10-19-95



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# FINAL REPORT Phase II Subsurface Investigation Former Avanti Property Northwest Corner of Lafayette and Sample St. South Bend, Indiana ATEC Project No. 21-07-95-00802

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Prepared For:

City of South Bend 1400 County-City Building South Bend, Indiana

Attn: Ms. Ann Kolata

October 19, 1995.



October 19, 1995

Ms. Ann Kolata City of South Bend 1400 County-City Building South Bend, Indiana 46601

Re:

FINAL REPORT

Phase II Subsurface Investigation

Former Avanti Property

NWC of Lafayette and Sample St.

South Bend, Indiana

ATEC Project No. 21-07-95-00802

Dear Ms Ann Kolata:

ATEC Associates, Inc. (ATEC) is pleased to present the City of South Bend with this report documenting the subsurface investigation performed at the above referenced site. The purpose of the study was to determine if subsurface soils have been impacted at the project site property. The attached report summarizes the activities performed by ATEC to accomplish this objective.

We appreciate the opportunity to conduct this investigation and trust this report is responsive to your needs. Please do not hesitate to contact the undersigned if you have any comments or questions concerning this study.

Sincerely,

ATEC ASSOCIATES, INC.

Brad K. Lewis

Staff Environmental Scientist

cc: Anne Slaughter Andrew

Solid & Hazardous Waste Site Assessments Remedial Design & Construction Underground Tank Management Asbestos Surveys & Analysis Hydrogeologic Investigations & Monitoring Analytical Testing / Chemistry Industrial Hygiene / Hazard Communication Environmental Audits & Permitting Exploratory Drilling & Monitoring Wells

Matthew C. Stokes, C.H.M.M. Senior Project Manager

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Appendix B: Boring Logs Appendix C: Analytical Results

### PHASE II SUBSURFACE INVESTIGATION

Former Avanti Property

NWC of Lafayette and Sample St.

South Bend, Indiana

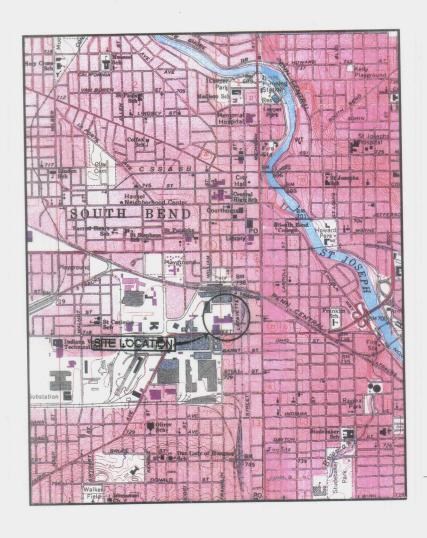
ATEC Project No. 21-07-95-00802

### 1.0 INTRODUCTION

ATEC Associates, Inc. (ATEC) was retained by the City of South Bend, Indiana, to perform a Phase II subsurface investigation on the Former Avanti Property (the project site) located on the northwest corner of Lafayette and Sample Street. (see Figure 1). The scope of this investigation was developed based on conversations with the client and areas of concern identified in ATEC's Phase I Environmental Site Assessment. Borings were located to near areas of former USTs, drum storage, subgrade oil pits, and soil staining noted during the Phase I Environmental Site Assessment.

Sample locations B-1 through B-6 were located at the east end of the former Avanti Building (Room 108). This room contained several subgrade oil sumps. Room 108 was also used for painting and automotive repair. Sample locations B-9 through B-12 were located at the west end of the former Avanti Building. This area was once used for drum storage. In addition, two underground storage tanks were previously located in this area. Sample locations B-7 and B-8 were located within the center portion of the former building to provide a complete sampling scheme across the site.

The scope of this Phase II subsurface investigation included advancing a total of twelve GeoProbe borings. The following report details the field activities, laboratory results and ATEC's findings relative to the project. All documents concerning the investigation can be found in the appendices.



# VICINITY MAP

PHASE II SUBSURFACE INVESTIGATION FORMER AVANTI PROPERTY NORTHWEST CORNER of LAFAYETTE ST. and SAMPLE ST. SOUTH BEND, INDIANA

Project Number: 21-07-95-00802	
Drawing File: 00802VM	
Date: 10-3-95	

Scale: 1" = 2000'

Ckd. By: App'd By: Figure: Drn. By: SRJ



### 2.0 FIELD ACTIVITIES

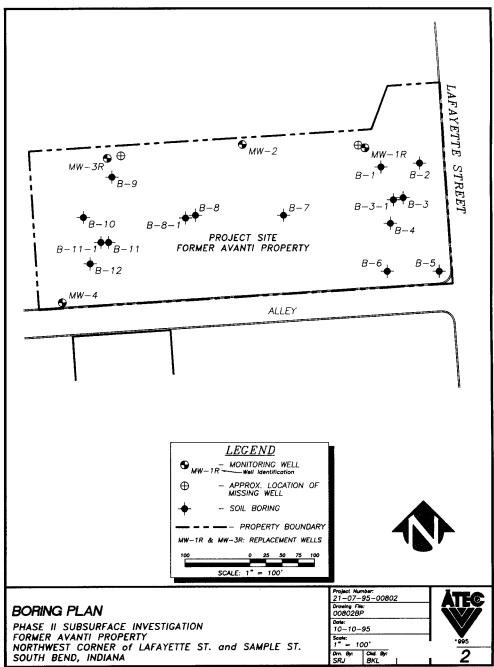
On September 18, and 19, 1995 ATEC personnel, Mr. Knoel Kaneshiro (ATEC Field Geologist), mobilized to the project site. ATEC met Mike Walker (ATEC Driller), to discuss boring locations and locations of utilities. Prior to the start of field activities, the boring locations were located and the Site Safety Plan was reviewed. Figure 2 shows the project site and relative boring locations.

### 2.1 GeoProbe Soil Sampling

On September 18, and 19, 1995, ATEC personnel mobilized to the project site to collect a total of 12 soil samples from 12 boring locations across the project site. One soil sample from each boring for a total of 12 soil samples were collected. GeoProbe boring samples were designated B-1 through B-12. Borings were advanced to a depth 20 ft below grade.

The borings were completed using a GEO Scorpion van-mounted drill rig. GeoProbe boring locations are shown on Figure 2. A Kansas Sampler®, consisting of a 4 ft in length by a 2-inch diameter stainless steel rod, was hydraulically driven into the subsurface soils. Soil samples were collected at two foot intervals from the surface down to the bottom of each boring. Between each boring the sampling equipment was decontaminated using a non-phosphate detergent wash followed by a tap water rinse. Upon completion, each bore hole was filled to the surface with non-shrink bentonite.

Soils from each interval were visually inspected by an ATEC scientist and classified using the Unified Soil Classification System (USCS). Each soil sample was placed in a sealed plastic bag and later screened for the presence of hydrocarbon vapors using an H-Nu® photo-ionization detector (PID). The PID measures total photo-ionizable vapors (TPVs) in the parts per million (ppm) range. The screening procedure is outlined in Appendix A. A complete description of the geologic materials encountered and the TPV responses are included on the boring logs in Appendix B. Based on field observations, and TPV readings



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one soil sample from each of twelve borings B-1 through B-12 were collected. Twelve soil samples were submitted to the ATEC laboratory for Volatile Organic Compound (VOC) analysis. All soil samples were transported to ATEC's laboratory in Indianapolis, Indiana using proper quality assurance/quality control (QA/QC) procedures and all appropriate chain-of-custody protocols. The soil samples were submitted to the ATEC laboratory for a one week turn-around for verbal results.

# 2.2 Second Round Soil Sampling

Based on the results of the first round of sampling showing low levels of toluene as possible artifact, ATEC remobilized to the project site to redrill three of the twelve borings to verify or discount earlier findings. The three additional soil boring locations (labeled B-3-1, B-8-1 and B-11-1) corresponded to the original soil boring locations B-3, B-8, and B-11 and are shown in Figure 2. Soil sample collection, classification, and visual screening were performed using the same methodology described above. Three soil samples were collected and submitted to the laboratory for analytical testing for toluene. The three soil samples submitted to the laboratory for analysis were collected from the same depths as the original samples collected from each of the corresponding boring locations.

### 3.0 FINDINGS

### 3.1 Geology

Visual inspection of soil samples from borings B-1 through B-12 revealed the presence of fill material to a depth of 2.0 to 3.5 ft below grade. Below the fill material in these borings is a moist brown silty sand. In borings B-6, and B-9 a four inch clay seam was encountered within the silty sand unit. No groundwater was encountered in the borings. Slight black staining was noted in two of the twelve borings. A two inch black seam was noted at approximately 11 feet below grade in boring B-1 and a one foot black seam was encountered in boring B-2 from 2 to 3 feet below grade.

# 3.2 Soil Screening

All soil samples collected during the investigation were screened for emission of TPVs using an TVA 1000 PID. Due to the high ionization potentials for many chlorinated solvents the TVA 1000 PID was equipped with a 11.6 eV lamp to better detect these constituents. The screening results for soil samples from borings B-4, B-5 and B-6 were all non-detect. Field screening of soil samples from soil borings B-1, B-2, B-3, B-10, B-11 and B-12 revealed low TPV readings throughout the borings. Field screening results from B-7, B-8 and B-9 revealed slightly more elevated readings around 40 ppm throughout each of these borings. The screening results for all soil samples from all twelve geoprobe borings can be found on the boring logs in Appendix B.

### 3.3 Soil Analytical Results

Soil samples collected from B-1 through B-12 were submitted to the ATEC laboratory for VOC testing. The VOC analysis were performed on a Finnigan Incos 50 GC/MS/DS system, complete with Superincos Software, via SW 846 Method 8240 for Purgeable Organic Compounds. Note three soil samples from borings B-3-1, B-8-1 and B-11-1 were collected and submitted for toluene testing. The toluene analysis was performed according to the same methodology described above. Analytical results from the soil samples from borings B-1 through B-12 did not reveal any concentrations of VOCs other than methylene chloride and toluene. Methylene chloride and toluene results are discussed in detail in Section 3.4 of this report. Analytical results of the three soil samples from borings B-3-1, B-8-1, and B-11-1 did not reveal any concentration of toluene. Table 1 summarizes the VOC analytical results and their respective depths.

# Table 1 Soil Analysis Volatile Organic Compounds (VOCs) Former Avanti Property NWC of Lafayette and Sample Street South Bend, Indiana

ATEC Project No. 21-07-95-00802

Sample I.D.	Depth of Sample (ft)	VOCs (ppb)	Methylene Chloride (ppb)	Toluene (ppb)
B-1	10-12	ND	8	ND
B-2	2-3	ND	13	5
B-3	18-20	ND	9	110
B-4	18-20	ND	9	87
B-5	18-20	ND	8	29
B-6	18-20	ND	9	120
B-7	18-20	ND	6	21
B-8	18-20	ND	9	140
B-9	18-20	ND	7	30
B-10	18-20	ND	5	71
B-11	10-12	ND	9	130
B-12	18-20	ND	8	92
B-3-1	18-20	NA	NA NA	ND
B-8-1	18-20	NA	NA NA	ND
B-11-1	10-12	NA	NA NA	ND

ND: None detected above method quantitation limits

NA: Not analyzed

<sup>\* =</sup> Methylene chloride and toluene detected in samples

Notes: Methylene chloride was identified as a laboratory artifact

Toluene is believed to be an artifact, however the source of toluene as an artifact is not confirmed

### 3.4 Methylene Chloride and Toluene Results

Analytical results from the initial round of soil sampling revealed methylene chloride and toluene in all the samples except for the lack of toluene in Sample B-1. Methylene chloride and toluene are commonly considered as a laboratory artifact and the presence of these constituents at these concentrations are not considered attributable to the activities at the site or adjacent properties.

Methylene chloride and toluene are used in various laboratory analyses and are considered laboratory artifacts. Although extraction and preparation processes are all performed by trained personnel in separate rooms under vented hoods, some vapors escape and are released into the laboratory atmosphere. Given the extreme sensitivity of the analytical instrumentation, these compounds are often detected at low levels in environmental samples.

The U.S. EPA document "Laboratory Data Validation Functional Guidelines for Evaluating Organics Analysis" allows for up to ten times the concentration found in the method blank to be reported as a laboratory artifact. The method blank for this analysis revealed a concentration of up to 12 ppb of methylene chloride, thus analytical results below 120 ppb should be considered laboratory artifacts. Concentrations of toluene were not identified in the method blanks for these sample results. Therefore, toluene concentrations in these samples could not be confirmed as the result of laboratory procedures. Introduction of toluene may be the result of contaminated sample jars or other sources such as permanent marking pens or glues from tape or labels. The source of toluene introduced into the samples is therefore unknown.

Although the source of the toluene from the initial sampling could not be determined, additional soil samples (B-3-1, B-8-1, and B-11-1) collected from the similar boring locations and similar depths did not reveal the presence of toluene. Based on these confirming data, ATEC concludes the toluene concentrations from the initial soil samples

was inadvertently introduced into the samples and is not considered attributable to on-site subsurface soil conditions.

### 4.0 CONCLUSIONS AND RECOMMENDATIONS

The purpose of this investigation was to determine if the subsurface soils had been impacted by former on-site activities. Based on field observations and analytical results, ATEC concludes that the upper 20 ft of subsurface soils from borings B-1 through B-12 have not been impacted with volatile organic compounds.

Based on the findings of this study ATEC recommends no further investigation with regard to the top 20 ft of unsaturated (above groundwater) soils.

