Region I
Inorganic Data Review Worksheets

VI. MATRIX SPIKE

TR # MALR29$ Matrix: Soil

1. Recovery Criteria

List the percent recoveries for analytes which did not meet the required criteria.

S - amount of spike added
SSR - spiked sample result
SR - sample result

ANALYTE	SSR	SR	S	%R	ACTION
Antimony	65.3261	.8627	113.51	57.6	~~No action~~ J(+)/UJ(ND)
Chromium	63.8213	33.0640	45.40	67.7	J(+)/UJ(ND)
Copper	103.8054	95.5977	56.75	14.5	J(+)/R(ND)
Pb	121.8477	190.0643	4.54	-150.6	~~J(+)/R(ND)~~ NA Sample Conc. >4x Spike

8/7/10/02

Matrix Spike Actions apply to all samples of the same matrix.

ACTIONS:

1. If the sample concentration exceed the spike concentration by a factor of 4 or more, no action is taken.
2. If any analyte does not meet the %R criteria, follow the actions stated below:

PERCENT RECOVERY

	< 30%	30%-74%	>125%
Positive Sample Results	J	J	J
Non-detected Results	R	UJ	A

2. Frequency Criteria

A. Was a matrix spike prepared at the required frequency? Yes or No
B. Was a post digestion spike analyzed for elements that did not meet the required criteria for matrix spike recovery? Yes or No

A separate worksheet should be filled out for each matrix spike pair.

Region I
Inorganic Data Review Worksheets

VII. LABORATORY DUPLICATES

List the concentrations of any analyte not meeting the criteria for duplicate precision. For soil duplicates, calculate the CRDL in mg/kg using the sample weight, volume and percent solids data for the sample. Indicate what criteria was used to evaluate precision by circling either the RPD or CRDL for each element.

Matrix: Soil

ELEMENT	CRDL WATER ug/L	CRDL SOIL mg/kg	SAMPLE # MALR29	DUPLICATE # MALR29D	RPD	ACTION
Aluminum	200	40	9095.1493	9240.5119	1.6	No action
Antimony	60	12				
Arsenic	10	2	6.694	7.5014	12.5	No action
Barium	200	40	85.5653	101.2137	16.8	No action
Beryllium	5	1				
Cadmium	5	1				
Calcium	5000	1000	2935.4255	6086.9575	69.9	J(+) all samples
Chromium	10	2	33.0640	17.9431	59.3	J(+) for all samples
Cobalt	50	10				
Copper	25	5	95.5977	79.2364	18.7	No action
Iron	100	20	15996.4697	17004.6733	6.1	No action
Lead	5	1	190.0643	119.2681	45.8	J(+) for all samples
Magnesium	5000	1000	2072.0933	2452.3901	18.0	No action
Manganese	15	3	157.0953	223.4741	34.9	No action
Mercury	0.2	0.1	~~.04~~	~~.1129~~	~~.1203~~	~~6.3~~ ~~No action~~
Nickel	40	8	8.6446	9.2784	7.1	No action
Potassium	5000	1000	1435.9368	1390.2711	3.2	No action
Selenium	5	1				
Silver	10	2				
Sodium	5000	1000				
Thallium	10	2				
Vanadium	50	10	29.8807	29.7433	.5	No action
Zinc	20	4	103.5959	125.7795	19.3	No action
Cyanide	10	2				

SET 7/10/02

Laboratory duplicate actions should be applied to all other samples of the same matrix type.

ACTION:

1. Estimate (J) positive results for elements which have an RPD > 20% for waters and > 35% for soils.
2. If sample results are less than 5X the CRDL, estimate (J) positive results for elements whose absolute difference is > CRDL (2X CRDL for soils). If both samples are non-detected, the RPD is not calculated (NC).

Region I
Inorganic Data Review Worksheets

VIII. FIELD DUPLICATES

List the concentrations of all analytes in the field duplicate pair. For soil duplicates, calculate the CRDL in mg/kg using the sample weight, volume and percent solids data for the sample. Indicate what criteria was used to evaluate precision by circling either the RPD or CRDL for each element.

Matrix: Soil 8/1 7/10/02

ELEMENT	CRDL WATER ug/L	CRDL SOIL mg/kg	SAMPLE # MALR33	DUPLICATE # MALR28	RPD %	ACTION
Aluminum	200	~~400~~ 40	26200	9450	~~93~~ 94	J(+) all samples
Antimony	60	12				
Arsenic	10	2	7.1	6.5	8.8	No action (NA)
Barium	200	40	3250	2350	32.1	↓
Beryllium	5	1				
Cadmium	5	1				
Calcium	5000	1000	6970	8760	22.8	NA
Chromium	10	2	25.5	20.4	22.2	NA
Cobalt	50	10				
* Copper	25	5	6380	308 182	~~22.2~~ 94	~~NA~~ J(+) all samples
Iron	100	20	34800	34500	.87	NA
Lead	5	1	546	362	40.5	↓
Magnesium	5000	1000	2540	3960	44	OK
Manganese	15	3	400	334	18.0	NA
Mercury	0.2	~~0~~ 0.1	0.12	0.08U		OK
Nickel	40	8	56.5	18.9	99.7	J(+) all samples
Potassium	5000	1000	1470	1270	15	OK
Selenium	5	1				
Silver	10	2	~~8~~ BAD			
Sodium	5000	1000	2430	1690	44	OK
Thallium	10	2				
Vanadium	50	10	21.7	17.2	23	OK
Zinc	20	4	1690	788	73%	J(+) all samples
Cyanide	10	2				

* all samples (+) and previously estimated (J) due to poor MS recovery. NFA

Field duplicate actions should be applied to all other samples of the same matrix type.

ACTION:

1. Estimate (J) positive results for elements which have an RPD > 30% for waters and > 50% for soils.
2. If sample results are less than 5X the CRDL, estimate (J) positive results for analytes whose absolute difference is > 2X CRDL (4X CRDL for soils). If both samples are non-detected, the RPD is not calculated (NC).

Region I
Inorganic Data Review Worksheets

XIII. SAMPLE QUANTITATION (continued)

List the positive sample results that were reported at concentrations less than 2xIDL and have not already been qualified. The positive results have been estimated (J) due to uncertainty in the quantitation near the IDL.

	Analyte	Samples Affected
*	Antimony	MALR31
	Arsenic	MALR24; MALR27
**	Beryllium	MALR26
***	Mercury	MALR31; MALR32; MALR33; MALR34
	Selenium	MALR23; MALR24; MALR28; MALR29; MALR32
	Silver	MALR28
	Thallium	MALR27; MALR32

* Previously qualified "U" due to blank contamination. Therefore, result further qualified as estimated, nondetect (UJ) due to poor MS recovery. Therefore no further action

** Previously qualified "U" due to blank contamination. Therefore, result further qualified as estimated, nondetect (UJ) due to blank contamination + uncertainty in quantitation near the IDL.

*** Previously qualified as estimated (J) due to poor CRDL standard recovery. Therefore no further action

Attachment V

Copies of Telephone Logs/Communications Forms
(NOT APPLICABLE)

Attachment VI

CSF Completeness Evidence Audit (DC-2)

Evidence Audit Photocopy

Reg. 1

FULL INORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET

LABORATORY NAME Sentinel, Inc.
CITY/STATE Huntsville, AL

CASE NO. 30584 SDG NO. MAUR20
SDG NOS. TO FOLLOW NA NA NA
SAS NO. NA

CONTRACT NO. 68-W-00-085
SOW NO. ILM04.1

Received JUN 11 2002 OEME Chelmsford

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

M+R/RI
Mill St. Property BTA

		PAGE NOs. FROM	TO	(Please Check:) LAB	~~REGION~~ MY+E/~~EPA~~
1.	Inventory Sheet (DC-2) (Do not number)			✓	✓
2.	Cover Page	1	1	✓	✓
3.	SDG Narrative	2	2	✓	✓
4.	Inorganic Analysis Data Sheet (Form I-IN)	3	15	✓	✓
5.	Initial & Continuing Calibration Verification (Form IIA-IN)	16	18	✓	✓
6.	CRDL Standards For AA and ICP (Form IIB-IN)	19	21	✓	✓
7.	Blanks (Form III-IN)	22	24	✓	✓
8.	ICP Interference Check Sample (Form IV-IN)	25	27	✓	✓
9.	Spike Sample Recovery (Form VA-IN)	28	28	✓	✓
10.	Post Digest Spike Sample Recovery (Form VB-IN)	29	29	✓	✓
11.	Duplicates (Form VI-IN)	30	30	✓	✓
12.	Laboratory Control Sample (Form VII-IN)	31	31	✓	✓
13.	Standard Addition Results (Form VIII-IN)	NA	NA	—	✓
14.	ICP Serial Dilutions (Form IX-IN)	32	32	✓	✓
15.	Instrument Detection Limits (Form X-IN)	33	34	✓	✓
16.	ICP Interelement Correction Factors (Form XIA-IN)	35	35	✓	✓
17.	ICP Interelement Correction Factors (Form XIB-IN)	36	37	✓	✓
18.	ICP Linear Ranges (Form XII-IN)	38	38	✓	✓
19.	Preparation Log (Form XIII-IN)	39	40	✓	✓
20.	Analysis Run Log (Form XIV-IN)	41	45	✓	✓
21.	ICP Raw Data	46	159	✓	✓
22.	Furnace AA Raw Data	NA	NA	—	—
23.	Mercury Raw Data	160	162	✓	✓
24.	Cyanide Raw Data	NA	NA	—	—
25.	Preparation Logs Raw Data	163	165	✓	✓
26.	Percent Solids Determination Log	166	167	✓	✓
27.	Traffic Report /COC	168	169	✓	✓
28.	EPA Shipping/Receiving Documents	170	178	✓	✓
	Airbill (No. of Shipments 1)	170	170	✓	✓
	Chain-of-Custody Records /Seals	171	171	✓	✓
	Sample Tags	172	175	✓	✓
	Sample Log-In Sheet (Lab & DC1)	176	177	✓	✓
	SDG Cover Sheet	178	178	✓	✓
29.	Misc. Shipping/Receiving Records (list all individual records)				
	Telephone Logs	NA	NA	—	—
	_____	NA	NA	—	—
	_____				
30.	Internal Lab Sample Transfer Records & Tracking Sheets (describe or list)	NA	NA	—	—
	SDG Tracking	179	179	✓	✓

Evidence Audit Photocopy

	PAGE NOS. FROM	TO	(Please Check:) LAB	REGION
	NA	NA		
31. Internal Original Sample Prep & Analysis Records (describe or list)				
Prep Records	180	183	✓	✓
Analysis Records	184	185	✓	✓
Description	NA	NA		
32. Other Records (describe or list)				
Telephone Communications Log	186	186	✓	✓
Defect Report	187	190	✓	✓

33. Comments:

Completed by (CLP Lab): Daphne Woods (Signature) — Daphne Woods Asst. Doc. Control Officer (Print Name & Title) — 06/20/02 (Date)

Audited by (EPA): M+E Elizabeth DeColoy (Signature) — Elizabeth DeColoy/Chemist (Print Name & Title) — 7/2/02 (Date)

Attachment VII

DQO Summary Form

A separate Form should be completed for each sampling event. Refer to Attachment A for instructions on completing this form. Attachment B for a complete list of the parameter codes and Attachment C for an example of a completed form.

