chloroform	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
1,1,1-Trichloroethane (TCA	EPA 5035	8260B	50	30	1	12/21/99	12/29/99	ND	
Carbon Tetrachloride	EPA 5035	8260B	50	30	1	12/21/99	12/29/99	ND	
1,2-Dichloroethane (EDC)	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
Benzene	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
Trichloroethene (TCE)	EPA 5035	8260B	50	30	1	12/21/99	12/29/99	ND	
,2-Dichloropropane	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
Bromodichloromethane	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
2-Hexanone	EPA 5035	8260B	2000	600	1	12/21/99	12/29/99	ND	
cis-1,3-Dichloropropene	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
Toluene	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
trans-1,3-Dichloropropene	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
1,1,2-Trichloroethane	EPA 5035	8260B	50	30	1	12/21/99	12/29/99	ND	
4-Methyl-2-pentanone (MIB	EPA 5035	8260B	2000	700	1	12/21/99	12/29/99	ND	
Tetrachloroethene (PCE)	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
Dibromochloromethane	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
Chlorobenzene	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
Ethylbenzene	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
m,p-Xylenes	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
o-Xylene	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
Styrene	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
Bromoform	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5035	8260B	50	20	1	12/21/99	12/29/99	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Conestoga Rovers & Assoc.	**Service Request:**	K9909132
Project:	Pontiac North Complex-A-Z Landfill/13509	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA

Volatile Organic Compounds by GC/MS

Sample Name:	Method Blank	Units:	ug/Kg (ppb)
Lab Code:	KWG9904621-3	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloromethane	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
Vinyl Chloride	EPA 5035	8260B	50	30	1	12/21/99	12/30/99	ND	
Bromomethane	EPA 5035	8260B	50	30	1	12/21/99	12/30/99	ND	
Chloroethane	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
Acetone	EPA 5035	8260B	2000	800	1	12/21/99	12/30/99	ND	
1,1-Dichloroethene	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
Carbon Disulfide	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
Methylene Chloride	EPA 5035	8260B	30	30	1	12/21/99	12/30/99	ND	
trans-1,2-Dichloroethene	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
1,1-Dichloroethane	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
2-Butanone (MEK)	EPA 5035	8260B	2000	600	1	12/21/99	12/30/99	ND	
cis-1,2-Dichloroethene	EPA 5035	8260B	50	30	1	12/21/99	12/30/99	ND	
Chloroform	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
1,1,1-Trichloroethane (TCA	EPA 5035	8260B	50	30	1	12/21/99	12/30/99	ND	
Carbon Tetrachloride	EPA 5035	8260B	50	30	1	12/21/99	12/30/99	ND	
1,2-Dichloroethane (EDC)	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
Benzene	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
Trichloroethene (TCE)	EPA 5035	8260B	50	30	1	12/21/99	12/30/99	ND	
1,2-Dichloropropane	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
Bromodichloromethane	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
2-Hexanone	EPA 5035	8260B	2000	600	1	12/21/99	12/30/99	ND	
cis-1,3-Dichloropropene	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
Toluene	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
trans-1,3-Dichloropropene	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
1,1,2-Trichloroethane	EPA 5035	8260B	50	30	1	12/21/99	12/30/99	ND	
4-Methyl-2-pentanone (MIB	EPA 5035	8260B	2000	700	1	12/21/99	12/30/99	ND	
Tetrachloroethene (PCE)	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
Dibromochloromethane	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
Chlorobenzene	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
Ethylbenzene	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
m,p-Xylenes	EPA 5035	8260B	40	40	1	12/21/99	12/30/99	ND	
o-Xylene	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
Styrene	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
Bromoform	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5035	8260B	50	20	1	12/21/99	12/30/99	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
ject: Pontiac North Complex-A-Z Landfill/13509
ıple Matrix: Soil

Service Request: K9909132
Date Collected: 12/16/99
Date Received: 12/18/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-121699-TJ-001
Lab Code: K9909132-001
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Bis(2-chloroethyl) Ether	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Phenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Chlorophenol	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
1,3-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,4-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,2-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
2-Methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Hexachloroethane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
N-Nitrosodi-n-propylamine	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
3- and 4-Methylphenol Coelut	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Nitrobenzene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Isophorone	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Nitrophenol	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dimethylphenol	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Bis(2-chloroethoxy)methane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
1,2,4-Trichlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Naphthalene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
4-Chloroaniline	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Hexachlorobutadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chloro-3-methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Methylnaphthalene	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Hexachlorocyclopentadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4,6-Trichlorophenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2,4,5-Trichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Chloronaphthalene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
2-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
Acenaphthylene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Dimethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
2,6-Dinitrotoluene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Acenaphthene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
3-Nitroaniline	EPA 3550B	8270C	1.7	0.07	1	12/23/99	1/5/00	ND	
2,4-Dinitrophenol	EPA 3550B	8270C	1.7	0.09	1	12/23/99	1/5/00	ND	
Dibenzofuran	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Nitrophenol	EPA 3550B	8270C	1.7	0.08	1	12/23/99	1/5/00	ND	
2,4-Dinitrotoluene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluorene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chlorophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Diethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
4-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3550B	8270C	1.7	0.03	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/16/99
Date Received: 12/18/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-121699-TJ-001
Lab Code: K9909132-001
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodiphenylamine	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Hexachlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Pentachlorophenol (PCP)	EPA 3550B	8270C	2	0.05	1	12/23/99	1/5/00	ND	
Phenanthrene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Anthracene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Carbazole	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Di-n-butyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Butyl Benzyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
3,3'-Dichlorobenzidine	EPA 3550B	8270C	2	0.04	1	12/23/99	1/5/00	ND	
Benz(a)anthracene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Chrysene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
Di-n-octyl Phthalate	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Benzo(b)fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Benzo(k)fluoranthene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Benzo(a)pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Indeno(1,2,3-cd)pyrene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	
Dibenz(a,h)anthracene	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Benzo(g,h,i)perylene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/16/99
Date Received: 12/18/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-121699-TJ-002
Lab Code: K9909132-002
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Bis(2-chloroethyl) Ether	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Phenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Chlorophenol	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
1,3-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,4-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,2-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
2-Methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Hexachloroethane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
N-Nitrosodi-n-propylamine	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
3- and 4-Methylphenol Coelut	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Nitrobenzene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Isophorone	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
2-Nitrophenol	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dimethylphenol	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Bis(2-chloroethoxy)methane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
-Trichlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
thalene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
4-Chloroaniline	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Hexachlorobutadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chloro-3-methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Methylnaphthalene	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Hexachlorocyclopentadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4,6-Trichlorophenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2,4,5-Trichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Chloronaphthalene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
2-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
Acenaphthylene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Dimethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
2,6-Dinitrotoluene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Acenaphthene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
3-Nitroaniline	EPA 3550B	8270C	1.7	0.07	1	12/23/99	1/5/00	ND	
2,4-Dinitrophenol	EPA 3550B	8270C	1.7	0.09	1	12/23/99	1/5/00	ND	
Dibenzofuran	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Nitrophenol	EPA 3550B	8270C	1.7	0.08	1	12/23/99	1/5/00	ND	
2,4-Dinitrotoluene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluorene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chlorophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Diethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
4-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3550B	8270C	1.7	0.03	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/16/99
Date Received: 12/18/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-121699-TJ-002
Lab Code: K9909132-002
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodiphenylamine	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Hexachlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Pentachlorophenol (PCP)	EPA 3550B	8270C	2	0.05	1	12/23/99	1/5/00	ND	
Phenanthrene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Anthracene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Carbazole	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Di-n-butyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Butyl Benzyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	0.2	J
3,3'-Dichlorobenzidine	EPA 3550B	8270C	2	0.04	1	12/23/99	1/5/00	ND	
Benz(a)anthracene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Chrysene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	0.1	J
Di-n-octyl Phthalate	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Benzo(b)fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Benzo(k)fluoranthene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Benzo(a)pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Indeno(1,2,3-cd)pyrene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	
Dibenz(a,h)anthracene	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Benzo(g,h,i)perylene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/16/99
Date Received: 12/18/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-121699-TJ-003
Lab Code: K9909132-003
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Bis(2-chloroethyl) Ether	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Phenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Chlorophenol	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
1,3-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,4-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,2-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
2-Methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Hexachloroethane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
N-Nitrosodi-n-propylamine	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
3- and 4-Methylphenol Coelut	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Nitrobenzene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Isophorone	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Nitrophenol	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dimethylphenol	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Bis(2-chloroethoxy)methane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
1,2,4-Trichlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Naphthalene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	0.2	J
4-Chloroaniline	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Hexachlorobutadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chloro-3-methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Methylnaphthalene	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	0.1	J
Hexachlorocyclopentadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4,6-Trichlorophenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2,4,5-Trichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Chloronaphthalene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
2-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
Acenaphthylene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Dimethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
2,6-Dinitrotoluene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Acenaphthene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	0.09	J
3-Nitroaniline	EPA 3550B	8270C	1.7	0.07	1	12/23/99	1/5/00	ND	
2,4-Dinitrophenol	EPA 3550B	8270C	1.7	0.09	1	12/23/99	1/5/00	ND	
Dibenzofuran	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Nitrophenol	EPA 3550B	8270C	1.7	0.08	1	12/23/99	1/5/00	ND	
2,4-Dinitrotoluene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluorene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	0.2	J
4-Chlorophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Diethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
4-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3550B	8270C	1.7	0.03	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
ject: Pontiac North Complex-A-Z Landfill/13509
ample Matrix: Soil

Service Request: K9909132
Date Collected: 12/16/99
Date Received: 12/18/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-121699-TJ-003
Lab Code: K9909132-003
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodiphenylamine	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Hexachlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Pentachlorophenol (PCP)	EPA 3550B	8270C	2	0.05	1	12/23/99	1/5/00	ND	
Phenanthrene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	0.6	
Anthracene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	0.09	J
Carbazole	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Di-n-butyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	0.5	
Pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	0.6	
Butyl Benzyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	0.4	
3,3'-Dichlorobenzidine	EPA 3550B	8270C	2	0.04	1	12/23/99	1/5/00	ND	
Benz(a)anthracene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	0.2	J
Chrysene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	0.3	J
Bis(2-ethylhexyl) Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	0.2	J
Di-n-octyl Phthalate	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Benzo(b)fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	0.2	J
Benzo(k)fluoranthene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	0.2	J
Benzo(a)pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	0.1	J
Indeno(1,2,3-cd)pyrene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	0.09	J
Dibenz(a,h)anthracene	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Benzo(g,h,i)perylene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	0.09	J

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/16/99
Date Received: 12/18/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-121699-TJ-004
Lab Code: K9909132-004
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Bis(2-chloroethyl) Ether	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Phenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Chlorophenol	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
1,3-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,4-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,2-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
2-Methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Hexachloroethane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
N-Nitrosodi-n-propylamine	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
3- and 4-Methylphenol Coelut	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Nitrobenzene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Isophorone	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Nitrophenol	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dimethylphenol	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Bis(2-chloroethoxy)methane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
1,2,4-Trichlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Naphthalene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	0.1	J
4-Chloroaniline	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Hexachlorobutadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chloro-3-methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Methylnaphthalene	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	0.2	J
Hexachlorocyclopentadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4,6-Trichlorophenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2,4,5-Trichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Chloronaphthalene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
2-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
Acenaphthylene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Dimethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
2,6-Dinitrotoluene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Acenaphthene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	0.07	J
3-Nitroaniline	EPA 3550B	8270C	1.7	0.07	1	12/23/99	1/5/00	ND	
2,4-Dinitrophenol	EPA 3550B	8270C	1.7	0.09	1	12/23/99	1/5/00	ND	
Dibenzofuran	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Nitrophenol	EPA 3550B	8270C	1.7	0.08	1	12/23/99	1/5/00	ND	
2,4-Dinitrotoluene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluorene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	0.2	J
4-Chlorophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Diethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
4-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3550B	8270C	1.7	0.03	1	12/23/99	1/5/00	ND	

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Analytical Report

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Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/16/99
Date Received: 12/18/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-121699-TJ-004
Lab Code: K9909132-004
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodiphenylamine	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Hexachlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Pentachlorophenol (PCP)	EPA 3550B	8270C	2	0.05	1	12/23/99	1/5/00	ND	
Phenanthrene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	0.6	
Anthracene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	0.09	J
Carbazole	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Di-n-butyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	0.7	
Pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	0.7	
Butyl Benzyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	0.1	J
3,3'-Dichlorobenzidine	EPA 3550B	8270C	2	0.04	1	12/23/99	1/5/00	ND	
Benz(a)anthracene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	0.3	J
Chrysene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	0.4	
Bis(2-ethylhexyl) Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	0.1	J
Di-n-octyl Phthalate	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Benzo(b)fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	0.3	
zo(k)fluoranthene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	0.3	J
zo(a)pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	0.3	J
ndeno(1,2,3-cd)pyrene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	0.2	J
Dibenz(a,h)anthracene	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	0.04	J
Benzo(g,h,i)perylene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	0.2	J