### **5.0 QUALIFICATIONS**

Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with customary principles and practices in the fields of environmental science and engineering. This warranty is in lieu of all other warranties either express or implied. This company is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploration and laboratory test data presented in this report.

It should be noted that all surficial environmental assessments are inherently limited in the sense that conclusions are drawn and recommendations developed from information obtained from limited research and site evaluation. Subsurface conditions were not field investigated as part of this study and may differ from the conditions implied by the surficial observations. Additionally, the passage of time may result in a change in the environmental characteristics at this site and surrounding properties.

The work performed in conjunction with this assessment and the data developed resulted from available information at the dates and locations given in the records searched and visible and accessible evidence on the site. Consequently, this report does not warrant or guarantee that any and all problems that may exist at the site were disclosed, nor does it warrant against operations or conditions present of a type or at a location not investigated, nor against future operations or conditions.

# APPENDIX A

# FIELD SCREENING EQUIPMENT

ATEC used a portable instrument called an H-Nu® to measure TPVs emitted from the soil samples. The H-Nu® is equipped with a small pump which continuously draws air samples into an ionization chamber which is flooded with ultra-violet light. Ionization of the vapors within this chamber results in the generation of an electric current which relates to the concentration of vapors below this energy. Most of the light permanent gases (such as those in ambient air) have ionization potentials at 12 eV or more while many organic chemicals (benzene, xylene, toluene, etc.) have ionization potentials below 10.5 eV.

For the purposes of this investigation, the H-Nu® was used as a screening tool for the presence of photo-ionizable contaminants. Following extrusion the sample was placed in a plastic sample bag and the pump inlet for the H-Nu® was placed in the bag for measurement. The highest value recorded during this procedure was recorded on the boring logs. For screening purposes, ATEC relies on the calibration performed on the instrument at the factory. The factory calibrates the instrument to 100 ppm benzene, therefore, values reported on the boring logs represent ppm as benzene. In screening applications the actual numerical values recorded are of secondary importance, especially since there are no established United States Environmental Protection Agency (U.S. EPA) and the Indiana Department of Environmental Management (IDEM) standards for TPVs. The relative magnitude of the values between sampling sites is considered to be of primary importance in screening for the presence of contaminated samples. In general, background levels of TPVs at an undeveloped site could range from 0 to 25 ppm while background values at an industrial site or a gasoline station could range from 0 to 50 ppm.

# APPENDIX B

BORING LOGS

ĀTEC A	ssociates, Inc.
W	5150 East 65th Street Indianapolis, Indiana (317) 849-4990

Client	City of South Bend	Boring #	B-1
Project Name	Subsurface Investigation	Job#	21-07-95-00802
Project I ocetion	NW Corner of Tutt and Lafavette South Rend, Indiana	_	

### DRILLING and SAMPLING INFORMATION 9/18/95 Date Started Hammer Wt. N/A BLOWS/8-INCHES 8-INCH INCREMENTS Date Completed 9/18/95 Hammer Drop N/A M. Walker N/A Drill Foreman Spoon Sampler OD K. Kaneshiro **Boring Inspector** Rock Core Dia. N/A BORING AND Geoprobe N/A **Boring Method** Shelby Tube OD BROUNDMATER SAMPLING NOTES Boring Location 48 ft South and 23 ft East of MW-1R RECOVERY SOIL CLASSIFICATION SAMPLE NO. SCALE (FT) 2€ SURFACE ELEVATION Brown moist Clayey Silty Sand with pieces of 1 80 2 brick (FULL) 2.0 Brown medium to course SILTY SAND (SM) with 2 100 2 trace Gravel 3 60 24 ND 100 60 7 10 100 9 2 inch Black seam 7 100 8 100 8 2 15-Fine to medium Sand below 15 ft Decreasing silt below 15 ft 9 100 3 100 10 1 20.0 20-Bottom of Test Boring at 20.0 ft \*Collected Sample No. 6 (10-12 ft) for VOC laboratory analysis SAMPLER TYPE

STANDARD PENETRATION TEST

TPV - TOTAL PROTO-IONIZATION VAPORS
TFV - TOTAL PLAME-IONIZATION VAPORS
PPM - PARTS PER MILLION

**▼** AT COMPLETION X AFTER HR.S WATER ON RODS

FT. FT. FT.

HSA -- HOLLOW STEM AUGERS GBO -GEOPROBE HAND AUGERS HA

# **ĀTEC** Associates, Inc

# SOIL BORING LOG

TEC A	ssociates, nic.
	5150 East 65th Street Indianapolis, Indiana (317) 849-4990

Client		City of South B	end								Boring # B-2	
Projec	t Name	Subsurface Investigation							Job # 21-07-95-008	02		
Projec	t Location	NW Corner of Tutt and Lafayette, South Bend, Indiana										
		DRILLING and SAMI	LING INFORMATIO	N								
De	te Started	9/18/95	Hammer Wt.		<b>i/A</b> 1	ĥα.	Г		,			_
	e Completed	9/18/95	Hammer Drop		I/A				ទ្			
	il Foreman	M. Walker	Spoon Sampler OD	_	I/A				B-INCHES INCREMENTS	ĺ		
Bo	ring Inspector	K. Kaneshiro	Rock Core Dia.		<b>I/A</b>	n.			26		nonnia ilim	
Bo	ring Method	Geoprobe	Shelby Tube OD	N	I/A :		ω.		1. S		BORING AND	
Bo	ring Location _	118 ft East and	38 ft South of M	W-1R				"			SAMPLING NOTES	1
		SOIL CLASSIFICATIO	N	r	ш	ш	3	ER.	BLOWS/8-INCHES 8-INCH INCREMEN			
	;	SURFACE ELEVATIO	N	EPTH (FT)	SCALE (FT)	SAMPLE NO.	GROUNDUATER	RECOVERY	₽ 85 10	<u>₹</u>		
₩		Silty Sand with Gravel	and Brick		-	1		100		2		-
-188	(FILL)			3.0	-	2						+
ľ	Red moist m	edium SILTY SAND (S	M), little fines	3.0	-	2.50		100		14	2-3 inch Seam of black	-
1	with Gravel				- ا	3	١.	100		3	material encountered	F
7	]		·		5-	Ĺ		100				
1						4		100		5		
-	Light brown	below 8 ft			-							-
					-	5		100		4		F
1					10-							$\vdash$
	Clay with G	ravel 14-16 ft			-	6		100		3		
1						7		100		1		[
					-							-
-1					15-	8		100		1		-
-					-	<del> </del>	l					-
	:			18.0	-	9		100		ND		ŀ
T	Bottom of To	est Boring at 18.0 ft			-		1					ı
	:										*Collected Sample No. 2.5 (2-3 ft) for VOC	
											laboratory analysis	
Ì												١
										1		
	1		<del></del>	L	L	L	L	L		Ц	1	

SAMPLER TYPE

SPT - STANDARD PENETRATION TEST
TPV - TOTAL PHOTO-DONIZATION VAPORS
TPV - TOTAL FLAME-HONIZATION VAPORS
PPM - PARTS PER MILLEON

TAFTER HRS WATER ON RODS

FT. FT. FT.

HSA - HOLLOW STEM AUGERS
GEO - GEOFROBE
HA - HAND AUGERS
MD - M
ND - N

# **SOIL BORING LOG**

lient	City of South Bend							Boring # B-3	
roject Name	Subsurface Investigation							Job # 21-07-95-0080	
roject Location	NW Corner of Tutt and Lafayette, South Bend, Indiana								
	DRILLING and SAMPLING INFORMATION	N							
Date Started _	9/18/95 Hammer Wt	N	N/A	lbs.					
Date Completed	9/18/95 Hammer Drop		V/A_	in.			13		
Drill Foreman	M. Walker Spoon Sampler OI		N/A	in.			EN EN		
Boring Inspector	K. Kaneshiro Rock Core Dia.		V/A	in.				İ	BORING AND
Boring Method	Geoprobe Shelby Tube OD		V/A.	in.	œ	.	έχ		SAMPLING NOTES
Boring Location	73 ft South and 58 ft East of MV	/-1R			1	× ×	홍윤		JAMI BLIG HOTES
	SOIL CLASSIFICATION	EPTH (F)	SCALE (FT)	SAMPLE NO.	GROUNDUATER	RECOVERY	F BLOWS/8-INCHES 8-INCH INCREMENTS	_⊋	
	SURFACE ELEVATION	띰	ŜΓ	₹2	8	찙	S A	Z€	
Brown moist (FILL)	Clayey Silty Sand with trace Gravel		.	1		100		ND	
	medium to course SILTY SAND	2.5	:	2		100		ND	
(SM) trace G	ravel			3		100		1	
			5-			100		1	
4				4		100		ND	Decreasing Silt below 6 ft
				ļ					00000
3				5		50		ND	
			10	6		100		2	
4				ļ					
				7		100		ND	
4			-	8					
			15	1 •		100		1	
1				9		100		ND:	
			-	-					
1		20.0	-	10*		100		ND	
Bottom of Te	et Boring at 20.0 ft	20.0	20-					1	*Collected Sample No. 10
									(20 ft) for VOC sampling laboratory analysis
1									
	MPLER TYPE		L		I			<u> </u>	

HSA — HOLLOW STEM GBO — GBOFROBE HA — HAND AUGERS MD — M ND — N

ĀTEC A	ssociates, Inc.
W	5150 East 65th Street Indianapolis, Indiana (317) 849-4990

Client	City of South Bend	Boring #	B-4
Project Name	Subsurface Investigation	Job#	21-07-95-00802
Project Location	NW Corner of Tutt and Lafavette, South Rend, Indiana		

### DRILLING and SAMPLING INFORMATION 9/18/95 **Date Started** Hammer Wt. N/A Ibs. Date Completed 9/18/95 N/A in. Hammer Drop M. Walker N/A Drill Foreman Spoon Sampler OD K. Kaneshiro N/A Boring Inspector Rock Core Dia. **BORING AND** N/A Geoprobe Boring Method Shelby Tube OD SROUNDMATER SAMPLING NOTES **Boring Location** 140 ft South and 40 ft East of MW-1R RECOVERY SOIL CLASSIFICATION SAMPLE NO. SCALE (FT) ₽Ê FS SURFACE ELEVATION Brown moist Clayey Silty Sand with fragments of ND 1 80 debris (brick) (FILL) 2.5 Brown moist medium SILTY SAND (SM) 2 100 ND ND 3 100 4 100 ND 5 25 ND 10-6 100 ND Coarse Sands below 12 ft 7 100 ND 100 ND R 15-100 ND 9 10\* 100 ND 20.0 20-Bottom of Test Boring at 20.0 ft \*Collected Sample No. 10 (20 ft) for VOC laboratory analysis SAMPLER TYPE

	01 mm 1 mm 1 m 1 m
-	STANDARD PENETRATION TO

SPI - STANDARD FEMBLIKATION 1851
TPV - TOTAL PHOTO-BONIZATION VAPORS
TFV - TOTAL FLAME-BONIZATION VAPORS
PPM - PARTS FER MELLION

AT COMPLETION ¥ AFTER

HRS WATER ON RODS FT.

HSA - HOLLOW STEM AUGERS GBO - GBOPROBE FT. FT. HA HAND AUGERS

ATEE AS	ssociates,	Inc.
W	5150 East 65th St Indianapolis, Indi	reet ana (317) 849-4990

Client	City of South Bend	Boring #	B-5
Project Name	Subsurface Investigation	Job #	21-07-95-00802
Project Location	NW Corner of Tutt and Lafavette, South Rend, Indiana	_	

	DRILLING and SAME	T ING INFORMATIO	N							
Date Started	9/18/95	Hammer Wt.		Ī/A	lba.	Г	Π			
Date Completed	9/18/95	Hammer Drop		I/A				ស		
Drill Foreman	M. Walker	Spoon Sampler OD	_		in.			ΩÄ		
Boring Inspector	K. Kaneshiro	Rock Core Dia.			in.			交货		
Boring Method	Geoprobe	Shelby Tube OD	N	I/A	in.	اہا		某음		BORING AND
Boring Location _	86 ft South and					12	*	δ.¥		SAMPLING NOTES
	OIL CLASSIFICATIO	N	_		щ	晝		BLOWS/8-INCHES 8-INCH INCREMENTS		
s	URFACE ELEVATION	4	EPTH (FT)	SCALE (FT)	SAMPLE NO.	GROUNDMATER	RECOVERY	SPT SPT B-	TP PP∰	
Brown moist	Clayey Silty Sand (FIL	L)		S	oz i	9	100	ωн	ND	
₩			2.5	Ι.						
Reddish brow	n moist medium SILT	SAND (SM)		-	2		100		ND	
			1	- ا	3		100		ND	
Coarse brow	sand 5 to 6 ft			5-	1		100		ND	
				-	4		100		ND	
Course Sands	with trace Gravel from	8 to 10 ft		-	5					Decreasing silt content
				٠, ا	1 '		100		ND	below 8 ft
				10-	. 6		100		ND	
				-						
				-	7		100		1	
					8		100		ND	
Very coarse	with Gravel below 15 ft			15	l <b>°</b>		اسا		שא	
				] ]	9		60		ND	
				-						
			20.0	-	10*		100		ND	
Bottom of Te	at Boring at 20.0 ft		20.0	20						*Collected Sample No. 10
										(20 ft) for VOC laboratory analysis
										Processive annivers
	,									
				<u> </u>	<u> </u>	L	<u>L</u> l		1	

M	I JENR	TV	DU

SPT - STANDARD PENETRATION TEST
TPV - TOTAL PHOTO-IONIZATION VAPORS
TPV - TOTAL FLAME-IONIZATION VAPORS
PPM - PARTS PER MILLION

**¥** AT COMPLETION # AFTER HRS WATER ON RODS

PT. FT. FT.

