



ENVIRONMENTAL COMPLIANCE SERVICES, INC.

Nov 13 10 24 AM '97

November 10, 1997
Project Number: 40005
Doc. Number: Siteinv1.wpd

Mr. Chuck Schwer
Sites Management Section
VT DEC HMMD
103 South Main Street/West Office
Waterbury, VT 05671-0404

RE: Environmental Summary Report for
Brattleboro Salvage, Inc. 437 Vernon Rd., Brattleboro, VT
DEC Site # 96-2110

Dear Mr. Schwer:

Enclosed please find the above referenced report for your review. Should you have any questions regarding this information, please do not hesitate to contact me at 802-257-1195.

Sincerely,
ENVIRONMENTAL COMPLIANCE SERVICES, Inc.

Bruce Tease
es

Bruce Tease, Ph.D.
Senior Project Manager/Scientist
enclosure

cc: Norm Mallory, Triple T Trucking

C:\Project Docs\40005\coverlet.wpd

Phase	Type
<input checked="" type="checkbox"/> Summary Report <input type="checkbox"/> Corrective Action Feasibility Investigation <input type="checkbox"/> Corrective Action Plan <input type="checkbox"/> Corrective Action Summary Report <input type="checkbox"/> Operations and Monitoring Report	<input type="checkbox"/> Work Scope <input checked="" type="checkbox"/> Technical Report <input type="checkbox"/> PCF Reimbursement Request <input type="checkbox"/> General Correspondence

**ENVIRONMENTAL SUMMARY
 REPORT
 BRATTLEBORO SALVAGE, INC.
 437 VERNON RD.
 BRATTLEBORO, VT
 Site #96-2110**

Prepared For:

Norman Mallory
 Triple T Trucking Inc.
 RR 6, Box 6
 Brattleboro, VT

Prepared By:

Environmental Compliance Services, Inc.
 157 Old Guilford Road #6
 Brattleboro, VT 05301
 (802) 257-1195
 Contact: Bruce Tease

November 10, 1997

ECS, Inc. Job #40005

Nov 13 10 26 AM '97

Executive Summary

In a letter dated February 10, 1997, the Sites Management Section (SMS) of the Vermont Department of Environmental Conservation (VT DEC) requested additional investigation of the extent of petroleum related contamination in the soils and groundwater at the Brattleboro Salvage property located at 437 Vernon Road, Brattleboro, Vermont. The letter was issued to Mr. Norman Mallory proprietor of Brattleboro Salvage based on a tank closure report prepared by ERD Environmental, Inc. concerning two 500 gallon #2 heating oil underground storage tanks (USTs) that were decommissioned and removed on October 29, 1996. During the tank pull, soils screened at 4.5 feet below ground surface UST #2 had a peak volatile organic compound (VOC) concentration of 147 parts per million (ppm) as measured by a photoionization detector (PID). Groundwater was encountered at approximately 4 feet with free phase petroleum product present on the groundwater in the excavation pit.

Four groundwater monitoring wells were installed at the site on October 10, 1997 by Environmental Compliance Services, Inc. of Brattleboro, VT. Groundwater samples were collected on October 15, 1997 and analyzed for VOCs by EPA Method 8020 + MTBE and total petroleum Hydrocarbons via EPA Method 8100M. Laboratory results revealed the absence of the compounds tested for.

Based on a sensitive receptor survey the subject property and surrounding properties are served by public water and sewer utilities. The site is located in the flood plain approximately 525 feet east of the Connecticut River. Conclusions and recommendations are presented at the end of this report.

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1.0 Introduction

On February 10, 1997, in a letter to Norman Mallory of Brattleboro Salvage Inc. the Vermont Department of Environmental Conservation (DEC) Sites Management Section (SMS) requested further investigation at the site in response to the removal of two 500 gallon heating oil underground storage tanks (USTs) which occurred on October 29, 1996 by ERD Environmental Inc. ERD was contacted by the site owner, Norman Mallory, and submitted a preliminary work plan for the additional work requested. The DEC approved the work plan but in August of 1997 ERD closed its Brattleboro office. Former ERD personnel now staff the Brattleboro office of Environmental Compliance Services, Inc. (ECS). The following report has been prepared by ECS on behalf of Norman Mallory of Brattleboro Salvage Inc.

2.0 Site Layout

The subject property is located at 437 Vernon Road (Route 142) in Brattleboro, Vermont. The current site occupant is Brattleboro Salvage, a recycling center and transfer station. Former occupants included Triple T Trucking and a junkyard. The two site buildings were formerly heated by fuel oil stored in two 500-gallon underground storage tanks (USTs). The ground in the vicinity of the former USTs consist of a gravel material. Properties adjacent to the site are used for commercial or industrial purposes. The Central Vermont Railroad is located east of the site across Vernon Road. The Connecticut River flows in a southerly direction approximately 525 feet east of the site. A Site Location Map is presented in Appendix A of this report.

3.0 Soil Boring /Monitoring Well Installation

On October 10, 1997, four soil borings were advanced within and in the vicinity the vicinity of the former UST pit where a release of heating oil was detected during the tank removal in October 1996. Split spoon soil samples were collected at two foot intervals down to four feet where groundwater was encountered. After four feet, drilling went directly to and ended at the ten to twelve foot interval. Soils were characterized and screened for volatile organic compounds (VOCs) using a Photovac Model 2020 PID. Soils generally consisted of fine to medium grain brown sand and silt. Monitoring wells, consisting of 2 inch diameter polyvinyl chloride (PVC) pipe, were placed into the bore holes, backfilled with well sand and a bentonite seal was provided along with locking well caps and a well box cemented flush to grade. The soil boring/well logs are presented in Appendix B.

4.0 Groundwater Potentiometric Data

Prior to sample collection, depth to groundwater was gauged from the PVC well head at each of the four monitoring wells using a Slope electronic water level indicator accurate to 0.01 feet. Based on an arbitrary datum point of 100.00 feet (top of concrete step located southwest corner of site building), the groundwater elevation at each monitoring well was calculated and summarized in Table 1 below.

