USEPA CONTRACT NO. 68-W6-0042
USEPA WORK ASSIGNMENT NO. 157-RDRD-0132

USEPA Project Officer: Diana King
USEPA Remedial Project Manager: Derrick Golden

DRAFT FINAL
SOURCE AREA RE-EVALUATION REPORT

GROVELAND WELLS NOs. 1 AND 2 SUPERFUND SITE
SOURCE RE-EVALUATION

GROVELAND, MASSACHUSETTS

VOLUME III
APPENDICES E THROUGH K

September 2006

Prepared By:

Metcalf & Eddy, Inc.
701 Edgewater Drive
Wakefield, Massachusetts

USEPA CONTRACT NO. 68-W6-0042
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VOLUME III
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September 2006

Prepared By:

Metcalf & Eddy, Inc.
701 Edgewater Drive
Wakefield, Massachusetts

VOLUME I

LIST OF FIGURES

LIST OF TABLES

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APPENDICES E THROUGH K

APPENDIX E

DAS & RAS LABORATORY ANALYTICAL RESULTS

DAS LABORATORY ANALYTICAL RESULTS
2004

SOUTHWEST RESEARCH INSTITUTE®

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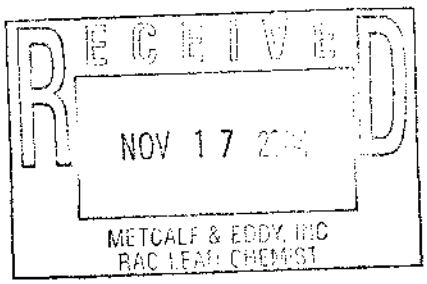
Chemistry and Chemical Engineering Division
Department of Analytical & Environmental Chemistry

November 16, 2004



Metcalf & Eddy, Inc.
701 Edgewater Dr.
Wakefield, MA 01880-5371

Attn: Constance Lapite

Subject:		
	Client Site Name:	Groveland, MA
	Client Case Number:	DAS 0244M
	Client Work Order:	30
	SwRI Project Number:	03159.27.00X
	SwRI Task Orders:	041008-2
	SwRI Sample Receipt No.:	26678
	SDG:	D05271
	Samples Received:	October 8, 2004
	Required Analyses:	DAS Method D-033.1

Dear Ms Lapite,

Enclosed please find revised Form VI(s) for Duplicate Samples for the above referenced case. The units were corrected to read mg/L, instead of ug/L. DC-2 is being resubmitted as well. If you should have any questions, please do not hesitate to call Chee-Kai Tan, Ph.D. at 210/522-2356.

Sincerely,

Jeanette G. Garcia

Jeanette G. Garcia
QA Inspector

ENCL

Revised Form

FULL INORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET

LABORATORY NAME Southwest Research Institute
CITY/STATE San Antonio, Texas

CASE NO. 0244M SDG NO. D05271
SDG NOS. TO FOLLOW _____
SAS NO. _____

CONTRACT NO. _____
SOW NO. _____

All documents delivered in the Complete SDG File must be original documents where possible. (Reference Exhibit B, Section II F and Section III U.)

Wetchem Analysis

		PAGE NOs. FROM	PAGE NOs. TO	(Please Check:) LAB	(Please Check:) REGION
1.	Inventory Sheet (DC-2) (Do not number)			—	—
2.	Cover Page	010002	010002	✓	—
3.	SDG Narrative	010003	010005	✓	—
4.	Inorganic Analysis Data Sheet (Form I-IN)	010006	010014	✓	—
5.	Initial & Continuing Calibration Verification (Form IIA-IN)	010015	010016	✓	—
6.	CRDL Standards For AA and ICP (Form IIB-IN)	N/A	N/A	—	—
7.	Blanks (Form III-IN)	010017	010018	✓	—
8.	ICP Interference Check Sample (Form IV-IN)	N/A	N/A	—	—
9.	Spike Sample Recovery (Form VA-IN)	010019	010019	✓	—
10.	Post Digest Spike Sample Recovery (Form VB-IN)	N/A	N/A	—	—
11.	Duplicates (Form VI-IN)	010020	010026	✓	—
12.	Laboratory Control Sample (Form VII-IN)	010027	010027	✓	—
13.	Standard Addition Results (Form VIII-IN)	—	—	—	—
14.	ICP Serial Dilutions (Form IX-IN)	—	—	—	—
15.	Instrument Detection Limits (Form X-IN)	—	—	—	—
16.	ICP Interelement Correction Factors (Form XIA-IN)	—	—	—	—
17.	ICP Interelement Correction Factors (Form XIB-IN)	—	N/A	—	—
18.	ICP Linear Ranges (Form XII-IN)	—	—	—	—
19.	Preparation Log (Form XIII-IN)	—	—	—	—
20.	Analysis Run Log (Form XIV-IN)	—	—	—	—
21.	~~ICP~~ wetchem Raw Data	010028	010034	✓	—
22.	Furnace AA Raw Data	—	—	—	—
23.	Mercury Raw Data	—	—	—	—
24.	Cyanide Raw Data	—	—	—	—
25.	Preparation Logs Raw Data	—	N/A	—	—
26.	Percent Solids Determination Log	—	—	—	—
27.	Traffic Report	010035	010036	✓	—
28.	EPA Shipping/Receiving Documents			—	—
	Airbill (No. of Shipments 1)	010037	010038	✓	—
	Chain-of-Custody Records	010039	010039	✓	—
	Sample Tags			—	—
	Sample Log-In Sheet (Lab & DC1)	010040	010040	✓	—
	SDG Cover Sheet	010041	010041	✓	—
29.	Misc. Shipping/Receiving Records (list all individual records)				
	Telephone Logs	—	—	—	—
	Custody Seals	010042	010043	✓	—
30.	Internal Lab Sample Transfer Records & Tracking Sheets (describe or list)				
	Sample Control records	010044	010044	✓	—
	_____	—	—	—	—

Revised Form

	PAGE NOs. FROM	TO	(Please Check:) LAB	REGION
31. Internal Original Sample Prep & Analysis Records (describe or list)				
Prep Records _____	—	—	—	—
Analysis Records _____	—	—	—	—
Description _____	—	—	—	—
32. Other Records (describe or list)				
Telephone Communications Log	—	—	—	—
MDL's Data	010047	010080	✓	—
_____	—	—	—	—

33. Comments:

_____

_____

Completed by (CLP Lab):

R. P Resau — R. Presa / Sr. Tech — 11/15/04

(Signature) (Print Name & Title) (Date)

Audited by (EPA):

_____ — _____ — _____

(Signature) (Print Name & Title) (Date)

34. Revided Form VI 010081 010087 ✓

J Garcia — J Garcia QA Inspector 11/16/04

METCALF & EDDY
DUPLICATE SAMPLE

010081
Revised Form

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water

Field Sample ID # D05271D Lab Sample ID # 253536D

% Solids for Sample _____ % Solids for Duplicate _____

ANALYTE	Date Analyzed	Sample Result	C	Duplicate Result	C	%RPD	Units	Q
TOC	11/03/04	1.72		1.85		7.28%	mg/L	

FORM VI - IN D-033.1

METCALF & EDDY
DUPLICATE SAMPLE

010082
Revised Form

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water

Field Sample ID # D05272D Lab Sample ID # 253537D

% Solids for Sample _____ % Solids for Duplicate _____

ANALYTE	Date Analyzed	Sample Result	C	Duplicate Result	C	%RPD	Units	Q
TOC	11/03/04	5.98		5.75		3.92%	mg/L	

FORM VI - IN D-033.1

METCALF & EDDY
DUPLICATE SAMPLE

010083

Revised Form

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water

Field Sample ID # D05273D Lab Sample ID # 253538D

% Solids for Sample _____ % Solids for Duplicate _____

ANALYTE	Date Analyzed	Sample Result	C	Duplicate Result	C	%RPD	Units	Q
TOC	11/03/04	1.45		1.28		12.5%	mg/L	

FORM VI - IN D-033.1

METCALF & EDDY
DUPLICATE SAMPLE

010084

Revised Form

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water

Field Sample ID # D05274D Lab Sample ID # 253539D

% Solids for Sample _____ % Solids for Duplicate _____

ANALYTE	Date Analyzed	Sample Result	C	Duplicate Result	C	%RPD	Units	Q
TOC	11/03/04	15.5		15.2		1.95%	mg/L	

METCALF & EDDY
DUPLICATE SAMPLE

010085

Revised Form

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water

Field Sample ID # D05277D Lab Sample ID # 253540D

% Solids for Sample _____ % Solids for Duplicate _____

ANALYTE	Date Analyzed	Sample Result	C	Duplicate Result	C	%RPD	Units	Q
TOC	11/03/04	15.1		15.3		1.32%	mg/L	

FORM VI - IN D-033.1

010086

METCALF & EDDY
DUPLICATE SAMPLE

Revised Form

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water

Field Sample ID # D05278D Lab Sample ID # 253541D

% Solids for Sample _____ % Solids for Duplicate _____

ANALYTE	Date Analyzed	Sample Result	C	Duplicate Result	C	%RPD	Units	Q
TOC	11/03/04	18.4		18.5		0.54%	mg/L	

FORM VI - IN D-033.1

METCALF & EDDY
DUPLICATE SAMPLE

010087

Revised Form

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water

Field Sample ID # D05279D Lab Sample ID # 253542D

% Solids for Sample _____ % Solids for Duplicate _____

ANALYTE	Date Analyzed	Sample Result	C	Duplicate Result	C	%RPD	Units	Q
TOC	11/03/04	5.31		5.40		1.68%	mg/L	

FORM VI - IN D-033.1

EPA-NEW ENGLAND
COMPLETE SDG FILE
RECEIPT/TRANSFER FORM

Case: 0244M SDG#: D05271 Data Package#: ____________

Receipt Date	Received By: Name	Init.	Affiliation	CSF Activity	Custody Seals Present/Intact	Released: To	Date
11/16/04	Ryan Bartosz for C. Lipik	RB	MITE	rec'd for validation	(Y) N (Y) N		
					Y N Y N		
					Y N Y N		
					Y N Y N		
					Y N Y N		
					Y N Y N		
					Y N Y N		
					Y N Y N		
					Y N Y N		
					Y N Y N		
					Y N Y N		
					Y N Y N		

Data Receipt Log
Project Chemist: Your Data Package Has Arrived

The Following Data Package Has Arrived:	The Package Arrived On:
Hardcopy ✓ **EDD** _____ Case No. 0244M SDG No. D65271 Parameters/ Methods: D-033-1 Lab: SWRE	RECEIVED NOV 16 DATE STAMP METCALF & EDDY, INC RAC LEAD CHEMIST

Your Package Has Been:

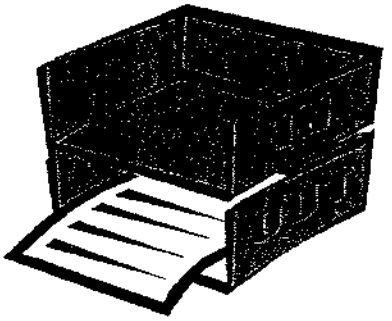
A. (Dropped in Your Mailbox)

B. Sent to TRC

C. Sent to FWC

D. Other (OEME, etc.)

E. With R. Bartosz for One Day to Wait for EDD arrival and DST Conversion.



PROJECT CHEMIST: Attached is a list of samples contained in this package. Please confirm that the following information is correct in tracking and/or update accordingly:

Case No.
SDG No.
Number of Samples and Matrix
Parameters
Date final samples shipped
PE Identifiers

Thanks
Elizabeth Decola

METCALF & EDDY

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

010002

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case No. # DAS 0244M SRR # 26678 SDG No.: D05271

SOW No. D-033.1 TO # 041008-2

Field Sample ID #	Lab Sample ID #
D05271	253536
D05272	253537
D05273	253538
D05274	253539
D05277	253540
D05278	253541
D05279	253542
D05271S	253536S
D05271D	253536D
D05272D	253537D
D05273D	253538D
D05274D	253539D
D05277D	253540D
D05278D	253541D
D05279D	253542D

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 hard copy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name: MIKE DAMMANN

Date: 11/11/04 Title: MANAGER

FULL INORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET

LABORATORY NAME Southwest Research Institute
CITY/STATE San Antonio, Texas

CASE NO. 0244M SDG NO. D05271
SDG NOS. TO FOLLOW _____ _____ _____
SAS NO. _____

CONTRACT NO. _____
SOW NO. _____

All documents delivered in the Complete SDG File must be original documents where possible. (Reference Exhibit B, Section II F and Section III U.)

Wetchem Analysis

		PAGE NOs. FROM	PAGE NOs. TO	(Please Check:) LAB	(Please Check:) REGION
1.	Inventory Sheet (DC-2) (Do not number)				
2.	Cover Page	010002	010002	✓	
3.	SDG Narrative	010003	010005	✓	
4.	Inorganic Analysis Data Sheet (Form I-IN)	010006	010014	✓	
5.	Initial & Continuing Calibration Verification (Form IIA-IN)	010015	010016	✓	
6.	CRDL Standards For AA and ICP (Form IIB-IN)	N/A	N/A		
7.	Blanks (Form III-IN)	010017	010018	✓	
8.	ICP Interference Check Sample (Form IV-IN)	N/A	N/A		
9.	Spike Sample Recovery (Form VA-IN)	010019	010019	✓	
10.	Post Digest Spike Sample Recovery (Form VB-IN)	N/A	N/A		
11.	Duplicates (Form VI-IN)	010020	010026	✓	
12.	Laboratory Control Sample (Form VII-IN)	010027	010027	✓	
13.	Standard Addition Results (Form VIII-IN)				
14.	ICP Serial Dilutions (Form IX-IN)				
15.	Instrument Detection Limits (Form X-IN)				
16.	ICP Interelement Correction Factors (Form XIA-IN)				
17.	ICP Interelement Correction Factors (Form XIB-IN)		N/A		
18.	ICP Linear Ranges (Form XII-IN)				
19.	Preparation Log (Form XIII-IN)				
20.	Analysis Run Log (Form XIV-IN)				
21.	Wetchem ~~ICP~~ Raw Data	010028	010034	✓	
22.	Furnace AA Raw Data				
23.	Mercury Raw Data				
24.	Cyanide Raw Data		N/A		
25.	Preparation Logs Raw Data				
26.	Percent Solids Determination Log				
27.	Traffic Report	010035	010036	✓	
28.	EPA Shipping/Receiving Documents				
	Airbill (No. of Shipments 1)	010037	010038	✓	
	Chain-of-Custody Records	010039	010039	✓	
	Sample Tags				
	Sample Log-In Sheet (Lab & DC1)	010040	010040	✓	
	SDG Cover Sheet	010041	010041	✓	
29.	Misc. Shipping/Receiving Records (list all individual records)				
	Telephone Logs				
	Custody Seals	010042	010043	✓	
30.	Internal Lab Sample Transfer Records & Tracking Sheets (describe or list)				
	Smpl. Control records	010044	010041	✓	
	_____				

	PAGE NOs. FROM	TO	(Please Check:) LAB	REGION
31. Internal Original Sample Prep & Analysis Records (describe or list)				
Prep Records _____	___	___	___	___
Analysis Records _____	___	___	___	___
Description _____	___	___	___	___
32. Other Records (describe or list)				
Telephone Communications Log	___	___	___	___
MDL's Data	01047	01066	✓	___
_____	___	___	___	___

33. Comments:

_____

_____

Completed by (CLP Lab):

R. P Resau — R. Press / Sr. tech — 11/15/04

(Signature) (Print Name & Title) (Date)

Audited by (EPA):

_____ _____ _____

(Signature) (Print Name & Title) (Date)

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Chemistry and Chemical Engineering Division
Department of Analytical & Environmental Chemistry

November 12, 2004

Metcalf & Eddy, Inc.
701 Edgewater Dr.
Wakefield, MA 01880-5371

Attn: Constance Lapite

Subject:		
	Client Site Name:	Groveland, MA
	Client Case Number:	DAS 0244M
	Client Work Order:	30
	SwRI Project Number:	03159.27.00X
	SwRI Task Orders:	041008-2
	SwRI Sample Receipt No.:	26678
	SDG:	D05271
	Samples Received:	October 8, 2004
	Required Analyses:	DAS Method D-033.1

Dear Ms Lapite,

Enclosed please find the analytical data for the above referenced case. If you should have any questions, please do not hesitate to call me at 210/522-2356.

Sincerely,

Chee-Kai Tan, Ph.D.
Group Leader

APPROVED:

Reza Karimi, Ph.D.
Director

CKT:mar

ENCL

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Metcalf & Eddy
TASK ORDER: 041008-2
SRR: 26678
SDG: D05271
CASE: 0244M
VTSR: October 08, 2004
PROJECT#: 03159.27.006

010001

Cover Page

METCALF & EDDY
COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

010002

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case No. # DAS 0244M SRR # 26678 SDG No.: D05271

SOW No. D-033.1 TO # 041008-2

Field Sample ID #	Lab Sample ID #
D05271	253536
D05272	253537
D05273	253538
D05274	253539
D05277	253540
D05278	253541
D05279	253542
D05271S	253536S
D05271D	253536D
D05272D	253537D
D05273D	253538D
D05274D	253539D
D05277D	253540D
D05278D	253541D
D05279D	253542D

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 hard copy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: MIKE DAMMANN

Date: 11/11/04 Title: MANAGER

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Metcalf & Eddy
TASK ORDER: 041008-2
SRR: 26678
SDG: D05271
CASE: 0244M
VTSR: October 08, 2004
PROJECT#: 03159.27.006

010003

SDG Narrative

SwRI SDG NARRATIVE
METCALF & EDDY / SDG: D05271

1. Eight (8) water samples were received for Wetchem analysis:

SwRI ID	Customer ID
253536	D05271
253537	D05272
253538	D05273
253539	D05274
253540	D05277
253541	D05278
253542	D05279

2. The samples were received at SwRI on October 8, 2004 for a thirty-five (35) day turnaround from Validated Time of Sample Receipt (VTSR).

3. QC Sample Identification:
D05271 S/DUP
LCS

ANALYSIS BY DAS METHOD D-033.1

Method:

TOC was analyzed using EPA 415.2 in accordance with DAS D-033.1.

Holding Times:

The sample holding times were met.

Quality Control:

- Calibration – six calibration standards and a blank were analyzed. The calibration curve was quadratic. The correlation coefficient for the curve was 0.999.
- Duplicates -all samples were analyzed and duplicate. If the duplicate RPD was not less than or equal to 20%, then the sample was analyzed again in duplicate. Only sample 253541 was rerun for a high RPD; the RPD of the rerun was <20%.
- Matrix Spikes - a matrix spike was analyzed although the DAS did not specify a MS requirement. The recovery was 101%.
- System Blanks - immediately after the calibration, two system blanks were analyzed. Their readings were within 10% of each other and were less than half of the reporting limit.

010005

- Method Blank (Procedure Blank) – was less than half of the reporting limit.
- A certified TOC quality control standard was used for the initial and continuing calibration verification, and as the laboratory control sample (LCS), purchased from ERA. All recoveries were within 85-115%.
- A laboratory fortified blank (LFB) spiked at the detection limit was analyzed, and had a 93.5% recovery. The LFB is reported on the Form VII.
- A 50 mg/L carbonate-bicarbonate check standard was analyzed to test the efficiency of the inorganic carbon removal process. No carbon was detected in this check sample above the detection limit. A 0% recovery was reported on the Form VII.

Method Detection Limit Study is enclosed:

Sample Calculation:

TOC, mg/L = $[A_o + (A_1 \times IR) + (A_2 \times IR^2)] \times (2500/ V)$
Where: A_o, A_1, A_2 – from quadratic equation
IR = instrument reading
V = sample volume

Ex. Calc. for 253536

TOC, mg/L = $[(-1.569214) + (0.959395 \times 2.396) + (0.022824 \times 2.396^2)] \times 2500/1250$
= 1.72 mg/L

"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 has been authorized by the Director or his designee, as verified by the following signature. This report shall not be reproduced except in full without the written approval of SwRI."

Jo Ann Boyd, Manager
Division 01 Quality Assurance

11/12/04
Date

010006

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Metcalf & Eddy
TASK ORDER: 041008-2
SRR: 26678
SDG: D05271
CASE: 0244M
VTSR: October 08, 2004
PROJECT#: 03159.27.006

WETCHEM ANALYSIS

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Metcalf & Eddy
TASK ORDER: 041008-2
SRR: 26678
SDG: D05271
CASE: 0244M
VTSR: October 08, 2004
PROJECT#: 03159.27.006

SAMPLE DATA

METCALF & EDDY
INORGANIC ANALYSIS DATA SHEET

010008

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water Date Received: 10/08/04

Field Sample ID # D05271 Lab Sample ID # 253536

% Solids

ANALYTE	RESULT	C	Units	METHOD	Q	Date Analyzed
TOC	1.72		mg/L	D033.1		11/03/04

COMMENTS:

FORM I - IN D-033.1

METCALF & EDDY
INORGANIC ANALYSIS DATA SHEET

010009

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water Date Received: 10/08/04

Field Sample ID # D05272 Lab Sample ID # 253537

% Solids _____

ANALYTE	RESULT	C	Units	METHOD	Q	Date Analyzed
TOC	5.98		mg/L	D033.1		11/03/04

COMMENTS: _____

FORM I - IN D-033.1

METCALF & EDDY
INORGANIC ANALYSIS DATA SHEET

010010

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water Date Received: 10/08/04

Field Sample ID # D05273 Lab Sample ID # 253538

% Solids _____

ANALYTE	RESULT	C	Units	METHOD	Q	Date Analyzed
TOC	1.45		mg/L	D033.1		11/03/04

COMMENTS: _____

FORM I - IN D-033.1

METCALF & EDDY
INORGANIC ANALYSIS DATA SHEET

010011

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water Date Received: 10/08/04

Field Sample ID # D05274 Lab Sample ID # 253539

% Solids

ANALYTE	RESULT	C	Units	METHOD	Q	Date Analyzed
TOC	15.5		mg/L	D033.1		11/03/04

COMMENTS:

METCALF & EDDY
INORGANIC ANALYSIS DATA SHEET

010012

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water Date Received: 10/08/04

Field Sample ID # D05277 Lab Sample ID # 253540

% Solids _____

ANALYTE	RESULT	C	Units	METHOD	Q	Date Analyzed
TOC	15.1		mg/L	D033.1		11/03/04

COMMENTS: _____

FORM I - IN D-033.1

METCALF & EDDY
INORGANIC ANALYSIS DATA SHEET

010013

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water Date Received: 10/08/04

Field Sample ID # D05278 Lab Sample ID # 253541

% Solids _____

ANALYTE	RESULT	C	Units	METHOD	Q	Date Analyzed
TOC	18.4		mg/L	D033.1		11/03/04

COMMENTS: _____

FORM I - IN D-033.1

METCALF & EDDY
INORGANIC ANALYSIS DATA SHEET

010014

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water Date Received: 10/08/04

Field Sample ID # D05279 Lab Sample ID # 253542

% Solids _____

ANALYTE	RESULT	C	Units	METHOD	Q	Date Analyzed
TOC	5.31		mg/L	D033.1		11/03/04

COMMENTS: _____

FORM I - IN D-033.1

METCALF & EDDY
INITIAL AND CONTINUING CALIBRATION VERFICATION

010015

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Initial Calibration Source ERA P081-516 (TOC)

Continuing Calibration Source 18-02-WCS2 (TOC)

ANALYTE	Units	ICV			CONTINUING CALIBRATION					
		TRUE	FOUND	%R	TRUE	FOUND	%R	TRUE	FOUND	%R
TOC	mg/L	1.92	1.82	94.8%	1.92	1.75	91.1%	1.92	1.84	95.8%

METCALF & EDDY
INITIAL AND CONTINUING CALIBRATION VERFICATION

010016

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Initial Calibration Source

Continuing Calibration Source 18-02-WCS2 (TOC)

ANALYTE	Units	ICV			CONTINUING CALIBRATION					
		TRUE	FOUND	%R	TRUE	FOUND	%R	TRUE	FOUND	%R
TOC	mg/L				1.92	2.14	111%	1.92	1.70	88.5%

METCALF & EDDY
BLANKS

Lab Name: Southwest Research Institute   Lab Code: SwRI   Contract: 03159.27.006

Case # DAS 0244M   SRR # 26678   SDG No.: D05271

Preparation Blank Matrix (soil/water): Water

Preparation Blank Concentration Units: mg/L

ANALYTE	Date Analyzed	ICB	C	CCB 1	C	CCB 2	C	CCB 3	C	PB	C	Units
TOC	11/03/04	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	mg/L

METCALF & EDDY
BLANKS

Lab Name: Southwest Research Institute   Lab Code: SwRI   Contract: 03159.27.006

Case # DAS 0244M   SRR # 26678   SDG No.: D05271

Preparation Blank Matrix (soil/water): Water

Preparation Blank Concentration Units: ________

	Date			CCB								
ANALYTE	Analyzed	ICB	C	1	C	2	C	3	C	PB	C	Units
TOC	11/03/04			0.1	U							mg/L

METCALF & EDDY
SPIKE SAMPLE RECOVERY

010019

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water

Field Sample ID # D05271S Lab Sample ID # 253536S

ANALYTE	Date Analyzed	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q
TOC	11/03/04	5.74		1.72		4.00	101%	

COMMENTS: _____

METCALF & EDDY
DUPLICATE SAMPLE

010020

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water

Field Sample ID # D05271D Lab Sample ID # 253536D

% Solids for Sample _____ % Solids for Duplicate _____

ANALYTE	Date Analyzed	Sample Result	C	Duplicate Result	C	%RPD	Units	Q
TOC	11/03/04	1.72		1.85		7.28%	ug/L	

METCALF & EDDY
DUPLICATE SAMPLE

010021

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water

Field Sample ID # D05272D Lab Sample ID # 253537D

% Solids for Sample _____ % Solids for Duplicate _____

ANALYTE	Date Analyzed	Sample Result	C	Duplicate Result	C	%RPD	Units	Q
TOC	11/03/04	5.98		5.75		3.92%	ug/L	

METCALF & EDDY
DUPLICATE SAMPLE

010022

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water

Field Sample ID # D05273D Lab Sample ID # 253538D

% Solids for Sample _____ % Solids for Duplicate _____

ANALYTE	Date Analyzed	Sample Result	C	Duplicate Result	C	%RPD	Units	Q
TOC	11/03/04	1.45		1.28		12.5%	ug/L	

FORM VI - IN D-033.1

METCALF & EDDY
DUPLICATE SAMPLE

010023

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water

Field Sample ID # D05274D Lab Sample ID # 253539D

% Solids for Sample _____ % Solids for Duplicate _____

ANALYTE	Date Analyzed	Sample Result	C	Duplicate Result	C	%RPD	Units	Q
TOC	11/03/04	15.5		15.2		1.95%	ug/L	

FORM VI - IN D-033.1

METCALF & EDDY
DUPLICATE SAMPLE

010024

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water

Field Sample ID # D05277D Lab Sample ID # 253540D

% Solids for Sample _____ % Solids for Duplicate _____

ANALYTE	Date Analyzed	Sample Result	C	Duplicate Result	C	%RPD	Units	Q
TOC	11/03/04	15.1		15.3		1.32%	ug/L	

FORM VI - IN

D-033.1

METCALF & EDDY
DUPLICATE SAMPLE

010025

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water

Field Sample ID # D05278D Lab Sample ID # 253541D

% Solids for Sample _____ % Solids for Duplicate _____

ANALYTE	Date Analyzed	Sample Result	C	Duplicate Result	C	%RPD	Units	Q
TOC	11/03/04	18.4		18.5		0.54%	ug/L	

FORM VI - IN D-033.1

METCALF & EDDY
DUPLICATE SAMPLE

010026

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

Matrix: Water

Field Sample ID # D05279D Lab Sample ID # 253542D

% Solids for Sample _____ % Solids for Duplicate _____

ANALYTE	Date Analyzed	Sample Result	C	Duplicate Result	C	%RPD	Units	Q
TOC	11/03/04	5.31		5.40		1.68%	ug/L	

FORM VI - IN D-033.1

METCALF & EDDY
LABORATORY CONTROL SAMPLE

010027

Lab Name: Southwest Research Institute Lab Code: SwRI Contract: 03159.27.006

Case # DAS 0244M SRR # 26678 SDG No.: D05271

LCS Matrix: Water LCS Source: ERA P081-516 (TOC LCS)
18-02-WCS2 (TOC LFB)
26-01-WCSC (CO_2 Check)

ANALYTE	Date Analyzed	AQUEOUS TRUE	AQUEOUS FOUND	AQUEOUS %R	SOLID TRUE	SOLID FOUND	SOLID LIMITS	SOLID %R	UNITS
TOC - LCS	11/03/04	1.92	1.68	87.5%					mg/L
TOC - LFB	11/03/04	0.1	0.0935	93.5%					mg/L
CO_2 Check	11/03/04	50	<0.1	0.00%					mg/L

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Metcalf & Eddy
TASK ORDER: 041008-2
SRR: 26678
SDG: D05271
CASE: 0244M
VTSR: October 08, 2004
PROJECT#: 03159.27.006

RAW DATA

Southwest Research Institute

Electronic Bench Sheet

TOC - Waters(1/94)

010029

11/9/04

Project # 03159.24.006
Client: Metcalf & Eddy
Method: DAS D-033.1
TO# 041008-2

Date: 11/03/04
Analyst: Warren A. Naegeli WAN
MDL: 0.1 mg/L

Standardization:

True Value mg/L	Average Instrument Reading	Original Instrument	Duplicate Instrument	Recalc Values (mg/kg)
5	5.998	5.939	6.057	5.006
2	3.405	3.452	3.357	1.962
1	2.477	2.468	2.485	0.947
0.5	2.170	2.131	2.209	0.620
0.2	1.823	1.815	1.831	0.256
0.1	1.655	1.693	1.617	0.081
0	1.506	1.547	1.464	-0.073

Quadratic Coefficients:

Ao	-1.569214
A1	0.959395
A2	0.022824
Coff.	0.999287

NOTES: Calibration Std prepared on 11/03/04 from 4000 mg/L Stock ID# 18-02-WCS2 (exp. 12/6/04)
ICV ERA Lot# P081-516 TV = 1.92 mg/L
Conc. (mg/L) from curve = Ao+ A1 x (Reading)+ A2 x (Reading)^2
Potassium Persulfate Solution made 11/03/04
CO2 Check = carbonate-bicarbonate standard soln 50 ppm preparted from 26-01-WCS2
Spike = 0.05 ml of 100ppm to 1.25 ml sample = 4 mg/L

Injection Volume: 2500 ul

Sig Figs: 3

Seq #	Sample ID	Sample Vol ul	Instument Reading	Conc. mg/l	Comments %Rec	%RPD	Avg
16	Check Blank	2500	1.550	<0.1	**(<0.05)**		
17	Check Blank	2500	1.529	<0.1	**(<0.05)**	**1.36%**	
18	CO2 Check	2500	N/A	<0.1	Void - Error		
19	CO2 Check	2500	0.877	<0.1			
20	ICV	2500	3.279	1.82	94.8% R, TV = 1.92 mg/L		
21	ICB	2500	1.565	<0.1			
22	LCSW	2500	3.149	1.68	87.5% R, TV = 1.92 mg/L		
23	PB	2500	1.573	<0.1	**(<0.05)**		
24	LFB	2500	1.667	0.0935	93.5% R, TV = 0.10 mg/L		
25	1	2500	1.690	0.117	39.0% R, TV = 0.30 mg/L		
26	2	2500	1.727	0.156			
27	3	2500	0.014	<0.1	Void - No sample		
28	4	2500	1.748	0.178			
29	5	2500	1.706	0.134			
30	6	2500	1.762	0.192			
31	7	2500	1.682	0.109			
32	void	2500	1.923	0.360	void - CCV		
33	CCV	2500	3.216	1.75	91.1% R, TV = 1.92 mg/L		
34	CCB	2500	1.333	<0.1			
35	8	2500	1.827	0.260			
36	253536	1250	2.396	1.72			
37	253536D	1250	2.458	1.85		**7.28%**	

Sample Calc:(Ao +(A1*inst.reading)) + (A2*inst.reading square) * (inj.vol/(samp.vol)*(%solids.dec) = mg/kg TOC Conc.

Southwest Research Institute

010030

Electronic Bench Sheet

TOC - Waters(1/94)

Project # 03159.24.006
Client: Metcalf & Eddy
Method: DAS D-033.1
TO# 041008-2

Date: 11/03/04
Analyst: Warren A. Naegeli
MDL: 0.1 mg/L

38	253536	5000	4.689	1.72	void - not needed
39	253536	1250	2.269	1.45	void - not needed
40	253536	1250	2.272	1.46	void - not needed
41	253536	1250	2.348	1.62	void - not needed
42	253536	1250	2.308	1.53	void - not needed
43	253536	1250	2.294	1.50	void - not needed
44	253536	1250	2.338	1.60	void - not needed
45	CCV	2500	3.296	1.84	95.8% R, TV = 1.92 mg/L
46	CCB	2500	1.343	<0.1	
47	253536S	1250	4.208	5.74	101% R, TV = 4.00 mg/L
48	253536SD	1250	4.289	5.93	105% **3.26%**
49	253537	2500	11.04	11.8	Void - Overcurve
50	253537	1250	4.310	5.98	
51	253537	1250	4.209	5.75	**3.92%**
52	253538	1250	2.269	1.45	
53	253538	1250	2.188	1.28	**12.5%**
54	253539	500	4.399	15.5	
55	253539	500	4.348	15.2	**1.95%**
56	253540	250	2.998	15.1	
57	CCV	2500	3.563	2.14	111% R, TV = 1.92 mg/L
58	CCB	2500	1.316	<0.1	
59	253540	250	3.012	15.3	**1.32%**
60	253541	250	3.520	20.9	Void - Rerun
61	253541	250	3.150	16.8	Void - Rerun - high RPD.
62	253541	250	3.294	18.4	
63	253541	250	3.305	18.5	**0.542%**
64	253542	250	1.667	<1.0	Void - Rerun
65	253542	1000	8.052	19.1	Void - Rerun
66	253542	500	2.583	5.31	
67	253542	500	2.601	5.40	**1.68%**
68	CCV	2500	3.167	1.70	88.5% R, TV = 1.92 mg/L
69	CCB	2500	1.281	<0.1	
70	MDL1	2500	1.359	<0.1	Void - Rerun
71	MDL2	2500	0.960	<0.1	Void - Rerun
72	MDL3	2500	2.356	0.818	Void - New solution necessary
73	MDL4	2500	1.936	0.374	74.8% R, TV = 0.50 mg/L
74	MDL5	2500	1.889	0.325	65.0% R, TV = 0.50 mg/L
75	MDL6	2500	1.870	0.305	61.0% R, TV = 0.50 mg/L
76	MDL7	2500	1.940	0.378	75.6% R, TV = 0.50 mg/L
77	MDL8	2500	1.878	0.313	62.6% R, TV = 0.50 mg/L
78	MDL9	2500	1.888	0.323	64.6% R, TV = 0.50 mg/L
79	MDL10	2500	1.907	0.343	68.6% R, TV = 0.50 mg/L
80	CCV	2500	3.247	1.79	93.2% R, TV = 1.92 mg/L
81	CCB	2500	1.276	<0.1	

True Value	Average	Standard Deviation	MDL
0.50	0.337	0.0289	0.091

Sample calc ✓ RSpires 11/9/04

Sample Calc:(Ao +(A1*inst.reading)) + (A2*inst.reading square) * (inj.vol/(samp.vol)*(%solids.dec) = mg/kg TOC Conc.

Southwest Research Institute
TOC Logbook

010031

Method: DAS D-033.1 Project #: 03159.27.006, OHD01.113

Client: Metcalf & Eddy, MDL Task Order #: 041008-2

STANDARDS:

Standard	LOT #
KHP	1602-WCS2

QUALITY CONTROL:

Standard ID	LOT #	TV (mg/L)
ERA	P081-516	1.92
ERA	N/A	N/A

SAMPLES:

Solids: Air Dried? (Yes / (No))
Ground? (Yes / (No))

Samples requiring Inorganic Carbon Pretreatment:
N/A

Waters: Acidified and Sparged samples:
All samples were sparged and previously acidified.

NOTES: N/A

Analyst Signature: Wayne A. Naegeli Date: 11/03/04

Reviewed by: [signature] Date: 11/9/04

Logbook# - Page # 07 019

Southwest Research Institute
TOC Logbook

010032

Method: DAS D-033.1 Project #: 03159.27.006, OHD01.113

Client: Metcalf + Eddy, MDL Task Order #: 041008-2

Space provided for TOC Printouts/Notes/Instrument Maintenance:

Warren A. Naegli 11/04/04

CAL -- 1 ML
CAL AVE 9.581
CAL ADJ 9.995

1	10	5.939	
2	10	6.057	> 5
3	10	3.452	
4	TOC	3.357	> 2
5	TOC	2.468	
6	TOC	2.485	> 1
7	TOC	2.131	
8	TOC	2.209	> 0.5
9	TOC	1.815	
10	TOC	1.831	> 0.2
11	TOC	1.693	
12	TOC	1.617	> 0.1
13	TOC	1.547	D
14	TOC	4.878	VOID
15	TOC	1.464	D
16	TOC	1.550	Check Blank
17	TOC	1.529	Check Blank

Warren A. Naegli 11/04/04

18	CAL	CALIB	VOID
19	TOC	0.877	CO2 Check
20	TOC	3.279	ICV
21	TOC	1.565	ICB
22	TOC	3.149	LCSW
23	TOC	1.573	PB
24	TOC	1.667	LFB
25	TOC	1.690	1
26	TOC	1.727	2
27	TOC	0.014	3
28	TOC	1.748	4
29	TOC	1.706	5
30	TOC	1.762	6
31	TOC	1.682	7
32	TOC	1.923	VOID
33	TOC	3.216	CCV
34	TOC	1.333	CCB
35	TOC	1.827	8
36	TOC	2.396	VOID
37	TOC	2.458	VOID
38	TOC	4.689	VOID

Analyst Signature: Warren A. Naegli Date: 11/03/04

Reviewed by: [signature] Date: 11/9/04

Logbook# - Page # 07 020

Southwest Research Institute
TOC Logbook

010033

Method: DAS - D-033.1 Project #: 03159.27.006, OHD81.113

Client: Metcalf & Eddy, MDL Task Order #: 041008-2

STANDARDS:

Standard	LOT #
KHP	18-02-WC52

QUALITY CONTROL:

Standard ID	LOT #	TV (mg/L)
ERA	P081-516	1.92
ERA	N/A	N/A

SAMPLES:

Solids: Air Dried? (Yes / (No))
Ground? (Yes / (No))

Samples requiring Inorganic Carbon Pretreatment:
N/A

Waters: Acidified and Sparged samples:
All samples were sparged and previously acidified.

NOTES: N/A

Analyst Signature: Joanna A. Nagel Date: 11/03/04

Reviewed by: [signature] Date: 11/9/04

Logbook# - Page # 07 021

Southwest Research Institute
TOC Logbook

010034

Method: DAS D-033.1

Project #: 03159.27.006, OHD01.113

Client: Metcalf & Eddy, MDL

Task Order #: 041008-2

Space provided for TOC Printouts/Notes/Instrument Maintenance:

Warren A. Naegeli 11/04/04

39	TOC	2.269	VOID
40	TOC	2.272	VOID
41	TOC	2.348	253536
42	TOC	2.308	253536
43	TOC	2.294	253536D
44	TOC	2.338	253536D
45	TOC	3.296	CCV
46	TOC	1.343	CCB
47	TOC	4.288	253536S
48	TOC	4.289	253536S
49	TOC	11.84	VOID
58	TOC	4.310	253537
[illegible]	[illegible]	4.209	253537
[illegible]	[illegible]	2.269	253538
[illegible]	[illegible]	2.188	253538
[illegible]	[illegible]	4.399	253539
[illegible]	[illegible]	4.348	253539
[illegible]	[illegible]	2.998	253540
[illegible]	[illegible]	3.563	CCV
[illegible]	[illegible]	1.316	CCB
[illegible]	[illegible]	3.012	253540

Warren A. Naegeli 11/04/04

[illegible]	[illegible]	3.520	VOID
[illegible]	[illegible]	3.150	VOID
[illegible]	[illegible]	3.294	253541
[illegible]	[illegible]	3.305	253541
[illegible]	[illegible]	1.667	VOID
[illegible]	[illegible]	8.052	VOID
[illegible]	[illegible]	2.583	253542
[illegible]	[illegible]	2.601	253542
[illegible]	[illegible]	3.167	CCV
[illegible]	[illegible]	1.281	CCB
[illegible]	[illegible]	1.359	VOID
71	TOC	0.960	VOID
72	TOC	2.356	VOID
73	TOC	1.936	4
74	TOC	1.889	5
75	TOC	1.870	6
76	TOC	1.940	7
77	TOC	1.878	8
[illegible]	[illegible]	1.688	9
[illegible]	[illegible]	1.907	10
[illegible]	[illegible]	3.247	CCV
[illegible]	[illegible]	1.276	CCB

Analyst Signature: Warren A. Naegeli Date: 11/03/04

Reviewed by: RBowles Date: 11/9/04

Logbook# - Page # 07 022

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Metcalf & Eddy
TASK ORDER: 041008-2
SRR: 26678
SDG: D05271
CASE: 0244M
VTSR: October 08, 2004
PROJECT#: 03159.27.006

010035

Traffic Report

Southwest Research Institute

010036

Traffic Report

Sample Custodian Signature: _____

Project: 03159.27-00X

Case: 0244M / SDG: _____

Airbill: 8464 1425 4761

Sample Receipt: 26678

1. Custody Seal — Present
2. Chain of Custody — Present
3. Sample Tags — Not Present
   Sample Tag Numbers — Not on COC
4. SMO Forms — Not Present

Date Received	Time Received	COC Record	SMO Sample #	Corresponding		Traffic Rpt, Tags, COC Agree	Sample Condition
				Sample Tag #	SwRI #		
10/08/04	08:30:00	Page 1 of 1	D05274	None	253539	YES	Intact
10/08/04	08:30:00	Page 1 of 1	D05277	None	253540	YES	Intact
10/08/04	08:30:00	Page 1 of 1	D05278	None	253541	YES	Intact
10/08/04	08:30:00	Page 1 of 1	D05279	None	253542	YES	Intact
10/08/04	08:30:00	Page 1 of 1	D05271	None	253536	YES	Intact
10/08/04	08:30:00	Page 1 of 1	D05272	None	253537	YES	Intact
10/08/04	08:30:00	Page 1 of 1	D05273	None	253538	YES	Intact

Client: Metcalf & Eddy

WO: 26678

FRM-217

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Metcalf & Eddy
TASK ORDER: 041008-2
SRR: 26678
SDG: D05271
CASE: 0244M
VTSR: October 08, 2004
PROJECT#: 03159.27.006

010037

EPA Shipping/Receiving Documents

Airbills (No. of Shipments 1)
Chain of Custody Records
Sample Tags/Custody Seals
Sample Log- In Sheet (Lab & DC1)
SDG Cover Sheet

390
500

FedEx Express *USA Airbill* FedEx Tracking Number 8464 1425 4761

Form I.D. No. 0215

Recipient's Copy

1 From This portion can be removed for Recipient's records.

Date 10/7/04 FedEx Tracking Number 846414254761

Sender's Name Dan Cafcote Phone

Company METCALF & EDDY

Address 701 ED WATER DR

City WAKEFIELD State MA ZIP 01880-6256

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

To "HOLD" at FedEx location, print FedEx address. We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address Dept./Floor/Suite/Room

City San Antonio State TX ZIP

8464 1425 4761

RECIPIENT: PEEL HERE

NO POUCH NEEDED.
See back for peel and stick application instructions.

4a Express Package Service *Packages up to 150 lbs.* Delivery commitment may be later in some areas.

- [X] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day — Second business day
- [ ] FedEx Express Saver — Third business day

FedEx Envelope rate not available. Minimum charge: One-pound rate

4b Express Freight Service *Packages over 150 lbs.* Delivery commitment may be later in some areas.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation

5 Packaging * Declared value limit

- [ ] FedEx Envelope*
- [ ] FedEx Pak*
- [ ] Other

6 Special Handling

- [ ] SATURDAY Delivery — Available ONLY for FedEx Priority Overnight, FedEx 2Day, FedEx 1Day Freight, and FedEx 2Day Freight to select ZIP codes.
- [ ] HOLD Weekday at FedEx Location — Not available for FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available only for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [X] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845

Dangerous Goods (including Dry Ice) cannot be shipped in FedEx packaging.

- [ ] Cargo Aircraft Only

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below. Obtain Recip. Acct. No.

- [X] Sender — Acct. No. in Section 1 will be billed
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages 1 | Total Weight | Total Charges | Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the *FedEx Service Guide* for details.

8 Release Signature *Sign to authorize delivery without obtaining signature.*

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Visit our Web site at fedex.com or call 1.800.Go.FedEx® 800.463.3339.