1.EPA Program: ~~TSCA CERCLA RCRA DW NPDES CAA~~
Other: Brownfields Targeted Site Assessment (BTSA)
Projected Date(s) of Sampling: 10 June through 21 June 2002
EPA Site Manager: Jim Byrne/James Chow
EPA Case Team Members: _____

Site Name: Mill Street Property
Site Location: Brookfield, MA
Assigned Site Latitude/Longitude: Unknown
CERCLA Site/Spill Identifier No._____(Include Operable Unit)
Phase: ~~ERA SA/SI pre-RI RI (phase I, etc.) FS RD RA post-RA~~
(circle one) **Other:** BTSA

2.QAPjP Title and Revision Date: Generic Sampling and Analysis Plan for Brownfield Targeted Site Assessments (M&E, June 1999) and Field Task Work Plan for Mill Street Property, Brookfield, MA (M&E, April 2002)

Approved by: James Chow/Jim Byrne Date of Approval: April 2002
Title of Approving Official: EPA WAM Organization*: EPA
*If other than EPA, record date approval authority was delegated: _____

EPA Oversight Project (circle one) ~~Y~~ N Type of EPA Oversight (circle one) ~~PRP or FF~~ Other: NA
Confirmatory Analysis for Field Screening ~~Y~~ N If EPA Oversight or Confirmatory: % splits ___
Are comparability criteria document? ~~Y~~ N

3.						
a.	Matrix Code[1]	SO	SO	SO	SO	SO
b.	Parameter Code[2]	EPH	VPH	13116010	8082	ILM04.1MT
c.	Preservation Code[3]	5	5, 10 (MEOH)	5	5	5
d.	Analytical Services Mechanism	Sub*	Sub	Sub	Sub	RAS
e.	No. of Sample Locations	12	12	6	6	12
	Field QC:					
f.	Field Duplicate Pairs	1	1	1	1	1
g.	Equipment Blanks	0	0	0	0	0
h.	VOA Trip Blanks	0	3	0	0	0
i.	Cooler Temperature Blanks	1 per cooler	1 per cooler	1 per cooler	1 per cooler	1 per cooler
j.	Bottle Blanks					
k.	Other:					
l.	PES sent to Laboratory	0	0	0	0	0
	Laboratory QC:					
m.	Reagent Blank	1	1	1	1	1
n.	Duplicate	1	1	1		1
o.	Matrix Spike	1	1	1	1	1
p.	Matrix Spike Duplicate	1	1		1	
q.	Other:					

4. Site Information
Site Dimensions Unknown
List all potentially contaminated matrices soil, groundwater
Range of Depth to Groundwater 10-20 ft below ground surface
Soil Types: **Surface Subsurface** ~~Other:~~ _____
Sediment Types: ~~Stream Pond Estuary Wetland Other:~~

When multiple matrices will be sampled during a sampling event, complete Sections 5-10 for each matrix. Matrix Code[1] SO

5. Data Use (circle all that apply) ~~Site Investigation/Assessment~~ ~~PRP Determination~~ ~~Removal Actions~~
Nature and Extent of Contamination Human and/or Ecological Risk Assessment
Remediation Alternatives ~~Engineering Design~~ ~~Remedial Action~~
~~Post-Remedial Action (quarterly monitoring)~~ **Other:** BTSA

* Sub = Directly Subcontracted
ILM04.1MT= RAS Inorganics (total metals)
VPH = Massachusetts VPH,
EPH = Massachusetts EPH
13116010 = TCLP Metals
8082 = PCBs

A separate Form should be completed for each sampling event. Refer to Attachment A for instructions on completing this form. Attachment B for a complete list of the parameter codes and Attachment C for an example of a completed form.

1.EPA Program: ~~TSCA CERCLA RCRA DW NPDES CAA~~
Other: Brownfields Targeted Site Assessment (BTSA)
Projected Date(s) of Sampling: 10 June through 21 June 2002
EPA Site Manager: Jim Byrne/James Chow
EPA Case Team Members:

Site Name: Mill Street Property
Site Location: Brookfield, MA
Assigned Site Latitude/Longitude: Unknown
CERCLA Site/Spill Identifier No. NA (Include Operable Unit)
Phase: ~~ERA SA/SI pre-RI RI (phase I, etc.) FS RD RA post-RA~~
(circle one) **Other:** BTSA

2.QAPjP Title and Revision Date: Generic Sampling and Analysis Plan for Brownfield Targeted Site Assessments (M&E, June 1999) and Field Task Work Plan for Mill Street Property, Brookfield, MA (M&E, April 2002)

Approved by: James Chow/Jim Byrne Date of Approval: April 2002
Title of Approving Official: EPA WAM Organization*: EPA
*If other than EPA, record date approval authority was delegated:

EPA Oversight Project (circle one) ~~Y~~ N
Confirmatory Analysis for Field Screening ~~Y~~ N
Are comparability criteria document? ~~Y~~ N

Type of EPA Oversight (circle one) ~~PRP or FF~~ Other: NA
If EPA Oversight or Confirmatory: % splits ___

3.						
	a.	Matrix Code[1]	GW	GW	GW	GW
	b.	Parameter Code[2]	EPH	VPH	OLC03.2	ILM04.1MT
	c.	Preservation Code[3]	5	1, 5	1, 5	2, 5
	d.	Analytical Services Mechanism	Sub	Sub	RAS	RAS
	e.	No. of Sample Locations	5	5	5	5
		Field QC:				
	f.	Field Duplicate Pairs	1	1	1	1
	g.	Equipment Blanks				
	h.	VOA Trip Blanks		1	1	
	i.	Cooler Temperature Blanks	1 per cooler	1 per cooler	1 per cooler	1 per cooler
	j.	Bottle Blanks	0	0	0	0
	k.	Other:	0	0	0	0
	l.	PES sent to Laboratory	0	0	0	0
		Laboratory QC:				
	m	Reagent Blank	1	1	1	1
	n.	Duplicate	1	1		1
	o.	Matrix Spike	1	1	1	1
	p.	Matrix Spike Duplicate	1	1	1	
	q.	Other:				

4. Site Information
Site Dimensions 3 parcels
List all potentially contaminated matrices soil, groundwater
Range of Depth to Groundwater 5-25 ft below ground surface
Soil Types: **Surface Subsurface** ~~Other~~:
Sediment Types: ~~Stream Pond Estuary Wetland~~ Other:

When multiple matrices will be sampled during a sampling event, complete Sections 5-10 for each matrix. Matrix Code[1] GW

5. Data Use (circle all that apply) ~~Site Investigation/Assessment~~ ~~PRP Determination~~ ~~Removal Actions~~
Nature and Extent of Contamination **Human and/or Ecological Risk Assessment**
~~Remediation Alternatives~~ ~~Engineering Design~~ ~~Remedial Action~~
~~Post-Remedial Action (quarterly monitoring)~~ **Other:** BTSA

* Sub = Directly Subcontracted
OLC03.2 - RAS Low Concentration VOCs
ILM04.1MT= RAS Inorganics (total metals)
VPH = Massachusetts VPH
EPH = Massachusetts EPH

6. Summarize DQOs: To provide data for characterizing and assessing current environmental and site conditions as needed to support a preliminary evaluation of risks and remedial alternatives.

COCs	Action Levels	Analytical Method-Quantitation Limits
Refer to Field Task Work Plan for Mill Street Property, Brookfield, MA (BTSA), M&E, March 2002	Refer to Field Task Work Plan for Mill Street Property, Brookfield, MA (BTSA), M&E, March 2002	RAS Methods - As per applicable CLP SOW Subcontract Methods - per SOP with approved BTSA laboratories (Mitkem, Amro, or Woods Hole Group)

7. Sampling Method (circle technique) ~~Bailer~~ ~~Low flow pump (Region I method: Yes No)~~ ~~Peristaltic Pump~~ ~~Positive Displacement Pump~~ ~~Faucet or Spigot~~ ~~Other~~: _____ ~~Split Spoon~~ ~~Dredge~~ Trowel

Other: Geoprobe Macro-core

Sampling Procedure (SOP name, No., Rev. #, and date) Generic Sampling and Analysis Plan for Brownfield Targeted Site Assessments (M&E, June 1999) and Field Task Work Plan for Mill Street Property, Brookfield, MA (M&E, April 2002)

List Background Sample Locations _____

Circle: ~~GW-Grab,~~ SO-Composite, ~~LN-Grab, WT - Grab~~

"Hot spots" sampled: ~~Yes~~ No

9. Analytical Methods and Parameters

Method title/SOP name	Method/SOP Identification number	Revision Date	Target Parameters (VOA, SV, Pest/PCB, Metals, etc.)
See Section 3			

10. Validation Criteria (circle one) 1. Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analysis, Part II, III or IV
2. Other Approved Validation Criteria: Tier II-like validation memorandum

Validation Tier (circle one) I II III Partial Tier III: _____

Company/Organization Performing Data Validation Metcalf & Eddy, Inc. Prime ~~or Subcontractor~~ (circle one)

11. Company Name Metcalf & Eddy, Inc. Contract Number 68-W6-0042

Contract Name (e.g. START, RAC, etc.) RAC Work Assignment No. 106-SISI-01ZZ

Person Completing Form/Title Denise M. Laferte /Project Chemist Date of DQO Summary Form Completion 5/24/02

Matrix Codes[1] - Refer to Attachment B, Part i
Parameter Codes[2] - Refer to Attachment B, Part II

Preservation Codes[3]

1.	HCl to pH ≤ 2	7.	$K_2Cr_2O_7$
2.	HNO_3	8.	Freeze
3.	$NaHSO_4$	9.	Room Temperature (avoid excessive heat)
4.	H_2SO_4	10.	Other (Specify)
5.	Cool @ 4°C (± 2°)	N.	No preserved

* - To supplement Matrix Codes and/or Parameter Codes contact the QA Unit

Memorandum

Metcalf & Eddy

PROJECT NO:	0362001.0006.00115	**DATE:** July 23, 2002	
TO:	Mill Street Site File (BTSA)	**OFFICE:** Wakefield	
FROM:	S. Harvey	**COMPANY:** Metcalf & Eddy, Inc.	
REVIEWED BY:	L. Krowitz		
CC:	B. Weir, N. Thurber, D. Laferte (memo only)		

SUBJECT: Limited QC Review/Modified Tier II-Like Review
VPH, EPH, PAH SIM Analytical Results
Woods Hole Group, Raynham, Massachusetts
ETR No. 0206091

On June 18 and 19, 2002, five aqueous samples and one aqueous trip blank sample were collected at the Mill Street Brownfields Targeted Site Assessment (BTSA) site, located in Brookfield, Massachusetts by Metcalf & Eddy, Inc. (M&E) field personnel. The sampling was performed as part of the BTSA Response Action Contract (RAC) Work Assignment (WA) #106-SIBZ-01ZZ. The samples were submitted to Woods Hole Group, located in Raynham, Massachusetts for the analysis of Volatile Petroleum Hydrocarbons (VPH) using the Massachusetts Department of Environmental Protection (MADEP) *Method for Determination of Volatile Petroleum Hydrocarbons (VPH) (January 1998);* Extractable Petroleum Hydrocarbons (EPH) using the Massachusetts Department of Environmental Protection (MADEP) *Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), January 1998*; and Polyaromatic Hydrocarbon (PAH) Selected Ion Monitoring (SIM) using EPA SW-846 Method 8270. All samples were received by the laboratory on June 20, 2002. The data package was received in the M&E office on July 11, 2002.

M&E reviewed the data in accordance with the EPA-approved Final Field Task Work Plan for the site, and the guidance received from EPA Work Assignment Manager, Mr. James Byrne, in a September 17, 1999 letter to former M&E Work Assignment Manager, Barb Wyskowski. The data review included:

- * Data Completeness
- * Preservation and Technical Holding Times
- * GC/MS and GC/ECD Instrument Performance Check
- Initial and Continuing Calibrations
- Blank Analysis Results
- * Surrogate Compounds
- * Internal Standards
- Matrix Spike (MS) Recoveries

*	•	Laboratory Duplicate Sample Results
*	•	Field Duplicate Sample Results
*	•	Laboratory Control Sample (LCS) Results
*	•	Compound Quantitation and Reported Quantitation Limits
NA	•	Semivolatile and Pesticide/PCB Cleanup
NA	•	Performance Evaluation (PE) Sample Results

*	=	All criteria met for this parameter
NA	=	Not applicable and/or no information was provided by the laboratory

Note: Worksheets are not included for parameters that have met criteria or for criteria that are not applicable to the method and/or to the modified Tier II-like review.

