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3:10 pm, Apr 27, 2009

Alameda County  
Environmental Health

**Compliance Soil Sampling Report for  
Site Renovation Activities**  
Atlantic Richfield Company Station No.9535  
3400 San Pablo Avenue  
Oakland, California

Prepared for

Mr. Paul Supple  
Environmental Business Manager  
Atlantic Richfield Company  
P.O. Box 1257  
San Ramon, California 94583

Prepared by



1324 Mangrove Avenue, Suite 212  
Chico, California 95926  
(530) 566-1400  
*www.broadbentinc.com*

16 April 2009

Project No. 09-88-602

16 April 2009

Project No. 09-88-602

Atlantic Richfield Company  
P.O. Box 1257  
San Ramon, CA 94583  
Submitted via ENFOS

Attn.: Mr. Paul Supple

Re: Compliance Soil Sampling Report for Site Renovation Activities  
Atlantic Richfield Company (a BP affiliated company) Station No.9535  
3400 San Pablo Avenue, Oakland, California; ACEH Case # RO0000004

Dear Mr. Supple:

Attached is the *Compliance Soil Sampling Report for Site Renovation Activities* at Atlantic Richfield Company Station No.9535 located at 3400 San Pablo Avenue, Oakland, California (Site). This report presents results of the soil sampling conducted at Station No.9535 in March 2009 during relocation of vent risers and installation of a Healy EVR Phase 2 fuel system at the Site as observed by the Oakland Fire Department.

Should you have questions regarding the work performed or results obtained, please do not hesitate to contact us at (530) 566-1400.

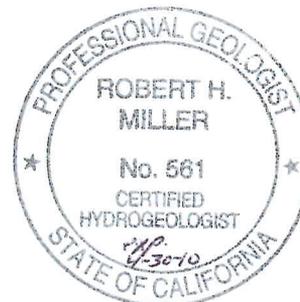
Sincerely,  
BROADBENT & ASSOCIATES, INC.



Thomas A. Venus, P.E.  
Senior Engineer



Robert H. Miller, P.G., C.HG  
Principal Hydrogeologist



Enclosure

cc: Inspector Keith Mathews, Oakland Fire Department, 150 Frank H. Ogawa Plaza,  
Suite 3354, Oakland, California 94612  
Mr. Paresh Khatri, Alameda County Environmental Health (Submitted via ACEH ftp site)  
Mr. Chris Panaitescu, Thrifty Oil Company, 13116 Imperial Springs Highway, Santa  
Fe Springs, California 90670-00138

**COMPLIANCE SOIL SAMPLING REPORT FOR  
SITE RENOVATION ACTIVITIES**  
Atlantic Richfield Company Station No.9535  
3400 San Pablo Avenue  
Oakland, California

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|------------|---|

**COMPLIANCE SOIL SAMPLING REPORT FOR  
SITE RENOVATION ACTIVITIES**

Atlantic Richfield Company Station No.9535  
3400 San Pablo Avenue  
Oakland, California

## **1.0 INTRODUCTION**

On behalf of the Atlantic Richfield Company, RM – a BP affiliated company, Broadbent & Associates, Inc. (BAI) has prepared this *Compliance Soil Sampling Report for Site Renovation Activities* for the soil sampling activities conducted during the vent line upgrades at the Atlantic Richfield Company Station No.9535, located at 3400 San Pablo Avenue, Oakland, California (Site). Soil sampling was conducted to fulfill the requirements of the Oakland Fire Department regarding vent line upgrades. This report includes discussions on the Site Background, Field Activities Performed, Analytical Results of the Soil Sampling, and Conclusions.

## **2.0 SITE BACKGROUND**

The Site is an active ARCO-brand gasoline retail outlet located at 3400 San Pablo Avenue, on the northeastern corner of San Pablo Avenue and 34th Street in Oakland, California (Drawing 1 and Drawing 2). The land use in the immediate vicinity of the Site is mixed commercial and residential. The Site consists of a cashier's station building and two 20,000-gallon gasoline underground storage tanks (USTs) with associated piping and dispensers. The Site is covered with asphalt or concrete surfacing except for planters along the southern and northeast property boundaries containing river rock.

The former Thrifty Oil Company Station No.49 historically operated at this location and retains the environmental liability for the open release case (GeoTracker Global ID T0600101365 / Alameda County Environmental Health Case RO0000004). Numerous subsurface investigations and remedial activities have been conducted on-site since 1986. A comprehensive history of remediation activities can be found within the *Feasibility Study and Corrective Action Plan* (GeoHydrologic Consultants, Inc., 9/22/2008) as submitted to Alameda County Environmental Health Services and available on GeoTracker.

## **3.0 VENT LINE EXCAVATION SOIL SAMPLING**

On behalf of Atlantic Richfield Company, RM, Stratus Environmental, Inc. (Stratus) collected compliance soil samples in conjunction with Paradiso Mechanical, Inc. (the contractor renovating the service station). Samples were collected under the direction of City of Oakland Fire Department personnel. Soil samples were collected on 16 March 2009 following removal of the existing vent lines. Two soil samples were collected from approximate depths of 22 inches bgs (VL-1) and 44 inches (VL-2) beneath the vent line trench. Specific soil sampling locations are depicted in Drawing 2. Detailed field sketches are provided within Appendix A.

Soil samples were submitted to Calscience Environmental Laboratories, Inc. (Garden Grove), a California State-certified laboratory, under standard chain-of-custody protocol. Samples were analyzed for Gasoline Range Organics (GRO, hydrocarbon chain lengths between C6-C12) by EPA Method 8015B; for Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX), Methyl Tert-Butyl Ether (MTBE), Ethyl Tert-Butyl Ether (ETBE), Tert-Amyl Methyl Ether (TAME),

Di-Isopropyl Ether (DIPE), Tert-Butyl Alcohol (TBA), and Ethanol using EPA Method 8260B; and for Total Lead by EPA Method 6010B. Analyses were requested on a 48-hour rush turn-around basis.

#### **4.0 DERIVED SOILS MANAGEMENT AND SAMPLING**

The soil excavated during the equipment renovation activities was temporarily placed within bins onsite prior to characterization and transportation for disposal/treatment. On 16 March 2009, Stratus personnel collected two waste composite soil samples from the excavated material. Sample 'TLC- 1' was collected from the pea gravel and soil excavated during removal of the former vent lines. Sample 'SWC' was collected from the soil generated during construction activities. Soil waste composite samples were shipped to Calscience Environmental Laboratories, Inc. under standard chain-of-custody protocol and analyzed for the same constituents as previously discussed with the excepted deletions of ETBE, TAME, DIPE, TBA, and Ethanol. Following characterization and profiling, Paradiso Mechanical, Inc. scheduled Belshire Environmental Services (Belshire) to transport the derived residual soil to Forward Incorporated Allied Waste Services disposal facility in Manteca, California facility for treatment or disposal.

#### **5.0 ANALYTICAL RESULTS OF SOIL SAMPLES**

A total of four soil samples were collected during the product piping and dispenser upgrade activities, including composite waste soil samples. The following summarizes the laboratory results obtained following analysis of the samples:

- GRO, BTEX, MTBE, ETBE, TAME, DIPE, TBA, nor Ethanol was detected above the laboratory reporting limits in compliance soil samples VL-1 or VL-2, or pea gravel composite sample TLC-1.
- Total Lead was detected in the two compliance soil samples at concentrations up of 10.2 milligrams per kilogram (mg/kg) in sample VL-1, and 44.4 mg/kg in sample VL-2.
- GRO nor BTEX was detected above the reporting limits in the soil waste composite sample SWC. MTBE was detected above the laboratory reporting limit in sample SWC at a concentration of 0.0024 mg/kg.

Soil sample analytical results are summarized in Table 1. A copy of the laboratory analytical report with chain-of-custody documentation is provided in Appendix A.

#### **6.0 CONCLUSIONS**

Based on the results from this compliance soil sampling investigation, BAI concludes the following:

- Hydrocarbons were observed to be below the laboratory reporting limits in both compliance samples (VL-1 and VL-2) and both waste disposal characterization samples (TLC-1 and SWC), with the exception of MTBE in sample SWC at 0.0024 mg/kg.

- Additional over-excavation was not performed due to the non-detect or low concentrations of hydrocarbons observed in the compliance and waste disposal characterization samples.