Table 1. Groundwater Potentiometric Data from October 15, 1997

Date	Elevation of Top of PVC	BS-1	BS-2	BS-3	BS-4
		99.48	99.85	99.21	99.89
10/15/97	Depth to groundwater	4.65	5.00	4.38	5.00
	Groundwater elevation	94.83	94.85	94.83	94.89

Elevations relative to an arbitrary elevation of 100.00 feet

These data were used to construct a groundwater potentiometric map included in Appendix C. The map shows that the groundwater table is relatively level at the site, trending slightly to the northwest.

5.0 Groundwater Sampling

Sampling was conducted at the four monitoring wells on October 15, 1997. A duplicate sample was collected from monitoring well BS-1 and a trip blank were included for quality control purposes. Standard sampling procedures were as follows:

- gauging of groundwater levels at each monitoring well
- purging of three well volumes of groundwater from each monitoring well by hand bailing with weighted plastic disposable bailers
- collection of groundwater samples from each monitoring well for VOCs via EPA Method 8020 and TPH via EPA Method 8100M.

All samples, including a trip blank, were refrigerated and sent, via courier, to Spectrum Analytical Laboratories in Agawam, Massachusetts for analysis.

Results of the groundwater analyses indicated the absence of the compounds tested for in each sample. Laboratory data sheets and chain of custody statement are included in Appendix D.

6.0 Sensitive Receptor Survey

A sensitive receptor survey was conducted during this investigation. The subject property and surrounding properties are served by municipal water and sewer utilities. Based on a review of the bedrock drinking water well data base for the Brattleboro area, no private or public well supplies are known to exist within the subject area. Properties adjacent to the site are used for commercial or industrial purposes. The major environmental receptor is the Connecticut River, which is located approximately 525 feet east of the subject property.

7.0 Conclusions and Recommendations

Conclusions and recommendations presented in this report are based solely on information obtained during the course of this investigation. Changes in site conditions, or information not available for review at the time of this investigation, may necessitate an update of these conclusions and recommendations.

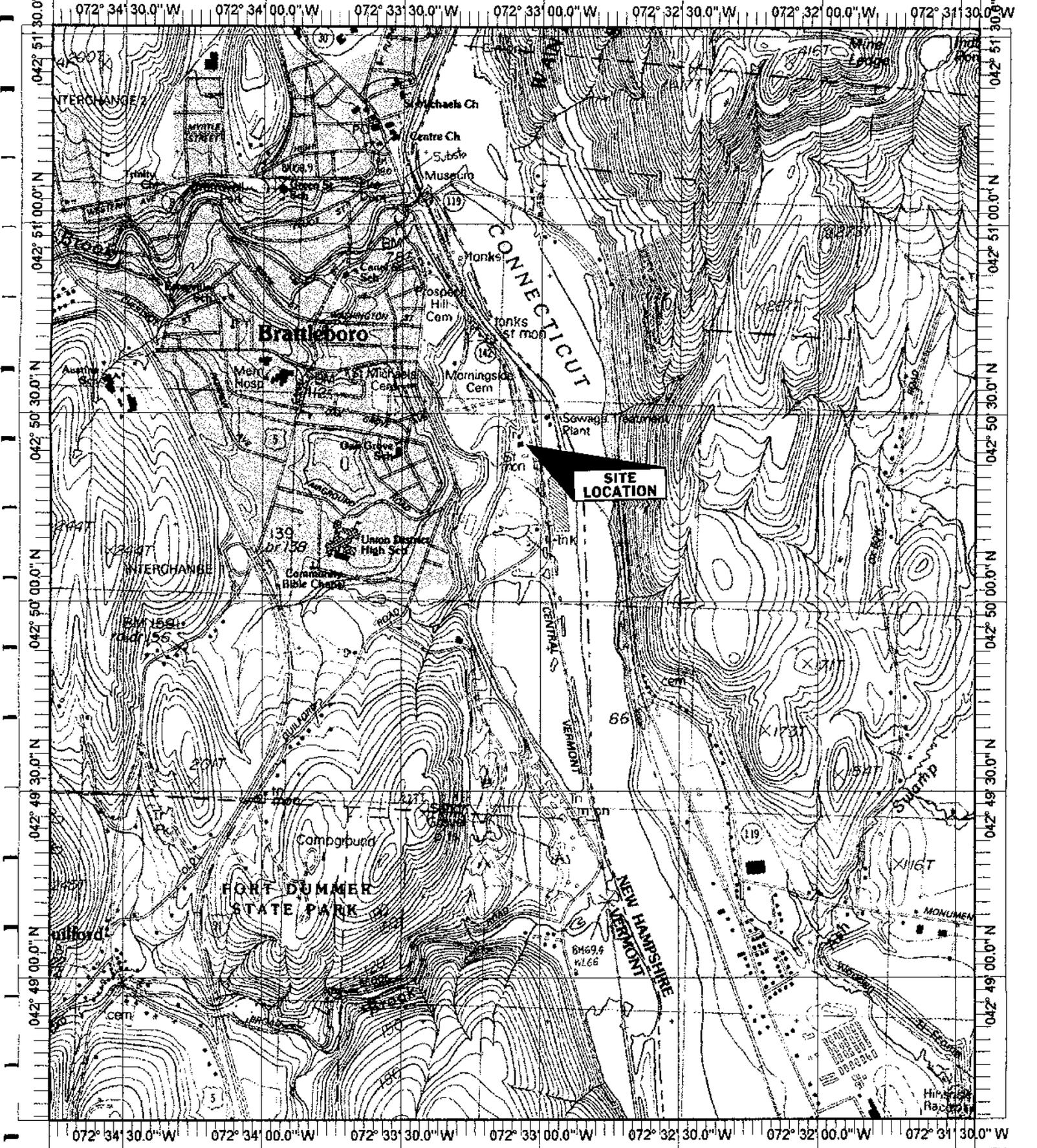
Conclusions

- No evidence of soil or groundwater contamination was obtained during subsurface investigations at the site of the former 500 gallon fuel oil UST that was, previously removed from the site during October 1996.
- Depth to groundwater varied from 4.38 to 5.00 feet below the gravel surface in the site monitoring wells. Similar conditions were present at the time of the tank pull. Potentiometric data indicated that the groundwater table was relatively level with a slight northwesterly trend in groundwater flow direction.
- No sensitive human or environmental receptors are known to exist within the subject area.