HSA - HOLLOW STEM AUGERS
GEO - GEOPROBE
HA - HAND AUGERS
MD - M
ND - N

ĀTEC A	ssociates, Inc.
W	5150 East 65th Street Indianapolis, Indiana (317) 849-4990

Client	City of South Bend	Boring #	B-6
Project Name	Subsurface Investigation	Job #	21-07-95-00802
Project Location	NW Corner of Tutt and Lafayette, South Bend, Indiana		

Date Started Date Completed Drill Foreman Roring Inspector Boring Method Roring Location	9/19/95 9/19/95 M. Walker K. Kaneshiro Geoprobe 90 ft South and	Hammer Wt.  Hammer Drop Spoon Sampler OD Rock Core Dia.  Shelby Tube OD 12 ft West of B-4	N	I/A I/A	lbs. in. in. in.	ATER	7 %	AS/8-INCHES CH INCREMENTS		BORING AND SAMPLING NOTES
	URFACE ELEVATION		DEPTH (FT)	SCALE (FT)	SAMPLE NO.	GROUNDMATER	RECOVERY	SPT BLOWS IN 8-INCH	TPV (PPM)	
Brown moist debris of Bric	Silty Sandy Clay with ( k (FILL)	Gravel and		-	1		100		ND	
Brown moist	coarse SILTY SAND (S	SM) with	3.0	-	2		100		ND	
Gravel				5	. 3		100		ND	
				-	4		100		ND	
				-	5		50		ND	
Fine Sande fr	om 11 to 13 ft			10-	6		100		ND	
				-	7		80		ND	
4 inch seam	of SILTY SANDY CLA	Y (CL) at 14.5	14.5 14.7	15-	8		100		ND	
Brown moist Brown moist	coarse SILTY SAND (S			-	9		100		ND	
Gravel			20.0	-	10*		100		ND	
Bottom of Te	st Boring at 20.0 ft		20.0	20-						*Collected Sample No. 6 (10-12 ft) for VOC laboratory analysis

SAMPLER T	YPE
-----------	-----

SPT - STANDARD PENETRATION TEST
TPV - TOTAL PHOTO-IONIZATION VAPORS
TPV - TOTAL FLAMB-IONIZATION VAPORS
PPM - PARTS PER MILLEON

¥ AT COMPLETION ¥ AFTER HRS ■ WATER ON RODS

FT. FT. FT.

HSA - HOLLOW STEM AUGERS
GEO - GEOPROBE
HA - HAND AUGERS
MD - HAND AUGERS
ND - N

ĀTEC A	ssociates, Inc.
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Chent	City of South Bend	Boring #	B-7
Project Name	Subsurface Investigation	Job #	21-07-95-00802
Project Location	NW Corner of Tutt and Lafayette, South Bend, Indiana		

### DRILLING and SAMPLING INFORMATION 9/19/95 N/A **Date Started** Hammer Wt. SPT BLOWS/8-INCHES IN 8-INCH INCREMENTS Date Completed Hammer Drop 9/19/95 N/A M. Walker N/A Drill Foreman Spoon Sampler OD K. Kaneshiro N/A **Boring Inspector** Rock Core Dia. BORING AND Geoprobe Shelby Tube OD N/A **Boring Method** GROUNDHATER SAMPLING NOTES Boring Location 122 ft South and 85 ft East of MW-2 RECOVERY SOIL CLASSIFICATION SCALE (FT) SAMPLE NO. ₽₽ PP#9 SURFACE ELEVATION Brown moist Clayey Silty Sand with Gravel 100 1 2 inch of Silty Clay at 2.8 ft 100 2 2 3.5 Brown moist medium to course SILTY SAND (SM) and GRAVEL 3 100 25 100 39 50 5 40 10-6 100 37 7 75 39 100 39 15-9 80 40 10+ 100 40 20.0 20-Bottom of Test Boring at 20.0 ft \*Collected Sample No. 10 (20 ft) for VOC laboratory analysis SAMPLER TYPE

-	STANDARD PENETRATION TEST
_	TOTAL PHOTO-IONIZATION VAPOR

TPV - TOTA TFV - TOTAL FLAMB-IONIZATION VAPORS
PPM - PARTS PER MILLION AT COMPLETION X AFTER HRS WATER ON RODS

FT. HSA - HOLLOW STEM AUGERS GBO - GEOPROBE FT. HA - HAND AUGERS
MD - N PT.

# **SOIL BORING LOG**

Client		City of South Be	end								Boring # B-8	
Projec	t Name	Subsurface Inve									Job# 21-07-95-00802	
Projec	t Location	NW Corner of T	utt and Lafayeti		h Bend	, Indi	апа					
ρ	e Started	9/19/95	Hammer Wt.		Ň/A					т-		٦
	te Completed	9/19/95	Hammer Drop		V/A				ý			
	ll Foreman	M. Walker	Spoon Sampler OD			in. in.			EN			
Bos	ing Inspector	K. Kaneshiro	Rock Core Dia.			in.	l		20			l
Bo	ing Method	Geoprobe	Shelby Tube OD		I/A	in.	g <sub>K</sub>		P S		BORING AND	
Bor	ing Location	115 ft South and	78 ft West of M	W-2	1	,	E	× <u>≻</u>	BLOWS/8-INCHES 8-INCH INCREMENTS		SAMPLING NOTES	l
L		SOIL CLASSIFICATION	N	₹.	щ	7	Ž	3				
		SURFACE ELEVATION	ı	GEPTH (FT)	SCALE	SAMPLE NO.	GROUNDMATER	RECOVERY	F S	₹ <u>€</u>		
	Brown moist	coarse SILTY SAND (S	iM)			1	Ī	100		25		t
1	]				-	-	Ī					-
					-	2		100		42		ŀ
4	Medium Sen	ds from 6 to 8 ft			5-	3		50		41		L
		LOW OW OK			· .	<b>_</b>					Decreasing silt content below 5.0 ft	L
					-	4		100		38		ŀ
					_	5		50		37		r
-[ ]					10	<u> </u>						
					-	6		100		39		ŀ
					_	7		100		42		ŀ
					-	<u> </u>		100		72		
-	Increased Gra	ivel content below 15 ft			15	8	Ì	100		25		L
					-	9		100		41		ŀ
					-			100		71		r
-					-	10*		100		40		Ĺ
101	Bottom of Te	at Boring at 20.0 ft		20.0	20-						*Collected Sample No. 10	ŀ
											(20 ft) for VOC laboratory analysis	
											movement manyage	
										i		
1												l
SPT -		MPLER TYPE D PENETRATION TES	· — · · · ·	7 47 66	~~~	BON.			_			_
TPV TFV PPM	- TOTAL PH	OTO-IONIZATION VA AMB-IONIZATION VA	PORS	AT CC	R	HR.	ı		FT. FT. FT.	HSA GBO HA MD	- HOLLOW STEM AUGERS - GEOFRORE - HAND AUGERS - N	

# ĀTEC Associates, Inc. 5150 East 65th Street Indianapolis, Indiana (317) 849-4990

Client	City of South Bend	Boring #	B-9
Project Name	Subsurface Investigation	Job#	21-07-95-00802
Project Location	NW Corner of Tutt and Lafayette, South Bend, Indiana		

Date Started	9/19/95	Hammer Wt.	N	<b>[/A</b> 1	bs.					
Onte Completed	Completed 9/19/95 Hammer Drop		N	<b>I/A</b> i	n.			S A		
Orill Foreman	M. Walker	Spoon Sampler OD	N	<b>//A</b> i	n.			¥¥		
loring inspector	K. Kaneshiro	Rock Core Dia.	N	[/A	n.			28	1 1	BORING AND
loring Method	Geoprobe	Shelby Tube OD		<b>//A</b> i	n.	œ	×	ψÃ		SAMPLING NOTES
loring Location	14 ft East and 17	ft South of MW	<u>-3R</u>		r —	E		중요	1	
	SOIL CLASSIFICATION	N	r	ш	9	호	5	Z F	_	
	SURFACE ELEVATION		DEPTH (FT)	SCALE (FT)	SAMPLE NO.	GROUNDLANTER	RECOVERY	SPT BLOWS/8-INCHES IN 8-INCH INCREMENTS	₹ E	
Brown mois	Clayey Sifty Sand (FIL.	L)	-	-	1		100		39	
Brown mois	coarse SILTY SAND (S	im)	3.0	-	2		100		40	
Medium to o	oarse below 5 ft			5-	3		100		44	
d inch Sau-	of SILTY SANDY CLA	V (CI)		-	4		100		40	
	medium to coarse SILT				5		100		32	
				10	6		100		42	
				-	7		100		43	
4 inch Seam	of SILTY SANDY CLA	Y (CL) .T=1	14.3 14.5	15	8		100		26	
	t medium to coarse SILT ravel	Y SAND			9		100		43	
Modium			20.0		10+		100		43	
Bottom of T	est Boring at 20.0 ft			20-						*Collected Sample No. 10 (20 ft) for VOC laboratory analysis

 LIM	DD	TYPE	3

SPT - STANDARD PENETRATION TEST
TPV - TOTAL PHOTO-JONIZATION VAPORS
TPV - TOTAL FLAMB-JONIZATION VAPORS
PPM - PARTS PER MILLION

¥ AT COMPLETION AFTER. HRS WATER ON RODS

FT. FT. FT.

HSA - HOLLOW STEM AUGERS
GEO - GEOFRORE
HA - HAND AUGERS
MD - N

ALEC A	ssociates, Inc.
W	5150 East 65th Street Indianapolis, Indiana (317) 849-4990

Chent	City of South Bend	Boring #	B-10
Project Name	Subsurface Investigation	Job#	21-07-95-00802

Project Location NW Corner of Tutt and Lafayett	e, South	Bend	, India	ına				
DRILLING and SAMPLING INFORMATION	)N							
Date Started 9/19/95 Hammer Wt.	N	[/A1	h.					
Date Completed 9/19/95 Hammer Drop			n.			တ	] ]	
						នង		
			n.			꿆찞		
Boring Inspector K. Kaneshiro Rock Core Dia.		<b>I/A</b> i				Ϋ́Ε̈́		BORING AND
Boring Method Geoprobe Shelby Tube OD		<b>i/A</b> i	n.	띪	×	φĦ		SAMPLING NOTES
Boring Location 26 ft West and 81 ft South of MV	<u>V-3R</u>			4		BLOWS/8-INCHES 8-INCH INCREMENTS	ll	
SOIL CLASSIFICATION	1 m	u u	ᄖ	2	3	ΒĖ		
SURFACE ELEVATION	E CE	SCALE (FT)	SAMPLE NO.	GROUNDIANTER	RECOVERY	PP SI	ZÊ E	
Brown moist Clayey Silty Sand (FILL)	<del>  -</del>	<u>                                   </u>	1	-	100		7	
1⊠		-	١.		100		'	Ĺ
Brown moist medium to coarse SILTY SAND	2.5		2		100		12	[
(sw)	1	] ]					] ]	Ĺ
		5-	3		100		4	
Para Company	]	٠.					1 1	<u> </u>
With Gravel at 6 ft			4		100		19	-
(SW)  With Gravel at 6 ft	Ì	] .	ļ		Ì Ì			}
- 100 - 100		٠,	. 5		100		4	<u> </u>
	1	10-	<b>-</b>				1 1	<del> </del>
	İ	-	6	İ	100		9	}
- [1]		-	├	ł	Ì			}
			7		100		12	
[일			├	ł	]			<b> </b>
		15-	8		100		9	
			<del>                                     </del>	1	]			<u> </u>
		'	9		100		4	<u> </u>
		] .	10*	1	100		12	<u> </u>
	20.0	l	100		***		12	Ţ
Bottom of Test Boring at 20.0 ft	1	20-	$\vdash$		ł	l		*Collected Sample No. 10
	1	ļ	ļ	ļ		l		(20 ft) for VOC laboratory analysis
	-			İ				
	ļ			ļ	ļ	l		
	1		ļ		ļ	l		Į į
				1	[	l		[
	1		1	1	ŀ			
SAMOUTE TOUR		Ц	L		Щ	L		L

SAMPLER	TYPE
---------	------

SPT - STANDARD PENBIRATION TEST
TPV - TOTAL PHOTO-CONIZATION VAPORS
TPV - TOTAL FLAMB-CONIZATION VAPORS
PPM - PARTS PER MILLION

**¥** AT COMPLETION T AFTER HRS WATER ON RODS

FT. FT. FT. HSA - HOLLOW STEM AUGERS
GBO - GBOPROBE
HA - HAND AUGERS
MD - 1
ND - 1

ĀTEC A	ssociates, Inc.
W	5150 East 65th Street Indianapolis, Indiana (317) 849-4990

Client	City of South Bend	Boring #	B-11
Project Name	Subsurface Investigation	Job #	21-07-95-00802
Desires Facesian	NW Corner of Tutt and I ofewatte South Bond Indiana	_	· · · · · · · · · · · · · · · · · · ·