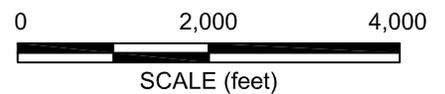
## **7.0 CLOSURE**

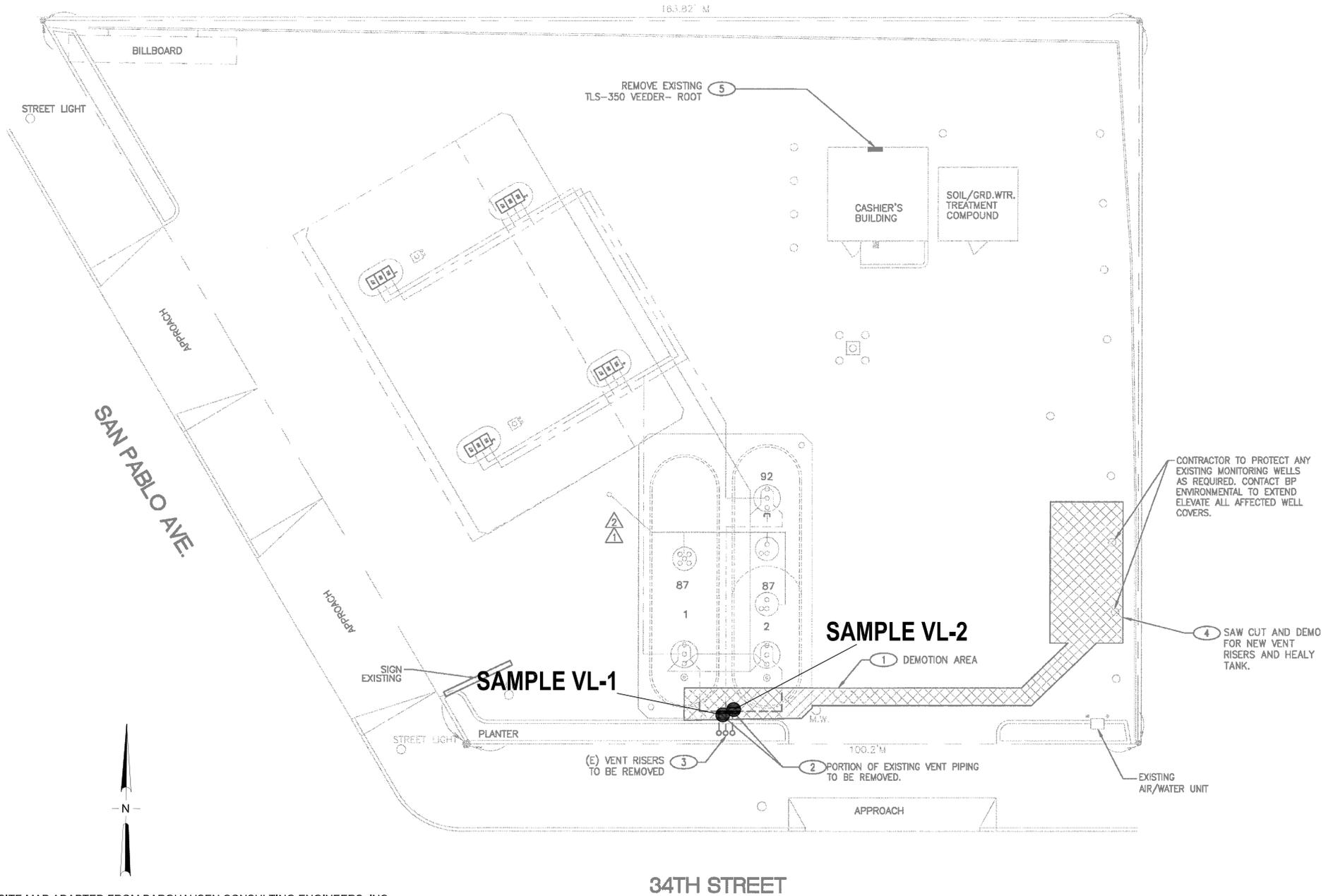
This document has been prepared for the exclusive use of Atlantic Richfield Company. The findings presented in this report are based upon the observations of Stratus field personnel, points of investigation and results of laboratory tests performed by Calscience Environmental Laboratories, Inc. (Garden Grove, California). Services were performed in accordance with the generally accepted standard of practice at the time this report was written. No warranty, expressed or implied, is intended. It is possible that variations in the soil or groundwater conditions could exist beyond the points explored in this investigation. Also, changes in site conditions could occur at some time in the future due to variations in rainfall, temperature, regional water usage or other factors.

## **8.0 REFERENCES**

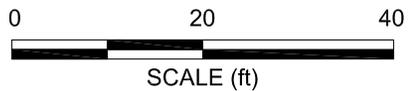
Barghausen Consulting Engineering, Inc., 27 February 2009. *Demolition Site Plan D-1 (Construction Release)*. Prepared by Hal P. Grubb, California Professional Civil Engineer 67814, for ARCO BP West Coast Products LLC.

GeoHydrologic Consultants, Inc., 22 September 2008. *Feasibility Study and Corrective Action Plan, Former Thrifty Oil Co. Station No. 049, 3400 San Pablo Avenue, Oakland, California*. Prepared on behalf of Thrifty Oil Company for Alameda County Environmental Health Services.





NOTE: SITE MAP ADAPTED FROM BARGHAUSEN CONSULTING ENGINEERS, INC.  
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.



**BROADBENT & ASSOCIATES, INC.**  
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL  
1324 Mangrove Ave. Suite 212, Chico, California 95926  
Project No.: 09-88-602 Date: 4/14/09

ARCO Service Station #9535  
3400 San Pablo Avenue  
Oakland, California

Site Layout Plan with  
Soil Sample Locations

Drawing

2

**Table 1. Soil Sampling Analytical Data  
Atlantic Richfield Company Station No.9535  
3400 San Pablo Avenue, Oakland, California**

| Soil Sample ID | Sampling Depth (inches) | Sampling Date | Laboratory Analytical Results (mg/kg) |         |         |              |               |               |        |         |         |         |         |             |
|----------------|-------------------------|---------------|---------------------------------------|---------|---------|--------------|---------------|---------------|--------|---------|---------|---------|---------|-------------|
|                |                         |               | GRO                                   | Benzene | Toluene | Ethylbenzene | Total Xylenes | MTBE          | TBA    | DIPE    | ETBE    | TAME    | Ethanol | Lead        |
| <b>VL-1</b>    | 22                      | 3/16/2009     | <0.50                                 | <0.0010 | <0.0010 | <0.0010      | <0.0010       | <0.0010       | <0.010 | <0.0020 | <0.0020 | <0.0020 | <0.10   | <b>10.2</b> |
| <b>VL-2</b>    | 44                      | 3/16/2009     | <0.50                                 | <0.0010 | <0.0010 | <0.0010      | <0.0010       | <0.0010       | <0.010 | <0.0020 | <0.0002 | <0.0020 | <0.10   | <b>44.4</b> |
| <b>TLC-1</b>   | NA                      | 3/16/2009     | <0.50                                 | <0.0010 | <0.0010 | <0.0010      | <0.0010       | <0.0010       | ---    | ---     | ---     | ---     | ---     | <b>3.32</b> |
| <b>SWC</b>     | NA                      | 3/16/2009     | <0.50                                 | <0.0010 | <0.0010 | <0.0010      | <0.0010       | <b>0.0024</b> | ---    | ---     | ---     | ---     | ---     | <b>7.92</b> |

**NOTES:**

Concentrations detected above laboratory reporting limits are in bold

bgs = Below ground surface

mg/kg = Milligrams per kilogram

--- = Not analyzed

GRO = Gasoline Range Organics

MTBE = Methyl Tert-Butyl Ether

TBA = Tert-Butyl Alcohol

DIPE = Di-Isopropyl Ether

ETBE = Ethyl Tert-Butyl Ether

TAME = Tert-Amyl Methyl Ether

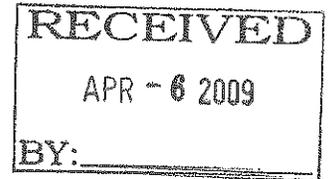
## **APPENDIX A**

**STRATUS VENT LINE UPGRADE COMPLIANCE SOIL SAMPLING DATA PACKAGE**  
(Includes Field Data Sheets, Site Sketch, and Certified Laboratory Analytical Report  
with Chain-of-Custody Documentation)



3330 Cameron Park Drive, Ste 550  
Cameron Park, California 95682  
(530) 676-6004 ~ Fax: (530) 676-6005

March 31, 2009



Mr. Tom Venus  
Broadbent & Associates, Inc.  
1324 Mangrove Ave., Suite 212  
Chico, CA 95926

Re: Vent Line Upgrade Compliance Soil Sampling Data Package  
ARCO Service Station No. 9535  
3400 San Pablo Avenue, Oakland, California.

**General Information**

*Data Submittal Prepared / Reviewed by:* Scott Bittinger / Jay Johnson

*Phone Number:* (530) 676-6000

*On-Site Supplier Representative:* Collin Fischer

*Date:* March 16, 2009

*Weather Conditions:* Raining

*Unusual Field Conditions:* None noted.

*Scope of Work Performed:* Stratus was onsite to collect compliance soil samples, in conjunction with Paradiso Mechanical Inc. (the contractor renovating the service station). Under the direction of City of Oakland Fire Department personnel, 2 soil samples were collected from beneath the vent line trench. The samples were collected at a depth of 22-inches below surface grade (VL-1), and 44-inches below surface grade (VL-2). A waste composite sample of soil/pea gravel mixture generated during uncovering of the vent lines was collected for the purpose of waste disposal characterization. A separate waste composite soil sample was collected from the soil generated during construction, also for the purpose of waste disposal characterization.

*Variations from Work Scope:* None Noted

This submittal presents information associated with the collection of compliance soil samples during the replacement of vent lines at the subject site. The attachments include field data sheets generated during the sampling event, a sketch depicting soil sampling locations, a site plan, an Inspection Report prepared by the City of Oakland Fire Department, certified analytical results for the soil samples, and chain-of-custody

March 31, 2009

records. The information is being provided to BP-ARCO's Scoping Supplier for use in preparing a report for regulatory submittal. This submittal is limited to presentation of collected data and does not include data interpretation or conclusions or recommendations.

Any questions concerning this submittal should be addressed to the Preparer/Reviewer identified above.

Sincerely,

*STRATUS ENVIRONMENTAL, INC.*



Scott G. Bittinger, P.G.  
Project Geologist



Jay R. Johnson, P.G.  
Project Manager



**Attachments:**

- Field Data Sheets
- Site Plan
- Sketch of Soil Sampling Locations
- City of Oakland Fire Department Inspection Report
- Certified Analytical Report
- Chain-of-Custody Documentation

cc: Mr. Paul Supple, BP/ARCO

ARCO 9535

TRAINING  
3/16/09

0845 → ONSITE, SAFETY MEETING.

0915 → TAKE SAMPLES OF VENT LINES & JOINTS,  
SP. DRAW A MAP OF LOCATION.

0945 → CALL OFFICE TO TALK ABOUT SAMPLING PROCEDURE,  
H<sub>2</sub>O IS PRESENT JUST BELOW VENTS.