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/17/99
Date Received: 12/18/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-121799-TJ-005
Lab Code: K9909132-005
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Bis(2-chloroethyl) Ether	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Phenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Chlorophenol	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
1,3-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,4-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,2-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
2-Methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Hexachloroethane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
N-Nitrosodi-n-propylamine	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
3- and 4-Methylphenol Coelut	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Nitrobenzene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Isophorone	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Nitrophenol	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dimethylphenol	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Bis(2-chloroethoxy)methane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
1,2,4-Trichlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Naphthalene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
4-Chloroaniline	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Hexachlorobutadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chloro-3-methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Methylnaphthalene	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Hexachlorocyclopentadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4,6-Trichlorophenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2,4,5-Trichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Chloronaphthalene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
2-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
Acenaphthylene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Dimethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
2,6-Dinitrotoluene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Acenaphthene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
3-Nitroaniline	EPA 3550B	8270C	1.7	0.07	1	12/23/99	1/5/00	ND	
2,4-Dinitrophenol	EPA 3550B	8270C	1.7	0.09	1	12/23/99	1/5/00	ND	
Dibenzofuran	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Nitrophenol	EPA 3550B	8270C	1.7	0.08	1	12/23/99	1/5/00	ND	
2,4-Dinitrotoluene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluorene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chlorophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Diethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
4-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3550B	8270C	1.7	0.03	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/17/99
Date Received: 12/18/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-121799-TJ-005
Lab Code: K9909132-005
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodiphenylamine	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Hexachlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Pentachlorophenol (PCP)	EPA 3550B	8270C	2	0.05	1	12/23/99	1/5/00	ND	
Phenanthrene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Anthracene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Carbazole	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Di-n-butyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Butyl Benzyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
3,3'-Dichlorobenzidine	EPA 3550B	8270C	2	0.04	1	12/23/99	1/5/00	ND	
Benz(a)anthracene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Chrysene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	0.5	
Di-n-octyl Phthalate	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Benzo(b)fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Benzo(k)fluoranthene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Benzo(a)pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Indeno(1,2,3-cd)pyrene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	
Dibenz(a,h)anthracene	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Benzo(g,h,i)perylene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/17/99
Date Received: 12/18/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-121799-TJ-006
Lab Code: K9909132-006
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Bis(2-chloroethyl) Ether	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Phenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Chlorophenol	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
1,3-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,4-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,2-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
2-Methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Hexachloroethane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
N-Nitrosodi-n-propylamine	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
3- and 4-Methylphenol Coelut	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Nitrobenzene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Isophorone	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Nitrophenol	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dimethylphenol	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Bis(2-chloroethoxy)methane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
1,2,4-Trichlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Naphthalene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
4-Chloroaniline	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Hexachlorobutadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chloro-3-methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Methylnaphthalene	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Hexachlorocyclopentadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4,6-Trichlorophenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2,4,5-Trichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Chloronaphthalene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
2-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
Acenaphthylene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Dimethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
2,6-Dinitrotoluene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Acenaphthene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
3-Nitroaniline	EPA 3550B	8270C	1.7	0.07	1	12/23/99	1/5/00	ND	
2,4-Dinitrophenol	EPA 3550B	8270C	1.7	0.09	1	12/23/99	1/5/00	ND	
Dibenzofuran	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Nitrophenol	EPA 3550B	8270C	1.7	0.08	1	12/23/99	1/5/00	ND	
2,4-Dinitrotoluene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluorene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chlorophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Diethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
4-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3550B	8270C	1.7	0.03	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: 12/17/99
Date Received: 12/18/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: S-13509-121799-TJ-006
Lab Code: K9909132-006
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodiphenylamine	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Hexachlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Pentachlorophenol (PCP)	EPA 3550B	8270C	2	0.05	1	12/23/99	1/5/00	ND	
Phenanthrene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Anthracene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Carbazole	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Di-n-butyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Butyl Benzyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
3,3'-Dichlorobenzidine	EPA 3550B	8270C	2	0.04	1	12/23/99	1/5/00	ND	
Benz(a)anthracene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Chrysene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	0.4	
Di-n-octyl Phthalate	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Benzo(b)fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Benzo(k)fluoranthene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
zo(a)pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
no(1,2,3-cd)pyrene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	
Dibenz(a,h)anthracene	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Benzo(g,h,i)perylene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: NA
Date Received: NA

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG9904537-8
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Bis(2-chloroethyl) Ether	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Phenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Chlorophenol	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
1,3-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,4-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
1,2-Dichlorobenzene	EPA 3550B	8270C	0.1	0.07	1	12/23/99	1/5/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
2-Methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Hexachloroethane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
N-Nitrosodi-n-propylamine	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
3- and 4-Methylphenol Coelut	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Nitrobenzene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Isophorone	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2-Nitrophenol	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dimethylphenol	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Bis(2-chloroethoxy)methane	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4-Dichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
1,2,4-Trichlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
N[illegible]alene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
4-[illegible]roaniline	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Hexachlorobutadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chloro-3-methylphenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Methylnaphthalene	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Hexachlorocyclopentadiene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
2,4,6-Trichlorophenol	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
2,4,5-Trichlorophenol	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
2-Chloronaphthalene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
2-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
Acenaphthylene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Dimethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
2,6-Dinitrotoluene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Acenaphthene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
3-Nitroaniline	EPA 3550B	8270C	1.7	0.07	1	12/23/99	1/5/00	ND	
2,4-Dinitrophenol	EPA 3550B	8270C	1.7	0.09	1	12/23/99	1/5/00	ND	
Dibenzofuran	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Nitrophenol	EPA 3550B	8270C	1.7	0.08	1	12/23/99	1/5/00	ND	
2,4-Dinitrotoluene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluorene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
4-Chlorophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
Diethyl Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
4-Nitroaniline	EPA 3550B	8270C	1.7	0.05	1	12/23/99	1/5/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3550B	8270C	1.7	0.03	1	12/23/99	1/5/00	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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Client: Conestoga Rovers & Assoc.
Project: Pontiac North Complex-A-Z Landfill/13509
Sample Matrix: Soil

Service Request: K9909132
Date Collected: NA
Date Received: NA

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG9904537-8
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodiphenylamine	EPA 3550B	8270C	0.3	0.09	1	12/23/99	1/5/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Hexachlorobenzene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Pentachlorophenol (PCP)	EPA 3550B	8270C	2	0.05	1	12/23/99	1/5/00	ND	
Phenanthrene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Anthracene	EPA 3550B	8270C	0.3	0.05	1	12/23/99	1/5/00	ND	
Carbazole	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Di-n-butyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Butyl Benzyl Phthalate	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
3,3'-Dichlorobenzidine	EPA 3550B	8270C	2	0.04	1	12/23/99	1/5/00	ND	
Benz(a)anthracene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Chrysene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3550B	8270C	0.3	0.1	1	12/23/99	1/5/00	ND	
Di-n-octyl Phthalate	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
Benzo(b)fluoranthene	EPA 3550B	8270C	0.3	0.08	1	12/23/99	1/5/00	ND	
Benzo(k)fluoranthene	EPA 3550B	8270C	0.3	0.07	1	12/23/99	1/5/00	ND	
o(a)pyrene	EPA 3550B	8270C	0.3	0.06	1	12/23/99	1/5/00	ND	
no(1,2,3-cd)pyrene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	
Dibenz(a,h)anthracene	EPA 3550B	8270C	0.3	0.03	1	12/23/99	1/5/00	ND	
Benzo(g,h,i)perylene	EPA 3550B	8270C	0.3	0.04	1	12/23/99	1/5/00	ND	

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Approved By: _____ Date: 1/11/00

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APPENDIX D

DATA VALIDATION REPORT

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CONESTOGA-ROVERS & ASSOCIATES
11100 Metro Airport Center Drive
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TELEPHONE: (734) 942-0909
FACSIMILE: (734) 942-1858

MEMORANDUM

TO: Gavin O'Neill

REF. NO.: 13509

FROM: Mary Cameron/rm/2/Det.

DATE: March 8, 2000

RE: Data Quality Assessment and Validation
Pontiac North Complex
Former A-2 Fill Area
Pontiac, Michigan

The following details a quality assessment and validation of the analytical data resulting from the December 16, 17 and 20, 1999 and January 4, 2000, collection of ten (10) soil and three (3) groundwater samples from the Pontiac North Complex Former A-2 Fill Area Site in Pontiac, Michigan. The sample summary detailing sample identification, sample location, quality control samples and analytical parameters is presented in Table 1. Sample analysis was completed at Columbia Analytical Services in Kelso, Washington (CAS) in accordance with the methodologies presented in Table 2. The quality control criteria used to assess the data were established by the methods and the quality assurance project plan (QAPP).[1]

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Holding Time Period and Sample Analysis

The holding time periods are presented in Table 3. Samples that violated the target compound list (TCL) volatile organic compounds (VOC) holding time period are detailed in Table 4. The remaining samples, as indicated by the sample collection, extraction and analysis dates on the chain-of-custody forms and analytical reports provided by CAS were prepared and analyzed within the required holding time periods.

Gas Chromatography/Mass Spectrometer Mass Calibration (Instrument Performance Check)

To ensure adequate mass resolution, identification, and to some degree, sensitivity; the performance of each gas chromatography/mass spectrometer (GC/MS) instrument used for TCL VOC and TCL semi-volatile organic compounds (SVOC) analyses was checked at the beginning of each 12-hour period using bromofluorobenzene (BFB) and decafluorotriphenylphosphine (DFTPP), respectively. The results of all instrument performance checks were within the acceptance criteria, indicating acceptable instrument performance.

Initial Calibration – Organic Analyses

Initial calibration data were used to demonstrate that each instrument was capable of generating acceptable quantitative data.

Initial Calibration – Organic Analyses (Cont'd)

Initial calibration criteria for TCL VOC, TCL SVOC and TCL Pesticides analyses require that all compounds meet a method-specific minimum mean relative response factor (RRF) and maximum percent relative standard deviation (RSD). The initial calibration data for TCL VOC, TCL SVOC and TCL Pesticides analyses were within the acceptance criteria indicating the instruments were capable of acceptable performance prior to analysis.

[1] Application of quality assurance criteria was consistent with "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", EPA-540/R-94/012, February 1994 and "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Review", EPA-540/R-94/013, February 1994.

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The initial calibration criteria for polychlorinated biphenyl (PCB) analysis require a specific number of standards be analyzed with a maximum percent RSD. The initial calibration data for PCB analyses were within the acceptance criteria indicating the instruments were capable of acceptable performance prior to analysis.

Initial Calibration – Inorganic Analyses

The initial calibration criteria for inorganic analyses require an initial calibration verification standard be analyzed within a method specific percent recovery of the accepted or true value. The initial calibration data for the inorganic analyses were within the acceptance criteria indicating the instruments were capable of acceptable performance prior to analysis.

Continuing Calibration

To ensure that each instrument was capable of producing acceptable quantitative data over the analysis period, routine checks upon the instrument calibrations were performed. Continuing calibration acceptance criteria for organic analyses require that compounds meet a method-specific minimum RRF and maximum percent difference (D) between the initial calibration mean RRF and the continuing calibration RRF. The continuing calibration verification data were within the acceptance criteria.

Continuing calibration criteria for inorganic analyses were the same criteria as used for assessing the initial calibration data. The continuing calibration verification data were within the acceptance criteria.

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Method Blank Samples

Contamination of samples contributed by laboratory conditions or procedures was monitored by concurrent preparation and analysis of method blank samples. The samples presented in Table 5 should be qualified due to laboratory contamination. These results were flagged by the laboratory with a "J, E" flag, which may be disregarded. The remaining method blank samples were reported to be free from detectable levels of target analytes, indicating no laboratory-attributable contamination occurred.

Surrogate Compound Percent Recoveries (Surrogate Recoveries)

Individual sample performance for the organic analyses was monitored by assessing the results of surrogate compound percent recoveries. The surrogate recovery acceptance criteria was met for all samples.

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Inductively Coupled Plasma Interference Check Sample Analysis

To verify that proper inter-element and background correction factors had been established by the laboratory for metals analyses, the inductively coupled plasma interference check sample data was monitored. The data were within the acceptance criteria.

Laboratory Control Sample Analysis

The laboratory control sample (LCS) analyses serve as a monitor of the overall performance in all steps of the sample analysis. The LCS percent recoveries were within the laboratory control limits, indicating that an acceptable level of overall performance was achieved.

Matrix Spike/Matrix Spike Duplicate Percent Recoveries - Organic Analyses

To assess the long term accuracy and precision of the analytical methods on various matrices, matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and the relative percent difference (RPD) of the concentrations were determined. The MS/MSD percent recoveries and associate RPDs acceptance criteria were met for all analyses.

Matrix Spike Analysis - Inorganic Analyses

Matrix spike samples were monitored to determine the effects of sample matrix on the laboratories digestion and measurement methods. The inorganic matrix spike recoveries were within acceptance criteria.

Duplicate Sample Analyses - Inorganic Analyses

The laboratory precision of matrix-specific metals methods was monitored by the analyses of duplicate samples. The duplicate RPD data for the samples outlined in Table 6 violated the acceptance criteria. These results were flagged by the laboratory with a "*" flag, which may be disregarded. The remaining duplicate RPDs were within the acceptance criteria.

Internal Standard Summaries

Overall instrument stability and performance for the TCL VOC and TCL SVOC analyses was monitored using internal standard peak area and retention time (RT) data. Internal standard peak areas of the samples were required to fall within -50 percent and +100 percent of their respective internal standard areas in the continuing calibration standard. The RT for each internal standard in the samples were required to be within ±30 seconds of their respective internal standard RT in the continuing calibration standard. The TCL VOC and TCL SVOC internal standard and retention time data were within the acceptance criteria.

Target Compound Identification

To minimize erroneous compound identification during TCL VOC and TCL SVOC analyses, qualitative criteria including compound retention time and mass spectra were evaluated according to identification criteria established by the methods. The TCL VOC and TCL SVOC reported adhered to the specified identification criteria.

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Compound Quantitation

The reported quantitation results and detection limits were checked to ensure results reported were accurate. No discrepancies were found between the raw data and the sample results reported by the laboratory.

Graphite Furnace Atomic Absorption Quality Control Analysis

The quality control scheme used to assess the precision and accuracy of the individual analytical determinations relative to the overall method precision and accuracy consisted of post-digestion analytical spikes. The post digestion percent recovery exceeded the method specific post digestion spike recovery criteria for one result, but the sample absorbance was not greater than fifty percent of the spike absorbance, therefore method of standard addition was not required. The sample result was flagged by the laboratory with a "W", which may be disregarded. The graphite furnace atomic absorption analysis scheme was followed correctly by the laboratory.

Sample Quantitation - Organic Analyses

The TCL VOC, TCL pesticides, PCB, TCL SVOC and cyanide sample analysis resulted in a number of concentrations qualified by the laboratory with a "J" value. These results are below the laboratories method reporting limit (MRL) but above the laboratories method detection limit (MDL) therefore, these results should be considered estimated values.

Several samples TCL pesticides method detection limits were elevated due to reported PCB results. The laboratory flagged these results with a "B" flag, which may be disregarded.

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Sample Quantitation – Inorganic Analysis

The TAL Inorganic analysis resulted in a number of concentrations qualified by the laboratory with a "B" flag. These results are below the laboratories contract required detection limits (CRDL) or MRL but above the laboratories instrument detection limit (IDL) therefore, these results should be qualified as estimated (J) values.

Field Quality Assurance/Quality Control

The field quality assurance/quality control consisted of two (2) field duplicate sample sets and two (2) trip blank samples.

Overall precision for the sampling event and laboratory procedures were monitored using the results of the field duplicate sample sets. Table 7 summarizes the results of the detected analytes in the field duplicate sample sets. The data indicate that an adequate level of precision was achieved for the sampling event.

To monitor potential cross-contamination of VOC during aqueous sample transportation and storage, a trip blank was submitted to the laboratory for VOC analysis with each shipping cooler. The sample results that should be qualified due to trip blank contamination are summarized in Table 8. No additional target analytes were reported as detected in the trip blank samples.