Included in Attachment I is a copy of the chain-of-custody (COC) record. Included in Attachment II are the result summary sheets, annotated with qualifiers, if necessary, as detailed in this memorandum. Included in Attachment III are the data validation worksheets.

Initial and Continuing Calibrations

VPH

The following table summarizes the continuing calibration (CC) EPH analysis results that failed to meet the CC criterion of percent difference (%D) $\leq$ 25%:

Instrument	HP PID
Calibration	CC 6/27/02
Compound	%D
2,2,4-trimethylpentane*	-29%
Associated Samples:	ME-1, ME-2, KME-2, ME-3, ME-4, and TB-01.

%D$\geq$25%: Estimate nondetect (UJ) C_5-C_8 aliphatic hydrocarbon results. A bias cannot be determined.

PAH SIM

The following table summarizes the initial calibration (IC) and continuing calibration (CC) PAH SIM analysis results that failed to meet the IC criterion of relative standard deviation $\leq$30% and the CC criterion of percent difference (%D)$\leq$25%:

Instrument	HP-TPH	
Calibration	IC 6/28/02	CC 7/3/02
Compound	% RSD	%D
fluoranthene	32.6	-
pyrene	52.0	33.3
benzo(g,h,i)perylene	33.4	-
Associated Samples:	ME-1, ME-2, KME-2, ME-3, and ME-4	

"-" indicates acceptable result.
%RSD≥30%: Estimate nondetect (UJ) results. A bias cannot be determined.
%D≥25%: Estimate nondetect (UJ) results. A bias cannot be determined.

No action is taken on the above listed PAH samples because the quantitation method used was linear regression and not an average response factor. The correlation coefficients for all compounds were greater than 0.990.

Blank Analysis Results

PAH SIM

A review of laboratory blank analysis results indicates the presence of contamination for the PAH SIM compounds in the samples listed below. Positive sample results reported with concentrations less than the blank action level (BAL) for that compound are considered to be false positive results.

Compound	Max. Conc. (µg/L)	Blank Action Level (BAL) (µg/L)	Affected Samples/Action
naphthalene	320	1,600	Qualify the reported value as nondetect "U" in PAH SIM samples ME-1, ME-2, ME-3, and ME-4.

The blank contamination validation actions include:

* concentration ≤ blank action level; qualify the reported value as nondetect (U)
* concentration ≥ blank action level; report the value unqualified.

Matrix Spike Recoveries

VPH

The VPH compounds that did not meet acceptance criteria of 70-130 percent recovery (%R) in matrix spike sample ME-1, indicating possible matrix interference, are summarized in the table below:

Compound	Spiked Sample Result (µg/L)	Sample Result (µg/L)	Matrix Spike %R	Affected Samples/Action
n-nonane	10U	67	67	Estimate (UJ) nondetect C_9-C_{12} aliphatic result in sample ME-1.

Attachment I

Chain-of-Custody

For Ex Air Bill Nos: 8306 0505 89 8
8306 0505 89 +0

Page 1 of 1

M&E Metcalf & Eddy

CHAIN OF CUSTODY FORM

Job/Project Name: Mill Street Property
Job/Project Location: Brookfield, MA
Job/Project Number: 20010000
Samplers: (Signatures) [signature]
Recorder: (Signature) [signature]
Date: 6/19/02
Lab (Samples Sent To): Woods Hole, Raynham MA

SAMPLING Date	SAMPLING Time	SAMPLE NUMBER	SAMPLE LOCATION	MATRIX Water	MATRIX Soil	COMPOSITE/GRAB	PRESERVATIVE (Y/N)	VPH (MA DEP)	EPH (MA DEP)	Total #	COMMENTS Preserved with HCl (All)
6/18/02	1320	ME-1	ME-1	X		G	Y	X	X	~~22~~ 23	MS/MSD
6/18/02	1300	ME-2	ME-2	X		G	Y	X	X	5	
6/18/02	1310	KME-2	KME-2	X		G	Y	X	X	5	D(ME-2)
6/18/02	1810	ME-3	ME-3	X		G	Y	X	X	5	
6/19/02	0900	ME-4	ME-4	X		G	Y	X	X	5	
6/18/02	0830	TB-01	TB-01	X		G	Y	X		1	
			TEMP BLANK INCLUDED								

Relinquished By: (Signature)	Date:	Time:	Received By: (Signature)	Relinquished By: (Signature)	Date:	Time:	Received By: (Signature)
[signature]	6/19/02	1600	[signature]				
Relinquished By: (Signature)	Date:	Time:	Received By: (Signature)	Relinquished By: (Signature)	Date:	Time:	Received By: (Signature)
Relinquished By: (Signature)	Date:	Time:	Received for Lab By: (Signature)	Date:	Time:		

Comments: Send Results to D. Lafate M&E follow Brownfields work order

Method of Shipment: Federal Express

Distribution: **Original** to Lab. **Copy 1** to Field Files, **Copy 2** to Project Manager

Form 274 (Rev. 5/89)

Attachment II

Sample Result Summary Sheets

Form I
Volatile Petroleum Hydrocarbons by GC - PID/FID

Client: **Metcalf & Eddy**
Project: **Mill Street - Brookfield**
Case: **N/A** SDG: **N/A**
Client ID: **ME-1**
Matrix: **Water**

Lab Code: **M-MA030**
ETR: **0206091**
Lab ID: **0206091-01**
Associated Blank: **VW0626B1**
Concentration Units: **µg/L**

Date Collected	Date Received	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
06/18/02	06/20/02	06/27/02	5	5	1	MLR

Petroleum Range Data	Result	
C_5-C_8 Aliphatic Hydrocarbons [1,2]	240	U J
C_9-C_{12} Aliphatic Hydrocarbons [1,3]	100	U J
C_9-C_{10} Aromatic Hydrocarbons [1]	70	U
Unadjusted C_5-C_8 Aliphatic Hydrocarbons [1]	240	U
Unadjusted C_9-C_{12} Aliphatic Hydrocarbons [1]	100	U

SH 7/22/02

Target Analytes	Elution Range	Result	
Methyl tert-butyl ether (MTBE)	C_5 - C_8	5.0	U
Benzene	C_5 - C_8	5.0	U
Toluene	C_5 - C_8	15	U
Ethylbenzene	C_9 - C_{12}	5.0	U
p/m-Xylene	C_9 - C_{12}	20	U
o-Xylene	C_9 - C_{12}	10	U
Naphthalene	N/A	10	U

[1] = Range concentration excludes the concentration of any surrogate(s) and/or internal standards eluting in that range.
[2] = Range concentration excludes the concentration of target analytes eluting in that range.
[3] = Range concentration excludes the concentration of target analytes eluting in that range and the concentration of the aromatic hydrocarbon range.

Surrogate	% Recovery FID	% Recovery PID	Acceptance Range (%)
1,4-Difluorobenzene	102	95	70-130

U - The analyte was analyzed for but not detected at the sample specific level reported.
N/A - Not Applicable

07/08/02 13:55

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Form I
Volatile Petroleum Hydrocarbons by GC - PID/FID

Client: **Metcalf & Eddy**
Project: **Mill Street - Brookfield**
Case: **N/A** SDG: **N/A**
Client ID: **ME-2**
Matrix: **Water**

Lab Code: **M-MA030**
ETR: **0206091**
Lab ID: **0206091-02**
Associated Blank: **VW0626B1**
Concentration Units: **µg/L**

Date Collected	Date Received	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
06/18/02	06/20/02	06/27/02	5	5	1	MLR

Petroleum Range Data	Result	
C_5-C_8 Aliphatic Hydrocarbons [1,2]	240	U J
C_9-C_{12} Aliphatic Hydrocarbons [1,3]	100	U
C_9-C_{10} Aromatic Hydrocarbons [1]	70	U
Unadjusted C_5-C_8 Aliphatic Hydrocarbons [1]	240	U
Unadjusted C_9-C_{12} Aliphatic Hydrocarbons [1]	100	U

SH 7/12/02

Target Analytes	Elution Range	Result	
Methyl tert-butyl ether (MTBE)	C_5 - C_8	5.0	U
Benzene	C_5 - C_8	5.0	U
Toluene	C_5 - C_8	15	U
Ethylbenzene	C_9 - C_{12}	5.0	U
p/m-Xylene	C_9 - C_{12}	20	U
o-Xylene	C_9 - C_{12}	10	U
Naphthalene	N/A	10	U

[1] = Range concentration excludes the concentration of any surrogate(s) and/or internal standards eluting in that range.
[2] = Range concentration excludes the concentration of target analytes eluting in that range.
[3] = Range concentration excludes the concentration of target analytes eluting in that range and the concentration of the aromatic hydrocarbon range.

Surrogate	% Recovery FID	% Recovery PID	Acceptance Range (%)
1,4-Difluorobenzene	102	95	70-130

U - The analyte was analyzed for but not detected at the sample specific level reported.
N/A - Not Applicable

07/08/02 13:53

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Form 1
Volatile Petroleum Hydrocarbons by GC - PID/FID

Client: **Metcalf & Eddy**
Project: **Mill Street - Brookfield**
Case: **N/A** SDG: **N/A**
Client ID: **KME-2**
Matrix: **Water**

Lab Code: **M-MA030**
ETR: **0206091**
Lab ID: **0206091-03**
Associated Blank: **VW0626B1**
Concentration Units: **µg/L**

Date Collected	Date Received	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
06/18/02	06/20/02	06/27/02	5	5	1	MLR

Petroleum Range Data	Result	
C_5-C_8 Aliphatic Hydrocarbons [1,2]	240	UJ
C_9-C_{12} Aliphatic Hydrocarbons [1,3]	100	U
C_9-C_{10} Aromatic Hydrocarbons [1]	70	U
Unadjusted C_5-C_8 Aliphatic Hydrocarbons [1]	240	U
Unadjusted C_9-C_{12} Aliphatic Hydrocarbons [1]	100	U

SH 7/22/02

Target Analytes	Elution Range	Result	
Methyl tert-butyl ether (MTBE)	C_5 - C_8	5.0	U
Benzene	C_5 - C_8	5.0	U
Toluene	C_5 - C_8	15	U
Ethylbenzene	C_9 - C_{12}	5.0	U
p/m-Xylene	C_9 - C_{12}	20	U
o-Xylene	C_9 - C_{12}	10	U
Naphthalene	N/A	10	U

[1] = Range concentration excludes the concentration of any surrogate(s) and/or internal standards eluting in that range.
[2] = Range concentration excludes the concentration of target analytes eluting in that range.
[3] = Range concentration excludes the concentration of target analytes eluting in that range and the concentration of the aromatic hydrocarbon range.

Surrogate	% Recovery FID	% Recovery PID	Acceptance Range (%)
1,4-Difluorobenzene	102	95	70-130

U - The analyte was analyzed for but not detected at the sample specific level reported.
N/A - Not Applicable

07/08/02 13:54

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Form 1
Volatile Petroleum Hydrocarbons by GC - PID/FID

Client: **Metcalf & Eddy**
Project: **Mill Street - Brookfield**
Case: **N/A** SDG: **N/A**
Client ID: **ME-3**
Matrix: **Water**

Lab Code: **M-MA030**
ETR: **0206091**
Lab ID: **0206091-04**
Associated Blank: **VW0626B1**
Concentration Units: **µg/L**

Date Collected	Date Received	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
06/18/02	06/20/02	06/27/02	5	5	1	MLR

Petroleum Range Data	Result	
C_5-C_8 Aliphatic Hydrocarbons [1,2]	240	UJ
C_9-C_{12} Aliphatic Hydrocarbons [1,3]	100	U
C_9-C_{10} Aromatic Hydrocarbons [1]	70	U
Unadjusted C_5-C_8 Aliphatic Hydrocarbons [1]	240	U
Unadjusted C_9-C_{12} Aliphatic Hydrocarbons [1]	100	U

SH 7/22/02

Target Analytes	Elution Range	Result	
Methyl tert-butyl ether (MTBE)	C_5 - C_8	5.0	U
Benzene	C_5 - C_8	5.0	U
Toluene	C_5 - C_8	15	U
Ethylbenzene	C_9 - C_{12}	5.0	U
p/m-Xylene	C_9 - C_{12}	20	U
o-Xylene	C_9 - C_{12}	10	U
Naphthalene	N/A	10	U

[1] = Range concentration excludes the concentration of any surrogate(s) and/or internal standards eluting in that range.
[2] = Range concentration excludes the concentration of target analytes eluting in that range.
[3] = Range concentration excludes the concentration of target analytes eluting in that range and the concentration of the aromatic hydrocarbon range.

