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February 4, 2011

Mr. David Kunselman
CDCM Program Manager
City of Seattle
PO Box 94689
Seattle, WA 98124-4689

SUBJECT: TRANSMITTAL OF SUNNY JIM ENCAMPMENT PLOT INVESTIGATION DATA REPORT
PROJECT NUMBER: COS-SUNNYJIM

Dear Mr. Kunselman:

This letter transmits the Sunny Jim Encampment Plot Investigation Data Report. The report details the investigation that was performed to evaluate the current surface conditions at the Sunny Jim Encampment Plot (Plot) that would potentially be accessible to residents if this Plot is used as a temporary homeless encampment. Based on the sampling and analysis of various existing soils and building materials, no major concerns were identified with the future use of this Plot as a temporary homeless encampment. It was determined that actions should be taken to address several of the soil areas and building materials prior to occupation of the Plot. Actions needed for the identified soil areas and building materials can easily be addressed with typical construction methods. Recommended actions for addressing these areas and materials are included in the report.

Sincerely yours,

FLOYD | SNIDER

Teri A. Floyd, Ph. D.
Principal

Encl.: Sunny Jim Encampment Plot Investigation Data Report

City of Seattle
Sunny Jim Encampment Plot

Investigation Data Report

Prepared for

City of Seattle
700 5th Avenue
Seattle, Washington 98104

Prepared by

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February 4, 2011

Table of Contents

List of Tables

List of Figures

List of Appendices

List of Abbreviations and Acronyms

Acronym/ Abbreviation	Definition
ARI	Analytical Resources, Inc.
City	City of Seattle
Ecology	Washington State Department of Ecology
GPS	Global Positioning System
I-5	Interstate 5
MTCA	Model Toxics Control Act
NVL	NVL Laboratories
PCB	Polychlorinated biphenyl
PCE	Tetrachloroethene
Plot	Sunny Jim Encampment Plot
PSCAA	Puget Sound Clean Air Agency
SAP/QAPP	Sampling and Analysis Plan/Quality Assurance Project Plan
SVOC	Semivolatile organic compound
TCE	Trichloroethene
TEF	Toxic equivalency factor

Acronym/ Abbreviation	Definition
TPH	Total petroleum hydrocarbons
TPH-D	Diesel-range total petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency
VOC	Volatile organic compound

1.0 Introduction

This report summarizes the investigation activities conducted at the proposed Sunny Jim Encampment Plot (Plot), located at 4200 Airport Way South in Seattle, Washington (Figure 1.1), on December 14 and 15, 2010 by Floyd|Snider. This Plot has recently been offered by Mayor McGinn to serve as the future home of the Seattle Homeless Encampment. As part of planning for the new use of the land, the City of Seattle (City) asked Floyd|Snider to investigate the surface conditions at the Plot that would be accessible to residents at the Homeless Encampment.

The Plot is the area where the former Sunny Jim Peanut Butter facility was located, and is the northern portion of a larger parcel at 4200 Airport Way South owned by the City (refer to Figure 1.2). The Sunny Jim Encampment Plot is currently unoccupied, whereas the southern portion of the parcel includes the Seattle Signs and Signals Maintenance Shop. The Washington State Department of Ecology (Ecology) refers to the larger parcel as the "Seattle City DOT Sunny Jim" Facility/Site No. 63747158. However, only the smaller, unoccupied, northern section of the parcel is being considered as the potential home of the Homeless Encampment.

It is expected that this location would be available for the encampment for at least 2 years.

1.1 PROJECT BACKGROUND

Prior to the City's purchase of the parcel in 1991, the following companies manufactured or canned edible goods on the Plot: Independent Brewing Company (early 1900s to 1916), the Seattle Can Company (1916 to 1930s), and lastly, Pacific Food Products (1930s to 1980s) -- the company that manufactured Sunny Jim Peanut Butter. Two fires have occurred at the Plot since the City acquired the property. The first fire occurred in February 1997 and the second occurred on September 20, 2010, which destroyed the vacant building on the Plot. Recently, the City removed all fire debris, demolished the remaining structures, closed and sealed utilities, and fenced the Plot. The Plot is currently vacant and paved with a mix of concrete slabs representing the original building foundations. The various exposed surfaces consist of bare concrete, brick foundations, cement with top coatings, and areas of disturbed soil.

Several investigations have been completed on the Plot and in the vicinity to assess environmental conditions in groundwater. In 1990, a groundwater sample was collected along the northern boundary of the Plot by GeoEngineers, Inc and analyzed for metals (including cadmium, total chromium, hexavalent chromium, and zinc), chlorinated solvents (including tetrachloroethene [PCE], trichlorothene [TCE], and vinyl chloride), and cyanide. Total chromium in this groundwater sample was detected at 0.33 mg/L, a concentration greater than the Model Toxics Control Act (MTCA) Method A groundwater standard for total chromium of 0.05 mg/L, which is based on the presence of hexavalent chromium. Hexavalent chromium was detected in the sample at 0.02 mg/L, less than the MTCA Method A groundwater standard. The trivalent chromium concentration of 0.31 mg/L (the difference between total chromium and hexavalent chromium) is considerably less than the MTCA Method B groundwater standard of 24 mg/L. The remaining metals were detected at concentrations less than the MTCA standards. Chlorinated solvents and cyanide were not detected in this groundwater sample.

In June 2009, CH2M HILL conducted an investigation that included sampling groundwater from 12 borehole locations and 3 existing groundwater monitoring wells on and in the vicinity of the Plot. Five of the new borehole locations, CHB-1 to CHB-5, were located on or within 100 feet of

the Plot. Groundwater samples were analyzed for chlorinated solvents (including PCE, TCE, dichloroethene [DCE] isomers, and vinyl chloride), diesel-range and oil-range total petroleum hydrocarbons (TPH), total chromium, and hexavalent chromium. Of the 5 borehole locations on or within 100 feet of the Plot, only 2 contained concentrations of chemicals in groundwater greater than the MTCA groundwater standards. Locations CHB-4 and CHB-5 contained concentrations of PCE at 0.15 µg/L and 0.11 µg/L, respectively, both greater than the MTCA Method B standard of 0.081 µg/L, but less than the drinking water maximum contaminant level of 5.0 µg/L. Location CHB-4 also contained TPH in the motor oil range at a concentration of 0.9 mg/L, which is greater than the MTCA Method A standard of 0.50 mg/L (CH2M HILL 2009). There is no drinking water standard for TPH.

These prior investigations identified low levels of PCE and motor oil-range TPH in groundwater at levels greater than the MTCA standards on the Plot; however, because Homeless Encampment tenants will not be exposed to groundwater, these low-level contaminants in groundwater were not investigated further as part of this recent investigation.

1.2 INVESTIGATION ACTVITIES AND SCOPE

The primary objectives of this investigation are to determine if the surface materials (soil, foundation materials, caulk, etc.) currently on the Plot would pose a risk to persons occupying a possible Homeless Encampment at this location. Because the City has already cleaned the surfaces as part of the cleanup after the most recent fire and will perform further surface dirt sweeping as part of preparing the Plot for the encampment, the objective was not to sample dirt that will be removed from the Plot, but to sample the remaining manufactured materials and soils that will serve as the “floor” of the encampment.

The investigation activities included the following:

- Sampling and chemical analysis of the various existing ground surfaces and materials that will serve as the “floor” of the encampment.
- Delineating distinct ground surfaces using a handheld Global Positioning Survey (GPS) device and measuring wheel to aid in identifying the extent of the various ground surfaces present on-site.

Table 1.1 lists and describes the manufactured materials and soils that were identified and collected from the Plot as well as the chemical analyses that were performed on each type of manufactured material and soil. The specific analyses chosen for the different materials were based on 30 plus years of experience by Dr. Floyd at Floyd|Snider.

2.0 Summary of Field and Analytical Work Performed

On December 14, 2010, a total of nine types of manufactured materials and soils were sampled at the Plot, as listed in Table 1.1. The following sections further describe the field sample collection methods and analysis for the manufactured materials and soils.

All sampling was conducted in general accordance with the Sampling and Analysis Plan and Quality Assurance Project Plan (SAP/QAPP; Floyd|Snider 2010).

2.1 MANUFACTURED MATERIAL AND SOIL SAMPLING AND ANALYSIS

2.1.1 Sample Locations

Most of the Plot is currently enclosed by fences and divided approximately in half by a fence running east to west across the Plot. The main area to the north of this dividing fence is referred to as the northern fenced area and main area to the south of this dividing fence is referred to as the southern fenced area. The proposed camping area includes both the northern and southern fenced areas, with the exception of the historical loading dock area within the southern fenced area. Due to the approximately 3-foot drop-off in the loading dock area, a fence would be placed to enclose and limit access to this area prior to establishment of the encampment. The only portion of the Plot located outside the fences is a soil landscaping strip located along Adams Street. These plot features are shown on Figure 2.1.