Recommendations

Based on the results of the subsurface investigations, no evidence of petroleum contaminated soil or groundwater was obtained at the site of the former 500 gallon fuel oil UST. Therefore, Environmental Compliance Services, Inc. recommends that the Vermont Department of Conservation consider Brattleboro Salvage Inc. for SMAC (Sites Management Activity Completed) actions.

APPENDIX A
SITE LOCATION MAP



Name: BRATTLEBORO
 Date: 11/10/97
 Scale: 1 inch equals 2000 feet

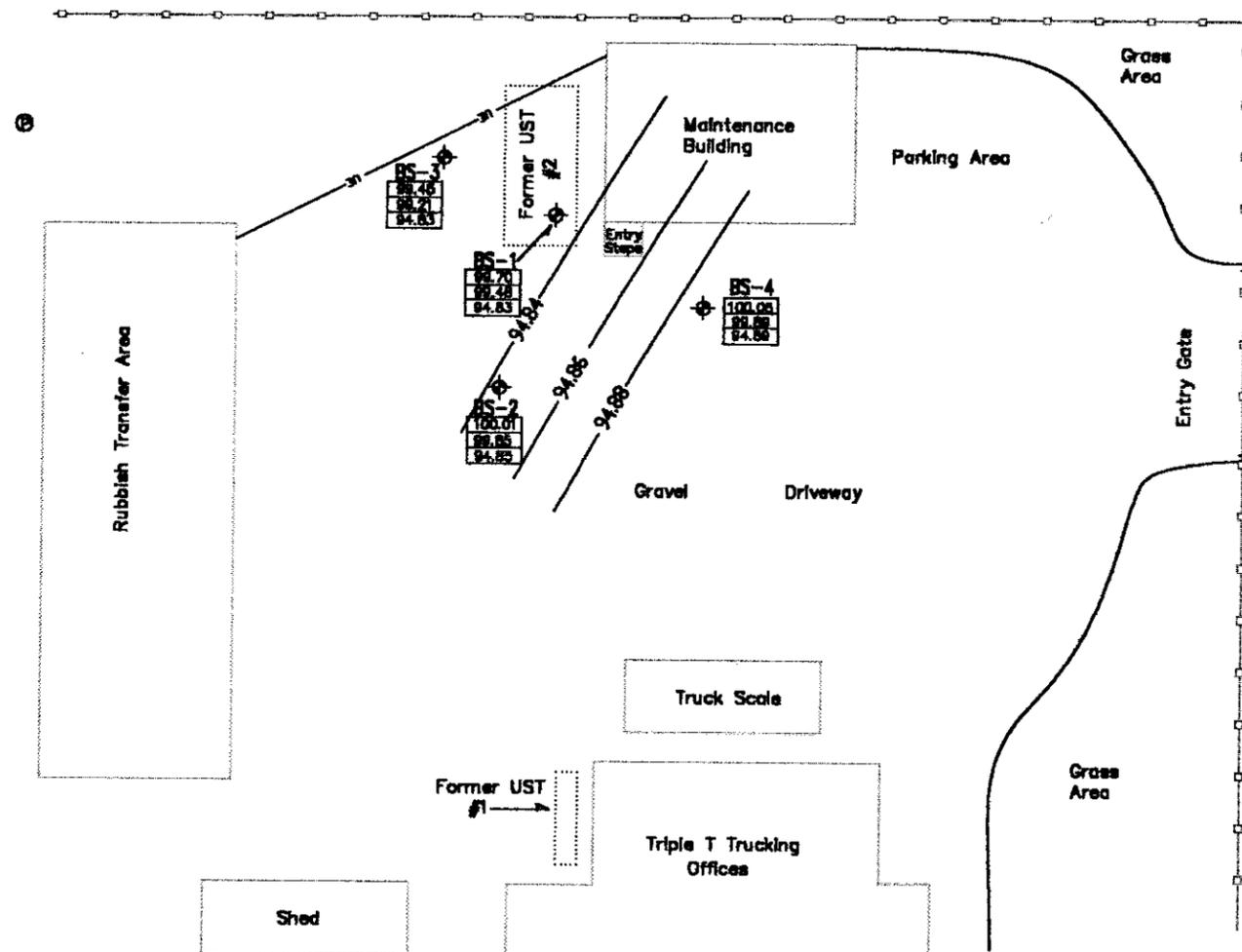
Location: 042° 50' 04.4" N 072° 33' 06.0" W
 Caption: Brattleboro Salvage
 437 Vernon Road
 Brattleboro, VT

APPENDIX B
SOIL BORING/WELL LOGS

APPENDIX C

GROUNDWATER POTENTIOMETRIC MAP

North



Vernon Road

Legend

- ⊙ Utility Pole
- ⊕ Monitoring Well
- BS-4 Well Identification
- | |
|--------|
| 100.05 |
| 94.88 |
| 94.88 |

 Rim Elevation
PVC Elevation
Groundwater Elevation
- 94.88 Groundwater Contours
- UE— Underground Private Electric
- Fence

General Notes:

Site Plan prepared from information obtained from a site visit by representatives of ECS, Inc.

All locations, dimensions of the site features, and property lines are approximate. This plan should not be used for construction or land conveyance purposes.

Vertical and horizontal locations of monitoring wells and selected site features determined by a site survey conducted by representatives of ECS, Inc.

Groundwater contours are based on measurements made on 10/15/97. Fluctuations in the level of groundwater may occur due to factors not accounted for at the time of measurements were made.

Groundwater contours and flow directions assumed homogenous, isotropic aquifer conditions, and horizontal flow.

Groundwater contours are interpolated between data points and inferred in other areas.



ENVIRONMENTAL COMPLIANCE SERVICES, INC.
187 Old Guilford Road, #6, Brattleboro, VT 06301

PROJECT:
Brattleboro Salvage, Inc.
437 Vernon Road
Brattleboro, VT

TITLE:
Groundwater Potentiometric Map for 10/15/97

CLIENT:
Norman Mallory, Triple T Trucking, Inc.