Surrogate	% Recovery FID	% Recovery PID	Acceptance Range (%)
1,4-Difluorobenzene	102	95	70-130

U - The analyte was analyzed for but not detected at the sample specific level reported.
N/A - Not Applicable

07/08/02 13:54

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Form 1

Volatile Petroleum Hydrocarbons by GC - PID/FID

Woods Hole Group

Client: **Metcalf & Eddy**
Project: **Mill Street - Brookfield**
Case: **N/A** SDG: **N/A**
Client ID: **ME-4**
Matrix: **Water**

Lab Code: **M-MA030**
ETR: **0206091**
Lab ID: **0206091-05**
Associated Blank: **VW0626B1**
Concentration Units: **µg/L**

Date Collected	Date Received	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
06/19/02	06/20/02	06/27/02	5	5	1	MLR

Petroleum Range Data	Result	
C_5-C_8 Aliphatic Hydrocarbons [1,2]	240	U J
C_9-C_{12} Aliphatic Hydrocarbons [1,3]	100	U
C_9-C_{10} Aromatic Hydrocarbons [1]	70	U
Unadjusted C_5-C_8 Aliphatic Hydrocarbons [1]	240	U
Unadjusted C_9-C_{12} Aliphatic Hydrocarbons [1]	100	U

SH 7/22/02

Target Analytes	Elution Range	Result	
Methyl tert-butyl ether (MTBE)	C_5 - C_8	5.0	U
Benzene	C_5 - C_8	5.0	U
Toluene	C_5 - C_8	15	U
Ethylbenzene	C_9 - C_{12}	5.0	U
p/m-Xylene	C_9 - C_{12}	20	U
o-Xylene	C_9 - C_{12}	10	U
Naphthalene	N/A	10	U

[1] = Range concentration excludes the concentration of any surrogate(s) and/or internal standards eluting in that range.
[2] = Range concentration excludes the concentration of target analytes eluting in that range.
[3] = Range concentration excludes the concentration of target analytes eluting in that range and the concentration of the aromatic hydrocarbon range.

Surrogate	% Recovery FID	% Recovery PID	Acceptance Range (%)
1,4-Difluorobenzene	102	95	70-130

U - The analyte was analyzed for but not detected at the sample specific level reported.
N/A - Not Applicable

07/08/02 13:54

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Form 1

Volatile Petroleum Hydrocarbons by GC - PID/FID

Client: **Metcalf & Eddy**
Project: **Mill Street - Brookfield**
Case: **N/A** SDG: **N/A**
Client ID: **TB-01**
Matrix: **Water**

Lab Code: **M-MA030**
ETR: **0206091**
Lab ID: **0206091-06**
Associated Blank: **VW0626B1**
Concentration Units: **µg/L**

Date Collected	Date Received	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
06/18/02	06/20/02	06/27/02	5	5	1	MLR

Petroleum Range Data	Result	
C_5-C_8 Aliphatic Hydrocarbons [1,2]	240	U J
C_9-C_{12} Aliphatic Hydrocarbons [1,3]	100	U
C_9-C_{10} Aromatic Hydrocarbons [1]	70	U
Unadjusted C_5-C_8 Aliphatic Hydrocarbons [1]	240	U
Unadjusted C_9-C_{12} Aliphatic Hydrocarbons [1]	100	U

SA 7/22/02

Target Analytes	Elution Range	Result	
Methyl tert-butyl ether (MTBE)	C_5 - C_8	5.0	U
Benzene	C_5 - C_8	5.0	U
Toluene	C_5 - C_8	15	U
Ethylbenzene	C_9 - C_{12}	5.0	U
p/m-Xylene	C_9 - C_{12}	20	U
o-Xylene	C_9 - C_{12}	10	U
Naphthalene	N/A	10	U

[1] = Range concentration excludes the concentration of any surrogate(s) and/or internal standards eluting in that range.
[2] = Range concentration excludes the concentration of target analytes eluting in that range.
[3] = Range concentration excludes the concentration of target analytes eluting in that range and the concentration of the aromatic hydrocarbon range.

Surrogate	% Recovery FID	% Recovery PID	Acceptance Range (%)
1,4-Difluorobenzene	102	95	70-130

U - The analyte was analyzed for but not detected at the sample specific level reported.
N/A - Not Applicable

07/08/02 13:53

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Form I
Extractable Petroleum Hydrocarbons by GC/FID

Woods Hole Group

Client: **Metcalf & Eddy**
Project: **Mill Street - Brookfield**
Case: N/A SDG: N/A
Client ID: **ME-1**
Matrix: **Water**

Lab Code: **M-MA030**
ETR: **0206091**
Lab ID: **0206091-01**
Associated Blank: **EW0624B1**
Concentration Units: **µg/L**

Date Collected	Date Received	Date Extracted	Sample Amount (ml)	Final Volume (ml)	Fraction	Date Analyzed	Dilution Factor	Analyst
06/18/02	06/20/02	06/24/02	1000	1	Aromatic	06/29/02	1	MLB
					Aliphatic	06/30/02	1	MLB

SA 7/22/02

Extractable Petroleum Hydrocarbons (EPH)	Result
C_9-C_{18} Aliphatics [1]	30 U
C_{19}-C_{36} Aliphatics [1]	40 U
C_{11}-C_{22} Aromatics [1,2]	85 U
Unadjusted C_{11}-C_{22} Aromatics [1]	85 U

Target PAH Analytes	Result
Naphthalene	5.0 U
2-Methylnaphthalene	5.0 U
Acenaphthylene	5.0 U
Acenaphthene	5.0 U
Fluorene	5.0 U
Phenanthrene	5.0 U
Anthracene	5.0 U
Fluoranthene	5.0 U
Pyrene	5.0 U
Benzo(a)anthracene	5.0 U
Chrysene	5.0 U
Benzo(b)fluoranthene	5.0 U
Benzo(k)fluoranthene	5.0 U
Benzo(a)pyrene	5.0 U
Indeno(1,2,3-cd)pyrene [3]	5.0 U
Dibenzo(a,h)anthracene [3]	5.0 U
Benzo(g,h,i)perylene	5.0 U

[1] = Range concentration excludes the concentration of any surrogate(s) and/or internal standards eluting in that range.
[2] = C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.
[3] = Values reported reflect their sum.

Extraction Surrogate	% Recovery	Acceptance Range (%)
5-alpha Androstane	112	40-140
ortho-Terphenyl	77	40-140
Fractionation Surrogate		
Biphenyl	89	40-140
2-Fluorobiphenyl	88	40-140

U - The analyte was analyzed for but not detected at the sample specific level reported.
N/A - Not Applicable

07/01/02 18:49

Form I
Extractable Petroleum Hydrocarbons by GC/FID

Client: **Metcalf & Eddy**
Project: **Mill Street - Brookfield**
Case: **N/A** SDG: **N/A**
Client ID: **ME-2**
Matrix: **Water**

Lab Code: **M-MA030**
ETR: **0206091**
Lab ID: **0206091-02**
Associated Blank: **EW0624B1**
Concentration Units: **µg/L**

Date Collected	Date Received	Date Extracted	Sample Amount (ml)	Final Volume (ml)	Fraction	Date Analyzed	Dilution Factor	Analyst
06/18/02	06/20/02	06/24/02	1000	1	Aromatic	06/29/02	1	MLB
					Aliphatic	06/30/02	1	MLB

SA 7/22/02

Extractable Petroleum Hydrocarbons (EPH)	Result
C_9-C_{18} Aliphatics [1]	30 U
C_{19}-C_{36} Aliphatics [1]	40 U
C_{11}-C_{22} Aromatics [1,2]	85 U
Unadjusted C_{11}-C_{22} Aromatics [1]	85 U

Target PAH Analytes	Result
Naphthalene	5.0 U
2-Methylnaphthalene	5.0 U
Acenaphthylene	5.0 U
Acenaphthene	5.0 U
Fluorene	5.0 U
Phenanthrene	5.0 U
Anthracene	5.0 U
Fluoranthene	5.0 U
Pyrene	5.0 U
Benzo(a)anthracene	5.0 U
Chrysene	5.0 U
Benzo(b)fluoranthene	5.0 U
Benzo(k)fluoranthene	5.0 U
Benzo(a)pyrene	5.0 U
Indeno(1,2,3-cd)pyrene [3]	5.0 U
Dibenzo(a,h)anthracene [3]	5.0 U
Benzo(g,h,i)perylene	5.0 U

[1] = Range concentration excludes the concentration of any surrogate(s) and/or internal standards eluting in that range.
[2] = C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.
[3] = Values reported reflect their sum.

Extraction Surrogate	% Recovery	Acceptance Range (%)
5-alpha Androstane	94	40-140
ortho-Terphenyl	83	40-140
Fractionation Surrogate		
Biphenyl	96	40-140
2-Fluorobiphenyl	94	40-140

U - The analyte was analyzed for but not detected at the sample specific level reported.
N/A - Not Applicable

07/01/02 18:49

Form I
Extractable Petroleum Hydrocarbons by GC/FID

Client: **Metcalf & Eddy**
Project: **Mill Street - Brookfield**
Case: **N/A** SDG: **N/A**
Client ID: **KME-2**
Matrix: **Water**

Lab Code: **M-MA030**
ETR: **0206091**
Lab ID: **0206091-03**
Associated Blank: **EW0624B1**
Concentration Units: **µg/L**

Date Collected	Date Received	Date Extracted	Sample Amount (ml)	Final Volume (ml)	Fraction	Date Analyzed	Dilution Factor	Analyst
06/18/02	06/20/02	06/24/02	950	1	Aromatic	06/29/02	1	MLB
					Aliphatic	06/30/02	1	MLB

SA 7/22/02

Extractable Petroleum Hydrocarbons (EPH)	Result
C_9-C_{18} Aliphatics [1]	32 U
C_{19}-C_{36} Aliphatics [1]	42 U
C_{11}-C_{22} Aromatics [1,2]	89 U
Unadjusted C_{11}-C_{22} Aromatics [1]	89 U

Target PAH Analytes	Result
Naphthalene	5.3 U
2-Methylnaphthalene	5.3 U
Acenaphthylene	5.3 U
Acenaphthene	5.3 U
Fluorene	5.3 U
Phenanthrene	5.3 U
Anthracene	5.3 U
Fluoranthene	5.3 U
Pyrene	5.3 U
Benzo(a)anthracene	5.3 U
Chrysene	5.3 U
Benzo(b)fluoranthene	5.3 U
Benzo(k)fluoranthene	5.3 U
Benzo(a)pyrene	5.3 U
Indeno(1,2,3-cd)pyrene [3]	5.3 U
Dibenzo(a,h)anthracene [3]	5.3 U
Benzo(g,h,i)perylene	5.3 U

[1] = Range concentration excludes the concentration of any surrogate(s) and/or internal standards eluting in that range.
[2] = C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.
[3] = Values reported reflect their sum.