Manufactured materials and soil samples were collected from nine distinct ground surface areas that were identified on the Plot. The manufactured materials and soils sampled are listed below (with the sample name included in parentheses) and in Table 1.1:

1. The red cement flooring surface (Cement-Red).
2. The grey cement flooring surface (Cement-Grey).
3. The brick foundation wall area close to Airport Way (Brick-Red).
4. The caulk in between the concrete slabs in the northern and southern fenced areas (Caulk).
5. The crumbling concrete surface within the southern fenced area (Concrete-Crumble).
6. Soils around the metal foundations and cracks within the northern fenced area (Soils-Ncracks).
7. Soils around the metal foundations and cracks within the southern fenced area (Soils-Scracks).
8. The soil sidewalk “landscaping strip” along Adams Street (Soils-Landscape).
9. The soil areas within the proposed camping area (Soils-Camping).

Three discrete samples were collected of each manufactured material and soil type listed above, with the exception of the red cement flooring surface. Five discrete samples were collected from the red cement flooring surface due to the large extent that this material was observed covering the Plot. The discrete samples were labeled with the sample name followed by the discrete sample number (e.g., Brick-Red-02 is the second discrete sample collected from the brick foundation wall area close to Airport Way). The discrete sample locations were

recorded in the field using a handheld GPS unit. The discrete sampling locations for these manufactured materials and soils are shown on Figure 2.1.

A handheld GPS unit was used to delineate the extents of the manufactured materials and soils on the ground surface at the Plot.

2.1.2 Sample Collection and Chemical Analysis

Discrete samples were collected using either stainless steel spoons or disposable spoons. Depending on the material being sampled, hand tools (e.g., putty knife) were sometimes used to dislodge material in order to collect sufficient sample volume. The samples were scraped from the surface, with the exception of soil samples from the sidewalk "landscaping strip" and proposed camping area where the soil was collected to a depth of 6 inches. The discrete soil samples from the proposed camping area, to be analyzed for volatile organic compounds (VOCs), were also sampled using a push-core sampling device (sampling Method 5035A) in accordance with Ecology sample collection guidance for VOCs.

Samples were labeled according to the methods described in the SAP/QAPP and stored in a cooler with ice. Samples were delivered to Analytical Resources, Inc. (ARI) in properly chilled conditions with appropriate documentation and completed Chain-of-Custody Forms (refer to Appendix A).

For each type of manufactured material or soil, one composite sample was prepared by ARI using the discrete samples submitted. The composite samples were labeled with the sample name followed by the letter "C" (e.g., Brick-Red-C). ARI also prepared a duplicate composite sample using the discrete samples collected from the soil areas within the proposed camping area, labeled Soils-Camping-C-B. The composite samples were analyzed for the analyses listed in Table 1.1, with the exceptions of the asbestos and VOC analyses that were performed on discrete samples. Three discrete samples from each of the following materials were analyzed for asbestos by NVL Laboratories (NVL): red cement flooring surface, grey cement flooring surface, and caulk. For VOC analysis on the soils from the proposed camping area, no sample compositing was performed and only one discrete sample was selected for analysis, Soil-Camping-03, in order to achieve the lowest detection limits with sampling Method 5035A for VOCs.

Materials that represent manufactured cement flooring or caulk were tested for metals, polychlorinated biphenyls (PCBs), and asbestos. Manufactured materials that are friable (able to break into small pieces) and are made of cement were also tested for pH. Broken up concrete was tested for metals and the brick foundation wall material was tested for metals and TPH in the diesel and heavy oil ranges. Soils within the proposed camping area were tested for metals, TPH in the diesel and heavy oil ranges, VOCs, and semivolatile organic compounds (SVOCs). Exposed soils from the "landscape strip" along Adams Street and soils collected from around the metal foundations and cracks within the proposed camping area were analyzed for metals and TPH in the diesel and heavy oil ranges. Table 1.1 lists the chemical analyses that were performed on each type of manufactured material and soil sample.

The following analytical methods were used for the sample analyses listed in Table 1.1:

- Metals (lead, arsenic, cadmium, chromium, copper, and zinc) by U.S. Environmental Protection Agency (USEPA) Method 6010.
- TPH—Heavy Oil-range and Diesel-range by NWTPH-Dx

- PCBs by USEPA Method 8082
- VOCs by USEPA Method 8260C
- SVOCs by USEPA 8270D
- pH by Standard Method (SM) 9045
- Asbestos by USEPA Method 600R-93/116

Method blank, field duplicate (composited by the laboratory), laboratory duplicate, laboratory control, matrix spike/matrix spike duplicate, and trip blank samples were analyzed to assess the quality of the data resulting from the sampling and laboratory analysis. A discussion of data quality, including data validation procedures, is presented in Appendix B.

2.2 EQUIPMENT DECONTAMINATION

Manufactured material and soil samples were collected using disposable spoons that were disposed of after sample collection or were collected using stainless steel spoons that were decontaminated prior to initiating sampling activities, between sample types, and following sampling activities. Hand tools used to help dislodge material in order to collect sufficient sample for analysis were also decontaminated prior to use, between sample types, and following sampling. Field sampling equipment used to collect samples was decontaminated by washing with an Alconox and tap water wash, and rinsing with deionized water.

2.3 INVESTIGATION-DERIVED WASTE

All disposable sampling materials and personal protective equipment (i.e., disposable gloves, disposal spoons, and paper towels) used during the sample collection process was placed in heavyweight garbage bags and disposed of in garbage cans located off-site.

2.4 DEVIATIONS FROM THE SAMPLING AND ANALYSIS PLAN AND QUALITY ASSURANCE PROJECT PLAN

The sampling investigation was conducted in general accordance with the SAP/QAPP with the exception of the following minor deviations:

- One discrete sample rather than a composite sample from the exposed soil areas within the proposed camping area was analyzed for VOCs. The discrete samples were collected in accordance with Ecology sample collection guidance for VOCs (sampling Method 5035A), which preserves the sample immediately in the field to prevent the loss of VOCs; however, to obtain the lowest detection levels for VOCs as listed in the SAP/QAPP, the preserved discrete samples could not be composited by the laboratory. Therefore, one discrete sample from the soils within the proposed camping area, considered to be the most representative of the exposed soil areas, was selected for VOC analysis.
- Analytical method reporting limit goals for soils listed in the SAP/QAPP were sometimes not achieved for the manufactured material or soil samples analyzed due to high sample concentrations or matrix interferences, resulting in higher reporting limits.

3.0 Summary of Analytical Results

A summary of the analytical results by manufactured material and soil type is presented below. The concentrations of detected compounds in the manufactured material and soil samples are compared to MTCA Methods A and B soil standards for incidental ingestion and direct contact at sites with unrestricted land use as a screening level evaluation to identify potential constituents of concern in the surface materials at the Plot. These standards are designed to be protective of human health under residential conditions.

Metals, PCB, asbestos, TPH, VOC, and SVOC results for the samples are reported in Tables 3.1 through 3.6, respectively. A copy of the analytical laboratory report is included in Appendix A.

3.1 RED CEMENT FLOORING SURFACE

The red cement flooring surface composite sample, Cement-Red-C, was analyzed for metals, PCBs, and pH. Three discrete red cement flooring samples were analyzed for asbestos.

Metals concentrations in the red cement flooring sample are shown in Table 3.1. The metal concentrations were considerably less than the MTCA Method B screening levels, with the exception of arsenic. Arsenic was detected in Cement-Red-C at 13 mg/kg, which is less than the Method A value for arsenic that has been corrected for background concentrations. PCBs were detected in this material at a concentration of 174 µg/kg (Table 3.2); this concentration is substantially less than the MTCA Method B soil screening level of 500 µg/kg, and therefore is not a threat.

The pH for this material measured 10.13. If freshly broken, this material mixed with rainwater could result in water that is sufficiently alkaline to induce a chemical burn should someone sit in the water for an extended period of time (minutes to hours).

All three of the discrete red cement flooring surface samples were determined to not contain asbestos (Table 3.3).

3.2 GREY CEMENT FLOORING SURFACE

The grey cement flooring surface composite sample, Cement-Grey-C, was analyzed for metals, PCBs, and pH. The three discrete grey cement flooring samples were analyzed for asbestos.

Detected metals concentrations in the grey cement flooring sample, shown in Table 3.1, were considerably less than the MTCA Method B screening levels. Arsenic was not detected in this sample; however, the detection limit for arsenic was elevated due to matrix interferences during the measurement. The detection limit of 30 mg/kg exceeds the Method A screening level of 20 mg/kg; however, since residents are not expected to stay on the site for more than 2 years and the screening level is based on decades of exposure, the material can still be considered to be safe.

PCBs were detected in this material at a concentration of 1,140 µg/kg (Table 3.2), greater than the MTCA Method B soil screening level of 500 µg/kg.

The pH of water in contact with this material measured 9.90. At this pH, this alkaline material may be capable of inducing a chemical burn as described above for the red cement flooring.

All three of the discrete grey cement flooring samples were confirmed to contain asbestos. An asbestos containing material is defined as a material containing greater than 1 percent asbestos. The grey cement flooring material contained approximately 3 percent chrysotile (Table 3.3).

3.3 BRICK FOUNDATION WALL

The brick foundation wall composite sample, Brick-Red-C, was analyzed for metals and TPH in the diesel and motor oil ranges.

Detected metals concentrations, including arsenic, in this composite sample were all considerably less than the MTCA Method A/B screening levels for ingestion and direct contact (Table 3.1). TPH in the diesel and motor oil ranges were measured at 120 mg/kg and 620 mg/kg, respectively (Table 3.4). These concentrations are substantially less than the MCTA Method A screening levels of 2,000 mg/kg for these analytes.