1000 → ACCORDING TO WORK PLAN, ONLY 1 SAMPLE NEEDS TO BE  
TAKEN, DIRECTLY BELOW WHEN VENT NEEDS COME OUT OF  
GROUND. WAITING FOR CALL BACK & FOR REGULATOR TO MAKE  
SCHEDULE SAMPLING.

1200 → GUY MATTHEWS, INSPECTOR ARRIVES, 2 SAMPLES (UL-1 & UL-2)  
TAKEN, (UL-1) @ 1' 10" BGS  
(UL-2) @ 3' 8" BGS  
(TLC-1) → COMPOSITE OF PEA GRAVEL

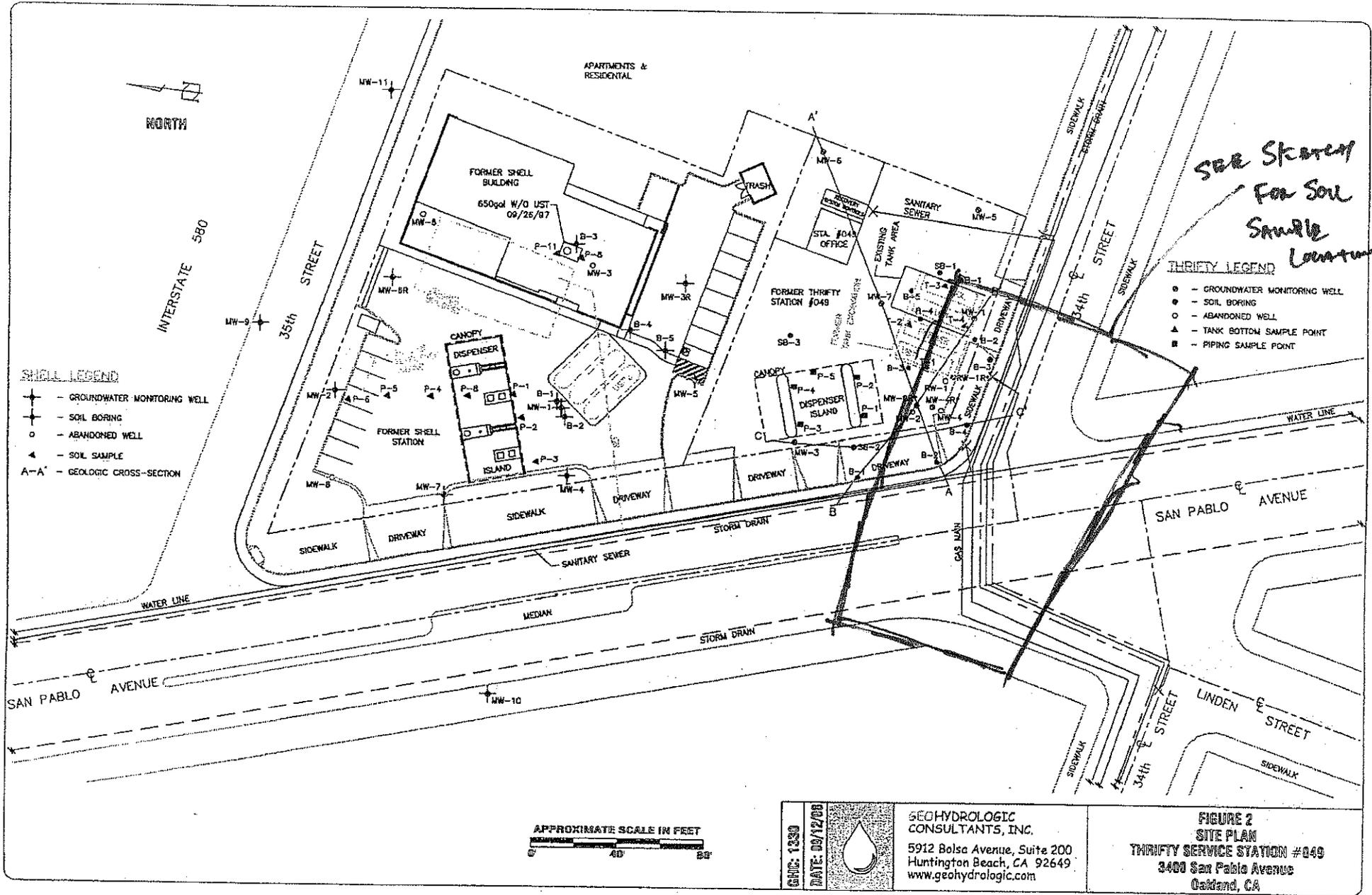
1230 → LABEL & STORE SAMPLES, DISCUSS PROJECT & SKETCH MAP FOR  
REGULATOR.