447

1140
10/8/04
0830

Client: METCALF & EDDY
SRR #26678
Project #03159.27.00X
Case: 0244M
VTSR: 10/08/04 0830

0100038

EPA Metcalf and Eddy Chain of Custody Form
Generic Chain of Custody

13432

Reference Case
Client No: 0244M
SDG No:
L

Date Shipped:	10/7/2004
Carrier Name:	FedEx
Airbill:	846414254761
Shipped to:	Southwest Research Institute 6220 Culebra Road San Antonio TX 78228 (210) 522-3051

Chain of Custody Record

Sampler Signature:

	Relinquished By	(Date / Time)	Received By	(Date / Time)
1		10/7/04 1400		
2				
3				
4			Rho Roman	10/8/04 0830

For Lab Use Only
Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	FOR LAB USE ONLY Sample Condition On Receipt:
D05271	Ground Water/ Denise Laferte	L/G	TOC (21)	(H2SO4) (1) 1.5	TW-30	S: 10/6/2004 14:00	
D05272	Ground Water/ Denise Laferte	L/G	TOC (21)	(H2SO4) (1) 1.0	TW-30-CS	S: 10/6/2004 13:00	
D05273	Ground Water/ Denise Laferte	L/G	TOC (21)	(H2SO4) (1) 1.0	TW-31	S: 10/6/2004 11:35	
D05274	Ground Water/ Denise Laferte	L/G	TOC (21)	(H2SO4) (1) 1.5	TW-17	S: 10/6/2004 9:58	
D05277	Ground Water/ Denise Laferte	L/G	TOC (21)	(H2SO4) (1) 1.0	EW-6D	S: 10/6/2004 14:25	
D05278	Ground Water/ Denise Laferte	L/G	TOC (21)	(H2SO4) (1) 1.5	TW-18	S: 10/6/2004 15:30	
D05279	Ground Water/ Denise Laferte	L/G	TOC (21)	(H2SO4) (1) 1.0	TW-23	S: 10/6/2004 16:10	

Client: METCALF & EDDY
SRR #26678
Project #03159.27.00X
Case: 0244M
VTSR: 10/08/04 0830

Rec'd Intact

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt:	Chain of Custody Seal Number:
			3.5°C #027	N/A

Analysis Key: TOC = D-033.1 TOC

Concentration: L = Low, M = Low/Medium, H = High Type/Designate: Composite = C, Grab = G

Custody Seal Intact? ✓ Shipment Iced? ✓

TR Number: 1-502446878-100704-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, Computer Sciences Corporation, 15000 Conference Center Drive, Chantilly, VA 20151-3819. Heather Bauer Phone: 703-818-4220 ST&R Fax No. 703-818-4602

LABORATORY COPY

010039

SAMPLE LOG-IN SHEET

010040

Lab Name: Southwest Research Institute

Page 1 of 1

Received By (Print Name): DINO ROMAN

Log-in Date: 10/08/2004

Received By (Signature): DR

Case Number: 0244M

Sample Delivery Group No.

SAS Number: N/A

Remarks: 03159.27.00X

Remarks: Condition of Sample Shipment, etc

			Corresponding			
			EPA Sample #	Sample Tag #	Assigned Lab #	
1.	Custody Seal(s)	Present/Absent* Intact/Broken	D05271	None	253536	Intact
2.	Custody Seal Nos.	N/A	D05272	None	253537	Intact
			D05273	None	253538	Intact
3.	Chain-of Custody Records	Present/Absent*	D05274	None	253539	Intact
4.	Traffic Reports or Packing Lists	Present/Absent	D05277	None	253540	Intact
5	Airbill	Airbill/Sticker Present/Absent*	D05278	None	253541	Intact
			D05279	None	253542	Intact
6.	Airbill No.	8464 1425 4761				
7	Sample Tags	Present/Absent				
	Sample Tag Numbers	Listed/Not listed on Chain of Custody				
8.	Sample Condition	Intact/Broken*/ Leaking				
9	Cooler Temperature	3.5C				
10	Does Information on custody records, traffic reports, and sample tags agree?	Yes/No*				
11	Date Received at Lab	10/08/2004				
12.	Time Received	08:30:00				

Sample Transfer

Fraction: Org + Inorg	Fraction:
Area #: R13	Area #:
By: DINO ROMAN	By:
On: 10/08/2004	On:

10.08.2004

* Contact SMO and attach record of resolution

Reviewed By: Cynthia A. Sprecher

Date: 10.08.2004

Logbook No.: Sample Receipt (26678)

Logbook Page No.: 5219 (SECTION 1 OF 4)

SAMPLE DELIVERY GROUP

COVER SHEET

SOUTHWEST RESEARCH INSTITUTE
DAS CASE 0244M

SDG TURNAROUND: 35 DAYS
SDG: D05271

Eight (8) water samples were received for Wetchem analysis by DAS Method D-033.1:

SwRI ID	Customer ID
253536	D05271
253537	D05272
253538	D05273
253539	D05274
253540	D05277
253541	D05278
253542	D05279

FIRST SAMPLE IN SDG: D05271
LAST SAMPLE IN SDG: D05279

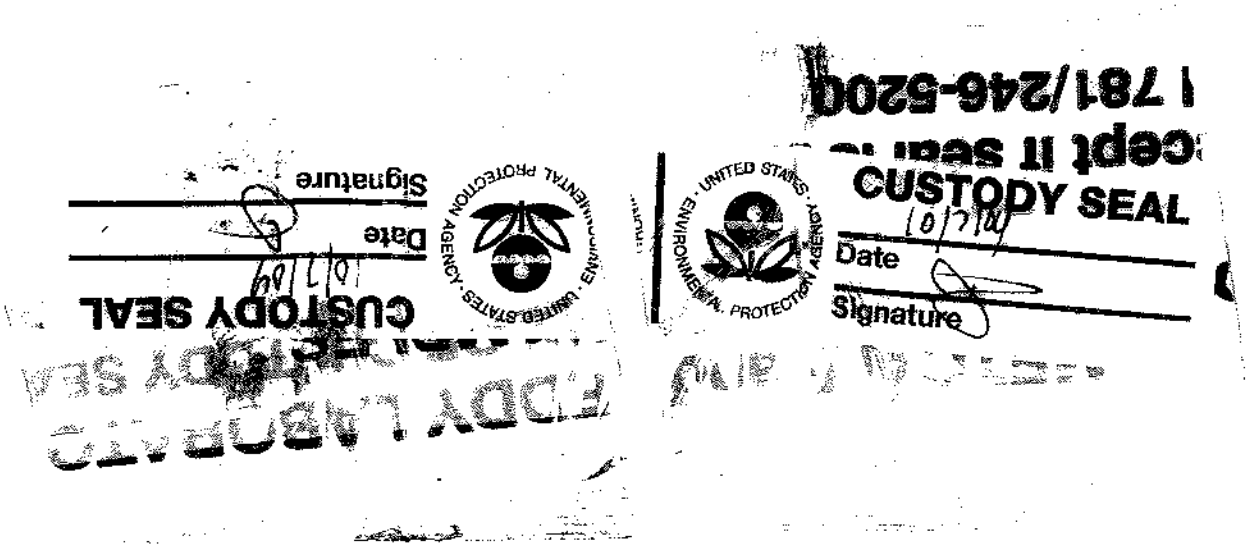
FIRST SAMPLE RECEIVED: October 8, 2004
LAST SAMPLE RECEIVED: October 8, 2004

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Metcalf & Eddy
TASK ORDER: 041008-2
SRR: 26678
SDG: D05271
CASE: 0244M
VTSR: October 08, 2004
PROJECT#: 03159.27.006

010042

Misc. Shipping/Receiving Records

010043



Client: METCALF & EDDY
SRR #26678
Project #03159.27.00X
Case: 0244M
VTSR: 10/08/04 0830

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Metcalf & Eddy
TASK ORDER: 041008-2
SRR: 26678
SDG: D05271
CASE: 0244M
VTSR: October 08, 2004
PROJECT#: 03159.27.006

010044

Internal Lab Sample Transfer Records & Tracking Sheets

010045

SRR #:	26678
Project #:	03159.27.00X
CASE:	0244M
Customer:	Metcalf & Eddy
Samples Received:	Oct 8 2004 8:30AM
Manager:	TAN, CK

SwRI ID: 253536

Client ID: D05271

Container #: 1
Oct 8 2004 4:55PM Checked in by BROCK, RONALD into Cooler 13/Shelf L/Bin 1
Nov 2 2004 11:18AM Checked Out by NAEGELI, WARREN
Nov 4 2004 2:16PM Checked in by NAEGELI, WARREN into Cooler 13/Shelf T/Bin 4
Nov 4 2004 2:20PM Checked Out by NAEGELI, WARREN
Nov 4 2004 2:20PM Checked in by NAEGELI, WARREN into Cooler 13/Shelf O/Bin 3

SwRI ID: 253537

Client ID: D05272

Container #: 1
Oct 8 2004 4:55PM Checked in by BROCK, RONALD into Cooler 13/Shelf L/Bin 1
Nov 2 2004 11:18AM Checked Out by NAEGELI, WARREN
Nov 4 2004 2:16PM Checked in by NAEGELI, WARREN into Cooler 13/Shelf T/Bin 4
Nov 4 2004 2:20PM Checked Out by NAEGELI, WARREN
Nov 4 2004 2:20PM Checked in by NAEGELI, WARREN into Cooler 13/Shelf O/Bin 3

SwRI ID: 253538

Client ID: D05273

Container #: 1
Oct 8 2004 4:55PM Checked in by BROCK, RONALD into Cooler 13/Shelf L/Bin 1
Nov 2 2004 11:18AM Checked Out by NAEGELI, WARREN
Nov 4 2004 2:16PM Checked in by NAEGELI, WARREN into Cooler 13/Shelf T/Bin 4
Nov 4 2004 2:20PM Checked Out by NAEGELI, WARREN
Nov 4 2004 2:20PM Checked in by NAEGELI, WARREN into Cooler 13/Shelf O/Bin 3

SwRI ID: 253539

Client ID: D05274

Container #: 1
Oct 8 2004 4:55PM Checked in by BROCK, RONALD into Cooler 13/Shelf L/Bin 1
Nov 2 2004 11:18AM Checked Out by NAEGELI, WARREN
Nov 4 2004 2:16PM Checked in by NAEGELI, WARREN into Cooler 13/Shelf T/Bin 4
Nov 4 2004 2:20PM Checked Out by NAEGELI, WARREN
Nov 4 2004 2:20PM Checked in by NAEGELI, WARREN into Cooler 13/Shelf O/Bin 3

SwRI ID: 253540

Client ID: D05277

Container #: 1
Oct 8 2004 4:55PM Checked in by BROCK, RONALD into Cooler 13/Shelf L/Bin 1
Nov 2 2004 11:18AM Checked Out by NAEGELI, WARREN

010046

Nov 2 2004 11:18AM Checked Out by NAEGELI, WARREN
Nov 4 2004 2:16PM Checked in by NAEGELI, WARREN into Cooler 13/Shelf T/Bin 4
Nov 4 2004 2:20PM Checked Out by NAEGELI, WARREN
Nov 4 2004 2:20PM Checked in by NAEGELI, WARREN into Cooler 13/Shelf O/Bin 3

SwRI ID: 253541

Client ID: D05278

Container #: 1
Oct 8 2004 4:55PM Checked in by BROCK, RONALD into Cooler 13/Shelf L/Bin 1
Nov 2 2004 11:18AM Checked Out by NAEGELI, WARREN
Nov 4 2004 2:16PM Checked in by NAEGELI, WARREN into Cooler 13/Shelf T/Bin 4
Nov 4 2004 2:20PM Checked Out by NAEGELI, WARREN
Nov 4 2004 2:20PM Checked in by NAEGELI, WARREN into Cooler 13/Shelf O/Bin 3

SwRI ID: 253542

Client ID: D05279

Container #: 1
Oct 8 2004 4:55PM Checked in by BROCK, RONALD into Cooler 13/Shelf L/Bin 1
Nov 2 2004 11:18AM Checked Out by NAEGELI, WARREN
Nov 4 2004 2:16PM Checked in by NAEGELI, WARREN into Cooler 13/Shelf T/Bin 4
Nov 4 2004 2:20PM Checked Out by NAEGELI, WARREN
Nov 4 2004 2:21PM Checked in by NAEGELI, WARREN into Cooler 13/Shelf O/Bin 3

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Metcalf & Eddy
TASK ORDER: 041008-2
SRR: 26678
SDG: D05271
CASE: 0244M
VTSR: October 08, 2004
PROJECT#: 03159.27.006

010047

Other Records

METHOD DETECTION LIMIT STUDY FOR INORGANICS

010048

Lab Name: Southwest Research Institute
Instrument ID: Dohrmann DC 80
Date & Time Analyzed: 11/03/04
Analyst: WNaegeli
Reviewed by: RSpies

Method: 415.2
Matrix: Waters

Digestion Method: NA
Sample Wt./Vol.: NA
Final Volume: NA
Digestion Date: NA
Digested by: NA
Concentration Units: mg/L

ANALYTE	Spike Amount	MDL1	MDL2	MDL3	MDL4	MDL5	MDL6	MDL7	Average	%REC	STD DEV	MDL*	PQL**	Ratio***
TOC	0.5	0.374	0.325	0.305	0.378	0.313	0.323	0.343	0.337	67.5%	0.029	0.091	0.455	5

* MDL is calculated as 3.143 times the standard deviation.
**PQL is calculated as 5 times the MDL.
***Ratio is calculated as the spike amount divided by the MDL.

ANALYTICAL SPECIFICATION FOR THE ANALYSIS OF WATER QUALITY PARAMETERS

(Alkalinity, Ammonia, Chloride, Chemical Oxygen Demand, Nitrate/Nitrite-N, Phosphorus, Sulfate, Total Dissolved Solids, Total Suspended Solids, and Total Organic Carbon)

DAS METHOD D-033.1

Prepared by:

Metcalf & Eddy, Inc.
Wakefield, Massachusetts

June 2001

1. SCOPE

This specification is for the analysis of water quality parameters in groundwater, surface water, treatment plant influents/effluents, or other aqueous matrices. The water quality parameters include: alkalinity, ammonia, chloride, chemical oxygen demand (COD), nitrate/nitrite-N, phosphorus, sulfate, total dissolved solids (TDS), total suspended solids (TSS), and total organic carbon (TOC). The laboratory must meet the detection limits as detailed in Attachment A of this specification.

2. SCHEDULE

Target sampling dates will be provided in each work order. Samples will be shipped, by overnight delivery service, no more than one day after sample collection. Saturday delivery may be required. Contacts for shipping will be provided in each work order. Data delivery inquiries may be made to Metcalf & Eddy, Inc. (M&E), Ms. Constance Lapite at (781)224-6628 or the person specified in each work order.

Sample data must be delivered to M&E, Ms. Constance Lapite or the person specified in the work order, within the turnaround time specified on the work order. The turnaround time for the data in an SDG will be calculated based on laboratory receipt of the last sample in that Sample Delivery group (SDG). Results must be delivered under chain-of-custody. Data submitted to M&E should be sent to the following address:

Ms. Constance Lapite
Metcalf & Eddy, Inc.
30 Harvard Mill Square
Wakefield, MA 01880-5371
Phone: (781)224-6628
Fax: (781)245-6293

The number of samples and each matrix will be provided in each individual work order. A shipment of samples will be assigned a unique M&E Delivery of Analytical Services (DAS) Case Number. Samples will be submitted in SDGs. An SDG is defined in United States Environmental Protection Agency (EPA) Contract Laboratory Program (CLP) Statement of Work (SOW) for Inorganics Analyses Multi-Media Multi-Concentration, ILM04.1, Exhibit A, Section II-G; however, the laboratory will be required to batch the samples as noted on the DAS chain-of-custody. Data for all samples in an SDG are due concurrently.

3. ANALYTICAL REFERENCES

The analytical methods are drawn from EPA Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, with updates to Rev. 3-83. The individual methods to be followed include:

Alkalinity (Titrimetric, pH 4.5) - Method 310.1
Chloride (Titrimetric, Mercuric Nitrate) - Method 325.3
Chemical Oxygen Demand (Titrimetric, Mid-Level)- Method 410.1
Nitrogen, Ammonia (Colorimetric; Titrimetric; Potentiometric - Distillation Procedure) - Method 350.2
Nitrogen, Nitrate/Nitrate (Colorimetric, Automated, Hydrazine Reduction) - Method 353.1
Organic Carbon, Total (TOC) (UV Promoted, Persulfate Oxidation) - Method 415.2
Phosphorus, Total (Colorimetric, Automated, Block Digestor AA II) - Method 365.4
Sulfate (Turbidimetric)- Method 375.4
Residue, Filterable (Gravimetric, Dried at 180°C) (TDS)- Method 160.1
Residue, Non-filterable (Gravimetric, Dried at 103 -105°C) (TSS) - Method 160.2

The laboratory may choose to perform a different, but equivalent analytical procedure. However, the laboratory **must** contact M&E for approval and submit an SOP that details the procedure, which meets the requirements of this specification.

The EPA CLP SOW for Inorganics Analyses Multi-Media Multi-Concentration, ILM04.1 is also referenced.

4. SAMPLE PRESERVATION AND HOLDING TIMES

Samples will be preserved by cooling and maintaining them at 4°C ±2°C. EPA-required cooler temperature indicators will be placed in the sample shipping containers. If the temperature of the cooler is greater than 6°C or less than 2°C upon sample receipt, the laboratory must contact M&E immediately for instructions regarding analysis of the samples. If the initial sample shipments arrive at a temperature above 6°C, M&E will conduct corrective action to include more ice in subsequent shipments to properly chill the samples. If the initial shipments arrive at a temperature below 2°C, the sample storage conditions prior to shipment will be evaluated.

All samples will be collected in glass bottles. An effort will be made to supply the laboratory with a minimum of two one-liter (1 L) bottles for the water quality parameter analyses.

The methods, preservatives, and holding times for the water quality parameter analyses are listed in the table below:

Parameter	Method	Holding Time[1]	Preservation
Alkalinity	310.1 - Titrimetric	14 days	Cool 4°C
Ammonia	350.2 - Colorimetric, Titrimetric; Potentiometric	28 days	Cool 4°C, H_2SO_4 to pH<2
Chloride	325.3 - Titrimetric	28 days	Cool 4°C
COD	410.1 - Titrimetric	28 days	Cool 4°C, HCl to pH<2
Nitrate/Nitrite-N	353.1 - Colorimetric, Automated, Hydrazine Reduction	28 days	Cool 4°C, H_2SO_4 to pH<2
Phosphorus	365.4 - Colorimetric	28 days	Cool 4°C, H_2SO_4 to pH<2
Sulfate	375.4 - Turbidimetric	28 days	Cool 4°C
TDS	160.1 - Gravimetric	7 days	Cool 4°C
TSS	160.2 - Gravimetric	7 days	Cool 4°C
TOC - low level	415.2 - UV Promoted, Persulfate Oxidation	28 days	Cool 4°C, H_2SO_4 to pH<2

(1) Holding time is defined as the time between sample collection and sample preparation/analysis.

5. ANALYTICAL PROCEDURE

A. The laboratory must provide with the DAS bid package following proofs of laboratory capability generated within the past nine months of operation:

- A method detection limit study (MDL) study conducted within the past nine months in accordance with 40 CFR Part 136 Appendix B that demonstrates the laboratory can achieve the detection limits presented in Attachment A of this specification.

- Laboratory fortified blank (LFB) results, consisting of organic-free water, spiked for all the target water quality parameters, except alkalinity, TDS, and TSS, at concentrations equal to the detection limits in Attachment A of this specification. Recovery criteria of 70-10% must be met for all target analytes.

Should these proofs of capability not be available for delivery with the DAS bid, the proofs may be submitted after the DAS bid. However, these proofs of capability must be submitted and accepted by M&E prior to the analysis of the samples.

B. **Alkalinity - Method 310.1 (Titrimetric)**

1. Analysis for alkalinity must begin as soon as possible since atmospheric carbon dioxide can affect the results. If portions from the same sample container are to be analyzed for other parameters, complete alkalinity analysis first.

2. Appropriate aliquots should be used to avoid a titration volume greater than 50 milliliters (mLs).

3. Follow Section 4.1 of the method for pH specifications. At least two different pH solutions must be used during standardization. The solutions must bracket the expected pH of the samples. Repeat adjustments of successive portions of the two buffer solutions until readings are within 0.05 pH units of the buffer solution value. A separate source pH check standard must then be analyzed to verify the calibration. In the event that the pH meter is not equipped with temperature compensation, all calibration solutions and standards must be measured at the same temperature. Calibration must be documented in a laboratory notebook and provided with the final data package.

4. A normality check of the titrant must be performed prior to sample analysis. If the normality is within 10% of that initially determined, the newly determined normality must be used in the calculations. If it is not within 10%, a fresh titrant must be prepared. The normality of the fresh titrant must be within 20% of that specified by the method.

5. Follow Section 6.1 of the method for the preliminary titration of the sample to determine the normality of the titrant to be used. Then, follow Section 6.2 of the method for high alkalinity samples or Section 6.3 for low alkalinity samples. The normality of the titrant used for each sample must be documented in a laboratory notebook and included with the final deliverables.

6. Analysis of a method blank, prepared using laboratory pure water (deionized/distilled) and all reagents used for the associated samples, must be performed. The method blank must be analyzed in conjunction with the calibration and following every twenty (20) analytical samples. The method blank must not have an alkalinity more than half the detection limit listed in Attachment A, or the source of water must be changed to a cleaner source and all samples relating to that blank must be reanalyzed.

7. One sample in twenty (20) field samples must be analyzed in duplicate and the relative percent difference (RPD) between results must be less than or equal to 20%. If the RPD is greater than 20%, the analysis of both samples must be repeated. If the RPD is still >20%, flag the associated results with an asterisk "*".

8. Initially, an EPA check standard or check standard from another source must be analyzed three (3) consecutive times with each analytical batch of twenty (20) samples or less, prior to blank and sample analysis. All three (3) analyses must be reported in the deliverable package. The final or third analysis must meet recovery criteria. The EPA check standard or check standard from another source must also be analyzed at a frequency of one (1) per ten (10) field samples and at the end of the analytical sequence. If a check sample is not available, a standard with a total alkalinity of 10 milligrams per liter (mg/L) as $CaCO_3$, which is from a source independent of that used to check the normality of the titrant, may be used. Results must agree within 15% of the true value. If the precision criteria are not met, a normality check must be performed. Then, another EPA check standard or check standard from another source, method blank, and all associated field samples analyzed since the last compliant calibration check must be reanalyzed.

C. Ammonia - Method 350.2 (Colorimetric; Potentiometric)

1. For sample concentrations between 0.05 mg/L and 1.0 mg/L, use colorimetric procedure. For sample concentrations between 0.05 mg/L to 1400 mg/L use potentiometric procedure. For sample concentrations between 1 mg/L to 25 mg/L use titrimetric procedure with additional requirements detailed in this section.

2. A 5-point calibration curve must be generated daily, prior to sample analysis. The lowest standard must be at the detection limit and the range of the calibration must bracket the concentration of the samples. The correlation coefficient must be greater than or equal to 0.995. If the criteria are not met, fresh standards must be prepared and a new standard curve generated. Samples may not be analyzed until the criteria are met. If a sample result falls outside the calibration range, either dilute the sample or recalibrate using standards to span the desired range.

3. An EPA check standard or a check standard from another source, which is digested with the samples, must be analyzed prior to the samples, every ten (10) samples, and at the end of the analytical sequence. If one is unavailable, a 0.1 mg NH_3-N/L standard, which is from a source independent from that of the calibration standards, may be used. The results must be within 15% of the true value. If the results do not agree, a new standard curve must be generated, and all associated QC samples and field samples must be redigested and reanalyzed. Limits must be

met prior to sample analysis. Report the source of the check standard in the final deliverables.

4. An EPA check sample or a check standard from another source, which is not digested, must be analyzed three (3) consecutive times prior to sample analysis. All three (3) analyses must be reported in the deliverable package. The final or third analysis must meet recovery criteria. If unavailable, a mid-range standard from an independent source may be used. The EPA check standard (or check standard from another source) or mid-range standard must also be analyzed one (1) per ten (10) samples and at the end of the analytical sequence. Results must agree within $\pm 15\%$ of the true value. If the result do not agree within 15%, a reanalysis of the check standard must be conducted. If the results are still not within 15%, a new calibration curve must be prepared and all samples analyzed following the last compliant check standard must be reanalyzed. Steps taken to remedy the problem must be reported in a laboratory notebook and included in the data package.

5. For every batch of twenty (20) samples or less, a distilled water method blank must be digested. The method blank must be analyzed at the beginning of the analytical sequence, following the analysis of the calibration curve and the check standard, but prior to the analysis of any samples. If contamination is present at concentrations exceeding one-half the detection limit listed in Attachment A, redigest a new blank, EPA check standard, and all associated field samples. Criteria must be met prior to sample analysis.

6. A matrix spike must be performed at a frequency of one (1) per twenty (20) field samples. Spike a sample prior to digestion at a concentration equal to the mid point of the calibration curve. Recovery must be within 80-120%. If limits are not met, redigest and reanalyze the spiked sample. If the results are still out, flag the results with a pound symbol "#".

7. One (1) sample per twenty (20) field samples must be analyzed in duplicate and the RPD between results must be less than or equal to 20%. If the RPD is greater than 20%, the analysis of both samples must be repeated. If the RPD is still >20%, flag the results with an asterisk "*".

D. Ammonia - Method 350.2 (Titrimetric)

1. For sample concentrations between 1 mg/L and 25 mg/L.

2. Four practice analyses must be performed before field sample analysis begins. The four practice analyses must be clearly documented in the laboratory notebook and provided with the final deliverables.

3. Initially, an EPA check standard or a check standard from another source must be analyzed three (3) consecutive times with each analytical batch (twenty samples or less), prior to blank and sample analysis. All three (3) analyses must be reported in the data package. The final or third analysis must meet recovery criteria. The EPA check standard or a check standard from another source must also be analyzed at a frequency of one (1) per ten (10) field samples and at the end of the analytical sequence. If a check sample is not available, a 20 mg/L standard, which is from a source independent of that used to check the normality of the titrant, may be used. Results must agree within ±15% of the true value. If this criteria is not met, a normality check must be performed. Then, another EPA check standard or standard from another source, method blank, and all associated field samples analyzed prior to the last compliant calibration check must be reanalyzed.

4. A normality check of the titrant must be performed prior to sample analysis. If the normality is within 10% of that initially determined, the newly determined value must be used in the calculations. If it is not within 10%, a fresh titrant must be prepared. The normality of the fresh titrant must be within 20% of that specified by the method.

5. Analysis of a method blank, prepared using laboratory pure water (deionized/distilled) and all reagents used for the associated samples, must be performed. The method blank should be analyzed in conjunction with the standardization and following every twenty (20) analytical samples. The method blank must not contain a concentration of ammonia more than half the detection limit listed in Attachment A, or the source of water must be changed to a cleaner source and all samples relating to that blank must be reanalyzed.

6. One (1) sample in twenty (20) field samples must be analyzed in duplicate and the RPD between results must be less than or equal to 20%. If the RPD is greater than 20%, the analysis of both samples must be repeated. If the RPD is still >20%, flag the results with an asterisk "*".

7. A matrix spike must be performed at a frequency of one (1) in twenty (20) samples. The sample must be fortified at a concentration of 10 mg/L, and the recovery of the spike must be within 80-120%. If the spike is outside the limits, repeat the analysis. If the results are still outside the limits, flag the results with a pound symbol "#".

E. Chloride - Method 325.3 (Titrimetric)

1. A sample aliquot must not contain more than 20 milligrams (mg) of chloride (Cl) per 50 mL, in order to avoid using a large titration volume.

2. Follow the procedure exactly as described in Section 6 of the method, with the following exceptions:

   - If the sample contains less than 0.1 mg/L, there is no need to concentrate the sample.

   - If the sample aliquot contains less than 2.5 mg of chloride, another aliquot must be analyzed using 0.0141N mercuric nitrate titrant (in Section 6.1 of the method). Record the normality of the titrant used in a laboratory notebook and include with the final deliverables.

   - If the end point of the titration is difficult to detect, complete Section 6.7 of the method and report with the sample results.

3. Four practice analyses must be made before field sample analysis begins. The four practice analyses must be clearly documented in the laboratory notebook and provided with the final deliverables.

4. Initially, an EPA check standard or a check standard from another source must be analyzed three (3) consecutive times with each analytical batch (twenty samples or less), prior to blank and sample analysis. All three (3) analyses must be reported in the data package. The final or third analysis must meet recovery criteria. The EPA check standard or a check standard from another source must also be analyzed at a frequency of one (1) per ten (10) field samples and at the end of the analytical sequence. If a check sample is not available, a 20 mg/L standard, which is from a source independent of that used to check the normality of the titrant, may be used. Results must agree within 15% of the true value. If this criteria is not met, a normality check must be performed. Then, another EPA check standard or check standard from another source, method blank, and all associated field samples analyzed prior to the last compliant calibration check must be reanalyzed.

5. A normality check of the titrant must be performed prior to sample analysis. If the normality is within 10% of that initially determined, the newly determined value must be used in the calculations. If it is not within 10%, a fresh titrant must be prepared. The normality of the fresh titrant must be within 20% of that specified by the method.

6. Analysis of a method blank, prepared using laboratory pure water (deionized/distilled) and all reagents used for the associated samples, must be performed. The method blank should be analyzed in conjunction with the standardization and following every twenty (20) analytical samples. The method blank must not contain a concentration of chloride more than half the detection

limit listed in Attachment A, or the source of water must be changed to a cleaner source and all samples relating to that blank must be reanalyzed.

7. One (1) sample in twenty (20) field samples must be analyzed in duplicate and the RPD between results must be less than or equal to 20%. If the RPD is greater than 20%, the analysis of both samples must be repeated. If the RPD is still >20%, flag the results with an asterisk "*".

8. A matrix spike must be performed at a frequency of one (1) in twenty (20) samples. The sample must be fortified at a concentration of 10 mg/L, and the recovery of the spike must be within 80-120%. If the spike is outside the limits, repeat the analysis. If the results are still outside the limits, flag the results with a pound symbol "#".

F. Chemical Oxygen Demand (COD) - Method 410.1 (Titrimetric)

1. Follow the procedure for sample analysis outlined in Section 7.0 of the method. Since the samples may contain volatile organic compounds, use an allihn condenser and add the sulfuric acid-silver sulfate solution (as described in Section 7.1.1 of the method) to avoid volatilization.

2. A normality check of the titrant must be performed prior to sample analysis. If the normality is within 10% of that initially determined, the newly determined value must be used in the calculations. If it is not within 10%, a fresh titrant must be prepared. The normality of the fresh titrant must be within 20% of that specified by the method.

3. For every batch of twenty (20) samples or less, a distilled water method blank must be refluxed. The method blank must be analyzed at the beginning of the analytical sequence, following the analysis of the calibration curve, and the check standard, but prior to the analysis of the samples. If contamination is present at concentrations exceeding one-half the detection limit, redigest a new blank, EPA check standard and all associated field samples. Criteria must be met prior to sample analysis.

4. An EPA check standard or a check standard from another source must be analyzed (carried though the entire analytical procedure) with each group of samples refluxed. If unavailable, a mid-range potassium acid phthalate standard may be used. Results must agree ±15% of the true value. If the results do not agree within 15%, a new normality check must be performed and the source of the problem must be identified and corrected prior to sample analysis. All associated samples must be reanalyzed (including the reflux step), and a new EPA check standard or a check standard from another source must be analyzed. Steps taken

to identify and remedy the problem must be recorded in a laboratory notebook and included in the final data package.

5. An EPA check standard or a check standard from another source, which is not refluxed, must be analyzed three (3) consecutive times prior to sample analysis. All three analyses must be reported in the data package. The final or third analysis must meet recovery criteria. If unavailable, a mid-range potassium acid phthalate standard may be used. The EPA check standard or other standard must also be analyzed at a frequency of one (1) per ten (10) samples and at the end of the analytical sequence. Results must agree within ±15% of the true value. If the results do not agree within 15%, a new normality check must be performed and the source of the problem must be identified and corrected prior to sample analysis. Steps taken to identify and remedy the problem must be recorded in a laboratory notebook and included in the final data package.

6. Analysis of a method blank, prepared using laboratory pure water (deionized/distilled) and all reagents used for the associated samples, must be performed. The method blank should be analyzed in conjunction with the standardization and following every twenty (20) analytical samples. The method blank must not contain a concentration of COD more than half the detection limit listed in Attachment A, or the source of water must be changed to a cleaner source and all samples relating to that blank must be reanalyzed.

7. One (1) sample in twenty (20) field samples must be analyzed in duplicate and the RPD between results must be less than or equal to 20%. If the RPD is greater than 20%, the analysis of both samples must be repeated. If the RPD is still >20%, flag the results with an asterisk "*".

G. Nitrate/Nitrite-Nitrogen - Method 353.1 (Colorimetric, Automated, Hydrazine Reduction)

1. Check the pH of the sample upon receipt. If the pH is greater than 1, document the pH in the narrative.

2. During the comparison of NO_3 vs. NO_2 standards (see Section 7.3 of the method), if the reduction efficiency is not 100%, adjust the concentration of the hydrazine sulfate solution appropriately and repeat the check for reduction efficiency. Reduction efficiency must be 100% prior to sample analysis. Document the results in a laboratory notebook for inclusion with the final deliverables.

3. An EPA check standard or check standard from another source must be analyzed after the calibration standards and blank and before the samples, as well as after every ten (10) samples and at the end of the analytical sequence. If an EPA check

standard or check standard from another source is not available, a 5 mg/L standard from a source independent of the calibration standards may be used. Results must agree within 15% of the true value. If the criteria are not met, a fresh standard curve must be prepared, and all samples analyzed since the previous acceptable check standard must be reanalyzed.

4. A calibration curve must be generated each day that samples are analyzed. The curve must consist of a blank and five (5) standards. The concentration of the lowest standard must be equal to the detection limit, and the range of the standards must bracket the concentration of the samples. The correlation coefficient must be greater than or equal to 0.995. Calibration criteria must be met prior to sample analysis.

5. A matrix spike must be performed at a frequency of one (1) per twenty (20) samples. The sample must be fortified at a concentration of 0.5 mg/L, and the recovery of the spike must be within 80-120%. If the spike is outside the limits, repeat the analysis. If the results are still outside the limits, flag the results with a pound symbol "#".

6. Analysis of a method blank, prepared using laboratory pure water (deionized/distilled) and all reagents used for the associated samples, must be performed. The method blank must be analyzed in conjunction with the standardization and before every twenty (20) analytical samples. The method blank must not contain a concentration of nitrate-nitrite more than half the detection limit listed in Attachment A, or the source of water must be changed to a cleaner source and all samples relating to that blank must be reanalyzed.

7. One sample in twenty (20) field samples must be analyzed in duplicate and the RPD between results must be less than or equal to 20%. If the RPD is greater than 20%, the analysis of both samples must be repeated. If the RPD is still >20%, flag the results with an asterisk "*".

H. Phosphorus - Method 365.4 (Colorimetric)

1. All glassware used must be acid washed in hot 1:1 HCl and rinsed with distilled water (see Method 365.3, Section 6.2). This includes glassware used in the analysis, as well as that used for the preparation of associated reagents.

2. A 5-point calibration curve must be generated daily, prior to sample analysis. The lowest standard must be at the detection limit and the range of the calibration must bracket the concentration of the samples. The calibration coefficient must be greater than or equal to 0.995. If the criteria are not met, fresh standards must be prepared and a new standard curve generated. Samples may not be analyzed until

the criteria are met. If a sample result falls outside the calibration range, either dilute the sample or recalibrate using standards to span the desired range.

3. An EPA check standard or a check standard from another source, which is digested with the samples, must be analyzed prior to the samples, every ten (10) samples and at the end of the analytical sequence. If one is unavailable, a 0.1 milligram of phosphorus per liter (mg P/L) standard, which is from a source independent from that of the calibration standards, may be used. The results must be within 15% of the true value. If the results do not agree, a new standard curve must be generated, and all associated QC samples and field samples must be redigested and reanalyzed. Limits must be met prior to sample analysis. Report the source of the check standard in the final deliverables.

4. An EPA check standard or check standard from another source that is not digested must be analyzed three (3) consecutive times prior to sample analysis. All three (3) analyses must be reported in the deliverable package. The final or third analysis must meet recovery criteria. If unavailable, a mid-range standard from an independent source may be used. The EPA check standard or standard must also be analyzed one (1) per ten (10) samples and at the end of the analytical sequence. Results must agree within $\pm$15% of the true value. If the result do not agree within 15%, a reanalysis of the check standard must be conducted. If the results are still not within 15%, a new calibration curve must be prepared and all samples analyzed following the last compliant check standard must be reanalyzed. Steps taken to remedy the problem must be reported in a laboratory notebook and included in the data package.

5. For every batch of twenty (20) samples or less, a distilled water method blank must be digested. The method blank must be analyzed at the beginning of the analytical sequence, following the analysis of the calibration curve and the check standard, but prior to sample analysis. If contamination is present at concentrations exceeding one-half the detection limit listed in Attachment A, redigest a new blank, EPA check standard, and all associated field samples. Criteria must be met prior to sample analysis.

6. A matrix spike must be performed at a frequency of one (1) per twenty (20) field samples. Spike a sample prior to digestion at a concentration equal to the mid point of the calibration curve. Recovery must be within 80-120%. If limits are not met, redigest and reanalyze the spiked sample. If the results are still out, flag the results with a pound symbol "#".

7. One (1) sample per twenty (20) field samples must be analyzed in duplicate and the RPD between results must be less than or equal to 20%. If the RPD is greater than

20%, the analysis of both samples must be repeated. If the RPD is still >20%, flag the results with an asterisk "*".

I. Sulfate - Method 375.4 (Turbidimetric)

1. The sample aliquot must not contain more than 40 mg of sulfate (SO_4).

2. Suspended matter and color will interfere. Perform blank correction by analyzing blanks from which the barium chloride has been omitted as per Sections 2.2 and 6.4 of the method.

3. Record all readings, at thirty (30) second intervals during the four (4) minute period, in a laboratory notebook and provide with a final deliverables.

4. A five-point calibration cure must be generated on every day that samples are to be analyzed. The lowest standard must be equal to the detection limit and the range of the standards must bracket the concentrations of the samples. A blank must also be included in the curve. The correlation coefficient must be greater than or equal to 0.995. Calibration criteria must be met prior to sample analysis.

5. Analysis of a method blank, prepared using laboratory pure water (deionized/distilled) and all reagents used for the associated samples, must be performed. The method blank should be analyzed in conjunction with the initial calibration and before every twenty (20) analytical samples. The method blank must not have a sulfate concentration more than one-half the detection limit listed in Attachment A, or the source of laboratory pure water must be changed.

6. A mid-range continuing calibration check standard from a different source must be analyzed prior to sample analysis, after every four (4) samples and at the end of the analytical sequence. The results must be ±10% of the true value. If the limits are not met, reanalyze the calibration curve, the continuing calibration check and all samples analyzed since the last acceptable continuing calibration standard before proceeding.

7. A duplicate sample must be analyzed of one (1) per twenty (20) field samples. The RPD must be less than or equal to 20%. If the RPD is greater than 20%, the analysis of both samples must be repeated. If the RPD is still greater than 20%, flag the associated ample results with an asterisk "*".

8. A matrix spike must be performed at a frequency of one (1) per twenty (20) field samples. Spike a sample at a concentration equal to the midpoint of the calibration curve. The recovery of the spike must be within ±20% of the true value. If the

criteria is not met, repeat the analysis. If the results are still outside the criteria, flag the results with a pound symbol "#".

J. Total Dissolved Solids - Methods 160.1 (Gravimetric)

1. The samples must be analyzed as soon as possible, so that in the event that the check standard is outside acceptable limits and all associated samples require reanalysis, all analyses can be completed within the required, seven (7) day holding time.

2. The analytical balance utilized for measurements must be checked using class "S" weights prior to weighing each batch of twenty (20) samples or less to ensure the accuracy of the weight values obtained. The results must be recorded in a log book and supplied in the final deliverable package. The check weight must be within the manufacturer's tolerance range or the balance must be recalibrated prior to weighing the samples.

3. Glass fiber filters must be prepared according to Section 7.1 of the method. The procedure must be documented in a laboratory notebook and must be provided with the final deliverables. The name of the manufacturer and model number of the filters must also be recorded and supplied with the deliverables.

4. The evaporating dishes must be prepared according to Section 7.2 of the method. The procedure must be documented on a laboratory notebook and provided with the final deliverables.

5. Record the temperature of the drying ovens daily and provide the documentation with the final deliverables.

6. Analysis of a method blank, prepared using deionized water and filtered through the same type of filter as that used for the samples, must be performed. The method blank should be prepared and analyzed for each group of twenty (20) samples or less prepared at the same time. Contaminants must be less than one-half the detection limit listed in Attachment A. If the criteria are not met, the samples, EPA check standard, and another blank must be prepared and weighed. The results must be documented in the final data package.

7. An EPA check standard or check standard from another source at 10 mg/L must be prepared and analyzed with each batch of samples and per filter type. The results of the analysis must be within $\pm 15\%$ of the true value. If the results are not within the criteria, another EPA check standard or standard from another source, method blank, and all associated field samples analyzed since the last compliant calibration check must be reanalyzed.

K. Total Suspended Solids - Method 160.2 (Gravimetric)

1. The samples must be run as soon as possible, so that in the event that the check standard is outside the acceptable limits and all associated samples require reanalysis, all analyses can be completed with the required, seven (7) day holding time.

2. The analytical balance utilized for measurements must be checked using class "S" weights prior to weighing each batch of twenty (20) samples or less to ensure the accuracy of the weight values obtained. The results must be recorded in a log book and supplied in the final deliverable package. The check weight must be within the manufacturer's tolerance range or the balance must be recalibrated prior to weighing the samples.

3. Glass fiber filters must be prepared according to Section 7.1 of the method. The procedure must be documented in a laboratory notebook and must be provided with the final deliverables. The name of the manufacturer and model number of the filters must also be recorded and supplied with the deliverables.

4. Sample volume determination must adhere to Section 7.2 of the method.

5. Record the temperatures of the drying oven daily and provide the documentation with the final deliverables.

6. Analysis of a method blank, prepared using deionized water and filtered through the same type of filter as that used for the samples, must be performed. The method blank should be prepared and analyzed for each group of twenty (20) samples or less prepared at the same time. Contaminants must be less than one-half the detection limit listed in Attachment A. If the criteria are not met, the samples, EPA check standard, and another blank must be prepared and weighed. The results must be documented in the final data package.

7. An EPA check standard or standard from another source at 20 mg/L must be prepared and analyzed with each batch of samples and per filter type. The results of the analysis must be within $\pm 15\%$ of the true value. If the results are not within the criteria, another EPA check standard or standard from another source, method blank, and all associated field samples analyzed since the last compliant calibration check must be reanalyzed.

L. Total Organic Carbon - Method 415.2

1. All samples must be analyzed in duplicate and both analyses must be reported. The RPD between duplicate results must be less than or equal to 20%. If the RPD is greater than 20%, then the analysis of both samples must be repeated. If the RPD is still greater than 20%, flag the results with an asterisk "*".

2. Follow the manufacturer's instructions to set up the instrument. Perform the system clean-up and calibration procedure each day prior to sample analysis (see Section 8.2 of the method).

3. Follow the analytical procedure provided in Section 8.0 of the method. Check the effectiveness of the CO_2 scrubber as described in Section 8.3. The results must be recorded and provided in the final data package.

4. Perform a system blank measurement (as specified in Section 8.2 and defined in Section 3.4 of the method) as part of the initial instrument set up procedure. Analysis of the system blank must be repeated until two consecutive readings are within 10% of each other. If the limit is exceeded, identify the problem, make appropriate corrections, and reanalyze the system blank. Criteria must be met prior to sample analysis.

5. A method blank must be analyzed after calibration of the instrument and prior to sample analysis. The method blank must not contain concentrations of TOC exceeding one-half the detection limit of the method. The water used for the method blank must be the same as that used for preparation of the calibration standards. If concentrations of TOC in the method blank are greater than one-half the detection limit listed in Attachment A, a new source of water that meets criteria must be used.

6. Calibrate the instrument according to Section 8.5 of the method. Analyze a method blank and five standards (at 0.1, 0.2, 0.5, 1.0 and 2.0 parts per million [ppm]). A correlation coefficient greater than or equal to 0.995 must be obtained prior to sample analysis. All sample results must be within the range of the calibration curve.

7. An EPA check standard or check standard from another source, or a 100 micrograms per liter (μg/L) QC check standard from a source independent of the calibration standards, must be analyzed prior to sample analysis, after every 10 analyses, and at the end of the analytical sequence. The recovery must be 85% - 115% of the true value, or else the instrument must be recalibrated and all associated analyses must be reanalyzed.