3.4 CAULK

The caulk composite sample, Caulk-C, was analyzed for metals and PCBs. The three discrete caulk samples were analyzed for asbestos.

The lead concentration, at 302 mg/kg, was greater than the MCTA Method A/B value of 250 mg/kg. The lead value of 250 mg/kg was developed for lead exposure to children, and there will be no children at the encampment; therefore, lead at this concentration likely presents a lower risk to the adults at the encampment. The remaining metals concentrations were detected at levels considerably less than the MTCA Method B screening levels.

PCBs were detected in this caulk composite at a concentration of 1,600 µg/kg (Table 3.2), greater than the MTCA Method B soil screening level of 500 µg/kg.

All three of the discrete caulk samples were determined not to contain asbestos (Table 3.3).

3.5 CRUMBLY CONCRETE SURFACE

The concrete crumbly surface composite sample, Concrete-Crumble-C, was analyzed for metals. Similar to the composite caulk sample discussed above, Concrete-Crumble-C had slightly elevated concentrations of arsenic and lead (Table 3.1). Lead was detected at 272 mg/kg, slightly greater than the MTCA Method A/B screening level of 250 mg/kg. Arsenic was detected at 40 mg/kg, greater than MTCA Method A soil concentration for arsenic (20 mg/kg). The remaining metals concentrations were detected at levels substantially less than the MTCA Method B screening levels.

3.6 SOILS AROUND METAL FOUNDATIONS AND CRACKS

Two composite samples were collected from soils around metal foundations and cracks at the Plot, with one from the northern fenced area, Soils-Ncracks-C, and one from the southern fenced area, Soils-Scracks-C. These composite samples were analyzed for metals and TPH in the diesel and motor oil ranges.

The detected metals concentrations in Soils-Scracks-C were all considerably less than the MTCA Method A/B soil screening levels. Soils-Ncracks-C had a lead concentration of 4,020

mg/kg that exceeds the MTCA Method A/B soil screening level for lead at 250 mg/kg. The remaining metals detected in this sample were considerably less than the MTCA Method A/B soil screening levels. Diesel-range and oil-range TPH results differed between these two composite samples. Soil-Scracks-C showed TPH in the diesel range and motor oil range at 35 mg/kg and 230 mg/kg, respectively, while Soil-Ncracks-C had higher concentrations with TPH in the diesel range and motor oil range at 780 mg/kg and 3,500 mg/kg, respectively (Table 3.4). The motor oil-range TPH concentration in Soil-Ncracks-C exceeds the MTCA Method A soil screening level of 2,000 mg/kg.

3.7 SOILS IN LANDSCAPE STRIP ALONG ADAMS STREET

The landscape strip soil composite sample, Soils-Landscape-C, was analyzed for metals and TPH in the diesel and motor oil ranges.

Lead was detected at 348 mg/kg in this sample, exceeding the MTCA Method A/B soil screening level of 250 mg/kg. The remaining metals concentrations were detected at levels considerably less than the MTCA Method A/B screening levels.

TPH in the diesel range and motor oil range were measured at 400 mg/kg and 1,500 mg/kg, respectively, in Soils-Landscape-C (Table 3.4). The motor oil-range TPH concentration in this sample is less than the MTCA Method A soil screening level of 2,000 mg/kg.

3.8 SOILS FROM SOIL AREAS IN THE PROPOSED CAMPING AREA

The composite soil sample Soils-Camping-C was collected from two exposed soil areas located in the proposed camping area and was analyzed for metals, TPH in the diesel and motor oil ranges, and SVOCs. A composite duplicate sample, Soils-Camping-C-B, was analyzed for metals and TPH. One of the discrete soil samples, Soils-Camping-03, was analyzed for VOCs.

The detected metals concentrations in the composite and composite duplicate samples were considerably less than the MTCA Method A/B screening levels (Table 3.1).

Concentrations of TPH in the diesel range and motor oil range in both the composite and composite duplicate samples were detected at levels considerably less than the MCTA Method A screening levels of 2,000 mg/kg for these analytes (Table 3.4).

Three VOCs were detected in the discrete soil sample, including methylene chloride, acetone, and benzene (Table 3.5). Detections of these analytes were considerably less than their corresponding MTCA Method A/B soil screening levels.

Ten SVOCs were detected in Soils-Camping-C comprising two categories of chemicals. Nine SVOCs were polycyclic aromatic hydrocarbons (PAHs): naphthalene, phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(a)pyrene, benzo(g,h,i)perylene, total benzofluoranthenes. One SVOC was a common plasticizer, bis(2-ethylhexyl)phthalate. The SVOC analytical results are presented in Table 3.6. All chemicals are less than the MTCA Method A/B screening levels. The presence of these SVOCs in the soil may be attributable to the fire that recently occurred on the Plot.

3.9 DATA QUALITY REVIEW

A Compliance Screening, Tier I data quality review was performed on the data resulting from laboratory analysis. The analytical data were validated in accordance with the following guidelines:

- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2004)
- USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (1999)
- USEPA National Functional Guidelines as applied to criteria in NWTPH-Dx

The chromium result for Cement-Red-C was qualified as estimated ("J" flagged) due to the relative percent difference (RPD) for this metal being outside of the laboratory control limits in the laboratory duplicate analysis. The acetone result for Soil-Camping-03 was also qualified as estimated due to drift in the continuing calibration that was outside of control limits.

The data were determined to be of acceptable quality for use on this project. A report presenting the results of the data quality review is included in Appendix B.

4.0 Summary of Findings and Recommendations

Based on the analytical results from the various manufactured materials and soils sampled as part of this investigation, four of the manufactured materials and two of the soil areas should be addressed prior to use of the Plot as the Seattle Homeless Encampment. These manufactured materials and soils are listed below along with the constituents of concern associated with each of these materials or soil areas.

- The red cement flooring surface—pH
- The grey cement flooring surface—PCBs, asbestos, and pH
- The caulk in between the concrete slabs in the northern and southern fenced areas—lead, and PCBs
- The crumbling concrete surface within the southern fenced area—arsenic and lead
- Soils around the metal foundations and cracks within the northern fenced area—lead and motor oil-range TPH
- The soil sidewalk "landscaping strip" along Adams Street—lead, and motor-oil range TPH

The extents of the red cement flooring surface, the grey cement flooring surface, the crumbling concrete area, and the soil sidewalk "landscaping strip" area are shown on Figure 5.1. The red cement flooring surface covers approximately 7,000 square feet and is located in both the northern and southern fenced areas. The grey cement flooring surface is only located in the northeastern corner of the northern fenced area and covers approximately 1,400 square feet. The crumbling concrete surface is located within the southern fenced area, just west of the historical loading dock and covers approximately 250 square feet. The soil sidewalk "landscaping strip" along Adams Street and adjacent to the Plot covers approximately 1,250 square feet.

Recommendations are included below for possible ways to address the four manufactured materials and two soil areas of concern listed above. These recommendations include either removing the materials or soils from the Plot or covering these materials or soils with another material to prevent direct human contact with the materials of concern while the Plot is being used as a homeless encampment. Additionally, the entire Plot area could be covered with a new surface or portions of the Plot could be fenced off to limit direct contact with select materials.

4.1 RED CEMENT FLOORING SURFACE

The concern with the red cement flooring surface is the possibility of causing a chemical burn if this alkaline material has an exposed fresh surface that comes in contact with water and skin. Exposure to this material is not a concern if there is a smooth cured surface. There are several options to address this material at the Plot. One option is to seal any exposed edges of this surface material and to seal areas where cracks have formed and this material can easily be broken up. In areas where this material is already broken up or the edges are brittle or fragile, this material should be removed and disposed of in a permitted landfill. Another option is to cover the entire surface of the red cement flooring surface with another type of material or surface. This new material or surface would not need to be an environmental containment barrier that completely encapsulates the red cement flooring surface, but rather a material or surface that helps prevent direct contact with the crumbling edge of the red cement flooring

surface. A third option is to remove this surface material from the Plot and dispose of this material in a permitted landfill consistent with landfill regulations.

4.2 GREY CEMENT FLOORING SURFACE

The grey cement flooring surface has multiple constituents of concern and covers a relatively small portion of the Plot. It is recommended that this material be removed from the Plot prior to use as an encampment area. This material contains asbestos and according to the Puget Sound Clean Air Agency (PSCAA) this material would be considered a friable asbestos-containing material, meaning it can be crumbled, pulverized, or reduced to powder in the course of demolition or disposal of this material. The removal of 48 square feet or more of friable asbestos requires notification to PSCAA prior to removal. This material must be removed by a certified asbestos abatement contractor and must be taken to a permitted landfill authorized to accept asbestos waste.

4.3 CRUMBLY CONCRETE SURFACE

The crumbling concrete surface within the southern fenced area is a relatively small area that forms a depression. One option is leave this area as is, but to prevent access to this uneven area by fencing it off. A fence is already planned to block access to the adjacent historical loading dock area; this option would expand this fence to include both areas. Another option is to bring this area up to grade, sealing or covering the broken up surface.