										Boring # 10-11
roject Name									Job #	
roject Location	NW Corner of Tutt and Lafayette, South Bend, Indiana									
	DRILLING and SAMP	LING INFORMATIO						<del></del>	1	
Date Started _	9/19/95	Hammer Wt.		I/A	lbs.			**		
Date Completed	9/19/95	Hammer Drop			in.			SIN		
Drill Foreman	M. Walker	Spoon Sampler OD			in.			뿡뿝		
Boring Inspector	K. Kaneshiro	Rock Core Dia.			in.			ΗĞ		BORING AND
Boring Method Boring Location	Geoprobe 53 ft East and 37	Shelby Tube OD  If South of R-16		I/A_	in.	E	%	ώĦ		SAMPLING NOTES
	SOIL CLASSIFICATION			Ī		<b>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</b>	à	F BLOWS/8-INCHES 8-INCH INCREMENTS		
	SURFACE BLEVATION		DEPTH (FT)	SCALE (FT)	SAMPLE NO.	GROUNDIANTER	RECOVERY	SPT B.	TPV (PPM)	
Brown moist	Clayey Silty Sand (FILI	<b>)</b>	2.0		1		100		1	
Brown moist	coarse SILTY SAND (S	:M()	2.0	-	2		100		2	
				5	3		100		8	Decreasing silt content below 5 ft
				-	4		100		4	
				10	5		100		5	
				-	6*		100		32	
				-	7		50		25	
With Gravel	below 15 ft			15-	8		100		3	
					9		100		3	
			20.0	20	10		100		10	
Bottom of To	at Boring at 20.0 ft									*Collected Sample No. 6 (20 ft) for VOC laboratory analysis
SA	AMPLER TYPE									

ND.	ARD	PENI	ETRA	TION	TES	Т
ľAL	PHO	TO-K	DNIZ	HOLTA	N VA	PORS
TAL	PLA	ME-N	ONIZ.	ATTO	N VA	PORS

SPT — STANDARD PENETRA
TPV — TOTAL PHOTO-HONIZ
TFV — TOTAL PLAME-HONIZ
PPM — PARTS PER MILLION

☑ AT COMPLETION ¥ AFTER HRS WATER ON RODS

HSA - HOLLOW STEM AUGERS
GEO - GEOPROBE
HA - HAND AUGERS
MD - 1
ND - 1 FT. FT. FT.

ATEC AS	ssociates, Inc.
W	5150 East 65th Street Indianapolis, Indiana (317) 849-4990

Client	City of South Bend	Boring #	B-12
Project Name	Subsurface Investigation	Job#	21-07-95-00802
Project Location	NW Corner of Tutt and Lafayette, South Bend, Indiana		

Date Started Date Completed Drill Foreman Boring Inspector Boring Method Boring Location	9/19/95 9/19/95 M. Walker K. Kaneshiro Geoprobe 48 ft South and	Hammer Wt.  Hammer Drop  Spoon Sampler OD  Rock Core Dia.  Shelby Tube OD  62 ft West of B-1		[/A		ATER	* *	BLOWS/8-INCHES 8-INCH INCREMENTS		BORING AND SAMPLING NOTES
<del> </del>	URFACE ELEVATION		GEPTH (FT)	SCALE (FT)	SAMPLE NO.	GROUNDHATER	RECOVERY	SPT BLO IN 6-IN	₹ PPE	
$\aleph$	Clayey Silty Sand (FIL		3.0	-	2 3		100 100 100		ND 2	Decreasing silt content with depth
Medical	is between 11 to 13 ft			- - - 10	5		100 100		1 4	·
	ravel below 16 ft			- - - 15	8		100 100		2 1 ND	
Bottom of Te	st Boring at 20.0 ft		20.0	20	10*		100		1	*Collected Sample No. 10 (20 ft) for VOC laboratory analysis

SAMPLER TYPE

SPT - STANDARD PENETRATION TEST
TPV - TOTAL PHOTO-JONIZATION VAPORS
TPV - TOTAL FLAME-JONIZATION VAPORS
PPM - PARTS PER MILLION

▼ AT COMPLETION Y AFTER HRS WATER ON RODS

FT. FT.

FT.

HSA - HOLLOW STEM AUGERS
GBO - GBOPROBE
HA - HAND AUGERS
MD - M
ND - N

## L BORING LOG

ATEC A	ssociates, Inc.	SOI
	5150 East 65th Street Indianapolis, Indiana (317) 849-4990	

City of South Bend B-3-1 Subsurface Investigation Project Name 21-07-95-00802 Job # NW Corner of Tutt and Lafayette, South Bend, Indiana Project Location DRILLING and SAMPLING INFORMATION 10/2/95 Date Started Hammer Wt. N/A BLOWS/8-INCHES 8-INCH INCREMENTS Date Completed 10/2/95 N/A Hammer Drop Drill Foreman M. Walker N/A Spoon Sampler OD K. Kaneshiro Boring Inspector Rock Core Dia. N/A BORING AND Geoprobe Boring Method Shelby Tube OD N/A ROUNDMATER SAMPLING NOTES Boring Location 94 ft South and 30 ft East of MW-1R RECOVERY SOIL CLASSIFICATION SCALE (FT) <u>£</u> SURFACE ELEVATION Brown moist Clayey Silty Sand (FILL) 1 100 2.0 Brown moist medium SILTY SAND (SM) with 2 100 trace Gravel 3 100 100 5 50 10 6 100 7 100 8 100 15 9 100 100 10 20.0 20-Bottom of Test Boring at 20.0 ft \*Soil samples collected from 2-3 ft, 10-12 ft and 20 ft for Tolvene analysis SAMPLER TYPE STANDARD PENETRATION TEST HSA - HOLLOW STEM AUGERS GEO - GEOPROBE AT COMPLETION FT. TOTAL PHOTO-IONIZATION VAPORS ¥ AFTER HRS FT. TOTAL FLAME-IONIZATION VAPORS PARTS PER MILLION HA HAND AUGERS WATER ON RODS FT.

# **SOIL BORING LOG**

lient	City of South Bend								Boring # B-8-1
roject Name	Subsurface Investigation								Job # 21-07-95-0080
roject Location	NW Corner of Tutt and Lafayett	e, Soutl	n Bend	, India	ına				
	DRILLING and SAMPLING INFORMATIO						-	_	T
Date Started	10/2/95 Hammer Wt.		I/A	lbs.					
Date Completed	10/2/95 Hammer Drop			in.			S		
Drill Foreman	M. Walker Spoon Sampler OD  K. Kaneshiro Rock Core Dia.			in.			8-INCHES INCREMENT		
Boring Inspector Boring Method	K. Kaneshiro Rock Core Dia.  Geoprobe Shelby Tube OD		7	io.			ΗŞ	1	BORING AND
Boring Location	108 ft South and 67 ft West of M		<u>// A.</u>	in.	GROUNDWATER	*			SAMPLING NOTES
	OIL CLASSIFICATION		T	Ī.,,	Ŧ	È	BLOWS -INCH		
	OL CLASSIFICATION	DEPTH (FT)	٥,4	골	3	RECOVERY		_ ⊋	
S	URFACE ELEVATION	BE	SCALE (FT)	SAMPLE NO.	8	띭	IN (	죵	
Beown moist	Clayey Silty Sand and Brick (FILL)		-	1		100		-	
Brown moist	medium to coarse SILTY SAND	3.0	-	2		100		-	
(SM)			5	3		100		-	
			-	4		100		_	
			-	5		50			
			10-	_					
			-	6		100		-	
			-	7		100		-	
			15	8		100		-	
			-	9		100		-	
			-	10		100		_	
Bottom of Te	at Boring at 20.0 ft	20.0	20	-				1	*Soil samples collected
									from 2-3 ft, 10-12 ft and 20 ft for Tolvene analysis
	MPLER TYPE			<u></u>					
T - STANDAR V - TOTAL PE V - TOTAL FL	D PENETRATION TEST	¥ AT CO ¥ AFTE ● WATI		HR	3		FT. FT. FT.	HSA GBO HA MD MD ND	

ĀTEC A	ssociates, Inc.
W	5150 East 65th Street Indianapolis, Indiana (317) 849-4990

ent	City of South Bend								Boring # B-11-1
ject Name	Subsurface Investigation								Job # 21-07-95-0086
ject Location	NW Corner of Tutt and Lafayo	tte, Sout	h Bend	, India	ina				
	DRILLING and SAMPLING INFORMAT							1	
Date Started	10/2/95 Hammer Wt.		<u> </u>	lbs.					
Date Completed	10/2/95 Hammer Drop			in.			SIN		
Drill Foreman	M. Walker Spoon Sampler		711	in.			X.		
Boring Inspector	K. Kaneshiro Rock Core Dia.  Geoprobe Shelby Tube OF			in.			Äξ		BORING AND
Boring Method Boring Location	Geoprobe Shelby Tube Of 128 ft South of MW-3R	·	1/23	in.	色	×	δH		SAMPLING NOTES
	OIL CLASSIFICATION	T	1.1	щ	\$	ÆRY	BLOWS/8-INCHES 8-INCH INCREMENTS		
S	URFACE ELEVATION		SCALE (FT)	SAMPLE NO.	GROUNDIANTER	RECOVERY	SP NI B NI	₹£	
Brown moist (FILL)	Clayey Siky Sand, debris of Bricks			1		100		-	
8				2		100			
<b>X</b>		_ 4.0	.						
Clay below 5	fine to medium SILTY SAND (SM)		5	3		100		-	
Trace Gravel	below 6 ft		-	<del>  .                                     </del>	1				
4				4		100		1 -	
:∦				5	1	50			
Medium belo	w 10 ft		10	ļ	ļ				
1				6		100		-	
Clay with tra	ce Gravel below 12 ft		:	7		100			
<b>1</b>				<del> </del>				ļ	
		ŀ	15-	8		100		-	
1			] :	9		100		-	
				-	1				
		20.0	20-	10		100		-	
Bottom of Te	at Boring at 20.0 ft								*Soil samples collected from 2-3 ft, 10-12 ft and 20 ft for Totvene analysis
	MPLER TYPE D PENEIRATION TEST	¥ AT C			<u> </u>		FT.		- HOLLOW STEM AUGERS - GROPROBE

# APPENDIX C

ANALYTICAL RESULTS





Solid & Hazardous Waste Site Assessments Remedial Design & Construction Underground Tank Management Asbestos Surveys & Analysis Hydrogeologic Investigations & Monitoring Analytical Testing / Chemistry Industrial Hygiene / Hazard Communication Environmental Audits & Permitting Exploratory Orilling & Monitoring Wells

September 29, 1995

Brad Lewis ATEC Associates, Inc. 5150 E. 65th St. Indianapolis, IN 46220-4871

Re: Twelve Soil VOA

City of South Bend

ATEC Work Order Number 9509339 ATEC Project Number 21-07-9500802

Dear Mr. Lewis:

Enclosed is a thirty-one page report of results for the Organic Analyses for the twelve soil and water samples which were submitted to the ATEC Environmental/Analytical Testing Division on September 19, 1995, on behalf of the City of South Bend. The volatile samples were analyzed on a Finnigan Incos 50 GC/MS/DS system, complete with Superincos Software, via SW 846 Method 8240 for Purgeable Organic Compounds. Prior to analysis, the system was tuned against Bromofluorobenzene and calibrated with the appropriate standard.

The analytical procedures are performed in accordance with the ATEC Analytical Standard Operating Procedures, which are based on the methods referenced in this report. These SOPs are available for your review upon request.

All Soil results are reported on an "as received" basis unless otherwise specified. Any associated Quality Control information will be maintained in the Testing Division files, a copy of which can be forwarded to you upon request. After a thirty-day period, a fee will be assessed for this additional information

A Definition of LIMS Terms is included in this report for your convenience. Two copies of this Analytical Report are being provided for your records. Additional copies can be provided at a minimum cost of \$30.00 per copy. It has been a pleasure serving you and, as always, if there are any questions concerning these results or the ATEC policies, please feel free to contact me.

Respectfully submitted,

ATEC ASSOCIATES, INC.

Mary McGill-Maxwell
GC/MS Group Leader
Environmental/Analytical
Testing Division

MMM/lam

ATEC ENVIRONMENTAL DIV. 5150 E. 65TH ST.

Indianapolis, IN 46220

Attn: Brad Lewis Invoice Number:

Order #: 95-09-339 Date: 09/25/95 15:22

Work ID: City of S.B. (2107-9500802)

Date Received: 09/19/95 Date Completed: 09/25/95

### SAMPLE IDENTIFICATION

ATEC	Client	ATEC Client
Sample Sample		Sample Sample
Number	Description	Number Description
01	B-1 (10-12)	02 B-2 (2-3)
03	B-3 (20')	04 B-4 (20')
05	8-5 (201)	06 B-6 (20')
07	B-7 (20')	08 8-8 (201)
09	B-9 (20')	10 B-10(20')
11	B-11 (10-12)	12 B-12 (20')

This report shall not be reproduced except in full, without approval of the Laboratory.

Many MCLON Mexcell
Certified By 0
Nory McGill-Maxwell

#### REPORT COMMENTS

LIMS General Definition of Jerms

Order Number: ATEC Laboratory Identification for your sample set.
(Please reference this number with any correspondence)

Sample Number: ATEC Laboratory Identification for individual samples

with the set.