6. QUALITY CONTROL REQUIREMENTS

Alkalinity - Method 310.1;
Ammonia - Method 350.2;
Chloride - Method 325.3; and
COD - Method 410.1 (Titrimetric)

Audits	Frequency	Limits	Corrective Action
Normality Check	Once per day prior to sample analysis	±10% of that initially determined	If the normality is within the limits, use the newly determined value in the calculations. If outside the limits, prepare a new titrant solution. The normality of the new solution must be within ±20% of the normality specified in the method.
Method Blank	Prior to sample analysis and following analysis of every 20 field samples	≤ ½ detection limit listed in Attachment A	If > ½ detection limit listed in Attachment A, the source of the contamination must be determined, the problem corrected, and all associated samples must be reanalyzed.
EPA Check Standard (or check standard from another source) Note: There are two for COD analysis. Corrective Actions vary. See Section 7 of method.)	Three times prior to sample analysis with each batch of 20 samples or less, prior to blank and sample analysis. Also, once per 10 field samples, and at the end of the analytical sequence.	±15% true value	If outside limits, recheck titrant normality and reanalyze EPA check standard (or standard from another source), method blank, and all associated field samples. Limits must be met prior to sample analysis. For COD analysis, redigest blanks, check standards, EPA check standard (or standard from another source), and all associated field samples. Blank must meet limits prior to analysis.
Matrix Spike (for ammonia and chloride only)	1/20 field samples	±20% recovery	If outside the limits, repeat the analysis. If still outside limits, flag with results with a #.
Duplicate	1/20 field samples	%RPD ≤20%	If outside the limits, repeat the analysis of both the samples and the duplicate. If still outside the limits, flag the results with an *.

Nitrate/Nitrite-Nitrogen - Method 353.1 (Colorimetric, Automated, Hydrazine Reduction)

Audits	Frequency	Limits	Corrective Action
Reduction Check	Prior to sample analysis	100% Reduction efficiency	Adjust the concentration of the hydrazine sulfate solution and repeat the reduction check. Criteria must be met prior to sample analysis.
Method Blank	Prior to sample analysis and after calibration	$\leq$ ½ detection limit listed in Attachment A	If > ½ detection limit listed in Attachment A, the source of the contamination must be determined, the problem corrected, and all associated samples must be reanalyzed.
Calibration	Daily prior to sample analysis	Correlation Coefficient $\geq$ 0.995	If criteria are not met, generate a new curve. Criteria must be met prior to sample analysis.
EPA Check Standard (or check standard from another source)	Prior to sample analysis, once per 10 field samples and at the end of the analytical sequence.	±15% true value	If outside limits, generate a new standard curve and reanalyze all field samples and QC samples since the previous acceptable check standard.
Matrix Spike	1/20 field samples	±20% recovery	If outside the limits, repeat the analysis. If still outside the limits, flag the results with a #.
Duplicate	1/20 field samples	%RPD$\leq$20%	If outside limits, repeat the analysis of both the sample and the duplicate. If still outside the limits, flag the results with an *

Ammonia - Method 350.2 (Colorimetric; Potentiometric)
Phosphorus - Method 365.4 (Colorimetric)

Audits	Frequency	Limits	Corrective Action
Method Blank	1/20 samples or less digested at the same time	≤ ½ detection limit listed in Attachment A	If criteria are not met redigest and reanalyze a new method blank, all associated samples and a new EPA Check Standard. Criteria must be met prior to sample analysis.
Calibration	Daily prior to sample analysis	Correlation Coefficient ≥ 0.995	If outside limits, prepare fresh standards and reanalyze. Criteria must be met prior to sample analysis.
EPA Check Standard (or check standard from another source) Note: There are two and Corrective Actions vary see Section 7	Prior to sample analysis, once per every 10 field samples and at the end of the analytical sequence.	±15% true value	If the criteria are not met, a new standard curve must be generated, a new check standard must be digested, and all associated samples must be reanalyzed prior to proceeding.
Matrix Spike	1/20 field samples.	±20% recovery	If outside limits, reprepare and reanalyze the spiked sample. If still outside limits, flag results with a #.
Duplicate	1/20 field samples	%RPD ≤20%	If outside limits, repeat the analysis of both the sample and the duplicate. If still outside limits, flag results with an *.

Sulfate - Method 375.4 (Turbidimetric)

Audits	Frequency	Limits	Corrective Action
Normality Check	Prior to sample analysis	±10% of the initially determined normality	If the normality is within the limits, use the newly determined value in the calculations. If outside the limits, prepare a new titrant solution. The new solution must be within ± 20% of the normality specified in the method.
Method Blank	Prior to sample analysis and after every batch (20 samples or less)	≤ ½ detection limit listed in Attachment A	If > ½ detection limit listed in Attachment A, the source of the contamination must be determined, the problem corrected, and all associated samples must be reanalyzed.
Calibration	Daily prior to sample analysis	Correlation Coefficient ≥ 0.995	If criteria are not met, the standard must be reprepared and the curve must be regenerated. Criteria must be met before sample analysis can begin.
Calibration Verification	Prior to sample analysis, after every four samples and at the end of the analytical sequence.	±10% true value	If the criteria are not met, a new calibration curve must be generated, another continuing calibration verification sample must be analyzed, and all samples after the last acceptable continuing calibration sample must be reanalyzed.
Matrix Spike	1/20 field samples	±20% recovery	If outside limits, repeat analysis. If still outside limits, flag the results with a #.
Duplicate	1/20 field samples	%RPD ≤20%	If outside limits, repeat the analysis of both the samples and the duplicate. If still outside limits, flag results with an *.

Total Dissolved Solids (TDS), Method 160.1 and Total Suspended Solids (TSS), Method 160.2.

Audits	Frequency	Limits	Corrective Action
Analytical Balance Check	Daily prior to sample analysis	Within the manufacturer's tolerance range	The balance must be recalibrated by the manufacturer.
Method Blank	1/20 samples or less prepared at one time and for each type of filter used.	≤ ½ detection limit listed in Attachment A	If > ½ detection limit listed in Attachment A, the samples, EPA check std and another blank must be reprepared.
EPA Check Standard (or check standard from another source)	1/batch prior to sample analysis and per filter type used	±15% true value	If outside the limits, re-filter another method blank, EPA check standard or check standard from another source and all associated field samples.
Duplicate	1/20 field samples	%RPD ≤ 20%	If outside the limits, repeat the analysis of both the sample and the duplicate. If still outside the limits, flag the results with an *.

Audits	Frequency	Limits	Corrective Action
System Blank	Daily prior to sample analysis	Two readings within 10% of each other and the last instrument system blank	If criteria are not met identify the problem and make appropriate corrections. Criteria must be met prior to sample analysis.
Method Blank	1/20 samples or less analyzed at one time. Prior to sample analysis.	≤ ½ detection limit listed in Attachment A	If > ½ detection limit listed in Attachment A, the samples, EPA check std and another blank must be reanalyzed. Criteria must be met prior to sample analysis.
Calibration	Daily prior to sample analysis	Correlation Coefficient ≥0.995	Criteria must be met prior to sample analysis
EPA Check Standard (or check standard from another source)	1/batch prior to sample analysis, after every ten samples and as the final analysis per each day of analysis	±15% true value	If outside the limits, recalibrate the instrument and reanalyze a check standard before any field samples are analyzed or reanalyze all associated field samples if applicable.
Duplicate	All samples	%RPD ≤ 20%	If outside the limits, reanalyze the sample and the duplicate. If still outside the limits, flag the results with an *.

7. ANALYTICAL DELIVERABLES

The laboratory data package deliverables must resemble as closely as possible the EPA CLP SOW ILM04.1 format, modified as appropriate. The data qualifiers provided in EPA CLP SOW ILM04.1 must be applied to the data generated. All the deliverables specified in EPA CLP SOW ILM04.1, including all of the data reporting forms and all of the raw or supporting data must be provided, if applicable. Missing deliverable(s) must be submitted to M&E within 48-hours from the time requested at no additional charge. The following list describes some of the required data deliverables.

A. A case narrative explaining the methodology used, deviations from the method as presented in this specification, deviations from laboratory Standard Operating Procedures for this analysis, problems encountered, problem resolutions, and factors affecting the validity of the data. The narrative must show all laboratory sample ID numbers and their corresponding field sample numbers. Signed and dated chain-of-custody documentation; shipping airbills, and telephone logs must be included. The data package must be paginated and of good copy quality.

B. The CLP SOW-required header information must be supplied on all Forms, whenever applicable.

C. Tabulated sample results, positive results, and detection limits for nondetects for all field samples and QC samples must be reported on a modified Form 1.

D. Laboratory analysis notebook page copies and bench sheets must be provided.

E. Copies of sample log in sheets indicating the cooler temperature and the sample arrival time and date must be provided.

F. Examples of sample results calculations must be provided. All equations, dilution factors, and information required to reproduce the laboratory results must be provided.

G. All sample tracking reports, chain-of-custody forms, custody seals, and telephone logs referring to the samples must be delivered under chain of custody with the data package.

H. The laboratory must provide a copy of this Analytical Specification.

I. The laboratory will use the case number provided and the field sample numbers when reporting sample results.

J. The results of all QC checks must be tabulated. These include: duplicate results, %RPD; matrix spike analyses, % recovery; QC check standards, % recovery; EPA check sample results, % recovery; calibration verification results; normality check results; nitrate reduction results; and blank results. The true value and the actual concentration of spikes must be provided with the percent recovery tabulation. Raw data, which is specified above, must be provided.

K. Raw data for all field samples, QC samples, and calibration standards must be provided. The raw data must include all bench sheets, preparation logs, analysis logbooks, and instrument strip charts and printouts.

L. Provide copies of records (telecons) of communication with field personnel, the work order designated project chemist or the M&E lead chemist.

M. The calibration curve raw data with print-outs and concentrations must be provided. Plot the standard curves and include the linear regression equation.

N. Complete Sample Delivery Group File (CSF) Audit

EPA Region I requires that all analytical data, quality control data, and tabulated or raw supporting data be delivered with each SDG. With each SDG an EPA Region I Complete SDG File (CSF) Inventory Sheet must be completed. The CSF Inventory Sheets are included in Attachment C and must accompany each SDG. The laboratory using these audit forms, must demonstrate that all sample data, raw data, calibration data, and other requirements of the statement of work or analytical specification are included in the data package.

The forms included in Attachment C are for all types of data packages. For this analytical specification, the laboratory shall use the inventory sheets for all applicable deliverable items, adapting the sheets where necessary.

8. ELECTRONIC DATA DELIVERABLES

All data must be submitted to M&E electronically with each hard copy data report. The electronic data deliverables (EDD) must be submitted via e-mail to Constance.Lapite@metcalfeddy.com, or on a MS-DOS compatible 3½" diskette. A list of the samples and analyses contained on the diskette or in the attached file must accompany each diskette and e-mail. Each diskette and e-mail must be clearly labeled with the laboratory name, Case number, SDG number, date created, initials of person who created the diskette, and EDD filename. Abbreviations used in the EDD, and not defined in this specification, must be defined by the laboratory on the documentation submitted with the diskette. The complete EDD must be delivered at the same time as the hard copy data report unless previously approved by M&E.

The EDD format must be adhered to for all submitted samples and all analytical parameters. Tentatively Identified Compounds (TIC) should be included in the EDD, when applicable. The EDD must be formatted as an ASCII, comma delimited, file. That is, each field, for each record, must be separated by a comma (,) even if no data is contained within the field or the field is not applicable. If the contents of the field contains a comma, the entire contents of the field should be enclosed in quotes (*e.g.*, "1,2-dichloroethene"). The first record of each file must contain the field names, all subsequent records must contain the chemical results. Each record must end with a carriage return/line feed code. Each file must contain all of the fields in the order presented in the EDD specification table presented as Attachment B. Deviations from the EDD field format must be previously approved by M&E. For EDD inquiries contact Ms. Constance Lapite, M&E, at (781)224-6628.

9. EXCEPTIONS

All exceptions to the specification as written must be documented by the laboratory on the exceptions form (Attachment D), submitted to M&E and approved by M&E prior to sample analysis.

If QC requirements are not met or QC acceptance limits are exceeded; or if analytical samples are compromised, destroyed or lost; or if matrix interference is suspected; or there are other problems immediately contact:

Ms. Constance Lapite
Metcalf & Eddy, Inc.
30 Harvard Mill Square
Wakefield, MA 01880-5371
Phone: (781)224-6628
Fax: (781)245-6293

Target Analytes and Required Detection Limits

Parameter and CAS Number (if applicable)	Method	Required Detection Limit (mg/L)
alkalinity	310.1 - Titrimetric	2
ammonia (7664-41-7)	350.2 - Colorimetric, Titrimetric; Potentiometric	0.05
chloride (16887-00-6)	325.3 - Titrimetric	2
COD	410.1 - Titrimetric	50
nitrate/nitrite-N (14797-55-8/14797-65-0)	353.1 - Colorimetric, Automated, Hydrazine Reduction	0.1
phosphorus	365.4 - Colorimetric	0.1
sulfate	375.4 - Turbidimetric	2
TDS	160.1 - Gravimetric	10
TSS	160.2 - Gravimetric	4
TOC - low level	415.2 - UV Promoted, Persulfate Oxidation	0.1

Attachment B-Electronic Data Deliverable Specifications

Field Name	Format	Comments
CaseNo	Character	The M&E assigned Case Number.
SDGNo	Character	The M&E assigned SDG Number.
SamplD	Character	The M&E assigned Sample ID Number as recorded on the COC. This ID must not be truncated or altered in any way. Do not append additional characters to this Number to indicate reanalyses (RE) or dilutions (DL).
LablD	Character	The laboratory assigned sample identifier.
Matrix	Character	The matrix of the sample, e.g., soil (SO), aqueous (AQ), sediment (SD), ground water (GW), surface water (SW), product (PR). For lab QC samples, use the matrix of the parent sample, where applicable (e.g., matrix spikes), and ANA@ where not applicable (e.g., method blanks). Report soil or aqueous if exact matrix type is not known by laboratory.
SampType	Character	Indicate the type of sample such as environmental, matrix spike, preparation blank, *etc.* Valid values include: NX - environmental sample, MS - matrix spike, SD - matrix spike duplicate, LD - lab duplicate, MD - matrix duplicate, MB - matrix blank, LC - lab control sample, CD - lab control duplicate, PE - performance evaluation sample.
DateSamp	MM/DD/YYYY	Date of sample collection.
DateRecd	MM/DD/YYYY	Date sample was received at the laboratory.
DateExt	MM/DD/YYYY	Date sample was extracted.
DateAnal	MM/DD/YYYY	Date sample was analyzed.
CASNo	Character	The Chemical Abstract Services (CAS) Number assigned to the compound/analyte. Do not include leading zeros. Do include dashes.
ChemName	Character	The chemical or analyte name. If the chemical name contains commas, the entire name must be enclosed in quotes, e.g., A1,2-dichloroethene@.
Result	Character	Compound/Analyte final result reported to the correct number of significant figures. The EDD result must match the result reported on the Form I exactly. If the sample is a laboratory QC sample, report the analytical result in this field, not the percent recovery. If the result is not detected, report the sample specific quantitation limit in this field.
LabQual	Character	All laboratory qualifiers applied to the result, e.g., U, J, B.
ResUnits	Character	The measurement units for the analytical result, e.g., ug/L, ug/Kg, %.
DryWet	Character	Indicate whether the reported concentration based on wet or dry weight for solid samples. Valid values are: AWet@, ADry@, or null for non-solid samples.
ExpVal	Character	The expected value for QC compounds, e.g., the expected value for a method blank compound would be A0". This field should not contain QC limits.
DetLimit	Character	Report the sample specific quantitation limit, which is, the laboratory=s method specific quantitation limit adjusted for all of the sample preparation factors.
MDL	Character	Report the method detection limit.
Solids	Character	Report the percent solids in decimal format, e.g., 85% should be recorded as 0.85
DilFact	Character	Indicate the sample analysis dilution factor; if not diluted enter A1".
Filtered	Character	Indicate whether an aqueous inorganic sample was filtered prior to analysis, i.e., AYes@, ANo@. The default response should be ANo@.
MassVol	Character	Report the mass or volume of the sample extracted/analyzed.
MassUnits	Character	Report the units of the sample mass or volume extracted/analyzed, e.g., g, L.
SampRun	Character	This field indicates whether the result is from the original analysis (NX), reanalysis (RE), or dilution analysis (DL). For multiple dilutions or reanalyses, append a number to the sample run code, e.g., RE1, RE2.
AnalMeth	Character	The DAS Method Reference number listed on the cover page of the method specification.
TIC	Character	This field should indicate whether the report compound is a TIC, i.e., AYes@ or ANo@. If TICs are reported in the data package, they should also be included on the EDD.
TICRT	Character	The TIC retention time, scan number, or elution order number

AIR SAMPLING (SOIL GAS) - 2006
Tier II Data Summary Tables
DAS

SITE: Groveland Wells Source RA
CASE NO.: 0274M
SDG NO.: D07199

DATA SUMMARY TABLE
VOLATILE ORGANIC ANALYSIS (D-152)
Air (PPBV)

Traffic Report Sample No.		D07199	D07200	D07207	D07201	D07202	D07203
M&E Sample ID		AR-01	AR-02	AR-09	AR-03	AR-04	AR-05
Lab Sample ID		0605578AR1-01A	0605578AR1-02A	0605578AR1-04A	0605578AR1-06A	0605578AR1-07A	0605578AR1-08A
Date Sampled		05-23-06	05-23-06	05-23-06	05-24-06	05-24-06	05-24-06
Date Analyzed		06-06-06	06-06-06	06-06-06	06-06-06	06-06-06	06-07-06
% Solids							
Dilution Factor		1.58	8.59	9.12	7.9	1.61	1.58
Mass/Volume of Sample		500 ml	85 ml	85 ml	100 ml	500 ml	500 ml
Comments			FD of D07207	FD of D07200			
Analyte	RL						
Freon 12	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.44	0.62
Chloromethane	0.10	0.24	0.86 U	0.91 U	0.79 U	0.16 U	0.18
Bromomethane	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.16 U	0.16 U
Chloroethane	0.10	2.0	16	16	0.79 U	0.16 U	0.16 U
Freon 11	0.10	0.31	0.86 U	0.91 U	0.79 U	0.29	1.2
Freon 113	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.16 U	0.16 U
1,1-Dichloroethene	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.16 U	0.16 U
Acetone	0.50	12	21	22	22	26	17
Carbon Disulfide	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
Methylene Chloride	0.20	0.32 U	1.7 U	1.8 U	1.6 U	0.32 U	0.32 U
Methyl tert-butyl ether	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
trans-1,2-Dichloroethene	0.50	2.5	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
1,1-Dichloroethane	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.16 U	0.16 U
2-Butanone (Methyl Ethyl Ketone)	0.50	2.6 J	4.3 UJ	4.6 UJ	4.0 UJ	3.7 J	2.6 J
cis-1,2-Dichloroethene	0.10	22	39	41	11	0.16 U	0.16 U
Tetrahydrofuran	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
Chloroform	0.10	46	39	41	9.3	0.80	0.17
1,1,1-Trichloroethane	0.10	0.29	0.86 U	0.91 U	0.79 U	0.16 U	0.21
Cyclohexane	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
Carbon Tetrachloride	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.16 U	0.16 U
1,2-Dichloropropane	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.16 U	0.16 U
Bromodichloromethane	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
cis-1,3-Dichloropropene	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.16 U	0.16 U
4-Methyl-2-pentanone	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
Toluene	0.10	0.50 U	1.0 U	0.97 U	0.79 U	0.25 U	0.56 U
trans-1,3-Dichloropropene	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.16 U	0.16 U
1,1,2-Trichloroethane	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.16 U	0.16 U
2-Hexanone	0.50	0.79 UJ	4.3 UJ	4.6 UJ	4.0 UJ	0.80 UJ	0.79 UJ
Dibromochloromethane	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
1,2-Dibromoethane (EDB)	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
Chlorobenzene	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.16 U	0.16 U
Ethyl Benzene	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.16 U	0.16 U
m,p-Xylene	0.20	0.27	0.86 U	0.91 U	0.79 U	0.16 U	0.16 U
o-Xylene	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.16 U	0.16 U
Styrene	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.16 U	0.16 U
Bromoform	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
Cumene	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U

SITE: Groveland Wells Source RA
CASE NO.: 0274M
SDG NO.: D07199

DATA SUMMARY TABLE
VOLATILE ORGANIC ANALYSIS (D-152)
Air (PPBV)

Traffic Report Sample No.		D07199	D07200	D07207	D07201	D07202	D07203
M&E Sample ID		AR-01	AR-02	AR-09	AR-03	AR-04	AR-05
Lab Sample ID		0605578AR1-01A	0605578AR1-02A	0605578AR1-04A	0605578AR1-06A	0605578AR1-07A	0605578AR1-08A
Date Sampled		05-23-06	05-23-06	05-23-06	05-24-06	05-24-06	05-24-06
Date Analyzed		06-06-06	06-06-06	06-06-06	06-06-06	06-06-06	06-07-06
% Solids							
Dilution Factor		1.58	8.59	9.12	7.9	1.61	1.58
Mass/Volume of Sample		500 ml	85 ml	85 ml	100 ml	500 ml	500 ml
Comments			FD of D07207	FD of D07200			
Analyte	RL						
Propylbenzene	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
1,3-Dichlorobenzene	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.16 U	0.16 U
1,4-Dichlorobenzene	0.10	0.16 U	0.86 U	0.94	0.79 U	0.16 U	0.16 U
alpha-Chlorotoluene	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.16 U	0.16 UJ
1,2-Dichlorobenzene	0.10	0.16 U	0.86 U	0.91 U	0.79 U	0.16 U	0.16 U
1,2,4-Trichlorobenzene	0.50	0.79 UJ	4.3 UJ	4.6 UJ	4.0 UJ	0.80 UJ	0.79 UJ
Hexachlorobutadiene	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
p-Cymene	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
sec-Butylbenzene	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
Butylbenzene	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
tert-Butylbenzene	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
Methylcyclohexane	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U
1,2-Dibromo-3-chloropropane	0.50	0.79 U	4.3 U	4.6 U	4.0 U	0.80 U	0.79 U

SITE: Groveland Wells Source RA
CASE NO.: 0274M
SDG NO.: D07199

DATA SUMMARY TABLE
VOLATILE ORGANIC ANALYSIS (D-152)
Air (PPBV)

Traffic Report Sample No.		D07204	D07205	D07206	D07208
M&E Sample ID		AR-06	AR-07	AR-08	AR-10EB
Lab Sample ID		0605578AR1-10A	0605578AR1-05A	0605578AR1-03A	0605578AR1-09A
Date Sampled		05-24-06	05-23-06	05-23-06	05-24-06
Date Analyzed		06-07-06	06-06-06	06-06-06	06-07-06
% Solids					
Dilution Factor		1.71	3.66	1.58	1.61
Mass/Volume of Sample		500 ml	250 ml	500 ml	500 ml
Comments					Equipment Blank
Analyte	RL				
Freon 12	0.10	0.46	0.58	0.24	0.16 U
Chloromethane	0.10	0.17 U	0.5	0.27	0.16 U
Bromomethane	0.10	0.17 U	1.1	0.16 U	0.16 U
Chloroethane	0.10	0.17 U	3.8	0.23	0.16 U
Freon 11	0.10	0.32	0.37 U	0.30	0.16 U
Freon 113	0.10	0.17 U	0.37 U	0.16 U	0.16 U
1,1-Dichloroethene	0.10	0.17 U	0.37 U	0.16 U	0.16 U
Acetone	0.50	14	20	15	0.80 U
Carbon Disulfide	0.50	0.86 U	9.5	0.79 U	0.80 U
Methylene Chloride	0.20	0.34 U	0.73 U	0.32 U	0.32 U
Methyl tert-butyl ether	0.50	0.86 U	1.8 U	0.79 U	0.80 U
trans-1,2-Dichloroethene	0.50	0.86 U	1.8 U	1.0	0.80 U
1,1-Dichloroethane	0.10	0.17 U	0.37 U	0.16 U	0.16 U
2-Butanone (Methyl Ethyl Ketone)	0.50	1.8 J	5.7 J	2.4 J	0.80 UJ
cis-1,2-Dichloroethene	0.10	0.48	41	10	0.16 U
Tetrahydrofuran	0.50	0.86 U	1.8 U	0.79 U	0.80 U
Chloroform	0.10	3.6	67	8.0	0.16 U
1,1,1-Trichloroethane	0.10	0.17 U	0.37 U	0.29	0.16 U
Cyclohexane	0.50	0.86 U	1.8 U	0.79 U	0.80 U
Carbon Tetrachloride	0.10	0.17 U	0.37 U	0.16 U	0.16 U
1,2-Dichloropropane	0.10	0.17 U	0.37 U	0.16 U	0.16 U
Bromodichloromethane	0.50	0.86 U	1.8 U	0.79 U	0.80 U
cis-1,3-Dichloropropene	0.10	0.17 U	0.37 U	0.16 U	0.16 U
4-Methyl-2-pentanone	0.50	0.86 U	1.8 U	0.79 U	0.80 U
Toluene	0.10	0.34 U	0.74 U	0.19 U	0.28
trans-1,3-Dichloropropene	0.10	0.17 U	0.37 U	0.16 U	0.16 U
1,1,2-Trichloroethane	0.10	0.17 U	0.37 U	0.16 U	0.16 U
2-Hexanone	0.50	0.86 UJ	1.8 UJ	0.79 UJ	0.80 UJ
Dibromochloromethane	0.50	0.86 U	1.8 U	0.79 U	0.80 U
1,2-Dibromoethane (EDB)	0.50	0.86 U	1.8 U	0.79 U	0.80 U
Chlorobenzene	0.10	0.17 U	0.37 U	0.16 U	0.16 U
Ethyl Benzene	0.10	0.17 U	0.37 U	0.16 U	0.16 U
m,p-Xylene	0.20	0.17 U	0.37 U	0.16 U	0.16 U
o-Xylene	0.10	0.17 U	0.37 U	0.16 U	0.16 U
Styrene	0.10	0.17 U	0.37 U	0.16 U	0.16 U
Bromoform	0.50	0.86 U	1.8 U	0.79 U	0.80 U
Cumene	0.50	0.86 U	1.8 U	0.79 U	0.80 U

SITE: Groveland Wells Source RA
CASE NO.: 0274M
SDG NO.: D07199

DATA SUMMARY TABLE
VOLATILE ORGANIC ANALYSIS (D-152)
Air (PPBV)

Traffic Report Sample No.		D07204	D07205	D07206	D07208
M&E Sample ID		AR-06	AR-07	AR-08	AR-10EB
Lab Sample ID		0605578AR1-10A	0605578AR1-05A	0605578AR1-03A	0605578AR1-09A
Date Sampled		05-24-06	05-23-06	05-23-06	05-24-06
Date Analyzed		06-07-06	06-06-06	06-06-06	06-07-06
% Solids					
Dilution Factor		1.71	3.66	1.58	1.61
Mass/Volume of Sample		500 ml	250 ml	500 ml	500 ml
Comments					Equipment Blank
Analyte	RL				
Propylbenzene	0.50	0.86 U	1.8 U	0.79 U	0.80 U
1,3-Dichlorobenzene	0.10	0.17 U	0.37 U	0.16 U	0.16 U
1,4-Dichlorobenzene	0.10	1.2 J	0.57	0.16 U	0.16 U
alpha-Chlorotoluene	0.10	0.17 UJ	0.37 U	0.16 U	0.16 UJ
1,2-Dichlorobenzene	0.10	0.17 U	0.37 U	0.16 U	0.16 U
1,2,4-Trichlorobenzene	0.50	0.86 UJ	1.8 UJ	0.79 UJ	0.80 UJ
Hexachlorobutadiene	0.50	0.86 U	1.8 U	0.79 U	0.80 U
p-Cymene	0.50	0.86 U	1.8 U	0.79 U	0.80 U
sec-Butylbenzene	0.50	0.86 U	1.8 U	0.79 U	0.80 U
Butylbenzene	0.50	0.86 U	1.8 U	0.79 U	0.80 U
tert-Butylbenzene	0.50	0.86 U	1.8 U	0.79 U	0.80 U
Methylcyclohexane	0.50	0.86 U	1.8 U	0.79 U	0.80 U
1,2-Dibromo-3-chloropropane	0.50	0.86 U	1.8 U	0.79 U	0.80 U

SITE: Groveland Wells Source RA
CASE NO.: 0274M
SDG NO.: D07199

DATA SUMMARY TABLE
VOLATILE ORGANIC ANALYSIS (D-152 (SIM)
Air (PPBV)

Traffic Report Sample No.		D07199	D07200	D07207	D07201	D07202	D07203
M&E Sample ID		AR-01	AR-02	AR-09	AR-03	AR-04	AR-05
Lab Sample ID		0605578BR1-01A	0605578BR1-02A	0605578BR1-04A	0605578BR1-06A	0605578BR1-07A	0605578BR1-08A
Date Sampled		05-23-06	05-23-06	05-23-06	05-24-06	05-24-06	05-24-06
Date Analyzed		06-05-06	06-05-06	06-05-06	06-06-06	06-06-06	06-06-06
% Solids							
Dilution Factor		19.8	97.3	62	98.8	5.37	2.63
Mass/Volume of Sample		40 ml	7.5 ml	12.5 ml	8 ml	150 ml	300 ml
Comments			FD of D07207	FD of D07200			
Analyte	RL						
Vinyl Chloride	0.010	0.20 U	0.97 U	0.62 U	0.99 U	0.054 U	0.026 U
Benzene	0.050	0.99 U	4.9 U	3.1 U	4.9 U	0.31	0.47
1,2-Dichloroethane	0.020	0.40 U	1.9 U	1.2 U	2.0 U	0.11 U	0.053 U
Trichloroethene	0.020	190	1100	1100	850	63	27
1,4-Dioxane	0.10	2.0 U	9.7 U	6.2 U	9.9 U	0.54 U	0.26 U
Tetrachloroethene	0.020	9.8	15	14	8.4	5.5	48
1,1,2,2-Tetrachloroethane	0.020	0.40 U	1.9 U	1.2 U	2.0 U	0.11 U	0.053 U
1,3,5-Trimethylbenzene	0.020	0.40 U	1.9 U	1.2 U	2.0 U	0.11 U	0.053 U
1,2,4-Trimethylbenzene	0.020	0.40 U	1.9 U	1.2 U	2.0 U	0.11 U	0.053 U

SITE: Groveland Wells Source RA
CASE NO.: 0274M
SDG NO.: D07199

DATA SUMMARY TABLE
VOLATILE ORGANIC ANALYSIS (D-152 (SIM)
Air (PPBV)

Traffic Report Sample No.		D07204	D07205	D07206	D07208
M&E Sample ID		AR-06	AR-07	AR-08	AR-10EB
Lab Sample ID		0605578BR1-10A	0605578BR1-05A	AR-07	0605578BR1-09A
Date Sampled		05-24-06	05-23-06	05-23-06	05-24-06
Date Analyzed		06-06-06	06-06-06	06-05-06	06-06-06
% Solids					
Dilution Factor		14.2	30.5	10.5	1.61
Mass/Volume of Sample		60 ml	30 ml	75 ml	500 ml
Comments					Equipment Blank
Analyte	RL				
Vinyl Chloride	0.010	0.14 U	0.30 U	0.10 U	0.016 U
Benzene	0.050	0.71 U	1.5 U	0.52 U	0.08 U
1,2-Dichloroethane	0.020	0.28 U	0.61 U	0.21 U	0.032 U
Trichloroethene	0.020	170	470	170	0.032 U
1,4-Dioxane	0.10	1.4 U	3.0 U	1.0 U	0.16 U
Tetrachloroethene	0.020	9.4	16	3.8	0.032 U
1,1,2,2-Tetrachloroethane	0.020	0.28 U	0.61 U	0.21 U	0.032 U
1,3,5-Trimethylbenzene	0.020	0.28 U	0.61 U	0.21 U	0.032 U
1,2,4-Trimethylbenzene	0.020	0.28 U	0.61 U	0.21 U	0.032 U

DATA SUMMARY TABLE
DEFINITIONS (Organics)

BB - As a qualifier for soil/sediment samples: Compound is also detected in the bottle blank
EB - As a qualifier for soil/sediment samples: Compound is also detected in the equipment blank
FD - Field Duplicate
J - The concentration is an estimated quantity
L - Liter
mL - milliliter
PPBV - parts per billion by volume
R - The data are rejected and unusable
RL - Reporting Limit
U - Compound was analyzed for but not detected
ug/kg - micrograms per kilogram
UJ - The sample quantitation limit is an estimated quantity
ug/L - micrograms per liter

POLYCHLORINATED BIPHENYLS
SOIL – JUNE 2006
DAS

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2639

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02679

Sample wt/vol: 30.0 (g/mL) g Lab File ID: 19060626A021,19060626B021

% Moisture: 5.2 Decanted: (Y/N) N Date Received: 06/06/2006

Extraction: (Type) SONC Date Extracted: 06/14/2006

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/27/2006

Injection Volume: 2.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.2 Sulfur Cleanup: (Y/N) N

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U
37324-23-5	Aroclor-1262	35	U
11100-14-4	Aroclor-1268	35	U

8/22/06

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2640

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02680

Sample wt/vol: 30.0 (g/mL) g Lab File ID: 19060626A024,19060626B024

% Moisture: 6.4 Decanted: (Y/N) N Date Received: 06/06/2006

Extraction: (Type) SONC Date Extracted: 06/14/2006

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/27/2006

Injection Volume: 2.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.3 Sulfur Cleanup: (Y/N) N

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U
37324-23-5	Aroclor-1262	35	U
11100-14-4	Aroclor-1268	35	U

8/22/6
8/21/06

RAS VOC SAMPLES
SOIL – JUNE 2006

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2643

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02683

Sample wt/vol: 10.3 (g/mL) g Lab File ID: LY72C683

Level: (TRACE/LOW/MED) MED Date Received: 06/06/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-71-8	Dichlorodifluoromethane	240	U
74-87-3	Chloromethane	240	U
75-01-4	Vinyl chloride	240	U
74-83-9	Bromomethane	240	U
75-00-3	Chloroethane	240	U
75-69-4	Trichlorofluoromethane	240	U
75-35-4	1,1-Dichloroethene	240	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	240	U
67-64-1	Acetone	490	U
75-15-0	Carbon disulfide	240	U
79-20-9	Methyl acetate	240	U
75-09-2	Methylene chloride	240	U
156-60-5	trans-1,2-Dichloroethene	240	U
1634-04-4	Methyl tert-butyl ether	240	U
75-34-3	1,1-Dichloroethane	240	U
156-59-2	cis-1,2-Dichloroethene	28	J
78-93-3	2-Butanone	490	U
74-97-5	Bromochloromethane	240	U
67-66-3	Chloroform	240	U
71-55-6	1,1,1-Trichloroethane	240	U
110-82-7	Cyclohexane	240	U
56-23-5	Carbon tetrachloride	240	U
71-43-2	Benzene	240	U
107-06-2	1,2-Dichloroethane	240	U
123-91-1	1,4-Dioxane	4900	U

8/22/06

RE 8/21/06

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2643

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02683

Sample wt/vol: 10.3 (g/mL) g Lab File ID: LY72C683

Level: (TRACE/LOW/MED) MED Date Received: 06/06/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
79-01-6	Trichloroethene	3300	
108-87-2	Methylcyclohexane	240	U
78-87-5	1,2-Dichloropropane	240	U
75-27-4	Bromodichloromethane	240	U
10061-01-5	cis-1,3-Dichloropropene	240	U
108-10-1	4-Methyl-2-Pentanone	490	U
108-88-3	Toluene	240	U
10061-02-6	trans-1,3-Dichloropropene	240	U
79-00-5	1,1,2-Trichloroethane	240	U
127-18-4	Tetrachloroethene	840	
591-78-6	2-Hexanone	490	U
124-48-1	Dibromochloromethane	240	U
106-93-4	1,2-Dibromoethane	240	U
108-90-7	Chlorobenzene	240	U
100-41-4	Ethylbenzene	240	U
95-47-6	o-Xylene	240	U
179601-23-1	m,p-Xylene	240	U
100-42-5	Styrene	240	U
75-25-2	Bromoform	240	U
98-82-8	Isopropylbenzene	240	U
79-34-5	1,1,2,2-Tetrachloroethane	240	U
541-73-1	1,3-Dichlorobenzene	240	U
106-46-7	1,4-Dichlorobenzene	240	U
95-50-1	1,2-Dichlorobenzene	240	U
96-12-8	1,2-Dibromo-3-chloropropane	240	U
120-82-1	1,2,4-Trichlorobenzene	240	U
87-61-6	1,2,3-Trichlorobenzene	240	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/22/06 R6/21/06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2643

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02683

Sample wt/vol: 10.3 (g/mL) g Lab File ID: LY72C683

Level: (TRACE/LOW/MED) MED Date Received: 06/06/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	591-47-9	Cyclohexene, 4-methyl-	19.74	450	JN
02	281-23-2	Adamantane	22.74	270	JN
03	7575-82-8	Tricyclo[3.3.1.13,7]decane, 1-nitro-	23.08	900	JN
04	54166-48-2	Cyclohexanone, 2-(2-butynyl)-	24.38	460	JN
05	1985-59-7	Naphthalene, 1,2,3,4-tetrahydro-1,1-dime	24.98	400	JN
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A	31000	J

[1]EPA-designated Registry Number.

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/22/06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2644

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02684

Sample wt/vol: 10.6 (g/mL) g Lab File ID: LY73C684

Level: (TRACE/LOW/MED) MED Date Received: 06/06/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-71-8	Dichlorodifluoromethane	240	U
74-87-3	Chloromethane	240	U
75-01-4	Vinyl chloride	240	U
74-83-9	Bromomethane	240	U
75-00-3	Chloroethane	240	U
75-69-4	Trichlorofluoromethane	240	U
75-35-4	1,1-Dichloroethene	240	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	240	U
67-64-1	Acetone	390	J
75-15-0	Carbon disulfide	240	U
79-20-9	Methyl acetate	240	U
75-09-2	Methylene chloride	240	U
156-60-5	trans-1,2-Dichloroethene	240	U
1634-04-4	Methyl tert-butyl ether	240	U
75-34-3	1,1-Dichloroethane	240	U
156-59-2	cis-1,2-Dichloroethene	14	J
78-93-3	2-Butanone	470	U
74-97-5	Bromochloromethane	240	U
67-66-3	Chloroform	240	U
71-55-6	1,1,1-Trichloroethane	240	U
110-82-7	Cyclohexane	240	U
56-23-5	Carbon tetrachloride	240	U
71-43-2	Benzene	240	U
107-06-2	1,2-Dichloroethane	240	U
123-91-1	1,4-Dioxane	4700	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/22/16 Redlake

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2644

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02684

Sample wt/vol: 10.6 (g/mL) g Lab File ID: LY73C684

Level: (TRACE/LOW/MED) MED Date Received: 06/06/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
79-01-6	Trichloroethene	1300	
108-87-2	Methylcyclohexane	240	U
78-87-5	1,2-Dichloropropane	240	U
75-27-4	Bromodichloromethane	240	U
10061-01-5	cis-1,3-Dichloropropene	240	U
108-10-1	4-Methyl-2-Pentanone	470	U
108-88-3	Toluene	240	U
10061-02-6	trans-1,3-Dichloropropene	240	U
79-00-5	1,1,2-Trichloroethane	240	U
127-18-4	Tetrachloroethene	560	
591-78-6	2-Hexanone	470	U
124-48-1	Dibromochloromethane	240	U
106-93-4	1,2-Dibromoethane	240	U
108-90-7	Chlorobenzene	240	U
100-41-4	Ethylbenzene	240	U
95-47-6	o-Xylene	240	U
179601-23-1	m,p-Xylene	240	U
100-42-5	Styrene	240	U
75-25-2	Bromoform	240	U
98-82-8	Isopropylbenzene	240	U
79-34-5	1,1,2,2-Tetrachloroethane	240	U
541-73-1	1,3-Dichlorobenzene	240	U
106-46-7	1,4-Dichlorobenzene	240	U
95-50-1	1,2-Dichlorobenzene	240	U
96-12-8	1,2-Dibromo-3-chloropropane	240	U
120-82-1	1,2,4-Trichlorobenzene	240	U
87-61-6	1,2,3-Trichlorobenzene	240	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2644

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: _____ SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02684

Sample wt/vol: 10.6 (g/mL) g Lab File ID: LY73C684

Level: (TRACE/LOW/MED) MED Date Received: 06/06/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	1453-24-3	Cyclohexene, 1-ethyl-	19.74	400	JN
02	471-15-8	Bicyclo[3.1.0]hexan-3-one, 4-methyl-1-(1	20.65	460	JN
03	7575-82-8	Tricyclo[3.3.1.13,7]decane, 1-nitro-	23.09	830	JN
04	29949-27-7	n-Amylcyclohexane	23.25	340	JN
05	1450-72-2	Ethanone, 1-(2-hydroxy-5-methylphenyl)-	24.38	430	JN
06	40650-41-7	1H-Indene, 2,3-dihydro-1,1,5-trimethyl-	24.97	380	JN
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A	27000	J

[1]EPA-designated Registry Number.