GRAPHIC SCALE:
0 10 20

COMPUTER CADFILE: F2-40005.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
CS	CS	BET	BET

SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1" = 20'	Nov. 1997	40005.00	2

APPENDIX D

**LABORATORY ANALYTICAL RESULTS
AND
CHAIN OF CUSTODY STATEMENT**



SPECTRUM ANALYTICAL, INC.

Massachusetts Certification M-MA 138
Connecticut Approval # PH 0777
Rhode Island # 98 & Maine # n/a
New Hampshire ID # 253896
New York ID #11393
Florida HRS87448

ECS, Inc.
157 Old Guilford Road, #6
Brattleboro, VT 05301

October 24, 1997

Attn: Greg King

Client Project No.: 40005

Location: Brattleboro Salvage - VT

<u>Lab ID No.</u>	<u>Client ID</u>	<u>Analysis Requested</u>
AA88316	BS-1	EPA Method 602
AA88317	BS-2	EPA Method 602
AA88318	BS-3	EPA Method 602
AA88319	BS-4	EPA Method 602
AA88320	BS-DUP	EPA Method 602
AA88321	BS-TRIP	EPA Method 602
AA88322	BSL-1	TPH by GC
AA88323	BSL-2	TPH by GC
AA88324	BSL-3	TPH by GC
AA88325	BSL-4	TPH by GC
AA88326	BSL-DUP	TPH by GC

Authorized by

Manibal Taych
President/Laboratory Director

ENVIRONMENTAL ANALYSES

SPECTRUM ANALYTICAL, INC.

Laboratory Report

Sample ID: BS-1
Lab ID No: AA88316

Location: Brattleboro Salvage - VT
Client Job No: 40005

Matrix: Water
Sampled on 10/15/97 by ECS-VT
Received on 10/16/97 by MBR
QC and Data Review by DDR

Preservative: Refrigeration, HCl
Container: 1 VOA Vials
Condition of Sample as Received: Satisfactory
Delivered by: Courier

Volatile Aromatics

EPA Method 602/8020

Parameter	Result (ug/L)	MDL	Analyzed	Analyst
Benzene	Not detected	1	10/20/97	NB
Toluene	Not detected	1	10/20/97	NB
Ethylbenzene	Not detected	1	10/20/97	NB
m,p-Xylenes	Not detected	2	10/20/97	NB
o-Xylene	Not detected	1	10/20/97	NB
Chlorobenzene	Not detected	1	10/20/97	NB
1,2-Dichlorobenzene	Not detected	1	10/20/97	NB
1,3-Dichlorobenzene	Not detected	1	10/20/97	NB
1,4-Dichlorobenzene	Not detected	1	10/20/97	NB
Methyl-t-butyl-ether	Not detected	1	10/20/97	NB
TFT Surrogate Recovery (%)	115		10/20/97	NB
BFB Surrogate Recovery (%)	Not detected		10/20/97	NB

SPECTRUM ANALYTICAL, INC.

Laboratory Report

Sample ID: **BS-2**
Lab ID No: **AA88317**

Location: **Brattleboro Salvage - VT**
Client Job No: **40005**

Matrix: Water
Sampled on 10/15/97 by ECS-VT
Received on 10/16/97 by MBR
QC and Data Review by DDR

Preservative: Refrigeration, HCl
Container: 2 VOA Vials
Condition of Sample as Received: Satisfactory
Delivered by: Courier

Volatile Aromatics

EPA Method 602/8020

Parameter	Result (ug/L)	MDL	Analyzed	Analyst
Benzene	Not detected	1	10/20/97	NB
Toluene	Not detected	1	10/20/97	NB
Ethylbenzene	Not detected	1	10/20/97	NB
m,p-Xylenes	Not detected	2	10/20/97	NB
o-Xylene	Not detected	1	10/20/97	NB
Chlorobenzene	Not detected	1	10/20/97	NB
1,2-Dichlorobenzene	Not detected	1	10/20/97	NB
1,3-Dichlorobenzene	Not detected	1	10/20/97	NB
1,4-Dichlorobenzene	Not detected	1	10/20/97	NB
Methyl-t-butyl-ether	Not detected	1	10/20/97	NB
TFT Surrogate Recovery (%)	115		10/20/97	NB
BFB Surrogate Recovery (%)	Not detected		10/20/97	NB

SPECTRUM ANALYTICAL, INC.

Laboratory Report

Sample ID: BS-3
Lab ID No: AA88318

Location: Brattleboro Salvage - VT
Client Job No: 40005

Matrix: Water
Sampled on 10/15/97 by ECS-VT
Received on 10/16/97 by MBR
QC and Data Review by DDR

Preservative: Refrigeration, HCl
Container: 2 VOA Vials
Condition of Sample as Received: Satisfactory
Delivered by: Courier

Volatile Aromatics

EPA Method 602/8020

Parameter	Result (ug/L)	MDL	Analyzed	Analyst
Benzene	Not detected	1	10/20/97	NB
Toluene	Not detected	1	10/20/97	NB
Ethylbenzene	Not detected	1	10/20/97	NB
m,p-Xylenes	Not detected	2	10/20/97	NB
o-Xylene	Not detected	1	10/20/97	NB
Chlorobenzene	Not detected	1	10/20/97	NB
1,2-Dichlorobenzene	Not detected	1	10/20/97	NB
1,3-Dichlorobenzene	Not detected	1	10/20/97	NB
1,4-Dichlorobenzene	Not detected	1	10/20/97	NB
Methyl-t-butyl-ether	Not detected	1	10/20/97	NB
TFT Surrogate Recovery (%)	113		10/20/97	NB
BFB Surrogate Recovery (%)	Not detected		10/20/97	NB

SPECTRUM ANALYTICAL, INC.