1300 → TAKE SOIL WASTE COMPOSITE SAMPLE

1315 → OFFSITE



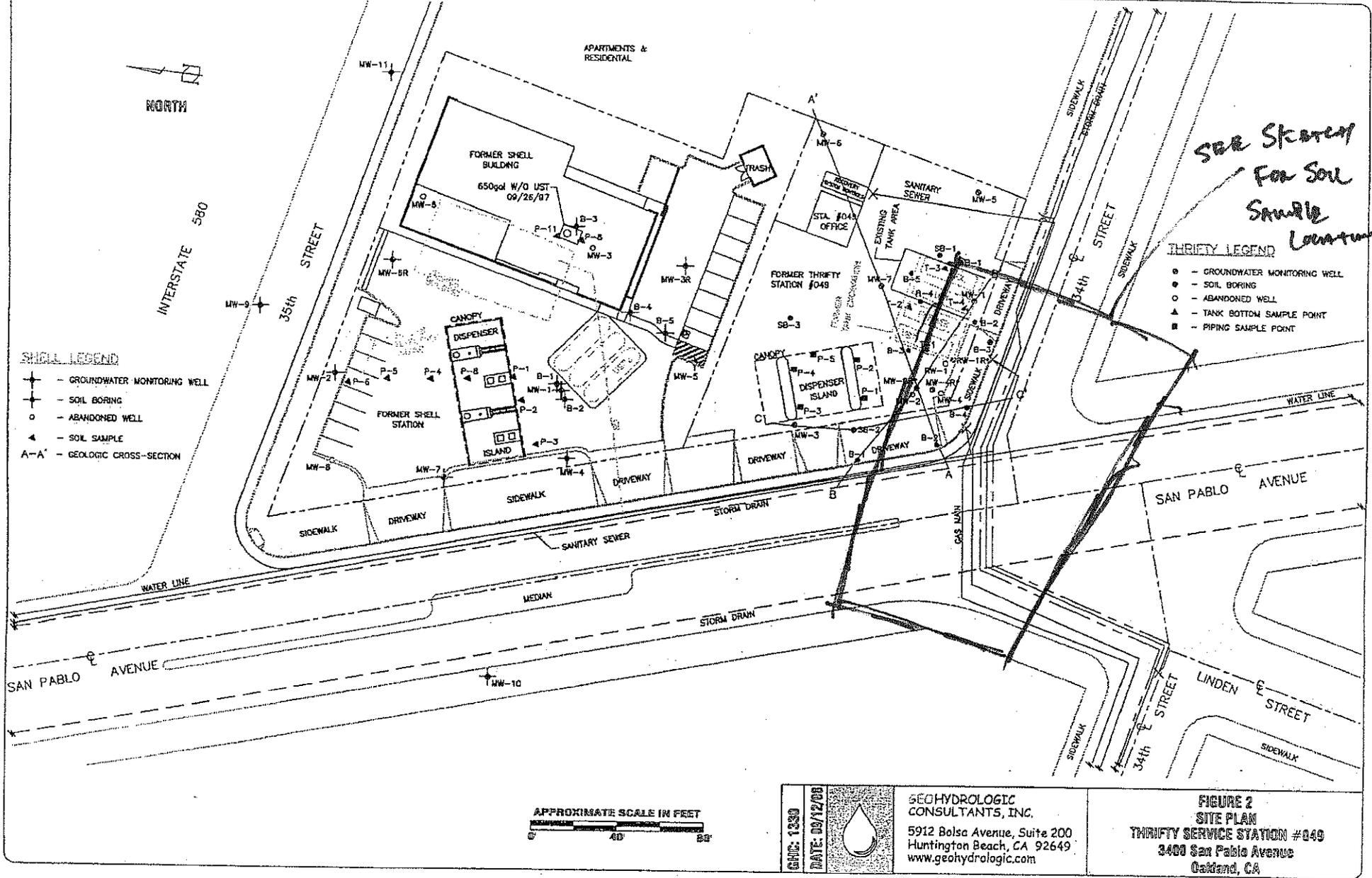
TRAVIS ENU, WCA



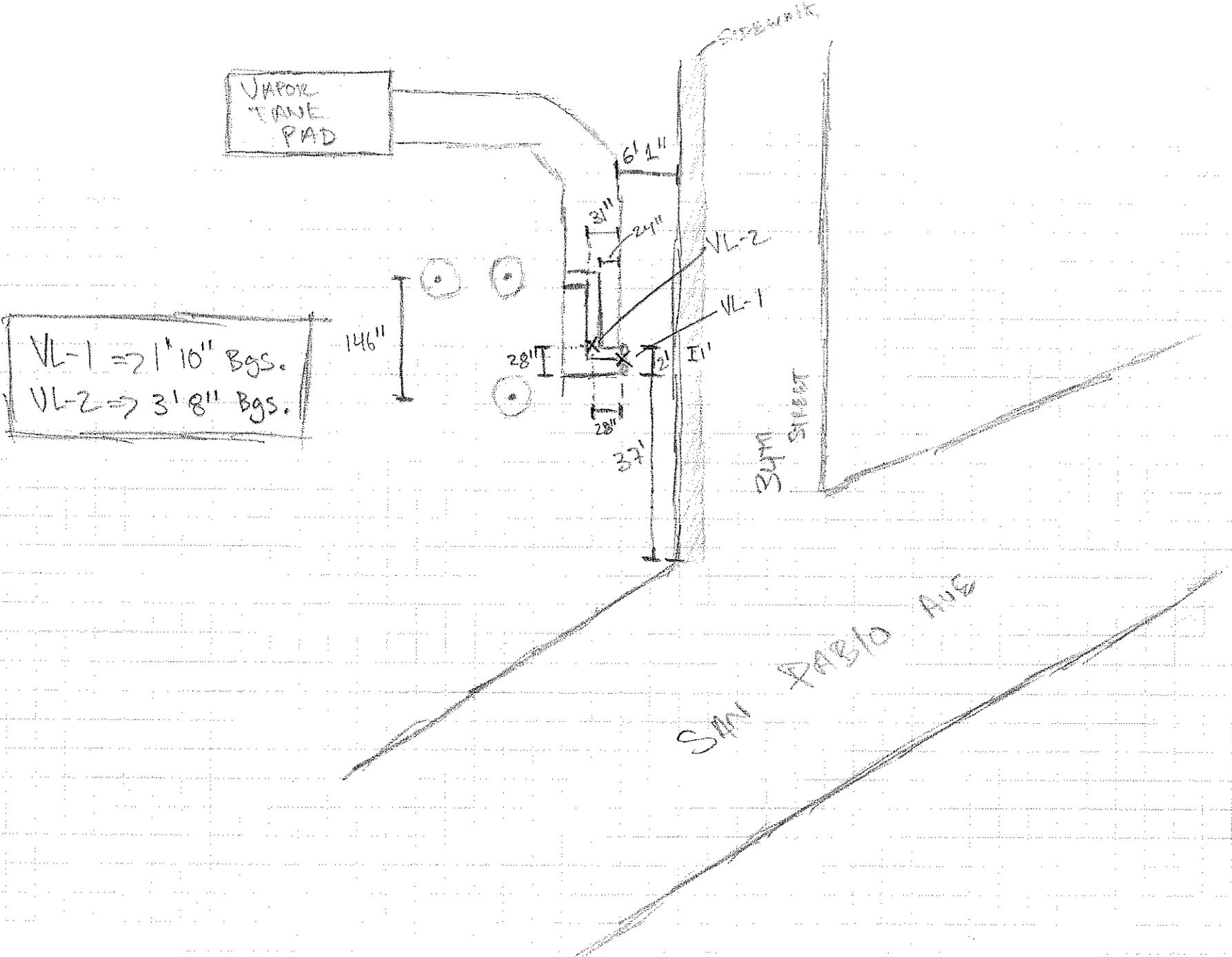
*SEE SKETCH  
FOR SOIL  
SAMPLE  
LOCATIONS*



INTERSTATE 580



0.9535



# OAKLAND FIRE DEPARTMENT/FIRE PREVENTION BUREAU HAZARDOUS MATERIALS UNIT

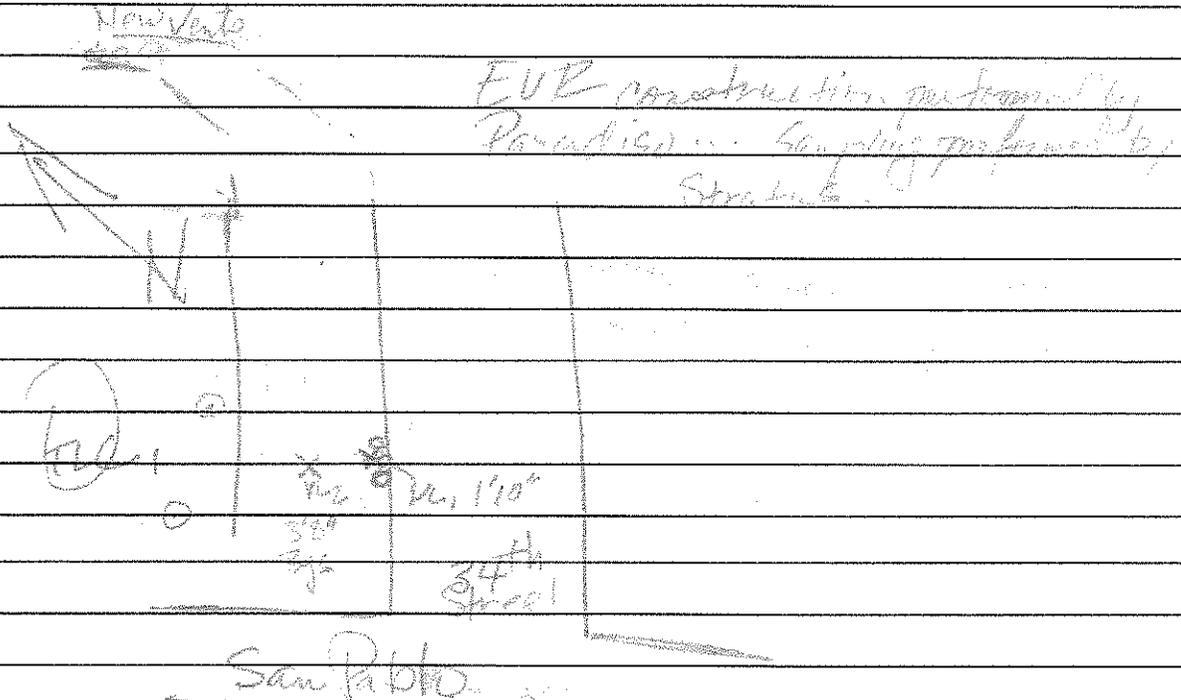
250 FRANK H. OGAWA PLAZA, SUITE 3341, OAKLAND, CA 94612-2032 • (510) 238-3927

## HAZARDOUS MATERIALS INSPECTION REPORT

| Site Number | Facility Name | Facility Address   | Zip Code |
|-------------|---------------|--------------------|----------|
|             | Arco 9535     | 3400 San Pablo Ave | 09       |

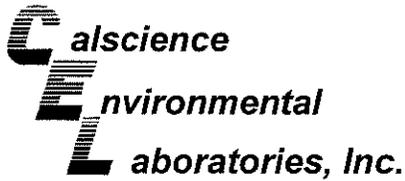
### Inspection Report

PERMISSION TO INSPECT GRANTED



Key: Soil Sampling in Native Soil beneath former vent piping / vents.  
 2x Samples taken, 1x + V, 2 @ 110" + 3/8" BGS  
 1ea 4'pt compost from overburden TLG

|                              |   |
|------------------------------|---|
| Facility Contact/Print Name: | Inspected By:   |
| Collin Escobar               | <input type="checkbox"/> Insp. Griffin 238-7759             |
| Facility Contact/Signature:  | <input checked="" type="checkbox"/> Insp. Matthews 238-2396 |
| 5306762002                   | <input type="checkbox"/> Insp. Krupers 238-7054             |
|                              | <input type="checkbox"/> _____                              |
|                              | Date: 16 March 09   |



March 20, 2009

Jay Johnson  
Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Subject: **Calscience Work Order No.: 09-03-1452**  
Client Reference: **ARCO 9535**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 3/17/2009 and analyzed in accordance with the attached chain-of-custody.

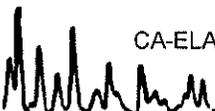
Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

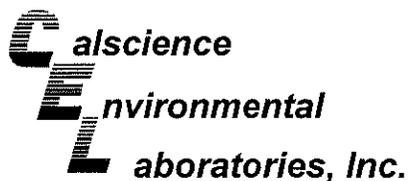
If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard Villafania".

Calscience Environmental  
Laboratories, Inc.  
Richard Villafania  
Project Manager





## Analytical Report

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: 03/17/09  
Work Order No: 09-03-1452  
Preparation: EPA 3050B  
Method: EPA 6010B

Project: ARCO 9535

Page 1 of 1

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|-------------------|---------------------|--------|------------|---------------|--------------------|-------------|
| VL-1                 | 09-03-1452-1-A    | 03/16/09<br>12:20   | Solid  | ICP 5300   | 03/17/09      | 03/18/09<br>11:55  | 090317L03A  |

| Parameter | Result | RL    | DF | Qual | Units |
|-----------|--------|-------|----|------|-------|
| Lead      | 10.2   | 0.500 | 1  |      | mg/kg |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|-------------------|---------------------|--------|------------|---------------|--------------------|-------------|
| VL-2                 | 09-03-1452-2-A    | 03/16/09<br>12:15   | Solid  | ICP 5300   | 03/17/09      | 03/18/09<br>11:58  | 090317L03A  |

| Parameter | Result | RL    | DF | Qual | Units |
|-----------|--------|-------|----|------|-------|
| Lead      | 44.4   | 0.500 | 1  |      | mg/kg |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|-------------------|---------------------|--------|------------|---------------|--------------------|-------------|
| TLC-1                | 09-03-1452-3-A    | 03/16/09<br>12:35   | Solid  | ICP 5300   | 03/17/09      | 03/18/09<br>12:00  | 090317L03A  |

| Parameter | Result | RL    | DF | Qual | Units |
|-----------|--------|-------|----|------|-------|
| Lead      | 3.32   | 0.500 | 1  |      | mg/kg |