4.4 CAULK AND SOILS AROUND METAL FOUNDATIONS AND CRACKS

It is recommended that the soil around the metal foundations and within seams or cracks in the northern fenced area be swept or cleaned out to remove as much of the soil from these areas as possible. Caulk, where present between the concrete slabs in the northern fenced area, should also be removed during this soil removal effort, as caulk was also determined to be a material of concern on the Plot. Soil around metal objects and within seams or cracks in the southern fenced area were not a concern; however, caulk present in seams within the southern fenced area should be removed where observed. It should be noted that caulk between the concrete slabs was difficult to find when the investigation sampling was conducted. Following this soil and caulk removal, it is recommended that these seams, cracks, or joints be sealed. The soil and caulk removed from these areas should be disposed of in a permitted landfill in accordance with landfill regulations.

4.5 SOILS IN LANDSCAPE STRIP ALONG ADAMS STREET

For the soil in the sidewalk “landscaping strip” along Adams Street, it is recommended that clean topsoil be placed over this soil area and grass planted to help prevent direct human contact with the underlying soil. As this soil is currently at grade with the sidewalk, it is recommended that a minimum of 6 inches of soil in this area be removed prior to placement of the clean topsoil. Any soil removed from this area should be disposed of in a permitted landfill in accordance with landfill regulations.

5.0 References

CH2M HILL. 2009. *Site Investigation Report for City of Seattle Sign and Signal Maintenance Shop.* Prepared for Seattle City Attorney's Office. 1 September.

Floyd|Snider. 2010. *Sunny Jim Encampment Site Sampling and Analysis Plan and Quality Assurance Project Plan*. Prepared for the City of Seattle. 13 December.

Washington State Department of Ecology (Ecology). 1994. *Natural Background Soil Metals Concentrations in Washington State*. Publication #94-115. October.

City of Seattle
Sunny Jim Encampment Plot

Investigation Data Report

Tables

Table 1.1
Sunny Jim Encampment Site Investigation Analytical Program

Manufactured Materials and Soils to be Characterized	Analyses						
	Metals[1]	TPH-Dx	PCBs	VOCs	SVOCs	Asbestos	pH
1. The red cement flooring surface (Cement-Red).	X		X			X	X
2. The grey cement flooring surface (Cement-Grey).	X		X			X	X
3. The brick foundation wall area close to Airport Way (Brick-Red).	X	X					
4. The caulk in between the concrete slabs on the northern and southern fenced areas (Caulk).	X		X			X	
5. The concrete crumbly surface within the southern fenced area (Concrete-Crumble).	X						
6. Soils around the metal foundations and cracks within the northern fenced area (Soils-Ncracks).	X	X					
7. Soils around the metal foundations and cracks within the southern fenced area (Soils-Scracks).	X	X					
8. The soil sidewalk “landscape strip” along Adams Street (Soils-Landscape).	X	X					
9. The soil areas within the proposed camping area (Soils-Camping).	X	X		X	X		

Notes:
1 Metals include lead, arsenic, cadmium, chromium, copper, and zinc.

Abbreviations:
PCB Polychlorinated biphenyl
SVOC Semivolatile organic compound
TPH-DX Total petroleum hydrocarbon–diesel range
VOC Volatile organic compound

Table 3.1
Metals Analytical Results for Manufactured Material and Soil Samples

Parameter[1]	Cement-Red-C	Cement-Grey-C	Brick-Red-C	Caulk-C	Concrete-Crumble-C	Soils-Ncracks-C	Soils-Scracks-C	Soils-Landscape-C	Soils-Camping-C	Soils-Camping-C-B
	12/14/2010	12/14/2010	12/14/2010	12/14/2010	12/14/2010	12/14/2010	12/14/2010	12/14/2010	12/14/2010	12/14/2010
Arsenic	13	30 U	5 U	9	40	20 U	6 U	8	6 U	5 U
Cadmium	0.5	1.0 U	1.0	2.1	2.5	8.7	1.4	2.2	0.2 U	0.2 U
Chromium	11.3 J	17	21.2	17.4	27	47	22.9	29.4	12.1	14.3
Copper	15.6	9	18.7	82.0	58.4	144	32.3	61.8	18.4	20.8
Lead	39	10 U	69	302	272	4,020	51	348	25	22
Zinc	234	80	329	776	1,240	3,740	565	1,040	68	83

Note:
1 All results are shown in mg/kg.

Qualifiers:
J The analyte was detected and the reported concentration is an estimate.
U The analyte was not detected at the reported concentration.

Table 3.2
Polychlorinated Biphenyl Analytical Results for Manufactured Material Samples

Parameter[1]	Cement-Red- C	Cement-Grey-C	Caulk-C
	12/14/2010	12/14/2010	12/14/2010
PCB-1016	31 U	33 U	790 U
PCB-1221	31 U	33 U	790 U
PCB-1232	31 U	33 U	790 U
PCB-1242	31 U	33 U	790 U
PCB-1248	74	380	1,400 UY
PCB-1254	100	620	1,600
PCB-1260	31 U	140	1,200 UY
PCBs (Total)	174	1,140	1,600

Note:
1 All results are shown in µg/kg.

Abbreviation:
PCB Polychlorinated biphenyl

Qualifiers:
U The analyte was not detected at the reported concentration.
UY The analyte was not detected at the reported concentration, but the reporting limit was raised because of chromatographic interference.

Table 3.3
Asbestos Analytical Results for Manufactured Material Samples

Sample ID	Sample Date	Material Description	Asbestos Content and Type [1]
Cement-Red-01	12/14/2010	Layer 1: Flooring Surface (Red) Layer 2: Cement (Gray)	Layer 1: ND Layer 2: ND
Cement-Red-02	12/14/2010	Layer 1: Flooring Surface (Red) Layer 2: Mastic (Black) Layer 3: Cement (Gray)	Layer 1: ND Layer 2: ND Layer 3: ND
Cement-Red-04	12/14/2010	Layer 1: Flooring Surface (Red)	Layer 1: ND
Cement-Grey-01	**12/14/2010**	**Layer 1: Flooring Surface (Grey)** **Layer 2: Concrete (Off-white)**	**Layer 1: 3 % Chrysotile** **Layer 2: ND**
Cement-Grey-02	**12/14/2010**	**Layer 1: Flooring Surface (Grey)** **Layer 2: Concrete (Off-white)**	**Layer 1: 3 % Chrysotile** **Layer 2: ND**
Cement-Grey-03	**12/14/2010**	**Layer 1: Flooring Surface (Grey)**	**Layer 1: 3 % Chrysotile**
Caulk-01	12/14/2010	Layer 1: Caulk (Grey) Layer 2: Soil (Black)	Layer 1: ND Layer 2: ND
Caulk-02	12/14/2010	Layer 1: Caulk (Yellow)	Layer 1: ND
Caulk-03	12/14/2010	Layer 1: Asphaltic-like Caulk (Black) Layer 2: Concrete (Gray)	Layer 1: ND Layer 2: ND

Note:
Bold text indicates that the sample contained more than 1 percent asbestos.

Abbreviation:
ND Asbestos was not detected in the material.

Table 3.4
Petroleum Hydrocarbon Analytical Results for Manufactured Material and Soil Samples

	Brick-Red-C	Soils-Ncracks-C	Soils-Scracks-C	Soils-Landscape-C	Soils-Camping-C	Soils-Camping-C-B
Parameter[1]	**12/14/2010**	**12/14/2010**	**12/14/2010**	**12/14/2010**	**12/14/2010**	**12/14/2010**
Diesel-range	120	780	35	400	16	12
Motor Oil-range	620	3,500	230	1,500	90	65

Note:
1 All results shown in mg/kg.

Table 3.5
Volatile Organic Compound Analytical Results

Parameter[1]	Soils-Camping-03[2] 12/14/2010
1,1,1,2-Tetrachloroethane	1.2 U
1,1,1-Trichloroethane	1.2 U
1,1,2,2-Tetrachloroethane	1.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	2.3 U
1,1,2-Trichloroethane	1.2 U
1,1-Dichloroethane	1.2 U
1,1-Dichloroethene	1.2 U
1,1-Dichloropropene	1.2 U
1,2,3-Trichlorobenzene	5.8 U
1,2,3-Trichloropropane	2.3 U
1,2,4-Trichlorobenzene	5.8 U
1,2,4-Trimethylbenzene	1.2 U
1,2-Dibromo-3-chloropropane	5.8 U
1,2-Dichlorobenzene	1.2 U
1,2-Dichloroethane	1.2 U
1,2-Dichloropropane	1.2 U
1,3,5-Trimethylbenzene	1.2 U
1,3-Dichlorobenzene	1.2 U
1,3-Dichloropropane	1.2 U
1,4-Dichlorobenzene	1.2 U
2,2-Dichloropropane	1.2 U
2-Butanone	5.8 U
2-Chloroethylvinylether	5.8 U
2-Chlorotoluene	1.2 U
2-Hexanone	5.8 U
4-Chlorotoluene	1.2 U
4-Isopropyltoluene	1.2 U
4-Methyl-2-Pentanone (MIBK)	5.8 U
Acetone	34 J
Acrolein	58 U
Acrylonitrile	5.8 U
Benzene	1.8
Bromobenzene	1.2 U
Bromochloromethane	1.2 U
Bromodichloromethane	1.2 U
Bromoethane	2.3 U
Bromoform	1.2 U
Bromomethane	1.2 U