Laboratory Report

Sample ID: BS-4
Lab ID No: AA88319

Location: Brattleboro Salvage - VT
Client Job No: 40005

Matrix: Water
Sampled on 10/15/97 by ECS-VT
Received on 10/16/97 by MBR
QC and Data Review by DDR

Preservative: Refrigeration, HCl
Container: 2 VOA Vials
Condition of Sample as Received: Satisfactory
Delivered by: Courier

Volatile Aromatics

EPA Method 602/8020

Parameter	Result (ug/L)	MDL	Analyzed	Analyst
Benzene	Not detected	1	10/20/97	NB
Toluene	Not detected	1	10/20/97	NB
Ethylbenzene	Not detected	1	10/20/97	NB
m,p-Xylenes	Not detected	2	10/20/97	NB
o-Xylene	Not detected	1	10/20/97	NB
Chlorobenzene	Not detected	1	10/20/97	NB
1,2-Dichlorobenzene	Not detected	1	10/20/97	NB
1,3-Dichlorobenzene	Not detected	1	10/20/97	NB
1,4-Dichlorobenzene	Not detected	1	10/20/97	NB
Methyl-t-butyl-ether	Not detected	1	10/20/97	NB
TFT Surrogate Recovery (%)	113		10/20/97	NB
BFB Surrogate Recovery (%)	Not detected		10/20/97	NB

SPECTRUM ANALYTICAL, INC.

Laboratory Report

Sample ID: **BS-DUP**
Lab ID No: **AA88320**

Location: **Brattleboro Salvage - VT**
Client Job No: **40005**

Matrix: Water
Sampled on 10/15/97 by ECS-VT
Received on 10/16/97 by MBR
QC and Data Review by

Preservative: Refrigeration, HCl
Container: 2 VOA Vials
Condition of Sample as Received: Satisfactory
Delivered by: Courier

Volatile Aromatics

EPA Method 602/8020

Parameter	Result (ug/L)	MDL	Analyzed	Analyst
Benzene	Not detected	1	10/21/97	NB
Toluene	Not detected	1	10/21/97	NB
Ethylbenzene	Not detected	1	10/21/97	NB
m,p-Xylenes	Not detected	2	10/21/97	NB
o-Xylene	Not detected	1	10/21/97	NB
Chlorobenzene	Not detected	1	10/21/97	NB
1,2-Dichlorobenzene	Not detected	1	10/21/97	NB
1,3-Dichlorobenzene	Not detected	1	10/21/97	NB
1,4-Dichlorobenzene	Not detected	1	10/21/97	NB
Methyl-t-butyl-ether	Not detected	1	10/21/97	NB
TFT Surrogate Recovery (%)	104		10/21/97	NB
BFB Surrogate Recovery (%)	Not detected		10/21/97	NB

SPECTRUM ANALYTICAL, INC.

Laboratory Report

Sample ID: **BS-TRIP**
Lab ID No: **AA88321**

Location: **Brattleboro Salvage - VT**
Client Job No: **40005**

Matrix: Water
Sampled on 10/15/97 by ECS-VT
Received on 10/16/97 by MBR
QC and Data Review by

Preservative: Refrigeration, HCl
Container: 1 VOA Vial
Condition of Sample as Received: Satisfactory
Delivered by: Courier

Volatile Aromatics

EPA Method 602/8020

Parameter	Result (ug/L)	MDL	Analyzed	Analyst
Benzene	Not detected	1	10/21/97	NB
Toluene	Not detected	1	10/21/97	NB
Ethylbenzene	Not detected	1	10/21/97	NB
m,p-Xylenes	Not detected	2	10/21/97	NB
o-Xylene	Not detected	1	10/21/97	NB
Chlorobenzene	Not detected	1	10/21/97	NB
1,2-Dichlorobenzene	Not detected	1	10/21/97	NB
1,3-Dichlorobenzene	Not detected	1	10/21/97	NB
1,4-Dichlorobenzene	Not detected	1	10/21/97	NB
Methyl-t-butyl-ether	Not detected	1	10/21/97	NB
TFT Surrogate Recovery (%)	120		10/21/97	NB
BFB Surrogate Recovery (%)	Not detected		10/21/97	NB

SPECTRUM ANALYTICAL, INC.

Laboratory Report

Client ID: **BSL-1**
Lab ID No.: **AA88322**

Location: **Brattleboro Salvage - VT**
Client Job No.: **40005**

Matrix: Water
Collected: 10/15/97 by ECS-VT
Received on 10/16/97 by MBR
QC and Data Review by

Preservative: Refrigeration
Container: 1 Amber Glass Liter
Condition of Sample as Received: Satisfactory
Delivered by: Courier

Total Hydrocarbons by GC

Modified EPA Method 8100

Parameter	Result (mg/L)	MDL	Extracted	Analyzed	Analyst
Total Hydrocarbons (GC)	Not detected		10/22/97	10/23/97	KH

Fingerprint based quantification:

Gasoline	Not detected	0.2	10/22/97	10/23/97	KH
Fuel Oil #2	Not detected	0.4	10/22/97	10/23/97	KH
Fuel Oil #4	Not detected	0.7	10/22/97	10/23/97	KH
Fuel Oil #6	Not detected	0.7	10/22/97	10/23/97	KH
Motor Oil	Not detected	0.7	10/22/97	10/23/97	KH
Ligroin	Not detected	0.4	10/22/97	10/23/97	KH
Aviation Fuel	Not detected	0.4	10/22/97	10/23/97	KH
Other Oil	Not detected	0.7	10/22/97	10/23/97	KH
Unidentified	Not detected		10/22/97	10/23/97	KH

Petroleum identification is determined by comparing the GC fingerprint obtained from the sample with a library of GC fingerprints obtained from petroleum products. Possible match categories are as follows;

Gasoline - includes regular, unleaded, premium, etc.

Fuel Oil #2 - includes home heating oil, #2 fuel oil and diesel.

Fuel Oil #4 - Includes #4 Fuel Oil.

Fuel Oil #6 - includes #6 oil and bunker "C" oil.

Motor Oil - includes virgin and waste automobile.

Ligroin - includes mineral spirits, petroleum naphtha, vm&p naphtha.

Aviation Fuels - includes Kerosene, Jet A and JP-4.

Other Oil - includes lubricating and cutting oil and silicon oil.

Factors such as microbial degradation, weathering and solubility generally prevent specific identification within a petroleum category. A finding of "unidentified" means that the sample fingerprint was characteristic of a petroleum product, but could not be matched to a fingerprint in the library.