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2645

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02698

Sample wt/vol: 10.2 (g/mL) g Lab File ID: LY68C698

Level: (TRACE/LOW/MED) MED Date Received: 06/08/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-71-8	Dichlorodifluoromethane	240	U
74-87-3	Chloromethane	240	U
75-01-4	Vinyl chloride	240	U
74-83-9	Bromomethane	240	U
75-00-3	Chloroethane	240	U
75-69-4	Trichlorofluoromethane	240	U
75-35-4	1,1-Dichloroethene	240	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	240	U
67-64-1	Acetone	490	U
75-15-0	Carbon disulfide	240	U
79-20-9	Methyl acetate	240	U
75-09-2	Methylene chloride	240	U
156-60-5	trans-1,2-Dichloroethene	240	U
1634-04-4	Methyl tert-butyl ether	240	U
75-34-3	1,1-Dichloroethane	240	U
156-59-2	cis-1,2-Dichloroethene	130	J
78-93-3	2-Butanone	490	U
74-97-5	Bromochloromethane	240	U
67-66-3	Chloroform	240	U
71-55-6	1,1,1-Trichloroethane	240	U
110-82-7	Cyclohexane	240	U
56-23-5	Carbon tetrachloride	240	U
71-43-2	Benzene	240	U
107-06-2	1,2-Dichloroethane	240	U
123-91-1	1,4-Dioxane	4900	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/22/06 Reviewed

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2645

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02698

Sample wt/vol: 10.2 (g/mL) g Lab File ID: LY68C698

Level: (TRACE/LOW/MED) MED Date Received: 06/08/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
79-01-6	Trichloroethene	260	
108-87-2	Methylcyclohexane	240	U
78-87-5	1,2-Dichloropropane	240	U
75-27-4	Bromodichloromethane	240	U
10061-01-5	cis-1,3-Dichloropropene	240	U
108-10-1	4-Methyl-2-Pentanone	490	U
108-88-3	Toluene	240	U
10061-02-6	trans-1,3-Dichloropropene	240	U
79-00-5	1,1,2-Trichloroethane	240	U
127-18-4	Tetrachloroethene	240	U
591-78-6	2-Hexanone	490	U
124-48-1	Dibromochloromethane	240	U
106-93-4	1,2-Dibromoethane	240	U
108-90-7	Chlorobenzene	240	U
100-41-4	Ethylbenzene	240	U
95-47-6	o-Xylene	240	U
179601-23-1	m,p-Xylene	240	U
100-42-5	Styrene	240	U
75-25-2	Bromoform	240	U
98-82-8	Isopropylbenzene	240	U
79-34-5	1,1,2,2-Tetrachloroethane	240	U
541-73-1	1,3-Dichlorobenzene	240	U
106-46-7	1,4-Dichlorobenzene	240	U
95-50-1	1,2-Dichlorobenzene	240	U
96-12-8	1,2-Dibromo-3-chloropropane	240	U
120-82-1	1,2,4-Trichlorobenzene	240	U
87-61-6	1,2,3-Trichlorobenzene	240	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/22/16 Reluab

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2645

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02698

Sample wt/vol: 10.2 (g/mL) g Lab File ID: LY68C698

Level: (TRACE/LOW/MED) MED Date Received: 06/08/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/22/06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2647

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02685

Sample wt/vol: 10.6 (g/mL) g Lab File ID: LY60C685

Level: (TRACE/LOW/MED) MED Date Received: 06/06/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-71-8	Dichlorodifluoromethane	240	U
74-87-3	Chloromethane	240	U
75-01-4	Vinyl chloride	240	U
74-83-9	Bromomethane	240	U
75-00-3	Chloroethane	240	U
75-69-4	Trichlorofluoromethane	240	U
75-35-4	1,1-Dichloroethene	240	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	240	U
67-64-1	Acetone	470	U
75-15-0	Carbon disulfide	240	U
79-20-9	Methyl acetate	240	U
75-09-2	Methylene chloride	240	U
156-60-5	trans-1,2-Dichloroethene	240	U
1634-04-4	Methyl tert-butyl ether	240	U
75-34-3	1,1-Dichloroethane	240	U
156-59-2	cis-1,2-Dichloroethene	41	J
78-93-3	2-Butanone	470	U
74-97-5	Bromochloromethane	240	U
67-66-3	Chloroform	240	U
71-55-6	1,1,1-Trichloroethane	240	U
110-82-7	Cyclohexane	240	U
56-23-5	Carbon tetrachloride	240	U
71-43-2	Benzene	240	U
107-06-2	1,2-Dichloroethane	240	U
123-91-1	1,4-Dioxane	4700	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2647

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02685

Sample wt/vol: 10.6 (g/mL) g Lab File ID: LY60C685

Level: (TRACE/LOW/MED) MED Date Received: 06/06/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
79-01-6	Trichloroethene	86	J
108-87-2	Methylcyclohexane	240	U
78-87-5	1,2-Dichloropropane	240	U
75-27-4	Bromodichloromethane	240	U
10061-01-5	cis-1,3-Dichloropropene	240	U
108-10-1	4-Methyl-2-Pentanone	470	U
108-88-3	Toluene	240	U
10061-02-6	trans-1,3-Dichloropropene	240	U
79-00-5	1,1,2-Trichloroethane	240	U
127-18-4	Tetrachloroethene	240	U
591-78-6	2-Hexanone	470	U
124-48-1	Dibromochloromethane	240	U
106-93-4	1,2-Dibromoethane	240	U
108-90-7	Chlorobenzene	240	U
100-41-4	Ethylbenzene	240	U
95-47-6	o-Xylene	240	U
179601-23-1	m,p-Xylene	240	U
100-42-5	Styrene	240	U
75-25-2	Bromoform	240	U
98-82-8	Isopropylbenzene	240	U
79-34-5	1,1,2,2-Tetrachloroethane	240	U
541-73-1	1,3-Dichlorobenzene	240	U
106-46-7	1,4-Dichlorobenzene	240	U
95-50-1	1,2-Dichlorobenzene	240	U
96-12-8	1,2-Dibromo-3-chloropropane	240	U
120-82-1	1,2,4-Trichlorobenzene	240	U
87-61-6	1,2,3-Trichlorobenzene	240	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2647

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02685

Sample wt/vol: 10.6 (g/mL) g Lab File ID: LY60C685

Level: (TRACE/LOW/MED) MED Date Received: 06/06/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/8/12 Reviewed

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2648

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02687

Sample wt/vol: 11.1 (g/mL) g Lab File ID: LY62C687

Level: (TRACE/LOW/MED) MED Date Received: 06/07/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-71-8	Dichlorodifluoromethane	230	U
74-87-3	Chloromethane	230	U
75-01-4	Vinyl chloride	230	U
74-83-9	Bromomethane	230	U
75-00-3	Chloroethane	230	U
75-69-4	Trichlorofluoromethane	230	U
75-35-4	1,1-Dichloroethene	230	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	230	U
67-64-1	Acetone	450	U
75-15-0	Carbon disulfide	230	U
79-20-9	Methyl acetate	230	U
75-09-2	Methylene chloride	230	U
156-60-5	trans-1,2-Dichloroethene	230	U
1634-04-4	Methyl tert-butyl ether	230	U
75-34-3	1,1-Dichloroethane	230	U
156-59-2	cis-1,2-Dichloroethene	1400	
78-93-3	2-Butanone	450	U
74-97-5	Bromochloromethane	230	U
67-66-3	Chloroform	230	U
71-55-6	1,1,1-Trichloroethane	85	J
110-82-7	Cyclohexane	230	U
56-23-5	Carbon tetrachloride	230	U
71-43-2	Benzene	230	U
107-06-2	1,2-Dichloroethane	230	U
123-91-1	1,4-Dioxane	4500	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/22/06
ES 6/06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2648

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02687

Sample wt/vol: 11.1 (g/mL) g Lab File ID: LY62C687

Level: (TRACE/LOW/MED) MED Date Received: 06/07/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
79-01-6	Trichloroethene	5800	
108-87-2	Methylcyclohexane	230	U
78-87-5	1,2-Dichloropropane	230	U
75-27-4	Bromodichloromethane	230	U
10061-01-5	cis-1,3-Dichloropropene	230	U
108-10-1	4-Methyl-2-Pentanone	450	U
108-88-3	Toluene	230	U
10061-02-6	trans-1,3-Dichloropropene	230	U
79-00-5	1,1,2-Trichloroethane	230	U
127-18-4	Tetrachloroethene	130	J
591-78-6	2-Hexanone	450	U
124-48-1	Dibromochloromethane	230	U
106-93-4	1,2-Dibromoethane	230	U
108-90-7	Chlorobenzene	230	U
100-41-4	Ethylbenzene	230	U
95-47-6	o-Xylene	230	U
179601-23-1	m,p-Xylene	230	U
100-42-5	Styrene	230	U
75-25-2	Bromoform	230	U
98-82-8	Isopropylbenzene	230	U
79-34-5	1,1,2,2-Tetrachloroethane	230	U
541-73-1	1,3-Dichlorobenzene	230	U
106-46-7	1,4-Dichlorobenzene	230	U
95-50-1	1,2-Dichlorobenzene	230	U
96-12-8	1,2-Dibromo-3-chloropropane	230	U
120-82-1	1,2,4-Trichlorobenzene	230	U
87-61-6	1,2,3-Trichlorobenzene	230	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/22/06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2648

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02687

Sample wt/vol: 11.1 (g/mL) g Lab File ID: LY62C687

Level: (TRACE/LOW/MED) MED Date Received: 06/07/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/22/06 RSL 6/06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2649

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02688

Sample wt/vol: 10.2 (g/mL) g Lab File ID: LY63C688

Level: (TRACE/LOW/MED) MED Date Received: 06/07/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-71-8	Dichlorodifluoromethane	250	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl chloride	250	U
74-83-9	Bromomethane	250	U
75-00-3	Chloroethane	250	U
75-69-4	Trichlorofluoromethane	250	U
75-35-4	1,1-Dichloroethene	250	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	250	U
67-64-1	Acetone	490	U
75-15-0	Carbon disulfide	250	U
79-20-9	Methyl acetate	250	U
75-09-2	Methylene chloride	250	U
156-60-5	trans-1,2-Dichloroethene	250	U
1634-04-4	Methyl tert-butyl ether	250	U
75-34-3	1,1-Dichloroethane	250	U
156-59-2	cis-1,2-Dichloroethene	250	U
78-93-3	2-Butanone	490	U
74-97-5	Bromochloromethane	250	U
67-66-3	Chloroform	250	U
71-55-6	1,1,1-Trichloroethane	250	U
110-82-7	Cyclohexane	250	U
56-23-5	Carbon tetrachloride	250	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	250	U
123-91-1	1,4-Dioxane	4900	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8 8/22/06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2649

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02688

Sample wt/vol: 10.2 (g/mL) g Lab File ID: LY63C688

Level: (TRACE/LOW/MED) MED Date Received: 06/07/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
79-01-6	Trichloroethene	250	U
108-87-2	Methylcyclohexane	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	490	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	250	U
79-00-5	1,1,2-Trichloroethane	250	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	490	U
124-48-1	Dibromochloromethane	250	U
106-93-4	1,2-Dibromoethane	250	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	250	U
95-47-6	o-Xylene	250	U
179601-23-1	m,p-Xylene	250	U
100-42-5	Styrene	250	U
75-25-2	Bromoform	250	U
98-82-8	Isopropylbenzene	250	U
79-34-5	1,1,2,2-Tetrachloroethane	250	U
541-73-1	1,3-Dichlorobenzene	250	U
106-46-7	1,4-Dichlorobenzene	250	U
95-50-1	1,2-Dichlorobenzene	250	U
96-12-8	1,2-Dibromo-3-chloropropane	250	U
120-82-1	1,2,4-Trichlorobenzene	250	U
87-61-6	1,2,3-Trichlorobenzene	250	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

RSL Low

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2649

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02688

Sample wt/vol: 10.2 (g/mL) g Lab File ID: LY63C688

Level: (TRACE/LOW/MED) MED Date Received: 06/07/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2650

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02689

Sample wt/vol: 9.50 (g/mL) g Lab File ID: LY64C689

Level: (TRACE/LOW/MED) MED Date Received: 06/07/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-71-8	Dichlorodifluoromethane	260	U
74-87-3	Chloromethane	260	U
75-01-4	Vinyl chloride	260	U
74-83-9	Bromomethane	260	U
75-00-3	Chloroethane	260	U
75-69-4	Trichlorofluoromethane	260	U
75-35-4	1,1-Dichloroethene	260	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	260	U
67-64-1	Acetone	530	U
75-15-0	Carbon disulfide	260	U
79-20-9	Methyl acetate	260	U
75-09-2	Methylene chloride	260	U
156-60-5	trans-1,2-Dichloroethene	260	U
1634-04-4	Methyl tert-butyl ether	260	U
75-34-3	1,1-Dichloroethane	260	U
156-59-2	cis-1,2-Dichloroethene	67	J
78-93-3	2-Butanone	530	U
74-97-5	Bromochloromethane	260	U
67-66-3	Chloroform	260	U
71-55-6	1,1,1-Trichloroethane	260	U
110-82-7	Cyclohexane	260	U
56-23-5	Carbon tetrachloride	260	U
71-43-2	Benzene	260	U
107-06-2	1,2-Dichloroethane	260	U
123-91-1	1,4-Dioxane	5300	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/22/06 Belcher

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2650

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02689

Sample wt/vol: 9.50 (g/mL) g Lab File ID: LY64C689

Level: (TRACE/LOW/MED) MED Date Received: 06/07/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
79-01-6	Trichloroethene	6200	
108-87-2	Methylcyclohexane	260	U
78-87-5	1,2-Dichloropropane	260	U
75-27-4	Bromodichloromethane	260	U
10061-01-5	cis-1,3-Dichloropropene	260	U
108-10-1	4-Methyl-2-Pentanone	530	U
108-88-3	Toluene	260	U
10061-02-6	trans-1,3-Dichloropropene	260	U
79-00-5	1,1,2-Trichloroethane	260	U
127-18-4	Tetrachloroethene	720	
591-78-6	2-Hexanone	530	U
124-48-1	Dibromochloromethane	260	U
106-93-4	1,2-Dibromoethane	260	U
108-90-7	Chlorobenzene	260	U
100-41-4	Ethylbenzene	260	U
95-47-6	o-Xylene	260	U
179601-23-1	m,p-Xylene	260	U
100-42-5	Styrene	260	U
75-25-2	Bromoform	260	U
98-82-8	Isopropylbenzene	260	U
79-34-5	1,1,2,2-Tetrachloroethane	260	U
541-73-1	1,3-Dichlorobenzene	260	U
106-46-7	1,4-Dichlorobenzene	260	U
95-50-1	1,2-Dichlorobenzene	260	U
96-12-8	1,2-Dibromo-3-chloropropane	260	U
120-82-1	1,2,4-Trichlorobenzene	260	U
87-61-6	1,2,3-Trichlorobenzene	260	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/7/06 Revised

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2650

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02689

Sample wt/vol: 9.50 (g/mL) g Lab File ID: LY64C689

Level: (TRACE/LOW/MED) MED Date Received: 06/07/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	5256-65-5	Cyclohexene, 3-methyl-6-(1-methylethyl)-	20.94	330	JN
02	281-23-2	Adamantane	22.74	450	JN
03	6240-11-5	1-Adamantaneethanol	23.08	850	JN
04	-0-0	3,9-Epoxy-p-mentha-1,8(10)-diene	24.37	690	JN
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A	290	J

[1]EPA-designated Registry Number.

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/17/06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2651

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02690

Sample wt/vol: 9.10 (g/mL) g Lab File ID: LY65C690

Level: (TRACE/LOW/MED) MED Date Received: 06/07/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 25.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-71-8	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	1100	U
75-01-4	Vinyl chloride	1100	U
74-83-9	Bromomethane	1100	U
75-00-3	Chloroethane	1100	U
75-69-4	Trichlorofluoromethane	1100	U
75-35-4	1,1-Dichloroethene	1100	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1100	U
67-64-1	Acetone	2200	U
75-15-0	Carbon disulfide	1100	U
79-20-9	Methyl acetate	1100	U
75-09-2	Methylene chloride	1100	U
156-60-5	trans-1,2-Dichloroethene	1100	U
1634-04-4	Methyl tert-butyl ether	1100	U
75-34-3	1,1-Dichloroethane	1100	U
156-59-2	cis-1,2-Dichloroethene	430	J
78-93-3	2-Butanone	2200	U
74-97-5	Bromochloromethane	1100	U
67-66-3	Chloroform	1100	U
71-55-6	1,1,1-Trichloroethane	1100	U
110-82-7	Cyclohexane	1100	U
56-23-5	Carbon tetrachloride	1100	U
71-43-2	Benzene	1100	U
107-06-2	1,2-Dichloroethane	1100	U
123-91-1	1,4-Dioxane	22000	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

BB 8/22/06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2651

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02690

Sample wt/vol: 9.10 (g/mL) g Lab File ID: LY65C690

Level: (TRACE/LOW/MED) MED Date Received: 06/07/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 25.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
79-01-6	Trichloroethene	34000	
108-87-2	Methylcyclohexane	1100	U
78-87-5	1,2-Dichloropropane	1100	U
75-27-4	Bromodichloromethane	1100	U
10061-01-5	cis-1,3-Dichloropropene	1100	U
108-10-1	4-Methyl-2-Pentanone	2200	U
108-88-3	Toluene	1100	U
10061-02-6	trans-1,3-Dichloropropene	1100	U
79-00-5	1,1,2-Trichloroethane	1100	U
127-18-4	Tetrachloroethene	4100	
591-78-6	2-Hexanone	2200	U
124-48-1	Dibromochloromethane	1100	U
106-93-4	1,2-Dibromoethane	1100	U
108-90-7	Chlorobenzene	1100	U
100-41-4	Ethylbenzene	1100	U
95-47-6	o-Xylene	1100	U
179601-23-1	m,p-Xylene	100	J
100-42-5	Styrene	1100	U
75-25-2	Bromoform	1100	U
98-82-8	Isopropylbenzene	1100	U
79-34-5	1,1,2,2-Tetrachloroethane	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
96-12-8	1,2-Dibromo-3-chloropropane	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
87-61-6	1,2,3-Trichlorobenzene	1100	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/22/06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2651

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02690

Sample wt/vol: 9.10 (g/mL) g Lab File ID: LY65C690

Level: (TRACE/LOW/MED) MED Date Received: 06/07/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 25.0 (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	63883-69-2	2-Ethyl-trans-2-butenal	18.76	3200	JN
02	55255-97-5	4,7-Methano-1H-inden-1-ol, octahydro-	20.65	1500	JN
03	5256-65-5	Cyclohexene, 3-methyl-6-(1-methylethyl)-	20.94	1600	JN
04	6240-11-5	1-Adamantaneethanol	23.08	2100	JN
05	2958-76-1	Naphthalene, decahydro-2-methyl-	23.47	1700	JN
06	54166-48-2	Cyclohexanone, 2-(2-butynyl)-	24.37	1200	JN
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A	1300	J

[1]EPA-designated Registry Number.

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

Rel. 1/6

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2652

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02691

Sample wt/vol: 9.90 (g/mL) g Lab File ID: LY66C691

Level: (TRACE/LOW/MED) MED Date Received: 06/07/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-71-8	Dichlorodifluoromethane	250	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl chloride	250	U
74-83-9	Bromomethane	250	U
75-00-3	Chloroethane	250	U
75-69-4	Trichlorofluoromethane	250	U
75-35-4	1,1-Dichloroethene	250	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	250	U
67-64-1	Acetone	510	U
75-15-0	Carbon disulfide	250	U
79-20-9	Methyl acetate	250	U
75-09-2	Methylene chloride	250	U
156-60-5	trans-1,2-Dichloroethene	250	U
1634-04-4	Methyl tert-butyl ether	250	U
75-34-3	1,1-Dichloroethane	250	U
156-59-2	cis-1,2-Dichloroethene	35	J
78-93-3	2-Butanone	510	U
74-97-5	Bromochloromethane	250	U
67-66-3	Chloroform	250	U
71-55-6	1,1,1-Trichloroethane	250	U
110-82-7	Cyclohexane	250	U
56-23-5	Carbon tetrachloride	250	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	250	U
123-91-1	1,4-Dioxane	5100	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/22/06 RS 8/21/06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2652

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02691

Sample wt/vol: 9.90 (g/mL) g Lab File ID: LY66C691

Level: (TRACE/LOW/MED) MED Date Received: 06/07/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
79-01-6	Trichloroethene	95	J
108-87-2	Methylcyclohexane	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	510	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	250	U
79-00-5	1,1,2-Trichloroethane	250	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	510	U
124-48-1	Dibromochloromethane	250	U
106-93-4	1,2-Dibromoethane	250	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	250	U
95-47-6	o-Xylene	250	U
179601-23-1	m,p-Xylene	250	U
100-42-5	Styrene	250	U
75-25-2	Bromoform	250	U
98-82-8	Isopropylbenzene	250	U
79-34-5	1,1,2,2-Tetrachloroethane	250	U
541-73-1	1,3-Dichlorobenzene	250	U
106-46-7	1,4-Dichlorobenzene	250	U
95-50-1	1,2-Dichlorobenzene	250	U
96-12-8	1,2-Dibromo-3-chloropropane	250	U
120-82-1	1,2,4-Trichlorobenzene	250	U
87-61-6	1,2,3-Trichlorobenzene	250	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/22/06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2652

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02691

Sample wt/vol: 9.90 (g/mL) g Lab File ID: LY66C691

Level: (TRACE/LOW/MED) MED Date Received: 06/07/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
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20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8 pp 6/28/06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2653

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02699

Sample wt/vol: 10.5 (g/mL) g Lab File ID: LY69C699

Level: (TRACE/LOW/MED) MED Date Received: 06/08/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 25.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-71-8	Dichlorodifluoromethane	950	U
74-87-3	Chloromethane	950	U
75-01-4	Vinyl chloride	950	U
74-83-9	Bromomethane	950	U
75-00-3	Chloroethane	950	U
75-69-4	Trichlorofluoromethane	950	U
75-35-4	1,1-Dichloroethene	950	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	950	U
67-64-1	Acetone	1700	J
75-15-0	Carbon disulfide	950	U
79-20-9	Methyl acetate	950	U
75-09-2	Methylene chloride	950	U
156-60-5	trans-1,2-Dichloroethene	950	U
1634-04-4	Methyl tert-butyl ether	950	U
75-34-3	1,1-Dichloroethane	950	U
156-59-2	cis-1,2-Dichloroethene	72	J
78-93-3	2-Butanone	1900	U
74-97-5	Bromochloromethane	950	U
67-66-3	Chloroform	950	U
71-55-6	1,1,1-Trichloroethane	950	U
110-82-7	Cyclohexane	950	U
56-23-5	Carbon tetrachloride	950	U
71-43-2	Benzene	950	U
107-06-2	1,2-Dichloroethane	950	U
123-91-1	1,4-Dioxane	19000	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

BS 6/21/06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2653

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02699

Sample wt/vol: 10.5 (g/mL) g Lab File ID: LY69C699

Level: (TRACE/LOW/MED) MED Date Received: 06/08/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 25.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
79-01-6	Trichloroethene	21000	
108-87-2	Methylcyclohexane	950	U
78-87-5	1,2-Dichloropropane	950	U
75-27-4	Bromodichloromethane	950	U
10061-01-5	cis-1,3-Dichloropropene	950	U
108-10-1	4-Methyl-2-Pentanone	1900	U
108-88-3	Toluene	950	U
10061-02-6	trans-1,3-Dichloropropene	950	U
79-00-5	1,1,2-Trichloroethane	950	U
127-18-4	Tetrachloroethene	950	U
591-78-6	2-Hexanone	1900	U
124-48-1	Dibromochloromethane	950	U
106-93-4	1,2-Dibromoethane	950	U
108-90-7	Chlorobenzene	950	U
100-41-4	Ethylbenzene	950	U
95-47-6	o-Xylene	950	U
179601-23-1	m,p-Xylene	950	U
100-42-5	Styrene	950	U
75-25-2	Bromoform	950	U
98-82-8	Isopropylbenzene	950	U
79-34-5	1,1,2,2-Tetrachloroethane	950	U
541-73-1	1,3-Dichlorobenzene	950	U
106-46-7	1,4-Dichlorobenzene	950	U
95-50-1	1,2-Dichlorobenzene	950	U
96-12-8	1,2-Dibromo-3-chloropropane	950	U
120-82-1	1,2,4-Trichlorobenzene	950	U
87-61-6	1,2,3-Trichlorobenzene	950	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8/22/06 RE 6/1/06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2653

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02699

Sample wt/vol: 10.5 (g/mL) g Lab File ID: LY69C699

Level: (TRACE/LOW/MED) MED Date Received: 06/08/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 25.0 (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

6/8/06 6/21/06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2654

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02700

Sample wt/vol: 11.0 (g/mL) g Lab File ID: LY71C700

Level: (TRACE/LOW/MED) MED Date Received: 06/08/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-71-8	Dichlorodifluoromethane	230	U
74-87-3	Chloromethane	230	U
75-01-4	Vinyl chloride	230	U
74-83-9	Bromomethane	230	U
75-00-3	Chloroethane	230	U
75-69-4	Trichlorofluoromethane	230	U
75-35-4	1,1-Dichloroethene	230	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	230	U
67-64-1	Acetone	450	U
75-15-0	Carbon disulfide	230	U
79-20-9	Methyl acetate	230	U
75-09-2	Methylene chloride	20	J
156-60-5	trans-1,2-Dichloroethene	230	U
1634-04-4	Methyl tert-butyl ether	230	U
75-34-3	1,1-Dichloroethane	230	U
156-59-2	cis-1,2-Dichloroethene	10	J
78-93-3	2-Butanone	450	U
74-97-5	Bromochloromethane	230	U
67-66-3	Chloroform	230	U
71-55-6	1,1,1-Trichloroethane	230	U
110-82-7	Cyclohexane	230	U
56-23-5	Carbon tetrachloride	230	U
71-43-2	Benzene	230	U
107-06-2	1,2-Dichloroethane	230	U
123-91-1	1,4-Dioxane	4500	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2654

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02700

Sample wt/vol: 11.0 (g/mL) g Lab File ID: LY71C700

Level: (TRACE/LOW/MED) MED Date Received: 06/08/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
79-01-6	Trichloroethene	9.8	J
108-87-2	Methylcyclohexane	230	U
78-87-5	1,2-Dichloropropane	230	U
75-27-4	Bromodichloromethane	230	U
10061-01-5	cis-1,3-Dichloropropene	230	U
108-10-1	4-Methyl-2-Pentanone	450	U
108-88-3	Toluene	230	U
10061-02-6	trans-1,3-Dichloropropene	230	U
79-00-5	1,1,2-Trichloroethane	230	U
127-18-4	Tetrachloroethene	230	U
591-78-6	2-Hexanone	450	U
124-48-1	Dibromochloromethane	230	U
106-93-4	1,2-Dibromoethane	230	U
108-90-7	Chlorobenzene	230	U
100-41-4	Ethylbenzene	230	U
95-47-6	o-Xylene	230	U
179601-23-1	m,p-Xylene	230	U
100-42-5	Styrene	230	U
75-25-2	Bromoform	230	U
98-82-8	Isopropylbenzene	11	J
79-34-5	1,1,2,2-Tetrachloroethane	230	U
541-73-1	1,3-Dichlorobenzene	230	U
106-46-7	1,4-Dichlorobenzene	230	U
95-50-1	1,2-Dichlorobenzene	230	U
96-12-8	1,2-Dibromo-3-chloropropane	230	U
120-82-1	1,2,4-Trichlorobenzene	230	U
87-61-6	1,2,3-Trichlorobenzene	230	U

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

8 8/22/06 Reluld

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2654

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2639

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02700

Sample wt/vol: 11.0 (g/mL) g Lab File ID: LY71C700

Level: (TRACE/LOW/MED) MED Date Received: 06/08/2006

% Moisture: not dec. 0.0 Date Analyzed: 06/10/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A	20000	J

[1]EPA-designated Registry Number.

This sample is reported on a wet-weight or "as received" basis. The reported concentrations would be low compared to those reported on a dry-weight basis.

5/22/10 Reviewed

RESIDENTIAL VOC SAMPLES
SOIL – JUNE 2006
(HA-1 through HA-4)
RAS

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2655

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2646

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02873

Sample wt/vol: 8.80 (g/mL) g Lab File ID: L273C873

Level: (TRACE/LOW/MED) MED Date Received: 06/14/2006

% Moisture: not dec. 8.8 Date Analyzed: 06/22/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-71-8	Dichlorodifluoromethane	340	U
74-87-3	Chloromethane	340	U
75-01-4	Vinyl chloride	340	U
74-83-9	Bromomethane	340	U
75-00-3	Chloroethane	340	U
75-69-4	Trichlorofluoromethane	340	U
75-35-4	1,1-Dichloroethene	340	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	340	U
67-64-1	Acetone	670	U
75-15-0	Carbon disulfide	340	U
79-20-9	Methyl acetate	340	U
75-09-2	Methylene chloride	340	U
156-60-5	trans-1,2-Dichloroethene	340	U
1634-04-4	Methyl tert-butyl ether	340	U
75-34-3	1,1-Dichloroethane	340	U
156-59-2	cis-1,2-Dichloroethene	340	U
78-93-3	2-Butanone	670	U
74-97-5	Bromochloromethane	340	U
67-66-3	Chloroform	110	JB
71-55-6	1,1,1-Trichloroethane	340	U
110-82-7	Cyclohexane	340	U
56-23-5	Carbon tetrachloride	340	U
71-43-2	Benzene	340	U
107-06-2	1,2-Dichloroethane	340	U
123-91-1	1,4-Dioxane	6700	U

8/17/06 Calculated

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2655

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2646

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02873

Sample wt/vol: 8.80 (g/mL) g Lab File ID: LZ73C873

Level: (TRACE/LOW/MED) MED Date Received: 06/14/2006

% Moisture: not dec. 8.8 Date Analyzed: 06/22/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
79-01-6	Trichloroethene	52	J
108-87-2	Methylcyclohexane	340	U
78-87-5	1,2-Dichloropropane	340	U
75-27-4	Bromodichloromethane	120	JB
10061-01-5	cis-1,3-Dichloropropene	340	U
108-10-1	4-Methyl-2-Pentanone	670	U
108-88-3	Toluene	340	U
10061-02-6	trans-1,3-Dichloropropene	340	U
79-00-5	1,1,2-Trichloroethane	340	U
127-18-4	Tetrachloroethene	340	U
591-78-6	2-Hexanone	670	U
124-48-1	Dibromochloromethane	41	JB
106-93-4	1,2-Dibromoethane	340	U
108-90-7	Chlorobenzene	340	U
100-41-4	Ethylbenzene	340	U
95-47-6	o-Xylene	340	U
179601-23-1	m,p-Xylene	340	U
100-42-5	Styrene	340	U
75-25-2	Bromoform	16	JB
98-82-8	Isopropylbenzene	340	U
79-34-5	1,1,2,2-Tetrachloroethane	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
96-12-8	1,2-Dibromo-3-chloropropane	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
87-61-6	1,2,3-Trichlorobenzene	340	U

8/17/06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2655

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2646

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02873

Sample wt/vol: 8.80 (g/mL) g Lab File ID: L273C873

Level: (TRACE/LOW/MED) MED Date Received: 06/14/2006

% Moisture: not dec. 8.8 Date Analyzed: 06/22/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
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19					
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21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

8/17/06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2656

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2646

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02874

Sample wt/vol: 9.00 (g/mL) g Lab File ID: L274C874

Level: (TRACE/LOW/MED) MED Date Received: 06/14/2006

% Moisture: not dec. 13 Date Analyzed: 06/22/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-71-8	Dichlorodifluoromethane	360	U
74-87-3	Chloromethane	360	U
75-01-4	Vinyl chloride	360	U
74-83-9	Bromomethane	360	U
75-00-3	Chloroethane	360	U
75-69-4	Trichlorofluoromethane	360	U
75-35-4	1,1-Dichloroethene	360	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	360	U
67-64-1	Acetone	720	U
75-15-0	Carbon disulfide	360	U
79-20-9	Methyl acetate	360	U
75-09-2	Methylene chloride	360	U
156-60-5	trans-1,2-Dichloroethene	360	U
1634-04-4	Methyl tert-butyl ether	360	U
75-34-3	1,1-Dichloroethane	360	U
156-59-2	cis-1,2-Dichloroethene	360	U
78-93-3	2-Butanone	720	U
74-97-5	Bromochloromethane	360	U
67-66-3	Chloroform	360	U
71-55-6	1,1,1-Trichloroethane	360	U
110-82-7	Cyclohexane	360	U
56-23-5	Carbon tetrachloride	360	U
71-43-2	Benzene	360	U
107-06-2	1,2-Dichloroethane	360	U
123-91-1	1,4-Dioxane	7200	U

8/17/16 Reviewed

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2656

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2646

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02874

Sample wt/vol: 9.00 (g/mL) g Lab File ID: LZ74C874

Level: (TRACE/LOW/MED) MED Date Received: 06/14/2006

% Moisture: not dec. 13 Date Analyzed: 06/22/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
79-01-6	Trichloroethene	52	J !
108-87-2	Methylcyclohexane	360	U
78-87-5	1,2-Dichloropropane	360	U
75-27-4	Bromodichloromethane	360	U
10061-01-5	cis-1,3-Dichloropropene	360	U
108-10-1	4-Methyl-2-Pentanone	720	U
108-88-3	Toluene	360	U
10061-02-6	trans-1,3-Dichloropropene	360	U
79-00-5	1,1,2-Trichloroethane	360	U
127-18-4	Tetrachloroethene	360	U
591-78-6	2-Hexanone	720	U
124-48-1	Dibromochloromethane	360	U
106-93-4	1,2-Dibromoethane	360	U
108-90-7	Chlorobenzene	360	U
100-41-4	Ethylbenzene	360	U
95-47-6	o-Xylene	360	U
179601-23-1	m,p-Xylene	360	U
100-42-5	Styrene	360	U
75-25-2	Bromoform	360	U
98-82-8	Isopropylbenzene	360	U
79-34-5	1,1,2,2-Tetrachloroethane	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
96-12-8	1,2-Dibromo-3-chloropropane	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
87-61-6	1,2,3-Trichlorobenzene	360	U

& 8/17/06 Calculated

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2656

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2646

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02874

Sample wt/vol: 9.00 (g/mL) g Lab File ID: LZ74C874

Level: (TRACE/LOW/MED) MED Date Received: 06/14/2006

% Moisture: not dec. 13 Date Analyzed: 06/22/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2657

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2646

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02875

Sample wt/vol: 9.30 (g/mL) g Lab File ID: LZ75C875

Level: (TRACE/LOW/MED) MED Date Received: 06/14/2006

% Moisture: not dec. 8.3 Date Analyzed: 06/22/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-71-8	Dichlorodifluoromethane	320	U
74-87-3	Chloromethane	320	U
75-01-4	Vinyl chloride	320	U
74-83-9	Bromomethane	320	U
75-00-3	Chloroethane	320	U
75-69-4	Trichlorofluoromethane	320	U
75-35-4	1,1-Dichloroethene	320	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	320	U
67-64-1	Acetone	630	U
75-15-0	Carbon disulfide	320	U
79-20-9	Methyl acetate	320	U
75-09-2	Methylene chloride	320	U
156-60-5	trans-1,2-Dichloroethene	320	U
1634-04-4	Methyl tert-butyl ether	320	U
75-34-3	1,1-Dichloroethane	320	U
156-59-2	cis-1,2-Dichloroethene	320	U
78-93-3	2-Butanone	630	U
74-97-5	Bromochloromethane	320	U
67-66-3	Chloroform	320	U
71-55-6	1,1,1-Trichloroethane	320	U
110-82-7	Cyclohexane	320	U
56-23-5	Carbon tetrachloride	320	U
71-43-2	Benzene	320	U
107-06-2	1,2-Dichloroethane	320	U
123-91-1	1,4-Dioxane	6300	U

8/17/06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2657

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: _____ SDG No.: A2646

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02875

Sample wt/vol: 9.30 (g/mL) g Lab File ID: LZ75C875

Level: (TRACE/LOW/MED) MED Date Received: 06/14/2006

% Moisture: not dec. 8.3 Date Analyzed: 06/22/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
79-01-6	Trichloroethene	320	U
108-87-2	Methylcyclohexane	320	U
78-87-5	1,2-Dichloropropane	320	U
75-27-4	Bromodichloromethane	320	U
10061-01-5	cis-1,3-Dichloropropene	320	U
108-10-1	4-Methyl-2-Pentanone	630	U
108-88-3	Toluene	320	U
10061-02-6	trans-1,3-Dichloropropene	320	U
79-00-5	1,1,2-Trichloroethane	320	U
127-18-4	Tetrachloroethene	320	U
591-78-6	2-Hexanone	630	U
124-48-1	Dibromochloromethane	320	U
106-93-4	1,2-Dibromoethane	320	U
108-90-7	Chlorobenzene	320	U
100-41-4	Ethylbenzene	320	U
95-47-6	o-Xylene	320	U
179601-23-1	m,p-Xylene	320	U
100-42-5	Styrene	320	U
75-25-2	Bromoform	320	U
98-82-8	Isopropylbenzene	320	U
79-34-5	1,1,2,2-Tetrachloroethane	320	U
541-73-1	1,3-Dichlorobenzene	320	U
106-46-7	1,4-Dichlorobenzene	320	U
95-50-1	1,2-Dichlorobenzene	320	U
96-12-8	1,2-Dibromo-3-chloropropane	320	U
120-82-1	1,2,4-Trichlorobenzene	320	U
87-61-6	1,2,3-Trichlorobenzene	320	U

8/7/10

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: A2657

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2646

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02875

Sample wt/vol: 9.30 (g/mL) g Lab File ID: LZ75C875

Level: (TRACE/LOW/MED) MED Date Received: 06/14/2006

% Moisture: not dec. 8.3 Date Analyzed: 06/22/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
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24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2658

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2646

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02876

Sample wt/vol: 10.5 (g/mL) g Lab File ID: L276C876

Level: (TRACE/LOW/MED) MED Date Received: 06/14/2006

% Moisture: not dec. 13 Date Analyzed: 06/22/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-71-8	Dichlorodifluoromethane	310	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl chloride	310	U
74-83-9	Bromomethane	310	U
75-00-3	Chloroethane	310	U
75-69-4	Trichlorofluoromethane	310	U
75-35-4	1,1-Dichloroethene	310	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	310	U
67-64-1	Acetone	620	U
75-15-0	Carbon disulfide	310	U
79-20-9	Methyl acetate	310	U
75-09-2	Methylene chloride	310	U
156-60-5	trans-1,2-Dichloroethene	310	U
1634-04-4	Methyl tert-butyl ether	310	U
75-34-3	1,1-Dichloroethane	310	U
156-59-2	cis-1,2-Dichloroethene	310	U
78-93-3	2-Butanone	620	U
74-97-5	Bromochloromethane	310	U
67-66-3	Chloroform	250	JB !
71-55-6	1,1,1-Trichloroethane	310	U
110-82-7	Cyclohexane	310	U
56-23-5	Carbon tetrachloride	310	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	310	U
123-91-1	1,4-Dioxane	6200	U

8/17/06 Reviewed

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2658

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2646

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02876

Sample wt/vol: 10.5 (g/mL) g Lab File ID: L276C876

Level: (TRACE/LOW/MED) MED Date Received: 06/14/2006

% Moisture: not dec. 13 Date Analyzed: 06/22/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
79-01-6	Trichloroethene	68	J !
108-87-2	Methylcyclohexane	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	620	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	310	U
79-00-5	1,1,2-Trichloroethane	310	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	620	U
124-48-1	Dibromochloromethane	310	U
106-93-4	1,2-Dibromoethane	310	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	310	U
95-47-6	o-Xylene	310	U
179601-23-1	m,p-Xylene	310	U
100-42-5	Styrene	310	U
75-25-2	Bromoform	310	U
98-82-8	Isopropylbenzene	310	U
79-34-5	1,1,2,2-Tetrachloroethane	310	U
541-73-1	1,3-Dichlorobenzene	310	U
106-46-7	1,4-Dichlorobenzene	310	U
95-50-1	1,2-Dichlorobenzene	310	U
96-12-8	1,2-Dibromo-3-chloropropane	310	U
120-82-1	1,2,4-Trichlorobenzene	310	U
87-61-6	1,2,3-Trichlorobenzene	310	U

8/9/06 Reviewed

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2658

Lab Name: DataChem Laboratories, Inc. Contract: EP-W-05-026

Lab Code: DATAC Case No.: 35396 Mod. Ref No.: SDG No.: A2646

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 06C02876

Sample wt/vol: 10.5 (g/mL) g Lab File ID: LZ76C876

Level: (TRACE/LOW/MED) MED Date Received: 06/14/2006

% Moisture: not dec. 13 Date Analyzed: 06/22/2006

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100.0 (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

& 8/19/16 Reviewed

RESIDENTIAL VOC SAMPLES
SOIL – AUGUST 2006
(HA-5 through HA-9)
RAS

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2924

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-01A

Sample wt/vol: 6.50 (g/mL) G Lab File ID: V5G9483.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 10.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	4.3	U
74-87-3	Chloromethane	4.3	U
75-01-4	Vinyl chloride	4.3	U
74-83-9	Bromomethane	4.3	U
75-00-3	Chloroethane	4.3	U
75-69-4	Trichlorofluoromethane	4.3	U
75-35-4	1,1-Dichloroethene	4.3	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	4.3	U
67-64-1	Acetone	8.4	J
75-15-0	Carbon disulfide	4.3	U
79-20-9	Methyl acetate	4.3	U
75-09-2	Methylene chloride	1.8	J
156-60-5	trans-1,2-Dichloroethene	4.3	U
1634-04-4	Methyl tert-butyl ether	4.3	U
75-34-3	1,1-Dichloroethane	4.3	U
156-59-2	cis-1,2-Dichloroethene	4.3	U
78-93-3	2-Butanone	8.5	U
74-97-5	Bromochloromethane	4.3	U
67-66-3	Chloroform	4.3	U
71-55-6	1,1,1-Trichloroethane	4.3	U
110-82-7	Cyclohexane	4.3	U
56-23-5	Carbon tetrachloride	4.3	U
71-43-2	Benzene	4.3	U
107-06-2	1,2-Dichloroethane	4.3	U
123-91-1	1,4-Dioxane	85	U

KMR 9.7.06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2924

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-01A

Sample wt/vol: 6.50 (g/mL) G Lab File ID: V5G9483.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 10.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	4.3	U
108-87-2	Methylcyclohexane	4.3	U
78-87-5	1,2-Dichloropropane	4.3	U
75-27-4	Bromodichloromethane	4.3	U
10061-01-5	cis-1,3-Dichloropropene	4.3	U
108-10-1	4-Methyl-2-pentanone	8.5	U
108-88-3	Toluene	4.3	U
10061-02-6	trans-1,3-Dichloropropene	4.3	U
79-00-5	1,1,2-Trichloroethane	4.3	U
127-18-4	Tetrachloroethene	4.3	U
591-78-6	2-Hexanone	8.5	U
124-48-1	Dibromochloromethane	4.3	U
106-93-4	1,2-Dibromoethane	4.3	U
108-90-7	Chlorobenzene	4.3	U
100-41-4	Ethylbenzene	4.3	U
179601-23-1	m,p-Xylene	4.3	U
95-47-6	o-Xylene	4.3	U
100-42-5	Styrene	4.3	U
75-25-2	Bromoform	4.3	U
98-82-8	Isopropylbenzene	4.3	U
79-34-5	1,1,2,2-Tetrachloroethane	4.3	U
541-73-1	1,3-Dichlorobenzene	4.3	U
106-46-7	1,4-Dichlorobenzene	4.3	U
95-50-1	1,2-Dichlorobenzene	4.3	U
96-12-8	1,2-Dibromo-3-chloropropane	4.3	U
120-82-1	1,2,4-Trichlorobenzene	4.3	U
87-61-6	1,2,3-Trichlorobenzene	4.3	U

KLL 7.7.06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2924

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-01A

Sample wt/vol: 6.50 (g/mL) G Lab File ID: V5G9483.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 10.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.092	17	BJ
02	7785-70-8	1R-.alpha.-Pinene	10.312	19	NJ
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

KMC 9.7.06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2925

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-02A

Sample wt/vol: 4.60 (g/mL) G Lab File ID: V5G9489.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 9.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	6.0	U
74-87-3	Chloromethane	6.0	U
75-01-4	Vinyl chloride	6.0	U
74-83-9	Bromomethane	6.0	U
75-00-3	Chloroethane	6.0	U
75-69-4	Trichlorofluoromethane	6.0	U
75-35-4	1,1-Dichloroethene	6.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	6.0	U
67-64-1	Acetone	12	U
75-15-0	Carbon disulfide	6.0	U
79-20-9	Methyl acetate	6.0	U
75-09-2	Methylene chloride	6.0	U
156-60-5	trans-1,2-Dichloroethene	6.0	U
1634-04-4	Methyl tert-butyl ether	6.0	U
75-34-3	1,1-Dichloroethane	6.0	U
156-59-2	cis-1,2-Dichloroethene	6.0	U
78-93-3	2-Butanone	12	U
74-97-5	Bromochloromethane	6.0	U
67-66-3	Chloroform	6.0	U
71-55-6	1,1,1-Trichloroethane	6.0	U
110-82-7	Cyclohexane	6.0	U
56-23-5	Carbon tetrachloride	6.0	U
71-43-2	Benzene	6.0	U
107-06-2	1,2-Dichloroethane	6.0	U
123-91-1	1,4-Dioxane	120	U

9.7.06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2925

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-02A

Sample wt/vol: 4.60 (g/mL) G Lab File ID: V5G9489.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 9.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	11	
108-87-2	Methylcyclohexane	6.0	U
78-87-5	1,2-Dichloropropane	6.0	U
75-27-4	Bromodichloromethane	6.0	U
10061-01-5	cis-1,3-Dichloropropene	6.0	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	6.0	U
10061-02-6	trans-1,3-Dichloropropene	6.0	U
79-00-5	1,1,2-Trichloroethane	6.0	U
127-18-4	Tetrachloroethene	6.0	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	6.0	U
106-93-4	1,2-Dibromoethane	6.0	U
108-90-7	Chlorobenzene	6.0	U
100-41-4	Ethylbenzene	6.0	U
179601-23-1	m,p-Xylene	6.0	U
95-47-6	o-Xylene	6.0	U
100-42-5	Styrene	6.0	U
75-25-2	Bromoform	6.0	U
98-82-8	Isopropylbenzene	6.0	U
79-34-5	1,1,2,2-Tetrachloroethane	6.0	U
541-73-1	1,3-Dichlorobenzene	6.0	U
106-46-7	1,4-Dichlorobenzene	6.0	U
95-50-1	1,2-Dichlorobenzene	6.0	U
96-12-8	1,2-Dibromo-3-chloropropane	6.0	U
120-82-1	1,2,4-Trichlorobenzene	6.0	U
87-61-6	1,2,3-Trichlorobenzene	6.0	U

KLM 9.7.06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2925

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-02A

Sample wt/vol: 4.60 (g/mL) G Lab File ID: V5G9489.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 9.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.097	21	BJ
02	7785-70-8	1R-.alpha.-Pinene	10.306	110	NJ
03	5989-27-5	D-Limonene	11.792	26	NJ
	E966796[1]	Total Alkanes	N/A	0	J

[1] EPA-designated Registry Number.