Parameter[1]	Soils-Camping-03[2] 12/14/2010
Carbon Disulfide	1.2 U
Carbon Tetrachloride	1.2 U
Chlorobenzene	1.2 U
Chloroethane	1.2 U
Chloroform	1.2 U
Chloromethane	1.2 U
cis-1,2-Dichloroethene	1.2 U
cis-1,3-Dichloropropene	1.2 U
Dibromochloromethane	1.2 U
Dibromomethane	1.2 U
Ethylbenzene	1.2 U
Ethylene Dibromide	1.2 U
Hexachlorobutadiene	5.8 U
Isopropylbenzene	1.2 U
m,p-Xylene	1.2 U
Methyl Iodide	1.2 U
Methylene Chloride	9.5
Naphthalene	5.8 U
n-Butylbenzene	1.2 U
n-Propylbenzene	1.2 U
o-Xylene	1.2 U
sec-Butylbenzene	1.2 U
Styrene	1.2 U
tert-Butylbenzene	1.2 U
Tetrachloroethene	1.2 U
Toluene	1.2 U
trans-1,2-Dichloroethene	1.2 U
trans-1,3-Dichloropropene	1.2 U
trans-1,4-Dichloro-2-butene	5.8 U
Trichloroethene	1.2 U
Trichlorofluoromethane	1.2 U
Vinyl Acetate	5.8 U
Vinyl Chloride	1.2 U

Note:
1 All results are shown in µg/kg.
2 Soil sample collected from the Proposed Camping Area.

Qualifiers:
J The analyte was detected and the reported concentration is an estimate.
U The analyte was not detected at the reported concentration.

Table 3.6
Semivolatile Organic Compound Analytical Results

Parameter[1]	Soils-Camping-C[2] 12/14/2010	
1,2,4-Trichlorobenzene	63	U
1,2-Dichlorobenzene	63	U
1,3-Dichlorobenzene	63	U
1,4-Dichlorobenzene	63	U
1-Methylnaphthalene	63	U
2,2'-Oxybis(1-Chloropropane)	63	U
2,4,5-Trichlorophenol	320	U
2,4,6-Trichlorophenol	320	U
2,4-Dichlorophenol	320	U
2,4-Dimethylphenol	63	U
2,4-Dinitrophenol	630	U
2,4-Dinitrotoluene	320	U
2,6-Dinitrotoluene	320	U
2-Chloronaphthalene	63	U
2-Chlorophenol	63	U
2-Methylnaphthalene	63	U
2-Methylphenol	63	U
2-Nitroaniline	320	U
2-Nitrophenol	63	U
3,3'-Dichlorobenzidine	320	U
3-Nitroaniline	320	U
4,6-Dinitro-2-Methylphenol	630	U
4-Bromophenyl-phenylether	63	U
4-Chloro-3-methylphenol	320	U
4-Chloroaniline	320	U
4-Chlorophenyl-phenylether	63	U
4-Methylphenol	63	U
4-Nitroaniline	320	U
4-Nitrophenol	320	U
Acenaphthene	63	U
Acenaphthylene	63	U
Anthracene	63	U
Benzidine	630	U
Benzo(a)anthracene	61	J
Benzo(a)pyrene	55	J
Benzo(g,h,i)perylene	39	J
Benzoic Acid	630	U
Benzyl Alcohol	320	U

Parameter[1]	Soils-Camping-C[2] 12/14/2010	
bis(2-Chloroethoxy) Methane	63	U
Bis-(2-Chloroethyl) Ether	63	U
bis(2-Ethylhexyl)phthalate	110	
Butylbenzylphthalate	63	U
Carbazole	63	U
Chrysene	83	
Dibenz(a,h)anthracene	63	U
Dibenzofuran	63	U
Diethylphthalate	63	U
Dimethylphthalate	63	U
Di-n-Butylphthalate	63	U
Di-n-Octyl phthalate	63	U
Fluoranthene	150	
Fluorene	63	U
Hexachlorobenzene	63	U
Hexachlorobutadiene	63	U
Hexachlorocyclopentadiene	320	U
Hexachloroethane	63	U
Indeno(1,2,3-cd)pyrene	63	U
Isophorone	63	U
Naphthalene	75	
Nitrobenzene	63	U
N-Nitroso-Di-N-Propylamine	63	U
N-Nitrosodiphenylamine	63	U
Pentachlorophenol	320	U
Phenanthrene	130	
Phenol	63	U
Pyrene	130	
Pyridine	320	U
Total Benzofluoranthenes	88	

Note:
1 All results are shown in µg/kg.
2 Soil sample collected from the Proposed Camping Area.

Qualifiers:
J The analyte was detected and the reported concentration is an estimate.
U The analyte was not detected at the reported concentration.

City of Seattle
Sunny Jim Encampment Plot

Investigation Data Report

Figures

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Investigation Data Report
Sunny Jim Encampment Plot
Seattle, Washington

Figure 1.1
Vicinity Map

File: F:\projects\COS-Sunny Jim\GIS\MXD\Data Report\Figure 1.1 (Vicinity Map).mxd
Date: 1/5/2011

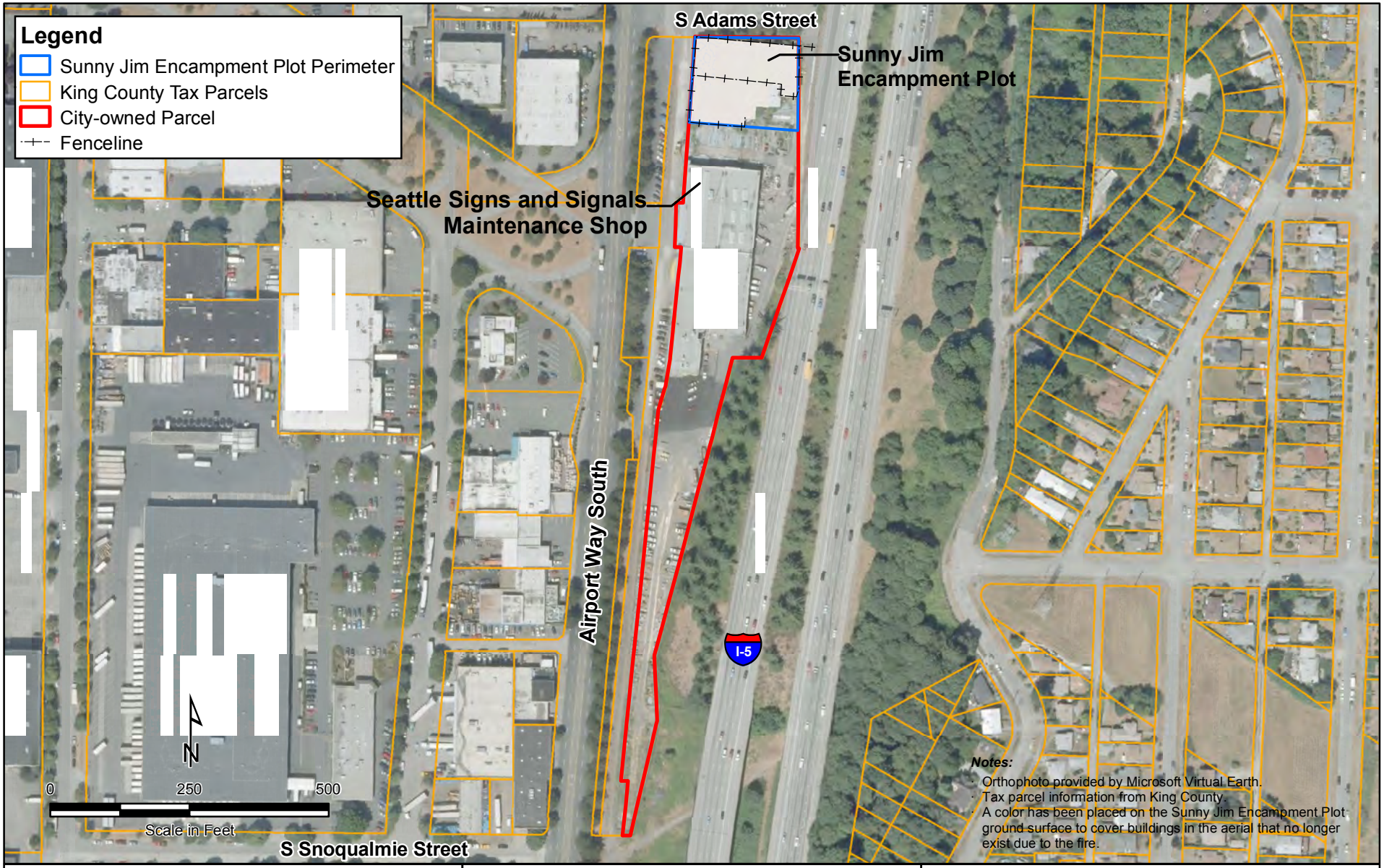

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Figure 1.2
Site Map

File: F:\projects\COS-Sunny Jim\GIS\MXD\Data Report\Figure 1.2 (Site Map).mxd
Date: 1/5/2011