After fingerprint identification, the amount present in the sample is quantified using a calibration curve prepared from a petroleum product of the same category as the identified petroleum. Unidentified petroleum is quantified using a petroleum calibration that approximates the distribution of compounds in the sample.

A * in the results column indicates the petroleum calibration used to quantify unidentified samples.

SPECTRUM ANALYTICAL, INC.

Laboratory Report

Client ID: **BSL-2**
Lab ID No.: **AA88323**

Location: **Brattleboro Salvage - VT**
Client Job No.: **40005**

Matrix: Water
Collected: 10/15/97 by ECS-VT
Received on 10/16/97 by MBR
QC and Data Review by

Preservative: Refrigeration
Container: 1 Amber Glass Liter
Condition of Sample as Received: Satisfactory
Delivered by: Courier

Total Hydrocarbons by GC

Modified EPA Method 8100

Parameter	Result (mg/L)	MDL	Extracted	Analyzed	Analyst
Total Hydrocarbons (GC)	Not detected		10/22/97	10/23/97	KH

Fingerprint based quantification:

Gasoline	Not detected	0.2	10/22/97	10/23/97	KH
Fuel Oil #2	Not detected	0.4	10/22/97	10/23/97	KH
Fuel Oil #4	Not detected	0.7	10/22/97	10/23/97	KH
Fuel Oil #6	Not detected	0.7	10/22/97	10/23/97	KH
Motor Oil	Not detected	0.7	10/22/97	10/23/97	KH
Ligroin	Not detected	0.4	10/22/97	10/23/97	KH
Aviation Fuel	Not detected	0.4	10/22/97	10/23/97	KH
Other Oil	Not detected	0.7	10/22/97	10/23/97	KH
Unidentified	Not detected		10/22/97	10/23/97	KH

Petroleum identification is determined by comparing the GC fingerprint obtained from the sample with a library of GC fingerprints obtained from petroleum products. Possible match categories are as follows;

Gasoline - includes regular, unleaded, premium, etc.

Fuel Oil #2 - includes home heating oil, #2 fuel oil and diesel.

Fuel Oil #4 - Includes #4 Fuel Oil.

Fuel Oil #6 - includes #6 oil and bunker "C" oil.

Motor Oil - includes virgin and waste automobile.

Ligroin - includes mineral spirits, petroleum naphtha, vm&p naphtha.

Aviation Fuels - includes Kerosene, Jet A and JP-4.

Other Oil - includes lubricating and cutting oil and silicon oil.

Factors such as microbial degradation, weathering and solubility generally prevent specific identification within a petroleum category. A finding of "unidentified" means that the sample fingerprint was characteristic of a petroleum product, but could not be matched to a fingerprint in the library.

After fingerprint identification, the amount present in the sample is quantified using a calibration curve prepared from a petroleum product of the same category as the identified petroleum. Unidentified petroleum is quantified using a petroleum calibration that approximates the distribution of compounds in the sample.

A * in the results column indicates the petroleum calibration used to quantify unidentified samples.

SPECTRUM ANALYTICAL, INC.

Laboratory Report

Client ID: **BSL-3**
Lab ID No.: **AA88324**

Location: **Brattleboro Salvage - VT**
Client Job No.: **40005**

Matrix: Water
Collected: 10/15/97 by ECS-VT
Received on 10/16/97 by MBR
QC and Data Review by

Preservative: Refrigeration
Container: 1 Amber Glass Liter
Condition of Sample as Received: Satisfactory
Delivered by: Courier

Total Hydrocarbons by GC

Modified EPA Method 8100

Parameter	Result (mg/L)	MDL	Extracted	Analyzed	Analyst
Total Hydrocarbons (GC)	Not detected		10/22/97	10/23/97	KH

Fingerprint based quantification:

Gasoline	Not detected	0.2	10/22/97	10/23/97	KH
Fuel Oil #2	Not detected	0.4	10/22/97	10/23/97	KH
Fuel Oil #4	Not detected	0.7	10/22/97	10/23/97	KH
Fuel Oil #6	Not detected	0.7	10/22/97	10/23/97	KH
Motor Oil	Not detected	0.7	10/22/97	10/23/97	KH
Ligroin	Not detected	0.4	10/22/97	10/23/97	KH
Aviation Fuel	Not detected	0.4	10/22/97	10/23/97	KH
Other Oil	Not detected	0.7	10/22/97	10/23/97	KH
Unidentified	Not detected		10/22/97	10/23/97	KH

Petroleum identification is determined by comparing the GC fingerprint obtained from the sample with a library of GC fingerprints obtained from petroleum products. Possible match categories are as follows;

Gasoline - includes regular, unleaded, premium, etc.

Fuel Oil #2 - includes home heating oil, #2 fuel oil and diesel.

Fuel Oil #4 - Includes #4 Fuel Oil.

Fuel Oil #6 - includes #6 oil and bunker "C" oil.

Motor Oil - includes virgin and waste automobile.

Ligroin - includes mineral spirits, petroleum naphtha, vm&p naphtha.

Aviation Fuels - includes Kerosene, Jet A and JP-4.

Other Oil - includes lubricating and cutting oil and silicon oil.

Factors such as microbial degradation, weathering and solubility generally prevent specific identification within a petroleum category. A finding of "unidentified" means that the sample fingerprint was characteristic of a petroleum product, but could not be matched to a fingerprint in the library.

After fingerprint identification, the amount present in the sample is quantified using a calibration curve prepared from a petroleum product of the same category as the identified petroleum. Unidentified petroleum is quantified using a petroleum calibration that approximates the distribution of compounds in the sample.

A * in the results column indicates the petroleum calibration used to quantify unidentified samples.

SPECTRUM ANALYTICAL, INC.