Extraction Surrogate	% Recovery	Acceptance Range (%)
5-alpha Androstane	110	40-140
ortho-Terphenyl	82	40-140
Fractionation Surrogate		
Biphenyl	92	40-140
2-Fluorobiphenyl	91	40-140

U - The analyte was analyzed for but not detected at the sample specific level reported.
N/A - Not Applicable

07/01/02 18:49

Form I
Extractable Petroleum Hydrocarbons by GC/FID

Client: **Metcalf & Eddy**
Project: **Mill Street - Brookfield**
Case: **N/A** SDG: **N/A**
Client ID: **ME-3**
Matrix: **Water**

Lab Code: **M-MA030**
ETR: **0206091**
Lab ID: **0206091-04**
Associated Blank: **EW0624B1**
Concentration Units: **µg/L**

Date Collected	Date Received	Date Extracted	Sample Amount (ml)	Final Volume (ml)	Fraction	Date Analyzed	Dilution Factor	Analyst
06/18/02	06/20/02	06/24/02	980	1	Aromatic	06/29/02	1	MLB
					Aliphatic	06/30/02	1	MLB

SA 7/22/02

Extractable Petroleum Hydrocarbons (EPH)	Result
C_9-C_{18} Aliphatics [1]	31 U
C_{19}-C_{36} Aliphatics [1]	41 U
C_{11}-C_{22} Aromatics [1,2]	87 U
Unadjusted C_{11}-C_{22} Aromatics [1]	87 U

Target PAH Analytes	Result
Naphthalene	5.1 U
2-Methylnaphthalene	5.1 U
Acenaphthylene	5.1 U
Acenaphthene	5.1 U
Fluorene	5.1 U
Phenanthrene	5.1 U
Anthracene	5.1 U
Fluoranthene	5.1 U
Pyrene	5.1 U
Benzo(a)anthracene	5.1 U
Chrysene	5.1 U
Benzo(b)fluoranthene	5.1 U
Benzo(k)fluoranthene	5.1 U
Benzo(a)pyrene	5.1 U
Indeno(1,2,3-cd)pyrene [3]	5.1 U
Dibenzo(a,h)anthracene [3]	5.1 U
Benzo(g,h,i)perylene	5.1 U

[1] = Range concentration excludes the concentration of any surrogate(s) and/or internal standards eluting in that range.
[2] = C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.
[3] = Values reported reflect their sum.

Extraction Surrogate	% Recovery	Acceptance Range (%)
5-alpha Androstane	84	40-140
ortho-Terphenyl	82	40-140
Fractionation Surrogate		
Biphenyl	93	40-140
2-Fluorobiphenyl	91	40-140

U - The analyte was analyzed for but not detected at the sample specific level reported.
N/A - Not Applicable

07/01/02 18:49

Form I
Extractable Petroleum Hydrocarbons by GC/FID

Client: **Metcalf & Eddy**
Project: **Mill Street - Brookfield**
Case: **N/A** SDG: **N/A**
Client ID: **ME-4**
Matrix: **Water**

Lab Code: **M-MA030**
ETR: **0206091**
Lab ID: **0206091-05**
Associated Blank: **EW0624B1**
Concentration Units: **µg/L**

Date Collected	Date Received	Date Extracted	Sample Amount (ml)	Final Volume (ml)	Fraction	Date Analyzed	Dilution Factor	Analyst
06/19/02	06/20/02	06/24/02	970	1	Aromatic	06/29/02	1	MLB
					Aliphatic	06/30/02	1	MLB

Extractable Petroleum Hydrocarbons (EPH)	Result
C_9-C_{18} Aliphatics [1]	31 U
C_{19}-C_{36} Aliphatics [1]	41 U
C_{11}-C_{22} Aromatics [1,2]	88 U
Unadjusted C_{11}-C_{22} Aromatics [1]	88 U

SH 7/22/02

Target PAH Analytes	Result
Naphthalene	5.2 U
2-Methylnaphthalene	5.2 U
Acenaphthylene	5.2 U
Acenaphthene	5.2 U
Fluorene	5.2 U
Phenanthrene	5.2 U
Anthracene	5.2 U
Fluoranthene	5.2 U
Pyrene	5.2 U
Benzo(a)anthracene	5.2 U
Chrysene	5.2 U
Benzo(b)fluoranthene	5.2 U
Benzo(k)fluoranthene	5.2 U
Benzo(a)pyrene	5.2 U
Indeno(1,2,3-cd)pyrene [3]	5.2 U
Dibenzo(a,h)anthracene [3]	5.2 U
Benzo(g,h,i)perylene	5.2 U

[1] = Range concentration excludes the concentration of any surrogate(s) and/or internal standards eluting in that range.
[2] = C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.
[3] = Values reported reflect their sum.

Extraction Surrogate	% Recovery	Acceptance Range (%)
5-alpha Androstane	120	40-140
ortho-Terphenyl	82	40-140
Fractionation Surrogate		
Biphenyl	90	40-140
2-Fluorobiphenyl	88	40-140

U - The analyte was analyzed for but not detected at the sample specific level reported.
N/A - Not Applicable

07/01/02 18:50

Form I
Semi-Volatile Organics by GC/MS - SIM

Woods Hole Group

Client: **Metcalf & Eddy**
Project: **Mill Street - Brookfield**
Case: **N/A** SDG: **N/A**
Client ID: **ME-1**
Matrix: **Water**

Lab Code: **M-MA030**
ETR: **0206091**
Lab ID: **0206091-01**
Associated Blank: **EW0624B1**
Concentration Units: **ng/L**

Date Collected	Date Received	Date Extracted	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
06/18/02	06/20/02	06/24/02	07/04/02	1000	2	1	CWM

Parameter	Result
Naphthalene	**230** ~~B~~ U
2-Methylnaphthalene	100 U
Acenaphthylene	100 U
Acenaphthene	100 U
Fluorene	100 U
Phenanthrene	100 U
Anthracene	100 U
Fluoranthene	100 U
Pyrene	100 U
Benz[a]anthracene	100 U
Chrysene	100 U
Benzo[b]fluoranthene	100 U
Benzo[k]fluoranthene	100 U
Benzo[a]pyrene	100 U
Indeno[1,2,3-cd]pyrene	100 U
Dibenz[a,h]anthracene	100 U
Benzo[g,h,i]perylene	100 U

SH 7/22/02

B - Found in associated blank as well as sample.
U - The analyte was analyzed for but not detected at the sample specific level reported.
N/A - Not Applicable

07/09/02 15:04

Form I
Semi-Volatile Organics by GC/MS - SIM

Woods Hole Group

Client: **Metcalf & Eddy**
Project: **Mill Street - Brookfield**
Case: **N/A** SDG: **N/A**
Client ID: **ME-2**
Matrix: **Water**

Lab Code: **M-MA030**
ETR: **0206091**
Lab ID: **0206091-02**
Associated Blank: **EW0624B1**
Concentration Units: **ng/L**

Date Collected	Date Received	Date Extracted	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
06/18/02	06/20/02	06/24/02	07/04/02	1000	2	1	CWM

Parameter	Result	
Naphthalene	**140**	~~B~~ U
2-Methylnaphthalene	100	U
Acenaphthylene	100	U
Acenaphthene	100	U
Fluorene	100	U
Phenanthrene	100	U
Anthracene	100	U
Fluoranthene	100	U
Pyrene	100	U
Benz[a]anthracene	100	U
Chrysene	100	U
Benzo[b]fluoranthene	100	U
Benzo[k]fluoranthene	100	U
Benzo[a]pyrene	100	U
Indeno[1,2,3-cd]pyrene	100	U
Dibenz[a,h]anthracene	100	U
Benzo[g,h,i]perylene	100	U

SH 7/22/02

B - Found in associated blank as well as sample.
U - The analyte was analyzed for but not detected at the sample specific level reported.
N/A - Not Applicable

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Form I
Semi-Volatile Organics by GC/MS - SIM

Client: **Metcalf & Eddy**
Project: **Mill Street - Brookfield**
Case: **N/A** SDG: **N/A**
Client ID: **KME-2**
Matrix: **Water**

Lab Code: **M-MA030**
ETR: **0206091**
Lab ID: **0206091-03**
Associated Blank: **EW0624B1**
Concentration Units: **ng/L**

Date Collected	Date Received	Date Extracted	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
06/18/02	06/20/02	06/24/02	07/04/02	950	2	1	CWM

Parameter	Result
Naphthalene	110 U
2-Methylnaphthalene	110 U
Acenaphthylene	110 U
Acenaphthene	110 U
Fluorene	110 U
Phenanthrene	110 U
Anthracene	110 U
Fluoranthene	110 U
Pyrene	110 U
Benz[a]anthracene	110 U
Chrysene	110 U
Benzo[b]fluoranthene	110 U
Benzo[k]fluoranthene	110 U
Benzo[a]pyrene	110 U
Indeno[1,2,3-cd]pyrene	110 U
Dibenz[a,h]anthracene	110 U
Benzo[g,h,i]perylene	110 U

SH 7/22/02

U - The analyte was analyzed for but not detected at the sample specific level reported.
N/A - Not Applicable

07/09/02 15:04

Form I
Semi-Volatile Organics by GC/MS - SIM

Client: **Metcalf & Eddy**
Project: **Mill Street - Brookfield**
Case: **N/A** SDG: **N/A**
Client ID: **ME-3**
Matrix: **Water**

Lab Code: **M-MA030**
ETR: **0206091**
Lab ID: **0206091-04**
Associated Blank: **EW0624B1**
Concentration Units: **ng/L**

Date Collected	Date Received	Date Extracted	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
06/18/02	06/20/02	06/24/02	07/04/02	980	2	1	CWM

Parameter	Result	
Naphthalene	150	~~B~~ U
2-Methylnaphthalene	100	U
Acenaphthylene	100	U
Acenaphthene	100	U
Fluorene	100	U
Phenanthrene	100	U
Anthracene	100	U
Fluoranthene	100	U
Pyrene	100	U
Benz[a]anthracene	100	U
Chrysene	100	U
Benzo[b]fluoranthene	100	U
Benzo[k]fluoranthene	100	U
Benzo[a]pyrene	100	U
Indeno[1,2,3-cd]pyrene	100	U
Dibenz[a,h]anthracene	100	U
Benzo[g,h,i]perylene	100	U

SH 7/22/02

B - Found in associated blank as well as sample.
U - The analyte was analyzed for but not detected at the sample specific level reported.
N/A - Not Applicable

07/09/02 15:04

Form I
Semi-Volatile Organics by GC/MS - SIM

Client: **Metcalf & Eddy**
Project: **Mill Street - Brookfield**
Case: **N/A** SDG: **N/A**
Client ID: **ME-4**
Matrix: **Water**

Lab Code: **M-MA030**
ETR: **0206091**
Lab ID: **0206091-05**
Associated Blank: **EW0624B1**
Concentration Units: **ng/L**

Date Collected	Date Received	Date Extracted	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
06/19/02	06/20/02	06/24/02	07/04/02	970	2	1	CWM

Parameter	Result	
Naphthalene	**130**	~~B~~ U
2-Methylnaphthalene	100	U
Acenaphthylene	100	U
Acenaphthene	100	U
Fluorene	100	U
Phenanthrene	100	U
Anthracene	100	U
Fluoranthene	100	U
Pyrene	100	U
Benz[a]anthracene	100	U
Chrysene	100	U
Benzo[b]fluoranthene	100	U
Benzo[k]fluoranthene	100	U
Benzo[a]pyrene	100	U
Indeno[1,2,3-cd]pyrene	100	U
Dibenz[a,h]anthracene	100	U
Benzo[g,h,i]perylene	100	U

SK 7/22/02

B - Found in associated blank as well as sample.
U - The analyte was analyzed for but not detected at the sample specific level reported.
N/A - Not Applicable

07/09/02 15:04

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Attachment III

Data Validation Worksheets

EPA-NE
Data Validation Worksheet Cover Page - Page 1

Site Name Mill St., Brookfield, MA
Reference No. 200100.0006.01115

REGION I ORGANIC DATA VALIDATION

The following data package has been validated:

Lab Name Woods Hole Group
ETR Case/Project No. 02060091
SDG No. NA
No. of Samples/Matrix 6 / Aqueous

SOW/Method No. VPH/EPH MA DEP Methods PAH Sim
Sampling Date(s) 6/18, 19/02
Shipping Date(s) 6/19/02
Date Rec'd by lab 6/20/02

pkg rec'd @ M+E 7/1/02

Traffic Report Sample Nos. ME-1, ME-2, KME-2, ME-3, ME-4 (VPH + EPH) SVOC-SIM

Trip Blank No. TB-01 (VPH only)
Equipment Blank No. none
Bottle Blank No. none
Field Duplicate Nos. ME-2 / KME-2 (VPH/EPH/SVOC-SIM)
PES Nos. none

The Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, revision _____ was used to evaluate the data and/or approved modifications to the EPA-NE Functional Guidelines were used to evaluate the data and are attached to this cover page: (attach modified criteria from EPA approved QAPjP or amendment to QAPjP).