Karl 9.7.06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2926

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-03A

Sample wt/vol: 5.40 (g/mL) G Lab File ID: V5G9485.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 6.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	4.9	U
74-87-3	Chloromethane	4.9	U
75-01-4	Vinyl chloride	4.9	U
74-83-9	Bromomethane	4.9	U
75-00-3	Chloroethane	4.9	U
75-69-4	Trichlorofluoromethane	4.9	U
75-35-4	1,1-Dichloroethene	4.9	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	4.9	U
67-64-1	Acetone	47	
75-15-0	Carbon disulfide	4.9	U
79-20-9	Methyl acetate	4.9	U
75-09-2	Methylene chloride	4.9	U
156-60-5	trans-1,2-Dichloroethene	4.9	U
1634-04-4	Methyl tert-butyl ether	4.9	U
75-34-3	1,1-Dichloroethane	4.9	U
156-59-2	cis-1,2-Dichloroethene	4.9	U
78-93-3	2-Butanone	9.9	U
74-97-5	Bromochloromethane	4.9	U
67-66-3	Chloroform	4.9	U
71-55-6	1,1,1-Trichloroethane	4.9	U
110-82-7	Cyclohexane	4.9	U
56-23-5	Carbon tetrachloride	4.9	U
71-43-2	Benzene	4.9	U
107-06-2	1,2-Dichloroethane	4.9	U
123-91-1	1,4-Dioxane	99	U

9.7.06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2926

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-03A

Sample wt/vol: 5.40 (g/mL) G Lab File ID: V5G9485.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 6.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	24	
108-87-2	Methylcyclohexane	4.9	U
78-87-5	1,2-Dichloropropane	4.9	U
75-27-4	Bromodichloromethane	4.9	U
10061-01-5	cis-1,3-Dichloropropene	4.9	U
108-10-1	4-Methyl-2-pentanone	9.9	U
108-88-3	Toluene	4.9	U
10061-02-6	trans-1,3-Dichloropropene	4.9	U
79-00-5	1,1,2-Trichloroethane	4.9	U
127-18-4	Tetrachloroethene	4.9	U
591-78-6	2-Hexanone	9.9	U
124-48-1	Dibromochloromethane	4.9	U
106-93-4	1,2-Dibromoethane	4.9	U
108-90-7	Chlorobenzene	4.9	U
100-41-4	Ethylbenzene	4.9	U
179601-23-1	m,p-Xylene	4.9	U
95-47-6	o-Xylene	4.9	U
100-42-5	Styrene	4.9	U
75-25-2	Bromoform	4.9	U
98-82-8	Isopropylbenzene	4.9	U
79-34-5	1,1,2,2-Tetrachloroethane	4.9	U
541-73-1	1,3-Dichlorobenzene	4.9	U
106-46-7	1,4-Dichlorobenzene	4.9	U
95-50-1	1,2-Dichlorobenzene	4.9	U
96-12-8	1,2-Dibromo-3-chloropropane	4.9	U
120-82-1	1,2,4-Trichlorobenzene	4.9	U
87-61-6	1,2,3-Trichlorobenzene	4.9	U

Kwk 9.7.06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2926

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-03A

Sample wt/vol: 5.40 (g/mL) G Lab File ID: V5G9485.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 6.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	9.811	12	J
02		Unknown-02	10.09	20	BJ
03	508-32-7	Tricyclo[2.2.1.0(2,6)]heptane, 1,	10.148	38	BNJ
04	7785-70-8	1R-.alpha.-Pinene	10.311	1200	NJ
05		Unknown-03	10.439	15	J
06		Unknown-04	10.59	76	J
07	556-67-2	Cyclotetrasiloxane, octamethyl-	10.764	7.5	NJ
08	127-91-3	.beta.-Pinene	11.089	230	NJ
09	99-83-2	.alpha.-Phellandrene	11.449	35	NJ
10	99-86-5	1,3-Cyclohexadiene, 1-methyl-4-(1	11.635	120	NJ
11	5989-27-5	D-Limonene	11.797	500	NJ
12	527-84-4	Benzene, 1-methyl-2-(1-methylethy	11.855	240	NJ
13	99-85-4	1,4-Cyclohexadiene, 1-methyl-4-(1	12.204	51	NJ
14		Unknown-05	12.494	5.4	J
15	586-62-9	Cyclohexene, 1-methyl-4-(1-methyl	12.645	100	NJ
16	1195-32-0	Benzene, 1-methyl-4-(1-methylethe	12.866	58	NJ
17	22627-95-8	Fenchol, exo-	13.655	5.8	NJ
18		Unknown-06	14.434	6.0	J
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

KWL 9.7.06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2927

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-04A

Sample wt/vol: 5.20 (g/mL) G Lab File ID: V5G9508.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 8.0 Date Analyzed: 08/07/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	5.2	U
74-87-3	Chloromethane	5.2	U
75-01-4	Vinyl chloride	5.2	U
74-83-9	Bromomethane	5.2	U
75-00-3	Chloroethane	5.2	U
75-69-4	Trichlorofluoromethane	5.2	U
75-35-4	1,1-Dichloroethene	5.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.2	U
67-64-1	Acetone	34	
75-15-0	Carbon disulfide	5.2	U
79-20-9	Methyl acetate	5.2	U
75-09-2	Methylene chloride	5.2	U
156-60-5	trans-1,2-Dichloroethene	5.2	U
1634-04-4	Methyl tert-butyl ether	5.2	U
75-34-3	1,1-Dichloroethane	5.2	U
156-59-2	cis-1,2-Dichloroethene	5.2	U
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.2	U
67-66-3	Chloroform	5.2	U
71-55-6	1,1,1-Trichloroethane	5.2	U
110-82-7	Cyclohexane	5.2	U
56-23-5	Carbon tetrachloride	5.2	U
71-43-2	Benzene	5.2	U
107-06-2	1,2-Dichloroethane	5.2	U
123-91-1	1,4-Dioxane	100	U

9-7-06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2927

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-04A

Sample wt/vol: 5.20 (g/mL) G Lab File ID: V5G9508.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 8.0 Date Analyzed: 08/07/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	5.2	U
108-87-2	Methylcyclohexane	5.2	U
78-87-5	1,2-Dichloropropane	5.2	U
75-27-4	Bromodichloromethane	5.2	U
10061-01-5	cis-1,3-Dichloropropene	5.2	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.2	U
10061-02-6	trans-1,3-Dichloropropene	5.2	U
79-00-5	1,1,2-Trichloroethane	5.2	U
127-18-4	Tetrachloroethene	5.2	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.2	U
106-93-4	1,2-Dibromoethane	5.2	U
108-90-7	Chlorobenzene	5.2	U
100-41-4	Ethylbenzene	5.2	U
179601-23-1	m,p-Xylene	5.2	U
95-47-6	o-Xylene	5.2	U
100-42-5	Styrene	5.2	U
75-25-2	Bromoform	5.2	U
98-82-8	Isopropylbenzene	5.2	U
79-34-5	1,1,2,2-Tetrachloroethane	5.2	U
541-73-1	1,3-Dichlorobenzene	5.2	U
106-46-7	1,4-Dichlorobenzene	5.2	U
95-50-1	1,2-Dichlorobenzene	5.2	U
96-12-8	1,2-Dibromo-3-chloropropane	5.2	U
120-82-1	1,2,4-Trichlorobenzene	5.2	U
87-61-6	1,2,3-Trichlorobenzene	5.2	U

Kml 9-7-06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2927

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-04A

Sample wt/vol: 5.20 (g/mL) G Lab File ID: V5G9508.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 8.0 Date Analyzed: 08/07/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.091	28	BJ
02	7785-70-8	1R-.alpha.-Pinene	10.312	130	NJ
03	138-86-3	Limonene	11.798	22	NJ
	E966796[1]	Total Alkanes	N/A	0	J

[1] EPA-designated Registry Number.

KWL 9.7.06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2928

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-05A

Sample wt/vol: 5.70 (g/mL) G Lab File ID: V5G9490.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 16.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	5.2	U
74-87-3	Chloromethane	5.2	U
75-01-4	Vinyl chloride	5.2	U
74-83-9	Bromomethane	5.2	U
75-00-3	Chloroethane	5.2	U
75-69-4	Trichlorofluoromethane	5.2	U
75-35-4	1,1-Dichloroethene	5.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.2	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.2	U
79-20-9	Methyl acetate	5.2	U
75-09-2	Methylene chloride	5.2	U
156-60-5	trans-1,2-Dichloroethene	5.2	U
1634-04-4	Methyl tert-butyl ether	5.2	U
75-34-3	1,1-Dichloroethane	5.2	U
156-59-2	cis-1,2-Dichloroethene	5.2	U
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.2	U
67-66-3	Chloroform	5.2	U
71-55-6	1,1,1-Trichloroethane	5.2	U
110-82-7	Cyclohexane	5.2	U
56-23-5	Carbon tetrachloride	5.2	U
71-43-2	Benzene	5.2	U
107-06-2	1,2-Dichloroethane	5.2	U
123-91-1	1,4-Dioxane	100	U

KM 9.7.06

1E - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2928

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-05A

Sample wt/vol: 5.70 (g/mL) G Lab File ID: V5G9490.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 16.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	5.2	U
108-87-2	Methylcyclohexane	5.2	U
78-87-5	1,2-Dichloropropane	5.2	U
75-27-4	Bromodichloromethane	5.2	U
10061-01-5	cis-1,3-Dichloropropene	5.2	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.2	U
10061-02-6	trans-1,3-Dichloropropene	5.2	U
79-00-5	1,1,2-Trichloroethane	5.2	U
127-18-4	Tetrachloroethene	5.2	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.2	U
106-93-4	1,2-Dibromoethane	5.2	U
108-90-7	Chlorobenzene	5.2	U
100-41-4	Ethylbenzene	5.2	U
179601-23-1	m,p-Xylene	5.2	U
95-47-6	o-Xylene	5.2	U
100-42-5	Styrene	5.2	U
75-25-2	Bromoform	5.2	U
98-82-8	Isopropylbenzene	5.2	U
79-34-5	1,1,2,2-Tetrachloroethane	5.2	U
541-73-1	1,3-Dichlorobenzene	5.2	U
106-46-7	1,4-Dichlorobenzene	5.2	U
95-50-1	1,2-Dichlorobenzene	5.2	U
96-12-8	1,2-Dibromo-3-chloropropane	5.2	U
120-82-1	1,2,4-Trichlorobenzene	5.2	U
87-61-6	1,2,3-Trichlorobenzene	5.2	U

KWL 9.7.06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2928

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-05A

Sample wt/vol: 5.70 (g/mL) G Lab File ID: V5G9490.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 16.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.093	18	BJ
	E966796 [1]	Total Alkanes	N/A	0	J

[1] EPA-designated Registry Number.

KRH 9.1.06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2929

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-06A

Sample wt/vol: 5.60 (g/mL) G Lab File ID: V5G9507.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 18.0 Date Analyzed: 08/07/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	5.4	U
74-87-3	Chloromethane	5.4	U
75-01-4	Vinyl chloride	5.4	U
74-83-9	Bromomethane	5.4	U
75-00-3	Chloroethane	5.4	U
75-69-4	Trichlorofluoromethane	5.4	U
75-35-4	1,1-Dichloroethene	5.4	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.4	U
67-64-1	Acetone	33	
75-15-0	Carbon disulfide	5.4	U
79-20-9	Methyl acetate	5.4	U
75-09-2	Methylene chloride	5.4	U
156-60-5	trans-1,2-Dichloroethene	5.4	U
1634-04-4	Methyl tert-butyl ether	5.4	U
75-34-3	1,1-Dichloroethane	5.4	U
156-59-2	cis-1,2-Dichloroethene	5.4	U
78-93-3	2-Butanone	3.9	J
74-97-5	Bromochloromethane	5.4	U
67-66-3	Chloroform	5.4	U
71-55-6	1,1,1-Trichloroethane	5.4	U
110-82-7	Cyclohexane	5.4	U
56-23-5	Carbon tetrachloride	5.4	U
71-43-2	Benzene	5.4	U
107-06-2	1,2-Dichloroethane	5.4	U
123-91-1	1,4-Dioxane	110	U

KMK 9.7.06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2929

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-06A

Sample wt/vol: 5.60 (g/mL) G Lab File ID: V5G9507.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 18.0 Date Analyzed: 08/07/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	5.4	U
108-87-2	Methylcyclohexane	5.4	U
78-87-5	1,2-Dichloropropane	5.4	U
75-27-4	Bromodichloromethane	5.4	U
10061-01-5	cis-1,3-Dichloropropene	5.4	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	5.4	U
10061-02-6	trans-1,3-Dichloropropene	5.4	U
79-00-5	1,1,2-Trichloroethane	5.4	U
127-18-4	Tetrachloroethene	5.4	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	5.4	U
106-93-4	1,2-Dibromoethane	5.4	U
108-90-7	Chlorobenzene	5.4	U
100-41-4	Ethylbenzene	5.4	U
179601-23-1	m,p-Xylene	5.4	U
95-47-6	o-Xylene	5.4	U
100-42-5	Styrene	5.4	U
75-25-2	Bromoform	5.4	U
98-82-8	Isopropylbenzene	5.4	U
79-34-5	1,1,2,2-Tetrachloroethane	5.4	U
541-73-1	1,3-Dichlorobenzene	5.4	U
106-46-7	1,4-Dichlorobenzene	5.4	U
95-50-1	1,2-Dichlorobenzene	5.4	U
96-12-8	1,2-Dibromo-3-chloropropane	5.4	U
120-82-1	1,2,4-Trichlorobenzene	5.4	U
87-61-6	1,2,3-Trichlorobenzene	5.4	U

KJH 9.7.06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2929

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-06A

Sample wt/vol: 5.60 (g/mL) G Lab File ID: V5G9507.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 18.0 Date Analyzed: 08/07/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.097	25	BJ
02	7785-70-8	1R-.alpha.-Pinene	10.306	56	NJ
03	138-86-3	Limonene	11.792	19	NJ
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

8.7.06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2931

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-07A

Sample wt/vol: 5.30 (g/mL) G Lab File ID: V5G9506.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 17.0 Date Analyzed: 08/07/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	5.7	U
74-87-3	Chloromethane	5.7	U
75-01-4	Vinyl chloride	5.7	U
74-83-9	Bromomethane	5.7	U
75-00-3	Chloroethane	5.7	U
75-69-4	Trichlorofluoromethane	5.7	U
75-35-4	1,1-Dichloroethene	5.7	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.7	U
67-64-1	Acetone	11	U
75-15-0	Carbon disulfide	5.7	U
79-20-9	Methyl acetate	5.7	U
75-09-2	Methylene chloride	5.7	U
156-60-5	trans-1,2-Dichloroethene	5.7	U
1634-04-4	Methyl tert-butyl ether	5.7	U
75-34-3	1,1-Dichloroethane	5.7	U
156-59-2	cis-1,2-Dichloroethene	5.7	U
78-93-3	2-Butanone	11	U
74-97-5	Bromochloromethane	5.7	U
67-66-3	Chloroform	5.7	U
71-55-6	1,1,1-Trichloroethane	5.7	U
110-82-7	Cyclohexane	5.7	U
56-23-5	Carbon tetrachloride	5.7	U
71-43-2	Benzene	5.7	U
107-06-2	1,2-Dichloroethane	5.7	U
123-91-1	1,4-Dioxane	110	U

9.7.06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2931

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-07A

Sample wt/vol: 5.30 (g/mL) G Lab File ID: V5G9506.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 17.0 Date Analyzed: 08/07/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	5.7	U
108-87-2	Methylcyclohexane	5.7	U
78-87-5	1,2-Dichloropropane	5.7	U
75-27-4	Bromodichloromethane	5.7	U
10061-01-5	cis-1,3-Dichloropropene	5.7	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	5.7	U
10061-02-6	trans-1,3-Dichloropropene	5.7	U
79-00-5	1,1,2-Trichloroethane	5.7	U
127-18-4	Tetrachloroethene	5.7	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	5.7	U
106-93-4	1,2-Dibromoethane	5.7	U
108-90-7	Chlorobenzene	5.7	U
100-41-4	Ethylbenzene	5.7	U
179601-23-1	m,p-Xylene	5.7	U
95-47-6	o-Xylene	5.7	U
100-42-5	Styrene	5.7	U
75-25-2	Bromoform	5.7	U
98-82-8	Isopropylbenzene	5.7	U
79-34-5	1,1,2,2-Tetrachloroethane	5.7	U
541-73-1	1,3-Dichlorobenzene	5.7	U
106-46-7	1,4-Dichlorobenzene	5.7	U
95-50-1	1,2-Dichlorobenzene	5.7	U
96-12-8	1,2-Dibromo-3-chloropropane	5.7	U
120-82-1	1,2,4-Trichlorobenzene	5.7	U
87-61-6	1,2,3-Trichlorobenzene	5.7	U

Kwk 9/7/06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2931

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-07A

Sample wt/vol: 5.30 (g/mL) G Lab File ID: V5G9506.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 17.0 Date Analyzed: 08/07/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.091	19	BJ
02		Unknown-02	10.149	10	BJ
03	7785-70-8	1R-.alpha.-Pinene	10.311	370	NJ
04		Unknown-03	10.427	6.7	J
05	556-67-2	Cyclotetrasiloxane, octamethyl-	10.764	6.5	NJ
06	18172-67-3	Bicyclo[3.1.1]heptane, 6,6-dimeth	11.089	24	NJ
07	554-61-0	Bicyclo[4.1.0]hept-2-ene, 3,7,7-t	11.635	17	NJ
08	5989-27-5	D-Limonene	11.798	140	NJ
09	99-87-6	Benzene, 1-methyl-4-(1-methylethy	11.856	120	NJ
10	99-85-4	1,4-Cyclohexadiene, 1-methyl-4-(1	12.204	7.1	NJ
11	586-62-9	Cyclohexene, 1-methyl-4-(1-methyl	12.645	11	NJ
12	1195-32-0	Benzene, 1-methyl-4-(1-methylethe	12.866	12	NJ
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

9.7.06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2932

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-08A

Sample wt/vol: 5.30 (g/mL) G Lab File ID: V5G9493.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 5.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	30	
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-Butanone	9.9	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	99	U

KML 9-7-06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2932

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-08A

Sample wt/vol: 5.30 (g/mL) G Lab File ID: V5G9493.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 5.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	5.7	
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	9.9	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	9.9	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KLL 9.7.06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2932

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-08A

Sample wt/vol: 5.30 (g/mL) G Lab File ID: V5G9493.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 5.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.091	20	BJ
02	508-32-7	Tricyclo[2.2.1.0(2,6)]heptane, 1,	10.15	8.8	BNJ
03	7785-70-8	1R-.alpha.-Pinene	10.312	450	NJ
04	127-91-3	.beta.-Pinene	11.09	62	NJ
05		Unknown-02	11.462	10	J
06	99-86-5	1,3-Cyclohexadiene, 1-methyl-4-(1	11.636	30	NJ
07	5989-27-5	D-Limonene	11.799	160	NJ
08	527-84-4	Benzene, 1-methyl-2-(1-methylethy	11.857	110	NJ
09	99-85-4	1,4-Cyclohexadiene, 1-methyl-4-(1	12.205	11	NJ
10		Unknown-03	12.484	17	J
11	99-86-5	1,3-Cyclohexadiene, 1-methyl-4-(1	12.646	19	NJ
12	1195-32-0	Benzene, 1-methyl-4-(1-methylethe	12.867	17	NJ
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

KWL 9.7.06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2933

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-09A

Sample wt/vol: 5.90 (g/mL) G Lab File ID: V5G9494.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 4.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	4.4	U
74-87-3	Chloromethane	4.4	U
75-01-4	Vinyl chloride	4.4	U
74-83-9	Bromomethane	4.4	U
75-00-3	Chloroethane	4.4	U
75-69-4	Trichlorofluoromethane	4.4	U
75-35-4	1,1-Dichloroethene	4.4	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	4.4	U
67-64-1	Acetone	8.8	U
75-15-0	Carbon disulfide	4.4	U
79-20-9	Methyl acetate	4.4	U
75-09-2	Methylene chloride	4.4	U
156-60-5	trans-1,2-Dichloroethene	4.4	U
1634-04-4	Methyl tert-butyl ether	4.4	U
75-34-3	1,1-Dichloroethane	4.4	U
156-59-2	cis-1,2-Dichloroethene	4.4	U
78-93-3	2-Butanone	8.8	U
74-97-5	Bromochloromethane	4.4	U
67-66-3	Chloroform	4.4	U
71-55-6	1,1,1-Trichloroethane	4.4	U
110-82-7	Cyclohexane	4.4	U
56-23-5	Carbon tetrachloride	4.4	U
71-43-2	Benzene	4.4	U
107-06-2	1,2-Dichloroethane	4.4	U
123-91-1	1,4-Dioxane	88	U

KWL 9.7.06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2933

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-09A

Sample wt/vol: 5.90 (g/mL) G Lab File ID: V5G9494.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 4.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	4.4	U
108-87-2	Methylcyclohexane	4.4	U
78-87-5	1,2-Dichloropropane	4.4	U
75-27-4	Bromodichloromethane	4.4	U
10061-01-5	cis-1,3-Dichloropropene	4.4	U
108-10-1	4-Methyl-2-pentanone	8.8	U
108-88-3	Toluene	4.4	U
10061-02-6	trans-1,3-Dichloropropene	4.4	U
79-00-5	1,1,2-Trichloroethane	4.4	U
127-18-4	Tetrachloroethene	4.4	U
591-78-6	2-Hexanone	8.8	U
124-48-1	Dibromochloromethane	4.4	U
106-93-4	1,2-Dibromoethane	4.4	U
108-90-7	Chlorobenzene	4.4	U
100-41-4	Ethylbenzene	4.4	U
179601-23-1	m,p-Xylene	4.4	U
95-47-6	o-Xylene	4.4	U
100-42-5	Styrene	4.4	U
75-25-2	Bromoform	4.4	U
98-82-8	Isopropylbenzene	4.4	U
79-34-5	1,1,2,2-Tetrachloroethane	4.4	U
541-73-1	1,3-Dichlorobenzene	4.4	U
106-46-7	1,4-Dichlorobenzene	4.4	U
95-50-1	1,2-Dichlorobenzene	4.4	U
96-12-8	1,2-Dibromo-3-chloropropane	4.4	U
120-82-1	1,2,4-Trichlorobenzene	4.4	U
87-61-6	1,2,3-Trichlorobenzene	4.4	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2933

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-09A

Sample wt/vol: 5.90 (g/mL) G Lab File ID: V5G9494.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 4.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.097	16	BJ
02	7785-70-8	1R-.alpha.-Pinene	10.318	12	NJ
	E966796[1]	Total Alkanes	N/A	16	J

[1]EPA-designated Registry Number.

KM 9.7.06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2934

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: D1186-10A

Sample wt/vol: 3.90 (g/mL) G Lab File ID: V5G9486.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 7.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	6.9	U
74-87-3	Chloromethane	6.9	U
75-01-4	Vinyl chloride	6.9	U
74-83-9	Bromomethane	6.9	U
75-00-3	Chloroethane	6.9	U
75-69-4	Trichlorofluoromethane	6.9	U
75-35-4	1,1-Dichloroethene	6.9	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	6.9	U
67-64-1	Acetone	14	U
75-15-0	Carbon disulfide	6.9	U
79-20-9	Methyl acetate	6.9	U
75-09-2	Methylene chloride	6.9	U
156-60-5	trans-1,2-Dichloroethene	6.9	U
1634-04-4	Methyl tert-butyl ether	6.9	U
75-34-3	1,1-Dichloroethane	6.9	U
156-59-2	cis-1,2-Dichloroethene	6.9	U
78-93-3	2-Butanone	14	U
74-97-5	Bromochloromethane	6.9	U
67-66-3	Chloroform	6.9	U
71-55-6	1,1,1-Trichloroethane	6.9	U
110-82-7	Cyclohexane	6.9	U
56-23-5	Carbon tetrachloride	6.9	U
71-43-2	Benzene	6.9	U
107-06-2	1,2-Dichloroethane	6.9	U
123-91-1	1,4-Dioxane	140	U

KM 9.7.06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2934

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-10A

Sample wt/vol: 3.90 (g/mL) G Lab File ID: V5G9486.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 7.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	6.9	U
108-87-2	Methylcyclohexane	6.9	U
78-87-5	1,2-Dichloropropane	6.9	U
75-27-4	Bromodichloromethane	6.9	U
10061-01-5	cis-1,3-Dichloropropene	6.9	U
108-10-1	4-Methyl-2-pentanone	14	U
108-88-3	Toluene	6.9	U
10061-02-6	trans-1,3-Dichloropropene	6.9	U
79-00-5	1,1,2-Trichloroethane	6.9	U
127-18-4	Tetrachloroethene	6.9	U
591-78-6	2-Hexanone	14	U
124-48-1	Dibromochloromethane	6.9	U
106-93-4	1,2-Dibromoethane	6.9	U
108-90-7	Chlorobenzene	6.9	U
100-41-4	Ethylbenzene	6.9	U
179601-23-1	m,p-Xylene	6.9	U
95-47-6	o-Xylene	6.9	U
100-42-5	Styrene	6.9	U
75-25-2	Bromoform	7.2	
98-82-8	Isopropylbenzene	6.9	U
79-34-5	1,1,2,2-Tetrachloroethane	6.9	U
541-73-1	1,3-Dichlorobenzene	6.9	U
106-46-7	1,4-Dichlorobenzene	6.9	U
95-50-1	1,2-Dichlorobenzene	6.9	U
96-12-8	1,2-Dibromo-3-chloropropane	6.9	U
120-82-1	1,2,4-Trichlorobenzene	6.9	U
87-61-6	1,2,3-Trichlorobenzene	6.9	U

KAL 9.7.06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2934

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-10A

Sample wt/vol: 3.90 (g/mL) G Lab File ID: V5G9486.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 7.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.097	30	BJ
	E966796[1]	Total Alkanes	N/A	0	J

[1] EPA-designated Registry Number.

KMH 9.7.06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2935

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-11A

Sample wt/vol: 5.40 (g/mL) G Lab File ID: V5G9495.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 12.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	5.3	U
74-87-3	Chloromethane	5.3	U
75-01-4	Vinyl chloride	5.3	U
74-83-9	Bromomethane	5.3	U
75-00-3	Chloroethane	5.3	U
75-69-4	Trichlorofluoromethane	5.3	U
75-35-4	1,1-Dichloroethene	5.3	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.3	U
67-64-1	Acetone	11	U
75-15-0	Carbon disulfide	5.3	U
79-20-9	Methyl acetate	5.3	U
75-09-2	Methylene chloride	5.3	U
156-60-5	trans-1,2-Dichloroethene	5.3	U
1634-04-4	Methyl tert-butyl ether	5.3	U
75-34-3	1,1-Dichloroethane	5.3	U
156-59-2	cis-1,2-Dichloroethene	5.3	U
78-93-3	2-Butanone	11	U
74-97-5	Bromochloromethane	5.3	U
67-66-3	Chloroform	5.3	U
71-55-6	1,1,1-Trichloroethane	5.3	U
110-82-7	Cyclohexane	5.3	U
56-23-5	Carbon tetrachloride	5.3	U
71-43-2	Benzene	5.3	U
107-06-2	1,2-Dichloroethane	5.3	U
123-91-1	1,4-Dioxane	110	U

KMB 9.7.06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2935

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-11A

Sample wt/vol: 5.40 (g/mL) G Lab File ID: V5G9495.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 12.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	5.3	U
108-87-2	Methylcyclohexane	5.3	U
78-87-5	1,2-Dichloropropane	5.3	U
75-27-4	Bromodichloromethane	5.3	U
10061-01-5	cis-1,3-Dichloropropene	5.3	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	5.3	U
10061-02-6	trans-1,3-Dichloropropene	5.3	U
79-00-5	1,1,2-Trichloroethane	5.3	U
127-18-4	Tetrachloroethene	5.3	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	5.3	U
106-93-4	1,2-Dibromoethane	5.3	U
108-90-7	Chlorobenzene	5.3	U
100-41-4	Ethylbenzene	5.3	U
179601-23-1	m,p-Xylene	5.3	U
95-47-6	o-Xylene	5.3	U
100-42-5	Styrene	5.3	U
75-25-2	Bromoform	5.3	U
98-82-8	Isopropylbenzene	5.3	U
79-34-5	1,1,2,2-Tetrachloroethane	5.3	U
541-73-1	1,3-Dichlorobenzene	5.3	U
106-46-7	1,4-Dichlorobenzene	5.3	U
95-50-1	1,2-Dichlorobenzene	5.3	U
96-12-8	1,2-Dibromo-3-chloropropane	5.3	U
120-82-1	1,2,4-Trichlorobenzene	5.3	U
87-61-6	1,2,3-Trichlorobenzene	5.3	U

KWF 9.7.06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2935

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-11A

Sample wt/vol: 5.40 (g/mL) G Lab File ID: V5G9495.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 12.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	74-95-3	Methane, dibromo-	10.092	21	BNJ
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

Karl 9.7.06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2936

Lab Name: MITKEM CORPOPATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-12A

Sample wt/vol: 3.80 (g/mL) G Lab File ID: V5G9496.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 5.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	6.9	U
74-87-3	Chloromethane	6.9	U
75-01-4	Vinyl chloride	6.9	U
74-83-9	Bromomethane	6.9	U
75-00-3	Chloroethane	6.9	U
75-69-4	Trichlorofluoromethane	6.9	U
75-35-4	1,1-Dichloroethene	6.9	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	6.9	U
67-64-1	Acetone	16	
75-15-0	Carbon disulfide	6.9	U
79-20-9	Methyl acetate	6.9	U
75-09-2	Methylene chloride	6.9	U
156-60-5	trans-1,2-Dichloroethene	6.9	U
1634-04-4	Methyl tert-butyl ether	6.9	U
75-34-3	1,1-Dichloroethane	6.9	U
156-59-2	cis-1,2-Dichloroethene	6.9	U
78-93-3	2-Butanone	14	U
74-97-5	Bromochloromethane	6.9	U
67-66-3	Chloroform	6.9	U
71-55-6	1,1,1-Trichloroethane	6.9	U
110-82-7	Cyclohexane	6.9	U
56-23-5	Carbon tetrachloride	6.9	U
71-43-2	Benzene	6.9	U
107-06-2	1,2-Dichloroethane	6.9	U
123-91-1	1,4-Dioxane	140	U

KBL 9.7.06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2936

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-12A

Sample wt/vol: 3.80 (g/mL) G Lab File ID: V5G9496.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 5.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	6.9	U
108-87-2	Methylcyclohexane	6.9	U
78-87-5	1,2-Dichloropropane	6.9	U
75-27-4	Bromodichloromethane	6.9	U
10061-01-5	cis-1,3-Dichloropropene	6.9	U
108-10-1	4-Methyl-2-pentanone	14	U
108-88-3	Toluene	6.9	U
10061-02-6	trans-1,3-Dichloropropene	6.9	U
79-00-5	1,1,2-Trichloroethane	6.9	U
127-18-4	Tetrachloroethene	6.9	U
591-78-6	2-Hexanone	14	U
124-48-1	Dibromochloromethane	6.9	U
106-93-4	1,2-Dibromoethane	6.9	U
108-90-7	Chlorobenzene	6.9	U
100-41-4	Ethylbenzene	6.9	U
179601-23-1	m,p-Xylene	6.9	U
95-47-6	o-Xylene	6.9	U
100-42-5	Styrene	6.9	U
75-25-2	Bromoform	6.9	U
98-82-8	Isopropylbenzene	6.9	U
79-34-5	1,1,2,2-Tetrachloroethane	6.9	U
541-73-1	1,3-Dichlorobenzene	6.9	U
106-46-7	1,4-Dichlorobenzene	6.9	U
95-50-1	1,2-Dichlorobenzene	6.9	U
96-12-8	1,2-Dibromo-3-chloropropane	6.9	U
120-82-1	1,2,4-Trichlorobenzene	6.9	U
87-61-6	1,2,3-Trichlorobenzene	6.9	U

KWL 9.7.06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2936

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-12A

Sample wt/vol: 3.80 (g/mL) G Lab File ID: V5G9496.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 5.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.096	28	BJ
02	7785-70-8	1R-.alpha.-Pinene	10.305	160	NJ
03	127-91-3	.beta.-Pinene	11.095	8.2	NJ
04	138-86-3	Limonene	11.792	32	NJ
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

KAW 9.7.06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2937

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-13A

Sample wt/vol: 4.80 (g/mL) G Lab File ID: V5G9497.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 8.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	5.7	U
74-87-3	Chloromethane	5.7	U
75-01-4	Vinyl chloride	5.7	U
74-83-9	Bromomethane	5.7	U
75-00-3	Chloroethane	5.7	U
75-69-4	Trichlorofluoromethane	5.7	U
75-35-4	1,1-Dichloroethene	5.7	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.7	U
67-64-1	Acetone	11	U
75-15-0	Carbon disulfide	5.7	U
79-20-9	Methyl acetate	5.7	U
75-09-2	Methylene chloride	5.7	U
156-60-5	trans-1,2-Dichloroethene	5.7	U
1634-04-4	Methyl tert-butyl ether	5.7	U
75-34-3	1,1-Dichloroethane	5.7	U
156-59-2	cis-1,2-Dichloroethene	5.7	U
78-93-3	2-Butanone	11	U
74-97-5	Bromochloromethane	5.7	U
67-66-3	Chloroform	5.7	U
71-55-6	1,1,1-Trichloroethane	5.7	U
110-82-7	Cyclohexane	5.7	U
56-23-5	Carbon tetrachloride	5.7	U
71-43-2	Benzene	5.7	U
107-06-2	1,2-Dichloroethane	5.7	U
123-91-1	1,4-Dioxane	110	U

KHL 9.7.06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2937

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-13A

Sample wt/vol: 4.80 (g/mL) G Lab File ID: V5G9497.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 8.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	5.7	U
108-87-2	Methylcyclohexane	5.7	U
78-87-5	1,2-Dichloropropane	5.7	U
75-27-4	Bromodichloromethane	5.7	U
10061-01-5	cis-1,3-Dichloropropene	5.7	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	5.7	U
10061-02-6	trans-1,3-Dichloropropene	5.7	U
79-00-5	1,1,2-Trichloroethane	5.7	U
127-18-4	Tetrachloroethene	5.7	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	5.7	U
106-93-4	1,2-Dibromoethane	5.7	U
108-90-7	Chlorobenzene	5.7	U
100-41-4	Ethylbenzene	5.7	U
179601-23-1	m,p-Xylene	5.7	U
95-47-6	o-Xylene	5.7	U
100-42-5	Styrene	5.7	U
75-25-2	Bromoform	5.7	U
98-82-8	Isopropylbenzene	5.7	U
79-34-5	1,1,2,2-Tetrachloroethane	5.7	U
541-73-1	1,3-Dichlorobenzene	5.7	U
106-46-7	1,4-Dichlorobenzene	5.7	U
95-50-1	1,2-Dichlorobenzene	5.7	U
96-12-8	1,2-Dibromo-3-chloropropane	5.7	U
120-82-1	1,2,4-Trichlorobenzene	5.7	U
87-61-6	1,2,3-Trichlorobenzene	5.7	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2937

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-13A

Sample wt/vol: 4.60 (g/mL) G Lab File ID: V5G9497.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 8.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.097	21	BJ
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

KLK 9.7.06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2938

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-14A

Sample wt/vol: 4.30 (g/mL) G Lab File ID: V5G9498.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 4.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	6.1	U
74-87-3	Chloromethane	6.1	U
75-01-4	Vinyl chloride	6.1	U
74-83-9	Bromomethane	6.1	U
75-00-3	Chloroethane	6.1	U
75-69-4	Trichlorofluoromethane	6.1	U
75-35-4	1,1-Dichloroethene	6.1	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	6.1	U
67-64-1	Acetone	16	
75-15-0	Carbon disulfide	6.1	U
79-20-9	Methyl acetate	6.1	U
75-09-2	Methylene chloride	6.1	U
156-60-5	trans-1,2-Dichloroethene	6.1	U
1634-04-4	Methyl tert-butyl ether	6.1	U
75-34-3	1,1-Dichloroethane	6.1	U
156-59-2	cis-1,2-Dichloroethene	6.1	U
78-93-3	2-Butanone	12	U
74-97-5	Bromochloromethane	6.1	U
67-66-3	Chloroform	6.1	U
71-55-6	1,1,1-Trichloroethane	6.1	U
110-82-7	Cyclohexane	6.1	U
56-23-5	Carbon tetrachloride	6.1	U
71-43-2	Benzene	6.1	U
107-06-2	1,2-Dichloroethane	6.1	U
123-91-1	1,4-Dioxane	120	U

KMS 9.7.06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A2938

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-14A

Sample wt/vol: 4.30 (g/mL) G Lab File ID: V5G9498.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 4.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	6.1	U
108-87-2	Methylcyclohexane	6.1	U
78-87-5	1,2-Dichloropropane	6.1	U
75-27-4	Bromodichloromethane	6.1	U
10061-01-5	cis-1,3-Dichloropropene	6.1	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	6.1	U
10061-02-6	trans-1,3-Dichloropropene	6.1	U
79-00-5	1,1,2-Trichloroethane	6.1	U
127-18-4	Tetrachloroethene	6.1	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	6.1	U
106-93-4	1,2-Dibromoethane	6.1	U
108-90-7	Chlorobenzene	6.1	U
100-41-4	Ethylbenzene	6.1	U
179601-23-1	m,p-Xylene	6.1	U
95-47-6	o-Xylene	6.1	U
100-42-5	Styrene	6.1	U
75-25-2	Bromoform	6.1	U
98-82-8	Isopropylbenzene	6.1	U
79-34-5	1,1,2,2-Tetrachloroethane	6.1	U
541-73-1	1,3-Dichlorobenzene	6.1	U
106-46-7	1,4-Dichlorobenzene	6.1	U
95-50-1	1,2-Dichlorobenzene	6.1	U
96-12-8	1,2-Dibromo-3-chloropropane	6.1	U
120-82-1	1,2,4-Trichlorobenzene	6.1	U
87-61-6	1,2,3-Trichlorobenzene	6.1	U

8.7.06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A2938

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35611 Mod. Ref No.: SDG No.: A2924

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: E1186-14A

Sample wt/vol: 4.30 (g/mL) G Lab File ID: V5G9498.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/05/2006

% Moisture: not dec. 4.0 Date Analyzed: 08/06/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.091	26	BJ
02	7785-70-8	1R-.alpha.-Pinene	10.312	160	NJ
03	5989-27-5	D-Limonene	11.798	23	NJ
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

KMB 9.7.06

PRE-INJECTION VOC SAMPLES
GROUNDWATER – JUNE 2006
RAS

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28D4

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-02

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: E6208.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/28/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	17	
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	12	B
156-60-5	trans-1,2-Dichloroethene	4.4	J
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.4	
156-59-2	cis-1,2-Dichloroethene	730 ~~950~~	~~E~~ D
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	21	
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	2.7	J
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

Kwk 9/8/06

Kwk 8/2/06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28D4

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-02

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: E6208.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/28/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	1800 ~~2300~~	~~E~~D
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	1.8	J
127-18-4	Tetrachloroethene	20	
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KMR 9.7.06

KMR 9/21/06 9/14/06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28D4

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-02

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: E6208.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/28/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	3.96	17	J
02		UNKNOWN	4.94	45	J
03		UNKNOWN	7.44	19	JB
04		UNKNOWN	8.04	9.0	JB
05		UNKNOWN	14.16	5.5	J
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

8/2/06 8/14/06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28D5

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-03

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6753.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	22	
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	8.1	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	9.6	B
156-60-5	trans-1,2-Dichloroethene	6.3	
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	9.2	
156-59-2	cis-1,2-Dichloroethene	1560 ~~1700~~	~~E~~ D
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	41	
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	6.1	
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KMR 9.7.06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28D5

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-03

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6753.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	4200 ~~5600~~	~~E~~ D
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	3.6	J
127-18-4	Tetrachloroethene	39	
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	1.4	J
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KMR 9.7.06

9/14/06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28D5

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-03

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6753.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	7.69	9.2	J
02		UNKNOWN	11.88	6.8	J
03		UNKNOWN	13.13	6.8	J
04		UNKNOWN	13.23	6.8	J
05		UNKNOWN	14.22	10	J
06	042769-38-0	1,3-Butadiene, 1,1,3,4-tetr...	14.32	16	JN
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

9.7.06 9/12/06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28D6

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-04

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: E6211.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/28/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	18	B
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	150	
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KMK 9.7.06

9/12/06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28D6

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-04

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: E6211.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/28/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	330 ~~366~~	~~E~~ D
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

9.7.06

9/12/06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28D6

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-04

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: E6211.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/28/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	4.94	6.9	J
02		UNKNOWN	7.45	16	JB
03		UNKNOWN	8.04	13	JB
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A	11	

[1]EPA-designated Registry Number.

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28D7

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-05

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6794.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	12	B
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	1400 ~~1200~~	~~B~~ D
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	3.5	J
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KLQ 9.7.06

7/14/06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28D7

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-05

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6794.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	3200 ~~2700~~	~~E~~ D
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.5	
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.6	
127-18-4	Tetrachloroethene	1.4	J
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	0.47	J
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	1.2	J
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KMR 9.7.06

Rad 9/12/06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28D7

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-05

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6794.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	4.53	13	J
02		UNKNOWN	10.90	9.6	J
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

KWL 9.7.06

R 9.11.06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28D8

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-06

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6792.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	35	
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	3.2	JB
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KMK 9.7.06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28D8

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-06

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6792.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	2.3	J
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	4.2	J
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	0.37	J
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	0.92	J
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KMB 9.7.06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28D8

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-06

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6792.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	7.68	9.1	J
02		UNKNOWN	8.28	8.3	J
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A	14	

[1]EPA-designated Registry Number.

Kmg 8/2/06

8/14/06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28D9

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-07

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6787.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 5.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	25	U
74-87-3	Chloromethane	25	U
75-01-4	Vinyl chloride	25	U
74-83-9	Bromomethane	25	U
75-00-3	Chloroethane	25	U
75-69-4	Trichlorofluoromethane	25	U
75-35-4	1,1-Dichloroethene	25	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	25	U
67-64-1	Acetone	50	U
75-15-0	Carbon disulfide	25	U
79-20-9	Methyl acetate	25	U
75-09-2	Methylene chloride	53	B
156-60-5	trans-1,2-Dichloroethene	25	U
1634-04-4	Methyl tert-butyl ether	25	U
75-34-3	1,1-Dichloroethane	25	U
156-59-2	cis-1,2-Dichloroethene	65	
78-93-3	2-Butanone	50	U
74-97-5	Bromochloromethane	25	U
67-66-3	Chloroform	25	U
71-55-6	1,1,1-Trichloroethane	14	J
110-82-7	Cyclohexane	25	U
56-23-5	Carbon tetrachloride	25	U
71-43-2	Benzene	25	U
107-06-2	1,2-Dichloroethane	25	U
123-91-1	1,4-Dioxane	500	U

KMR 9.7.06

9/14/06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28D9

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-07

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6787.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 5.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	34000 ~~45000~~	~~E~~ D
108-87-2	Methylcyclohexane	25	U
78-87-5	1,2-Dichloropropane	25	U
75-27-4	Bromodichloromethane	25	U
10061-01-5	cis-1,3-Dichloropropene	25	U
108-10-1	4-Methyl-2-pentanone	50	U
108-88-3	Toluene	25	U
10061-02-6	trans-1,3-Dichloropropene	25	U
79-00-5	1,1,2-Trichloroethane	25	U
127-18-4	Tetrachloroethene	4.8	J
591-78-6	2-Hexanone	50	U
124-48-1	Dibromochloromethane	25	U
106-93-4	1,2-Dibromoethane	25	U
108-90-7	Chlorobenzene	25	U
100-41-4	Ethylbenzene	25	U
95-47-6	o-Xylene	25	U
179601-23-1	m,p-Xylene	25	U
100-42-5	Styrene	25	U
75-25-2	Bromoform	25	U
98-82-8	Isopropylbenzene	25	U
79-34-5	1,1,2,2-Tetrachloroethane	25	U
541-73-1	1,3-Dichlorobenzene	25	U
106-46-7	1,4-Dichlorobenzene	25	U
95-50-1	1,2-Dichlorobenzene	25	U
96-12-8	1,2-Dibromo-3-chloropropane	25	U
120-82-1	1,2,4-Trichlorobenzene	25	U
87-61-6	1,2,3-Trichlorobenzene	25	U

KMC 9.7.06

Rala/08

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28D9

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-07

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6787.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 5.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A	42	

[1]EPA-designated Registry Number.

KMG 8/2/06 R 9/14/06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E0

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-08

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6793.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	29	
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	3.3	JB
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	58	
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KWL 9.7.06

9/14/06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28E0

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-08

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6793.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	52	
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	4.1	J
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	0.80	J
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	0.92	J
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KMR 9.7.06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: A28E0

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-08

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6793.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A	17	

[1]EPA-designated Registry Number.

KAM 8/2/06

Ra 1/08

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E1

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-09

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6755.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	7.8	B
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KM 9.7.06

9/6/06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28E1

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-09

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6755.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	5.0	U
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KML 9.7.06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28E1

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-09

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6755.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	7.67	12	J
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

8/2/06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E2

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-10

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6789.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	30	B
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	58	
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	11	
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KWL 9.7.06

7/14/06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E2

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-10

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6789.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	39000 ~~14000~~	~~E~~ D
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	3.4	J
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KMR 9.7.06

9/14/06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28E2

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-10

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6789.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	6.04	15	J
02		UNKNOWN	7.68	6.3	J
03		UNKNOWN	8.28	8.2	J
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

KMB 8/2/06

RG 8/10/06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E3

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-11

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6767.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	7.2	B
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	9.1	
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

9.7.06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E3

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-11

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6767.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	46	
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	1.7	J
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KMH 9.7.06

9/10/06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28E3

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-11

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6767.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

KMG 8/2/06 R 8/18/06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E4

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-12

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6791.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	4.1	JB
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	12	
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KWL 9.7.06

RG 9/12/06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E4

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-12

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6791.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	130	
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	4.0	J
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	0.86	J
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28E4

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-12

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6791.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	7.68	11	J
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A	17	

[1]EPA-designated Registry Number.