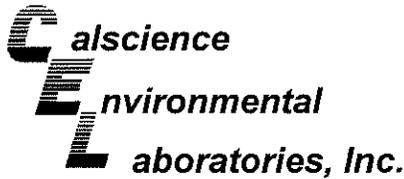
| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|-------------------|---------------------|--------|------------|---------------|--------------------|-------------|
| SWC                  | 09-03-1452-4-A    | 03/16/09<br>12:45   | Solid  | ICP 5300   | 03/17/09      | 03/18/09<br>12:03  | 090317L03A  |

| Parameter | Result | RL    | DF | Qual | Units |
|-----------|--------|-------|----|------|-------|
| Lead      | 7.92   | 0.500 | 1  |      | mg/kg |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|-------------------|---------------------|--------|------------|---------------|--------------------|-------------|
| Method Blank         | 097-01-002-12,125 | N/A                 | Solid  | ICP 5300   | 03/17/09      | 03/18/09<br>11:23  | 090317L03A  |

| Parameter | Result | RL    | DF | Qual | Units |
|-----------|--------|-------|----|------|-------|
| Lead      | ND     | 0.500 | 1  |      | mg/kg |

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: 03/17/09  
Work Order No: 09-03-1452  
Preparation: EPA 5030B  
Method: EPA 8015B (M)

Project: ARCO 9535

Page 1 of 2

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|-------------------|---------------------|--------|------------|---------------|--------------------|-------------|
| VL-1                 | 09-03-1452-1-A    | 03/16/09 12:20      | Solid  | GC 1       | 03/17/09      | 03/18/09 02:52     | 090318B01   |

| Parameter                        | Result         | RL                    | DF | Qual        | Units |
|----------------------------------|----------------|-----------------------|----|-------------|-------|
| Gasoline Range Organics (C6-C12) | ND             | 0.50                  | 1  |             | mg/kg |
| <u>Surrogates:</u>               | <u>REC (%)</u> | <u>Control Limits</u> |    | <u>Qual</u> |       |
| 1,4-Bromofluorobenzene           | 91             | 42-126                |    |             |       |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|-------------------|---------------------|--------|------------|---------------|--------------------|-------------|
| VL-2                 | 09-03-1452-2-A    | 03/16/09 12:15      | Solid  | GC 1       | 03/17/09      | 03/18/09 05:31     | 090318B01   |

| Parameter                        | Result         | RL                    | DF | Qual        | Units |
|----------------------------------|----------------|-----------------------|----|-------------|-------|
| Gasoline Range Organics (C6-C12) | ND             | 0.50                  | 1  |             | mg/kg |
| <u>Surrogates:</u>               | <u>REC (%)</u> | <u>Control Limits</u> |    | <u>Qual</u> |       |
| 1,4-Bromofluorobenzene           | 92             | 42-126                |    |             |       |

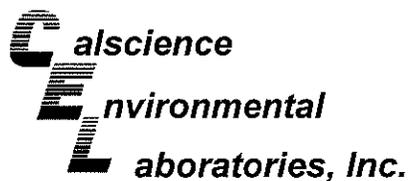
| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|-------------------|---------------------|--------|------------|---------------|--------------------|-------------|
| TLC-1                | 09-03-1452-3-A    | 03/16/09 12:35      | Solid  | GC 1       | 03/17/09      | 03/18/09 04:28     | 090318B01   |

| Parameter                        | Result         | RL                    | DF | Qual        | Units |
|----------------------------------|----------------|-----------------------|----|-------------|-------|
| Gasoline Range Organics (C6-C12) | ND             | 0.50                  | 1  |             | mg/kg |
| <u>Surrogates:</u>               | <u>REC (%)</u> | <u>Control Limits</u> |    | <u>Qual</u> |       |
| 1,4-Bromofluorobenzene           | 91             | 42-126                |    |             |       |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|-------------------|---------------------|--------|------------|---------------|--------------------|-------------|
| SWC                  | 09-03-1452-4-A    | 03/16/09 12:45      | Solid  | GC 1       | 03/17/09      | 03/18/09 04:59     | 090318B01   |

| Parameter                        | Result         | RL                    | DF | Qual        | Units |
|----------------------------------|----------------|-----------------------|----|-------------|-------|
| Gasoline Range Organics (C6-C12) | ND             | 0.50                  | 1  |             | mg/kg |
| <u>Surrogates:</u>               | <u>REC (%)</u> | <u>Control Limits</u> |    | <u>Qual</u> |       |
| 1,4-Bromofluorobenzene           | 93             | 42-126                |    |             |       |

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

**Analytical Report**

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: 03/17/09  
Work Order No: 09-03-1452  
Preparation: EPA 5030B  
Method: EPA 8015B (M)

Project: ARCO 9535

Page 2 of 2

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|-------------------|---------------------|--------|------------|---------------|--------------------|-------------|
| Method Blank         | 099-12-697-89     | N/A                 | Solid  | GC 1       | 03/18/09      | 03/18/09<br>01:17  | 090318B01   |

| <u>Parameter</u>                 | <u>Result</u>  | <u>RL</u>             | <u>DF</u> | <u>Qual</u> | <u>Units</u> |
|----------------------------------|----------------|-----------------------|-----------|-------------|--------------|
| Gasoline Range Organics (C6-C12) | ND             | 0.50                  | 1         |             | mg/kg        |
| <u>Surrogates:</u>               | <u>REC (%)</u> | <u>Control Limits</u> |           | <u>Qual</u> |              |
| 1,4-Bromofluorobenzene           | 92             | 42-126                |           |             |              |

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

## Analytical Report

 Stratus Environmental, inc.  
 3330 Cameron Park Drive, Suite 550  
 Cameron Park, CA 95682-8861

 Date Received: 03/17/09  
 Work Order No: 09-03-1452  
 Preparation: EPA 5030B  
 Method: EPA 8260B  
 Units: mg/kg

Project: ARCO 9535

Page 1 of 2

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|-------------------|---------------------|--------|------------|---------------|--------------------|-------------|
| VL-1                 | 09-03-1452-1-A    | 03/16/09<br>12:20   | Solid  | GC/MS Z    | 03/19/09      | 03/19/09<br>15:18  | 090319L01   |

| Parameter            | Result         | RL             | DF | Qual        | Parameter                     | Result         | RL             | DF | Qual        |
|----------------------|----------------|----------------|----|-------------|-------------------------------|----------------|----------------|----|-------------|
| Benzene              | ND             | 0.0010         | 1  |             | Methyl-t-Butyl Ether (MTBE)   | ND             | 0.0010         | 1  |             |
| Ethylbenzene         | ND             | 0.0010         | 1  |             | Tert-Butyl Alcohol (TBA)      | ND             | 0.010          | 1  |             |
| Ethanol              | ND             | 0.10           | 1  |             | Diisopropyl Ether (DIPE)      | ND             | 0.0020         | 1  |             |
| Toluene              | ND             | 0.0010         | 1  |             | Ethyl-t-Butyl Ether (ETBE)    | ND             | 0.0020         | 1  |             |
| Xylenes (total)      | ND             | 0.0010         | 1  |             | Tert-Amyl-Methyl Ether (TAME) | ND             | 0.0020         | 1  |             |
| <u>Surrogates:</u>   | <u>REC (%)</u> | <u>Control</u> |    | <u>Qual</u> | <u>Surrogates:</u>            | <u>REC (%)</u> | <u>Control</u> |    | <u>Qual</u> |
|                      |                | <u>Limits</u>  |    |             |                               |                | <u>Limits</u>  |    |             |
| Dibromofluoromethane | 117            | 75-141         |    |             | 1,2-Dichloroethane-d4         | 82             | 73-151         |    |             |
| Toluene-d8           | 97             | 87-111         |    |             | 1,4-Bromofluorobenzene        | 87             | 71-113         |    |             |

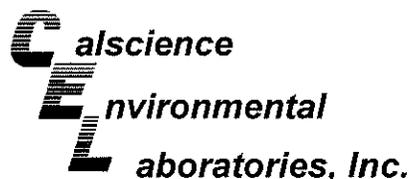
| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|-------------------|---------------------|--------|------------|---------------|--------------------|-------------|
| VL-2                 | 09-03-1452-2-A    | 03/16/09<br>12:15   | Solid  | GC/MS Z    | 03/19/09      | 03/19/09<br>16:52  | 090319L01   |

| Parameter            | Result         | RL             | DF | Qual        | Parameter                     | Result         | RL             | DF | Qual        |
|----------------------|----------------|----------------|----|-------------|-------------------------------|----------------|----------------|----|-------------|
| Benzene              | ND             | 0.0010         | 1  |             | Methyl-t-Butyl Ether (MTBE)   | ND             | 0.0010         | 1  |             |
| Ethylbenzene         | ND             | 0.0010         | 1  |             | Tert-Butyl Alcohol (TBA)      | ND             | 0.010          | 1  |             |
| Ethanol              | ND             | 0.10           | 1  |             | Diisopropyl Ether (DIPE)      | ND             | 0.0020         | 1  |             |
| Toluene              | ND             | 0.0010         | 1  |             | Ethyl-t-Butyl Ether (ETBE)    | ND             | 0.0020         | 1  |             |
| Xylenes (total)      | ND             | 0.0010         | 1  |             | Tert-Amyl-Methyl Ether (TAME) | ND             | 0.0020         | 1  |             |
| <u>Surrogates:</u>   | <u>REC (%)</u> | <u>Control</u> |    | <u>Qual</u> | <u>Surrogates:</u>            | <u>REC (%)</u> | <u>Control</u> |    | <u>Qual</u> |
|                      |                | <u>Limits</u>  |    |             |                               |                | <u>Limits</u>  |    |             |
| Dibromofluoromethane | 112            | 75-141         |    |             | 1,2-Dichloroethane-d4         | 83             | 73-151         |    |             |
| Toluene-d8           | 95             | 87-111         |    |             | 1,4-Bromofluorobenzene        | 87             | 71-113         |    |             |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|-------------------|---------------------|--------|------------|---------------|--------------------|-------------|
| TLC-1                | 09-03-1452-3-A    | 03/16/09<br>12:35   | Solid  | GC/MS Z    | 03/19/09      | 03/19/09<br>17:24  | 090319L01   |