A Tier II or Tier III evaluation was used to validate the data (circle one). If a Tier II validation with a partial Tier III was used, then identify samples, parameters, etc. that received partial Tier III validation

Modified Tier II

The data were evaluated based upon the following parameters:

	VPH	EPH	SVOC
OK - Overall Evaluation of Data	OK	OK	OK
OK - Data Completeness (CSF Audit - Tier I)	OK	OK	OK
OK - Preservation & Technical Holding Times	OK	OK	OK
NA NA OK - GC/MS & GC/ECD Instrument Performance Check	NA		
? * - Initial & Continuing Calibrations	NA		
OK OK * - Blanks	OK	OK	OK
OK OK - Surrogate Compounds	OK	OK	OK
NA NA OK - Internal Standards	NA		
* OK NA - Matrix Spike/Matrix Spike Duplicate			
- Field Duplicates			
- Sensitivity Check			
- PE Samples/Accuracy Check			
- Target Compound Identification			
- Compound Quantitation and Reported Quantitation Limits			
- TICs			
- Semivolatile and Pesticide/PCB Cleanup			
- System Performance			
Laboratory Duplicates	OK	OK	OK

Region I Definitions and Qualifiers:

A - Acceptable Data
J - Numerical value associated with compound is an estimated quantity.
R - The data are rejected as unusable. The R replaces the numerical value or sample quantitation limit.
U - Compound not detected at that numerical sample quantitation limit.
UJ - The sample quantitation limit is an estimated quantity.
TB, BB, EB - Compound detected in aqueous trip blank, aqueous bottle blank, or aqueous equipment blank associated with soil/sediment samples.

Validator's Name Sheila Blanks Company Name M+E, Inc Phone Number _____

Date Validation Started 7/17/02 Date Validation Completed 7/17/02

Check if all criteria are met and no hard copy worksheet provided. Indicate NA if worksheet is not applicable to analytical method. Note: there is no standard worksheet for System Performance, however, the validator must document all system performance issues in the Data Validation Memorandum.

VPH/EPH
~~VOA/SV~~ worksheets:

VOA/SV-Pest/PCB	COMPLETE SDG FILE (CSF) AUDIT	OK
VOA/SV-Pest/PCB-I	PRESERVATION AND HOLDING TIMES	OK
VOA/SV-II	GC/MS INSTRUMENT PERFORMANCE CHECK (TUNING)	NA
VOA/SV-III	INITIAL CALIBRATION	VPH OK EPH:
VOA/SV-IV	CONTINUING CALIBRATION	VPH: * EPH: OK
VOA/SV-Pest/PCB-V-A	BLANK ANALYSIS	VPH: OK EPH: OK
VOA/SV-Pest/PCB-V-B	BLANK ANALYSIS	—
VOA-VI	V~~OA~~ SURROGATE SPIKE RECOVERIES	OK
SV-VI	EPH ~~SV~~ SURROGATE SPIKE RECOVERIES	OK
VOA/SV-VII	INTERNAL STANDARD PERFORMANCE	NA
VOA/SV-Pest/PCB-VIII	MATRIX SPIKE/MATRIX SPIKE DUPLICATE	VPH: * EPH: OK
VOA/SV-Pest/PCB-IX	FIELD DUPLICATE PRECISION	VPH: OK EPH: OK
VOA/SV-Pest/PCB-X	SENSITIVITY CHECK	VPH: OK EPH: OK
VOA/SV-Pest/PCB-XI	ACCURACY CHECK	NA
VOA/SV-Pest/PCB-XII	TARGET COMPOUND IDENTIFICATION	NA
VOA/SV-Pest/PCB-XIII	SAMPLE QUANTITATION	NA
VOA/SV-XIV	TENTATIVELY IDENTIFIED COMPOUNDS	NA
VOA/SV-XV	SEMIVOLATILE CLEANUP	NA
TABLE II-WORKSHEET	OVERALL EVALUATION OF DATA	OK
SVOC-Sim	Laboratory Duplicates	VPH: OK EPH: OK

~~Pest/PCB~~ worksheets:

VOA/SV-Pest/PCB	COMPLETE SDG FILE (CSF) AUDIT	OK
VOA/SV-Pest/PCB-I	PRESERVATION AND HOLDING TIMES	OK
Pest/PCB-IIA	GC/~~ECD~~ MS INSTRUMENT PERFORMANCE CHECK- ~~RESOLUTION~~ (Tuning)	OK
Pest/PCB-IIB	GC/ECD INSTRUMENT PERFORMANCE CHECK- RETENTION TIMES	NA
Pest/PCB-IIC	GC/ECD INSTRUMENT PERFORMANCE CHECK- ACCURACY CHECK OF INITIAL CALIBRATION	↓
Pest/PCB-IID	GC/ECD INSTRUMENT PERFORMANCE CHECK- PESTICIDE DEGRADATION	↓
Pest/PCB-III	INITIAL CALIBRATION	*
Pest/PCB-IV	CONTINUING CALIBRATION	*
VOA/SV-Pest/PCB-V-A	BLANK ANALYSIS	*
VOA/SV-Pest/PCB-V-B	BLANK ANALYSIS	NA
Pest/PCB-VI	SURROGATE COMPOUNDS: SPIKE RECOVERIES AND RETENTION TIME SHIFT	NA
Pest/PCB-VII	PESTICIDE CLEANUP	NA
VOA/SV-Pest/PCB-VIII	MATRIX SPIKE/MATRIX SPIKE DUPLICATE	NA
VOA/SV-Pest/PCB-IX	FIELD DUPLICATE PRECISION	OK
VOA/SV-Pest/PCB-X	SENSITIVITY CHECK	OK
VOA/SV-Pest/PCB-XI	ACCURACY CHECK	NA
Pest/PCB-XII	COMPOUND IDENTIFICATION	↓
VOA/SV-Pest/PCB-XIII	SAMPLE QUANTITATION	↓
TABLE II-WORKSHEET	OVERALL EVALUATION OF DATA	OK
	Laboratory Duplicate	OK

I certify that all criteria were met for the worksheets checked above.

Signature: Sheila Harvey M+E, Inc. Name: Sheila Harvey

Date: 7/17/02

EPA-NE - Data Validation Worksheet
VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

VPH: all individual cmpds RSD < 25% All criteria met

Date of ICAL	Instrument	Parameter	Matrix	Compound	% RSD	RRF	Samples Affected	Action
6/28/02		SVOC	Aq	Fluoranthene	32.6		ME-1, ME-2, ~~ME-2~~, ME-3	~~UJ (ND)~~ (SH)
				pyrene	52.0		ME-4	
				Benzo(g,h,i)perylene	33.4			

No Action taken as linear regression used instead of calibration factor. Correlation coefficients for all cmpds were 0.990

Comments:

Validator: Sherle Harvey

Date: 7/17/02

EPA-NE - Data Validation Worksheet
VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria. EPH - all criteria met

Date of ICAL	Date of CCAL	Instrument	Parameter	Matrix	Compound	%D	RRF	Samples Affected	Action
6/26/02	6/27/02	HP-PID	VPH	Aq	2,2,4-trimethylpentane	-29%	—		

Comments:

Validator: Sheila Harvey

Date: 7/17/02

12/96

EPA-NE - Data Validation Worksheet
VOA/SV-IV

SVOC-SIM

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Date of CCAL	Instrument	Parameter	Matrix	Compound	%D	RRF	Samples Affected	Action
6/25/02	7/3/02		SVOC	Aq	Pyrene	33.3		ME-1, ME-2, RME-2, ME-3, ME-4	UJ(ND)

Comments:

Validator: Sheila Hawes

Date: 7/17/02

12/96

EPA-NE - Data Validation Worksheet
VOA/SV - Pest/PCB-V-A

V. BLANK ANALYSIS

List the blank contamination below: SVOC-SIM

Concentration Level: low

Sampler: P. Odgers Company: M+E, Inc.

Contacted: Yes (No) Date: _____

1. Laboratory: Method, Storage and Instrument Blanks

Date Extracted	Date Analyzed	Parameter/ Matrix	Sample No. (Blank Type)	Instrument/ Column	Compound	Conc. (units)
6/24/02	7/3/02	SVOC/ag	Method (EW0024HB)		Naphthalene	320 ug/L

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Date Extracted	Date Analyzed	Parameter/ Matrix	Sample No. (Blank Type)	Instrument/ Column	Compound	Conc. (units)

Validator: Sherie Denney Date: 7/17/02

EPA-NE - Data Validation Worksheet
VOA/SV - Pest/PCB-V-B

3. **Blank Actions** - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled/Originated	Max. Conc. (units)	Action Level (units) µg/L	Sample QL µg/L	Samples Affected	Action
Naphthalene	Method	6/24/02	3.20	1600	100	~~all~~ ME-1, ME-2	Qualify Rpt value "U"
						ME-3, ME-4	

Comments: _____

Validator: Sheila Denny

Date: 7/17/02

EPA-NE - Data Validation Worksheet
VOA/SV - Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria.

EPH - all criteria met

Use a separate worksheet for each MS/MSD pair.

Sample # ME-1 Matrix Aqueous Concentration Level low

Parameter	Compound	MS %Rec	MSD %Rec	RPD	Method QC Limits		Concentration			% RSD	Action
					% Rec	RPD	Unspiked Sample	MS	MSD		
VPH	n-nonane	67	NA	NA	70-130	NA					UJ(ND) C_9-C_{12} aliphatic in the sample

Validator: Sheila Harvey Date: 7/17/02

A separate Form should be completed for each sampling event. Refer to Attachment A for instructions on completing this form. Attachment B for a complete list of the parameter codes and Attachment C for an example of a completed form.