System Performance

System performance between various quality control checks was evaluated to monitor for changes that may have caused the degradation of data quality. No technical problems or chromatographic anomalies were observed which require qualification of the data.

Overall Assessment

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The data were found to exhibit acceptable levels of accuracy and precision, based on the provided information, and may be used with the qualifications noted.

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TABLE 1

SAMPLE SUMMARY
PONTIAC NORTH COMPLEX
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

Sample Identification	*QA/QC*	*Location*	*Depth (ft. bgs.)*	*Matrix*	*Parameters*
S-13509-121699-TJ-001		BH7-99	2-4	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-121699-TJ-002		BH9-99	4-6	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-121699-TJ-003		BH8-99	4-6	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-121699-TJ-004		BH1-99	2-4	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-121799-TJ-005		BH3-99	10-12	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-121799-TJ-006	Duplicate of 005	BH3-99	10-12	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-122099-TJ-007		BH2-99	3-5	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-122099-TJ-008		BH4-99	4-6	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-122099-TJ-009	MS/MSD	BH5-99	4-6	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
S-13509-122099-TJ-010		BH6	4-6	Soil	VOC, SVOC, Pesticides, PCB, Inorganics
W-13509-010400-TJ-011		MW1-99	---	Groundwater	VOC, SVOC, Pesticides, PCB, Inorganics
W-13509-010400-TJ-012	Duplicate of 011	MW1-99	---	Groundwater	VOC, SVOC, Pesticides, PCB, Inorganics
13509-010400-TJ-013	MS/MSD	MW2-99	---	Groundwater	VOC, SVOC, Pesticides, PCB, Inorganics

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tes:

OC - Target Compound List (TCL) Volatile Organic Compounds (VOC).
/OC - TCL Semi-Volatile Organic Compounds (SVOC).
rganics - Target Analyte List (TAL) Metals and Cyanide
B - Polychlorinated Byphenyl
sticides - TCL Pesticides
bgs. - feet below ground surface

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TABLE 2

SUMMARY OF ANALYTICAL METHODS
PONTIAC NORTH COMPLEX
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

Parameter	*Method*
TCL VOC (soil)	SW-846 5035/8260B [1]
TCL VOC (water)	SW-846 8260B
TCL SVOC	SW-846 8270C
TCL Pesticide	SW-846 8081A
PCB	SW- 846 8082
TAL Inorganics	
Aluminum	SW-846 6010B
Antimony	SW-846 6020
Arsenic	SW-846 6020/7060A
Barium	SW-846 6010B
Beryllium	SW-846 6020
Cadmium	SW-846 6020
Calcium	SW-846 6010B
Chromium	SW-846 6010B
Cobalt	SW-846 6020
Copper	SW-846 6020
Iron	SW-846 6010B
Lead	SW-846 6020
Magnesium	SW-846 6010B
Manganese	SW-846 6010B
Mercury	SW-846 7471A/7470A
Nickel	SW-846 6020
Potassium	SW-846 6010B
Selenium	SW-846 6020/7740
Silver	SW-846 6020
Sodium	SW-846 6010B
Thallium	SW-846 6020
Total Cyanide	SW-846 9010
Vanadium	SW-846 6010B
Zinc	SW-846 6010B

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[1] SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 3rd Edition, and Promulgated updates, November 1986

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TABLE 3

HOLDING TIME PERIODS
PONTIAC NORTH COMPLEX
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

Analysis	*Holding Time Period*
TCL VOC (water)	- 14 days from sample collection to completion of analysis
TCL VOC (soil)	- 48 hours from sample collection to extraction - 14 days from sample extract to completion of analysis
TCL SVOC, TCL Pesticides, PCB	- 7 days (water), 14 days (soil) from sample collection to extraction - 40 days from extraction to completion of analysis
TAL Inorganics-	
Metals (except Mercury)	- 180 days from sample collection to completion of analysis
Mercury	- 28 days from sample collection to completion of analysis
Cyanide	- 14 days from sample collection to completion of analysis

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TABLE 4

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO HOLDING TIME PERIOD VIOLATIONS PONTIAC NORTH COMPLEX FORMER A-2 FILL AREA PONTIAC, MICHIGAN

Parameter	*Associated Samples*	*Qualifier*[1]
TCL VOC	S-13509-121699-TJ-001	UJ
	S-13509-121699-TJ-002	UJ
	S-13509-121699-TJ-003	J/UJ
	S-13509-121699-TJ-004	UJ
	S-13509-121699-TJ-005	UJ
	S-13509-121699-TJ-006	UJ

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[1]The sample parameter results should be qualified as:

J - The analyte was positively identified; the associated numerical value is the estimated concentration of the analyte in the sample (for detected parameters).

UJ -The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is estimated and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample (for non-detected parameters).

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TABLE 5

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO METHOD BLANK CONTAMINATION
PONTIAC NORTH COMPLEX
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

Analyte	*Associated Samples*	*Qualified*[1] *Sample Result (µg/L)*
TCL VOC		
Chloroform	S-13509-122099-TJ-007	ND (53) U
	S-13509-122099-TJ-008	ND (60) U
	S-13509-122099-TJ-009	ND (55) U
	S-13509-122099-TJ-010	ND (58) U

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[1] The analyte should be qualified for the listed samples as:

ND ( ) U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit in parenthesis.

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TABLE 6

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO OUTLYING DUPLICATE RPDS-INORGANICS PONTIAC NORTH COMPLEX FORMER A-2 FILL AREA PONTIAC, MICHIGAN

Analysis	*Parameters*	*Associated Samples*	*Qualifier*[1]
TAL Inorganics	Manganese	S-13509-121699-TJ-001	J
		S-13509-121699-TJ-002	J
		S-13509-121699-TJ-003	J
		S-13509-121699-TJ-004	J
		S-13509-121799-TJ-005	J
		S-13509-121799-TJ-006	J
		S-13509-122099-TJ-007	J
		S-13509-122099-TJ-008	J
		S-13509-122099-TJ-009	J
		S-13509-122099-TJ-010	J

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[1] The parameter results should be qualified for the listed samples as:

J - The associated value is an estimated quantity (for detected parameters).

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TABLE 7

SUMMARY OF DETECTED ANALYTES IN FIELD DUPLICATE SAMPLE SETS
PONTIAC NORTH COMPLEX
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

Parameter	*Investigative Sample*	*Duplicate Sample*	*RPD* [1]
	S-13509-121799-TJ-005	S-13509-121799-TJ-006	
TCL Pesticides (µg/kg)			
4,4'-DDE	6 J [2]	6 J	0
PCB (mg/kg)			
Aroclor 1248	0.3	0.3	0
TCL SVOC (mg/kg)			
bis(2-Ethylhexyl)phthalate	0.5	0.4	22
TAL Inorganics (mg/kg)			
Aluminum	10,300	9,730	5.7
Antimony	0.17	0.36	72
Arsenic	1.1	2.8	87
Barium	61.2	86.4	37
Beryllium	0.52	0.52	0
Cadmium	0.26	0.45	54
Calcium	2,490	13,600	140
Chromium	20.0	73.4	110
Cobalt	7.21	5.31	30
Copper	37.8	183	130
Cyanide, total	ND (0.5) [3]	0.1 J	NC [4]
Iron	19,100	17,600	8.2
Lead	14.7	37.6	88
Magnesium	2,580	4,400	52
Manganese	251 J	543 J	74
Mercury	0.03	0.02 J	40
Nickel	43.0	168	120
Potassium	680	590	14
Silver	0.046	0.319	150
Sodium	236	280	17
Thallium	0.14	0.12	15
Vanadium	27.8	18.5	40
Zinc	42.8	212	130

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TABLE 7

SUMMARY OF DETECTED ANALYTES IN FIELD DUPLICATE SAMPLE SETS
PONTIAC NORTH COMPLEX
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

Parameter	*Investigative Sample*	*Duplicate Sample*	*RPD* [1]
	W-13509-010400-TJ-011	W-13509-010400-TJ-012	
TCL Pesticides (µg/kg)			
Endrin ketone	0.01 J	0.01 J	0
TCL SVOC (mg/kg)			
Phenol	0.5 J	0.7 J	33
Diethyl phthalate	0.6 J	0.7 J	15
bis(2-Ethylhexyl)phthalate	510	510	0
TAL Inorganics (mg/kg)			
Aluminum	38.1 J	47.6 J	22
Antimony	1.12 J	1.02 J	9.3
Barium	3,440	3,690	7.0
Cadmium	3.39	4.04	17
Calcium	531,000	584,000	5.8
Cobalt	4.57 J	4.78 J	4.5
Copper	5.74 J	ND (4.00)	NC
Cyanide, total	0.03	0.03	0
Iron	1,470 J	1,600	8.5
Lead	0.23 J	0.31 J	30
Magnesium	61,300	66,500	8.1
Manganese	629	682	8.1
Potassium	33,400	31,500	5.9
Silver	0.410 J	0.217 J	62
Sodium	8,190,000	8,730,000	6.4
Zinc	3.54 J	2.52 J	34

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TABLE 7

SUMMARY OF DETECTED ANALYTES IN FIELD DUPLICATE SAMPLE SETS
PONTIAC NORTH COMPLEX
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

Parameter	*Investigative Sample*	*Duplicate Sample*	*RPD* [1]
	W-13509-010400-TJ-011	W-13509-010400-TJ-012	
TCL VOC (µg/L)			
Acetone	17 J	18 J	5.7
2-Butonone	6.5 J	6.6 J	1.5
Toluene	0.4 J	0.5	22
o-Xylene	0.2	ND (0.5)	NC

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Notes:

[1] RPD - Relative Percent Difference
[2] J - The associated numerical value is an estimated quantity.
[3] ND( ) - Not detected at the quantitation limit stated in parentheses.
[4] NC - Not calculable.

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TABLE 8

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO TRIP BLANK CONTAMINATION
PONTIAC NORTH COMPLEX
FORMER A-2 FILL AREA
PONTIAC, MICHIGAN

Analyte	*Associated Samples*	*Qualified*[1] *Sample Result (µg/L)*
TCL VOC		
Toluene	W-13509-010400-TJ-011	ND (0.5) U
	W-13509-010400-TJ-012	ND (0.5) U
	W-13509-010400-TJ-013	ND (0.5) U

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[1] The analyte should be qualified for the listed samples as:

ND ( ) U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit in parenthesis.

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April 14, 1998

Reference No. 10491

DRAFT

Mr. Keith West
General Motors Corporation
WFG Remediation Team
485 West Milwaukee Avenue
Mail Code: 482-310-004
Detroit, Michigan 48202-3220

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Dear Mr. West:

Re: Concrete and Soil Investigation
Track 26
General Motors Metal Fabricating Division
Pontiac, Michigan

This letter summarizes the results of the concrete and soil investigation (Investigation) conducted by Conestoga-Rovers & Associates (CRA) on March 5 and 6, 1998 at Track 26, located at the General Motors (GM) Metal Fabricating Division in Pontiac, Michigan (Site).

1.0 INTRODUCTION

CRA was retained by GM to conduct a subsurface investigation of the historic Track 26 area. Previous investigations of the Track 26 area indicated the potential presence of elevated concentrations of Polychlorinated Biphenyls (PCBs) on concrete and in soil. Therefore, the investigation included the collection and analysis of surficial concrete samples, surficial soil samples, and subsurface soil samples. The Site location is presented on Figure 1.

2.0 INVESTIGATION

A total of ten boreholes (BH 1 through BH 10-98) were advanced using a drill rig equipped with 4 ¼-inch hollow stem augers in order to investigate the Track 26 area. Concrete and soil samples were collected from the borehole locations presented on Figure 2. All boreholes were surveyed based on a previously established coordinate system for the Site.

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2.1 CONCRETE INVESTIGATION

A total of four concrete core samples were collected from the concrete pad in the Track 26 area. Concrete core samples were collected using a 2-inch diameter concrete core barrel from BH 1, BH 2, BH 3, and BH 4-98. The concrete core thickness ranged from 7 to 12 inches. The concrete samples were collected, wrapped in aluminum foil, placed in a plastic bag, labeled and transported to a laboratory under chain of custody protocols to be analyzed for PCBs.

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2.2 SOIL INVESTIGATION

A total of 21 soil samples were collected from ten boreholes, BH 1 through BH 10-98. The soil samples were collected using split-spoon soil samplers which were decontaminated by removing visible soil with a water/alconex scrub and deionized water rinse. Each borehole was advanced until native clay was encountered, approximately 10 to 13 feet below ground surface (bgs). Soil samples were collected continuously and were screened using a photoionization detector (PID) and visually examined for staining and/or odors by CRA field personnel. Borehole stratigraphic logs are presented in Attachment A.

Soil samples were collected and analyzed for PCBs from boreholes BH 1, 2, 3 and BH 4-98 (locations where surficial concrete was located, sampled, and analyzed for PCBs) at 1 to 3 and 3 to 5 feet bgs. Soil samples were collected and analyzed for PCBs from boreholes BH 5 through BH 10-98 at 0 to 2 and 2 to 4 feet bgs. Soil samples collected from BH 7-98 and BH 10-98 at 0 to 2 feet bgs were also analyzed for Target Compound List (TCL), volatile organic compounds (VOC), TCL semi-volatile organic compounds (SVOCs), and Target Analyte List (TAL) metals. In addition, one soil sample was collected from BH 2-98 at 5 to 7 feet bgs and analyzed for TCL VOCs, TCL SVOCs, and TAL metals. All soil samples were collected and transported to the laboratory under chain of custody protocols. A summary of samples collected and analyzed is presented in Table 1.

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Arsenic and Berylium were detected above the Michigan Generic Residential Direct Contact Criteria for soil, but below the Michigan Generic Industrial Direct Contact Criteria for soil. Arsenic was detected in BH 7 and BH 10-98 at 0 to 2 feet bgs at concentrations of 17 mg/kg and 15 mg/kg, respectively. Berylium was detected in BH 10-98 at 0 to 2 feet bgs at a concentration of 2.6 mg/kg. A summary of metals detected in soil samples is presented in Table 6.

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4.0 SUMMARY

The analytical results of the concrete and soil samples collected during this Investigation indicate the following:

- No PCBs, TCL VOCs, TCL SVOCs, or TAL metals were detected above the Michigan Generic Industrial Direct Contact Criteria for soil; and
- Additional investigation is not warranted.