Sample Description: Your Sample Identification

Test Description: Analytical Test

Result Qualifiers:

Result: Analytical Value Obtained

> denotes greater than

N/A denotes not applicable NR denotes not reported

< denotes less than

J denotes analyte detected but amount present is less

than the Quantitation Limit

M denotes analyte spiked with matrix spike compound

B denotes analyte found in method blank

ND not detected

Units: Unit of Measurement

Limit: Denotes Quantitation Limit: Limit of reliability based

on the sample quantity analyzed, the sample matrix, and

the analytical method sensitivity

Analyzed: Optional Field for Date Analyzed

By: Optional Field for Test Analyst

SAMPLE ID B-1 (10	)-12)	TEST CODE 8240	NAME Volatile	
FRACTION 01A	Date & Time Colle	cted 09/18/95	Category SOIL	

nalytical Method	SW 846 Mtd. 8240A
COMMENTS:	
INITS	ug/Kg
ERIFIED BY	M. McGill
MALYST	R. Booknis
ILUTION FACTOR	1
NSTRUMENT	incos BV2
DATE ANALYZED	09/21/95

PARAMETER	CAS #	RESULT	LIMIT
Chioromethane	74-87-3	<u> &lt;10</u>	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75~00-3	<10	10
Methylene Chloride	75-09-2	8	5
Acetone	67-64-1	<100	100
Carbon Disulfide	75 - 15 - 0	<100	100
1,1-Dichloroethene	75-35-4	<5	5
1,1-Dichloroethane	75-34-3	<5	5
Total 1,2-Dichloroethene		<u> </u>	5
Chloroform	67-66-3	<u> &lt;5</u>	5
1,2-Dichloroethane	107-06-2	<5	5
2-Butanone	78-93-3	<100	100
1,1,1-Trichloroethane	71-55-6	<u>&lt;5</u>	5
Carbon Tetrachioride	56-23-5	<u> &lt;5</u>	5
Vinyl Acetate	108-05-4	<50	50
Bromodichloromethane	75-27-4	<u>&lt;5</u>	5
1,2-Dichloropropane	78-87-5	<u> &lt;5</u>	5
Trans-1, 3-Dichloropropene	10061-02-6	<u>&lt;5</u>	5
Trichloroethene	79-01-6	<5	5

SAMPLE ID 8-1 (10-12)	TEST CODE	8240 NAME Volatile
FRACTION 01A Date & Time Co	llected <u>09/18</u>	795 Category <u>SOIL</u>
Dibromochloromethane	124-48-1	<u>5</u>
1,1,2-Trichloroethane	79-00-5	5
Benzene	71-43-2	<u></u>
cis-1, 3-Dichloropropene	10061-01-5	<u>&lt;5</u> 5
2-Chloroethylvinylether	110-75-8	<10 10
Bromoform	75 - 25 - 2	<5 5
4-Methyl-2-Pentanone	108-10-1	<50 50
2-Hexanone	591-78-6	<50 50
Tetrachlorgethene	127-18-4	<u> </u>
1,1,2,2-Tetrachloroethane	79-34-5	<u> </u>
<b>*</b>	100 00 7	
Toluene	108-88-3	<u> </u>
Chlorobenzene	108-90-7	<u> </u>
Ethylbenzene	100-41-4	<u> </u>
Styrene	100-42-5	<u> </u>
Total Xylenes		<u> </u>
Acrolein	107-02-8	<u>&lt;10</u> 10
Acrylonitrile	107-13-1	<100 100
Iodomethane	74-88-4	<100 100
trans 1,4-Dichloro-2-butene	110-57-6	<100 <u>100</u>
Ethyl methacrylate	97-63-2	<100 100
1,2,3-Trichloropropane	96-18-4	<100 100
Trichlorofluoromethane	75-69-4	<10 10
Dichlorodifluoromethane	75-61-8	<100 100

SAMPLE ID 8-2 (2-3)	· · · · · · · · · · · · · · · · · · ·	TEST CODE 8240	NAME Volatile
FRACTION 02A	Date & Time Colle	cted 09/18/95	Category SOIL

DATE ANALYZED	09/22/95
INSTRUMENT	Incos BV2
DILUTION FACTOR	1
ANALYST	R. Booknis
VERIFIED BY	M. McGill
UNITS	ug/Kg
CONMENTS:	
Analytical Method	SW 846 Mtd. 8240A

PARAMETER	CAS #	RESULT	LIMIT
Chloromethane	74-87-3	<u>&lt;10</u>	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<10	10
Methylene Chloride	75-09-2	13	5
Acetone	67-64-1	<100	100
Carbon Bisulfide	75-15-0	<100	100
1,1-Dichloroethene	75-35-4	<5	5
1,1-Dichloroethane	75-34-3	<u> &lt;5</u>	5
Tctal 1,2-Dichloroethene		<5	5
Chloroform	67-66-3	<5	5
1,2-Dichloroethane	107-06-2	<u>&lt;5</u>	5
2-Butanone	78-93-3	<100	100
1,1,1-Trichloroethane	71-55-6	<u> &lt;5</u>	5
Carbon Tetrachloride	56-23-5	<u>&lt;5</u>	5
Vinyl Acetate	108-05-4	<50	50
Bromodichloromethane	75-27-4	<u> &lt;5</u>	5
1,2-Dichloropropane	78-87-5	<5	5
Trans-1, 3-Dichloropropene	10061-02-6	<5	5
Trichloroethene	79-01-6	<5	5

Dibromochloromethane   124-48-1   <5   5   5   5   5   5   5   5   5	SAMPLE ID 8-2 (2-3)	TEST CODE	8240 NAME Volatile
1,1,2-Trichloroethane     79-00-5     <5	FRACTION <u>O2A</u> Date & Time Co	llected <u>09/18</u>	/95 Category SOIL
1,1,2-Trichloroethane 79-00-5			
1,1,2-Trichloroethane     79-00-5     <5			
Benzene       71-43-2       <5			
cis-1, 3-Dichloropropene       10061-01-5       <5			
2-Chloroethylvinylether 110-75-8 <10 10  Bromoform 75-25-2 <5 5 4-Methyl-2-Pentanone 108-10-1 <50 50 2-Mexanone 591-78-6 <50 50 Tetrachloroethene 127-18-4 <5 5 1,1,2,2-Tetrachloroethane 79-34-5 <5 5  Toluene 108-88-3 5 5 Chlorobenzene 108-90-7 <5 5 Ethylbenzene 100-41-4 <5 5 Styrene 100-42-5 <5 5 Total Xylenes <5 5  Acrolein 107-02-8 <10 10 Acrylonitrile 107-13-1 <100 100 Lodomethane 74-88-4 <100 100 Ethyl methacrylate 97-63-2 <100 100 1,2,3-Trichloropropane 96-18-4 <100 100 Trichlorofluoromethane 75-69-4 <100 100	Benzene	71-43-2	
Bromoform       75-25-2       <5	cis-1, 3-Dichloropropene	10061-01-5	
4-Methyl-2-Pentanone       108-10-1       <50	2-Chloroethylvinylether	110-75-8	<u> 10</u> <u>10</u>
4-Methyl-2-Pentanone       108-10-1       <50	Bromoform	75-25-2	<5 5
2-Hexanone       591-78-6       <50	4-Methyl-2-Pentanone		<50 50
Tetrachloroethene       127-18-4       <5	•		
1,1,2,2-Tetrachloroethane 79-34-5 <5 5  Toluene 108-88-3 5 5 Chlorobenzene 108-90-7 <5 5 Ethylbenzene 100-41-4 <5 5 Styrene 100-42-5 <5 5 Total Xylenes <5 5  Acrolein 107-02-8 <10 10 Acrylonitrile 107-13-1 <100 100 Iodomethane 74-88-4 <100 100 Ethyl methacrylate 97-63-2 <100 100 1,2,3-Trichlororopane 96-18-4 <100 100 Trichlorofluoromethane 75-69-4 <10 100 Trichlorofluoromethane 75-69-4 <10 10	-		
Chlorobenzene       108-90-7       <5			
Chlorobenzene       108-90-7       <5			
Ethylbenzene 100-41-4 <5 5 Styrene 100-42-5 <5 5 Total Xylenes <5 5  Acrolein 107-02-8 <10 10 Acrylonitrile 107-13-1 <100 100 Iodomethane 74-88-4 <100 100 Ethyl methacrylate 97-63-2 <100 100 1,2,3-Trichloropropane 96-18-4 <100 100 Trichlorofluoromethane 75-69-4 <10 10		-	
Styrene     100-42-5     <5	•		
Total Xylenes       <5	•		
Acrolein     107-02-8     <10     10       Acrylonitrile     107-13-1     <100	-	100-42-5	
Acrylonitrile     107-13-1     <100     100       Iodomethane     74-88-4     <100	Total Xylenes		<u></u>
Iodomethane     74-88-4     <100	Acrolein	107-02-8	<1010
trans 1,4-Dichloro-2-butene     110-57-6     <100     100       Ethyl methacrylate     97-63-2     <100	Acrylonitrile	107-13-1	<100 100
Ethyl methacrylate       97-63-2       <100	Iodomethane	74-88-4	<100 100
Ethyl methacrylate       97-63-2       <100	trans 1,4-Dichloro-2-butene	110-57-6	<u> &lt;100                                  </u>
1,2,3-Trichloropropane 96-18-4 <u>&lt;100</u> 100 Trichlorofluoromethane 75-69-4 <u>&lt;10</u> 10		97-63-2	
Trichlorofluoromethane 75-69-4 <10 10		96-18-4	
	Dichlorodifluoromethane	75-61-8	<100 100

SAMPLE ID 8-3 (201)		TEST CODE 8240	NAME Volatile	
FRACTION OJA	Date & Time Colle	cted <u>09/18/95</u>	Category	<u>\$01L</u>

nalytical Method	SW 846 Mtd. 8240A
MMENTS:	
ITS	ug/Kg
RIFIED BY	M. McGill
HALYST	R. Booknis
ILUTION FACTOR	1
NSTRUMENT	Incos BV2
ATE ANALYZED	39/21/95

Chloromethane         74-87-3         <10	PARAMETER	CAS #	RESULT	LIMIT
Vinyl Chloride         75-01-4         <10         10           Chloroethane         75-00-3         <10	Chloromethane	74-87-3	<10	10
Chloroethane         75-00-3         <10         10           Methylene Chloride         75-09-2         9         5           Acetone         67-64-1         <100	Bromomethane	74-83-9	<10	10
Rethylene Chloride         75-09-2         9         5           Acetone         67-64-1         <100	Vinyl Chloride	75-01-4	<10	10
Acetone         67-64-1         <100         100           Carbon Disulfide         75-15-0         <100	Chloroethane	75-00-3	<10	10
Carbon Disulfide         75-15-0         <100         100           1,1-Dichloroethene         75-35-4         <5	Hethylene Chloride	75-09-2	9	5
1,1-Dichloroethene     75-35-4     <5	Acetone	67-64-1	<100	100
1,1-Dichloroethane     75-34-3     <5	Carbon Disulfide	75 - 15 - 0	<u>&lt;100</u>	100
Total 1,2-Dichloroethene         <5         5           Chloroform         67-66-3         <5	1,1-Dichloroethene	75-35-4	<5	
Chloroform         67-66-3         <5         5           1,2-0ichloroethane         107-06-2         <5	1,1-Dichloroethane	75-34-3	<5	5
1,2-0ichloroethane     107-06-2     <5	Total 1,2-Dichloroethene		<5	5
2-Butanone     78-93-3     <100	Chlaroform	67-66-3	<u> </u>	5
1,1,1-Trichloroethane     71-55-6     <5	1,2-Dichloroethane	107-06-2	<5	5
Carbon Tetrachloride         56-23-5         <5         5           Vinyl Acetate         108-05-4         <50	2-Butanone	78-93-3	<100	100
Vinyl Acetate         108-05-4         <50         50           Bromodichloromethane         75-27-4         <5	1,1,1-Trichloroethane	71-55-6	<5	5
Bromodichloromethane         75-27-4         <5         5           1,2-Dichloropropane         78-87-5         <5	Carbon Tetrachloride	56-23-5	<5	5
1,2-Dichtoropropane     78-87-5     <5	Vinyl Acetate	108-05-4	<50	50
Trans-1, 3-Dichloropropene 10061-02-6 <5 5	Bromodichloromethane	75-27-4	<5	5
	1,2-Dichloropropane	78-87-5	<5	5
Trichloroethene 79-01-6 <u>&lt;5 5</u>	Trans-1, 3-Dichloropropene	10061-02-6	<5	5
	Trichioroethene	79-01-6	<u> &lt;5</u>	5

SAMPLE ID 8-3 (201)	TEST CODE	8240 NAME Volatile
FRACTION O3A Date & Time	Collected 09/18	/95 Category SOIL
Dibromochloromethane	124-48-1	<u> </u>
1,1,2-Trichloroethane	79-00-5	<55
Benzene	71-43-2	<u> </u>
cis-1, 3-Dichloropropene	10061-01-5	<u> </u>
2-Chloroethylvinylether	110-75-8	<u> </u>
Bromoform	75-25-2	55
4-Methyl-2-Pentanone	108-10-1	<50 50
2-Hexanone	591-78-6	<5050
Tetrachloroethene	127-18-4	<55
1,1,2,2-Tetrachloroethane	79-34-5	<u> </u>
Toluene	108-88-3	1105
Chlorobenzene	108-90-7	<u> </u>
Ethylbenzene	100-41-4	<u> </u>
Styrene	100-42-5	<u> </u>
Total Xylenes		<u> </u>
Acrolein	107-02-8	<u> </u>
Acrylonitrile	107-13-1	<100 100
Iodomethane	74-88-4	<100 100
trans 1,4-Dichloro-2-buten	e 110-57-6	<100 100
Ethyl methacrylate	97-63-2	<100 100
1,2,3-Trichtoropropane	96-18-4	<100 100
Trichlorofluoromethane	75-69-4	<1010
Dichlorodifluoromethane	75-61-8	<u> </u>