KMB 8/2/06 RG 8/4/06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E5

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-13

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6754.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	6.8	B
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KMC 9.7.06

Rd 10/10/06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E5

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-13

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6754.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	1.7	J
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KMF 9.7.06

9/14/06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28E5

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-13

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6754.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	4.54	12	J
02		UNKNOWN	15.84	5.0	J
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

KMJ 8/2/06 RJ 8/4/06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E6

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-14

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6752.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	12	B
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	9.3	
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

Kmk 9.7.06

9/14/06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E6

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-14

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6752.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	16	
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KLL 9.7.06

RJ 9/14/06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28E6

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-14

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6752.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	003868-64-2	Pentalene, octahydro-2-methyl-	11.87	12	JN
02	004551-51-3	1H-Indene, octahydro-, cis-	12.99	13	JN
03	000093-53-8	Benzeneacetaldehyde, .alpha...	13.29	20	JN
04	000535-77-3	Benzene, 1-methyl-3-(1-meth... (	13.64	12	JN
05	000141-93-5	Benzene, 1,3-diethyl-	13.71	48	JN
06		UNKNOWN	13.90	7.5	J
07		UNKNOWN	13.95	11	J
08	000700-12-9	Benzene, pentamethyl-	14.09	14	JN
09	002870-04-4	Benzene, 2-ethyl-1,3-dimethyl-	14.12	16	JN
10		UNKNOWN	14.23	110	J
11		UNKNOWN	14.30	43	J
12		UNKNOWN	14.38	63	J
13	001595-16-0	Benzene, 1-methyl-4-(1-meth... (	14.43	20	JN
14		UNKNOWN	14.50	13	J
15		UNKNOWN	14.56	35	J
16	004706-90-5	Benzene, 1,3-dimethyl-5-(1-...	14.64	30	JN
17	097664-19-2	Benzene, 1-methyl-2-(1-meth...	14.70	16	JN
18		UNKNOWN	14.83	12	J
19		UNKNOWN	14.88	10	J
20		UNKNOWN	14.96	6.8	J
21	040650-41-7	1H-Indene, 2,3-dihydro-1,1,... (	15.44	8.8	JN
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

Kwl 8/2/06

9/14/06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E7

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-15

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6774.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	3.6	J
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	8.6	B
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	88	
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	1.7	J
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

9.7.06

9/14/06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E7

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-15

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6774.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	1000 ~~1000~~	~~E~~ D
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	7.6	
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KHR 9.7.06

9/12/06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28E7

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-15

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6774.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	7.69	13	J
02	000138-86-3	Limonene	13.39	11	JN
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
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22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

KMW 8/2/06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E8

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-16

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6756.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	27	
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	9.6	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	2.7	JB
156-60-5	trans-1,2-Dichloroethene	7.0	
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	10	
156-59-2	cis-1,2-Dichloroethene	1100 ~~1900~~	~~E~~ D
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	48	
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	7.2	
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KMR 9.7.06

7/14/06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E8

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-16

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6756.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	3300 ~~6100~~	~~E~~ D
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	3.9	J
127-18-4	Tetrachloroethene	44	
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	1.2	J
179601-23-1	m,p-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	1.4	J
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.0	J
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KWF 7.06

9/14/06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28E8

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-16

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6756.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	5.09	13	J
02		UNKNOWN	7.67	13	J
03	003296-50-2	1H-Indene, octahydro-, trans-	11.87	10	JN
04		UNKNOWN	11.97	7.1	J
05		UNKNOWN	12.48	5.8	J
06		UNKNOWN	12.66	7.2	J
07		UNKNOWN	13.12	7.7	J
08		UNKNOWN	13.23	7.3	J
09		UNKNOWN	13.53	6.9	J
10		UNKNOWN	14.23	11	J
11		UNKNOWN	14.37	5.2	J
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

8/2/06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E9

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-17

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: E6206.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/28/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	28	
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	2.4	J
75-00-3	Chloroethane	20	
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	19	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	130	
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	2.6	J
75-09-2	Methylene chloride	40	B
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	19	
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-Butanone	74	
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	31	
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	18	
71-43-2	Benzene	19	
107-06-2	1,2-Dichloroethane	39	
123-91-1	1,4-Dioxane	100	U

KWC 9.7.06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28E9

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-17

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: E6206.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/28/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	45	
108-87-2	Methylcyclohexane	6.5	
78-87-5	1,2-Dichloropropane	19	
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	1.6	J
108-10-1	4-Methyl-2-pentanone	52	
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	1.1	J
79-00-5	1,1,2-Trichloroethane	22	
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	77	
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	49	
179601-23-1	m,p-Xylene	5.0	U
100-42-5	Styrene	27	
75-25-2	Bromoform	22	
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	23	
541-73-1	1,3-Dichlorobenzene	19	
106-46-7	1,4-Dichlorobenzene	19	
95-50-1	1,2-Dichlorobenzene	27	
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KVB 9.7.06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28E9

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-17

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: E6206.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/28/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	7.44	17	JB
02		UNKNOWN	8.03	10	JB
03	000630-20-6	Ethane, 1,1,1,2-tetrachloro-	10.64	130	JN
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A	8.0	

[1]EPA-designated Registry Number.

KW 8/2/06 R 8/4/06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28F0

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-18

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6757.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	4.4	JB
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KWF 9.7.06

Ralphole

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28F0

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-18

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6757.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	1.3	J
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KMC 9.7.06

9/14/06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28F0

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-18

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6757.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	7.67	10	J
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

kml 8/2/06 9/14/06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28F1

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-19

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6772.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	3.9	J
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	1.7	J
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	9.8	B
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	190	
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	1.7	J
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

9.7.06

7/14/06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28F1

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-19

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6772.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	170	
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	1.5	J
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28F1

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-19

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6772.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/29/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	7.67	6.0	JB
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A	15	

[1]EPA-designated Registry Number.

KML 8/2/06

8/4/06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28F2

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-20

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6790.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	28	
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	5.2	B
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

7.1.06

7/1/06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28F2

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-20

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6790.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	3.3	J
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.4	
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	1.2	J
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	0.19	J

KWL 7.7.06

7/14/06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28F2

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-20

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: C6790.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/30/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	4.53	9.2	J
02		UNKNOWN	7.68	10	JB
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28F3

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-21

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: E6210.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/28/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	26	B
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KML 9.7.06

9/11/06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28F3

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-21

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: E6210.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/28/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	1.1	J
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KMR 7.7.06

9/14/06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28F3

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-21

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: E6210.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/28/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	3.97	15	J
02		UNKNOWN	4.94	37	J
03		UNKNOWN	7.45	13	JB
04		UNKNOWN	8.04	7.3	JB
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A	10	

[1]EPA-designated Registry Number.

KLB 8/2/06

9/14/06

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28F4

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-22

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: E6207.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/28/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	13	B
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

9.7.06

9/12/06

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
A28F4

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-22

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: E6207.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/28/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.00 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
79-01-6	Trichloroethene	5.0	U
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
95-47-6	o-Xylene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KWL 9.7.06

9/10/06

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
A28F4

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036

Lab Code: A4 Case No.: 35471 Mod. Ref No.: SDG No.: A28D4

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0007876-22

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: E6207.D

Level: (TRACE or LOW/MED) LOW Date Received: 06/28/2006

% Moisture: not dec. Date Analyzed: 06/28/2006

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L Purge Volume: 5.00 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN	4.94	6.1	J
02		UNKNOWN	7.45	15	JB
03		UNKNOWN	8.04	11	JB
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[1]	Total Alkanes	N/A	6.4	

[1]EPA-designated Registry Number.

KMB 8/2/06

Ra 8/4/06

POST-INJECTION VOC SAMPLES
GROUNDWATER – AUGUST 2006
RAS

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28F9

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0044.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	78	
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	120	
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	4.8	J
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KM 8/31/06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28F9

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0044.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	39	
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	4.7	J
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KNG 8/31/06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A28F9

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0044.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.093	14	BJ
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

KM 8/31/06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G0

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0045.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	11	
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	120	
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KMG 8/31/06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G0

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0045.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	130	
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	14	
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KWB 8/31/06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A28G0

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0045.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.09	17	BJ
02	611-14-3	Benzene, 1-ethyl-2-methyl- (10.91	10.914	7.3	NJ
03	611-14-3	Benzene, 1-ethyl-2-methyl- (11.26	11.262	8.5	NJ
04	108-67-8	Benzene, 1,3,5-trimethyl-	11.471	32	NJ
05	526-73-8	Benzene, 1,2,3-trimethyl-	11.971	11	NJ
06	42769-38-0	1,3-Butadiene, 1,1,3,4-tetrachlor	13.074	9.0	NJ
07	95-93-2	Benzene, 1,2,4,5-tetramethyl-	13.341	5.1	NJ
08		Unknown-02	13.851	5.5	J
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

KMC 8/31/06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G1

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0048.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	2.2	J
156-59-2	cis-1,2-Dichloroethene	320	E E KM 9/7/06
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	20	
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	6.1	
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KM 8/31/06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G1

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0048.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	32000 ~~4000~~	~~E~~ D
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	15	
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KMR
8/31/06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A28G1

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0048.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.092	13	BJ
	E966796[1]	Total Alkanes	N/A	0	J

[1] EPA-designated Registry Number.

KMG 8/31/06

0053

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G2

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-04A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0049.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	4.3	J
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	120	
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	16	
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	4.3	J
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KMV 8/31/06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G2

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-04A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0049.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	19000 ~~4800~~	E D
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	J
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KMR 8/31/06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A28G2

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-04A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0049.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	74-95-3	Methane, dibromo-	10.092	15	NJ
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

KMC 8/31/06

0077

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G3

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-05A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0068.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.6	
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	2.5	J
71-55-6	1,1,1-Trichloroethane	26	
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	11	
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KMH 8/31/06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G3

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-05A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0068.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	55	~~U~~ B
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.6	
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KMR 8/31/06

KMR 8/31/06

0099

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A28G3

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-05A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0068.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	3.975	54	J
02		Unknown-02	10.093	17	BJ
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

KLR 8/31/06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G5

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-06A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0051.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	730	~~U~~ E KMB 9.7.06
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	180	
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	9.8	
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KMB 8/31/06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G5

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-06A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0051.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	9800 ~~3100~~	~~E~~ D
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	3.9	J
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KM 8/31/06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A28G5

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-06A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0051.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.098	14	BJ
	E966796[1]	Total Alkanes	N/A	0	J

[1] EPA-designated Registry Number.

KMR 8/31/06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G7

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-07A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0067.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	8.8	
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	85	
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	4.4	J
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	120	
78-93-3	2-Butanone	23	
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	4.1	J
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KMB 8/31/06

0149

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G7

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-07A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0067.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	37	B
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	4.2	J
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KMC 8/31/06

KMC 8/31/06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A28G7

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-07A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0067.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	74-95-3	Methane, dibromo-	10.092	14	NJ
02	928-68-7	2-Heptanone, 6-methyl-	11.044	5.1	NJ
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

KMB 8/31/06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G8

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A26F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-08A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0066.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KAK 8/31/06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G8

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-08A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0066.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	5.0	U
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

EAW 8/31/06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A28G8

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-08A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0066.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.087	15	BJ
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

KMG 8/31/06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G9

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-09A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0065.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

8/31/06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G9

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-09A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0065.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	5.0	U
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KMP 8/31/06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A28G9

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-09A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0065.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.088	13	BJ
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

8/31/06

D175

SOM01.1 (5/2005)

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28H0

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-10A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0055.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/16/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

KWG 8/31/06

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28H0

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-10A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0055.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	4.8	J
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KM 8/31/06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A28H0

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-10A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0055.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.089	14	BJ
	E966796[1]	Total Alkanes	N/A	0	J

[1] EPA-designated Registry Number.

KM 8/31/06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28H3

Lab Name: MITKEM CORPORATION   Contract: EP-W-05-030

Lab Code: MITKEM   Case No.: 35593   Mod. Ref No.:   SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER   Lab Sample ID: E1254-11A

Sample wt/vol: 5.00 (g/mL) ML   Lab File ID: V5H0043.D

Level: (TRACE/LOW/MED) LOW   Date Received: 08/18/2006

% Moisture: not dec.   Date Analyzed: 08/23/2006

GC Column: DB-624   ID: 0.25 (mm)   Dilution Factor: 1.0

Soil Extract Volume: (uL)   Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	15	
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	43	
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	22	
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	98	
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	110	
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
71-43-2	Benzene	22	
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

GROVELAND #V00467 P

RE 8/29/06

KMG 8/31/06

SOM01.1 (5/2005)

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28H3

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-11A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0043.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	21	X
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	52	
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	100	
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
100-42-5	Styrene	91	
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	20	
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	94	
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

KMF 9/6/06

KMF 8/31/06

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A28H3

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-11A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0043.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/23/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.091	15	BJ
	E966796[1]	Total Alkanes	N/A	0	J

[1] EPA-designated Registry Number.

KWL 8/31/06

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G1DL

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-03ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0069.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 200.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	1000	U
75-01-4	Vinyl chloride	1000	U
74-83-9	Bromomethane	1000	U
75-00-3	Chloroethane	1000	U
75-69-4	Trichlorofluoromethane	1000	U
75-35-4	1,1-Dichloroethene	1000	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1000	U
67-64-1	Acetone	2000	U
75-15-0	Carbon disulfide	1000	U
79-20-9	Methyl acetate	1000	U
75-09-2	Methylene chloride	1000	U
156-60-5	trans-1,2-Dichloroethene	1000	U
1634-04-4	Methyl tert-butyl ether	1000	U
75-34-3	1,1-Dichloroethane	1000	U
156-59-2	cis-1,2-Dichloroethene	1000	U
78-93-3	2-Butanone	2000	U
74-97-5	Bromochloromethane	1000	U
67-66-3	Chloroform	1000	U
71-55-6	1,1,1-Trichloroethane	1000	U
110-82-7	Cyclohexane	1000	U
56-23-5	Carbon tetrachloride	1000	U
71-43-2	Benzene	1000	U
107-06-2	1,2-Dichloroethane	1000	U
123-91-1	1,4-Dioxane	20000	U

DIL'S RE'S

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G1DL

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-03ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0069.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 200.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	32000	DB
108-87-2	Methylcyclohexane	1000	U
78-87-5	1,2-Dichloropropane	1000	U
75-27-4	Bromodichloromethane	1000	U
10061-01-5	cis-1,3-Dichloropropene	1000	U
108-10-1	4-Methyl-2-pentanone	2000	U
108-88-3	Toluene	1000	U
10061-02-6	trans-1,3-Dichloropropene	1000	U
79-00-5	1,1,2-Trichloroethane	1000	U
127-18-4	Tetrachloroethene	1000	U
591-78-6	2-Hexanone	2000	U
124-48-1	Dibromochloromethane	1000	U
106-93-4	1,2-Dibromoethane	1000	U
108-90-7	Chlorobenzene	1000	U
100-41-4	Ethylbenzene	1000	U
179601-23-1	m,p-Xylene	1000	U
95-47-6	o-Xylene	1000	U
100-42-5	Styrene	1000	U
75-25-2	Bromoform	1000	U
98-82-8	Isopropylbenzene	1000	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
96-12-8	1,2-Dibromo-3-chloropropane	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
87-61-6	1,2,3-Trichlorobenzene	1000	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A28G1DL

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-03ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0069.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 200.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	7446-09-5	Sulfur dioxide	1.785	160000	DNJ
02		Unknown-01	10.098	2600	BDJ
	E966796[1]	Total Alkanes	N/A	0	J

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G2DL

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-04ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0071.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 200.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	1000	U
75-01-4	Vinyl chloride	1000	U
74-83-9	Bromomethane	1000	U
75-00-3	Chloroethane	1000	U
75-69-4	Trichlorofluoromethane	1000	U
75-35-4	1,1-Dichloroethene	1000	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1000	U
67-64-1	Acetone	2000	U
75-15-0	Carbon disulfide	1000	U
79-20-9	Methyl acetate	1000	U
75-09-2	Methylene chloride	1000	U
156-60-5	trans-1,2-Dichloroethene	1000	U
1634-04-4	Methyl tert-butyl ether	1000	U
75-34-3	1,1-Dichloroethane	1000	U
156-59-2	cis-1,2-Dichloroethene	1000	U
78-93-3	2-Butanone	2000	U
74-97-5	Bromochloromethane	1000	U
67-66-3	Chloroform	1000	U
71-55-6	1,1,1-Trichloroethane	1000	U
110-82-7	Cyclohexane	1000	U
56-23-5	Carbon tetrachloride	1000	U
71-43-2	Benzene	1000	U
107-06-2	1,2-Dichloroethane	1000	U
123-91-1	1,4-Dioxane	20000	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G2DL

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-04ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0071.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 200.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	19000	DB
108-87-2	Methylcyclohexane	1000	U
78-87-5	1,2-Dichloropropane	1000	U
75-27-4	Bromodichloromethane	1000	U
10061-01-5	cis-1,3-Dichloropropene	1000	U
108-10-1	4-Methyl-2-pentanone	2000	U
108-88-3	Toluene	1000	U
10061-02-6	trans-1,3-Dichloropropene	1000	U
79-00-5	1,1,2-Trichloroethane	1000	U
127-18-4	Tetrachloroethene	1000	U
591-78-6	2-Hexanone	2000	U
124-48-1	Dibromochloromethane	1000	U
106-93-4	1,2-Dibromoethane	1000	U
108-90-7	Chlorobenzene	1000	U
100-41-4	Ethylbenzene	1000	U
179601-23-1	m,p-Xylene	1000	U
95-47-6	o-Xylene	1000	U
100-42-5	Styrene	1000	U
75-25-2	Bromoform	1000	U
98-82-8	Isopropylbenzene	1000	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
96-12-8	1,2-Dibromo-3-chloropropane	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
87-61-6	1,2,3-Trichlorobenzene	1000	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A28G2DL

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-04ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0071.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 200.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.09	2500	BDJ
	E966796[1]	Total Alkanes	N/A	0	J

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G3RE

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-05ARA

Sample wt/vol: #Error (g/mL) ML Lab File ID: V5H0072.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/16/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	6.4	
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	27	
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon tetrachloride	10	
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G3RE

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-05ARA

Sample wt/vol: #Error (g/mL) ML Lab File ID: V5H0072.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	55	B
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.6	
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
179601-23-1	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G5DL

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-06ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0070.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 100.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	500	U
74-87-3	Chloromethane	500	U
75-01-4	Vinyl chloride	500	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	500	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	500	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	500	U
67-64-1	Acetone	1000	U
75-15-0	Carbon disulfide	500	U
79-20-9	Methyl acetate	500	U
75-09-2	Methylene chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
1634-04-4	Methyl tert-butyl ether	500	U
75-34-3	1,1-Dichloroethane	500	U
156-59-2	cis-1,2-Dichloroethene	500	U
78-93-3	2-Butanone	1000	U
74-97-5	Bromochloromethane	500	U
67-66-3	Chloroform	500	U
71-55-6	1,1,1-Trichloroethane	500	U
110-82-7	Cyclohexane	500	U
56-23-5	Carbon tetrachloride	500	U
71-43-2	Benzene	500	U
107-06-2	1,2-Dichloroethane	500	U
123-91-1	1,4-Dioxane	10000	U

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G5DL

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-06ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0070.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 100.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	500	U
74-87-3	Chloromethane	500	U
75-01-4	Vinyl chloride	500	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	500	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	500	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	500	U
67-64-1	Acetone	1000	U
75-15-0	Carbon disulfide	500	U
79-20-9	Methyl acetate	500	U
75-09-2	Methylene chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
1634-04-4	Methyl tert-butyl ether	500	U
75-34-3	1,1-Dichloroethane	500	U
156-59-2	cis-1,2-Dichloroethene	500	U
78-93-3	2-Butanone	1000	U
74-97-5	Bromochloromethane	500	U
67-66-3	Chloroform	500	U
71-55-6	1,1,1-Trichloroethane	500	U
110-82-7	Cyclohexane	500	U
56-23-5	Carbon tetrachloride	500	U
71-43-2	Benzene	500	U
107-06-2	1,2-Dichloroethane	500	U
123-91-1	1,4-Dioxane	10000	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A28G5DL

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-06ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0070.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 100.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	9800	DB
108-87-2	Methylcyclohexane	500	U
78-87-5	1,2-Dichloropropane	500	U
75-27-4	Bromodichloromethane	500	U
10061-01-5	cis-1,3-Dichloropropene	500	U
108-10-1	4-Methyl-2-pentanone	1000	U
108-88-3	Toluene	500	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	500	U
591-78-6	2-Hexanone	1000	U
124-48-1	Dibromochloromethane	500	U
106-93-4	1,2-Dibromoethane	500	U
108-90-7	Chlorobenzene	500	U
100-41-4	Ethylbenzene	500	U
179601-23-1	m,p-Xylene	500	U
95-47-6	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
98-82-8	Isopropylbenzene	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U
541-73-1	1,3-Dichlorobenzene	500	U
106-46-7	1,4-Dichlorobenzene	500	U
95-50-1	1,2-Dichlorobenzene	500	U
96-12-8	1,2-Dibromo-3-chloropropane	500	U
120-82-1	1,2,4-Trichlorobenzene	500	U
87-61-6	1,2,3-Trichlorobenzene	500	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A28G5DL

Lab Name: MITKEM CORPORATION Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 35593 Mod. Ref No.: SDG No.: A28F9

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: E1254-06ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V5H0070.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2006

% Moisture: not dec. Date Analyzed: 08/24/2006

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 100.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.092	1200	BDJ
	E966796[1]	Total Alkanes	N/A	0	J

[1]EPA-designated Registry Number.

APPENDIX F

ARARS TABLES

TABLE F-1. ACTION-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE FOR SOURCE REMEDIATION ALTERNATIVES

Media and Authority	Requirements	Status	Action Triggering ARAR	Requirement Synopsis	Action to be taken to attain ARAR
Air					
Federal Regulatory Requirements	Clean Air Act, NAAQS (40 CFR 50.6 - 50.7)	To be Considered	This alternative includes excavation and/or earthwork.	This regulation specifies maximum primary and secondary 24-hour concentrations for particulate matter.	Standards for particulate matter will be met during excavation and handling of contaminated soils and sediments. Activities during construction will include measures to suppress dust.
Massachusetts Regulatory Requirements	Ambient Air Quality Standards (310 CMR 6.00)	Applicable to Alternatives 1A, 1B, and 2	This alternative includes excavation and/or earthwork.	Sets primary and secondary ambient air quality standards for emissions of sulfur oxides, particulate matter, CO, ozone, nitrogen dioxide, and lead.	No air emissions from remedial treatment will cause ambient air quality standards to be exceeded. Dust standards will be complied with during any and all excavation of materials at the Site.
	Massachusetts Air Pollution Control Regulations (310 CMR 7.09)	Applicable to Alternatives 1A, 1B, and 2	These alternatives includes excavation and/or earthwork.	Prohibits burning or emissions of dust which causes or contributes to a condition of air pollution. Standards for dust are contained in 310 CMR 7.09.	These standards will be complied with during any excavation of materials at the Site
	Air Pollution Control Regulations (310 CMR 7.00)	Applicable to all new sources of air emissions.	This alternative includes one or more of the following activities: earthwork and excavation; treatment of media containing organic materials; other construction activities that may generate noise	Defines and regulates air pollution sources. Establishes emissions limitations for various processes and regions within the state. Sources require source approval and may require a study of health risks. All minor stationary sources are required to apply Best Available Control Technology (BACT) for each pollutant it would have the potential to emit. Major sources of volatile organic compounds (VOCs) are required to apply Lowest Achievable Emission Rate (LAER) and obtain offsets.	The system will be designed, constructed, and operated in accordance with these rules. Any on-site treatment that generates an air emission source will comply with the substantive requirements of this regulation including visible emissions, dust, noise, VOC emission limitations, and RACT emission limitations. No air sources will cause ambient air quality standards to be exceeded.
Federal Criteria, Advisories and Guidance	ACGIH (American Conference of Governmental Industrial Hygienists) Threshold Limiting Values (TLVs)	To be considered	This alternative includes remedial actions that may pose a threat to site remediation workers	TLVs are an estimate of the average safe airborne concentration of a substance in representative conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect. These standards were issued as consensus standards for controlling air quality in work place environments.	TLVs could be used for assessing site inhalation risks for site remediation workers.
Massachusetts Criteria, Advisories, and Guidance	Massachusetts Threshold Effects Exposure Levels (TELs) and Allowable Ambient Limits (AALs) for Air (December 1995)	To be considered	This alternative includes actions that may disturb waste-containing materials	These are guidelines used by Massachusetts DEP for air emission permit writing. Under the Clean Air Act Amendments, AALs may be utilized. TELs and AALs provide guidance when assessing significance of monitored and modeled residential contamination from air emissions. They also are used in evaluating worker safety	AALs and TELs are to be considered when evaluating worker safety during Site remediation, and for ambient air quality monitoring during any Site remedy that involves disturbance of waste or contaminated materials.

TABLE F-1. ACTION-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE FOR SOURCE REMEDIATION ALTERNATIVES

Media and Authority	Requirements	Status	Action Triggering ARAR	Requirement Synopsis	Action to be taken to attain ARAR
Groundwater					
Federal Regulatory Requirements	RCRA - Subpart F Groundwater Protection Standards (40 CFR 264 90-264 109)	Relevant and Appropriate for All Alternatives	Because of the past disposal of wastes that would be considered RCRA hazardous wastes by today's standards, all remedial actions must be in conformance to RCRA groundwater protection rules.	This regulation provides for groundwater corrective measures to be conducted in the event RCRA maximum concentration limits are exceeded at points of compliance Groundwater monitoring and corrective measure response requirements are specified. Corrective measures are required within a reasonable time period.	A groundwater monitoring program will be implemented at the Site Sampling and analysis will be in accordance with approved methods, sampling locations, and plans.
Massachusetts Regulatory Requirements	Hazardous Waste Management - Groundwater Protection (310 CMR 30.660 - 30.675)	Applicable to All Alternatives	Because of the past disposal of wastes that would be considered hazardous wastes by today's standards, all remedial actions must be in conformance to these groundwater protection rules.	General groundwater monitoring requirements for facilities that treat, store, use or dispose of hazardous wastes are specified Groundwater protection standards are set and maximum concentrations of constituents for groundwater protection are specified In the event detection monitoring identifies hazardous constituents in the groundwater, compliance monitoring is required. Defines corrective action programs to prevent hazardous constituents from exceeding their respective concentration limits at compliance points.	A groundwater monitoring program will be implemented at the Site. Sampling and analysis will be in accordance with approved methods, sampling locations, and plans.
	Ground Water Quality Standards (314 CMR 6.00)	Relevant and Appropriate to In-situ Thermal Treatment (Alternative 4)	This alternative will have an effluent requiring disposal The discharge of this effluent could be directed to the groundwater system	These standards consist of groundwater classifications, water quality criteria necessary to sustain the designated uses, and regulations to achieve the designated uses or maintain existing groundwater quality. Discharge limits are specified in 314 CMR 6.07, and monitoring requirements are identified in 314 CMR 6.08.	Discharge limits and monitoring requirements will be complied with for any on-site groundwater discharge. Any groundwater requiring treatment will be treated onsite in GWTP.
	Underground Water Source Protection (310 CMR 27.00)	Applicable to In-situ Thermal Treatment (Alternative 4)	This alternative will have an effluent requiring disposal The discharge of this effluent could be directed to the groundwater system. This rule is applicable by virtue of the designation of Site contaminated groundwater as RCRA hazardous.	Established to regulate underground injection of hazardous waste and other fluids with the potential to contaminate groundwater.	No untreated contaminated groundwater will be reinjected Care will be taken to ensure that no underground injection shall allow the movement of fluid containing any pollutant into underground sources of drinking water or to cause a violation of drinking water regulations
	Underground Water Source Protection (310 CMR 27.00)	Applicable to ISCO and Enhanced Biodegradation (Alternatives 1A, 1B, 2): No Longer ARAR	These alternatives involve injection of remedial solutions into the subsurface.	Established to regulate underground injection of hazardous waste and other fluids with the potential to contaminate groundwater	Source Area injections would be exempt from permits under 314 CMR 5.05 The site is a federal Superfund site, and no permits would be required.
	Massachusetts Application of Remedial Additives (310 CMR 40.0046)	Applicable to ISCO and Enhanced Biodegradation (Alternatives 1A, 1B, 2) No Longer ARAR	These alternatives involve injection of remedial solutions into the subsurface.	Establishes regulations pertaining to the application of remedial additives to protect existing infrastructure and not exacerbate contamination, including prohibitions based on proximity to water supply sources, sampling requirements	Source Area injections would be exempt from permits under 314 CMR 5.05. The site is a federal Superfund site, and no permits would be required
Federal Criteria, Advisories and Guidance	EPA Groundwater Protection Strategy (August 1984; NCP Preamble, Vol 55, No. 46, March 8, 1990, 40 CFR Part 300, p. 8733); Guidelines for Ground-Water Classification (November 1986)	To be considered at all Alternatives	The Site overlies a GW-1 aquifer	The Groundwater Protection Strategy provides a common reference for preserving clean groundwater and protecting the public health against the effects of past contamination. Guidelines for consistency in groundwater protection programs focus on the highest beneficial use of a groundwater aquifer and define three classes of groundwater. These documents defined Class I, II and III groundwaters.	The role of CSGWPPs (Comprehensive State Ground Water Protection Programs) in EPA Remediation Programs (April 1997) defers groundwater use determination to the state for states that have a CSGWPP that is endorsed by EPA and has provisions for site-specific decisions. For states that do not have an EPA-endorsed CSGWPP, groundwater use determinations will follow the NCP preamble MA has an EPA-endorsed CSGWPP at this time

TABLE F-1. ACTION-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE FOR SOURCE REMEDIATION ALTERNATIVES

Media and Authority	Requirements	Status	Action Triggering ARAR	Requirement Synopsis	Action to be taken to attain ARAR
Soil					
Federal Regulatory Requirements	RCRA - Standards for Owners and Operators of Permitted Hazardous Waste Facilities (40 CFR 264.10 - 264.18)	Relevant and Appropriate to All Alternatives	Because of the past disposal of wastes that would be considered RCRA hazardous wastes by today's standards, all remedial actions must be in conformance with RCRA facility rules. This alternative includes movement or handling of those materials, triggering this requirement.	General hazardous waste facility requirements outline general waste analysis, security measures, inspections, and training requirements	All facilities on-site will be constructed, fenced, posted, and operated in accordance with these requirements All workers will be properly trained. Process wastes will be characterized in RCRA terms. Treatment residuals will be disposed in accordance with RCRA characterization. Construction activities will be overseen by a registered engineer to verify that activities are conducted in accordance with the approved design and these requirements.
	RCRA - Preparedness and Prevention (40 CFR 264.30 - 264.37)	Relevant and Appropriate to All Alternatives	Because of the past disposal of wastes that would be considered RCRA hazardous wastes by today's standards, all remedial actions must be in conformance with RCRA facility rules. This alternative includes movement or handling of those materials, triggering this requirement	This regulation outlines safety equipment and spill control requirements for hazardous waste facilities. Part of the regulation includes a requirement that facilities be designed, maintained, constructed and operated so that the possibility of an unplanned release which could threaten public health or the environment is minimized.	Safety and communication equipment will be available at the Site. Local authorities will be familiarized with Site operations. RCRA requirements must be considered when evaluating alternatives
	RCRA Hazardous Waste Management Regulations - Contingency Plan and Emergency Procedures (40 CFR 264.50 - 264.56)	Relevant and Appropriate to all Alternatives	Because of the past disposal of wastes that would be considered RCRA hazardous wastes by today's standards, all remedial actions must be in conformance with RCRA facility rules. This alternative includes movement or handling of those materials, triggering this requirement.	Outlines the requirements for emergency procedures to be used following explosions, fires, releases, etc. Requires that threats to public health and environment be minimized.	Substantive contingency planning requirements will be followed during remediation activities at the Site. Emergency procedures will be defined and an emergency coordinator identified.
	RCRA - Standards Applicable to Generators of Hazardous Waste (40 CFR 262)	Applicable to any action at any alternative that generates a hazardous waste	Any alternative that results in the generation of hazardous waste, or that handles material that could be classified as RCRA hazardous, will need to comply with these rules.	Generator requirements outline waste characterization, management of containers, packaging, labeling, and manifesting. Generator requirements apply to contaminated substances meeting the definition of RCRA-hazardous under 40 CFR 261. If contaminated substances at CERCLA sites are determined to be sufficiently similar to RCRA hazardous wastes, technical aspects of RCRA requirements are considered relevant and appropriate.	If removed from their location, hazardous substances must be handled, transported, and treated as RCRA hazardous waste Waste characterization at the point of generation will be conducted to verify the applicability of these requirements.
	RCRA Hazardous Waste Management Regulations - Waste Piles (40 CFR 264.250-264.259)	Applicable to Alternatives 1A, 1B, and 2	These alternatives may include treatment of hazardous wastes(soil) in piles	Sets design, operating, monitoring and inspection requirements for facilities that store or treat hazardous waste in piles. Requirements identifies response actions to correct exceedences of approved action leakage rates. Identifies closure and post-closure care requirements.	Design, operating, monitoring and inspection requirements will be followed for hazardous waste remediation that occurs in a waste pile. If, after completion of the remedy, all wastes and waste residues cannot be removed, the post-closure requirements for landfills (40 CFR 264.310) will be followed.

TABLE F-1. ACTION-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE FOR SOURCE REMEDIATION ALTERNATIVES

Media and Authority	Requirements	Status	Action Triggering ARAR	Requirement Synopsis	Action to be taken to attain ARAR
	RCRA Hazardous Waste Management Regulations - Land Treatment (40 CFR 264.270-264 283)	Relevant and Appropriate to All Alternatives	This alternative may include in-situ treatment of contaminated soils defined as hazardous wastes.	Requires that the land treatment of hazardous wastes be designed to ensure that hazardous constituents are degraded, transformed, or immobilized within the treatment zone. These regulations include requirements for a treatment demonstration, design and operating requirements, unsaturated zone monitoring, and closure and post-closure care.	If design sampling defines any contaminated soils as characteristic hazardous wastes, these requirements will be followed. Precautions will be taken to minimize, eliminate or control the release of hazardous materials from the treatment zone A treatment demonstration will be undertaken. Design and operating requirements will be followed. If, after completion of the remedy, all wastes and waste residues cannot be removed, the post-closure requirements for landfills (40 CFR 264.310) will be followed.
	RCRA Hazardous Waste Management Regulations - Corrective Action for Solid Waste Management Units (CAMU) (40 CFR 264 552-264 553)	Relevant and Appropriate to All Alternatives	Because of the past disposal of wastes that would be considered RCRA hazardous wastes by today's standards, all remedial actions must be in conformance with RCRA rules.	Provisions for areas at the facility designated as corrective action management units. Consolidation of waste in CAMUs does not constitute land disposal. Designation of CAMUs are to facilitate the implementation of effective, reliable, protective, and cost-effective measures for protecting human health and the environment against unacceptable risks from facility wastes.	CERCLA standards are consistent with CAMU standards of performance. These requirements will be attained by virtue of meeting CERCLA requirements.
	RCRA Hazardous Waste Management Regulations - Use and Management of Containers (40 CFR 264 170-264 179)	Relevant and Appropriate for all Alternatives	Because of the past disposal of wastes that would be considered RCRA hazardous wastes by today's standards, all remedial actions must be in conformance with RCRA rules. This alternative may involve storage of hazardous materials in containers (permanganate, PPE, polyethylene sheeting)	Specifies conditions under which hazardous waste may be stored in containers.	Any hazardous waste stored in containers will meet these requirements, including condition of containers and management of containers. All wastes will be compatible with the container in which it is stored Weekly inspections of containers will be incorporated into the operating procedures. All containers of hazardous waste will have secondary containment.
	Hazardous Waste Management - Requirements for Generators of Hazardous Waste (310 CMR 30.300)	Applicable to any action at any alternative that generates a hazardous waste	Any alternative that results in the generation of hazardous waste, or that handles material that could be classified as RCRA hazardous, will need to comply with these rules.	Generator requirements outline waste characterization, management of containers, packaging, labeling, and manifesting. Generator requirements apply to contaminated substances meeting the definition of hazardous under 310 CMR 100.	If removed from their location, substances meeting the definition of Massachusetts hazardous wastes must be handled, transported, and treated according to these rules. Waste characterization at the point of generation will be conducted to verify the applicability of these hazardous waste generator requirements.
	Hazardous Waste Management - Management Standards for all Hazardous Waste Facilities (310 CMR 30.500)	Applicable to All Alternatives	Because of the past disposal of wastes that would be considered RCRA hazardous wastes by today's standards, all remedial actions must be in conformance with RCRA facility rules. This alternative includes movement or handling of those materials, triggering this requirement.	Management standards for all facilities that treat, store, use or dispose of hazardous wastes on-site include general waste analysis, inspection, personnel training, contingency plans, use and management of containers, and labelling and marking containers.	A sample of any material to be stored or treated on-site will be obtained. Analytical results will be used to establish the need for waste management controls.

TABLE F-1. ACTION-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE FOR SOURCE REMEDIATION ALTERNATIVES

Media and Authority	Requirements	Status	Action Triggering ARAR	Requirement Synopsis	Action to be taken to attain ARAR
	Hazardous Waste Management - Contingency Plan, Emergency Procedures, Preparedness, and Prevention (310 CMR 30.520)	Applicable to All Alternatives	Because of the past disposal of wastes that would be considered RCRA hazardous wastes by today's standards, all remedial actions must be in conformance with RCRA facility rules. This alternative includes movement or handling of those materials, triggering this requirement	Prescribes requirements for preparing and implementing a contingency plan to prevent and minimize hazards to public health, safety, or the environment from unplanned releases of hazardous constituents into air, soil, surface water or groundwater.	A contingency plan will be required in the event that materials treated or handled in bulk on-site are characterized as hazardous materials. The need for the plan will be determined after sampling and analysis of each media to be treated or handled. Analytical results will be used to establish contingency plan actions.
	Hazardous Waste Management - Waste Piles (310 CMR 30.640)	Applicable to Alternatives 1, 2, and 4			A sample of any material to be stored or treated on-site will be obtained. Analytical results will be used to establish construction materials and specifications. These regulations will be adhered to in the event that waste materials handled, treated or stored on site are determined to be characteristic hazardous wastes. If necessary, construction activities will be overseen by a registered engineer to verify that activities are conducted in accordance with the design and these requirements.
	Hazardous Waste Management - Land Treatment Units (310 CMR 30.650)	Applicable to Alternatives 1, 2, and 4			A sample of any material to be stored or treated on-site will be obtained. Analytical results will be used to establish construction materials and specifications. These regulations will be adhered to in the event that waste materials handled, treated or stored on site are determined to be characteristic hazardous wastes. If necessary, construction activities will be overseen by a registered engineer to verify that activities are conducted in accordance with the design and these requirements.
	Hazardous Waste Management - Use and Management of Containers (310 CMR 30.680)	Applicable to Alternatives 1, 2, and 4	Because of the past disposal of wastes that would be considered RCRA hazardous wastes by today's standards, all remedial actions must be in conformance with RCRA facility rules. This alternative includes movement or handling of those materials, triggering this requirement	Labelling and marking, management procedures, inspections, and containment requirements are given for containers used to store hazardous wastes	These requirements will be adhered to in the event that waste materials handled, treated or stored on site are determined to be characteristic hazardous wastes. Containers will be selected based on compatability with waste materials, secondary containment will be provided, weekly inspections will be conducted, and all containers will be managed in accordance with these requirements, including adequate aisle space.

TABLE F-2. CHEMICAL-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE

Media/ Authority	Requirements	Status	Requirement Synopsis	Consideration in the Alternative Evaluation
Air				
Federal Regulatory Requirements	Clean Air Act, NAAQS (40 CFR 50.1 - 50.12)	Relevant and Appropriate	NAAQS define levels of primary and secondary levels for listed air contaminants, primarily for stack and automobile emissions.	Standards for particulate matter, and gas emissions will be used when assessing off-site impact of remedial activities.
	Clean Air Act - State Implementation Plans - 40 CFR 52	Relevant and Appropriate	These federally-approved Commonwealth standards were primarily developed to regulate stack (point source) automobile-related pollutants, and volatile organic compounds (VOCs).	These standards for particulate matter and VOCs will be used when assessing excavation and emission controls for soil and groundwater treatment.
	RCRA Standards for land treatment (40 CFR 264.251, 264.273, 264.301	To Be Considered	RCRA air regulations for hazardous waste piles, land treatment, and landfills require that particulates be controlled by covers or other means	Should be considered when developing remedies for site
	RCRA Standards for TSDFs (40 CFR Part 269)	To Be Considered	RCRA air regulations for treatment, storage, and disposal facilities other than incinerator and land disposal facilities.	Should be considered when developing remedies for site
Massachusetts Regulatory Requirements	Ambient Air Quality Standards (310 CMR 6.00)	Applicable	Sets primary and secondary standards for emissions of Sulfur Oxides, particulate matter, CO, ozone, Nitrogen Dioxide, and Lead. Standards were developed primarily for stack and automobile emissions	Remedies will be designed, constructed, and operated in accordance with these rules.
	Air Pollution Control Regulations (310 CMR 7.00)	Applicable	Prohibit burning or emissions of dust which causes or contributes to a condition of air pollution. Establishes emissions limitations for various processes and regions within the state.	Remedies will be designed, constructed, and operated in accordance with these rules.
Federal Criteria, Advisories, and Guidance	Threshold Limit Values (TLVs)	To be considered	These standards were issued as consensus standards for controlling air quality in work place environments.	TLVs will be used for assessing site inhalation risks for site remediation workers.

TABLE F-2. CHEMICAL-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE

Media/ Authority	Requirements	Status	Requirement Synopsis	Consideration in the Alternative Evaluation
Groundwater				
Federal Regulatory Requirements	Resource Conservation and Recovery Act (42 U.S.C. §6901 et seq.); (40 CFR 264.94)	Applicable	Establishes maximum concentration limits for RCRA groundwater monitoring and response requirements. A risk-based Alternate Concentration may also be applied for. Standards for 14 toxic compounds have been adopted as part of RCRA groundwater protection standards. RCRA sets the limit for organic constituents at background levels. The groundwater protection regulations require the setting of groundwater protection standards which must be protective of public health and the environment.	During design of any groundwater interception and treatment system, these standards will be incorporated. Remedial actions will comply with either RCRA MCLs or site-specific risk-based Alternate Concentration Limits.
	Safe Drinking Water Act (42 U.S.C. §300f *et seq.*); National primary drinking water regulations (40 CFR 141)	Relevant and Appropriate	Establishes MCLs for common organic and inorganic contaminants applicable to public drinking water supplies. Used as relevant and appropriate cleanup standards for aquifers and surface water bodies that are potential drinking water sources.	MCLs were used to set clean-up levels in groundwater for these contaminants. Cleanup of soil will assure that groundwater is not contaminated further. Remedial actions including groundwater treatment and discharge will be designed and implemented to meet this requirement.
	Safe Drinking Water Act (42 U.S.C. §300f *et seq* .); National primary drinking water regulations (40 CFR 141)	Relevant and Appropriate for non-zero MCLGs only	Establishes MCLGs for public water supplies. MCLGs are health goals for drinking water sources. These unenforceable health goals are available for a number of organic and inorganic compounds.	Non-zero MCLGs are relevant and appropriate, as discussed for MCLs above. MCLGs set at zero are to be considered. Remedial actions including groundwater treatment and discharge will be designed and implemented to meet this requirement.
	Federal Underground Injection Control Program (40 CFR 144-148)	Applicable: No Longer ARAR	This program provides standards, technical assistance, and grants to state and local governments to oversee underground injection of waste and regulate injection wells in order to prevent contamination of drinking water resources.	The EPA has delegated primacy for all well classes to 34 states, including Massachusetts. All potential permits and approvals for injection wells are at the discretion of MassDEP and regulations of the Commonwealth.
State Regulatory Requirements	Massachusetts Ground Water Quality Standards (314 CMR §6.00)	Applicable: No Longer ARAR	Establishes groundwater classifications, water quality criteria necessary to sustain the designated uses, and regulations necessary to achieve the designated uses or maintain the existing groundwater quality. When state levels are more stringent than federal levels, the state levels will be used.	Groundwater at Site falls under "Class I" classification (fresh groundwater found in the saturated zone of unconsolidated deposits or consolidated rock and bedrock are designated as a potable water supply). Groundwater Standards for iron and manganese are the only Commonwealth standards more stringent than federal standards for chemicals.
	Massachusetts Drinking Water Regulations (310 CMR §22.00)	Relevant and Appropriate	Establishes maximum contaminant levels that apply to public drinking water supplies. Massachusetts Maximum Contaminant Levels and Maximum Contaminant Level Goals are specified for numerous contaminants, including inorganic and organic chemicals. For the most part, the numerical criteria are identical to Federal SDWA MCLs and MCLGs, although there are several additional chemicals that have criteria.	Since DEQE drinking water standards are the same as MCLs, promulgated MCLs were used to set clean-up levels for contaminants of concern. Remedial actions including groundwater treatment and discharge will be designed and implemented to meet these standards.
	Massachusetts Groundwater Discharge Permit Program (314 CMR 5.00)	Applicable: No Longer ARAR	Regulations for groundwater discharge limitations.	Discharges to this Class I aquifer must meet levels set at MCLs.
	Massachusetts Office of Research and Standards Guidelines	To be considered	DEP Health Advisories are guidance criteria for drinking water and were used to develop discharge levels for surface water and groundwater. The DEP Office of Research and Standards issues guidelines for chemicals for which state MCLs have not been promulgated. These guidelines apply to non-chlorinated water supplies and represent a level at or below which adverse, non-cancer health effects are not expected to occur and which generally has an excess lifetime cancer risk of less than or equal to 10-6.	Remedial actions including groundwater treatment and discharge will be designed and implemented in consideration of these standards.

TABLE F-2. CHEMICAL-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE

Media/ Authority	Requirements	Status	Requirement Synopsis	Consideration in the Alternative Evaluation
Soil				
Federal Regulatory Requirements	There are no set maximum allowable residual levels for chemicals in soils and sediments under federal law.			
Massachusetts Regulatory Requirements	MADEP 310 CMR 40.0975 (6)(a), Standards for S-1 Soil and GW-1 Groundwater	Not Applicable	These levels can be used in lieu of a site-specific risk characterization to determine if there is significant risk to human health or the environment.	Not ARAR or TBC if a site-specific risk characterization has established risk-based PRGs or has established no significant risk for the media evaluated.