If you have any questions or comments regarding information presented in this letter, please contact our office.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

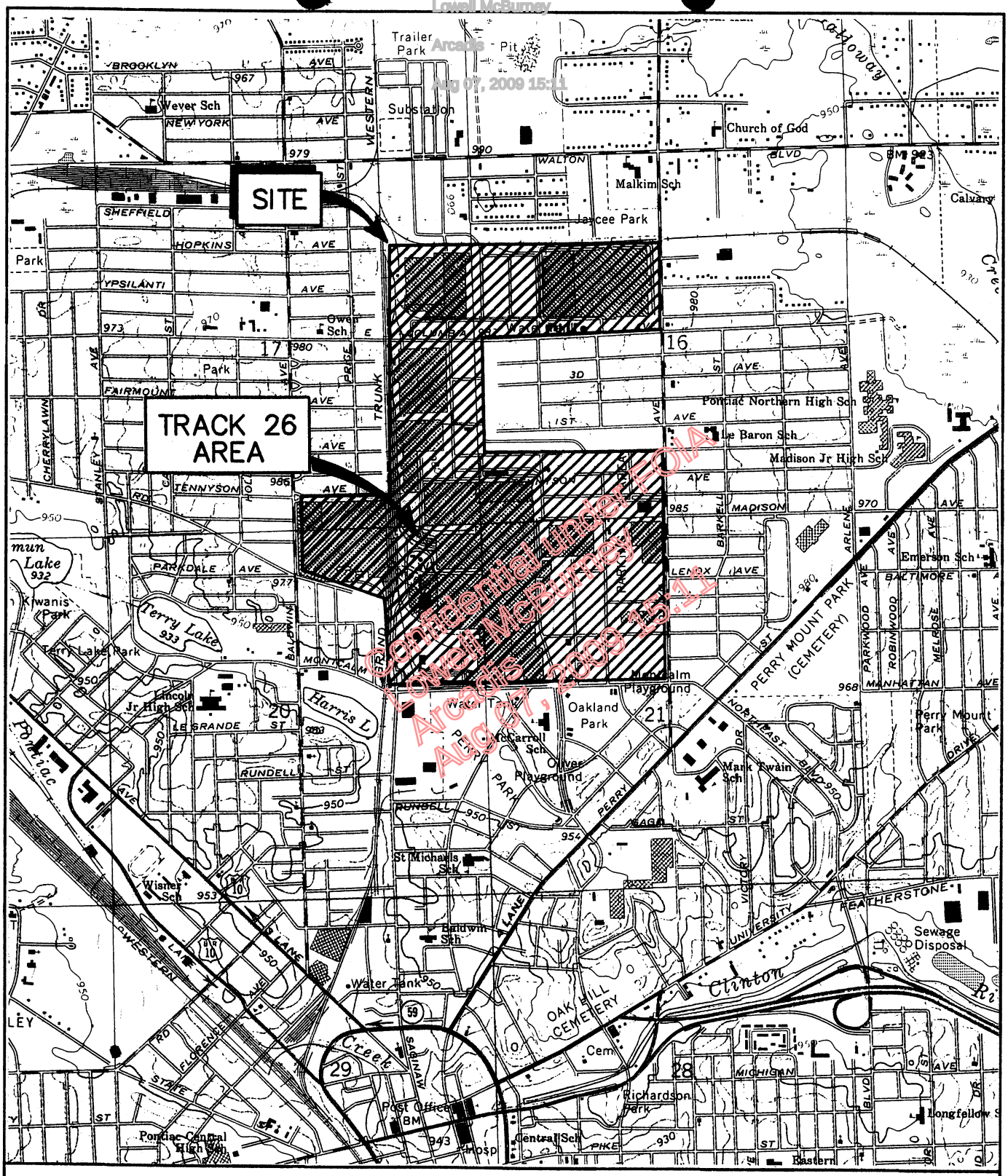
Frank Ring, P.E.

FR/rm/2/Det.

Cc: Glenn Turchan
Susan Fielek

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SOURCE: USGS QUADRANGLE MAP; PONTIAC NORTH, MICHIGAN

0 1000 2000ft

PONTIAC

CRA

10491(WEST002)DE APR 13/98

figure 1

SITE LOCATION
TRACK 26
GM METAL FABRICATING DIVISION
Pontiac, Michigan

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PLANT 14

PLANT 49

PLANT 2

N

0 20 50ft

FORMER TRACK 26 LOCATION

BH10-98
BH2-98
BH5-98
BH9-98
BH3-98
BH1-98
BH6-98
BH8-98
BH4-98
BH7-98

LEGEND

CONCRETE PAD
BH7-98 BOREHOLE LOCATIONS
EXISTING RAILROAD

CRA

10491(WEST002)DE001 APR 13/98

figure 2
BOREHOLE LOCATIONS
TRACK 26
GM METAL FABRICATING DIVISION
Pontiac, Michigan

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TABLE 1

SAMPLE SUMMARY
TRACK 26
GENERAL MOTORS METAL FABRICATING DIVISION
PONTIAC, MICHIGAN

Sample Number	Media	Location	Depth (ft bgs)	Analysis
C-10491-030598-SF-001	concrete	BH1-98	0-12 inches	PCB
C-10491-030598-SF-002	concrete	BH2-98	0-9 inches	PCB
C-10491-030598-SF-003	concrete	BH3-98	0-9 inches	PCB
C-10491-030598-SF-004	concrete	BH4-98	0-9 inches	PCB
S-10491-030598-SF-005	soil	BH5-98	0-2	PCB
S-10491-030598-SF-006	soil	BH6-98	2-4	PCB
S-10491-030598-SF-010	soil	BH1-98	1-3	PCB
S-10491-030598-SF-011	soil	BH1-98	3-5	PCB
S-10491-030598-SF-016	soil	BH4-98	1-3 (MS/MSD)	PCB
S-10491-030598-SF-017	soil	BH4-98	3-5	PCB
S-10491-030698-SF-022	soil	BH6-98	0-2	PCB
S-10491-030698-SF-023	soil	BH6-98	2-4	PCB
S-10491-030698-SF-028	soil	BH7-98	0-2	PCB, VOC, SVOC, metals
S-10491-030698-SF-029	soil	BH7-98	2-4	PCB
S-10491-030698-SF-033	soil	BH8-98	0-2	PCB
S-10491-030698-SF-034	soil	BH8-98	2-4	PCB
S-10491-030698-SF-039	soil	BH3-98	1-3	PCB
S-10491-030698-SF-040	soil	BH3-98	3-5	PCB
S-10491-030698-SF-045	soil	BH9-98	0-2	PCB
S-10491-030698-SF-046	soil	BH9-98	2-4 (MS/MSD)	PCB
S-10491-030698-SF-051	soil	BH2-98	1-3	PCB
S-10491-030698-SF-052	soil	BH2-98	3-5	PCB
S-10491-030698-SF-053	soil	BH2-98	5-7	PCB, VOC, SVOC, metals
S-10491-030698-SF-056	soil	BH10-98	0-2	PCB, VOC, SVOC, metals
S-10491-030698-SF-057	soil	BH10-98	2-4 (MS/MSD)	PCB

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Notes:

PCB - Polychlorinated Biphenyls
VOC - Volatile Organic Compounds
SVOC - Semi-Volatile Organic Compounds

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TABLE 2

SUMMARY OF POLYCHLORINATED BIPHENYLS DETECTED IN CONCRETE CORE SAMPLES
CONCRETE AND SOIL INVESTIGATION
TRACK 26
GENERAL MOTORS METAL FABRICATING DIVISION
PONTIAC, MICHIGAN

Sample ID (C-10491-)	*Michigan*	*Michigan*	*030598-SF-001*	*030598-SF-002*	*030598-SF-003*	*030598-SF-004*
Sample Location	*Generic*	*Generic*	*BH-1-98*	*BH2-98*	*BH3-98*	*BH4-98*
Depth (bgs)	*Residential*	*Industrial*	*0-12"*	*0-9"*	*0-9"*	*0-9"*
Date Sampled	*Direct Contact*	*Direct Contact*	*3/5/98*	*3/5/98*	*3/5/98*	*3/5/98*
Date Analyzed	*Value (1)*	*Value (2)*	*3/7/98*	*3/7/98*	*3/7/98*	*3/10/98*
Units	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*
Parameter						
Aroclor - 1016	1,200	9,900	ND(330)	ND(330)	ND(330)	ND(330)
Aroclor - 1221	1,200	9,900	ND(330)	ND(330)	ND(330)	ND(330)
Aroclor - 1232	1,200	9,900	ND(330)	ND(330)	ND(330)	ND(330)
Aroclor - 1242	1,200	9,900	ND(330)	ND(330)	ND(330)	ND(330)
Aroclor - 1248	1,200	9,900	ND(330)	ND(330)	ND(330)	ND(330)
Aroclor - 1254	1,200	9,900	ND(330)	ND(330)	ND(330)	ND(330)
Aroclor - 1260	1,200	9,900	450	ND(330)	ND(330)	ND(330)

Notes:

(1) - Michigan Department of Environmental Quality (MDEQ), Interim Environmental Response Division (ERD) Operational Memorandum #8, Revision 4: Generic Residential Cleanup Criteria, June 5, 1995, and Revisions January 26, 1996 as defined in the MDEQ ERD Training Material, March 1998.

(2) - MDEQ, Interim ERD Operational Memorandum # 14, Revision 2: Generic Industrial Cleanup Criteria, June 6, 1995, and Revisions January 25, 1996 as defined in the MDEQ ERD Training Material, March 1998.

ND ( ) - Not detected above the report limit in the parenthesis.

bgs - below ground surface

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TABLE 3

SUMMARY OF POLYCHLORINATED BIPHENYLS DETECTED IN SOIL SAMPLES
CONCRETE AND SOIL INVESTIGATION
TRACK 26
GENERAL MOTORS METAL FABRICATING DIVISION
PONTIAC, MICHIGAN

Sample ID (S-10491-)	*Michigan*	*Michigan*	*030598-SF-005*	*030598-SF-006*	*030598-SF-010*	*030598-SF-011*	*030598-SF-016*	*030598-SF-017*	*030698-SF-022*
Sample Location	*Generic*	*Generic*	*BH5-98*	*BH5-98*	*BH1-98*	*BH1-98*	*BH4-98*	*BH4-98*	*BH6-98*
Depth (bgs)	*Residential*	*Industrial*	*0-2'*	*2-4'*	*1-3'*	*3-5'*	*1-3'*	*3-5'*	*0-2'*
Date Sampled	*Direct Contact*	*Direct Contact*	*3/5/98*	*3/5/98*	*3/5/98*	*3/5/98*	*3/5/98*	*3/5/98*	*3/6/98*
Date Analyzed	*Value (1)*	*Value (2)*	*3/8/98*	*3/7/98*	*3/7/98*	*3/7/98*	*3/7/98*	*3/7/98*	*3/11/98*
Units	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*
Parameter									
Aroclor - 1016	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1221	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1232	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1242	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1248	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1254	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1260	1,200	9,900	**9,100**	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	**2,400**

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Notes:

(1) - Michigan Department of Environmental Quality (MDEQ), Interim Environmental Response Division (ERD) Operational Memorandum #8, Revision 4: Generic Residential Cleanup Criteria, June 5, 1995, and Revisions January 26, 1996 as defined in the MDEQ ERD Training Material, March 1998.

(2) - MDEQ, Interim ERD Operational Memorandum # 14, Revision 2: Generic Industrial Cleanup Criteria, June 6, 1995, and Revisions January 25, 1996 as defined in the MDEQ ERD Training Material, March 1998.

ND ( ) - Not detected above the report limit in the parenthesis.

bgs - below ground surface

TABLE 3

SUMMARY OF POLYCHLORINATED BIPHENYLS DETECTED IN SOIL SAMPLES
CONCRETE AND SOIL INVESTIGATION
TRACK 26
GENERAL MOTORS METAL FABRICATING DIVISION
PONTIAC, MICHIGAN

Sample ID (S-10491-)	*Michigan*	*Michigan*	*030698-SF-023*	*030698-SF-028*	*030698-SF-029*	*030698-SF-033*	*030698-SF-034*	*030698-SF-039*	*030698-SF-040*
Sample Location	*Generic*	*Generic*	*BH6-98*	*BH7-98*	*BH7-98*	*BH8-98*	*BH8-98*	*BH3-98*	*BH3-98*
Depth (bgs)	*Residential*	*Industrial*	*2-4'*	*0-2'*	*2-4'*	*0-2'*	*2-4'*	*1-3'*	*3-5'*
Date Sampled	*Direct Contact*	*Direct Contact*	*3/6/98*	*3/6/98*	*3/6/98*	*3/6/98*	*3/6/98*	*3/6/98*	*3/6/98*
Date Analyzed	*Value (1)*	*Value (2)*	*3/11/98*	*3/13/98*	*3/13/98*	*3/11/98*	*3/11/98*	*3/12/98*	*3/12/98*
Units	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*
Parameter									
Aroclor - 1016	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1221	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1232	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1242	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1248	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1254	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1260	1,200	9,900	ND (330)	ND (330)	ND (330)	530	ND (330)	ND (330)	ND (330)

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Notes:

(1) - Michigan Department of Environmental Quality (MDEQ), Interim Environmental Response Division (ERD) Operational Memorandum #8, Revision 4: Generic Residential Cleanup Criteria, June 5, 1995, and Revisions January 26, 1996 as defined in the MDEQ ERD Training Material, March 1998.

(2) - MDEQ, Interim ERD Operational Memorandum # 14, Revision 2: Generic Industrial Cleanup Criteria, June 6, 1995, and Revisions January 25, 1996 as defined in the MDEQ ERD Training Material, March 1998.

ND ( ) - Not detected above the report limit in the parenthesis.

bgs - below ground surface

TABLE 3

SUMMARY OF POLYCHLORINATED BIPHENYLS DETECTED IN SOIL SAMPLES
CONCRETE AND SOIL INVESTIGATION
TRACK 26
GENERAL MOTORS METAL FABRICATING DIVISION
PONTIAC, MICHIGAN

Sample ID (S-10491-)	*Michigan*	*Michigan*	*030698-SF-045*	*030698-SF-046*	*030698-SF-051*	*030698-SF-052*	*030698-SF-056*	*030698-SF-057*
Sample Location	*Generic*	*Generic*	*BH9-98*	*BH9-98*	*BH2-98*	*BH2-98*	*BH10-98*	*BH10-98*
Depth (bgs)	*Residential*	*Industrial*	*0-2'*	*2-4'*	*1-3'*	*3-5'*	*0-2'*	*2-4'*
Date Sampled	*Direct Contact*	*Direct Contact*	*3/6/98*	*3/6/98*	*3/6/98*	*3/6/98*	*3/6/98*	*3/6/98*
Date Analyzed	*Value (1)*	*Value (2)*	*3/12/98*	*3/12/98*	*3/12/98*	*3/13/98*	*3/13/98*	*3/13/98*
Units	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*
Parameter								
Aroclor - 1016	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1221	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1232	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1242	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1248	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1254	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)
Aroclor - 1260	1,200	9,900	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)	ND (330)

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Notes:

(1) - Michigan Department of Environmental Quality (MDEQ), Interim Environmental Response Division (ERD) Operational Memorandum #8, Revision 4: Generic Residential Cleanup Criteria, June 5, 1995, and Revisions January 26, 1996 as defined in the MDEQ ERD Training Material, March 1998.