SAMPLE ID 8-4 (201)		TEST CODE 8240	NAME Volatile	
FRACTION 04A	Date & Time Collec	ted 09/18/95	Category SOIL	

ILUTION FACTOR	1
NALYST ERIFIED BY	R. Booknis M. McGill
NITS	ug/Kg
ONNENTS:	

PARAMETER	CAS #	RESULT	LIMIT
Chloromethane	74-87-3	<10	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<10	10
Methylene Chloride	75-09-2	9	5
Acetone	67-64-1	<u>&lt;100</u>	100
Carbon Disulfide	75 - 15 - 0	<100	100
1,1-Dichloroethene	75-35-4	<5	5
1,1-Dichloroethane	75-34-3	<u> &lt;5</u>	5
Total 1,2-Dichloroethene		<u> </u>	5
Chloroform	67-66-3	<u> </u>	5
1,2-Dichloroethane	107-06-2	<5	5
2-Butanone	78-93-3	<100	100
1,1,1-Trichloroethane	71-55-6	<u> &lt;5</u>	5
Carbon Tetrachloride	56-23-5	<5	5
Vinyl Acetate	108-05-4	<u> &lt;50</u>	50
Bromodichloromethane	75-27-4	<u> &lt;5</u>	5
1,2-Dichloropropane	78-87-5	<5	5
Trans-1, 3-Dichloropropene	10061-02-6	<5_	5
Trichloroethene	79-01-6	<u> &lt;5</u>	5

SAMPLE ID 8-4 (201)	TEST CODE	8240 NAME Volatile
FRACTION <u>04A</u> Date & Time Co	llected <u>09/18</u>	795 Category SOIL
Dibromochloromethane	124-48-1	<5 5.
1,1,2-Trichlorgethane	79-00-5	<5 5
Benzene	71-43-2	<5 5
cis-1, 3-Dichloropropene	10061-01-5	<u>&lt;5</u>
2-Chloroethylvinylether	110-75-8	<10 10
Bromoform	75 - 25 - 2	<55
4-Methyl-2-Pentanone	108-10-1	<50 50
2-Hexanone	591-78-6	<u> &lt;50                                   </u>
Tetrachloroethene	127-18-4	<u> </u>
1,1,2,2-Tetrachloroethane	79-34-5	<u> </u>
Toluene	108-88-3	5
Chlorobenzene	108-90-7	<u> </u>
Ethylbenzene	100-41-4	<u> </u>
Styrene	100-42-5	<u> </u>
Total Xylenes		<u> </u>
Acrolein	107-02-8	<u>&lt;10</u> 10
Acrylonitrile	107-13-1	<100100
Iodomethane	74-88-4	<100 100
trans 1,4-Dichloro-2-butene	110-57-6	<100 100
Ethyl methacrylate	97-63-2	<100 100
1,2,3-Trichtoropropane	96-18-4	<100 100
Trichlorofluoromethane	75-69-4	<10 10
Dichlorodifluoromethane	75-61-8	<100 100

SAMPLE ID B-5 (201)	TES	ST CODE <u>8240</u>	NAME <u>Volatile</u>	
FRACTION OSA_	Date & Time Collected	d 09/18/95	Category <u>SOI</u>	L

UNREE 13.	
COMMENTS:	
INITS	ug/Kg
ERIFIED BY	M. McGill
MALYST	R. Booknis
ILUTION FACTOR	1
NSTRUMENT	Incos BV2
ATE ANALYZED	09/21/95

		RESULT	LIMIT
Chloromethane	74-87-3	<10	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<10	10
Methylene Chloride	75-09-2	8	5
Acetone	67-64-1	<100	100
Carbon Disulfide	75 - 15 - 0	<100	100
1,1-Dichloroethene	75-35-4	<5	5
1,1-Dichloroethane	75 - 34 - 3	<5	5
Total 1,2-Dichloroethene		<u>&lt;5</u>	5
Chloroform	67-66-3	<u> </u>	5
1,2-Dichloroethane	107-06-2	<u>&lt;5</u>	
2-Butanone	78-93-3	<100	100
1,1,1-Trichloroethane	71-55-6	<u> &lt;5</u>	5
Carbon Tetrachloride	56-23-5	<u> </u>	5
Vinyl Acetate	108-05-4	<50	50
Bromodichloromethane	75-27-4	<5	5
1,2-Dichloropropane	78-87-5	<u>&lt;5</u>	5
Trans-1, 3-Dichloropropene	10061-02-6	<u>&lt;5</u>	5
Trichloroethene	79-01-6	<u> &lt;5</u>	

SAMPLE ID 8-5 (20')	TEST CODE	8240 NAME Volatile
FRACTION 05A Date & Time	Collected 09/18/	95 Category SOIL
Dibromochloromethane	124-48-1	<u></u>
1,1,2-Trichloroethane	79-00-5	<u> </u>
Benzene	71-43-2	<u> </u>
cis-1, 3-Dichloropropene	10061-01-5	<u> </u>
2-Chloroethylvinylether	110-75-8	<u> 10</u>
Bromoform	75 - 25 - 2	<u> </u>
4-Methyl-2-Pentanone	108-10-1	<50 50
2-Hexanone	591-78-6	<u> </u>
Tetrachloroethene	127-18-4	<u>&lt;5</u> 5
1,1,2,2-Tetrachloroethane	79-34-5	<u> </u>
Toluene	108-88-3	5
Chlorobenzene	108-90-7	<5 5
Ethylbenzene	100-41-4	<5 5
Styrene	100-42-5	<55
Total Xylenes		<5 5
,		
Acrolein	107-02-8	<u>&lt;10</u> 10
Acrylonitrile	107-13-1	<100 100
Iodomethane	74-88-4	<100 100
trans 1,4-Dichloro-2-buter	ne 110-57-6	<100 100
Ethyl methacrylate	97-63-2	<100 100
1,2,3-Trichloropropane	96-18-4	<100 100
Trichlorofluoromethane	75-69-4	<10 10
Dichlorodifluoromethane	75-61-8	<100 100

SAMPLE ID	B-6 (201)			TEST	CODE	8240	NAME	Volatile
FRACTION (	06A	Date &	Time	Collected	09/19	/95	_	Category SOIL

alytical Method	SW 846 Mtd. 8240A
OMMENTS:	
INITS	ug/Kg
ERIFIED BY	M. McGill
MALYST	R. Booknis
ILUTION FACTOR	1
NSTRUMENT	Incos BV2
ATE ANALYZED	09/21/95

PARAMETER	CAS #	RESULT	LIMIT
Chloromethane	74-87-3	<10	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<10	10
Methylene Chloride	75-09-2		5
Acetone	67-64-1	<100	100
Carbon Disulfide	75-15-0	<100	100
1,1-Dichloroethene	75-35-4	<5	5
1,1-Dichloroethane	75-34-3	<u> &lt;5</u>	5
Total 1,2-Dichloroethene		<u> &lt;5</u>	5
Chloroform	67-66-3	<u> &lt;5</u>	5
1,2-Dichloroethane	107-06-2	<5	5
2-Butanone	78-93-3	<100	100
1,1,1-Trichloroethane	71-55-6	<5	5
Carbon Tetrachloride	56-23-5	<u>&lt;5</u>	5
Vinyl Acetate	108-05-4	<50	50
Bromodichloromethane	75-27-4	<u>&lt;5</u>	5
1,2-Dichloropropane	78-87-5	<5	5
Trans-1, 3-Dichloropropene	10061-02-6	<u>&lt;5</u>	5
Trichloroethene	79-01-6	<5	5

SAMPLE ID B-6 (201)	TEST CODE	8240 NAME Volatile
FRACTION OGA Date & Time	Collected 09/19	/95 Category SOIL
Dibromochloromethane	124-48-1	<u> </u>
1,1,2-Trichloroethane	79-00-5	<u> </u>
Benzene	71-43-2	<u></u>
cis-1, 3-Dichloropropene	10061-01-5	<u> </u>
2-Chloroethylvinylether	110-75-8	<u>&lt;10</u> <u>10</u>
	75 25 2	.e e
Bromoform	75-25-2	<u>&lt;5</u> <u>5</u>
4-Nethyl-2-Pentanone	108-10-1	<u> </u>
2-Hexanone	591-78-6	<u> </u>
Tetrachloroethene	127-18-4	<u> </u>
1,1,2,2-Tetrachloroethane	79-34-5	<u>&lt;5</u> 5
Toluene	108-88-3	5
Chlorobenzene	108-90-7	<5 5
Ethylbenzene	100-41-4	<del></del>
Styrene	100-42-5	<u> </u>
Total Xylenes		<5 5
Acrolein	107-02-8	<u> 10</u>
Acrylonitrile	107-13-1	<100 100
Iodomethane	74-88-4	<100 100
trans 1,4-Dichloro-2-buten	e 110-57-6	<100 100
Ethyl methacrylate	97-63-2	<100 100
1,2,3-Trichloropropane	96-18-4	<100 100
Trichlorofluoromethane	75-69-4	<10 10
Dichlorodifluoromethane	75-61-8	<100 100

SAMPLE ID 8-7 (201)	TEST CODE 8240	NAME Volatile
FRACTION OTA	Date & Time Collected 09/19/95	Category <u>SOIL</u>

MENTS:	
ITS	ug/Kg
ERIFIED BY	M. McGill
WALYST	R. Booknis
ILUTION FACTOR	1
NSTRUMENT	Incos BV2
TE ANALYZED	09/22/95

PARAMETER	CAS #	RESULT	LIMIT
Chloromethane	74-87-3	<10	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<u> &lt;10</u>	10
Methylene Chloride	75-09-2	6	5
Acetone	67-64-1	<100	100
Carbon Disulfide	75-15-0	<100	100
1,1-Dichloroethene	75 - 35 - 4	<u>&lt;5</u> .	5
1,1-Dichloroethane	75-34-3	<u>&lt;5</u>	5
Total 1,2-Dichloroethene		<u> </u>	5
Chloroform	67-66-3	<u> &lt;5</u>	5
1,2-Dichloroethane	107-06-2	<u> &lt;5</u>	5
2-Butanone	78-93-3	<100	100
1,1,1-Trichloroethane	71-55-6	<u>&lt;5</u>	5
Carbon Tetrachloride	56-23-5	<5	5
Vinyl Acetate	108-05-4	<u> &lt;50</u>	50
Bromodichloromethane	75-27-4	<u> &lt;5</u>	5
1,2-Dichloropropane	78-87-5	<5	5
Trans-1, 3-Dichloropropene	10061-02-6	<5	5
Trichloroethene	79-01-6	<u> &lt;5</u>	5

SAMPLE ID 8-7 (20')	TEST CODE	8240 NAME	Volatile	
FRACTION O7A Date & Time Co	llected <u>09/19</u>	/95	Category	SOIL
Dibromochloromethane	124-48-1	<5	<u> </u>	
1,1,2-Trichloroethane	79-00-5	<u> </u>	5	
Benzene	71-43-2	<5	5	
cis-1, 3-Dichloropropene	10061-01-5	<u> </u>	5	
2-Chloroethylvinylether	110-75-8	<u> </u>	10	
Bromoform	75-25-2	<5	5	
4-Methyl-2-Pentanone	108-10-1	<50	50	
2-Hexanone	591-78-6	<50	50	
Tetrachloroethene	127-18-4	<5	. 5	
1,1,2,2-Tetrachloroethane	79-34-5	<del></del>	<del></del>	
1,1,2,2 recruenter de chang	77 34 3			
Töluene	108-88-3	21	5	
Chlorobenzene	108-90-7	<5	5	
Ethylbenzene	100-41-4	<5	5	
Styrene	100-42-5	<5	5	
Total Xylenes		<5	5	
Acrolein	107-02-8	<10	10	
Acrylonitrile	107-13-1	<100	100	
Iodomethane	74-88-4	<100	100	
trans 1,4-Dichloro-2-butene	110-57-6	<100	100	
Ethyl methacrylate	97-63-2	<100	100	
1,2,3-Trichloropropane	96-18-4	<100	100	
Trichlorofluoromethane	75-69-4	<10	10	
Dichlorodifluoromethane	75-61-8	<100	100	
	_			

SAMPLE ID 8-8 (201)	<u></u>	TEST CODE 8240	NAME <u>Volatile</u>	
FRACTION OSA	Date & Time Colle	cted 09/19/95	Category SOIL	

MMENTS:	
IITS	ug/Kg
ERIFIED BY	M. McGill
MALYST	R. Booknis
ILUTION FACTOR	1
NSTRUMENT	lncos BV2
ATE ANALYZED	09/22/95

PARAMETER	CAS #	RESULT	LIMIT
Chloromethane	74-87-3	<10	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<10	10
Nethylene Chloride	75-09-2	9	5
Acetone	67-64-1	<100	100
Carbon Disulfide	75-15-0	<100	100
1,1-Dichloroethene	75 - 35 - 4	<u> &lt;5</u>	5
1,1-Dichloroethane	75-34-3	<5	5
Total 1,2-Dichloroethene		<u></u>	5
Chloroform	67-66-3	<u> &lt;5</u>	5
1,2-Dichloroethane	107-06-2	<u>&lt;5</u>	5
2-Butanone	78-93-3	<100	100
1,1,1-Trichloroethane	71-55-6	<5	5
Carbon Tetrachloride	56-23-5	<u> &lt;5</u>	5
Vinyl Acetate	108-05-4	<50	50
Bromodichloromethane	75-27-4	<5	5
1,2-Dichloropropane	78-87-5	<u> &lt;5</u>	5
Trans-1, 3-Dichloropropene	10061-02-6	<u>&lt;5</u>	5
Trichloroethene	79-01-6	<5	5