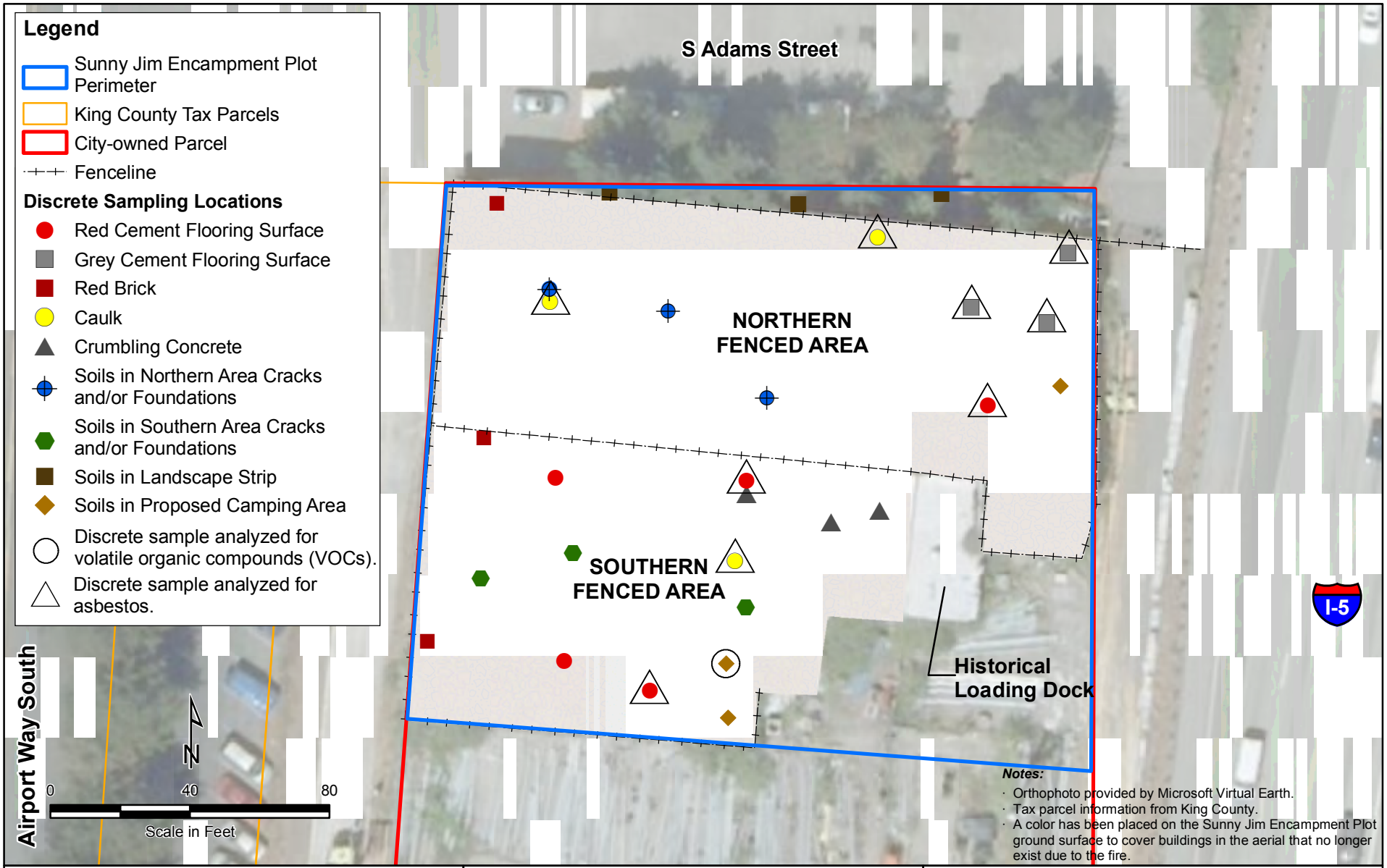

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Figure 2.1
Site Plan and Sampling Locations

File: F:\projects\COS-Sunny Jim\GIS\MXD\Data Report\Figure 2.1 (Site Plan and Sampling Locations).mxd
Date: 1/5/2011

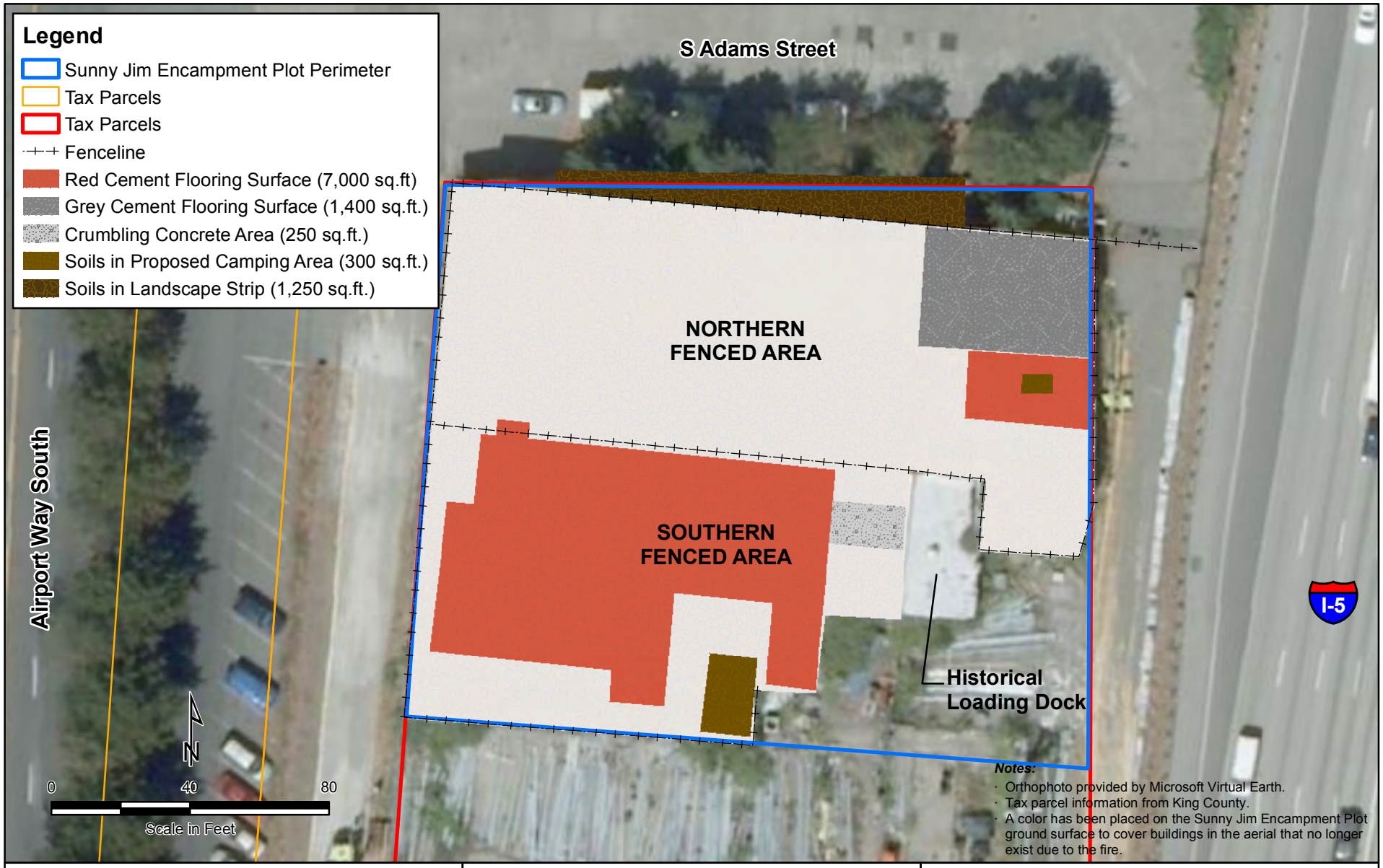

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Figure 5.1
Approximate Extents of
Manufactured Materials and Soils

File: F:\projects\COS-Sunny Jim\GIS\MXD\Data Report\Figure 5.1 (Approximate Areal Extents of Manufactured Materials and Soils).mxd
Date: 2/3/2011

City of Seattle
Sunny Jim Encampment Plot

Investigation Data Report

Appendix A
Laboratory Analytical Data Report

Analytical Resources, Incorporated
Analytical Chemists and Consultants

January 6, 2011

Erin Breckel
Floyd Snider
601 Union Street, Suite 600
Seattle, WA 98101-2341

RE: Client Project: Sunny Jim Encampment Site, COS-Sunny Jim
ARI Job No: SA83 & SA90

Dear Erin:

Please find enclosed the Chain-of-Custody (COC) records, receipt documentation, and the final analytical results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted twenty-nine solid samples and a trip blank on December 14 and 15, 2010 under ARI job numbers SA83 and SA90. For details regarding sample receipt, refer to the enclosed Cooler Receipt Form.

The samples were composited as requested on the COC. The composites were analyzed for VOCs, SVOCs, PCBs, Metals, and pH. Samples received under ARI Job SA90 were subcontracted to NVL Laboratories, Inc. in Seattle WA for Bulk Asbestos analysis. All data have been included in this report.

The volatile continuing calibrations for Bromomethane, Vinyl Chloride, Chloroethane, Acetone, Trichlorofluoromethane, and Acrolein were outside the 20% control limit high and 2-Chloroethylvinylether was out of control low. All detected results for these compounds have been flagged with a "Q" qualifier. No further corrective action was taken.