1.EPA Program: ~~TSCA CERCLA RCRA DW NPDES CAA~~
Other: Brownfields Targeted Site Assessment (BTSA)
Projected Date(s) of Sampling: 10 June through 21 June 2002
EPA Site Manager: Jim Byrne/James Chow
EPA Case Team Members: _____

Site Name: Mill Street Property
Site Location: Brookfield, MA
Assigned Site Latitude/Longitude: Unknown
CERCLA Site/Spill Identifier No._____(Include Operable Unit)
Phase: ~~ERA SA/SI pre-RI RI (phase I, etc.) FS RD RA post-RA~~
(circle one) **Other:** BTSA

2.QAPjP Title and Revision Date: Generic Sampling and Analysis Plan for Brownfield Targeted Site Assessments (M&E, June 1999) and Field Task Work Plan for Mill Street Property, Brookfield, MA (M&E, April 2002)

Approved by: James Chow/Jim Byrne Date of Approval: April 2002
Title of Approving Official: EPA WAM Organization*: EPA
*If other than EPA, record date approval authority was delegated: _____

EPA Oversight Project (circle one) ~~Y~~ N Type of EPA Oversight (circle one) ~~PRP or FF~~ Other: NA
Confirmatory Analysis for Field Screening ~~Y~~ N If EPA Oversight or Confirmatory: % splits ___
Are comparability criteria document? ~~Y~~ N

3.						
a.	Matrix Code[1]	SO	SO	SO	SO	SO
b.	Parameter Code[2]	EPH	VPH	13116010	8082	ILM04.1MT
c.	Preservation Code[3]	5	5, 10 (MEOH)	5	5	5
d.	Analytical Services Mechanism	Sub*	Sub	Sub	Sub	RAS
e.	No. of Sample Locations	12	12	6	6	12
	Field QC:					
f.	Field Duplicate Pairs	1	1	1	1	1
g.	Equipment Blanks	0	0	0	0	0
h.	VOA Trip Blanks	0	3	0	0	0
i.	Cooler Temperature Blanks	1 per cooler	1 per cooler	1 per cooler	1 per cooler	1 per cooler
j.	Bottle Blanks					
k.	Other:					
l.	PES sent to Laboratory	0	0	0	0	0
	Laboratory QC:					
m.	Reagent Blank	1	1	1	1	1
n.	Duplicate	1	1	1		1
o.	Matrix Spike	1	1	1	1	1
p.	Matrix Spike Duplicate	1	1		1	
q.	Other:					

4. Site Information
Site Dimensions Unknown
List all potentially contaminated matrices soil, groundwater
Range of Depth to Groundwater 10-20 ft below ground surface
Soil Types: **Surface Subsurface** ~~Other~~: _____
Sediment Types: ~~Stream Pond Estuary Wetland Other:~~

When multiple matrices will be sampled during a sampling event, complete Sections 5-10 for each matrix. Matrix Code[1] SO

5. Data Use (circle all that apply) ~~Site Investigation/Assessment~~ ~~PRP Determination~~ ~~Removal Actions~~
Nature and Extent of Contamination Human and/or Ecological Risk Assessment
Remediation Alternatives ~~Engineering Design~~ ~~Remedial Action~~
~~Post-Remedial Action (quarterly monitoring)~~ **Other:** BTSA

* Sub = Directly Subcontracted
ILM04.1MT= RAS Inorganics (total metals)
VPH = Massachusetts VPH,
EPH = Massachusetts EPH
13116010 = TCLP Metals
8082 = PCBs

A separate Form should be completed for each sampling event. Refer to Attachment A for instructions on completing this form. Attachment B for a complete list of the parameter codes and Attachment C for an example of a completed form.

1.EPA Program: ~~TSCA CERCLA RCRA DW NPDES CAA~~
Other: Brownfields Targeted Site Assessment (BTSA)
Projected Date(s) of Sampling: 10 June through 21 June 2002
EPA Site Manager: Jim Byrne/James Chow
EPA Case Team Members:

Site Name: Mill Street Property
Site Location: Brookfield, MA
Assigned Site Latitude/Longitude: Unknown
CERCLA Site/Spill Identifier No. NA (Include Operable Unit)
Phase: ~~ERA SA/SI pre-RI RI (phase I, etc.) FS RD RA post-RA~~
(circle one) **Other:** BTSA

2.QAPjP Title and Revision Date: Generic Sampling and Analysis Plan for Brownfield Targeted Site Assessments (M&E, June 1999) and Field Task Work Plan for Mill Street Property, Brookfield, MA (M&E, April 2002)

Approved by: James Chow/Jim Byrne Date of Approval: April 2002
Title of Approving Official: EPA WAM Organization*: EPA
*If other than EPA, record date approval authority was delegated:

EPA Oversight Project (circle one) ~~Y~~ N
Confirmatory Analysis for Field Screening ~~Y~~ N
Are comparability criteria document? ~~Y~~ N

Type of EPA Oversight (circle one) ~~PRP or FF~~ Other: NA
If EPA Oversight or Confirmatory: % splits ___

3.					
a.	Matrix Code[1]	GW	GW	GW	GW
b.	Parameter Code[2]	EPH	VPH	OLC03.2	ILM04.1MT
c.	Preservation Code[3]	5	1, 5	1, 5	2, 5
d.	Analytical Services Mechanism	Sub	Sub	RAS	RAS
e.	No. of Sample Locations	5	5	5	5
	Field QC:				
f.	Field Duplicate Pairs	1	1	1	1
g.	Equipment Blanks				
h.	VOA Trip Blanks		1	1	
i.	Cooler Temperature Blanks	1 per cooler	1 per cooler	1 per cooler	1 per cooler
j.	Bottle Blanks	0	0	0	0
k.	Other:	0	0	0	0
l.	PES sent to Laboratory	0	0	0	0
	Laboratory QC:				
m	Reagent Blank	1	1	1	1
n.	Duplicate	1	1		1
o.	Matrix Spike	1	1	1	1
p.	Matrix Spike Duplicate	1	1	1	
q.	Other:				

4. Site Information
Site Dimensions 3 parcels
List all potentially contaminated matrices soil, groundwater
Range of Depth to Groundwater 5-25 ft below ground surface
Soil Types: **Surface Subsurface** ~~Other~~:
Sediment Types: ~~Stream Pond Estuary Wetland~~ Other:

When multiple matrices will be sampled during a sampling event, complete Sections 5-10 for each matrix. Matrix Code[1] GW

5. Data Use (circle all that apply) ~~Site Investigation/Assessment~~ ~~PRP Determination~~ ~~Removal Actions~~
Nature and Extent of Contamination **Human and/or Ecological Risk Assessment**
~~Remediation Alternatives~~ ~~Engineering Design~~ ~~Remedial Action~~
~~Post-Remedial Action (quarterly monitoring)~~
Other: BTSA

* Sub = Directly Subcontracted
OLC03.2 - RAS Low Concentration VOCs
ILM04.1MT= RAS Inorganics (total metals)
VPH = Massachusetts VPH
EPH = Massachusetts EPH

6. Summarize DQOs: To provide data for characterizing and assessing current environmental and site conditions as needed to support a preliminary evaluation of risks and remedial alternatives.

COCs	Action Levels	Analytical Method-Quantitation Limits
Refer to Field Task Work Plan for Mill Street Property, Brookfield, MA (BTSA), M&E, March 2002	Refer to Field Task Work Plan for Mill Street Property, Brookfield, MA (BTSA), M&E, March 2002	RAS Methods - As per applicable CLP SOW Subcontract Methods - per SOP with approved BTSA laboratories (Mitkem, Amro, or Woods Hole Group)

7. Sampling Method (circle technique) ~~Bailer~~ ~~Low flow pump (Region I method: Yes No)~~ ~~Peristaltic Pump~~ ~~Positive Displacement Pump~~ ~~Faucet or Spigot~~ ~~Other~~: _____ ~~Split Spoon~~ ~~Dredge~~ **Trowel**

Other: Geoprobe Macro-core

Sampling Procedure (SOP name, No., Rev. #, and date) Generic Sampling and Analysis Plan for Brownfield Targeted Site Assessments (M&E, June 1999) and Field Task Work Plan for Mill Street Property, Brookfield, MA (M&E, April 2002)

List Background Sample Locations _____

Circle: ~~GW-Grab,~~ **SO-Composite,** ~~LN-Grab, WT - Grab~~

"Hot spots" sampled: ~~Yes~~ **No**

9. Analytical Methods and Parameters

Method title/SOP name	Method/SOP Identification number	Revision Date	Target Parameters (VOA, SV, Pest/PCB, Metals, etc.)
See Section 3			

10. Validation Criteria (circle one) 1. Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analysis, Part II, III or IV
2. **Other Approved Validation Criteria: Tier II-like validation memorandum**

Validation Tier (circle one) I II III Partial Tier III: _____

Company/Organization Performing Data Validation Metcalf & Eddy, Inc. **Prime** ~~or Subcontractor~~ (circle one)

11. Company Name Metcalf & Eddy, Inc. Contract Number 68-W6-0042

Contract Name (e.g. START, RAC, etc.) RAC Work Assignment No. 106-SISI-01ZZ

Person Completing Form/Title Denise M. Laferte /Project Chemist Date of DQO Summary Form Completion 5/24/02

Matrix Codes[1] - Refer to Attachment B, Part i
Parameter Codes[2] - Refer to Attachment B, Part II

Preservation Codes[3]

1.	HCl to pH ≤ 2	7.	$K_2Cr_2O_7$
2.	HNO_3	8.	Freeze
3.	$NaHSO_4$	9.	Room Temperature (avoid excessive heat)
4.	H_2SO_4	10.	Other (Specify)
5.	Cool @ 4°C (± 2°)	N.	No preserved

* - To supplement Matrix Codes and/or Parameter Codes contact the QA Unit

Metcalf & Eddy

30 Harvard Mill Square
Wakefield, MA 01880-5371
P.O. Box 4071
Wakefield, MA 01880-5371

Tel: 781-246-5200
Fax: 781-245-6293
www.m-e.com

036200100.0006.00115

August 2, 2002

Ms. Christine Clark
USEPA - New England
OEME - QA Unit
11 Technology Drive
North Chelmsford, Massachusetts 01863-2431

Re: Work Assignment No. 106-SIBZ-01ZZ
Case No. 30610, SDG No. A0BW5
Mitkem Corporation, Warwick, Rhode Island
Targeted Brownfields Site Assessment: Mill Street, Brookfield, Massachusetts
Modified Tier II Organic Data Validation

Low Concentration Volatile Organic Compounds: 5/Aqueous/A0BW5, A0BW6, A0BW7, A0BW8, A0BX0
1/Aqueous Trip Blank/A0BX1
(Field Duplicate Pair/A0BW6 and A0BW7)

Dear Ms. Clark:

A modified Tier II data validation was performed by Metcalf & Eddy, Inc. (M&E) on the low concentration volatile organic compound (VOC) analytical data for five aqueous samples and one aqueous trip blank sample collected from the Mill Street Targeted Brownfields Assessment (TBA) site, located in Brookfield, Massachusetts by M&E field personnel on June 18 and 19, 2002. The samples were analyzed for metals under the Contract Laboratory Program Routine Analytical Services (RAS) using the EPA *Statement of Work for Analysis of Low Concentration Organics, OLCO3.2.* M&E evaluated the data using the Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses*, December 1996 criteria. All samples were received by the laboratory on June 20, 2002. The data package was received in the M&E office on July 15, 2002.

M&E reviewed the data in accordance with the EPA-approved Final Field Task Work Plan for the site, and the guidance received from EPA Work Assignment Manager, Mr. James Byrne, in a September 17, 1999 letter to former M&E Work Assignment Manager, Barb Wyskowski. The format of the validation memoranda underwent modification as of July 2001 at the request of the EPA Project Chemist, Alan Peterson, with the approval of Mr. Byrne. The data review included the following:

*	•	Data Completeness
*	•	Preservation and Technical Holding Times
*	•	Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
	•	Initial and Continuing Calibrations
	•	Blank Analysis Results
	•	Surrogate Recoveries
*	•	Internal Standards
*	•	Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
*	•	Field Duplicate Results
NA	•	Laboratory Fortified Blank (LFB) and/or Laboratory Control Sample (LCS)
NA	•	Accuracy Check/PE Samples
*	•	Compound Quantitation and Reported Quantitation Limits
NA	•	Tentatively Identified Compounds (TICs)
NA	•	Semivolatile and Pesticide/PCB Cleanup

*	-	All criteria were met for this parameter.
NA	-	Not Applicable

Note: Worksheets are not included for parameters that have met criteria or for criteria that are not applicable to the method and/or to Tier II data validation.

Initial and Continuing Calibrations

The following table summarizes the initial calibration (IC) and continuing calibration (CC) results that failed to meet the calibration criteria of percent relative standard deviation (%RSD) ≤ 30 and percent difference (%D) ≤ 25, respectively, and/or $RF_{avg} \geq 0.01$ for all compounds:

Instrument	V2
Calibration	CC 6/26/02
Compound	%D
acetone	38.1
bromomethane	33.6
chloroethane	27.5
1,1-dichloroethene	31.2
1,1,2-trichloro-1,2,2-trifluoroethane	32.5
methylene chloride	33.5

Instrument	V2
Calibration	CC 6/26/02
Compound	%D
trans-1,2-dichloroethene	32.1
methyl tert butyl ether	34.7
1,2-dichloroethane	29.1
1,1-dichloroethene-d_2 (surrogate)	25.5
1,2-dichloroethane-d_4 (surrogate)	34.2
Associated Samples:	A0BW5, A0BW6, A0BW7, A0BW8, A0BX0, and A0BX1

%D >25: Estimate positive (J) results and nondetect (UJ) results. A bias cannot be determined.