Laboratory Report

Client ID: **BSL-4**
Lab ID No.: **AA88325**

Location: **Brattleboro Salvage - VT**
Client Job No.: **40005**

Matrix: Water
Collected: 10/15/97 by ECS-VT
Received on 10/16/97 by MBR
QC and Data Review by

Preservative: Refrigeration
Container: 1 Amber Glass Liter
Condition of Sample as Received: Satisfactory
Delivered by: Courier

Total Hydrocarbons by GC

Modified EPA Method 8100

Parameter	Result (mg/L)	MDL	Extracted	Analyzed	Analyst
Total Hydrocarbons (GC)	not detected		10/22/97	10/24/97	KH

Fingerprint based quantification:

Gasoline	not detected	0.2	10/22/97	10/24/97	KH
Fuel Oil #2	not detected	0.4	10/22/97	10/24/97	KH
Fuel Oil #4	not detected	0.7	10/22/97	10/24/97	KH
Fuel Oil #6	not detected	0.7	10/22/97	10/24/97	KH
Motor Oil	not detected	0.7	10/22/97	10/24/97	KH
Ligroin	not detected	0.4	10/22/97	10/24/97	KH
Aviation Fuel	not detected	0.4	10/22/97	10/24/97	KH
Other Oil	not detected	0.7	10/22/97	10/24/97	KH
Unidentified	not detected		10/22/97	10/24/97	KH

Petroleum identification is determined by comparing the GC fingerprint obtained from the sample with a library of GC fingerprints obtained from petroleum products. Possible match categories are as follows;

Gasoline - includes regular, unleaded, premium, etc.

Fuel Oil #2 - includes home heating oil, #2 fuel oil and diesel.

Fuel Oil #4 - Includes #4 Fuel Oil.

Fuel Oil #6 - includes #6 oil and bunker "C" oil.

Motor Oil - includes virgin and waste automobile.

Ligroin - includes mineral spirits, petroleum naphtha, vm&p naphtha.

Aviation Fuels - includes Kerosene, Jet A and JP-4.

Other Oil - includes lubricating and cutting oil and silicon oil.

Factors such as microbial degradation, weathering and solubility generally prevent specific identification within a petroleum category. A finding of "unidentified" means that the sample fingerprint was characteristic of a petroleum product, but could not be matched to a fingerprint in the library.

After fingerprint identification, the amount present in the sample is quantified using a calibration curve prepared from a petroleum product of the same category as the identified petroleum. Unidentified petroleum is quantified using a petroleum calibration that approximates the distribution of compounds in the sample.

A * in the results column indicates the petroleum calibration used to quantify unidentified samples.

SPECTRUM ANALYTICAL, INC.

Laboratory Report

Client ID: **BSL-DUP**
Lab ID No.: **AA88326**

Location: **Brattleboro Salvage - VT**
Client Job No.: **40005**

Matrix: Water
Collected: 10/15/97 by ECS-VT
Received on 10/16/97 by MBR
QC and Data Review by

Preservative: Refrigeration
Container: 1 Amber Glass Liter
Condition of Sample as Received: Satisfactory
Delivered by: Courier

Total Hydrocarbons by GC

Modified EPA Method 8100

Parameter	Result (mg/L)	MDL	Extracted	Analyzed	Analyst
Total Hydrocarbons (GC)	not detected		10/22/97	10/24/97	KH
Fingerprint based quantification:					
Gasoline	not detected	0.2	10/22/97	10/24/97	KH
Fuel Oil #2	not detected	0.4	10/22/97	10/24/97	KH
Fuel Oil #4	not detected	0.7	10/22/97	10/24/97	KH
Fuel Oil #6	not detected	0.7	10/22/97	10/24/97	KH
Motor Oil	not detected	0.7	10/22/97	10/24/97	KH
Ligroin	not detected	0.4	10/22/97	10/24/97	KH
Aviation Fuel	not detected	0.4	10/22/97	10/24/97	KH
Other Oil	not detected	0.7	10/22/97	10/24/97	KH
Unidentified	not detected		10/22/97	10/24/97	KH

Petroleum identification is determined by comparing the GC fingerprint obtained from the sample with a library of GC fingerprints obtained from petroleum products. Possible match categories are as follows;

Gasoline - includes regular, unleaded, premium, etc.

Fuel Oil #2 - includes home heating oil, #2 fuel oil and diesel.

Fuel Oil #4 - Includes #4 Fuel Oil.

Fuel Oil #6 - includes #6 oil and bunker "C" oil.

Motor Oil - includes virgin and waste automobile.

Ligroin - includes mineral spirits, petroleum naphtha, vm&p naphtha.

Aviation Fuels - includes Kerosene, Jet A and JP-4.

Other Oil - includes lubricating and cutting oil and silicon oil.

Factors such as microbial degradation, weathering and solubility generally prevent specific identification within a petroleum category. A finding of "unidentified" means that the sample fingerprint was characteristic of a petroleum product, but could not be matched to a fingerprint in the library.

After fingerprint identification, the amount present in the sample is quantified using a calibration curve prepared from a petroleum product of the same category as the identified petroleum. Unidentified petroleum is quantified using a petroleum calibration that approximates the distribution of compounds in the sample.

A * in the results column indicates the petroleum calibration used to quantify unidentified samples.

Spectrum Analytical, Inc.

Laboratory Report Supplement

References

- Methods for the Determination of Organic Compounds in Drinking Water. EPA-600/4-88/039. EMSL 1988.
- Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. EMSL 1983.
- Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater. EPA 600/4-82-057. EMSL 1982.
- Test Methods for Evaluating Solid Waste. Physical/Chemical Methods. EPA SW-846. 1986.
- Standard Methods for the Examination of Water and Wastes. APHA-AWWA-WPCF. 16th Edition. 1985.
- Standard Methods for Comparison of Waterborne Petroleum Oils by Gas Chromatography. ASTM D 3328. 1982.
- Oil Spill Identification System. U.S. Coast Guard CG-D-52-77. 1977.
- Handbook for Analytical Quality Control in Water and Wastewater Laboratories. EPA 600/4-79-019. EMSL 1979.
- Choosing Cost-Effective QA/QC (Quality Assurance/Quality Control) Programs for Chemical Analyses. EPA 600/4-85/056. EMSL 1985.