The LCS and LCSD percent recoveries of Acetone were outside the control limits high for **LCS-121610**. The outliers were accepted as marginal exceedances. No corrective action was taken.

The LCS percent recovery of 2,2-Dichloropropane was outside the control limits high for **LCS-121610**. The LCSD percent recovery was within control limits. No corrective action was taken.

The continuing calibrations for 2-Nitroaniline, 3-Nitroaniline, 2,4-Dinitrophenol, 4-Nitrophenol, and 4-Nitroaniline were outside the 20% control limit high. All detected results for these compounds have been flagged with a "Q" qualifier. No further corrective action was taken.

The LCS percent recoveries of 4-Chloroaniline, 2-Nitroaniline, 3-Nitroaniline, 4-Nitrophenol, 4-Nitroaniline, and 3,3'-Dichlorobenzidine were outside the control limits high for **LCS-121610**. The associated sample was undetected for these compounds. No corrective action was taken.

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

The matrix spike and matrix spike duplicate percent recoveries of Aroclor 1016 were outside the advisory control limits high for sample **CEMENT-RED-C**. No corrective action is required for matrix QC.

The matrix spike percent recovery of zinc was outside the control limits high for sample **CEMENT-RED-C**. The sample concentration exceeded the spike concentration by a factor of four or more. No corrective action was taken.

The duplicate RPD of chromium was outside the control limit high for sample **CEMENT-RED-C**. All relevant data have been flagged with a "*" qualifier on the appropriate Form V. No further corrective action was taken.

An electronic copy of this report and all associated raw data will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Susan Dunnihoo
Director, Client Services
sue@arilabs.com
206-695-6207

Enclosures

cc: eFile SA83_SA90

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

ARI Assigned Number: SA83	Turn-around Requested: 2-DAY
ARI Client Company: Floyd Snider	Phone: 206-292-2078
Client Contact: Erin Breckel	
Client Project Name: Sunny Jim Encampment Site	
Client Project #: COS-Sunny Jim	Samplers: EB/EM
Page: 1 of 4	
Date: 12/14/10	Ice Present? Y
No. of Coolers: 2	Cooler Temps: 2.3, 6.4

Analysis Requested (*)

Sample ID	Date	Time	Matrix	No. Containers	Metals (Pb, As, Cd, Cr, Cu, Zn)	PCBs	pH	SVOCs (PSDDA)	VOCs	TPH-Dx			Notes/Comments
Cement-Red-01	12/14/10	10:20	Solid	1	X	X	X						
Cement-Red-02	↓	10:35	↓	1									Composite into one sample: cement-Red-C for analysis
Cement-Red-03	↓	10:45	↓	1									
Cement-Red-04	↓	11:00	↓	1									
Cement-Red-05	↓	11:10	↓	1									MS/MSD for Metals and PCBs
Cement-Grey-01	↓	11:55	Solid	1	X	X	X						Composite into one sample: cement-Grey-C for analysis
Cement-Grey-02	↓	12:00	↓	1									
Cement-Grey-03	↓	12:05	↓	1									

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
(*) Analyze composites only. 2-Day turn-around composite by weight	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: Erin Murray	Printed Name: A. Volgardsen	Printed Name:	Printed Name:
	Company: Floyd/Snider	Company: ARI	Company:	Company:
	Date & Time: 12/14/10 1645	Date & Time: 12/14/10 1645	Date & Time:	Date & Time:

SA83 : 00003

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

ARI Assigned Number:	Turn-around Requested: 2-DAY
ARI Client Company: Floyd Snider	Phone: 206-292-2078
Client Contact: Erin Breckel	
Client Project Name: Sunny Jim Encampment Site	
Client Project #: COS-Sunny Jim	Samplers: EB/EM

Page: 2	of 4
Date: 12/14/10	Ice Present? Y
No. of Coolers: 2	Cooler Temps: 2.3, 0.4

(*) Analysis Requested (X)

Sample ID	Date	Time	Matrix	No. Containers	Metals (Pb, As, Cd, Cr, Cu, Zn)	TPH-Dx							Notes/Comments
Brick-Red-01	12/14/10	12:20	Solid	1	X	X							Composite into one sample: Brick-Red-C for analysis
Brick-Red-02	12/14/10	12:30	↓	1									
Brick-Red-03	12/14/10	12:35	↓	1									
Concrete-Crumble-01	12/14/10	13:05	Solid	1	X								Composite into one sample; Concrete-Crumble-C for analysis
Concrete-Crumble-02	12/14/10	13:10	↓	1									
Concrete-Crumble-03	12/14/10	13:15	↓	1									
Soils-Scracks-01	12/14/10	13:25	Soil	1	X	X							Composite into ~~one sample~~; Soils-Scracks-C for analysis
Soils-Scracks-02	12/14/10	13:30	↓	1									
Soils-Scracks-03	12/14/10	13:35	↓	1									

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
(*) Analyze Composites only; 2-day turn around; composite by weight	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: Erin Murray	Printed Name: A. Volgardsen	Printed Name:	Printed Name:
	Company: Floyd/Snider	Company: ARI	Company:	Company:
	Date & Time: 12/14/10 1645	Date & Time: 12/14/10 1645	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: 2-DAY
ARI Client Company: Floyd Snider	Phone: 206-292-2078
Client Contact: Erin Brecke	
Client Project Name: Sunny Jim Encampment Site	
Client Project #: COS-Sunny Jim	Samplers: EB / EM

Page: 3 of 4

Date: 12/14/10 | Ice Present? Y

No. of Coolers: 2 | Cooler Temps: 2.3, 0.4

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: Metals (Pb, As, Cd, Cr, Cu, Zn)	TPH-Dx	VOCs	SVOCs (PSSDA)	Notes/Comments
Soils-Noracks-01	12/14/10	13:55	soil	1	X	X			composite into one sample: Soils-Noracks-C for analysis
Soils-Noracks-02	12/14/10	14:00	↓	1					
Soils-Noracks-03	12/14/10	14:10	↓	1					
Soils-Camping-01	12/14/10	14:45	soil	5	X	X	X	X	composite into samples Soils-Camping-C and duplicate Soils-Camping-C-B (for dup only analyze for metals and TPH-Dx)
Soils-Camping-02	12/14/10	14:55	↓	5					
Soils-Camping-03	12/14/10	15:00	↓	5					
Soils-Landscape-01	12/14/10	15:10	soil	1	X	X			composite into one sample: Soils-Landscape-C for analysis
Soils-Landscape-02	12/14/10	15:15	↓	1					
Soils-Landscape-03	12/14/10	15:20	↓	1					

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
(*) Analyze composites only. 2-Day turn-around Composite by weight	Printed Name: Erin Murray	Printed Name: A. Volgardsen	Printed Name:	Printed Name:
	Company: Floyd/Snider	Company: DRI	Company:	Company:
	Date & Time: 12/14/10 1645	Date & Time: 12/14/10 1645	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

ARI Assigned Number:	Turn-around Requested: 2 day
ARI Client Company: Floyd / Snider	Phone: 206-292-2078
Client Contact: Erin Breckel	
Client Project Name: City of Seattle Sunny Jim Encampment Site	
Client Project #: COS Sunny Jim	Samplers: Erin Breckel/Erin Murray

Page: 4 of 4	
Date: 12/14/10	Ice Present? Y
No. of Coolers: 2	Cooler Temps: 2.3, 0.4

(*) Analysis Requested (*)

Sample ID	Date	Time	Matrix	No. Containers	Metals (Pb, As, Cd, Cr, Cu, Zn)	PCBs						Notes/Comments
Cawlk-01	12/14/10	15:20	solid	1	X	X						Composite into one sample Cawlk-C for analysis
Cawlk-02	12/14/10	15:25	↓	1								
Cawlk-03	12/14/10	16:00	↓	1								

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
(*) Analyze composites only. 2 day turn around. Composite by weight	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: Erin Murray	Printed Name: A. Volgardsen	Printed Name:	Printed Name:
	Company: Floyd/Snider	Company: ARI	Company:	Company:
	Date & Time: 12/14/10 1645	Date & Time: 12/14/10 1645	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Floyd Snider
Project Name: Sunny Jim Encampment Site
COC No(s): _____ (NA)
Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
Assigned ARI Job No: SA83
Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): 3.3 0.4 ___ ___ ___
If cooler temperature is out of compliance fill out form 00070F — Temp Gun ID#: 90941619

Cooler Accepted by: AV Date: 12/14/10 Time: 1645

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ... Bubble Wrap (Wet Ice) Gel Packs (Baggies) Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	(NA)	YES	NO
Were all VOC vials free of air bubbles?	NA	(YES)	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	NA	12/9/10	

Was Sample Split by ARI: (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

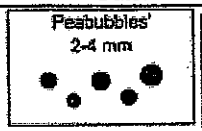
Samples Logged by: AV Date: 12/14/10 Time: 1750

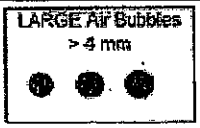
***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:





Small → "sm"
Peabubbles → "pb"
Large → "lg"
Headspace → "hs"