(2) - MDEQ, Interim ERD Operational Memorandum # 14, Revision 2: Generic Industrial Cleanup Criteria, June 6, 1995, and Revisions January 25, 1996 as defined in the MDEQ ERD Training Material, March 1998.

ND ( ) - Not detected above the report limit in the parenthesis.

bgs - below ground surface

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TABLE 4

SUMMARY OF VOLATILE ORGANIC COMPOUNDS DETECTED IN SOIL SAMPLES
CONCRETE AND SOIL INVESTIGATION
TRACK 26
GENERAL MOTORS METAL FABRICATING DIVISION
PONTIAC, MICHIGAN

Sample ID (S-10491-)	*Michigan*	*Michigan*	*030698-SF-028*	*030698-SF-053*	*030698-SF-056*
Sample Location	*Generic*	*Generic*	*BH7-98*	*BH2-98*	*BH10-98*
Depth (bgs)	*Residential*	*Industrial*	*0-2'*	*0-2'*	*0-2'*
Date Sampled	*Direct Contact*	*Direct Contact*	*3/6/98*	*3/6/98*	*3/6/98*
Date Analyzed	*Value (1)*	*Value (2)*	*3/20/98*	*3/20/98*	*3/11/98*
Units	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*
Parameter					
acetone	11,000,000	74,000,000	ND (100)	ND (100)	ND (100)
benzene	88,000	400,000 (3)	ND (10)	ND (10)	ND (10)
bromodichloromethane	41,000	400,000	ND (10)	ND (10)	ND (10)
bromoform	320,000	870,000 (3)	ND (10)	ND (10)	ND (10)
bromomethane	150,000	1,000,000	ND (10)	ND (10)	ND (10)
2-butanone	27,000,000 (3)	27,000,000 (3)	ND (100)	ND (100)	ND (100)
carbon disulfide	280,000 (3)	280,000 (3)	ND (100)	ND (100)	ND (100)
carbon tetrachloride	20,000	190,000	ND (10)	ND (10)	ND (10)
chlorobenzene	260,000 (3)	260,000 (3)	ND (10)	ND (10)	ND (10)
chloroethane	670,000	970,000 (3)	ND (10)	ND (10)	ND (10)
chloroform	420,000	1,500,000 (3)	ND (10)	ND (10)	ND (10)
chloromethane	200,000	1,100,000 (3)	ND (10)	ND (10)	ND (10)
dibromochloromethane	31,000	300,000	ND (10)	ND (10)	ND (10)
1,4-dichlorobenzene	110,000	1,000,000	ND (10)	ND (10)	ND (10)
1,3-dichlorobenzene	200,000 (3)	960,000 (3)	ND (10)	ND (10)	ND (10)
1,2-dichlorobenzene	210,000 (3)	210,000 (3)	ND (10)	ND (10)	ND (10)
1,1-dichloroethane	790,000 (3)	790,000 (3)	ND (10)	ND (10)	ND (10)
1,2-dichloroethane	28,000	270,000	ND (10)	ND (10)	ND (10)
1,1-dichloroethene	110,000	530,000 (3)	ND (10)	ND (10)	ND (10)
1,2-dichloroethene (cis)	640,000 (3)	640,000 (3)	ND (10)	ND (10)	ND (10)
1,2-dichloroethene (trans)	1,400,000 (3)	1,400,000 (3)	ND (10)	ND (10)	ND (10)
1,2-dichloropropane	38,000	360,000	ND (10)	ND (10)	ND (10)
trans-1,3-dichloropropene	14,000	140,000	ND (10)	ND (10)	ND (10)
cis-1,3-dichloropropene	14,000	140,000	ND (10)	ND (10)	ND (10)
ethylbenzene	140,000 (3)	140,000 (3)	ND (10)	ND (10)	ND (10)
2-hexanone	10,000,000 (3)	10,000,000 (3)	ND (100)	ND (100)	ND (100)
4-methyl-2-pentanone	2,700,000 (3)	2,700,000 (3)	ND (100)	ND (100)	ND (100)
methylene chloride	340,000	2,300,000 (3)	ND (10)	62	ND (10)
styrene	85,000	520,000 (3)	ND (10)	ND (10)	ND (10)
1,1,2,2-tetrachloroethane	13,000	120,000	ND (10)	ND (10)	ND (10)
tetrachloroethene	50,000	88,000 (3)	ND (10)	ND (10)	ND (10)
toluene	250,000 (3)	250,000 (3)	ND (10)	ND (10)	ND (10)
1,1,1-trichloroethane	460,000 (3)	460,000 (3)	ND (10)	ND (10)	ND (10)
1,1,2-trichloroethane	45,000	440,000	ND (10)	ND (10)	ND (10)
trichloroethene	160,000	500,000 (3)	ND (10)	ND (10)	ND (10)
vinyl chloride	1,200	11,000	ND (10)	ND (10)	ND (10)
xylenes (total)	150,000 (3)	150,000 (3)	ND (30)	ND (30)	ND (30)

Notes:

(1) - Michigan Department of Environmental Quality (MDEQ), Interim Environmental Response Division (ERD) Operational Memorandum #8, Revision 4: Generic Residential Cleanup Criteria, June 5, 1995, and Revisions January 26, 1996.

(2) - MDEQ, Interim ERD Operational Memorandum # 14, Revision 2: Generic Industrial Cleanup Criteria, June 6, 1995, and Revisions January 25, 1996 as defined in the MDEQ ERD Training Material, March 1998.

(3) - Values represent revised soil saturation concentrations (CSAT) presented in the MDEQ ERD Training Material, March 1998.

ND ( ) - Not detected above the report limit in the parenthesis.

bgs - below ground surface

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TABLE 5

SUMMARY OF SEMI-VOLATILE ORGANIC COMPOUNDS DETECTED IN SOIL SAMPLES
CONCRETE AND SOIL INVESTIGATION
TRACK 26
GENERAL MOTORS METAL FABRICATING DIVISION
PONTIAC, MICHIGAN

Sample ID (S-10491-)	*Michigan*	*Michigan*	*030698-SF-028*	*030698-SF-053*	*030698-SF-056*
Sample Location	*Generic*	*Generic*	*BH7-98*	*BH2-98*	*BH10-98*
Depth (bgs)	*Residential*	*Industrial*	*0-2'*	*0-2'*	*0-2'*
Date Sampled	*Direct Contact*	*Direct Contact*	*3/6/98*	*3/6/98*	*3/6/98*
Date Analyzed	*Value (1)*	*Value (2)*	*3/12/98*	*3/21/98*	*3/12/98*
Units	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*
Parameter					
Acenaphthene	76,000,000	810,000,000	ND (330)	ND (330)	ND (330)
Acenaphthylene	1,500,000	16,000,000	ND (330)	ND (330)	ND (330)
Anthracene	420,000,000	1,000,000,000	ND (330)	ND (330)	ND (330)
Benzo(a)anthracene	14,000	210,000	ND (330)	ND (330)	480
Benzo(a)pyrene	1,400	21,000	ND (330)	ND (330)	560
Benzo(b)fluoranthene	14,000	210,000	450	ND (330)	900
Benzo(g,h,i)perylene	1,500,000	16,000,000	ND (330)	ND (330)	360
Benzo(k)fluoranthene	140,000	2,100,000	ND (330)	ND (330)	ND (330)
4-Bromophenylphenyl ether	---	---	ND (330)	ND (330)	ND (330)
Butylbenzylphthalate	310,000 (3)	310,000 (3)	ND (330)	ND (330)	460
Carbazole	130,000	1,200,000	ND (330)	ND (330)	ND (330)
4-Chloro-3-methylphenol	2,200,000	15,000,000	ND (330)	ND (330)	ND (330)
4-Chloroaniline	---	---	ND (330)	ND (330)	ND (330)
bis(2-Chloroethoxy)ethane	ID	ID	ND (330)	ND (330)	ND (330)
bis(2-Chloroethyl)ether	2,300	23,000	ND (330)	ND (330)	ND (330)
bis(2-Chloroisopropyl)ether	---	---	ND (330)	ND (330)	ND (330)
2-Chloronaphthalene	27,000,000	190,000,000	ND (330)	ND (330)	ND (330)
2-Chlorophenol	680,000	4,600,000	ND (330)	ND (330)	ND (330)
4-Chlorophenyl phenyl ether	---	---	ND (330)	ND (330)	ND (330)
Chrysene	1,400,000	21,000,000	350	ND (330)	620
Di-n-Butyphthalate	760,000 (3)	760,000 (3)	ND (330)	ND (330)	ND (330)
Di-n-Octylphthalate	7,600,000	81,000,000	ND (330)	ND (330)	ND (330)
Dibenzo(a,h)anthracene	1,400	21,000	ND (330)	ND (330)	ND (330)
Dibenzofuran	ID	ID	ND (330)	ND (330)	ND (330)
3,3'-Dichlorobenzidine	5,700	55,000	ND (330)	ND (330)	ND (330)
2,4 -Dichorophenol	4,200,000	10,000,000 (3)	ND (330)	ND (330)	ND (330)
Diethylphthalate	740,000 (3)	740,000 (3)	ND (330)	ND (330)	ND (330)
Dimethylphthalate	790,000 (3)	790,000 (3)	ND (330)	ND (330)	ND (330)
2,4-Dimethylphenol	21,000,000	230,000,000	ND (330)	ND (330)	ND (330)
4,6-Dinitro-2-methylphenol	150,000	1,600,000	ND (800)	ND (800)	ND (800)
2,4-Dinitrophenol	---	---	ND (800)	ND (800)	ND (800)
2,6-Dinitrotoluene	---	---	ND (330)	ND (330)	ND (330)
2,4-Dinitrotoluene	15,000	220,000	ND (330)	ND (330)	ND (330)
Bis(2-ethylhexyl)phthalate	700,000	10,000,000 (3)	ND (330)	ND (330)	ND (330)
Fluoranthene	51,000,000	540,000,000	430	ND (330)	760
Fluorene	51,000,000	540,000,000	ND (330)	ND (330)	ND (330)
Hexachlorobenzene	6,200	94,000	ND (330)	ND (330)	ND (330)
Hexachlorobutadiene	130,000	350,000 (3)	ND (330)	ND (330)	ND (330)
Hexachlorocyclopentadiene	81,000 (3)	81,000 (3)	ND (330)	ND (330)	ND (330)
Hexachloroethane	180,000	1,800,000	ND (330)	ND (330)	ND (330)
Indeno(1,2,3-cd)pyrene	14,000	210,000	ND (330)	ND (330)	ND (330)
Isophorone	2,400,000 (3)	2,400,000 (3)	ND (330)	ND (330)	ND (330)
2-Methylnaphthalene	15,000,000 (3)	160,000,000 (3)	350	ND (330)	430
4-Methylphenol	2,100,000	23,000,000	ND (330)	ND (330)	ND (330)
2-Methylphenol	5,500,000	57,000,000	ND (330)	ND (330)	ND (330)
N-nitroso-di-n-propylamine	370	3,500	ND (330)	ND (330)	ND (330)

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SUMMARY OF SEMI-VOLATILE ORGANIC COMPOUNDS DETECTED IN SOIL SAMPLES
CONCRETE AND SOIL INVESTIGATION
TRACK 26
GENERAL MOTORS METAL FABRICATING DIVISION
PONTIAC, MICHIGAN

Sample ID (S-10491-)	*Michigan*	*Michigan*	*030698-SF-028*	*030698-SF-053*	*030698-SF-056*
Sample Location	*Generic*	*Generic*	*BH7-98*	*BH2-98*	*BH10-98*
Depth (bgs)	*Residential*	*Industrial*	*0-2'*	*0-2'*	*0-2'*
Date Sampled	*Direct Contact*	*Direct Contact*	*3/6/98*	*3/6/98*	*3/6/98*
Date Analyzed	*Value (1)*	*Value (2)*	*3/12/98*	*3/21/98*	*3/12/98*
Units	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*	*µg/kg*
Parameter					
N-nitrosodiphenylamine	520,000	5,100,000	ND (330)	ND (330)	ND (330)
Naphthalene	15,000,000	160,000,000	ND (330)	ND (330)	ND (330)
3-Nitroaniline	---	---	ND (800)	ND (800)	ND (800)
2-Nitroaniline	---	---	ND (800)	ND (800)	ND (800)
4-Nitroaniline	---	---	ND (800)	ND (800)	ND (800)
Nitrobenzene	51,000	340,000	ND (330)	ND (330)	ND (330)
4-Nitrophenol	---	---	ND (800)	ND (800)	ND (800)
2-Nitrophenol	1,200,000	13,000,000	ND (330)	ND (330)	ND (330)
Pentachlorophenol	8,100	63,000	ND (800)	ND (800)	ND (800)
Phenanthrene	1,500,000	16,000,000	ND (330)	ND (330)	380
Phenol	12,000,000 (3)	42,000,000 (3)	ND (330)	ND (330)	ND (330)
Pyrene	32,000,000	340,000,000	450	ND (330)	970
1,2,4-Trichlorobenzene	1,100,000 (3)	1,100,000 (3)	ND (330)	ND (330)	ND (330)
2,4,6-Trichlorophenol	900,000	14,000,000	ND (330)	ND (330)	ND (330)
2,4,5-Trichlorophenol	42,000,000	450,000,000	ND (800)	ND (800)	ND (800)

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Notes:

(1) - Michigan Department of Environmental Quality (MDEQ), Interim Environmental Response Division (ERD) Operational Memorandum #8, Revision 4: Generic Residential Cleanup Criteria, June 5, 1995, and Revisions January 26, 1996.

(2) - MDEQ, Interim ERD Operational Memorandum # 14, Revision 2: Generic Industrial Cleanup Criteria, June 6, 1995, and Revisions January 25, 1996 as defined in the MDEQ ERD Training Material, March 1998.