SAMPLE ID B-8 (201)	TEST CODE	8240 NAME Volatile
FRACTION OSA Date & Time Co	ollected <u>09/19</u>	/95 Category SOIL
		_
Dibromochloromethane	124-48-1	<u> </u>
1,1,2-Trichloroethane	79-00-5	<u> </u>
Benzene	71-43-2	<u> </u>
cis-1, 3-Dichloropropene	10061-01-5	<u> </u>
2-Chloroethylvinylether	110-75-8	<u> 10</u>
Bromoform	75 - 25 - 2	<5 5
4-Nethyl-2-Pentanone	108-10-1	<50 50
2 - Hexanone	591-78-6	<50 50
Tetrachloroethene	127-18-4	<u> </u>
1,1,2,2-Tetrachloroethane	79-34-5	<u> </u>
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		<del></del>
Toluene	108-88-3	1405
Chlorobenzene	108-90-7	<u> </u>
Ethylbenzene	100-41-4	<u> </u>
Styrene	100-42-5	<5 5
Total Xylenes		<u> </u>
Acrolein	107-02-8	<u> &lt;10</u>
Acrylonitrile	107-13-1	<u> </u>
Iodomethane	74-88-4	<100 100
trans 1,4-Dichloro-2-butene	110-57-6	<u> </u>
Ethyl methacrylate	97-63-2	<100 100
1,2,3-Trichloropropane	96-18-4	<100 100
Trichlorofluoromethane	75-69-4	<10 10
Dichlorodifluoromethane	75-61-8	<100 100

SAMPLE ID B-9 (20	') TEST CODE <u>8240</u>	NAME Volatile
FRACTION 09A	Date & Time Collected 09/19/95	Category SOIL

DATE ANALYZED	09/22/95
INSTRUMENT	Incos BV2
DILUTION FACTOR	1
ANALYST	R. Booknis
VERIFIED BY	M. McGill
UNITS	ug/Kg
COMMENTS:	
	SW 846 Mtd. 8240A

PARAMETER	CAS #	RESULT	LIMIT
Chloromethane	74-87-3	<10	10
Bromomethane	74-83-9	<u> &lt;10</u>	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<u></u>	10
Methylene Chloride	75-09-2		5
Acetone	67-64-1	<100	100
Carbon Disulfide	75-15-0	<100	100
1,1-Dichloroethene	75 - 35 - 4	<u>&lt;5</u>	5
1,1-Dichloroethane	75-34-3	<u> &lt;5</u>	5
Total 1,2-Dichloroethene		<u> </u>	5
Chloroform	67-66-3	<u> &lt;5</u>	5
1,2-Dichloroethane	107-06-2	<u>&lt;5</u>	
2-Butanone	78-93-3	<100	100
1,1,1-Trichloroethane	71-55-6	<5	5
Carbon Tetrachloride	56-23-5	<5	5
Vinyl Acetate	108-05-4	<50	50
Bromodichloromethane	75-27-4	<5	
1,2-Dichloropropane	78-87-5	<5	5
Trans-1, 3-Dichloropropene	10061-02-6	<5	5
Trichloroethene	79-01-6	<u> &lt;5</u>	5

SAMPLE ID 8-9 (201)	TEST CODE	8240 NAME Volatile
FRACTION 09A Date & Time Co	ollected <u>09/19</u>	/95 Category SOIL
Dibromochloromethane	124-48-1	<u>&lt;5</u> <u>5</u>
1,1,2-Trichloroethane	79-00-5	<5 5
Benzene	71-43-2	<5 5
cis-1, 3-Dichloropropene	10061-01-5	<u> </u>
2-Chloroethylvinylether	110-75-8	<10 10
Bromoform	75-25-2	<55
4-Methyl-2-Pentanone	108-10-1	<50 50
2-Hexanone	591-78-6	<50 50
Tetrachloroethene	127-18-4	<u> </u>
1,1,2,2-Tetrachloroethane	79-34-5	<u>&lt;5</u> 5
Toluene	108-88-3	305
Chlorobenzene	108-90-7	<u> </u>
Ethylbenzene	100-41-4	<5 5
Styrene	100-42-5	<5 5
Total Xylenes		<5 5
Acrolein	107-02-8	<1010
Acrylonitrile	107-13-1	<100 100
lodomethane	74-88-4	<100 100
trans 1,4-Dichloro-2-butene	110-57-6	<100 100
Ethyl methacrylate	97-63-2	<100 100
1,2,3-Trichloropropane	96-18-4	<100 100
Trichlorofluoromethane	75-69-4	<u>≺10</u> <u>10</u>
Dichlorodifluoromethane	75-61-8	<100 100

SAMPLE ID 8-10(20')	TES	T CODE <u>8240</u> NA	ME <u>Volatile</u>
FRACTION 10A	Date & Time Collected	09/19/95	Category SOIL

Analytical Hethod	SW 846 Mtd. 8240A
COMMENTS:	
UNITS	ug/Kg
VERIFIED BY	M. McGill
ANALYST	R. Booknis
DILUTION FACTOR	1
INSTRUMENT	Incos BV2
DATE ANALYZED	09/22/95

PARAMETER	CAS #	RESULT	LIMIT
Chloromethane	74-87-3	<u> </u>	10
Bromomethane	74-83-9	<u> &lt;10</u>	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<10	10
Methylene Chloride	75-09-2	5	5
Acetone	67-64-1	<100	100
Carbon Disulfide	75 - 15 - 0	<100	100
1,1-Dichloroethene	75-35-4	<u>&lt;5</u>	5
1,1-Dichloroethane	75-34-3	<u>&lt;5</u>	5
Total 1,2-Dichloroethene		<u>&lt;5</u>	5
Chloroform	67-66-3	<u> </u>	5
1,2-Dichloroethane	107-06-2	<u> &lt;5</u>	5
2-Butanone	78-93-3	<100	100
1,1,1-Trichloroethane	71-55-6	<5	5
Carbon Tetrachloride	56-23-5	<u> &lt;5</u>	
Vinyl Acetate	108-05-4	<50	50
Bromodichtoromethane	75-27-4	<u> &lt;5</u>	5
1,2-Dichloropropane	78-87-5	<u> &lt;5</u>	5
Trans-1, 3-Dichloropropene	10061-02-6	<u> &lt;5</u>	5
Trichloroethene	79-01-6	<u> &lt;5</u>	5

SAMPLE ID 8-10(20')	TEST CODE 8	3240 NAME Volatile
FRACTION 10A Date & Time	Collected <u>09/19/9</u>	Category \$01L
Dibromochloromethane	124-48-1	<u> </u>
1,1,2-Trichloroethane	79-00-5	<u> </u>
Benzene	71-43-2	<u> </u>
cis-1, 3-Dichloropropene	10061-01-5	<u> </u>
2-Chloroethylvinylether	110-75-8	<10 10
Bromoform	75 - 25 - 2	< <u>5</u> 5
4-Methyl-2-Pentanone	108-10-1	<50 50
2-Hexanone	591-78-6	<50 50
Tetrachloroethene	127-18-4	<5 5
1,1,2,2-Tetrachloroethane	79-34-5	<5 5
Toluene	108-88-3	71 5
Chlorobenzene	108-90-7	<5 5
Ethylbenzene	100-41-4	<u> </u>
Styrene	100-42-5	<5 5
Total Xylenes	_	<5 5
	_	
Acrolein	107-02-8	<10 10
Acrylonitrile	107-13-1	<100 100
Iodomethane	74-88-4	<100 100
trans 1,4-Dichloro-2-buten	e 110-57-6	<100 100
Ethyl methacrylate	97-63-2	<100 100
1,2,3-Trichloropropane	96-18-4	<100 100
Trichlorofluoromethane	75-69-4	<10 10
Dichlorodifluoromethane	75-61-8	<100 100
	., .,	-144

SAMPLE ID B-11 (	10-12)	TEST CODE 8240	NAME Volatile	
FRACTION 11A	Date & Time Co	llected 09/19/95	Category SOIL	

Analytical Method	SW 846 Mtd. 8240A
COMMENTS:	
JNITS	ug/Kg
ERIFIED BY	M. McGill
MALYST	R. Booknis
DILUTION FACTOR	1
INSTRUMENT	Incos BV2
DATE ANALYZED	09/22/95

Chloromethane         74-87-3         <10	PARAMETER	CAS #	RESULT	LIMIT
Vinyl Chloride         75-01-4         <10         10           Chloroethane         75-00-3         <10	Chloromethane	74-87-3	<10	10
Chloroethane         75-00-3         <10         10           Nethylene Chloride         75-09-2         7         5           Acetone         67-64-1         <100	Bromomethane	74-83-9	<10	10
Rethylene Chloride         75-09-2         7         5           Acetone         67-64-1         <100	Vinyl Chloride	75-01-4	<10	10
Acetone         67-64-1         <100         100           Carbon Disulfide         75-15-0         <100	Chloroethane	75-00-3	<10	10
Carbon Disulfide         75-15-0         <100         100           1,1-Dichloroethene         75-35-4         <5	Methylene Chloride	75-09-2		5
1,1-Dichloroethene     75-35-4     <5	Acetone	67-64-1	<100	100
1,1-Dichloroethane         75-34-3         <5	Carbon Disulfide	75 - 15 - 0	<100	100
Total 1,2-Dichloroethene         <5         5           Chloroform         67-66-3         <5	1,1-Dichloroethene	75-35-4	<u>&lt;5</u>	5
Chloroform         67-66-3         <5         5           1,2-Dichloroethane         107-06-2         <5	1,1-Dichloroethane	75 - 34 - 3	<u>&lt;5</u>	5
1,2-Dichloroethane     107-06-2     <5	Total 1,2-Dichloroethene		<u>&lt;5</u>	5
2-Butanone     78-93-3     <100	Chloroform	67-66-3	<u> &lt;5</u>	5
1,1,1-Trichloroethane     71-55-6     <5	1,2-Dichloroethane	107-06-2	<u> &lt;5</u>	5
Carbon Tetrachloride         56-23-5         <5         5           Vinyl Acetate         108-05-4         <50	2-Butanone	78-93-3	<100	100
Vinyl Acetate     108-05-4     <50     50       Bromodichloromethane     75-27-4     <5	1,1,1-Trichloroethane	71-55-6	<u> &lt;5</u>	5
Bromodichloromethane         75-27-4         <5         5           1,2-Dichloropropane         78-87-5         <5	Carbon Tetrachloride	56-23-5		5
1,2-Dichloropropane 78-87-5 < 5 5 Trans-1, 3-Dichloropropene 10061-02-6 < 5 5	Vinyl Acetate	108-05-4	<50	50
Trans-1, 3-Dichloropropene 10061-02-6 <5 5	Bromodichloromethane	75-27-4	<5	5
	1,2-Dichloropropane	78-87-5	<5	5
Trichloroethene 79-01-6 <u>&lt;5</u> <u>5</u>	Trans-1, 3-Dichloropropene	10061-02-6	<5	5
	Trichloroethene	79-01-6	<5	5

SAMPLE ID 8-11 (10-12)	TEST CODE	8240 NAME	Volatile	
FRACTION 11A Date & Time Co	ilected <u>09/19</u>	/95	Category	SOIL
***		_		
Dibromochtoromethane	124-48-1	<u> </u>		
1,1,2-Trichloroethane	79-00-5	<u> </u>	<u> </u>	
Benzene	71-43-2	<u>&lt;5</u>	5	
cis-1, 3-Dichloropropene	10061-01-5	<u> </u>	5	
2-Chloroethylvinylether	110-75-8	<u> </u>	10	
Bromoform	75 - 25 - 2	<5	5	
4-Methyl-2-Pentanone	108-10-1	<50	50	
2-Hexanone	591-78-6	<50	50	
Tetrachloroethene	127-18-4	<5	5	
1,1,2,2-Tetrachloroethane	79-34-5	<5	5	
Toluene	108-88-3	130	5	
Chlorobenzene	108-90-7	<5	5	
Ethylbenzene	100-41-4	<5	5	
Styrene	100-42-5	<5	5	
Total Xylenes		<5	5	
•				
Acrolein	107-02-8	<10	10	
Acrylonitrile	107-13-1	<100	100	
Iodomethane	74-88-4	<100	100	
trans 1,4-Dichloro-2-butene	110-57-6	<100	100	
Ethyl methacrylate	97-63-2	<100	100	
1,2,3-Trichloropropane	96-18-4	<100	100	
Trichlorofluoromethane	75-69-4	<10	10	
Dichlorodifluoromethane	75-61-8	<100	100	

SAMPLE ID 8-12 (20	0')	TEST CODE 8240	NAME <u>Volatile</u>	
FRACTION 12A	Date & Time Colle	cted 09/19/95	Category SOIL	

DATE ANALYZED Instrument	<u>09/22/95</u> Incos BV2
DILUTION FACTOR	1
ANALYST	R. Booknis
VERIFIED BY	M. McGill
UNITS	ug/Kg
COMMENTS:	
Analytical Method	SW 846 Mtd. 8240A