Blank Analysis Results

A review of laboratory blank analysis results indicates the presence of laboratory contamination for the compound listed below.

Compound	Max. Conc. Contaminant (µg/L)	BAL (µg/L)	Affected Samples/Action
methylene chloride	0.61	6.1	None. All sample results are nondetect.

Blank Actions:

* concentration ≤ BAL; report value on summary table as U.
* concentration > BAL; report value unqualified.

Surrogate Recoveries

The surrogate compound that did not meet the acceptable criterion is summarized in the following table.

Sample ID	Chloroethane-d_{14} %R (QC Limit: 60-126 %)	Action
A0BX0	59%	Estimate the positive (J) and nondetect (UJ) results in sample A0BX0. Sample results may be biased low.

The nondetect results for acetone, bromomethane, chloroethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, methylene chloride, trans-1,2-dichloroethene, methyl tert butyl ether, and 1,2-dichloroethane in sample A0BX0 were previously qualified as estimated (UJ) due to instrument variability. No further action is taken on these results due to low surrogate recovery.

Please contact Constance Lapite at (781) 224-6628 if you have any questions regarding this information.

Very truly yours,

METCALF & EDDY, Inc.

Sheila Harvey
Data Validator

Lisa Krowitz
Senior Reviewer

Constance Lapite
M&E RAC Lead Chemist

J:\ne\brwnflds\MillstreetBrookfield\dataval\A0BW5av.wpd

cc: Barbara Weir, Project Manager (memo only)
Denise Laferte, Project Chemist (entire package)
S. Harvey, Data Validator (entire package)
BTSA Mill Street Project File (WA No. 106-SIBZ-01ZZ)

Attachments: ORDA Form
Chain-of-Custody Forms
Validated Sample Result Summary Sheets (Form Is)
Data Validation Worksheets
CSF Audit (DC-2 Form)
DQO Summary Form

Attachment I

ORDA Form

REGION I, EPA-NE ORGANIC REGIONAL DATA ASSESSMENT (ORDA)*

CASE #: 30610

LAB NAME: MiTkem Corporation

SDG #: AD3W5

SOW #/CONTRACT #: OLC03.2

EPA-NE DV TIER LEVEL: II

TPO/PO: **ACTION ____ FYI ✓

SITE NAME: Brownfields Targeted SK Assessment Site: Mill St. Brookfield, MA

OF SAMPLES/MATRIX: 6/Aqueous

VALIDATION CONTRACTOR: MtE, Inc.

VALIDATOR'S NAME: S. Harvey

DATE DP REC'D BY EPA-NE: 7/12/02

DV COMPLETION DATE: 7/23/02

ANALYTICAL DATA QUALITY SUMMARY

		VOA	SV	Pest/PCB
1.	Preservation and Contractual Holding Times	O	NA	NA
2.	GC/MS / GC/ECD Instrument Performance Check	O		
3.	Initial Calibration	O^1, Z^2		
4.	Continuing Calibration	O^2, Z^2		
5.	Blanks	O^3		
6.	Surrogate Compounds	O^4		
7.	Internal Standards	O		
8.	Matrix Spike/Matrix Spike Duplicate	O		
9.	Sensitivity Check	NA		
10.	PE Samples-Accuracy Check	NA		
11.	Target Compound Identification	NA		
12.	Compound Quantitation and Reported QLs	O		
13.	Tentatively Identified Compounds	NA		
14.	Semivolatile Cleanup/Pesticide/PCB Cleanup	NA		
15.	Data Completeness	O		
16.	Overall Evaluation of Data	O		

CKK 7/29/02

o = Data had no problems or were qualified due to minor contractual problems.
m = Data were qualified due to major contractual problems.
z = Data were rejected as unusable due major contractual problems.

ACTION ITEMS: (z items) ~~Z^2: Nondetect Acetone results in several samples rejected due to RRF < 0.05.~~ ~~Z^2: Nondetect Acetone and 2-butanone results rejected due to RRF < 0.05.~~ CKK 7/29/02

AREAS OF CONCERN: (m items)

COMMENTS: O^1: Positive acetone results in several samples estimated due to RRF < 0.05.
O^2: Nondetect results for several compounds estimated due to continuing calibration % D > 25%.
O^3: Methylene chloride detected in method blank. No samples affected because all results were nondetect.
O^4: The nondetect results in one sample estimated due to low surrogate recovery.

*This form assesses the analytical data quality in terms of contractual compliance only. It does not assess sampling errors and/or non-contractual analytical issues that affect data quality.

**Check "ACTION" only if contractual defects resulted in reduced payment/data rejection recommendations.

Validator: Sheila Harvey, MtE, Inc. Date: 7/23/02

INSTRUCTIONS ON REVERSE SIDE

Attachment II

Chain-of-Custody

United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 30610

1. Project Code: 200100.0006.00114
2. Region No.: I
Sampling Co.: M&E
4. Date Shipped: 6/19/02
Carrier: Federal Express

Account Code:
Sampler (Name): Philippa Odgers
Airbill Number: 8306 0505 8980

Site Name: Mill Street Property
Sampler Signature: P. Odgers.
5. Ship To: Mitkem Corporation, 175 Metro Center Boulevard, Warwick, RI 02886, (401) 732-3400, ATTN: Agnes Ng

3. Purpose**
Lead: [X] SF, [ ] PRP, [ ] ST, [ ] FED, [ ] BZ
Early Action: [ ] IA, [ ] PA, [ ] REM, [X] RI, [ ] SI, [ ] ESI
Long-Term Action: [ ] RIFS, [ ] RD, [ ] RA, [ ] O&M

City, State: Brookfield, MA
Site Spill ID:
Op Unit:

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. PE-water 7. PE-soil 8. Other (specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. CH3OH 7. Other (specify in Column D) N. Not Preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis TA (circle one) PR* 7 14 21 VOA	E RAS Analysis TA (circle one) PR* 7 14 21 BNA	E RAS Analysis TA (circle one) PR* 7 14 21 Pest/PCB	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Field Spike D = Field Duplicate R = Rinsate PE = Perform Eval.)
AQBW5	2	L	G	1	✓			179008-16	ME-1	6/18/02/1320	MAQ2D6	PO	MS/MSD
AQBW6	2	L	G	1	✓			179017-19	ME-2	6/18/02/1300	MAQ2D7	PO	—
AQBW7	2	L	G	1	✓			179020-22	ME-2	6/18/02/1310	MAQ2D8	PO	D (AQBW6)
AQBW8	2	L	G	1	✓			179023-25	ME-3	6/18/02/1810	MAQ2D9	PO	—
AQBX0	2	L	G	1	✓			179028-31 (PO)	ME-4	6/19/02/0900	MAQ2E1	PO	—
AQBX2	2	L	G	1	✓			179032-34	TB-02	6/19/02/0830		PO	—
				EPA REQUIRED TEMP BLANK INCLUDED									

Shipment for Case Complete? (Y/N): (Y)
Page 1 of 1

VOA MS/MSD Required? Y/N Sample #: AQBW5
BNA MS/MSD Required? Y/N Sample #:
Pest/PCB MS/MSD Required? Y/N Sample #:

Additional Sampler Signatures:

Chain of Custody Seal Number(s):

*PR provides 7-day data turnaround in addition to preliminary results. Requests for preliminary results will increase analytical costs.

Chain of Custody Record

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
P. Odgers.	6/19/02 1600	Fedex airbill no: 8306 0505 8980			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Distribution: Blue - Region Copy; White - Lab Copy for Return to SMO; Pink - SMO Copy; Yellow - Lab Copy for Return to Region

See Reverse for Additional Standard Instructions
**See Reverse for Purpose Code Definitions

EPA Form 9110-2 (2/99)

CLASS-99-001

396137

Attachment III

Validated Sample Result Summary Sheets

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A0BW5

Lab Name: MITKEM CORPORATION Contract: 68W01041

Lab Code: MITKEM Case No.: 30610 SAS No.: _____ SDG No.: A0BW5

Matrix: (soil/water) WATER Lab Sample ID: A0950-01A

Sample wt/vol: 25.00 (g/mL) ML Lab File ID: V2F1514

Level: (low/med) LOW Date Received: 06/20/02

% Moisture: not dec. _____ Date Analyzed: 06/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

SRA 8/1/02

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	UJ
75-00-3	Chloroethane	0.50	UJ
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	UJ
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	UJ
67-64-1	Acetone	5.0	UJ
75-15-0	Carbon Disulfide	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.50	UJ
156-60-5	trans-1,2-Dichloroethene	0.50	UJ
1634-04-4	Methyl tert-Butyl Ether	1.1	J
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-Butanone	5.0	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U

1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A0BW5

Lab Name: MITKEM CORPORATION Contract: 68W01041

Lab Code: MITKEM Case No.: 30610 SAS No.: _____ SDG No.: A0BW5

Matrix: (soil/water) WATER Lab Sample ID: A0950-01A

Sample wt/vol: 25.00 (g/mL) ML Lab File ID: V2F1514

Level: (low/med) LOW Date Received: 06/20/02

% Moisture: not dec. _____ Date Analyzed: 06/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

8/1/02

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
107-06-2	1,2-Dichloroethane	0.50	UJ
79-01-6	Trichloroethene	0.50	U
108-87-2	Methylcyclohexane	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-Pentanone	5.0	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
1330-20-7	Xylene (total)	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	U

VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A0BW5

Lab Name: MITKEM CORPORATION Contract: 68W01041

Lab Code: MITKEM Case No.: 30610 SAS No.: _____ SDG No.: A0BW5

Matrix: (soil/water) WATER Lab Sample ID: A0950-01A

Sample wt/vol: 25.00 (g/mL) ML Lab File ID: V2F1514

Level: (low/med) LOW Date Received: 06/20/02

% Moisture: not dec. _____ Date Analyzed: 06/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

8/1/02

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

A0BW5

Lab Name: MITKEM CORPORATION Contract: 68W01041

Lab Code: MITKEM Case No.: 30610 SAS No.: _____ SDG No.: A0BW5

Matrix: (soil/water) WATER Lab Sample ID: A0950-01A

Sample wt/vol: 25.00 (g/mL) ML Lab File ID: V2F1514

Level: (low/med) LOW Date Received: 06/20/02

% Moisture: not dec. _____ Date Analyzed: 06/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) SA 8/1/02 Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A0BW6

Lab Name: MITKEM CORPORATION Contract: 68W01041

Lab Code: MITKEM Case No.: 30610 SAS No.: _____ SDG No.: A0BW5

Matrix: (soil/water) WATER Lab Sample ID: A0950-02A

Sample wt/vol: 25.00 (g/mL) ML Lab File ID: V2F1515

Level: (low/med) LOW Date Received: 06/20/02

% Moisture: not dec. _____ Date Analyzed: 06/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

SDA 8/1/02

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	UJ
75-00-3	Chloroethane	0.50	UJ
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	UJ
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	UJ
67-64-1	Acetone	10	J
75-15-0	Carbon Disulfide	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.50	UJ
156-60-5	trans-1,2-Dichloroethene	0.50	UJ
1634-04-4	Methyl tert-Butyl Ether	0.50	UJ
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-Butanone	5.0	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U

1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

A0BW6

Lab Name: MITKEM CORPORATION Contract: 68W01041

Lab Code: MITKEM Case No.: 30610 SAS No.: _____ SDG No.: A0BW5

Matrix: (soil/water) WATER Lab Sample ID: A0950-02A

Sample wt/vol: 25.00 (g/mL) ML Lab File ID: V2F1515

Level: (low/med) LOW Date Received: 06/20/02

% Moisture: not dec. _____ Date Analyzed: 06/26/02

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

8/1/02

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
108-87-2	Methylcyclohexane	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-Pentanone	5.0	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
1330-20-7	Xylene (total)	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	U