TABLE F-3. LOCATION-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE

Media/ Authority	Requirements	Status	Requirement Synopsis	Consideration in the Alternative Evaluation
There were no location specific ARARs in the source area ROD. Since the Valley building is not historic, and there are no archeological sites, endangered species, water-bodies, floodplains, or wetlands in the immediate vicinity of the source area or that would be impacted by the potential remedies, the same assumptions for (location specific) ARARs were used for the remedies evaluated in this report.				

APPENDIX G

INDOOR AIR EVALUATION

INDOOR AIR EVALUATION
GROVELAND WELLS NOs. 1 AND 2 SUPERFUND SITE

A pathway of potential future concern identified in the June 2005 Five-Year Review for the Groveland Superfund Site was the vapor intrusion pathway due to the presence of shallow soil and groundwater contaminated with VOCs in close proximity to existing buildings. Recent groundwater data at the site indicated exceedances of the trichloroethene (TCE) generic screening values for the indoor air pathway (5 ug/L; USEPA, 2002) where soil VOCs are also present. Therefore, the potential exists for indoor air impacts should an existing building become occupied or should a new building be constructed in the area of VOC-impacted soil and groundwater.

This appendix contains a screening-level risk evaluation to address the future on-property vapor intrusion pathway. As a risk screening, the maximally-exposed future receptor (i.e., adult/child resident) was evaluated using conservative exposure point concentrations and exposure assumptions. Table 1 identifies the receptors and pathways evaluated in the risk screening. Should risk and hazard within or below risk management guidelines be identified using the conservative approach employed in this screening, then risk and hazard associated with less conservative on-property conditions (e.g., commercial use) would also be less than those estimated and also be within or below risk management guidelines.

To most accurately evaluate the vapor intrusion pathway, sub-slab soil vapor sampling was conducted in May 2006 at eight locations within the existing building (AR-01 through AR-08, plus a duplicate sample at AR-02) using Summa canisters. Air samples were analyzed for VOCs via Method TO15 and validated to Tier II. Maximum detected concentrations are summarized on Table 2. Contaminants reported as below the detection limit ("U" qualified) in all of the samples are not listed on Table 2.

The Johnson and Ettinger model (USEPA, 2003) was then used to estimate potential worst-case indoor air concentrations, based on the maximum soil vapor concentrations, using assumptions provided in Table 3. The maximum modeled indoor air concentrations (summarized on Table 4) were then compared to Region 9 Preliminary Remediation Goals (PRGs) for ambient air (USEPA, 2004) based on a cancer risk of 1E-06 and adjusted to a noncarcinogenic risk of 0.1. This comparison, provided in Table 5, is used to focus the evaluation on the most significant potential risk contributors. Based on this comparison, only TCE was selected for further evaluation, using

a maximum modeled indoor air concentration of 0.27 ug/m^3 (Table 6).

For the purposes of risk screening, future residents (adults and young children) were assumed to be exposed 24 hours per day, 350 days of the year, for a combined exposure duration of 30 years. The exposure assumptions are presented in Table 7 and represent reasonable maximum exposure (RME) assumptions for residential scenarios presented in the *Exposure Factors Handbook* (USEPA, 1997). Inhalation toxicity values to account for the noncarcinogenic and carcinogenic effects of TCE are provided in Tables 8 and 9, respectively.

This evaluation indicates that potential on-property risks and hazards are within or below EPA risk management guidelines (cancer risk between 10^{-4} and 10^{-6} and noncarcinogenic hazard of one), based on assumed residential property use. Adult and young child risks and hazards are presented in Tables 10 and 11, respectively. Total receptor risks (summed for the adult and child) are presented in Table 12. The total receptor cancer risk is estimated as 1 x 10^{-5} and the noncarcinogenic hazard as 0.007.

Based on these results of the risk screening, the future on-property indoor air pathway is unlikely to present a risk of harm to humans. Because the on-property VOC levels in soil and groundwater are greater than those in off-property locations, the off-property indoor air pathway is also unlikely to present a risk of harm to off-property receptors.

U.S. Environmental Protection Agency (USEPA). 1989. *Risk assessment guidance for Superfund. Volume I: Human health evaluation manual. Part A.* Interim Final. EPA/540/1-89/002. December 1989.

U.S. Environmental Protection Agency (USEPA). 1994. *Risk updates, no. 2.* USEPA Region I. August 1994.

U.S. Environmental Protection Agency (USEPA). 1997. *Exposure factors handbook.* Office of Research and Development. Washington, D.C. August 1997.

U.S. Environmental Protection Agency (USEPA). 2001. *Trichloroethylene health risk assessment: Synthesis and characterization (External Review Draft).* Office of Research and Development. National Center for Environmental Assessment. Washington, D.C. EPA/600/P-01/002A. 2001.

U.S. Environmental Protection Agency (USEPA). 2002. *Draft guidance for evaluating the vapor intrusion to indoor air pathway from groundwater and soils.* RCRA/2002/033. November

2002. http://www.epa.gov/correctiveaction/eis/vapor.htm.

U.S. Environmental Protection Agency (USEPA). 2003. *User's guide for evaluating subsurface vapor intrusion into buildings.* Prepared by Environmental Quality Management, Inc. for USEPA. June 19, 2003.

U.S. Environmental Protection Agency (USEPA). 2004. *Preliminary remediation goals table. Region 9 technical support team.* Office of Superfund Programs. Region IX. October 2004.

TABLE 1

SELECTION OF EXPOSURE PATHWAYS
GROVELAND WELLS SUPERFUND SITE

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route (1)	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Soil Gas	Indoor Air	On-Property Residences	Resident	Adult	Inhalation	Quant	The subsurface vapor migration pathway may be complete if residences are constructed on the property.
					Young Child	Inhalation	Quant	The subsurface vapor migration pathway may be complete if residences are constructed on the property.

TABLE 2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
GROVELAND WEILLS SUPERFUND SITE

Scenario Timeframe: Future
Medium: Soil Gas
Exposure Medium: Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Maximum Concentration (Qualifier) (2)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
On-Property (a)	71-55-6	1,1,1-Trichloroethane	NA	0.29	ppbv	1.6	ug/m3	AR-08	3 / 8	NA
	106-46-7	1,4-Dichlorobenzene	NA	1.2	ppbv	7.2	ug/m3	AR-06	3 / 8	NA
	78-93-3	2-Butanone	NA	5.7	ppbv	17	ug/m3	AR-07	6 / 8	NA
	67-64-1	Acetone	NA	26	ppbv	62	ug/m3	AR-04	8 / 8	NA
	71-43-2	Benzene	NA	0.47	ppbv	1.5	ug/m3	AR-05	2 / 8	NA
	74-83-9	Bromomethane	NA	1.1	ppbv	4.3	ug/m3	AR-07	1 / 8	NA
	75-15-0	Carbon Disulfide	NA	9.5	ppbv	31	ug/m3	AR-07	1 / 8	NA
	75-00-3	Chloroethane	NA	16	ppbv	42	ug/m3	AR-02	4 / 8	NA
	67-66-3	Chloroform	NA	67	ppbv	327	ug/m3	AR-07	8 / 8	NA
	74-87-3	Chloromethane	NA	0.50	ppbv	1.0	ug/m3	AR-07	4 / 8	NA
	156-59-2	cis-1,2-Dichloroethene	NA	41	ppbv	163	ug/m3	AR-02	6 / 8	NA
	75-71-8	Dichlorodifluoromethane	NA	0.62	ppbv	3.1	ug/m3	AR-05	5 / 8	NA
	127-18-4	Tetrachloroethene	NA	48	ppbv	325	ug/m3	AR-05	8 / 8	NA
	156-60-5	trans-1,2-Dichloroethene	NA	2.5	ppbv	9.9	ug/m3	AR-01	2 / 8	NA
	79-01-6	Trichloroethene	NA	1100	ppbv	5911	ug/m3	AR-02	8 / 8	NA
	75-69-4	Trichlorofluoromethane	NA	1.2	ppbv	7.3	ug/m3	AR-01	5 / 8	NA
	103-38-3/106-42	Xylene, m/p-	NA	0.27	ppbv	1.2	ug/m3	AR-01	1 / 8	NA

(a) Samples include AR-01, AR-02 (plus duplicate), AR-03, AR-04, AR-05, AR-06, AR-07, and AR-08.

(1) Minimum/maximum detected concentration
(2) ug/m3 = ppbv * MW/24.45

TABLE 3
SOIL GAS TO INDOOR AIR
GROVELAND WELLS SUPERFUND SITE

Units:	Soil EPC C_R µg/kg	Soil Temp. T_S °C	Soil Temp. T'_S K	Henry's Law Constant at ref. temp. H_R atm-m^3/mol	Henry's Law Reference Temp. T_R K	Normal Boiling Point T_B K	Enthalpy of vaporization at T_S ΔH_{vB} cal/mol	Critical Temp. T_C K	constant n unitless	Enthalpy of vaporization at T_S ΔH_{vTS} cal/mol	Gas Constant R_c cal/mol-K	Henry's Law Constant at T_S H_{TS} atm-m^3/mol	Gas Constant R m^3-atm/mol-K	Henry's Law Constant H'_{TS} unitless
Formula.	**Input**	(10 for screening)	(T_S + 273.15)	lookup	(lookup+273.15)	lookup	lookup	lookup	(Note 7)	(Note 8)		(Note 9)		H_{TS} / (R * T'_S)
Analyte														
1,1,1-Trichloroethane	Not used	1.00E+01	2.83E+02	1 72E-02	2.98E+02	3.47E+02	7 14E+03	5 45E+02	3 55E-01	7.88E+03	1.99E+00	8.48E-03	8 21E-05	3 65E-01
1,4-Dichlorobenzene	Not used	1.00E+01	2.83E+02	2 39E-03	2.98E+02	4.47E+02	9 27E+03	6 85E+02	3 67E-01	1.12E+04	1.99E+00	8.76E-04	8 21E-05	3 77E-02
2-Butanone	Not used	1.00E+01	2.83E+02	5.58E-05	2.98E+02	3.53E+02	7.48E+03	5.37E+02	3.70E-01	8.42E+03	1.99E+00	2.63E-05	8.21E-05	1.13E-03
Acetone	Not used	1.00E+01	2.83E+02	3.87E-05	2.98E+02	3.29E+02	6.96E+03	5.08E+02	3.63E-01	7.56E+03	1.99E+00	1.97E-05	8.21E-05	8.47E-04
Benzene	Not used	1.00E+01	2.83E+02	5 54E-03	2.98E+02	3.53E+02	7 34E+03	5 62E+02	3 49E-01	8.12E+03	1.99E+00	2.68E-03	8 21E-05	1 15E-01
Bromomethane	Not used	1.00E+01	2.83E+02	6 22E-03	2.98E+02	2.77E+02	5 71E+03	4 67E+02	3 22E-01	5.65E+03	1.99E+00	3.76E-03	8 21E-05	1 62E-01
Carbon Disulfide	Not used	1.00E+01	2.83E+02	3.02E-02	2.98E+02	3.19E+02	6.39E+03	5.52E+02	3.12E-01	6.68E+03	1.99E+00	1.66E-02	8.21E-05	7.16E-01
Chloroethane	Not used	1.00E+01	2.83E+02	8 80E-03	2.98E+02	2.85E+02	5 88E+03	4 60E+02	3 43E-01	5.90E+03	1.99E+00	5.19E-03	8 21E-05	2 23E-01
Chloroform	Not used	1.00E+01	2.83E+02	3.66E-03	2.98E+02	3.34E+02	6.99E+03	5.36E+02	3.45E-01	7.55E+03	1.99E+00	1.86E-03	8.21E-05	8.02E-02
Chloromethane	Not used	1.00E+01	2.83E+02	8.80E-03	2.98E+02	2.49E+02	5.11E+03	4.16E+02	3.27E-01	4.75E+03	1.99E+00	5.76E-03	8.21E-05	2.48E-01
cis-1,2-Dichloroethene	Not used	1.00E+01	2.83E+02	4.07E-03	2.98E+02	3.34E+02	7.19E+03	5.44E+02	3.38E-01	7.73E+03	1.99E+00	2.04E-03	8.21E-05	8.77E-02
Dichlorodifluoromethane	Not used	1.00E+01	2.83E+02	3 42E-01	2.98E+02	2.43E+02	9 42E+03	3 85E+02	3 52E-01	8.39E+03	1.99E+00	1.62E-01	8 21E-05	6.96E+00
Tetrachloroethene	Not used	1.00E+01	2.83E+02	1.84E-02	2.98E+02	3.94E+02	8.29E+03	6.20E+02	3.55E-01	9.55E+03	1.99E+00	7.81E-03	8.21E-05	3.36E-01
trans-1,2-Dichloroethene	Not used	1.00E+01	2.83E+02	9.36E-03	2.98E+02	3.21E+02	6.72E+03	5.17E+02	3.44E-01	7.14E+03	1.99E+00	4.94E-03	8.21E-05	2.13E-01
Trichloroethene	Not used	1.00E+01	2.83E+02	1.03E-02	2.98E+02	3.60E+02	7.51E+03	5.44E+02	3.74E-01	8.56E+03	1.99E+00	4.78E-03	8.21E-05	2.06E-01
Trichlorofluoromethane	Not used	1.00E+01	2.83E+02	9.68E-02	2.98E+02	2.97E+02	6.00E+03	4.71E+02	3.50E-01	6.16E+03	1.99E+00	5.58E-02	8.21E-05	2.40E+00
Xylene, m/p-	Not used	1.00E+01	2.83E+02	6 73E-03	2.98E+02	4.12E+02	8 53E+03	6 16E+02	3 78E-01	1.02E+04	1.99E+00	2.69E-03	8 21E-05	1 16E-01

TABLE 3 (continued)
SOIL GAS TO INDOOR AIR
GROVELAND WELLS SUPERFUND SITE

	Conversion Factor µg/kg to g/g	SCS soil type in vadose zone	Vadose zone soil dry bulk density	Vadose zone soil water-filled porosity	Organic carbon partition coefficient	Vadose zone organic carbon fraction	Soil-water partition coefficient	Vadose zone soil total porosity	Vadose zone soil air-filled porosity	Conversion Factor g/cm^3 to $\mu g/m^3$	Source Vapor Conc.
	Conv01	ST_v	ρ_b	$\theta_{w,v}$	K_{oc}	$f_{oc,v}$	K_d	n_v	$\theta_{a,v}$	Conv03	C_{source}
Units:	µg/kg / g/g	unitless	g/cm^3	cm^3/cm^3	cm^3/g	unitless	cm^3/g	cm^3/cm^3	cm^3/cm^3	g/cm^3 / $\mu g/m^3$	$\mu g/m^3$
Formula.		(Note 11)	lookup	lookup	lookup	(0.002 for screening)	$K_{oc} * f_{oc}$	lookup	$n_v - \theta_{w,v}$		**(Input)**
Analyte											
1,1,1-Trichloroethane	1.00E-09	SCL	1.63E+00	1.46E-01	1.10E+02	2.00E-03	2.20E-01	3.84E-01	2.38E-01	1.00E+12	**1.58E+00**
1,4-Dichlorobenzene	1.00E-09	SCL	1.63E+00	1.46E-01	6.17E+02	2.00E-03	1.23E+00	3.84E-01	2.38E-01	1.00E+12	**7.21E+00**
2-Butanone	1.00E-09	SCL	1.63E+00	1.46E-01	2.30E+00	2.00E-03	4.60E-03	3.84E-01	2.38E-01	1.00E+12	**1.68E+01**
Acetone	1.00E-09	SCL	1.63E+00	1.46E-01	5.75E-01	2.00E-03	1.15E-03	3.84E-01	2.38E-01	1.00E+12	**6.18E+01**
Benzene	1.00E-09	SCL	1.63E+00	1.46E-01	5.89E+01	2.00E-03	1.18E-01	3.84E-01	2.38E-01	1.00E+12	**1.50E+00**
Bromomethane	1.00E-09	SCL	1.63E+00	1.46E-01	1.05E+01	2.00E-03	2.10E-02	3.84E-01	2.38E-01	1.00E+12	**4.27E+00**
Carbon Disulfide	1.00E-09	SCL	1.63E+00	1.46E-01	4.57E+01	2.00E-03	9.14E-02	3.84E-01	2.38E-01	1.00E+12	**3.11E+01**
Chloroethane	1.00E-09	SCL	1.63E+00	1.46E-01	4.40E+00	2.00E-03	8.79E-03	3.84E-01	2.38E-01	1.00E+12	**4.22E+01**
Chloroform	1.00E-09	SCL	1.63E+00	1.46E-01	3.98E+01	2.00E-03	7.96E-02	3.84E-01	2.38E-01	1.00E+12	**3.27E+02**
Chloromethane	1.00E-09	SCL	1.63E+00	1.46E-01	2.12E+00	2.00E-03	4.24E-03	3.84E-01	2.38E-01	1.00E+12	**1.03E+00**
cis-1,2-Dichloroethene	1.00E-09	SCL	1.63E+00	1.46E-01	3.55E+01	2.00E-03	7.10E-02	3.84E-01	2.38E-01	1.00E+12	**1.63E+02**
Dichlorodifluoromethane	1.00E-09	SCL	1.63E+00	1.46E-01	4.57E+02	2.00E-03	9.14E-01	3.84E-01	2.38E-01	1.00E+12	**3.07E+00**
Tetrachloroethene	1.00E-09	SCL	1.63E+00	1.46E-01	1.55E+02	2.00E-03	3.10E-01	3.84E-01	2.38E-01	1.00E+12	**3.25E+02**
trans-1,2-Dichloroethene	1.00E-09	SCL	1.63E+00	1.46E-01	5.25E+01	2.00E-03	1.05E-01	3.84E-01	2.38E-01	1.00E+12	**9.91E+00**
Trichloroethene	1.00E-09	SCL	1.63E+00	1.46E-01	1.66E+02	2.00E-03	3.32E-01	3.84E-01	2.38E-01	1.00E+12	**5.91E+03**
Trichlorofluoromethane	1.00E-09	SCL	1.63E+00	1.46E-01	4.97E+02	2.00E-03	9.93E-01	3.84E-01	2.38E-01	1.00E+12	**7.33E+00**
Xylene, m/p-	1.00E-09	SCL	1.63E+00	1.46E-01	2.49E+02	2.00E-03	4.99E-01	3.84E-01	2.38E-01	1.00E+12	**1.17E+00**

TABLE 3 (continued)
SOIL GAS TO INDOOR AIR
GROVELAND WELLS SUPERFUND SITE

	Depth below grade to bottom of enclosed space	Depth below grade to contamination	Source Building Separation	Diffusivity in air	Diffusivity in water	Vadose zone Effective Diffusion Coeff.	Total Overall Effective Diffusion Coeff.	Area of Enclosed Space Below Grade	Building Ventilation Rate	Pressure Diff. between soil & enclosed space	Vadose zone soil saturated hydraulic conductivity	Conversion Factor hr to s
Units:	cm	cm	cm	cm^2/s	cm^2/s	cm^2/s	cm^2/s	cm^2	cm^3/s	$g/cm\text{-}s^2$	cm/hr	s/hr
Formula:	(15 or 200 for screening)	(400 for screening)	$L_t - L_F$	lookup	lookup	(Note 13)	(Note 4)	(Note 2)	(Note 2a)	(40 for screening)	lookup	Conv02
Analyte	L_F	L_t	L_T	D_a	D_w	D_v^{eff}	D_T^{eff}	A_B	$Q_{building}$	ΔP	$K_{s,v}$	
1,1,1-Trichloroethane	2.00E+02	4.00E+02	2.00E+02	7.80E-02	8.80E-06	4.44E-03	4.44E-03	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03
1,4-Dichlorobenzene	2.00E+02	4.00E+02	2.00E+02	6.90E-02	7.90E-06	3.93E-03	3.93E-03	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03
2-Butanone	2.00E+02	4.00E+02	2.00E+02	8.08E-02	9.80E-06	4.70E-03	4.70E-03	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03
Acetone	2.00E+02	4.00E+02	2.00E+02	1.24E-01	1.14E-05	7.21E-03	7.21E-03	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03
Benzene	2.00E+02	4.00E+02	2.00E+02	8.80E-02	9.80E-06	5.01E-03	5.01E-03	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03
Bromomethane	2.00E+02	4.00E+02	2.00E+02	7.28E-02	1.21E-05	4.15E-03	4.15E-03	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03
Carbon Disulfide	2.00E+02	4.00E+02	2.00E+02	1.04E-01	1.00E-05	5.92E-03	5.92E-03	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03
Chloroethane	2.00E+02	4.00E+02	2.00E+02	2.71E-01	1.15E-05	1.54E-02	1.54E-02	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03
Chloroform	2.00E+02	4.00E+02	2.00E+02	1.04E-01	1.00E-05	5.92E-03	5.92E-03	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03
Chloromethane	2.00E+02	4.00E+02	2.00E+02	1.26E-01	6.50E-06	7.17E-03	7.17E-03	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03
cis-1,2-Dichloroethene	2.00E+02	4.00E+02	2.00E+02	7.36E-02	1.13E-05	4.19E-03	4.19E-03	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03
Dichlorodifluoromethane	2.00E+02	4.00E+02	2.00E+02	6.65E-02	9.92E-06	3.79E-03	3.79E-03	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03
Tetrachloroethene	2.00E+02	4.00E+02	2.00E+02	7.20E-02	8.20E-06	4.10E-03	4.10E-03	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03
trans-1,2-Dichloroethene	2.00E+02	4.00E+02	2.00E+02	7.07E-02	1.19E-05	4.03E-03	4.03E-03	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03
Trichloroethene	2.00E+02	4.00E+02	2.00E+02	7.90E-02	9.10E-06	4.50E-03	4.50E-03	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03
Trichlorofluoromethane	2.00E+02	4.00E+02	2.00E+02	8.70E-02	9.70E-06	4.95E-03	4.95E-03	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03
Xylene, m/p-	2.00E+02	4.00E+02	2.00E+02	7.69E-02	8.44E-06	4.38E-03	4.38E-03	1.80E+06	2.54E+04	4.00E+01	5.50E-01	3.60E+03

TABLE 3 (continued)
SOIL GAS TO INDOOR AIR
GROVELAND WELLS SUPERFUND SITE

	Viscosity of water at 10°C	Viscosity of water at system temp.	Density of water	Acceleration due to gravity	Vadose zone soil intrinsic permeability	Vadose zone residual soil water content	Vadose zone effective total fluid saturation	Vadose zone van Genuchten shape parameter	Vadose zone soil relative air permeability	Vadose zone soil effective vapor permeability
Units:	$\mu_{w\text{-}10}$ g/cm-s	μ_w g/cm-s	ρ_w g/cm^3	g cm/s^2	$k_{i,v}$ cm^2	$\theta_{r,v}$ cm^3/cm^3	S_{te} unitless	M_v unitless	k_{rg} unitless	k_v cm^2
Formula:		(Note 16)	(0 999 for screening)		(Note 17)	lookup	(Note 18)	lookup	(Note 19)	(Note 20)
Analyte										
1,1,1-Trichloroethane	1.31E-02	1 31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09
1,4-Dichlorobenzene	1.31E-02	1.31E-02	9.99E-01	9 81E+02	2 04E-09	6 30E-02	2 59E-01	2 48E-01	8 59E-01	1 75E-09
2-Butanone	1 31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09
Acetone	1.31E-02	1.31E-02	9 99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09
Benzene	1 31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09
Bromomethane	1 31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09
Carbon Disulfide	1.31E-02	1.31E-02	9 99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09
Chloroethane	1 31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09
Chloroform	1.31E-02	1.31E-02	9 99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09
Chloromethane	1.31E-02	1.31E-02	9 99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09
cis-1,2-Dichloroethene	1.31E-02	1.31E-02	9 99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09
Dichlorodifluoromethane	1 31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09
Tetrachloroethene	1.31E-02	1.31E-02	9 99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09
trans-1,2-Dichloroethene	1.31E-02	1.31E-02	9 99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09
Trichloroethene	1.31E-02	1.31E-02	9 99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09
Trichlorofluoromethane	1.31E-02	1.31E-02	9 99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09
Xylene, m/p-	1 31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09

TABLE 3 (continued)
SOIL GAS TO INDOOR AIR
GROVELAND WELLS SUPERFUND SITE

	Floor-wall seam perimeter	Vapor viscosity at avg. soil temp.	Crack depth below grade	Total area of cracks	Crack-to-total area ratio	Equivalent crack radius	Avg. Vapor Flow Rate Into Bldg.	Foundation or Slab Thickness	Crack Effective Diffusion Coeff.	Infinite Source Indoor Attenuation Coeff.	Infinite Source Bldg. Conc.
	X_{crack}	μ_{TS}	Z_{crack}	A_{crack}	η	r_{crack}	Q_{soil}	L_{crack}	D^{crack}	α	$C_{building}$
Units:	cm	g/cm-s	cm	cm^2	unitless	cm	cm^3/s	cm	cm^2/s	unitless	$\mu g/m^3$
Formula:	(4000 for screening)	$0.00018*(T'_S/298.15)^{\wedge}0.5$	(= L_F for screening)	(400 for screening)	A_{crack}/A_B	$\eta(A_B/X_{crack})$	(Note 5)	(10 for screening)	(Note 1)	(Note 6)	$C_{source} * \alpha$
Analyte											
1,1,1-Trichloroethane	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	4.44E-03	4.63E-05	7.32E-05
1,4-Dichlorobenzene	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	3.93E-03	4.61E-05	3.32E-04
2-Butanone	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	4.70E-03	4.64E-05	7.78E-04
Acetone	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	7.21E-03	4.74E-05	2.93E-03
Benzene	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	5.01E-03	4.65E-05	6.98E-05
Bromomethane	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	4.15E-03	4.61E-05	1.97E-04
Carbon Disulfide	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	5.92E-03	4.68E-05	1.46E-03
Chloroethane	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	1.54E-02	5.49E-05	2.32E-03
Chloroform	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	5.92E-03	4.68E-05	1.53E-02
Chloromethane	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	7.17E-03	4.74E-05	4.90E-05
cis-1,2-Dichloroethene	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	4.19E-03	4.62E-05	7.50E-03
Dichlorodifluoromethane	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	3.79E-03	4.60E-05	1.41E-04
Tetrachloroethene	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	4.10E-03	4.61E-05	1.50E-02
trans-1,2-Dichloroethene	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	4.03E-03	4.61E-05	4.57E-04
Trichloroethene	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	4.50E-03	4.63E-05	2.74E-01
Trichlorofluoromethane	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	4.95E-03	4.65E-05	3.41E-04
Xylene, m/p-	4.00E+03	1.75E-04	2.00E+02	4.00E+02	2.22E-04	1.00E-01	1.21E+00	1.00E+01	4.38E-03	4.62E-05	5.42E-05

TABLE 3 (continued)
SOIL GAS TO INDOOR AIR
GROVELAND WELLS SUPERFUND SITE

Notes:

Reference: *User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings* , USEPA, June 19, 2003.

(1) Assumed equivalent to D_i^{eff} of soil layer i in contact with the floor

(2) For screening, A_B = 1,000,000 cm^2 for L_F <= 15 cm and A_B = 1,800,000 cm^2 for LF > 15 cm

(2a) For screening, $Q_{building}$ = 25,417 cm^3/s for L_F <= 15 cm and $Q_{building}$ = 16,944 cm^3/s for LF > 15 cm

(3) Purposely left blank

(4) $D_T^{eff} = L_T / (L_T / D_v^{eff})$

(5) $Q_{soil} = (2*\pi*\Delta P*k_v*X_{crack}) / (\mu_{TS}*\ln(2*Z_{crack}/r_{crack}))$

(6) $\alpha = [(D_T^{eff}*A_B/(Q_{building}*L_T))*EXP(Q_{soil}*L_{crack}/(D^{crack}*A_{crack}))]/[EXP(Q_{soil}*L_{crack}/(D^{crack}*A_{crack}))+(D_T^{eff}*A_B/(Q_{building}*L_T))+(D_T^{eff}*A_B/(Q_{soil}*L_T))*(EXP(Q_{soil}*L_{crack}/(D^{crack}*A_{crack}))-1)]$

(7) A function of the ratio T_B/T_C:

T_B/T_C	n
<0.57	0.30
0.57-0.71	$0.74(T_B/T_C)-0.116$
>0.71	0.41

If values are not available for calculation, result is NA

(8) $\Delta H_{v,TS} = \Delta H_{v,B}*[(1-T_S/T_C)/(1-T_B/T_C)]^n$, if values are not available for calculation, result is NA.

(9) $H_{TS} = EXP[-\Delta H_{v,TS}/R_c*(1/T_S-1/T_B)]*H_R$; if values are not available for calculation, result assumed to be H_R

(10) Purposely left blank

(11) Refer to 12 SCS soil types - if no site-specific information is available, use SCL for screening.

(12) Purposely left blank

(13) $D_v^{eff} = D_a*(\theta_{a,v}^{3.33}/n_v^2)+(D_w/H'_{TS})(\theta_{w,v}^{3.33}/n_v^2)$

(14) Purposely left blank

(15) Purposely left blank

(16) $\mu_w = \mu_{w,10} * (T'_S / 283.15)^{0.5}$

(17) $k_{i,v} = K_{s,v} * 1/Conv02 * \mu_w / (\rho_w * g)$

(18) $S_{te} = (\theta_{w,v} - \theta_{r,v}) / (n_v - \theta_{r,v})$

(19) $k_{rg} = (1 - S_{te})^{0.5} * (1-S_{te}^{1/mvv})^{2mv}$

(20) $k_v = k_{i,v} * k_{rg}$, note that the model is very sensitive to this parameter and if site-specific values are available, they should be used.

TABLE 4. SUMMARY OF MODELED AIR DATA
SOIL GAS TO INDOOR AIR

	Indoor Air Concentrations (ug/m^3)
Analyte	
1,1,1-Trichloroethane	7.3E-05
1,4-Dichlorobenzene	3.3E-04
2-Butanone	7.8E-04
Acetone	2.9E-03
Benzene	7.0E-05
Bromomethane	2.0E-04
Carbon Disulfide	1.5E-03
Chloroethane	2.3E-03
Chloroform	1.5E-02
Chloromethane	4.9E-05
cis-1,2-Dichloroethene	7.5E-03
Dichlorodifluoromethane	1.4E-04
Tetrachloroethene	1.5E-02
trans-1,2-Dichloroethene	4.6E-04
Trichloroethene	2.7E-01
Trichlorofluoromethane	3.4E-04
Xylene, m/p-	5.4E-05

TABLE 5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
GROVELAND WELLS SUPERFUND SITE

Scenario Timeframe: Current/Future
Medium: Soil Gas
Exposure Medium: Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value	Screening Toxicity Value (N/C) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
On-Property (a)	71-55-6	1,1,1-Trichloroethane	N/A	7.3E-05	ug/m3	N/A	N/A	N/A	7.3E-05	N/A	230 nc	N/A	N/A	N	BSL
	106-46-7	1,4-Dichlorobenzene	N/A	3.3E-04	ug/m3	N/A	N/A	N/A	3.3E-04	N/A	0.31 ca	N/A	N/A	N	BSL
	78-93-3	2-Butanone	N/A	7.8E-04	ug/m3	N/A	N/A	N/A	7.8E-04	N/A	511 nc	N/A	N/A	N	BSL
	67-64-1	Acetone	N/A	2.9E-03	ug/m3	N/A	N/A	N/A	2.9E-03	N/A	329 nc	N/A	N/A	N	BSL
	71-43-2	Benzene	N/A	7.0E-05	ug/m3	N/A	N/A	N/A	7.0E-05	N/A	0.25 ca	N/A	N/A	N	BSL
	74-83-9	Bromomethane	N/A	2.0E-04	ug/m3	N/A	N/A	N/A	2.0E-04	N/A	0.52 nc	N/A	N/A	N	BSL
	75-15-0	Carbon Disulfide	N/A	1.5E-03	ug/m3	N/A	N/A	N/A	1.5E-03	N/A	73 nc	N/A	N/A	N	BSL
	75-00-3	Chloroethane	N/A	2.3E-03	ug/m3	N/A	N/A	N/A	2.3E-03	N/A	2.3 ca	N/A	N/A	N	BSL
	67-66-3	Chloroform	N/A	1.5E-02	ug/m3	N/A	N/A	N/A	1.5E-02	N/A	0.083 ca	N/A	N/A	N	BSL
	74-87-3	Chloromethane	N/A	4.9E-05	ug/m3	N/A	N/A	N/A	4.9E-05	N/A	9.5 nc	N/A	N/A	N	BSL
	156-59-2	cis-1,2-Dichloroethene	N/A	7.5E-03	ug/m3	N/A	N/A	N/A	7.5E-03	N/A	3.7 nc	N/A	N/A	N	BSL
	75-71-8	Dichlorodifluoromethane	N/A	1.4E-04	ug/m3	N/A	N/A	N/A	1.4E-04	N/A	21 nc	N/A	N/A	N	BSL
	127-18-4	Tetrachloroethene	N/A	1.5E-02	ug/m3	N/A	N/A	N/A	1.5E-02	N/A	0.32 ca	N/A	N/A	N	BSL
	156-60-5	trans-1,2-Dichloroethene	N/A	4.6E-04	ug/m3	N/A	N/A	N/A	4.6E-04	N/A	7.3 nc	N/A	N/A	N	BSL
	79-01-6	Trichloroethene	N/A	2.7E-01	ug/m3	N/A	N/A	N/A	2.7E-01	N/A	0.017 ca	N/A	N/A	Y	ASL
	75-69-4	Trichlorofluoromethane	N/A	3.4E-04	ug/m3	N/A	N/A	N/A	3.4E-04	N/A	73 nc	N/A	N/A	N	BSL
	108-38-3/106-42	Xylene, m/p-	N/A	5.4E-05	ug/m3	N/A	N/A	N/A	5.4E-05	N/A	11 nc	N/A	N/A	N	BSL

(a) Refer to Table 2 for sample grouping

(1) The modeled soil gas contributions to indoor air have been presented in the Maximum Concentration field
Refer to Table 3 for model results
(2) Maximum concentration used for screening.

(3) USEPA Region 9 PRGs for ambient air (adjusted to an hazard quotient = 0.1 for noncarcinogens), October 2004.
(4) Rationale Codes: Selection Reason: Above Screening Levels (ASL)
No Screening Level (NSL)
Deletion Reason: No Toxicity Information (NTX)
Below Screening Level (BSL)

Definitions:
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
PRG = Preliminary Remedial Goal
N/A = Not Applicable or Not Available
J = Estimated Value
C = Carcinogenic
N = Non-Carcinogenic

TABLE 6

EXPOSURE POINT CONCENTRATION SUMMARY

GROVELAND WELLS SUPERFUND SITE

Scenario Timeframe: Future
Medium: Soil Gas
Exposure Medium: Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
On-Property	Trichloroethene	ug/m^3	NA	NA	2.7E-01	2.7E-01	ug/m^3	Max	(a)

(1) Refer to Table 2 for samples; only COPCs selected on Table 5 appear; Refer to Table 3 for model results.

(2) T - Transformed; N - Normal; NP - Non-parametric; G - Gamma; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% UCL of Normal Data (95% UCL - N); 95% UCL of Non-parametric Data (95% UCL - NP); 95% UCL of Gamma Distributed Data (95% UCL - G); Arithmetic Mean (Mean)

(4) Rationale:

(a) For a conservative evaluation, the maximum detected concentration is used.

J = Estimated Concentration

Max = Maximum Detected Concentration

N/A = Not Applicable

UCL = Upper Confidence Limit

EPC = Exposure Point Concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 7

VALUES USED FOR DAILY INTAKE CALCULATIONS

GROVELAND WELLS SUPERFUND SITE

Scenario Timeframe: Future
Medium: Soil Gas
Exposure Medium: Indoor Air (Vapor Intrusion)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Resident	Adult	On-Property Residences	CA	Modeled Concentration in Air	see Table 6	ug/m^3	see Table 6	Chronic Daily Intake (CDI) (ug/m^3) =
				ET	Exposure Time	24	hrs/day	USEPA, 1997	$\frac{CA \times ET \times EF \times ED}{CF \times AT}$
				EF	Exposure Frequency	350	days/year	USEPA, 1997	
				ED	Exposure Duration	24	years	USEPA, 1994	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8760	days	USEPA, 1989	
				CF	Conversion Factor	24	hrs/day	- -	
		Young Child (ages 1-6)	On-Property Residences	CA	Modeled Concentration in Air	see Table 6	ug/m^3	see Table 6	Chronic Daily Intake (CDI) (ug/m^3) =
				ET	Exposure Time	24	hrs/day	USEPA, 1997	$\frac{CA \times ET \times EF \times ED}{CF \times AT}$
				EF	Exposure Frequency	350	days/year	USEPA, 1997	
				ED	Exposure Duration	6	years	USEPA, 1994	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2190	days	USEPA, 1989	
				CF	Conversion Factor	24	hrs/day	- -	

TABLE 8

NON-CANCER TOXICITY DATA – INHALATION

GROVELAND WELLS SUPERFUND SITE

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Extrapolated RfD[1]		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
Trichloroethene	Chronic	4E+01	ug/m^3	N/A	N/A	Liver/CNS	3000	NCEA	01/05/06

NCEA = National Center for Environmental Assessment, Trichloroethylene Health Risk Assessment: Synthesis and Characterization EPA/600/P-01/002A (2001)

N/A = Not Applicable

TABLE 9

CANCER TOXICITY DATA – INHALATION

GROVELAND WELLS SUPERFUND SITE

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor		Weight of Evidence/ Cancer Guideline Description	Unit Risk - Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Trichloroethene	1.1E-04	$(ug/m^3)^{-1}$	N/A	N/A	B1 (a)	NCEA	01/05/05

N/A = Not Applicable

EPA Group:

A - Human carcinogen

B1 - Probable human carcinogen - indicates that limited human data are available

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans

C - Possible human carcinogen

D - Not classifiable as a human carcinogen (by the oral route)

E - Evidence of noncarcinogenicity

NCEA = National Center for Environmental Assessment; Trichloroethylene Health Risk Assessment: Synthesis and Characterization. EPA/600/P-01/002A (2001)

(a) Under review

TABLE 10

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

GROVELAND WELLS SUPERFUND SITE

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil gas	Indoor Air (Vapor Intrusion)	On-Property Residences	Inhalation	Trichloroethene	3E-01	ug/m^3	9.0E-02	ug/m3	1.1E-04	$(ug/m3)^{-1}$	9.9E-06	2.6E-01	ug/m3	4.0E+01	ug/m3	6.6E-03
			Exp. Route Total								1E-05					7E-03
		Exposure Point Total									1E-05					7E-03
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
										Total of Receptor Risks Across All Media	N/A				Total of Receptor Hazards Across All Media	N/A

TABLE 11

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

GROVELAND WELLS SUPERFUND SITE

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil gas	Indoor Air (Vapor Intrusion)	On-Property Residences	Inhalation	Trichloroethene	3E-01	ug/m^3	2.2E-02	ug/m3	1.1E-04	$(ug/m3)^{-1}$	2.5E-06	2.6E-01	ug/m3	4.0E+01	ug/m3	6.6E-03
			Exp. Route Total								2E-06					7E-03
		Exposure Point Total									2E-06					7E-03
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
										Total of Receptor Risks Across All Media	N/A				Total of Receptor Hazards Across All Media	N/A

TABLE 12

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

GROVELAND WELLS SUPERFUND SITE

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Young Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Young Child + Adult					Non-Carcinogenic Hazard Quotient Young Child				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil Gas	Indoor Air (Vapor Intrusion)	On-Property Residences	Trichloroethene	- -	1E-05	- -	- -	1E-05	Liver/CNS	- -	7E-03	- -	7E-03
			Chemical Total	- -	1E-05	- -	- -	1E-05		- -	7E-03	- -	7E-03
			Radionuclide Total										
		Exposure Point Total						1E-05					7E-03
	Exposure Medium Total							1E-05					7E-03
Medium Total								1E-05					7E-03
Receptor Total								1E-05					7E-03

- - = Not Evaluated
N/A = Not Applicable

Total Risk Across All Media: 1E-05

Total Hazard Across All Media: 7E-03

Total Blood HI =	N/A
Total Cardiovascular HI =	N/A
Total Reproductive HI =	N/A
Total General Toxicity HI =	N/A
Total GI System HI =	N/A
Total Immune System HI =	N/A
Total Kidney HI =	N/A
Total Liver HI =	7E-03
Total CNS HI =	7E-03
Total Skin HI =	N/A
Total Thyroid HI =	N/A
Total Respiratory HI =	N/A
Total Developmental HI =	N/A

APPENDIX H

PROPOSED
SOIL CLEANUP LEVEL
CALCULATIONS

METCALF & EDDY | AECOM

Memorandum

DATE: September 27, 2006

TO: Cindy McLane (M&E), Derrick Golden (USEPA)

FROM: Paul Dombrowski

SUBJECT: Soil Cleanup Level - Groveland Wells Superfund Site

In response to updates made to United States Environmental Protection Agency (USEPA) soil screening guidance, revised site-specific cleanup levels for unsaturated soil were developed for remediation of the Source Area at the Groveland Wells Superfund Site in Groveland, Massachusetts. Proposed cleanup levels were calculated utilizing site-specific data collected during the Source Area Re-Evaluation for nine volatile organic compounds (VOCs), including the eight contaminants of concern listed in the Record of Decision (ROD) for Operable Unit 2 (OU2) (trichloroethene, vinyl chloride, methylene chloride, tetrachloroethene, 1,1-dichloroethene, trans-1,2-Dichloroethene, toluene, 1,1,1-trichloroethane) and cis-1,2-dichloroethene which was not listed in the ROD [USEPA, 1988] . These propsed cleanup levels were determined based on current soil screening guidance (SSG) from the USEPA to compute soil screening levels (SSLs), concentrations below which no further action or study at a site is warranted under CERCLA [USEPA, 1996a and 2002]. Soil screening levels can be used for developing site-specific cleanup levels if the nine-criteria evaluation of remedial alternatives indicates that alternatives achieving the SSLs are protective, comply with Applicable or Relevant and Appropriate Requirements (ARARs), and appropriately balance the other criteria, including cost [USEPA, 2002].

The site-specific cleanup levels for unsaturated soil in the Source Area at Groveland Wells Superfund Site are intended to be protective of off-site receptors, who may ingest contaminated groundwater that migrates from the Source Area as a result of leaching; direct contact exposures (i.e., incidental ingestion, dermal contact, and inhalation of dust released from soil); and risks associated with the subsurface vapor intrusion pathway (i.e., the inhalation of impacted air). As stated in the ROD [USEPA, 1988], the ultimate goal is the reduction of contaminant concentrations in groundwater to Maximum Contaminant Levels (MCLs) [USEPA, 2003a].

Migration to Groundwater Soil Screening Level.

Migration to groundwater SSLs were computed for the nine contaminants for the ingestion of leachate-contaminated ground water by downgradient receptors based on a linear equilibrium soil/water partition equation to estimate the contaminant concentration in soil leachate, as shown in Equation 1 [USEPA, 2002].

$$Screening\ Level\ in\ Soil\ (mg/kg) = C_w\left[K_D + \frac{\theta_w + \theta_a H'}{\rho_b}\right] \qquad \text{Eq. 1}$$

The parameters used in computing the screening level in soil are summarized in Table 1. Chemical specifc parameters are provided for trichloroethene (TCE), which is the primary contaminant of concern. A dilution attenuation factor (DAF) is calculated to account for reduction of contaminant concentrations from soil

leachate mixing with a clean aquifer [USEPA, 2002]. Figure 1 presents a conceptual model of soil leachate mixing within an aquifer. The DAF is multiplied by the groundwater remedial goal (MCL, ug/L) to determine an acceptable target soil leachate concentration (C_w, ug/L). The soil remedial goals in the ROD were calculated within the initial Remedial Investigation (RI) using used a simplified linear equilibrium soil/water partition equation (soil cleanup concentration = K_D x MCL) to determine the contaminant concentration in soil such that pore water concentrations at the moment of dissolution would be less than the MCL [Lally, 1985].

The inclusion of dilution and attenuation in current USEPA guidance [USEPA, 2002, USEPA, 1996b] is the primary parameter accounting for the difference in the SSLs calculated herein and the soil cleanup goals in the ROD. USEPA guidance provides two default values for sites with a source area smaller than one-half acre: DAF=20 and DAF=1 [US EPA, 2002]. A DAF of 1 is appropriate for sites where little or no dilution or attenuation of soil leachate concentrations is expected between the source and the receptor well, such as sites with a shallow water table, fractured media, or a souce area greater than 30 acres [USEPA, 2002, Appendix A]. The Source Area at Groveland Wells is no larger than 6,000 square feet, significantly smaller than one-half acre. Where sufficient hydrogeologic information is available, USEPA guidance provides tools to calculate a site-specific DAF: Equation 2 to compute DAF and Equation 3 for the mixing zone depth used therein [USEPA, 2002].

$$Dilution\ Attenuation\ Factor\ (DAF) = 1 + \frac{K \cdot i \cdot d}{I \cdot L} \qquad \text{Eq. 2}$$

$$Mixing\ Zone\ Depth\ (d) = (0.0112 L^2)^{0.5} + d_a \left(1 - \exp\left(\frac{(-L \cdot I)}{K \cdot i \cdot d_a}\right)\right) \qquad \text{Eq. 3}$$

A site-specific DAF of 12.6 was calculated for the Source Area at Groveland Wells and used to determine the target soil leachate concentrations (C_w) as well as the migration to groundwater SSL. The parameters used in computing theDAF and mixing zone depth are summarized in Table 1 and the associated computations are provided as Attachment A. The migration to groundwater SSLs are provided in Table 2 for the nine contaminants of concern. Complete tabulation is provided in Attachment A.