Report Notations

Not Detected, Not Det, ND or nd	=	<i>The compound was not detected at a concentration equal to or above the established method detection limit.</i>
NC	=	<i>Not Calculated</i>
MCL	=	<i>EPA Maximum Contamination Level</i>
VOA	=	<i>Volatile Organic Analysis</i>
BFB	=	<i>4-Bromofluorobenzene (an EPA 624 Surrogate)</i>
p-DFB	=	<i>1,4-Difluorobenzene (an EPA 624 Surrogate)</i>
CLB-d5	=	<i>Chlorobenzene-d5 (an EPA 624 Surrogate)</i>
BCP	=	<i>2-Bromo-1-chloropropane (an EPA 601 Surrogate)</i>
TFT	=	<i>a, a, a-Trifluorotoluene (an EPA 602 Surrogate)</i>
Decachlorobiphenyl	=	<i>(an EPA 608/8080 Surrogate)</i>

Definitions

Surrogate Recovery = The recovery (expressed as a percent) of a non method analyte (see surrogates listed above) added to the sample for the purpose of monitoring system performance.

Matrix Spike Recovery = The recovery (expressed as a percent) of method analytes added to the sample for the purpose of determining any effect of sample composition on analyte recovery.

Laboratory Replicate = Two sample aliquots taken in the analytical laboratory and analyzed separately with identical procedures. Analyses of laboratory duplicates give a measure of the precision associated with laboratory procedures, but not with sample collection, preservation, or storage procedures.

Field Duplicate = Two separate samples collected at the same time and place under identical circumstances and treated exactly the same throughout field and laboratory procedures. Analysis of Field duplicates give a measure of the precision associated with sample collection, preservation and storage, as well as with laboratory procedures.

Relative Percent Difference (%RPD) = The precision measurement obtained on duplicate/replicate analyses. %RPD is calculated as:

$$\%RPD = \frac{(\text{value1} - \text{value2})}{\text{ave. value}} * 100\%$$

CHAIN OF CUSTODY RECORD



SPECTRUM ANALYTICAL

Page 1 of 1

PROJECT NO.: <u>40005</u>	REPORT TO: <u>ECS - Brattleboro</u>
SITE NAME: <u>Brattleboro Salvage</u>	
LOCATION: <u>Brattleboro</u> STATE <u>VT</u>	ADDRESS:
REFERENCE QUOTE NUMBER (RQN):	CITY STATE ZIP
PURCHASE ORDER NO.:	INVOICE TO: <u>ECS</u>
PROJECT Mgr: <u>Greg King</u>	
SAMPLER(s): <u>JCP</u>	CITY STATE ZIP

SAMPLE TYPE & MATRIX CODES:	CONTAINERS	VOC's	SVOC's	TPH	METALS	OTHER
1 = 4°C 2 = HCl 3 = H ₂ SO ₄ 4 = HNO ₃ 5 = OTHER _____	# 40 ml VOA VIALS	1-601/8010 2-602/8020	1-624/8240 2-KETONES	1-PCBS 2-PEST (608/8080)	1 - Soluble 2 - Total 3 - TCLP	1-PH 2-FLASH 3-REACT
	# OF AMBER GLASS LITERS	1-502/8021 2-524	1-MTBE	1-GC(8100M) 2-GC(8015M)		
	# OF PLASTIC LITERS	1-8270 2-BN 3-PAHS	1-8270 2-BN 3-PAHS	1-VPH 2-EPH 3-ID		
	# OF GLASS SOIL JARS			1-R(418.1) 2-OIL/GREASE		

C = COMPOSITE G = GRAB
 1 = AQUEOUS 3 = SLUDGE 5 = OTHER
 2 = SOIL 4 = SEDIMENT

LAB USE ONLY	SAMPLE I.D.	DATE	TIME	MATRIX	SAMPLE TYPE	PRESERVATIVE	# 40 ml VOA VIALS	# OF AMBER GLASS LITERS	# OF PLASTIC LITERS	# OF GLASS SOIL JARS	1-601/8010	1-502/8021	1-624/8240	1-MTBE	1-8270 2-BN 3-PAHS	1-PCBS 2-PEST (608/8080)	1-GC(8100M) 2-GC(8015M)	1-VPH 2-EPH 3-ID	1-R(418.1) 2-OIL/GREASE	PP13	RCRA8	As, Cd, Cr, Hg, Pb	1-PH	2-FLASH	3-REACT	
AA 88316	BS-1-40005	10/15	11:10	1	G	12	2				2			1												
AA 88317	BS-2-40005	10/15	11:06	1	G	12	2				2			1												
AA 88318	BS-3-40005	10/15	11:04	1	G	12	2				2			1												
AA 88319	BS-4-40005	10/15	11:05	1	G	12	2				2			1												
AA 88320	BS Dup-40005	10/15	11:11	1	G	12	2				2			1												
AA 88321	BS Trip-40005	10/15	11:00	1	G	12	1				2			1												
AA 88322	BSL-1-40005	10/15	11:10	1	G	1											1									
AA 88323	BSL-2-40005	10/15	11:06	1	G	1											1									
AA 88324	BSL-3-40005	10/15	11:04	1	G	1											1									
AA 88325	BSL-4-40005	10/15	11:05	1	G	1											1									
AA 88326	BSL Dup-40005	10/15	11:10	1	G	1											1									
AA																										
AA																										
AA																										
AA																										

RELINQUISHED BY: <u>Greg King</u> <u>E. Repardon</u>	RECEIVED BY: <u>E. Repardon</u> <u>Director</u>	DATE <u>10-16-97</u>	TIME <u>12:55</u> <u>15:22</u>
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SPECIAL INSTRUCTIONS:	SPECIAL HANDLING: <i>Please check</i> <input type="checkbox"/> Return Sample after Analysis <input type="checkbox"/> Dispose of Sample after 60 days <input checked="" type="checkbox"/> Standard TAT - 7 to 10 Business days <input type="checkbox"/> Special TAT - 24 hr - 48 hr - 72 hr - 5 b. days • TAT begins when sample is received at test facility. • TAT for samples rec'd after 3 pm will begin on the next business day. • All TAT's are subject to laboratory approval and customer consent. DATE RESULTS NEEDED: _____
<input checked="" type="checkbox"/> Fax results when available to (802) 257-1603	