| Parameter            | Result         | RL             | DF | Qual        | Parameter                     | Result         | RL             | DF | Qual        |
|----------------------|----------------|----------------|----|-------------|-------------------------------|----------------|----------------|----|-------------|
| Benzene              | ND             | 0.0010         | 1  |             | Methyl-t-Butyl Ether (MTBE)   | ND             | 0.0010         | 1  |             |
| Ethylbenzene         | ND             | 0.0010         | 1  |             | Tert-Butyl Alcohol (TBA)      | ND             | 0.010          | 1  |             |
| Ethanol              | ND             | 0.10           | 1  |             | Diisopropyl Ether (DIPE)      | ND             | 0.0020         | 1  |             |
| Toluene              | ND             | 0.0010         | 1  |             | Ethyl-t-Butyl Ether (ETBE)    | ND             | 0.0020         | 1  |             |
| Xylenes (total)      | ND             | 0.0010         | 1  |             | Tert-Amyl-Methyl Ether (TAME) | ND             | 0.0020         | 1  |             |
| <u>Surrogates:</u>   | <u>REC (%)</u> | <u>Control</u> |    | <u>Qual</u> | <u>Surrogates:</u>            | <u>REC (%)</u> | <u>Control</u> |    | <u>Qual</u> |
|                      |                | <u>Limits</u>  |    |             |                               |                | <u>Limits</u>  |    |             |
| Dibromofluoromethane | 90             | 75-141         |    |             | 1,2-Dichloroethane-d4         | 82             | 73-151         |    |             |
| Toluene-d8           | 97             | 87-111         |    |             | 1,4-Bromofluorobenzene        | 88             | 71-113         |    |             |

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Analytical Report

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: 03/17/09  
Work Order No: 09-03-1452  
Preparation: EPA 5030B  
Method: EPA 8260B  
Units: mg/kg

Project: ARCO 9535

Page 2 of 2

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|-------------------|---------------------|--------|------------|---------------|--------------------|-------------|
| SWC                  | 09-03-1452-4-A    | 03/16/09<br>12:45   | Solid  | GC/MS Z    | 03/19/09      | 03/19/09<br>17:56  | 090319L01   |

| Parameter            | Result         | RL                    | DF | Qual        | Parameter                   | Result         | RL                    | DF | Qual        |
|----------------------|----------------|-----------------------|----|-------------|-----------------------------|----------------|-----------------------|----|-------------|
| Benzene              | ND             | 0.0010                | 1  |             | Xylenes (total)             | ND             | 0.0010                | 1  |             |
| Ethylbenzene         | ND             | 0.0010                | 1  |             | Methyl-t-Butyl Ether (MTBE) | 0.0024         | 0.0010                | 1  |             |
| Toluene              | ND             | 0.0010                | 1  |             |                             |                |                       |    |             |
| <u>Surrogates:</u>   | <u>REC (%)</u> | <u>Control Limits</u> |    | <u>Qual</u> | <u>Surrogates:</u>          | <u>REC (%)</u> | <u>Control Limits</u> |    | <u>Qual</u> |
| Dibromofluoromethane | 90             | 75-141                |    |             | 1,2-Dichloroethane-d4       | 79             | 73-151                |    |             |
| Toluene-d8           | 98             | 87-111                |    |             | 1,4-Bromofluorobenzene      | 89             | 71-113                |    |             |

| Method Blank | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|--------------|-------------------|---------------------|--------|------------|---------------|--------------------|-------------|
|              | 099-12-709-117    | N/A                 | Solid  | GC/MS Z    | 03/19/09      | 03/19/09<br>14:44  | 090319L01   |

| Parameter            | Result         | RL                    | DF | Qual        | Parameter                     | Result         | RL                    | DF | Qual        |
|----------------------|----------------|-----------------------|----|-------------|-------------------------------|----------------|-----------------------|----|-------------|
| Benzene              | ND             | 0.0010                | 1  |             | Methyl-t-Butyl Ether (MTBE)   | ND             | 0.0010                | 1  |             |
| Ethylbenzene         | ND             | 0.0010                | 1  |             | Tert-Butyl Alcohol (TBA)      | ND             | 0.010                 | 1  |             |
| Ethanol              | ND             | 0.10                  | 1  |             | Diisopropyl Ether (DiPE)      | ND             | 0.0020                | 1  |             |
| Toluene              | ND             | 0.0010                | 1  |             | Ethyl-t-Butyl Ether (ETBE)    | ND             | 0.0020                | 1  |             |
| Xylenes (total)      | ND             | 0.0010                | 1  |             | Tert-Amyl-Methyl Ether (TAME) | ND             | 0.0020                | 1  |             |
| <u>Surrogates:</u>   | <u>REC (%)</u> | <u>Control Limits</u> |    | <u>Qual</u> | <u>Surrogates:</u>            | <u>REC (%)</u> | <u>Control Limits</u> |    | <u>Qual</u> |
| Dibromofluoromethane | 118            | 75-141                |    |             | 1,2-Dichloroethane-d4         | 80             | 73-151                |    |             |
| Toluene-d8           | 99             | 87-111                |    |             | 1,4-Bromofluorobenzene        | 83             | 71-113                |    |             |

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

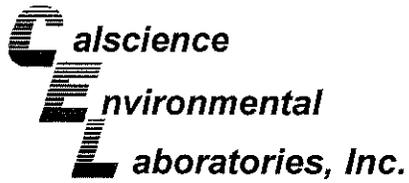
Date Received: 03/17/09  
Work Order No: 09-03-1452  
Preparation: EPA 3050B  
Method: EPA 6010B

Project ARCO 9535

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---------------------------|--------|------------|---------------|---------------|---------------------|
| 09-03-1485-1              | Solid  | ICP 5300   | 03/17/09      | 03/17/09      | 090317S03           |

| <u>Parameter</u> | <u>MS %REC</u> | <u>MSD %REC</u> | <u>%REC CL</u> | <u>RPD</u> | <u>RPD CL</u> | <u>Qualifiers</u> |
|------------------|----------------|-----------------|----------------|------------|---------------|-------------------|
| Lead             | 99             | 98              | 75-125         | 1          | 0-20          |                   |

RPD - Relative Percent Difference, CL - Control Limit



## Quality Control - PDS / PDSD

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received 03/17/09  
Work Order No: 09-03-1452  
Preparation: EPA 3050B  
Method: EPA 6010B

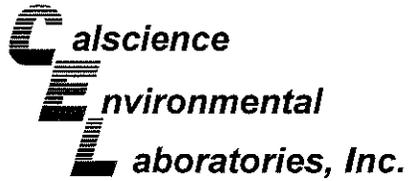
Project: ARCO 9535

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS/PDSD Batch Number |
|---------------------------|--------|------------|---------------|---------------|-----------------------|
| 09-03-1485-1              | Solid  | ICP 5300   | 03/17/09      | 03/18/09      | 090317S03             |

| Parameter | PDS %REC | PDSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|-----------|----------|-----------|---------|-----|--------|------------|
| Lead      | 94       | 94        | 75-125  | 1   | 0-20   |            |

RPD - Relative Percent Difference , CL - Control Limit

7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



## Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

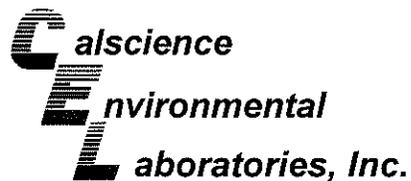
Date Received: 03/17/09  
Work Order No: 09-03-1452  
Preparation: EPA 5030B  
Method: EPA 8015B (M)

Project ARCO 9535

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---------------------------|--------|------------|---------------|---------------|---------------------|
| VL-1                      | Solid  | GC 1       | 03/17/09      | 03/18/09      | 090318S01           |

| <u>Parameter</u>                 | <u>MS %REC</u> | <u>MSD %REC</u> | <u>%REC CL</u> | <u>RPD</u> | <u>RPD CL</u> | <u>Qualifiers</u> |
|----------------------------------|----------------|-----------------|----------------|------------|---------------|-------------------|
| Gasoline Range Organics (C6-C12) | 79             | 79              | 42-126         | 1          | 0-25          |                   |

RPD - Relative Percent Difference, CL - Control Limit



## Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: 03/17/09  
Work Order No: 09-03-1452  
Preparation: EPA 5030B  
Method: EPA 8260B

Project ARCO 9535

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---------------------------|--------|------------|---------------|---------------|---------------------|
| VL-1                      | Solid  | GC/MS Z    | 03/19/09      | 03/19/09      | 090319S01           |

| Parameter                   | MS %REC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|-----------------------------|---------|----------|---------|-----|--------|------------|
| Benzene                     | 90      | 87       | 78-114  | 4   | 0-14   |            |
| Chloroform                  | 76      | 79       | 80-120  | 3   | 0-20   |            |
| 1,1-Dichloroethane          | 68      | 70       | 80-120  | 2   | 0-20   |            |
| 1,2-Dichloroethane          | 96      | 93       | 80-120  | 3   | 0-20   |            |
| 1,1-Dichloroethene          | 66      | 67       | 73-127  | 2   | 0-21   |            |
| Ethanol                     | 83      | 78       | 45-135  | 7   | 0-29   |            |
| Tetrachloroethene           | 73      | 70       | 80-120  | 4   | 0-20   |            |
| Toluene                     | 92      | 88       | 74-116  | 4   | 0-16   |            |
| Trichloroethene             | 85      | 83       | 74-122  | 3   | 0-17   |            |
| Methyl-t-Butyl Ether (MTBE) | 78      | 82       | 69-123  | 5   | 0-18   |            |