The migration to groundwater pathway SSLs are based on several simplifying assumptions [USEPA, 2002], including

- Infinite source (i.e., steady-state concentrations are maintained over the exposure period);
- Uniformly distributed contamination from the surface to the top of the aquifer;
- No contaminant attenuation (i.e., adsorption, biodegradation, chemical degradation) in soil;
- Instantaneous and linear equilibrium soil/water partitioning;
- Unconfined, unconsolidated aquifer with homogeneous and isotropic hydrologic properties;
- Receptor well at the downgradient edge of the source and screened within the plume;
- No contaminant attenuation in the aquifer;
- No NAPLs present (if NAPLs are present, the SSLs do not apply)

Table 1. Migration to Groundwater SSL – Computation Parameters

Parameter	Definition	Units	Value	Reference
Reference Values				
MCL	Maximum Contaminant Level	mg/L	Chemical specific (TCE=5 μg/L)	USEPA, 2003a
K_{oc}	Soil organic carbon-water partition coefficient	L/kg	Chemical specific (TCE = 166 L/kg)	ORNL, 2004; USEPA, 2000
θ_w	Water-filled porosity	L/L	0.3	USEPA, 2002
H	Henry's Law Constant	$\frac{atm \cdot m^3}{mol}$	Chemical specific (TCE = 0.0101)	USEPA, 2004a; USEPA, 2000
I	Infiltration Rate	m/yr	0.51 (20 in/yr) ½ average rainfall	USGS, 1985
ρ_b	Dry bulk soil density	kg/L	1.5	USEPA, 2002
ρ_s	Soil particle density	kg/L	2.65	USEPA, 2002
n	Soil Porosity	L/L	$1 - (\rho_b / \rho_s) = 0.43$	USEPA, 2002
θ_a	Air Filled Porosity	L/L	$n - \theta_w = 0.13$	USEPA, 2002
T	Groundwater Temperature	°F	49 (282 K)	USEPA, 2001
R	Universal Gas Constant	$\frac{atm \cdot m^3}{mol \cdot K}$	8.25E-05 $\frac{atm \cdot m^3}{mol \cdot K}$	USEPA, 2001
Site-Specific Values				
K	Hydraulic Conductivity	m/yr	700	Geometric Mean from slug tests M&E, 2006 (Table 4-14)
f_{oc}	Fraction organic carbon in soil	g/g	0.006	Average in vadose zone M&E, 2006 (Table 4-9)
I	Hydraulic Gradient	m/m	0.09	M&E, 2006 (Figure 4-11)
L	Source area length	m	37	See Figure 1
d_a	Aquifer thickness	m	4.6 (15 feet)	M&E, 2006 (Figure 4-2)
Calculated Values				
K_d	Soil-water partition coefficient	L/kg	$K_{oc} \times f_{oc}$ (TCE = 0.98)	USEPA, 2002
H'	Dimensionless Henry's Law Constant	--	H' = H / RT Chemical Specific (TCE = 0.433)	USEPA, 2004a; USEPA, 2000
D	Mixing Zone Depth	m	3.5 (Eq . 3)	USEPA, 2002 (Eq. 4-12)
DAF	Dilution Attenuation Factor	--	12.6	USEPA, 2002 (Eq. 4-11)
C_w	Target soil leachate concentration	mg/L	MCL x DAF (TCE = 63 μg/L)	USEPA, 2002

Table 2. Migration to Groundwater Soil Screening Levels

Contaminant of Concern	Soil Screening Level (2006) (ug/kg)	ROD Soil Cleanup Goal (1988) (ug/kg)
Trichloroethene	77	6.3
Vinyl Chloride	11	1.14
Methylene Chloride	22	0.44
Tetrachloroethene	56	18.2
1,1-Dichloroethene	45	4.6
Trans-1,2-Dichloroethene	626	41.3
Toluene	22,753	6,000
1,1,1-Trichloroethane	1,388	302
Cis-1,2-Dichloroethene	418	--

Elevated TCE concentrations have been measured in groundwater and soil for greater than 25 years. Due to the low total organic carbon in saturated soils, attenuation is assumed to be low in the aquifer, and DNAPL is not likely present in unsaturated soils. The subsurface at the site contains heterogeneous layers, including a buried soil horizon, amid sand and gravel, and a confining clay layer is present beneath much of the Source Area. However, the clay layer was noted to be not completely impermeable [M&E jar test observations, 2006]. Although these two simplified assumptions may not be completely valid for the site, the migration to groundwater SSLs do provide a quantitative value for use as a remediation goal, particularly for shallow soils.

Direct Contact Exposures.

The development of site-specific migration to groundwater SSLs requires confirmation that the SSL soil concentrations are also protective of direct contact exposures including the incidental ingestion of, dermal contact with, and inhalation of particulates containing contaminants released from soil. In order to evaluate the protectiveness of the site-specific SSLs for these direct contact exposure pathways, the site-specific SSLs were compared to residential soil Region 9 Preliminary Remediation Goals (PRGs), developed using conservative generic exposure assumptions and set at the lower of a cumulative cancer risk of 1×10^{-6} or noncancer hazard quotient of 0.1.

Table 3. Comparison of SSLs to Residential Soil PRGs

Contaminant of Concern	SSL (ug/kg)	PRG (ug/kg)
Trichloroethene	77	53
Vinyl Chloride	11	79
Methylene Chloride	22	9,100
Tetrachloroethene	56	480
1,1-Dichloroethene	45	12,000
Trans-1,2-Dichloroethene	626	6,900
Toluene	22,753	66,000
1,1,1-Trichloroethane	1,388	200,000
Cis-1,2-Dichloroethene	418	4,300

Only the site-specific migration to groundwater SSL for trichloroethene exceeds the generic Region 9 PRG based on a cancer risk of 1×10^{-6}. However, the exceedance is minor and corresponds to a cancer risk of 1.5×10^{-6}. All other site-specific migration to groundwater SSLs are associated with a risk or hazard significantly below a level of concern for the direct contact exposure pathways.

Inhalation Risks.

Migration to groundwater SSLs are generally protective of inhalation risk to outdoor workers [USEPA, 1996b, Section 2.1.4, p. 16]. This statement is generally true because of the high degree of dilution and dispersion associated with the volatilization of compounds into ambient air. However, the subsurface vapor intrusion pathway requires additional evaluation to confirm that the site-specific SSLs are protective of the migration of volatile compounds to indoor air where dilution and dispersion may not occur to a significant extent. The Johnson and Ettinger model [Johnson and Ettinger, 1991; USEPA, 2003b] was used to estimate an indoor air concentration for each migration to groundwater SSL soil concentration, using conservative default fate and

transport assumptions. The estimated indoor air concentrations were then used to calculate a cancer risk and noncancer hazard, based on a residential exposure scenario. The residential scenario assumes that children and adults are exposed to contaminants in indoor air 24 hours/day for 350 days/year for a total duration of 30 years. For TCE, the primary contaminant of concern, the migration to groundwater SSL (77 ug/kg) corresponded to an indoor air concentration of 1.62 ug/m^3. The residential risk associated with this indoor air concentration is approximately 7 x 10^{-5}, with a noncancer hazard quotient of 0.04. A soil TCE concentration of 100 ug/kg is associated with a cancer risk of 1 x 10^{-4}, which is at the upper end of USEPA's acceptable risk range. Based on the modeling performed for the migration to groundwater SSLs for the nine contaminants of concern, the cumulative risk and hazard associated with exposure to the nine compounds in indoor air is estimated to be 9 x 10^{-5} and 0.6, respectively. The cumulative risk and hazard are within or below USEPA's risk management criteria (cancer risk of 10^{-4} to 10^{-6} and hazard index of 1). The Residential Indoor Air Risk and Hazard Calculations are included at Attachment B.

Therefore, the site-specific migration to groundwater SSLs calculated are protective of both direct contact exposures and of the subsurface vapor intrusion pathway.

References

Johnson, P.C. and R.A. Ettinger. 1991. Heuristic model for predicting the intrusion rate of contaminant vapors into buildings. Environment Science and Technology. 25(8):1445-1452.

M. Anthony Lally, Associates (Lally). 1985. Final Remedial Investigation report, Docket No. 84-1027, Valley Manufacturing Products, Co., Inc. March 1985.

Metcalf and Eddy, Inc. (M&E). 2006. *Draft Final Source Area Re-Evaluation Report. Groveland Wells Nos. 1 and 2 Superfund Site.* September 2006.

Oak Ridge National Laboratory (ORNL). 2004. Risk Assessment Information System, Chemical-Specific Factors. 2004.

United States Environmental Protection Agency (USEPA). 1988. Record of Decision (ROD), *Groveland Wells OU2*. EPA ID: MAD98732317. September 1988.

United States Environmental Protection Agency (USEPA). 1996a. Soil Screening Guidance: User's Guide. Office of Solid Waste and Emergency Response. Publication 9355.4-23. July 1996.

United States Environmental Protection Agency (USEPA). 1996b. Soil Screening Guidance: Technical Background Document (TBD). EPA Document Number: EPA/540/R-95/128. July 1996.

United States Environmental Protection Agency (USEPA). 2000. EPI (Estimation Programs Interface) Suite. Office of Pollution Prevention Toxics and Syracuse Research Corporation (SRC). 2000.

United States Environmental Protection Agency (USEPA). 2001. Fact Sheet: Correcting the Henry's Law Constant for Soil Temperature. 2001

United States Environmental Protection Agency (USEPA). 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24. December 2002.

United States Environmental Protection Agency (USEPA). 2003a. National Primary Drinking Water Standards. Office of Water (4606M). EPA 816-F-03-016. June 2003. http://www.epa.gov/safewater/consumer/pdf/mcl.pdf

United States Environmental Protection Agency (USEPA). 2003b. User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings. Prepared by Environmental Quality Management, Inc. for the USEPA. June 19, 2003.

United States Environmental Protection Agency (USEPA). 2004a. WATER9 Software, Version 2.0.0, Office of Air Quality Planning and Standards. 2004.

United States Environmental Protection Agency (USEPA). 2004b. Software, Version 2.0.0, Office of Air Quality Planning and Standards. 2004.

United States Geologic Survey (USGS). 1985. Hydrology and Water Resources of Tributary Basins to the Merrimack River from Salmon Brook to the Concord River, MA. 1985.

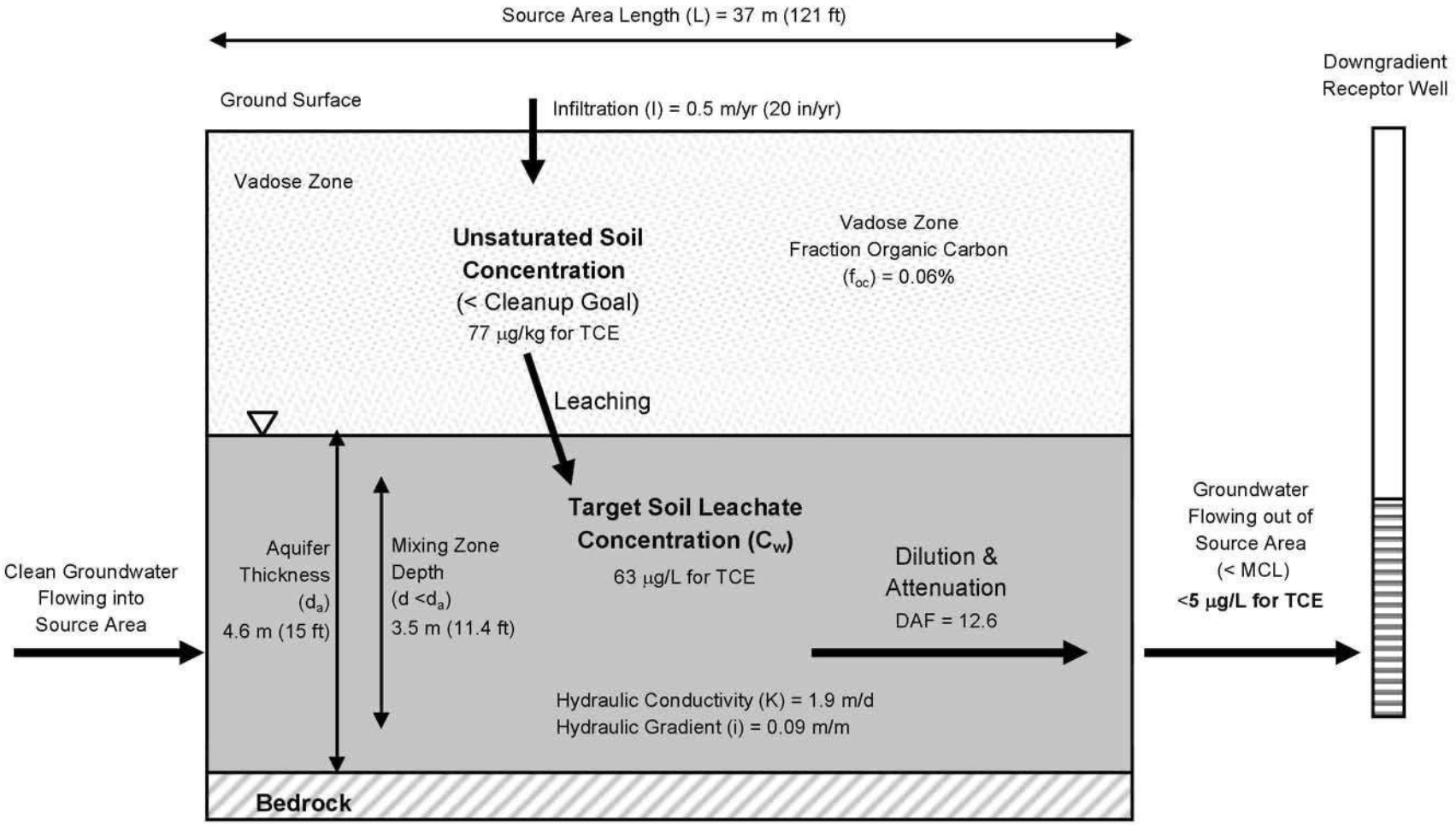

Figure 1. Conceptual Model of Soil Leaching and Groundwater Flow Through Source Area

Attachment 1
Soil Screening Level Calculations

METCALF & EDDY | AECOM

Groveland Wells Superfund Site - Source RA	36800320.00009		
Subject: Soil Cleanup Target Concentrations			
Performed by Paul M. Dombrowski		Date	8/17/2006
Checked by Barbara Weir		Date	8/18/2006
Calculations updated by Paul M. Dombrowski -response to UESPA Comments		Date	9/22/2006
Updates Checked by Cinthia McLane		Date	9/22/2006

Summary: This spreadsheet calculation estimates the soil screening level (SSL) in assessing remediation target concentrations. This computation is driven by contamination migration to groundwater. EPA guidance suggests that for VOCs, being protective for groundwater migration is also protective enough for inhalation.

Calculation of Soil Screening Level [1,2]

$$Soil\ Screening\ Level = C_w\left[K_D + \frac{(\theta_w + \theta_a H')}{\rho_b}\right]$$

$$C_w = MCL \cdot DAF$$

$$K_D = K_{oc} f_{oc}$$

$$H' = \frac{H}{RT}(Dimensionless\ Henry's\ Law$$

Target Leachate Concentration (Cw) mg/L (use MCLx dilution)
Soil-Water Partition Coefficient (K_D) L/kg
Organic Carbon/Water Partition Coefficient (K_{oc}) L/kg

Constants & Soil Properties

Temperature (T) [3]	49	Fahrenheit
	282	Kelvin
Universal Gas Constant (R)	8.25E-05	(atm m3) / (mol K)
Total Organic Carbon (shallow average)	5900	mg/kg
Fraction Organic Carbon (f_{oc})	0.6%	
Soil Particle Density (ρ_s)	2.65	kg/L
Dry Soil Bulk Density (ρ_b)	1.5	kg/L
Soil Porosity (n)	0.43	1 • (•$_b$ /•$_s$)
Water Filled Porosity (θ_w)	0.3	
Air Filled Porosity (θ_a)	0.13	
Dilution Attenuation Factor (DAF) [1,2]	12.6	

Contaminant of Concern	MCL (mg/L)	C_w (mg/L)	Henry's Law Constant (H) (atm-m3/mol)	Koc (L/kg)	Kow (Log)	Henry's Law Constant (H') Dimensionless	K_D (L/kg)	SSL (ug/kg)
References			(5,6)	(4,6)	(4,5,6)	(4,5,6)		
Trichloroethene	0.005	0.063	1.01E-02	166	2.42	0.433	0.98	**77**
Vinyl Chloride	0.002	0.0252	2.21E-02	23.74	1.62	0.948	0.14	**11**
Methylene Chloride	0.005	0.063	2.93E-03	23.74	1.25	0.126	0.14	**22**
Tetrachloroethene	0.005	0.063	1.43E-02	106.8	3.4	0.614	0.63	**56**
1,1-Dichloroethene	0.007	0.0882	2.58E-02	35.04	2.13	1.107	0.21	**45**
Trans-1,2-Dichloroethene	0.1	1.26	1.01E-02	43.79	2.09	0.433	0.26	**626**
Toluene	1	12.6	6.42E-03	268	2.73	0.276	1.58	**22,753**
1,1,1-Trichloroethane	0.2	2.52	1.67E-02	48.64	2.49	0.717	0.29	**1,388**
Cis-1,2-Dichloroethene	0.07	0.882	4.17E-03	43.79	2.09	0.179	0.26	**418**

References

1. US EPA. 1996. Soil Screening Guidance: User's Guide. Office of Solid Waste and Emergency Response. Publication 9355.4-23. July 1996.
2. US EPA. 2001. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites - Peer Review Draft. OSWER 9355.4-24. March 2001.
3. US EPA. 2001. Fact Sheet: Correcting the Henry's Law Constant for Soil Temperature.
4. Oak Ridge National Laboratory (ORNL). 2004. Risk Assessment Information System, Chemical-Specific Factors.
5. US EPA. 2004. WATER9 Software, Version 2.0.0, Office of Air Quality Planning and Standards.
6. USEPA. 2000. EPI (Estimation Programs Interface) Suite. Office of Pollution Prevention Toxics and Syracuse Research Corporation (SRC).

METCALF & EDDY | AECOM

Groveland Wells Superfund Site - Source RA	36800320.00009
Subject: Soil Cleanup Target Concentrations	
Performed by Paul M. Dombrowski	Date 8/17/2006
Checked by Barbara Weir	Date 8/18/2006
Calculations updated by Paul M. Dombrowski in response to UESPA Comments	Date 9/22/2006
Updates Checked by Cinthia McLane	Date 9/22/2006

Summary: This spreadsheet calculation estimates the dilution/attenuation factor to be applied in the SSL calculation. The USEPA default value for sites of 0.5 acre source zones is 20. Site-specific information is available to compute the factor for this site.

Assumptions: Several assumptions were made to complete these calculations.

1. Infiltration = 20 inches per year
2. Assume water table at ~30' bgs and bedrock at 44' bgs in source area (aquifer thickness ~ 15 feet)
3. Hydraulic Gradient from Figure 4.5 in M&E Draft Source RA Report, April 2005

Hydraulic Conductivity (K) Determined From Slug Test Performed June 2006 (8 wells)

Geometric Mean is used as Hydraulic Conductivity is Log normally distributed

6.30	ft/day =	1.9	m/day =	**701**	**m/yr**

Computation of Dilution Factor

Equation 12: Estimation of Mixing Zone Depth

$$d = (0.0112\ L^2)^{0.5} + d_a\{1 - \exp[(-LI)/(Kid_a)]\}$$

Parameter/Definition (units)
d/mixing zone depth (m)
L/source length parallel to ground water flow (m)
I/infiltration rate (m/yr)
K/aquifer hydraulic conductivity (m/yr)
i/hydraulic gradient (m/m)
d_a/aquifer thickness (m)

Input Values

K	700	m/yr
i	0.090	
I	0.51	m/yr
d_a	4.6	m
L	30.5	m

LH Term	3.23
exp term	-0.05
1 - exp {}	0.05
RH Term	0.24
d	**3.5** **Mixing Zone Depth**

Equation 11: Derivation of Dilution Factor

$$\text{dilution factor} = 1 + \frac{Kid}{IL}$$

Parameter/Definition (units)	Default
dilution factor (unitless)	20 (0.5-acre source)
K/aquifer hydraulic conductivity (m/yr)	
i/hydraulic gradient (m/m)	
I/infiltration rate (m/yr)	
d/mixing zone depth (m)	
L/source length parallel to ground water flow (m)	

Input Values same as above

K	700	m/yr
i	0.09	m/m
I	0.508	m/yr
d	3.5	m
L	37.0	m

dilution factor **12.6**

Source: United States Environmental Protection Agency (USEPA). 2001. *Supplemental Guidance for Developing* Soil Screening Levels for Superfund Sites - Peer Review Draft. OSWER 9355.4-24. March 2001.

APPENDIX I

SOIL FLUSHING CALCULATIONS – NO FURTHER ACTION

METCALF & EDDY | AECOM

Groveland Wells Superfund Site - Source RA 36800320.00009

Subject: Estimated Time to Remove TCE from Source Area - No Further Action

Performed by Paul M. Dombrowski Date 9/18/2006

Checked by Warren Diesl Date 9/27/2006

Summary: Computations, shown here, provide an order of magnitude estimate of the operation time for the GWTF, as part of the No Further Action Alternative, in order to remove 90% of the remaining TCE mass in the Source Area. Three variations of the computation were performed.

Assumptions:

- 3,000 gallons of solvents and waste oils released to the site
- ~26,700 lbs TCE remaining in Source Area ~ 12100 kg
- To remove 90% of remaining mass in Source Area **10,890** kg

1) Simplified Box Model

Calculation of Average Overburden Groundwater Velocity

$$v = \frac{ki}{\eta_e}$$

Input	k	6.3	hydraulic conductivity [ft/d] (from slug test 2006)
	i	0.05	hydraulic gradient
	η_e	0.3	soil porosity (effective), $\eta_e \sim \eta$
Output	v	1.05	velocity (ft/d)

Groundwater Flux from Source Area (Q)

- At the extraction wells, the saturated thickness of the overburden is ~ **9** feet
- Extraction wells are ~55 feet apart. Water was assumed to flow from a rectangular area ~ **70** feet wide.

Q = actual velocity x area = 1.05 ft/d x 630 sq ft = **661.5** **cu ft / d**

88 **gal/d**

Mass Removal Rate

-The product of concentration and volumetric flux rate yields a mass flux rate.

-It is assumed that the concentration leaving the Source Area is 1% TCE ug/L

TCE Aqueous Solubility = 1,100 mg/L = 1,100,000 ug/L

1 % TCE Aqueous Solubility = 11 mg/L = 11,000 ug/L

- 1% TCE Solubility is of order of magnitude of GWTF influent (see Calculation 2 Below)

661.5 ft^3 / d X 11,000 ug/L X 28.317 L / ft^3 X 1.0E-09 kg/ug = **2.1E-01** **kg / d**

Using this mass flux rate, the time for the TCE contamination to be removed from the Source Area is

$$\frac{10{,}890 \text{ kg}}{2.1\text{E-}01 \text{ kg / d}} = 5.3\text{E+}04 \text{ days} = \boxed{\textbf{145 years}}$$

2) Based on average extraction flow rates and concentrations in extraction wells

Well	Typ Flow (gpm)	Avg Conc (7/03 - 7/06) (ug/L)	Mass Removal Rate
EW-S1	3	5315	
EW-S2	1.5	12540	
Weighted Avg Conc Removed		7723 ug/L	

7723 ug/L X 4.5 gpm X 3.8 L/gal X 525600 min/yr X 1.00E-09 kg/ug =

69.4 **kg/yr** Mass removal rate

$$\frac{10{,}890 \text{ kg}}{69.4 \text{ kg/yr}} = \boxed{\textbf{157 years}}$$

3) Based on average removal rates by GWTF

From April 2000 through January 2005, 900 lbs of TCE removed by GWTF. Average removal rate is ~ 185 lb/yr

$$\frac{24030 \text{ lb}}{185 \text{ lb/yr}} = \boxed{\textbf{130 years}}$$

APPENDIX J

WHITE PINE ASSESSMENT

Metcalf & Eddy
701 Edgewater Drive, Wakefield, Massachusetts 01880-5371
T 781.246.5200 F 781.245.6293 www.m-e.aecom.com

Memorandum

Date:	August 21, 2006
To:	Cindy McLane
From:	Tom Touchet
Subject:	**White Pine Assessment for Groveland Groundwater Treatment Plant - Groveland, Massachusetts**
Distribution:	Denise Laferte Paul Dombrowski Jen Doyle-Breen

On Monday August 21, 2006 I met with Denise Laferte of M&E to view several Eastern white pines (*Pinus strobus*) located along the southwestern boundary of the site that seemed to be experiencing browning needles as observed by the owner of property located to the south of the site on Washington Street. The purpose of the site visit was to determine the probable cause of the observed needle browning. The findings of my assessment are summarized below.

One white pine was observed located within the site fence boundary while the remainder (four *Pinus strobus*) were located on a neighboring property located to the south of the site. The crown condition of all white pine observed generally appeared to be in healthy condition. No chlorosis was observed. However, sporadic browning of needles was observed on some branch ends in the lower to mid-portions of the crowns (Figure 1). Upon examining samples of branch ends with browned needles, a small exit hole was observed in the branch, just below the browned fascicles of needles. The branch ends were either observed in a drooping or slightly curled state. These observations are consistent with white pine weevil (*Pissodes strobi*), a common insect pest of white pine in the Northeast. This type of infestation does not result in death of the tree, although the progress of new growth may be inhibited on affected shoots. No other insect or fungal evidence were observed on the white pine.

Treatment for white pine weevil typically includes selective pruning and disposing of affected shoots. However, due to the larger size of these particular trees, pruning of individual shoots is not practicable. Chemical control measures can be undertaken by an approved applicator either in spring (when the adults emerge from hibernation and start feeding/egg-laying) or in the fall (after the new adults emerge from branch ends). Weevils are especially susceptible to control measures during fall when they are feeding on new growth in the upper and outer portions of the crown.

Figure 1. Damage to white pine (*Pinus strobus*) shoots by white pine weevil (*Pissodes strobi*) adjacent to the Groveland Groundwater Treatment Plant Site.

A portion of the root system of the single white pine observed on the site near the fence along the site's southern periphery appears to have been disturbed by recent excavation of soils within a short distance of the tree. It is possible that a small amount of root disturbance has also occurred to a white pine on the opposite side of the site fence in the neighboring property as a result of the same excavation activities, but actual amount of root disturbance and potential effect on this neighboring tree is unclear at this time.

In addition to observing white pine on the neighboring property, several Norway maple saplings (*Acer platanoides*) were also observed. All of these saplings appeared to have leaves exhibiting tar spot (*Rhytisma acerinum*), a common fungal disease of maples in the Northeast. Although unsightly, this disease is not fatal to the Norway maple.

In conclusion, it appears that the needle browning observed on white pine at and adjacent to the Groveland site is the result of insect damage rather than the result of groundwater or soil contamination.

Feel free to contact me if you have any questions.

Sincerely,

Tom Touchet

APPENDIX K

PILOT TESTING SUPPORT INFORMATION

PERMANGANATE SOIL OXIDANT DEMAND ANALYSIS
(Carus Chemical Company, 2006)

CARUS®

CARUS CHEMICAL COMPANY
Technology and Quality
Remediation Report

14 June 2006

Customer:	Metcalf and Eddy 701 Edgewater Drive Wakefield, MA 01880	Cc:	M. Dingens K. Frasco B. Veronda P. Vella
Attention:	P. Dombrowski C. McLane		
From:	E. Vlastnik	Keywords:	Permanganate Remediation
TECH #	10209		Soil/Site Groundwater

Subject: RemOx® L ISCO Reagent Soil/Groundwater Oxidant Demand

Summary

The average permanganate soil/groundwater oxidant demand (PSOD) for the low permanganate dose at 48 hours was determined to be than 0.9 g/kg. The average PSOD for the medium permanganate dose at 48 hours was determined to be 1.4 g/kg. The average PSOD for the high permanganate dose at 48 hours was determined to be 1.8 g/kg. These values are calculated on a mass per dry weight of soil. Based on the soil/site groundwater demands, in-situ chemical oxidation with permanganate is recommended for this site.

Background

One groundwater and three soil samples were received from Metcalf and Eddy from the Groveland Wells Superfund Site, Project No. 36500320.00003 located at Groveland Wells, Massachusetts on June 9, 2006. The soil samples were described as TW-44D 32-34 Feet, B-50 35-38 Feet and B-36 8-10 Feet. The groundwater sample was described as TW-32D. The samples were analyzed for combined permanganate soil/site groundwater oxidant demands. The measurement of the permanganate soil/site groundwater oxidant demand is used to estimate the concentration of permanganate that will be consumed by the natural reducing agents as well as the contaminants of concern in the soil and groundwater during a given time period.

Experimental

To determine the PSOD of the soils, a reaction vessel for each sample was filled with 50 grams of the soil. Large rocks (>5 grams) were excluded from the analysis. A total volume of 100 mLs of the specified site groundwater and concentrated permanganate dosing solution were added for a 1:2 soil to added water ratio. The average initial permanganate concentrations were 2.8 g/kg (low dose), 13.8 g/kg (medium dose), and 27.5 g/kg (high dose) on a dry soil basis. The reaction vessels were inverted twice per day during the 48-hour reaction time. Residual permanganate (MnO_4^-) was determined at 48 hours. The moisture content for each soil sample was determined using ASTM Method D 2216-98 and the demands were calculated on a dry weight basis.

The permanganate demand is the amount of permanganate consumed in a given amount of time. It should be noted that in a soil or groundwater sample, the oxidation of any compound by permanganate is dependent on the initial dose of permanganate and the reaction time available. As the permanganate dose is increased, the reaction rate and oxidant consumption may also increase. Some compounds that are not typically oxidized by permanganate under low doses can become reactive with permanganate at higher concentrations. Therefore, increasing the permanganate dose to extreme excess could be disadvantageous to a remediation project (e.g., inefficient chemical usage, higher costs, etc.).

The 48-hour PSOD results of the soil/site groundwater for the low, medium, and high oxidant doses can be seen in Table 1 (on a dry soil basis).

Table 1: 48-Hour PSOD* for the Low, Medium, and High Permanganate Doses

Sample ID Soil/Site Groundwater	Low Dose (g/kg)	Medium Dose (g/kg)	High Dose (g/kg)	Soil Moisture (%)
TW-44D 32-34 Feet/TW-32D	0.3	0.6	0.8	11.83
B-50 35-38 Feet/TW-32D	0.2	0.5	0.6	13.97
B-36 8-10 Feet /TW-32D	2.2	3.0	4.1	13.59
Average	0.9	1.4	1.8	13.13

* All demands were calculated on a dry weight basis. To convert the demand results from a dry basis to an as received basis, multiply the dry value by 1 minus the moisture. For example, the average soil demand from the high dose is 1.8 g/kg (dry) x (1-0.1313) = 1.6 g/kg (as received).
**Average is estimated.

Conclusions

For this application the amount of permanganate needed will be dependent on the reaction time allowed. The soil/site groundwater samples had a low demand with the average 48-hour permanganate demand value of 1.8 g/kg for the high permanganate dose. Generally, remediation sites with a soil demand of less than 35.0 g/kg at 48 hours for the high permanganate dose are favorable for in-situ chemical oxidation with permanganate (see Table 2 for additional information). A pilot study or additional site characterization is recommended to confirm laboratory results and determine the parameters for a full-scale trial.

Table 2: Correlation of Soil/Site Groundwater Oxidant Demand Results*

PSOD (g/kg)	**Rank**	Comment
<15	Low	ISCO with MnO_4^- is recommended. PSOD contribution to MnO_4^- demand is low.
15-35	Moderate	ISCO with MnO_4^- is recommended.
35-50	Moderately High	ISCO with MnO_4^- is recommended but PSOD will contribute significantly to MnO_4^- demand. Pilot testing may help define these demands.
>50	High	Pilot testing is highly recommended to determine effective PSOD at the site.

*Dry Weight Basis

ISCO INJECTION SHEET
(Redox Tech NE, LLC, 2006)

Site Location 64 Washington Street, Groveland, MA
Client Name Metcalf & Eddy

Date	Injection Point I.D.	Gallons Injected	Approximate Concentration (wt %)	Pressure
7/24/2006	TW-37	140	10	30/35
	TW-43	140	10	Gravity feed*

* The well was constructed with a coupling that was not sealed by the driller at the time the well was installed. Following the gravity feed, the PVC was allowed to dry and Redox sealed the coupling to the riser for future injections at that location.

PERMANGANATE DOSING CALCULATIONS FOR EX-SITU PILOT TEST
(Charter Environmental, Inc., 2006)

Permangate Dosing Calculations for Ex-Situ Soil Pilot Test

Calculations by Momin Kamaluddin (Charter Environmental) 8/8/2006
Checked by Paul Dombrowski (M&E) 8/14/2006

ASSUMPTIONS

TCE Concentration in soil	1-2	mg/kg
Soil to be used in each roll-off	5	cubic yard
Soil Bulk Density	110	pound/cft
Reaction Time	5	days
PSOD	=2,3,5,6	g/kg
Potassium Permanganate will be used		

PERMANGANATE DOSE (g/kg)	TREATMENT PILE	POUNDS KMnO4 per PILE	
6	7,8	180	
5	3,4	150	
3	5,6	90	
2	1,2	60	
2	9	30	
TOTAL CHEMICAL (lbs) =		990	

ROLL-OFF BOX 1 (Piles 1 and 2)

Each roll-off soil volume	Cu. Yd.	5
Bulk density assumed	lb/ft3	110
Bulk density assumed	lb/yd3	2,970
Soil Mass	lb	14,850
Soil Mass	kg	6,736
PSOD	g/kg	6
PSOD Oxidant demand	g	40,415
PSOD Oxidant demand	lb	89.10
Roll-off TCE concentration assumed	mg/kg	2
Total roll-off TCE mass	mg	13471.7
Total roll-off TCE mass	lb	0.03
Avg. Stoichiometric Demand	lb/lb	2
Contaminant Oxidant Demand	lb.	0.06
Theoritical Oxidant Demand	lb.	89.16
Confidence Factor	???	2
Calculated Oxidant Demand	lb.	178.33
K Permanganate conc to be used	%	100.00
Pounds of KMnO4 be used	lb	178
Total mass = soil+ chemical	lb	15,028
Total mass = soil+ chemical	kg	6817

Total Water needed	liter	2045
Total Water needed	gallons	540

ROLL-OFF BOX 2 (Piles 3 and 4)

Each roll-off soil volume	Cu. Yd.	5
Bulk density assumed	lb/ft3	110
Bulk density assumed	lb/yd3	2,970
Soil Mass	lb	14,850
Soil Mass	kg	6,736
PSOD	g/kg	3
PSOD Oxidant demand	g	20,208
PSOD Oxidant demand	lb	44.55
Roll-off TCE concentration assumed	mg/kg	2
Total roll-off TCE mass	mg	13471.69
Total roll-off TCE mass	lb	0.03
Avg. Stoichiometric Demand	lb/lb	2
Contaminant Oxidant Demand	lb.	0.06
Theoritical Oxidant Demand	lb.	44.61
Confidence Factor	???	2
Calculated Oxidant Demand	lb.	89.23
K Permanganate conc to be used	%	100.00
Pounds of KMnO4 be used	lb	89
Total mass = soil+ chemical	lb	14,939
Total mass = soil+ chemical	kg	6776

Total Water needed	liter	2033
Total Water needed	gallons	537

ROLL-OFF BOX 4 (Piles 7 and 8)

Each roll-off soil volume	Cu. Yd.	5
Bulk density assumed	lb/ft3	110
Bulk density assumed	lb/yd3	2,970
Soil Mass	lb	14,850
Soil Mass	kg	6,736
PSOD	g/kg	2
PSOD Oxidant demand	g	13,472
PSOD Oxidant demand	lb	29 70
Roll-off TCE concentration assumed	mg/kg	2
Total roll-off TCE mass	mg	13471 69
Total roll-off TCE mass	lb	0 03
Avg. Stoichiometric Demand	lb/lb	2
Contaminant Oxidant Demand	lb.	0 06
Theoritical Oxidant Demand	lb.	29 76
Confidence Factor	???	2
Calculated Oxidant Demand	lb.	59 53
K Permanganate conc to be used	%	100 00
Pounds of KMnO4 be used	lb	60
Total mass = soil+ chemical	lb	14,910
Total mass = soil+ chemical	kg	6763

Total Water needed	liter	2029
Total Water needed	gallons	536

ROLL-OFF BOX 3 (Piles 5 and 6)

Each roll-off soil volume	Cu. Yd.	5
Bulk density assumed	lb/ft3	110
Bulk density assumed	lb/yd3	2,970
Soil Mass	lb	14,850
Soil Mass	kg	6,736
PSOD	g/kg	5
PSOD Oxidant demand	g	33,679
PSOD Oxidant demand	lb	74.25
Roll-off TCE concentration assumed	mg/kg	2
Total roll-off TCE mass	mg	13471.7
Total roll-off TCE mass	lb	0.03
Avg. Stoichiometric Demand	lb/lb	2
Contaminant Oxidant Demand	lb.	0.06
Theoritical Oxidant Demand	lb.	74.31
Confidence Factor	???	2
Calculated Oxidant Demand	lb.	149
K Permanganate conc to be used	%	100.00
Pounds of KMnO4 be used	lb	149
Total mass = soil+ chemical	lb	14,999
Total mass = soil+ chemical	kg	6803

Total Water needed	liter	2041
Total Water needed	gallons	539

CASE STUDIES

FORT RILEY EXCELS IN SOLVENT CLEANUP

U.S. Department of Defense, Washington, DC.
Defense Environmental Programs Annual Report to Congress: Fiscal Year 2004 — Success Stories. Apr 2005

Fort Riley was honored with the Secretary of the Army's Award for Environmental Excellence in Environmental Restoration for Fiscal Year 2004. A pilot study was initiated in March 2004 to remove chlorinated solvents from soil in a 40 ft x 70 ft "hot spot" under asphalt. Before it was paved, the site had been used as a graveled motor pool and artillery gun shed area, and chlorinated solvents were spilled there in large quantities. Extensive sampling showed the primary contaminant, tetrachloroethene (PCE), in soil core samples at potentially hazardous levels ranging up to 28,000 parts per billion (ppb). The pilot study tested the use of potassium permanganate ($KMnO_4$) on PCE, trichloroethene, and dichloroethene contamination. In consultation with the Kansas Department of Health and Environment, the U.S. Army Corps of Engineers, and EPA, Fort Riley determined that in situ blending would be the most effective method to deliver the $KMnO_4$ to this site. Asphalt was removed from above the hot spot and recycled off site after sampling found the asphalt was not contaminated with chlorinated solvents. Using a modified excavator equipped with the newly created in situ blender, 13,000 pounds of $KMnO_4$ and 22,000 gallons of water were mixed into the contaminated soil to a depth of 10 feet below the soil surface. Within three weeks after treatment, the highest recorded levels of PCE in the soil dropped more than 91%, from 28,000 ppb to 2,100 ppb and readings of only 20 ppb. Further analysis showed that treatment time had been reduced from 20 years to approximately five years. Due to the pilot's success, regulators allowed a reduction in monitoring from 38 monitoring wells sampled twice per year to 16 sampled once per year. Blending $KMnO_4$ into the soil shortened the estimated monitored natural attenuation time from 20 years to approximately five years. By implementing this innovative technology, shortening the cleanup timeframe, and reducing the need for long-term monitoring, Fort Riley saved $2.5 million. More success stories at http://derparc.egovservices.net/Derparc_FY04/do/success

Chemical oxidation of VOCs – ex-situ soil treatment

RemedX treated soil contaminated by chlorinated hydrocarbons via a chemical oxidation technique applied ex-situ

The choice of remedial strategy and the final design of the solution were developed by building up site-specific data from site investigation, laboratory-scale and finally field-scale remediation trials. This process allowed the strategy and techniques chosen to be validated prior to full-scale works commencing.

Field-scale pilot trial

The final stage of developing the remedial method for application at the site was a field-scale pilot trial. This trial compared chlorinated hydrocarbon (CHC) destruction using three chemical oxidant additions under identical treatment conditions:

- solid (powdered) potassium permanganate
- potassium permanganate solution
- RegenOx™.

RegenOx™ is a proprietary compound mixture produced by Regenesis. Treatment effectiveness of the additions were compared with each other and with an oxidant-free control to quantify physical losses such as volatilisation during soil mixing. The results from this pilot study was used to evaluate the feasibility of full scale ex-situ soil treatment.

Pilot test methods

A representative bulk soil sample of 4 tonnes was collected from the contaminated soil zone. This sample was homogenised and split into four batches of one tonne, each being placed in a skip. Skip A soils had potassium permanganate ($KMnO_4$) powder added and mixed using an excavator, Skip B had $KMnO_4$ solution added and mixed using an excavator, Skip C had RegenOx™ (Part A) and RegenOx™ activator gel (Part B) added by hand and then mixed with the excavator and Skip D had no additions only mixing to act as the experimental control.

Baseline soil samples were taken from each soil batch to confirm homogenisation and establish the starting contaminant levels. For each skip, two composite samples of five subsamples were analysed for Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (sVOCs), Soil Moisture, Total Organic Carbon (TOC) and grain size. The baseline sampling indicated the soil homogenisation process had been effective.

Results

Little or no reduction of any contaminant was observed in either the permanganate solution treatment or the control over the 12-day test period. In contrast, significant reductions in trichloroethene (TCE) and cis-1,2 dichloroethene (DCE) were measured in Skips A (permanganate power) and Skip C (RegenOx™) (Figures 1 and 2). Significant reductions of perchloroethene (PCE) and trichloroethane (TCA) were also observed in Skip C (RegenOx™) as compared with the other treatments (Figures 3 and 4). This was most marked for TCA where an 80% reduction was observed in the RegenOx™ treatment whilst other treatments did not differ significantly from the control (no treatment). The likely reason for unsatisfactory results in Skip B (permanganate solution) was the limited amount of oxidant delivered due to the cohesive nature of the soil and its high moisture content to start. This limited the amount of additional liquid (permanganate solution) that could be added without exceeding the soils field capacity and then producing a slurry, which was avoided.

Conclusions

- Potassium permanganate powder and RegenOx™ can be effectively used for ex-situ soil treatment with less material handling problems than liquid permanganate solution.
- Both Skip A (powdered permanganate) and Skip C (RegenOx™) showed good reductions of TCE and DCE.
- RegenOx™ treated a wider range of CHCs than permanganate, with statistically better results for DCE, PCE and TCA and evidence of ongoing contaminant reduction. BB

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▸ www.remedx.co.uk

Pilot test chemical results

Figure 1: TCE (ug/kg)

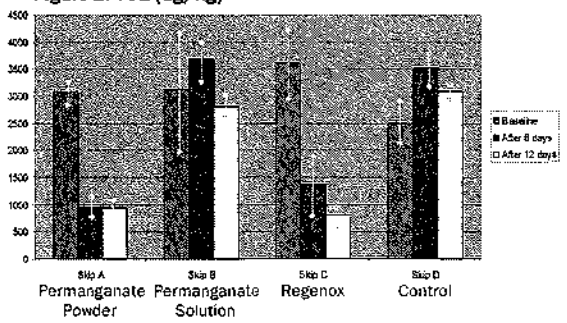

Figure 2: cis-1-2 DCE (ug/kg)

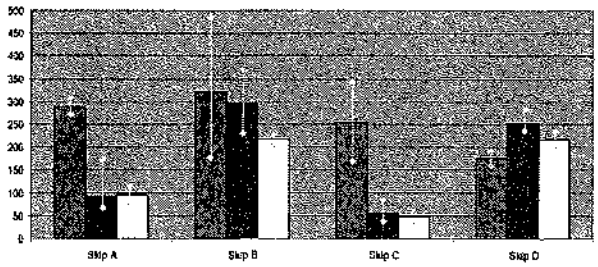

Figure 3: PCE (ug/kg)

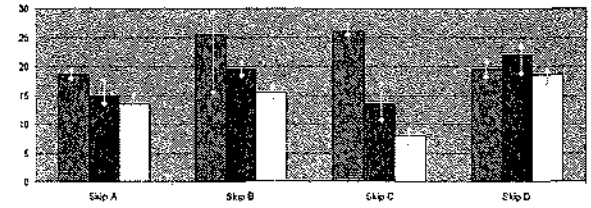

Figure 4: TCA (ug/kg)