PARAMETER	CAS #	RESULT	LIMIT
Chloromethane	74-87-3	<10	10
Bromomethane	74-83-9	<u>&lt;10</u>	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<10	10
Methylene Chloride	75-09-2	8	5
Acetone	67-64-1	<100	100
Carbon Disulfide	75-15-0	<100	100
1,1-Dichloroethene	75-35-4	<u>&lt;5</u>	5
1,1-Dichloroethane	75 - 34 - 3	<5	5
Total 1,2-Dichloroethene		<u> &lt;5</u>	5
Chloroform	67-66-3	<u></u>	5
1,2-Dichloroethane	107-06-2	<5	5
2-Sutanone	78-93-3	<100	100
1,1,1-Trichloroethane	71-55-6	<5	5
Carbon Tetrachloride	56-23-5	<u> </u>	5
Vinyl Acetate	108-05-4	<50	50
Bromodichloromethane	75-27-4	<u>&lt;5</u>	5
1,2-Dichloropropane	78-87-5	<5	5
Trans-1, 3-Dichloropropene	10061-02-6	<5	5
Trichloroethene	79-01-6	<u> &lt;5</u>	5

SAMPLE ID 8-12 (201)	TEST CODE	8240 NAME Volatile
FRACTION 12A Date & Time Co		
<del></del>		
Dibromochloromethane	124-48-1	<u> </u>
1,1,2-Trichloroethane	79-00-5	<u> </u>
Benzene	71-43-2	<55
cis-1, 3-Dichloropropene	10061-01-5	<u> </u>
2-Chloroethylvinylether	110-75-8	<10 10
Bromoform	75 - 25 - 2	<u> </u>
4-Methyl-2-Pentanone	108-10-1	<u> &lt;50</u> <u> 50</u>
2 - Hexanone	591-78-6	<u> </u>
Tetrachloroethene	127-18-4	<u>&lt;5</u> 5
1,1,2,2-Tetrachloroethane	79-34-5	<55
Toluene	108-88-3	925
Chlorobenzene	108-90-7	<del></del>
Ethylbenzene	100-41-4	
Styrene		
Total Xylenes	100-42-5	<u> </u>
lotal xylenes		<u> </u>
Acrolein	107-02-8	<1010
Acrylonitrile	107-13-1	<100 100
Iodomethane	74-88-4	<100 100
trans 1,4-Dichloro-2-butene	110-57-6	<100 100
Ethyl methacrylate	97-63-2	<100 100
1,2,3-Trichloropropane	96-18-4	<100 100
Trichlorofluoromethane	75-69-4	<10 10
Dichlorodifluoromethane	75-61-8	<100 100
- · · · · · · · · · · · · · · · · · · ·		

SAMPLE ID Method B	lank	TEST CODE	8240	NAME	Volatile
FRACTION 12B	Date & Time Colle	cted		_	Category SOIL

ug/Kg
M. McGill
R. Booknis
1
Incos BV2

PARAMETER	CAS #	RESULT	LIMIT
Chloromethane	74-87-3	<u> &lt;10</u>	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<10	10
Methylene Chloride	75-09-2	12	5
Acetone	67-64-1	<100	100
Carbon Disulfide	75-15-0	<100	100
1,1-Dichloroethene	75 - 35 - 4	<u> &lt;5</u>	5
1,1-Dichloroethane	75-34-3	<u> </u>	5
Total 1,2-Dichloroethene		<u> </u>	5
Chloroform	67-66-3	<5	5
1,2-Dichloroethane	107-06-2	<5	5
2-Butanone	78-93-3	<100	100
1,1,1-Trichloroethane	71-55-6	<u> &lt;5</u>	
Carbon Tetrachloride	56-23-5	<u> </u>	5
Vinyl Acetate	108-05-4	<50	50
Bromodichioromethane	75-27-4	<5	5
1,2-Dichloropropane	78-87-5	<u> &lt;5</u>	5
Trans-1, 3-Dichloropropene	10061-02-6	<u> &lt;5</u>	5
Trichloroethene	79-01-6	<u>&lt;5</u>	5

SAMPLE ID Method Blank	TEST CODE	8240 NAME Volatile
FRACTION 12B Date & Time Co	llected	Category <u>SOIL</u>
Dibromoch{oromethane	124-48-1	<5 5
1,1,2-Trichloroethane	79-00-5	<5 5
Benzene	71-43-2	<u> </u>
cis-1, 3-Dichloropropene	10061-01-5	<5 5
2-Chloroethylvinylether	110-75-8	<10 10
2 - Cutor betnytvinytetner	110-73-8	
Bromoform	75 - 25 - 2	<55
4-Methyl-2-Pentanone	108-10-1	<u>&lt;50</u> 50
2 - Hexanone	591-78-6	<50 50
Tetrachloroethene	127-18-4	<u> </u>
1,1,2,2-Tetrachloroethane	79-34-5	<5 5
Toluene	108-88-3	<5 5
Chlarobenzene	108-90-7	
Ethylbenzene	100-41-4	<del></del>
Styrene	100-41-4	
•	100-42-5	
Total Xylenes		<u> </u>
Acrolein	107-02-8	<10 10
Acrylonitrile	107-13-1	<100 100
Iodomethane	74-88-4	<100 100
trans 1,4-Dichloro-2-butene	110-57-6	<100 100
Ethyl methacrylate	97-63-2	<100 100
1,2,3-Trichloropropane	96-18-4	<100 100
Trichlorofluoromethane	75-69-4	<10 10
Dichlorodifluoromethane	75-61-8	<100 100

SAMPLE ID Method	8 lank	TEST CODE	8240 NAME	Volatile
FRACTION 12C	Date & Time Colle	cted		Category SOIL

DMMENTS:	
NITS	ug/Kg
ERIFIED BY	M. McGill
MALYST	R. Booknis
DILUTION FACTOR	1
INSTRUMENT	Incos BV2
ATE ANALYZED NSTRUMENT	09/22/95 Incos BV2

PARAMETER	CAS #	RESULT	LIMIT
Chloromethane	74-87-3	<10	10
Bromomethane	74-83-9	<10	10
Vinyl Chloride	75-01-4	<10	10
Chloroethane	75-00-3	<u> &lt;10</u>	10
Methylene Chloride	75-09-2	5	5
Acetone	67-64-1	<100	100
Carbon Disulfide	75 - 15 - 0	<100	100
1,1-Dichloroethene	75 - 35 - 4	<5	5
1,1-Dichloroethane	75-34-3	<u>&lt;5</u>	5
Total 1,2-Dichloroethene		<del>&lt;5</del>	5
Chloroform	67-66-3	<u> &lt;5</u>	5
1,2-Dichloroethane	107-06-2	<5	5
2-Butanone	78-93-3	<100	100
1,1,1-Trichloroethane	71-55-6	<5	5
Carbon Tetrachloride	56-23-5	<u> </u>	5
Vinyl Acetate	108-05-4	<u> &lt;50</u>	50
Bromodichloromethane	75-27-4	<5	5
1,2-Dichtoropropane	78-87-5	<5	
Trans-1, 3-Dichloropropene	10061-02-6	<5	5
Trichloroethene	79-01-6	<5	5

SAMPLE ID Method Blank	TEST CODE	8240 NAME Volatile
FRACTION 12C Date & Time Co	llected	Category SOIL
Dibromochloromethane	124-48-1	<u> </u>
1,1,2-Trichloroethane	79-00-5	<u> </u>
Benzene	71-43-2	<u> </u>
cis-1, 3-Dichloropropene	10061-01-5	<u>&lt;5</u> 5
2-Chloroethylvinylether	110-75-8	<u> </u>
Bromoform	75-25-2	<b>&lt;</b> 5 5
4-Methyl-2-Pentanone	108-10-1	<50 50
2-Hexanone	591-78-6	<50 50
Tetrachloroethene	127-18-4	< <u>5</u> 5
1,1,2,2-Tetrachioroethane	79-34-5	<u> </u>
r, r, z, z recracator bethane	19-34-3	
Toluene	108-88-3	<55
Chlorobenzene	108-90-7	<5 5
Ethylbenzene	100-41-4	<55
Styrene	100-42-5	<5 5
Total Xylenes		<u> </u>
Acrolein	107-02-8	<u> &lt;10</u>
Acrylonitrile	107-13-1	<100 100
Iodomethane	74-88-4	<100100
trans 1,4-Dichloro-2-butene	110-57-6	<100 100
Ethyl methacrylate	97-63-2	<100 100
1,2,3-Trichloropropane	96-18-4	<100 100
Trichlorofluoromethane	75-69-4	<10 10
Dichlorodifluoromethane	75-61-8	<100 100

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Soird & Hazardous Waste Site Assessments Remedial Design & Construction Underground Tank Management Asbestos Surveys & Analysis Hydrogeologic Investigations & Monitoring Analytical Testing / Chemistry Industrial Hygiene / Hazard Communication Environmental Audits & Permitting Exploratory Drilling & Monitoring Wells

October 9, 1995

Brad Lewis ATEC Associates, Inc. 5150 E. 65th Street Indianapolis, IN 46220

Re:

Three Soil Toluene City of South Bend

ATEC Work Order Number 9510044 ATEC Project Number 21-07-9500802

Dear Mr. Lewis:

Enclosed is a six page report of results for the Organic Analyses for the three soil samples which were submitted to the ATEC Environmental/Analytical Testing Division on October 3, 1995, on behalf of the City of South Bend. The Toluene samples were analyzed on a Finnigan Incos 50 GC/MS/DS system, complete with Superincos Software, via SW 846 Method 8240 for Purgeable Organic Compounds. Prior to analysis, the system was tuned against Bromofluorobenzene and calibrated with the appropriate standard.

The analytical procedures are performed in accordance with the ATEC Analytical Standard Operating Procedures, which are based on the methods referenced in this report. These SOPs are available for your review upon request.

All Soil results are reported on an "as received" basis unless otherwise specified. Any associated Quality Control information will be maintained in the Testing Division files, a copy of which can be forwarded to you upon request. After a thirty-day period, a fee will be assessed for this additional information.

A Definition of LIMS Terms is included in this report for your convenience. Two copies of this Analytical Report are being provided for your records. Additional copies can be provided at a minimum cost of \$30.00 per copy. It has been a pleasure serving you and, as always, if there are any questions concerning these results or the ATEC policies, please feel free to contact me.

Respectfully submitted,

ATEC ASSOCIATES, INC.

Hay McHill Hoxwell
Mary McGill-Maxwell
GC/MS Group Leader
Environmental/Analytical
Testing Division

MMM/lam

ATEC Associates, Inc. 5150 East 65th Indianapolis IN 46220

Attn : Brad Lewis

Cust Proj #: City of South Bend 2107-9500802

Lab Proj #: 95100353 Date : 10/06/1995

Date Received : 10/03/1995 Date Completed: 10/04/1995

#### REPORT OF ANALYSIS

ATEC Client ATEC Client Sample Number Sample Sample Sample Description Number Description B-3-1 (20) (9510044-1 B-11-1(10-12) (9510044-3 95-001777 95-001778 B-8-1 (20) (9510044-2 Method Blank 95-001779 95-001802

This report shall not be reproduced except in full, without approval of the Laboratory.

Certified By Wary R. McGill-Maxwell

Attention: Brad Lewis
ATEC Associates, Inc.
5150 East 65th

Indianapolis IN 46220

mple Desc: B-3-1 (20) (9510044-1

GANIC CMS VOLATILES Toluene

Date of Report: Project Number: Lab ID: Date Collected: 10/06/95 95100353 95-0001777 10/02/95 11:07 Collected By: Date Received: C of C Number: Temperature: Client 10/03/95 10:20

Received on Ice

Result	Unit	Det. Limit	Procedure	Test Date
<5	ug/Kg	5	SW 8240	10/03/95

Attention: Brad Lewis
ATEC Associates, Inc.
5150 East 65th
Indianapolis IN 46220

Sample Desc: B-8-1 (20) (9510044-2

)RGANIC CMS VOLATILES Toluene Det. Test Result Unit Limit Procedure Date

Date of Report: Project Number:

Date Collected:

Collected By: Date Received: C of C Number:

Temperature:

Lab ID:

10/06/95 95100353

Client 10/03/95 10:20

95-0001778

10/02/95 12:10

Received on Ice

Attention: Brad Lewis ATEC Associates, Inc. 5150 East 65th Indianapolis IN 46220 Sample Desc: B-11-1(10-12) (9510044-3		Lab ID: Date Co Collect	llected: ed By: ceived: Number:	10/06/95 95100353 95-0001779 10/02/95 12:40 Client 10/03/95 10:20 Received on Ice			
Sample Dead. B 11-1(10-12) (9310044-3	Result	Unit	Det. Limit	Procedure	Test Date		
ORGANIC CMS VOLATILES Toluene	<5	ug/Kg	5	SW 8240	10/03/95		
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Attention: Brad Lewis
ATEC Associates, Inc.
5150 East 65th
Indianapolis IN 46220

mple Desc: Method Blank

ANIC CMS VOLATILES Toluene Date of Report: Project Number: Lab ID: 10/06/95 95100353 95-0001802 Date Collected: 10/03/95 12:40 Client Collected By: Date Received: C of C Number: Temperature: 10/03/95 10:20 Received on Ice

Result	Unit	Det. Limit	Procedure	Test Date
<5	ug/Kg	5	SW 8240	10/03/95

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### **Corporate Headquarters**

8665 Bash Street Indianapolis, IN 46256-1202 (317) 577-1761 FAX (317) 842-7308

With Offices Nationwide