RPD - Relative Percent Difference, CL - Control Limit



## Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

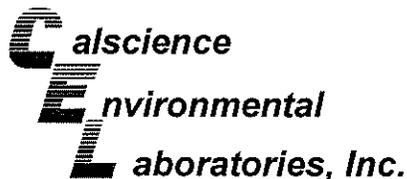
Date Received: N/A  
Work Order No: 09-03-1452  
Preparation: EPA 3050B  
Method: EPA 6010B

Project: ARCO 9535

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---------------------------|--------|------------|---------------|---------------|-----------------------|
| 097-01-002-12,125         | Solid  | ICP 5300   | 03/17/09      | 03/18/09      | 090317L03A            |

| Parameter | LCS %REC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|-----------|----------|-----------|---------|-----|--------|------------|
| Lead      | 109      | 107       | 80-120  | 1   | 0-20   |            |

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.  
 3330 Cameron Park Drive, Suite 550  
 Cameron Park, CA 95682-8861

Date Received: N/A  
 Work Order No: 09-03-1452  
 Preparation: EPA 5030B  
 Method: EPA 8015B (M)

Project: ARCO 9535

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---------------------------|--------|------------|---------------|---------------|-----------------------|
| 099-12-697-89             | Solid  | GC 1       | 03/18/09      | 03/18/09      | 090318B01             |

| Parameter                        | LCS %REC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|----------------------------------|----------|-----------|---------|-----|--------|------------|
| Gasoline Range Organics (C6-C12) | 95       | 96        | 70-118  | 1   | 0-20   |            |

RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: N/A  
Work Order No: 09-03-1452  
Preparation: EPA 5030B  
Method: EPA 8260B

Project: ARCO 9535

| Quality Control Sample ID   | Matrix   | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |        |            |
|-----------------------------|----------|------------|---------------|---------------|-----------------------|--------|------------|
| 099-12-709-117              | Solid    | GC/MS Z    | 03/19/09      | 03/19/09      | 090319L01             |        |            |
| Parameter                   | LCS %REC | LCSD %REC  | %REC CL       | ME CL         | RPD                   | RPD CL | Qualifiers |
| Benzene                     | 91       | 92         | 84-114        | 79-119        | 1                     | 0-7    |            |
| Bromobenzene                | 104      | 103        | 80-120        | 73-127        | 1                     | 0-20   |            |
| Bromochloromethane          | 96       | 93         | 80-120        | 73-127        | 4                     | 0-20   |            |
| Bromodichloromethane        | 95       | 98         | 80-120        | 73-127        | 2                     | 0-20   |            |
| Bromoform                   | 107      | 107        | 80-120        | 73-127        | 0                     | 0-20   |            |
| Bromomethane                | 121      | 117        | 80-120        | 73-127        | 3                     | 0-20   |            |
| n-Butylbenzene              | 86       | 86         | 77-123        | 69-131        | 1                     | 0-25   |            |
| sec-Butylbenzene            | 87       | 87         | 80-120        | 73-127        | 0                     | 0-20   |            |
| tert-Butylbenzene           | 93       | 89         | 80-120        | 73-127        | 4                     | 0-20   |            |
| Carbon Disulfide            | 88       | 84         | 80-120        | 73-127        | 5                     | 0-20   |            |
| Carbon Tetrachloride        | 81       | 95         | 69-135        | 58-146        | 16                    | 0-13   |            |
| Chlorobenzene               | 94       | 95         | 85-109        | 81-113        | 2                     | 0-8    |            |
| Chloroethane                | 85       | 81         | 80-120        | 73-127        | 5                     | 0-20   |            |
| Chloroform                  | 98       | 94         | 80-120        | 73-127        | 4                     | 0-20   |            |
| Chloromethane               | 87       | 82         | 80-120        | 73-127        | 6                     | 0-20   |            |
| 2-Chlorotoluene             | 95       | 94         | 80-120        | 73-127        | 0                     | 0-20   |            |
| 4-Chlorotoluene             | 86       | 86         | 80-120        | 73-127        | 0                     | 0-20   |            |
| Dibromochloromethane        | 102      | 103        | 80-120        | 73-127        | 0                     | 0-20   |            |
| 1,2-Dibromo-3-Chloropropane | 82       | 79         | 80-120        | 73-127        | 4                     | 0-20   |            |
| 1,2-Dibromoethane           | 101      | 98         | 80-120        | 73-127        | 3                     | 0-20   |            |
| Dibromomethane              | 100      | 101        | 80-120        | 73-127        | 1                     | 0-20   |            |
| 1,2-Dichlorobenzene         | 94       | 94         | 80-110        | 75-115        | 0                     | 0-10   |            |
| 1,3-Dichlorobenzene         | 92       | 92         | 80-120        | 73-127        | 0                     | 0-20   |            |
| 1,4-Dichlorobenzene         | 90       | 90         | 80-120        | 73-127        | 0                     | 0-20   |            |
| Dichlorodifluoromethane     | 94       | 89         | 80-120        | 73-127        | 6                     | 0-20   |            |
| 1,1-Dichloroethane          | 89       | 86         | 80-120        | 73-127        | 3                     | 0-20   |            |
| 1,2-Dichloroethane          | 93       | 93         | 80-120        | 73-127        | 0                     | 0-20   |            |
| 1,1-Dichloroethene          | 87       | 84         | 83-125        | 76-132        | 4                     | 0-10   |            |
| c-1,2-Dichloroethene        | 91       | 88         | 80-120        | 73-127        | 2                     | 0-20   |            |
| t-1,2-Dichloroethene        | 91       | 87         | 80-120        | 73-127        | 5                     | 0-20   |            |
| 1,2-Dichloropropane         | 91       | 93         | 79-115        | 73-121        | 1                     | 0-25   |            |
| 1,3-Dichloropropane         | 95       | 94         | 80-120        | 73-127        | 2                     | 0-20   |            |
| 2,2-Dichloropropane         | 99       | 94         | 80-120        | 73-127        | 6                     | 0-20   |            |
| 1,1-Dichloropropene         | 67       | 87         | 80-120        | 73-127        | 25                    | 0-20   |            |
| c-1,3-Dichloropropene       | 94       | 95         | 80-120        | 73-127        | 1                     | 0-20   |            |
| t-1,3-Dichloropropene       | 95       | 94         | 80-120        | 73-127        | 1                     | 0-20   |            |
| Ethylbenzene                | 94       | 91         | 80-120        | 73-127        | 3                     | 0-20   |            |
| Isopropylbenzene            | 96       | 94         | 80-120        | 73-127        | 1                     | 0-20   |            |

RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: N/A  
Work Order No: 09-03-1452  
Preparation: EPA 5030B  
Method: EPA 8260B

Project: ARCO 9535

| Quality Control Sample ID     | Matrix   | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |        |            |
|-------------------------------|----------|------------|---------------|---------------|-----------------------|--------|------------|
| 099-12-709-117                | Solid    | GC/MS Z    | 03/19/09      | 03/19/09      | 090319L01             |        |            |
| Parameter                     | LCS %REC | LCSD %REC  | %REC CL       | ME CL         | RPD                   | RPD CL | Qualifiers |
| p-Isopropyltoluene            | 91       | 91         | 80-120        | 73-127        | 0                     | 0-20   |            |
| Methylene Chloride            | 90       | 86         | 80-120        | 73-127        | 4                     | 0-20   |            |
| Naphthalene                   | 87       | 87         | 80-120        | 73-127        | 0                     | 0-20   |            |
| n-Propylbenzene               | 95       | 94         | 80-120        | 73-127        | 1                     | 0-20   |            |
| Styrene                       | 100      | 100        | 80-120        | 73-127        | 0                     | 0-20   |            |
| Ethanol                       | 87       | 83         | 50-134        | 36-148        | 4                     | 0-23   |            |
| 1,1,1,2-Tetrachloroethane     | 101      | 102        | 80-120        | 73-127        | 1                     | 0-20   |            |
| 1,1,2,2-Tetrachloroethane     | 102      | 98         | 80-120        | 73-127        | 4                     | 0-20   |            |
| Tetrachloroethene             | 89       | 97         | 80-120        | 73-127        | 9                     | 0-20   |            |
| Toluene                       | 92       | 92         | 79-115        | 73-121        | 0                     | 0-8    |            |
| 1,2,3-Trichlorobenzene        | 90       | 92         | 80-120        | 73-127        | 2                     | 0-20   |            |
| 1,2,4-Trichlorobenzene        | 89       | 90         | 80-120        | 73-127        | 2                     | 0-20   |            |
| 1,1,1-Trichloroethane         | 99       | 94         | 80-120        | 73-127        | 5                     | 0-20   |            |
| 1,1,2-Trichloroethane         | 97       | 97         | 80-120        | 73-127        | 0                     | 0-20   |            |
| Trichloroethene               | 89       | 89         | 87-111        | 83-115        | 0                     | 0-7    |            |
| Trichlorofluoromethane        | 101      | 96         | 80-120        | 73-127        | 5                     | 0-20   |            |
| 1,2,3-Trichloropropane        | 103      | 104        | 80-120        | 73-127        | 1                     | 0-20   |            |
| 1,2,4-Trimethylbenzene        | 91       | 91         | 80-120        | 73-127        | 0                     | 0-20   |            |
| 1,3,5-Trimethylbenzene        | 98       | 96         | 80-120        | 73-127        | 3                     | 0-20   |            |
| Vinyl Acetate                 | 101      | 87         | 80-120        | 73-127        | 14                    | 0-20   |            |
| Vinyl Chloride                | 80       | 78         | 72-126        | 63-135        | 3                     | 0-10   |            |
| p/m-Xylene                    | 94       | 94         | 80-120        | 73-127        | 1                     | 0-20   |            |
| o-Xylene                      | 93       | 93         | 80-120        | 73-127        | 0                     | 0-20   |            |
| Methyl-t-Butyl Ether (MTBE)   | 99       | 96         | 75-129        | 66-138        | 4                     | 0-13   |            |
| Tert-Butyl Alcohol (TBA)      | 97       | 95         | 66-126        | 56-136        | 1                     | 0-24   |            |
| Diisopropyl Ether (DIPE)      | 86       | 84         | 77-125        | 69-133        | 2                     | 0-13   |            |
| Ethyl-t-Butyl Ether (ETBE)    | 93       | 92         | 72-132        | 62-142        | 1                     | 0-12   |            |
| Tert-Amyl-Methyl Ether (TAME) | 98       | 99         | 77-125        | 69-133        | 1                     | 0-10   |            |