(3) - Values represent revised soil saturation concentrations (CSAT) presented in the MDEQ ERD Training Material, March 1998.

ND ( ) - Not detected above the report limit in the parenthesis.

bgs - below ground surface

ID - Inadequat data to develop criterion

--- - No criteria available

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TABLE 6

SUMMARY OF METALS DETECTED IN SOIL SAMPLES
CONCRETE AND SOIL INVESTIGATION
TRACK 26
GENERAL MOTORS METAL FABRICATING DIVISION
PONTIAC, MICHIGAN

Sample ID (S-10491-)	*Michigan*	*Michigan*	*030698-SF-028*	*030698-SF-053*	*030698-SF-056*
Sample Location	*Generic*	*Generic*	*BH7-98*	*BH2-98*	*BH10-98*
Depth (bgs)	*Residential*	*Industrial*	*0-2'*	*0-2'*	*0-2'*
Date Sampled	*Direct Contact*	*Direct Contact*	*3/6/98*	*3/6/98*	*3/6/98*
Last Date Analyzed	*Value (1)*	*Value (2)*	*3/11/98*	*3/24/98*	*3/12/98*
Units	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*
Parameter					
Aluminum	42,000 (3)	300,000 (3)	7,200	2,200	20,000
Antimony	150	1,600	0.91	ND (0.5)	1.3
Arsenic	6.6	100	12	1.9	**15**
Barium	30,000	320,000	130	15	340
Beryllium	2.3	35	0.69	ND (0.25)	**2.6**
Cadmium	210	2,300	0.21	0.1	1.5
Calcium	---	---	6,200	1,500	100,000
Chromium, total (4)	2,000	22,000	12	4.4	18
Cobalt	2,100	23,000	3.2	3.3	1.8
Copper	16,000	170,000	39	9.6	65
Iron	ID	ID	10,000	5,000	20,000
Lead	400	800 (draft)	93	5.2	140
Magnesium	1,000,000	1,000,000	1,300	750	40,000
Manganese	20,000	210,000	130	390	1,100
Mercury	130	1,400	1.7	ND (0.1)	ND (0.1)
Nickel	32,000	340,000	14	7.2	37
Potassium	---	---	570	210	1,100
Selenium	2,100	23,000	ND (0.5)	ND (0.5)	ND (74)
Silver	2,000	21,000	ND (0.5)	ND (0.5)	ND (0.5)
Sodium	1,000,000	1,000,000	450	35	480
Thallium	28	300	ND (0.5)	ND (0.5)	ND (0.5)
Vanadium	3,700	39,000	22	7.3	12
Zinc	140,000	1,000,000	58	29	61

Notes:

(1) - Michigan Department of Environmental Quality (MDEQ), Interim Environmental Response Division (ERD) Operational Memorandum #8, Revision 4: Generic Residential Cleanup Criteria, June 5, 1995, and Revisions January 26, 1996 as defined in the MDEQ ERD Training Material. March 1998.

(2) - MDEQ, Interim ERD Operational Memorandum # 14, Revision 2: Generic Industrial Cleanup Criteria, June 6, 1995, and Revisions January 25, 1996 as defined in the MDEQ ERD Training Material, March 1998.

(3) - Values represent changes to criteria presented in the MDEQ ERD Training Material, March 1998.

(4) - The total chromium values detailed are compared to the criteria for chromium VI.

ND ( ) - Not detected above the report limit in the parenthesis.

ID - Inadequate data to develop criterion

--- - No criteria available

bgs - below ground surface

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ATTACHMENT A

STRATIGRAPHIC LOGS

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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(DL-01)
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PROJECT NAME: GM METAL FABRICATING DIV. TRACK 26 SITE
PROJECT NUMBER: 10491
CLIENT: GENERAL MOTORS CORPORATION
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH1-98
DATE COMPLETED: MARCH 05, 1998
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: S. FIELEK

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	965.6					
	CONCRETE	964.6		1C		--	--
2.5	SM-SAND (FILL), some silt trace gravel, loose, fine grained, poorly graded, dark brown, moist		8"Ø BOREHOLE	1SS		5	0.0
	- brown, no fill			2SS		9	0.0
5.0				3SS		13	0.0
7.5	- wet, brown and gray		CUTTINGS	4SS		14	0.0
	ML-SILT, trace sand, medium dense, fine grained, poorly graded, brown, moist to wet	957.1					
10.0	- gray			5SS		13	0.0
12.5	CL-CLAY, some silt, little sand, firm, low plasticity, gray, moist	953.6	2"Ø SPLIT SPOON	6SS		5	0.0
	END OF HOLE @ 13.0ft BGS	952.6					
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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PROJECT NAME: GM METAL FABRICATING DIV. TRACK 26 SITE
PROJECT NUMBER: 10491
CLIENT: GENERAL MOTORS CORPORATION
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH2-98
DATE COMPLETED: MARCH 06, 1998
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: S. FIELEK

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	965.2					
	CONCRETE	964.5		1C		--	--
2.5	SM-SAND (FILL), some silt and gravel, medium dense, medium grained, well graded, black, moist		8"Ø BOREHOLE	1SS		12	0.0
	- no fill, poorly graded, brown and gray						
5.0	- loose			2SS		8	0.0
	- wet		CUTTINGS				
7.5	- medium dense, brown			3SS		4	0.0
	CL-CLAY, some silt, little sand, trace gravel, stiff, low plasticity, brown, moist	957.0		4SS		14	0.0
10.0	- gray		2"Ø SPLIT SPOON	5SS		20	0.0
	ML/CL-SILT AND CLAY, little sand, very stiff, low plasticity, fine grained, gray, moist	954.5					
12.5	END OF HOLE @ 11.0ft BGS	954.2					
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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PROJECT NAME: GM METAL FABRICATING DIV. TRACK 26 SITE
PROJECT NUMBER: 10491
CLIENT: GENERAL MOTORS CORPORATION
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH3-98
DATE COMPLETED: MARCH 06, 1998
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: S. FIELEK

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	965.1					
	CONCRETE	964.4	8"Ø BOREHOLE	1C		--	--
-2.5	SM-SAND (FILL), some silt, little gravel, medium dense, fine to medium grained, well graded, black, moist - brown, no fill			1SS		13	0.0
-5.0	- loose, brown and gray - very loose, brown, wet			2SS		9	0.0
			CUTTINGS	3SS		2	0.0
-7.5	SM/ML-SAND AND SILT, trace gravel, medium dense, fine grained, poorly graded, brown, moist	957.1		4SS		25	0.0
-10.0				5SS		20	0.0
-12.5	CL-CLAY, some silt, little sand, trace gravel, very stiff, low plasticity, gray, moist	954.1	2"Ø SPLIT SPOON	6SS		16	0.0
	END OF HOLE @ 13.0ft BGS	952.1					
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATION TABLE
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Page 1 of 1

PROJECT NAME: GM METAL FABRICATING DIV. TRACK 26 SITE
PROJECT NUMBER: 10491
CLIENT: GENERAL MOTORS CORPORATION
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH4-98
DATE COMPLETED: MARCH 05, 1998
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: S. FIELEK

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	965.7					
	CONCRETE	964.9		1C		--	--
2.5	SM-SAND (FILL), some silt, trace gravel, loose, fine grained, poorly graded, dark brown, moist		8"Ø BOREHOLE	1SS		8	0.0
	– no gravel, medium dense, gray and brown, no fill			2SS		10	0.0
5.0	– loose			3SS		4	0.0
7.5	– wet, brown		CUTTINGS	4SS		16	0.0
10.0	ML-SILT, trace sand, medium dense, fine grained, poorly graded, brown, wet	957.0		5SS		20	0.0
12.5	ML/CL-SILT AND CLAY, trace sand, stiff, fine grained, low plasticity, gray, moist	953.4	2"Ø SPLIT SPOON	6SS		9	0.0
	END OF HOLE @ 13.0ft BGS	952.7					
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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PROJECT NAME: GM METAL FABRICATING DIV. TRACK 26 SITE
PROJECT NUMBER: 10491
CLIENT: GENERAL MOTORS CORPORATION
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH5-98
DATE COMPLETED: MARCH 05, 1998
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: S. FIELEK

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	965.4					
2.5	SW-SAND (FILL), some gravel, little silt, medium dense, fine to medium grained, well graded, brown, moist		8"Ø BOREHOLE	1SS		10	0.0
	– trace silt, black	963.2		2SS		10	0.0
5.0	SM-SAND, some silt, trace gravel, fine grained, medium dense, poorly graded, brown, moist – no recovery in split spoon after 2 attempts			3SS		14	--
7.5	– wet		CUTTINGS	4SS		13	0.0
10.0	– gray			5SS		15	0.0
	CL-CLAY, some silt, little sand, firm to stiff, low plasticity, gray, moist	954.7	2"Ø SPLIT SPOON	6SS		8	0.0
12.5	END OF HOLE @ 12.0ft BGS	953.4					
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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PROJECT NAME: GM METAL FABRICATING DIV. TRACK 26 SITE
PROJECT NUMBER: 10491
CLIENT: GENERAL MOTORS CORPORATION
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH6-98
DATE COMPLETED: MARCH 06, 1998
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: S. FIELEK

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	965.5					
2.5	SW-SAND (FILL), little gravel, trace silt, loose, fine to medium grained, well graded, brown, moist - some gravel, black	963.5	8"Ø BOREHOLE	1SS		6	0.0
5.0	SM-SAND, some silt, trace gravel, medium dense, fine grained, poorly graded, brown, moist - loose - wet - medium dense		CUTTINGS	2SS		10	0.0
				3SS		6	0.0
7.5				4SS		12	0.0
10.0				5SS		18	0.0
	CL-CLAY, some silt, trace to little sand, trace gravel, stiff, low plasticity, brown, moist	955.0					
12.5	- gray END OF HOLE @ 12.0ft BGS	953.5	2"Ø SPLIT SPOON	6SS		10	0.0
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(DL-07)
Page 1 of 1

PROJECT NAME: GM METAL FABRICATING DIV. TRACK 26 SITE
PROJECT NUMBER: 10491
CLIENT: GENERAL MOTORS CORPORATION
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH7-98
DATE COMPLETED: MARCH 06, 1998
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: S. FIELEK

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	965.9					
	SW-SAND (FILL), some gravel, trace silt, loose, medium grained, well graded, black, moist						
		964.4					
2.5	SM-SAND, some silt, trace gravel, loose, fine grained, poorly graded, brown, moist		8"Ø BOREHOLE	1SS		4	0.0
	– medium dense, light brown			2SS		10	0.0
5.0			CUTTINGS	3SS		16	0.0
	– wet			4SS		22	0.0
7.5				5SS		14	0.0
		958.4	2"Ø SPLIT SPOON				
10.0	CL-CLAY, some silt, trace sand and gravel, stiff, low plasticity, brown, moist	955.9					
	END OF HOLE @ 10.0ft BGS						
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(DL-08)
Page 1 of 1

PROJECT NAME: GM METAL FABRICATING DIV. TRACK 26 SITE
PROJECT NUMBER: 10491
CLIENT: GENERAL MOTORS CORPORATION
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH8-98
DATE COMPLETED: MARCH 06, 1998
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: S. FIELEK

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	965.0					
	SW-SAND (FILL), some gravel, little silt, loose, medium grained, well graded, black, moist			1SS		6	0.0
-2.5	SM-SAND, some silt, trace gravel, loose, fine grained, poorly graded, brown and gray, moist	963.0	8"Ø BOREHOLE	2SS		6	0.0
	– medium dense, brown			3SS		11	0.0
-5.0							
	SM/ML-SAND AND SILT, trace gravel, medium dense, fine grained, poorly graded, brown, moist to wet	959.0	CUTTINGS	4SS		17	0.0
-7.5							
				5SS		26	0.0
-10.0	CL-CLAY, some silt, trace sand and gravel, stiff, low plasticity, gray, moist	954.8	2"Ø SPLIT SPOON	6SS		14	0.0
-12.5	END OF HOLE @ 12.0ft BGS	953.0					
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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Page 1 of 1

PROJECT NAME: GM METAL FABRICATING DIV. TRACK 26 SITE
PROJECT NUMBER: 10491
CLIENT: GENERAL MOTORS CORPORATION
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH9-98
DATE COMPLETED: MARCH 06, 1998
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: S. FIELEK

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	965.1					
	SW-SAND (FILL), some gravel, trace silt, medium dense, medium grained, well graded, black, moist	963.4	8"Ø BOREHOLE	1SS		12	0.0
2.5	SM-SAND, some silt, trace gravel, loose, fine grained, poorly graded, brown, moist			2SS		9	0.0
5.0				3SS		9	0.0
	- wet		CUTTINGS				
7.5	SM/ML-SAND AND SILT, trace gravel, medium dense, fine grained, poorly graded, brown, moist to wet	957.1		4SS		15	0.0
	- gray			5SS		18	0.0
10.0	CL-CLAY, some silt, trace to little sand, trace gravel, stiff, low plasticity, gray, moist	955.1	2"Ø SPLIT SPOON	6SS		9	0.0
12.5	END OF HOLE @ 12.0ft BGS	953.1					
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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Page 1 of 1

PROJECT NAME: GM METAL FABRICATING DIV. TRACK 26 SITE
PROJECT NUMBER: 10491
CLIENT: GENERAL MOTORS CORPORATION
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: BH10-98
DATE COMPLETED: MARCH 06, 1998
DRILLING METHOD: 4¼" HSA
CRA SUPERVISOR: S. FIELEK

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft.	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	965.4					
2.5	SW-SAND (FILL), some gravel, trace to little silt, gray, medium grained, well graded, black and brown, moist	963.4	8"Ø BOREHOLE	1SS		13	0.0
	SM-SAND, some silt, trace gravel, medium dense, fine grained, poorly graded, brown and gray, moist - brown			2SS		18	0.0
5.0	- wet		CUTTINGS	3SS		10	0.0
7.5	ML/CL-SILT AND CLAY, trace to little sand, stiff, fine grained, low plasticity, brown, moist	957.3		4SS		14	0.0
10.0	CL-CLAY, some silt, trace sand, very stiff, low plasticity, gray, moist	955.9	2"Ø SPLIT SPOON	5SS		19	0.0
	END OF HOLE @ 10.0ft BGS	955.4					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
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ENCOTEC

REC'D CRA
APR 17 1998
SDG 1-3

April 17, 1998

Mr. Paul Wiseman
Conestoga-Rovers & Associates, Inc.
Suite 160
11100 Metro Airport Center Drive
Romulus, MI 48174

RE: Analytical Results / Track 26, GM Metal Fab. Division

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Dear Mr. Wiseman:

Please find enclosed two hard copies of the analytical results, QC and case narrative corresponding to samples from the above referenced project, which were received by LEI/ENCOTEC on March 6, 1998. The samples S-10491-030698-SF-28, S-10491-030698-SF-053 and S-10491-030698-SF-056 were removed from hold status on March 18, 1998.

Please note that this data was previously forwarded to you via facsimile. Transmittals occurred on March 11 - 17, 25 and 30, 1998.

Following review of this data, please feel free to contact me with any questions or concerns.

Sincerely,
Laidlaw Environmental, Inc./ENCOTEC

Jane Rusin
Project Manager

Enclosure

SDG CRA-GMF-98C1
Batch# 09932, 09954, 09955, 09956
#33000

ORIGINAL ANALYTICAL REPORT
Project#: 10491 Lab #: CRA-GMF-98C1
Name: GM Track 26
Description
Event: Phase II
Samples: 24-Soil
Analysis: PCB, SVOC, VOC, metals
TAT: 1 wk
Lab: Encotec
Checked Against Preliminary Data:
Date: 4/30/98 Init.: mae
Date of Validation Memo: 5/7/98
Invoice Approval Date: 4/21/98
Comments:

Laidlaw Environmental, Inc. / Encotec
3985 Research Park Drive Ann Arbor, Michigan 48108
Phone 313.761.1389 Fax 313.761.1034

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APR 2 2 1998

ENCOTEC

April 21, 1998

Ms. Mary Cameron
Conestoga-Rovers & Associates, Inc.
11100 Metro Airport Center Drive
Suite 160
Romulus, MI 47174

RE: Analytical Results/Track 26, GM Metal Fab. Division
Reference No. 10491

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Dear Ms. Cameron:

Please find enclosed the revised narrative corresponding to the above referenced project. The revised pages have been paginated for ease of placement into your existing report. I apologize for any inconvenience this oversight may have caused you.

Following review of this data, please feel free to contact me with any questions or concerns.

Sincerely,
Laidlaw Environmental, Inc./ENCOTEC

Jane Rusin

Jane Rusin
Project Manager

replaced 4/23/98

Enclosure

SDG CRA-GMF-98C1
Batch # 09932, 09954, 09955, 09956
#33000

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DATA PACKAGE COVER PAGE

This report contains 102 pages, excluding the cover letter and is only for the submitted samples.

If any pages are missing please contact Laidlaw Environmental, Inc./ENCOTEC immediately.

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This analytical report does not comply with State of Utah batch QC requirements for organic extractables unless otherwise noted in the laboratory narrative.

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Flags and Definitions

U = The analyte was not detected at or above the quantitation limit.

E = The analyte was detected at a concentration greater than the calibration range; therefore the result is estimated.

DL = The sample was diluted due to sample matrix, therefore QC was not recoverable.

* = The value is outside quality control limits.

K = Reported concentration is proportional to dilution factor and may be exaggerated.

P = When one or both sample results are <5 times the quantitation limit, the RPD cannot be properly evaluated. It is not included in the total QC count.

G = Result is greater than the numerical value presented.

J = The analyte was detected at a concentration below the quantitation limit but above the method detection limit.

B = The analyte was detected in the associated method blank.

M = Matrix interference has resulted in an elevated quantitation limit or distorted QC result.

NC = Not Calculable.

NA = Not Applicable.

A = If the sample result is >4 times the amount spiked, the MS recovery cannot be properly evaluated. It is not included in the total QC count.

CA = Combustion aid was necessary to achieve results.

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SDG	A Sample Delivery Group is a grouping of samples arriving under separate Chains of Custody that are reported together.
QC Set ID	An alphanumeric identification associating appropriate QC data with sample data.
Calculation Basis	Indicates whether the results have been adjusted for moisture content.
Quant Limit	The limit at which the analyte can be reliably reported within the method- specified limits of precision and accuracy under routine operating conditions.
Dil	Dilution Factor.
Conc	The concentration, expressed in appropriate units.
LCS	Laboratory Control Sample.
LCD	Laboratory Control Sample Duplicate.
MS	Matrix Spike.
MSD	Matrix Spike Duplicate.
%Rec	The percent recovery of a fortified analyte (surrogate, matrix spike, lab control sample).
RPD	The relative percent difference for duplicate analyses.
Second Analysis Date	The date on which a sample was analyzed a second time, at a dilution different than that on the (initial) Analysis Date.

If a numerical value is very large, it will be expressed in scientific notation. For example, a concentration of 10,000,000 ug/Kg will be reported as 1E7.

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LABORATORY NARRATIVE

Client Name: CONESTOGA-ROVERS & ASSOCIATES
Project Name: 10491
Project Number: 33000
Sample Delivery Group: CRA-GMF-98C1
Batch Number(s): 100009932, 9954, 9955, 9956
Narrative Date: March 31, 1998

Samples were received and analyzed without incident, within holding times, with chain-of-custody maintained, and according to the referenced methods, except as noted below:

Method Blank- Positive Results

QC Set ID	Analysis	Corrective Action/Result
VORC1101S VORC2001S	Volatiles Volatiles	Methylene chloride was detected in the method blank below the quantitation limit. A result was not reported on the method blank summary form.

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MD Recovery Outliers

QC Set ID	Analysis	Corrective Action/Result
ICPC2303	Aluminum, Barium, Iron, Cadmium, Chromium, Zinc, Copper, Manganese, Nickel, Vanadium, Calcium, Potassium	Poor reproducibility is not uncommon for nonhomogeneous soil samples. Corrective action was deemed unnecessary.

LCS Recovery Outliers

QC Set ID	Analysis	Corrective Action/Result
VORC1101S BNAC1806S	Volatiles Semivolatiles	Since ≥ 80% of the LCS recoveries were within QC windows, corrective action was deemed unnecessary.

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MS/MSD RPD Outliers

QC Set ID	Analysis	Corrective Action/Result
PCBC1106S BNAC1806S	PCBs Semivolatiles	Poor reproducibility is not uncommon for nonhomogeneous soil samples. Corrective action was deemed unnecessary.

MS Recovery Outliers

QC Set ID	Analysis	Corrective Action/Result
ICPC0907 IMSC0901 IMSC2304	Aluminum Silver, Antimony, Arsenic, Selenium Antimony, Arsenic, Selenium	Since ≥80% of the fortified elements in the LCS (including any analytes found in samples) recovered within QC windows, a post-digestion spike was analyzed and was within criteria.
IMSC0901	Lead	Since ≥80% of the fortified elements in the LCS (including any analytes found in samples) recovered within QC windows, a post-digestion spike was analyzed but was outside criteria. Matrix interference is assumed.
PCBC1005S	PCBs	Since a majority of the fortified analytes in the LCS recovered within QC windows, matrix interference is assumed. Corrective action was deemed unnecessary

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I certify that the data presented in this report is accurate, complete and meets the minimum quality assurance standards as specified in 40-CFR 136, 40-CFR-141, and/or SW-846. An assessment of the quality of the data, noting any exceptions, outliers, and/or problems encountered have been narrated herein.

Walt Roudebush/h
Walt Roudebush (or designee)
Technical Director

4/21/98
Date

REVISED April 21, 1998

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SAMPLE CROSS REFERENCE REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
SDG: CRA-GMF-98C1
Submission ID(s): 100009932, 100009954, 100009955, 100009956

Client Sample ID	ENCOTEC Sample ID	Sample Matrix	Date Sampled	Date Received
C-10491-030598-SF-001	200067946	SOLID	03/05/98	03/06/98
C-10491-030598-SF-002	200067947	SOLID	03/05/98	03/06/98
C-10491-030598-SF-003	200067948	SOLID	03/05/98	03/06/98
C-10491-030598-SF-004	200067949	SOLID	03/05/98	03/06/98
S-10491-030598-SF-005	200067950	SOIL	03/05/98	03/06/98
S-10491-030598-SF-006	200067951	SOIL	03/05/98	03/06/98
S-10491-030598-SF-007	200067952	SOIL	03/05/98	03/06/98
S-10491-030598-SF-008	200067953	SOIL	03/05/98	03/06/98
S-10491-030598-SF-009	200067954	SOIL	03/05/98	03/06/98
S-10491-030598-SF-010	200067955	SOIL	03/05/98	03/06/98
S-10491-030598-SF-011	200067956	SOIL	03/05/98	03/06/98
S-10491-030598-SF-012	200067957	SOIL	03/05/98	03/06/98
S-10491-030598-SF-013	200067958	SOIL	03/05/98	03/06/98
S-10491-030598-SF-014	200067959	SOIL	03/05/98	03/06/98
S-10491-030598-SF-015	200067960	SOIL	03/05/98	03/06/98
S-10491-030598-SF-016	200067961	SOIL	03/05/98	03/06/98
S-10491-030598-SF-017	200067962	SOIL	03/05/98	03/06/98
S-10491-030598-SF-018	200067963	SOIL	03/05/98	03/06/98
S-10491-030598-SF-019	200067964	SOIL	03/05/98	03/06/98
S-10491-030598-SF-020	200067965	SOIL	03/05/98	03/06/98
S-10491-030598-SF-021	200067966	SOIL	03/05/98	03/06/98
S-10491-030698-SF-022	200068109	SOIL	03/06/98	03/06/98
S-10491-030698-SF-023	200068110	SOIL	03/06/98	03/06/98
S-10491-030698-SF-024	200068111	SOIL	03/06/98	03/06/98
S-10491-030698-SF-025	200068112	SOIL	03/06/98	03/06/98
S-10491-030698-SF-026	200068113	SOIL	03/06/98	03/06/98
S-10491-030698-SF-027	200068114	SOIL	03/06/98	03/06/98
S-10491-030698-SF-028	200068115	SOIL	03/06/98	03/06/98
S-10491-030698-SF-029	200068116	SOIL	03/06/98	03/06/98
S-10491-030698-SF-030	200068117	SOIL	03/06/98	03/06/98
S-10491-030698-SF-031	200068118	SOIL	03/06/98	03/06/98
S-10491-030698-SF-032	200068119	SOIL	03/06/98	03/06/98
S-10491-030698-SF-033	200068120	SOIL	03/06/98	03/06/98
S-10491-030698-SF-034	200068121	SOIL	03/06/98	03/06/98
S-10491-030698-SF-035	200068122	SOIL	03/06/98	03/06/98
S-10491-030698-SF-036	200068123	SOIL	03/06/98	03/06/98
S-10491-030698-SF-037	200068124	SOIL	03/06/98	03/06/98
S-10491-030698-SF-038	200068125	SOIL	03/06/98	03/06/98
S-10491-030698-SF-039	200068126	SOIL	03/06/98	03/06/98

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SAMPLE CROSS REFERENCE REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
SDG: CRA-GMF-98C1
Submission ID(s): 100009932, 100009954, 100009955, 100009956

Client Sample ID	ENCOTEC Sample ID	Sample Matrix	Date Sampled	Date Received
S-10491-030698-SF-040	200068127	SOIL	03/06/98	03/06/98
S-10491-030698-SF-041	200068128	SOIL	03/06/98	03/06/98
S-10491-030698-SF-042	200068129	SOIL	03/06/98	03/06/98
S-10491-030698-SF-043	200068130	SOIL	03/06/98	03/06/98
S-10491-030698-SF-044	200068131	SOIL	03/06/98	03/06/98
S-10491-030698-SF-045	200068132	SOIL	03/06/98	03/06/98
S-10491-030698-SF-046	200068133	SOIL	03/06/98	03/06/98
S-10491-030698-SF-047	200068134	SOIL	03/06/98	03/06/98
S-10491-030698-SF-048	200068135	SOIL	03/06/98	03/06/98
S-10491-030698-SF-049	200068136	SOIL	03/06/98	03/06/98
S-10491-030698-SF-050	200068137	SOIL	03/06/98	03/06/98
S-10491-030698-SF-051	200068138	SOIL	03/06/98	03/06/98
S-10491-030698-SF-052	200068139	SOIL	03/06/98	03/06/98
S-10491-030698-SF-053	200068140	SOIL	03/06/98	03/06/98
S-10491-030698-SF-054	200068141	SOIL	03/06/98	03/06/98
S-10491-030698-SF-055	200068142	SOIL	03/06/98	03/06/98
S-10491-030698-SF-056	200068143	SOIL	03/06/98	03/06/98
S-10491-030698-SF-057	200068144	SOIL	03/06/98	03/06/98
S-10491-030698-SF-058	200068145	SOIL	03/06/98	03/06/98
S-10491-030698-SF-059	200068146	SOIL	03/06/98	03/06/98
S-10491-030698-SF-060	200068147	SOIL	03/06/98	03/06/98

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METHOD DESCRIPTION REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
SDG: CRA-GMF-98C1
Submission ID(s): 100009932, 100009954, 100009955, 100009956

Method Reference	Description
160.3	Residue, Total, Gravimetric, Dried at 103-105o C
6020	Inductively Coupled Plasma - Mass Spectrometry
6010	Inductively Coupled Plasma - Atomic Emission Spectroscopy
7471	Mercury, Cold Vapor, Non-Aqueous Matrices
8080	Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography
8260	Volatile Organic Compounds by GC/MS: Capillary Column
8270	Semivolatile Organic Compounds by GC/MS: Capillary Column

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ANALYTICAL REPORT

Client: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-028

Date Sampled	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	N/A	**ENCOTEC QC Set ID:**	See below
Date Analyzed:	See below	**ENCOTEC Submission ID:**	100009954
Method Reference:	See below	**ENCOTEC Sample ID:**	200068115
Matrix:	SOIL	**Analyte List:**	N/A
Percent Total Solids:	83.3	**Calculation Basis:**	Dry Weight