Total number of LCS compounds : 66

Total number of ME compounds : 2

Total number of ME compounds allowed : 3

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Work Order Number: 09-03-1452

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| <u>Qualifier</u> | <u>Definition</u>  |
|------------------|--|
| AX               | Sample too dilute to quantify surrogate.   |
| BA               | There was no MS/MSD analyzed with this batch due to insufficient sample volume (NR = not reported). See Blank Spike/Blank Spike Duplicate. |
| BA,AY            | Relative percent difference out of control, matrix interference suspected.   |
| BB               | Sample > 4x spike concentration.   |
| BF               | Reporting limits raised due to high hydrocarbon background.  |
| BH               | Reporting limits raised due to high level of non-target analytes.  |
| BU               | Sample analyzed after holding time expired.  |
| BV               | Sample received after holding time expired.  |
| BY               | Sample received at improper temperature.   |
| CL               | Initial analysis within holding time but required dilution.  |
| CQ               | Analyte concentration greater than 10 times the blank concentration.   |
| CU               | Surrogate concentration diluted to not detectable during analysis.   |
| DF               | Reporting limits elevated due to matrix interferences.   |
| ET               | Sample was extracted past end of recommended max. holding time.  |
| EY               | Result exceeds normal dynamic range; reported as a min est.  |
| GS               | Internal standard recovery is outside method recovery limit.   |
| IB               | CCV recovery above limit; analyte not detected.  |
| IH               | Calibrtn. verif. recov. below method CL for this analyte.  |
| IJ               | Calibrtn. verif. recov. above method CL for this analyte.  |
| J,DX             | J=EPA Flag -Estimated value; DX= Value < lowest standard (MQL), but > than MDL.  |
| LA               | Confirmatory analysis was past holding time.   |
| LG               | Surrogate recovery below the acceptance limit.   |
| LH               | Surrogate recovery above the acceptance limit.   |
| LM,AY            | MS and/or MSD above acceptance limits. See Blank Spike (LCS). Matrix interference suspected.   |
| LN,AY            | MS and/or MSD below acceptance limits. See Blank Spike (LCS). Matrix interference suspected.   |
| LQ               | LCS recovery above method control limits.  |
| LR               | LCS recovery below method control limits.  |

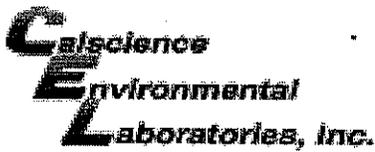


Work Order Number: 09-03-1452

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| <u>Qualifier</u> | <u>Definition</u>  |
|------------------|--|
| MB               | Analyte present in the method blank.                           |
| MG               | Analyte is a suspected lab contaminate.                        |
| PC               | Sample taken from VOA vial with air bubble > 6mm diameter.     |
| PI               | Primary and confirm results varied by > than 40% RPD.          |
| RB               | RPD exceeded method control limit; % recoveries within limits. |





WORK ORDER #: 09-03-1452

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: STRATUS ENV'L

DATE: 3/17/09

TEMPERATURE: (Criteria: 0.0°C - 6.0°C, not frozen)
Temperature 1.9°C - 0.2°C (CF) = 1.7°C
Blank Sample
Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_).
Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.
Received at ambient temperature, placed on ice for transport by Courier.
Ambient Temperature: Air Filter Metals Only PCBs Only
Initial: WS

CUSTODY SEALS INTACT:
Cooler No (Not Intact) Not Present N/A
Sample No (Not Intact) Not Present
Initial: WS
Initial: PS

Table with columns: SAMPLE CONDITION, Yes, No, N/A. Rows include Chain-Of-Custody (COC) document(s) received with samples, COC document(s) received complete, Sampler's name indicated on COC, Sample container label(s) consistent with COC, etc.

CONTAINER TYPE:
Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve EnCores TerraCores
Water: VOA VOAh VOAna2 125AGB 125AGBh 125AGBpo4 1AGB 1AGBna2
Air: Tedlar Summa
Sludge/Other:
Checked/Labeled by: PS
Reviewed by: WS
Scanned by: PS



Laboratory Management Program LaMP Chain of Custody Record

190419  
1452

BP/ARC Project Name: \_\_\_\_\_

Req Due Date (mm/dd/yy): \_\_\_\_\_

Rush TAT: Yes  No

BP/ARC Facility No: APCO 9535

Lab Work Order Number: \_\_\_\_\_

48 HOUR

|  |  |   |
|--|--|---|
| Lab Name: <u>CONSCIENCE ENV. LABORATORIES</u>            | BP/ARC Facility Address: <u>3400 SAN PABLO AVE</u>   | Consultant/Contractor: <u>STATUS ENV. INC.</u>                          |
| Lab Address: <u>7440 LINCOLN WAY, CAMPBELL 95008 CA.</u> | City, State, ZIP Code: <u>OAKLAND, CA.</u>   | Consultant/Contractor Project No: <u>E 9535</u>                         |
| Lab PM: <u>RICHARD VILAFANIA</u>                         | Lead Regulatory Agency:  | Address: <u>3330 CAMERON PARK DR #550, CAMERON PARK, CA.</u>            |
| Lab Phone: <u>714-895-5444</u>                           | California Global ID No.: <u>T0600101365</u>   | Consultant/Contractor PM: <u>JAY JOHNSON</u>                            |
| Lab Shipping Acct: <u>9255</u>                           | Enfos Proposal No:   | Phone: <u>530 626 6000</u>  |
| Lab Bottle Order No:                                     | Accounting Mode: Provision <input type="checkbox"/> OOC-BU <input checked="" type="checkbox"/> OOC-RM <input type="checkbox"/> | Email EDD To: <u>CHUFF@STATUS INC. NET</u>                              |
| Other Info:  | Stage: _____ Activity: _____   | Invoice To: BP/ARC <input checked="" type="checkbox"/> Contractor _____ |

| BP/ARC EBM: <u>PAUL SUPPLE</u>       |                    |          |      | Matrix       |                | No. Containers / Preservative |                            |             |                                |                  |     | Requested Analyses |     |       |      |            |         | Report Type & QC Level |  |  |
|--------------------------------------|--------------------|----------|------|--------------|----------------|-------------------------------|----------------------------|-------------|--------------------------------|------------------|-----|--------------------|-----|-------|------|------------|---------|------------------------|--|--|
| EBM Phone:                           |                    |          |      | Soil / Solid | Water / Liquid | Air / Vapor                   | Total Number of Containers | Unpreserved | H <sub>2</sub> SO <sub>4</sub> | HNO <sub>3</sub> | HCl | Methanol           | GPO | BETEX | *SOX | TOTAL LEAD | ETHANOL | MTBE                   | Standard <input checked="" type="checkbox"/> |  |
| EBM Email: <u>PAUL.SUPPLE@BP.COM</u> |                    |          |      |              |                |                               |                            |             |                                |                  |     |                    |     |       |      |            |         |                        | Full Data Package <input type="checkbox"/>   |  |
| Lab No.                              | Sample Description | Date     | Time |              |                |                               |                            |             |                                |                  |     |                    |     |       |      |            |         |                        | Comments                                     |  |
| 1                                    | VL-1               | 03/16/09 | 1220 | X            |                |                               | 1                          | X           |                                |                  |     |                    | X   | X     | X    | X          |         |                        | *SOX => DUPE                                 |  |
| 2                                    | VL-2               |          | 1215 | X            |                |                               | 1                          | X           |                                |                  |     |                    | X   | X     | X    | X          |         |                        | TAME   |  |
| 3                                    | TLC-1              | ↓        | 1235 | X            |                |                               | 1                          | X           |                                |                  |     |                    | X   | X     | X    | X          |         |                        | MTBE   |  |
| 4                                    | SWC                | ↓        | 1245 | X            |                |                               | 1                          | X           |                                |                  |     |                    | X   | X     | X    | X          |         |                        | ETBE   |  |
|                                      |                    |          |      |              |                |                               |                            |             |                                |                  |     |                    |     |       |      |            |         |                        | TBA  |  |

\*48 hour TAT

|  |   |                      |                   |  |                      |                   |
|--|---|----------------------|-------------------|--|----------------------|-------------------|
| Sampler's Name: <u>COLLIN FISHER</u>       | Relinquished By / Affiliation: <u>Collin Fisher</u> | Date: <u>3/16/09</u> | Time: <u>1600</u> | Accepted By / Affiliation: <u>Wobateh CE</u> | Date: <u>3/17/09</u> | Time: <u>1000</u> |
| Sampler's Company: <u>STATUS ENV. INC.</u> |   |                      |                   |  |                      |                   |
| Shipment Method: <u>GSO</u>                | Ship Date: <u>3/16/09</u>                           |                      |                   |  |                      |                   |
| Shipment Tracking No: <u>GSO 106087830</u> |   |                      |                   |  |                      |                   |

Special Instructions: \_\_\_\_\_

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No \_\_\_\_\_ Temp Blank: Yes / No \_\_\_\_\_ Cooler Temp on Receipt: \_\_\_\_\_ °F/C \_\_\_\_\_ Trip Blank: Yes / No \_\_\_\_\_ MS/MSD Sample Submitted: Yes / No \_\_\_\_\_

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