	Metals Inorganics	QC Set ID	Date Analyzed	Method Ref.	Units	Quant Limit	Dil	Conc	Flag
1	Aluminum	ICPC0907	03/10/98	6010	ug/Kg	10000	1	7200000	
2	Antimony	IMSC0901	03/11/98	6020	ug/Kg	500	5	910	
3	Arsenic	IMSC0901	03/11/98	6020	ug/Kg	240	5	17000	
4	Barium	ICPC0907	03/10/98	6010	ug/Kg	1000	1	130000	
5	Beryllium	IMSC0901	03/11/98	6020	ug/Kg	240	5	690	
6	Cadmium	IMSC0901	03/11/98	6020	ug/Kg	50	5	210	
7	Calcium	ICPC0907	03/10/98	6010	ug/Kg	10000	1	6200000	
8	Chromium	ICPC0907	03/10/98	6010	ug/Kg	2500	1	12000	
9	Cobalt	IMSC0901	03/11/98	6020	ug/Kg	500	5	3200	
10	Copper	ICPC0907	03/10/98	6010	ug/Kg	1000	1	39000	
11	Iron	ICPC0907	03/10/98	6010	ug/Kg	2000	1	1E7	
12	Lead	IMSC0901	03/11/98	6020	ug/Kg	24000	500	93000	
13	Magnesium	ICPC0907	03/10/98	6010	ug/Kg	5000	1	1300000	
14	Manganese	ICPC0907	03/10/98	6010	ug/Kg	2000	1	130000	
15	Mercury	CVAC1003	03/11/98	7471	ug/Kg	290	10	1700	
16	Nickel	ICPC0907	03/10/98	6010	ug/Kg	1000	1	14000	
17	Potassium	ICPC0907	03/10/98	6010	ug/Kg	10000	1	570000	
18	Selenium	IMSC0901	03/11/98	6020	ug/Kg	500	5	U	
19	Silver	IMSC0901	03/11/98	6020	ug/Kg	500	5	U	
20	Sodium	ICPC0907	03/10/98	6010	ug/Kg	10000	1	450000	
21	Thallium	IMSC0901	03/11/98	6020	ug/Kg	500	5	U	
22	Vanadium	ICPC0907	03/10/98	6010	ug/Kg	1000	1	22000	
23	Zinc	ICPC0907	03/10/98	6010	ug/Kg	1000	1	58000	

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ANALYTICAL REPORT

Client: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-053

Date Sampled	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	N/A	**ENCOTEC QC Set ID:**	See below
Date Analyzed:	See below	**ENCOTEC Submission ID:**	100009956
Method Reference:	See below	**ENCOTEC Sample ID:**	200068140
Matrix:	SOIL	**Analyte List:**	N/A
Percent Total Solids:	80.0	**Calculation Basis:**	Dry Weight

	Metals Inorganics	QC Set ID	Date Analyzed	Method Ref.	Units	Quant Limit	Dil	Conc	Flag
1	Aluminum	ICPC2303	03/24/98	6010	ug/Kg	10000	1	2200000	
2	Antimony	IMSC2304	03/24/98	6020	ug/Kg	500	5	U	
3	Arsenic	IMSC2304	03/24/98	6020	ug/Kg	250	5	1900	
4	Barium	ICPC2303	03/24/98	6010	ug/Kg	1000	1	15000	
5	Beryllium	IMSC2304	03/24/98	6020	ug/Kg	250	5	U	M
6	Cadmium	IMSC2304	03/24/98	6020	ug/Kg	50	5	100	
7	Calcium	ICPC2303	03/24/98	6010	ug/Kg	10000	1	1500000	
8	Chromium	ICPC2303	03/24/98	6010	ug/Kg	2500	1	4400	
9	Cobalt	IMSC2304	03/24/98	6020	ug/Kg	500	5	3300	
10	Copper	ICPC2303	03/24/98	6010	ug/Kg	1000	1	9600	
11	Iron	ICPC2303	03/24/98	6010	ug/Kg	2000	1	5000000	
12	Lead	IMSC2304	03/24/98	6020	ug/Kg	1000	5	5200	
13	Magnesium	ICPC2303	03/24/98	6010	ug/Kg	5000	1	750000	
14	Manganese	ICPC2303	03/24/98	6010	ug/Kg	2000	1	390000	
15	Mercury	CVAC2501	03/25/98	7471	ug/Kg	100	1	U	
16	Nickel	ICPC2303	03/24/98	6010	ug/Kg	1000	1	7200	
17	Potassium	ICPC2303	03/24/98	6010	ug/Kg	10000	1	210000	
18	Selenium	IMSC2304	03/24/98	6020	ug/Kg	500	5	U	
19	Silver	IMSC2304	03/24/98	6020	ug/Kg	500	5	U	
20	Sodium	ICPC2303	03/24/98	6010	ug/Kg	10000	1	35000	
21	Thallium	IMSC2304	03/24/98	6020	ug/Kg	500	5	U	
22	Vanadium	ICPC2303	03/24/98	6010	ug/Kg	1000	1	7300	
23	Zinc	ICPC2303	03/24/98	6010	ug/Kg	1000	1	29000	

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Client: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-056

Date Sampled	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	N/A	**ENCOTEC QC Set ID:**	See below
Date Analyzed:	See below	**ENCOTEC Submission ID:**	100009956
Method Reference:	See below	**ENCOTEC Sample ID:**	200068143
Matrix:	SOIL	**Analyte List:**	N/A
Percent Total Solids:	82.9	**Calculation Basis:**	Dry Weight

	Metals Inorganics	QC Set ID	Date Analyzed	Method Ref.	Units	Quant Limit	Dil	Conc	Flag
1	Aluminum	ICPC0907	03/10/98	6010	ug/Kg	10000	1	2E7	
2	Antimony	IMSC0901	03/11/98	6020	ug/Kg	500	5	1300	
3	Arsenic	IMSC0901	03/11/98	6020	ug/Kg	250	5	15000	
4	Barium	ICPC0907	03/10/98	6010	ug/Kg	1000	1	340000	
5	Beryllium	IMSC0901	03/11/98	6020	ug/Kg	250	5	2600	
6	Cadmium	IMSC0901	03/11/98	6020	ug/Kg	50	5	1500	
7	Calcium	ICPC0907	03/10/98	6010	ug/Kg	95000	10	1E8	
8	Chromium	ICPC0907	03/10/98	6010	ug/Kg	2500	1	18000	
9	Cobalt	IMSC0901	03/11/98	6020	ug/Kg	500	5	1800	
10	Copper	ICPC0907	03/10/98	6010	ug/Kg	1000	1	65000	
11	Iron	ICPC0907	03/10/98	6010	ug/Kg	2000	1	2E7	
12	Lead	IMSC0901	03/11/98	6020	ug/Kg	1200	25	140000	
13	Magnesium	ICPC0907	03/10/98	6010	ug/Kg	5000	1	4E7	
14	Manganese	ICPC0907	03/10/98	6010	ug/Kg	2400	10	1100000	
15	Mercury	CVAC1003	03/11/98	7471	ug/Kg	100	1	U	
16	Nickel	ICPC0907	03/10/98	6010	ug/Kg	9500	10	37000	
17	Potassium	ICPC0907	03/10/98	6010	ug/Kg	10000	1	1100000	
18	Selenium	IMSC0901	03/11/98	6020	ug/Kg	74000	500	U	M
19	Silver	IMSC0901	03/11/98	6020	ug/Kg	500	5	U	
20	Sodium	ICPC0907	03/10/98	6010	ug/Kg	10000	1	480000	
21	Thallium	IMSC0901	03/11/98	6020	ug/Kg	500	5	U	
22	Vanadium	ICPC0907	03/10/98	6010	ug/Kg	1000	1	12000	
23	Zinc	ICPC0907	03/10/98	6010	ug/Kg	1000	1	61000	

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Project/Site: 10491
Sample ID: C-10491-030598-SF-001

Date Sampled:	03/05/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/06/98	**ENCOTEC QC Set ID:**	PCBC0603S
Analysis Date:	03/07/98	**ENCOTEC Submission ID:**	100009932
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200067946
Method Reference:	8080	**Percent Total Solids:**	N/A
Matrix:	SOLID	**Calculation Basis:**	Wet Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	450	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: C-10491-030598-SF-002

Date Sampled:	03/05/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/06/98	**ENCOTEC QC Set ID:**	PCBC0603S
Analysis Date:	03/07/98	**ENCOTEC Submission ID:**	100009932
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200067947
Method Reference:	8080	**Percent Total Solids:**	N/A
Matrix:	SOLID	**Calculation Basis:**	Wet Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: C-10491-030598-SF-003

Date Sampled:	03/05/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/06/98	**ENCOTEC QC Set ID:**	PCBC0603S
Analysis Date:	03/07/98	**ENCOTEC Submission ID:**	100009932
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200067948
Method Reference:	8080	**Percent Total Solids:**	N/A
Matrix:	SOLID	**Calculation Basis:**	Wet Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: C-10491-030598-SF-004

Date Sampled:	03/05/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/09/98	**ENCOTEC QC Set ID:**	PCBC0602S
Analysis Date:	03/10/98	**ENCOTEC Submission ID:**	100009932
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200067949
Method Reference:	8080	**Percent Total Solids:**	N/A
Matrix:	SOLID	**Calculation Basis:**	Wet Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030598-SF-005

Date Sampled:	03/05/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/06/98	**ENCOTEC QC Set ID:**	PCBC0603S
Analysis Date:	03/08/98	**ENCOTEC Submission ID:**	100009932
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200067950
Method Reference:	8080	**Percent Total Solids:**	92.5
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	1500	10	U	
2	PCB-1221	11104-28-2	1500	10	U	
3	PCB-1232	11141-16-5	1500	10	U	
4	PCB-1242	53469-21-9	1500	10	U	
5	PCB-1248	12672-29-6	1500	10	U	
6	PCB-1254	11097-69-1	1500	10	U	
7	PCB-1260	11096-82-5	1500	10	9100	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030598-SF-006

Date Sampled:	03/05/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/06/98	**ENCOTEC QC Set ID:**	PCBC0603S
Analysis Date:	03/07/98	**ENCOTEC Submission ID:**	100009932
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200067951
Method Reference:	8080	**Percent Total Solids:**	84.8
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030598-SF-010

Date Sampled:	03/05/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/06/98	**ENCOTEC QC Set ID:**	PCBC0603S
Analysis Date:	03/07/98	**ENCOTEC Submission ID:**	100009932
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200067955
Method Reference:	8080	**Percent Total Solids:**	90.1
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030598-SF-011

Date Sampled:	03/05/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/06/98	**ENCOTEC QC Set ID:**	PCBC0603S
Analysis Date:	03/07/98	**ENCOTEC Submission ID:**	100009932
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200067956
Method Reference:	8080	**Percent Total Solids:**	89.7
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030598-SF-016

Date Sampled:	03/05/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/06/98	**ENCOTEC QC Set ID:**	PCBC0603S
Analysis Date:	03/07/98	**ENCOTEC Submission ID:**	100009932
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200067961
Method Reference:	8080	**Percent Total Solids:**	88.6
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030598-SF-017

Date Sampled:	03/05/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/06/98	**ENCOTEC QC Set ID:**	PCBC0603S
Analysis Date:	03/07/98	**ENCOTEC Submission ID:**	100009932
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200067962
Method Reference:	8080	**Percent Total Solids:**	85.3
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-022

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/10/98	**ENCOTEC QC Set ID:**	PCBC1005S
Analysis Date:	03/11/98	**ENCOTEC Submission ID:**	100009954
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068109
Method Reference:	8080	**Percent Total Solids:**	87.7
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	2400	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-023

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/10/98	**ENCOTEC QC Set ID:**	PCBC1005S
Analysis Date:	03/11/98	**ENCOTEC Submission ID:**	100009954
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068110
Method Reference:	8080	**Percent Total Solids:**	85.4
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-028

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/12/98	**ENCOTEC QC Set ID:**	PCBC1005S
Analysis Date:	03/13/98	**ENCOTEC Submission ID:**	100009954
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068115
Method Reference:	8080	**Percent Total Solids:**	83.3
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-029

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/12/98	**ENCOTEC QC Set ID:**	PCBC1005S
Analysis Date:	03/13/98	**ENCOTEC Submission ID:**	100009954
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068116
Method Reference:	8080	**Percent Total Solids:**	85.7
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-033

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/10/98	**ENCOTEC QC Set ID:**	PCBC1005S
Analysis Date:	03/11/98	**ENCOTEC Submission ID:**	100009954
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068120
Method Reference:	8080	**Percent Total Solids:**	81.8
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	530	

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CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-034

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/10/98	**ENCOTEC QC Set ID:**	PCBC1005S
Analysis Date:	03/11/98	**ENCOTEC Submission ID:**	100009954
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068121
Method Reference:	8080	**Percent Total Solids:**	81.3
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-039

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/10/98	**ENCOTEC QC Set ID:**	PCBC1005S
Analysis Date:	03/12/98	**ENCOTEC Submission ID:**	100009955
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068126
Method Reference:	8080	**Percent Total Solids:**	88.9
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-040

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/10/98	**ENCOTEC QC Set ID:**	PCBC1005S
Analysis Date:	03/12/98	**ENCOTEC Submission ID:**	100009955
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068127
Method Reference:	8080	**Percent Total Solids:**	84.0
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-045

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/10/98	**ENCOTEC QC Set ID:**	PCBC1005S
Analysis Date:	03/12/98	**ENCOTEC Submission ID:**	100009955
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068132
Method Reference:	8080	**Percent Total Solids:**	87.0
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-046

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/10/98	**ENCOTEC QC Set ID:**	PCBC1005S
Analysis Date:	03/12/98	**ENCOTEC Submission ID:**	100009955
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068133
Method Reference:	8080	**Percent Total Solids:**	83.8
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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ANALYTICAL REPORT

CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-051

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/11/98	**ENCOTEC QC Set ID:**	PCBC1106S
Analysis Date:	03/12/98	**ENCOTEC Submission ID:**	100009956
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068138
Method Reference:	8080	**Percent Total Solids:**	70.4
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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CLIENT: CONESTOGA-ROVERS & ASSOCIATES
Project/Site: 10491
Sample ID: S-10491-030698-SF-052

Date Sampled:	03/06/98	**ENCOTEC Project ID:**	33000
Date Received:	03/06/98	**ENCOTEC SDG ID:**	CRA-GMF-98C1
Date Extracted:	03/11/98	**ENCOTEC QC Set ID:**	PCBC1106S
Analysis Date:	03/13/98	**ENCOTEC Submission ID:**	100009956
Second Analysis Date:	N/A	**ENCOTEC Sample ID:**	200068139
Method Reference:	8080	**Percent Total Solids:**	85.3
Matrix:	SOIL	**Calculation Basis:**	Dry Weight

	AROCLOR MDEQ Part 201, PCBs only List	CAS #	Quant Limit (ug/Kg)	Dil	Conc (ug/Kg)	Flag
1	PCB-1016	12674-11-2	330	1	U	
2	PCB-1221	11104-28-2	330	1	U	
3	PCB-1232	11141-16-5	330	1	U	
4	PCB-1242	53469-21-9	330	1	U	
5	PCB-1248	12672-29-6	330	1	U	
6	PCB-1254	11097-69-1	330	1	U	
7	PCB-1260	11096-82-5	330	1	U	

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