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: SA90	Turn-around Requested: 48 hours	Page: 1 of 1	
ARI Client Company: Floyd | Snider	Phone: 206-292-2078	Date: 12/14/10	Ice Present? N
Client Contact: Erin Breckel		No. of Coolers: 0	Cooler Temps: 18.3
Client Project Name: Sunny Jim Encampment Site			
Client Project #: COS-Sunny Jim	Samplers: EM / CB		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: As based TAL US EPA 6000/7000 Series	Notes/Comments
Cement-Red-01	12/14/10	1020	solid	1	X	
Cement-Red-02		1035		1	X	
Cement-Red-04		1100		1	X	
Cement-Grey-01		1155		1	X	
Cement-Grey-02		1200		1	X	
Cement-Grey-03		1205		1	X	
CaulK-01		1520		1	X	
CaulK-02		1525		1	X	
CaulK-03	12/14/10	1600		1	X	

Comments/Special Instructions	Relinquished by: (Signature)	Printed Name:	Company:	Date & Time:	Received by: (Signature)	Printed Name:	Company:	Date & Time:	Relinquished by: (Signature)	Printed Name:	Company:	Date & Time:	Received by: (Signature)	Printed Name:	Company:	Date & Time:
	Erin Breckel	Erin Breckel	Floyd Snider	12/15/10 10:00 am		A. Volgardsen	ARI	12/15/10 1000								

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Floyd Snider Project Name: Sunny Jim

COC No(s): _____ (NA) Delivered by: Fed-Ex UPS Courier (Hand Delivered) Other: _____

Assigned ARI Job No: SA90 Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)..... 18.3 ___ ___ ___

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90941619

Cooler Accepted by: AV Date: 12/15/10 Time: 1000

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs (Baggies) Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	YES	(NO)
Were all bottles sealed in individual plastic bags?		(YES)	NO
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: AV Date: 12/15/10 Time: 1155

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Small → "sm"
Peabubbles → "pb"
Large → "lg"
Headspace → "hs"

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Temperature Compliance Form

Cooler#: 1	Temperature(°C): 18.3	
Sample ID	**Bottle Count**	**Bottle Type**
All Samples out of temp compliance		

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Completed by: AV Date: 12/15/10 Time: 1155

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: Floyd Snider	**ARI Project No.:** SA83
Client Project: Sunny Jim Encampment Site	**Client Project No.:** COS-Sunny Jim

Case Narrative

1. Four samples were submitted to be prepped for chemical analysis by crushing on December 14, 2010.
2. The jaw crusher and related equipment was vacuumed, washed with Citranox detergent, rinsed with deionized water, then rinsed with isopropyl alcohol and allowed to dry completely before each sample was crushed.
3. All utensils used in handling the samples were decontaminated in the same manner as the jaw crusher and then rinsed with dichloromethane.
4. The samples were received wet, and required air-drying prior to crushing.
5. After the each sample was crushed, the sample was then homogenized and placed into clean glass sample jars.
6. There were no anomalies in the samples or methods on this project.

Approved by: [signature]
Geotechnical Laboratory Manager

Date: 12/16/10

Data Reporting Qualifiers

Effective 7/10/2009

Inorganic Data

U Indicates that the target analyte was not detected at the reported concentration

* Duplicate RPD is not within established control limits

B Reported value is less than the CRDL but ≥ the Reporting Limit

N Matrix Spike recovery not within established control limits

NA Not Applicable, analyte not spiked

H The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U Indicates that the target analyte was not detected at the reported concentration

* Flagged value is not within established control limits

B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J Estimated concentration when the value is less than ARI's established reporting limits

D The spiked compound was not detected due to sample extract dilution

E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

M2 The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

Y Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SOILS-CAMPING-03
SAMPLE

Lab Sample ID: SA83L
LIMS ID: 10-31047
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Instrument/Analyst: FINN5/PAB
Date Analyzed: 12/16/10 18:55

Sample Amount: 4.31 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 13.7%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.2	< 1.2	U
74-83-9	Bromomethane	1.2	< 1.2	U
75-01-4	Vinyl Chloride	1.2	< 1.2	U
75-00-3	Chloroethane	1.2	< 1.2	U
75-09-2	**Methylene Chloride**	**2.3**	**9.5**	
67-64-1	**Acetone**	**5.8**	**34**	**Q**
75-15-0	Carbon Disulfide	1.2	< 1.2	U
75-35-4	1,1-Dichloroethene	1.2	< 1.2	U
75-34-3	1,1-Dichloroethane	1.2	< 1.2	U
156-60-5	trans-1,2-Dichloroethene	1.2	< 1.2	U
156-59-2	cis-1,2-Dichloroethene	1.2	< 1.2	U
67-66-3	Chloroform	1.2	< 1.2	U
107-06-2	1,2-Dichloroethane	1.2	< 1.2	U
78-93-3	2-Butanone	5.8	< 5.8	U
71-55-6	1,1,1-Trichloroethane	1.2	< 1.2	U
56-23-5	Carbon Tetrachloride	1.2	< 1.2	U
108-05-4	Vinyl Acetate	5.8	< 5.8	U
75-27-4	Bromodichloromethane	1.2	< 1.2	U
78-87-5	1,2-Dichloropropane	1.2	< 1.2	U
10061-01-5	cis-1,3-Dichloropropene	1.2	< 1.2	U
79-01-6	Trichloroethene	1.2	< 1.2	U
124-48-1	Dibromochloromethane	1.2	< 1.2	U
79-00-5	1,1,2-Trichloroethane	1.2	< 1.2	U
71-43-2	**Benzene**	**1.2**	**1.8**	
10061-02-6	trans-1,3-Dichloropropene	1.2	< 1.2	U
110-75-8	2-Chloroethylvinylether	5.8	< 5.8	U
75-25-2	Bromoform	1.2	< 1.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.8	< 5.8	U
591-78-6	2-Hexanone	5.8	< 5.8	U
127-18-4	Tetrachloroethene	1.2	< 1.2	U
79-34-5	1,1,2,2-Tetrachloroethane	1.2	< 1.2	U
108-88-3	Toluene	1.2	< 1.2	U
108-90-7	Chlorobenzene	1.2	< 1.2	U
100-41-4	Ethylbenzene	1.2	< 1.2	U
100-42-5	Styrene	1.2	< 1.2	U
75-69-4	Trichlorofluoromethane	1.2	< 1.2	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SOILS-CAMPING-03
SAMPLE

Lab Sample ID: SA83L
LIMS ID: 10-31047
Matrix: Soil
Date Analyzed: 12/16/10 18:55

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim

CAS Number	Analyte	RL	Result	Q
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.3	< 2.3	U
179601-23-1	m,p-Xylene	1.2	< 1.2	U
95-47-6	o-Xylene	1.2	< 1.2	U
95-50-1	1,2-Dichlorobenzene	1.2	< 1.2	U
541-73-1	1,3-Dichlorobenzene	1.2	< 1.2	U
106-46-7	1,4-Dichlorobenzene	1.2	< 1.2	U
107-02-8	Acrolein	58	< 58	U
74-88-4	Methyl Iodide	1.2	< 1.2	U
74-96-4	Bromoethane	2.3	< 2.3	U
107-13-1	Acrylonitrile	5.8	< 5.8	U
563-58-6	1,1-Dichloropropene	1.2	< 1.2	U
74-95-3	Dibromomethane	1.2	< 1.2	U
630-20-6	1,1,1,2-Tetrachloroethane	1.2	< 1.2	U
96-12-8	1,2-Dibromo-3-chloropropane	5.8	< 5.8	U
96-18-4	1,2,3-Trichloropropane	2.3	< 2.3	U
110-57-6	trans-1,4-Dichloro-2-butene	5.8	< 5.8	U
108-67-8	1,3,5-Trimethylbenzene	1.2	< 1.2	U
95-63-6	1,2,4-Trimethylbenzene	1.2	< 1.2	U
87-68-3	Hexachlorobutadiene	5.8	< 5.8	U
106-93-4	Ethylene Dibromide	1.2	< 1.2	U
74-97-5	Bromochloromethane	1.2	< 1.2	U
594-20-7	2,2-Dichloropropane	1.2	< 1.2	U
142-28-9	1,3-Dichloropropane	1.2	< 1.2	U
98-82-8	Isopropylbenzene	1.2	< 1.2	U
103-65-1	n-Propylbenzene	1.2	< 1.2	U
108-86-1	Bromobenzene	1.2	< 1.2	U
95-49-8	2-Chlorotoluene	1.2	< 1.2	U
106-43-4	4-Chlorotoluene	1.2	< 1.2	U
98-06-6	tert-Butylbenzene	1.2	< 1.2	U
135-98-8	sec-Butylbenzene	1.2	< 1.2	U
99-87-6	4-Isopropyltoluene	1.2	< 1.2	U
104-51-8	n-Butylbenzene	1.2	< 1.2	U
120-82-1	1,2,4-Trichlorobenzene	5.8	< 5.8	U
91-20-3	Naphthalene	5.8	< 5.8	U
87-61-6	1,2,3-Trichlorobenzene	5.8	< 5.8	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	126%
d8-Toluene	101%
Bromofluorobenzene	93.1%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: Trip Blanks
SAMPLE

Lab Sample ID: SA83M
LIMS ID: 10-31048
Matrix: Water
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Instrument/Analyst: FINN5/PAB
Date Analyzed: 12/16/10 19:21

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: Trip Blanks
SAMPLE

Lab Sample ID: SA83M
LIMS ID: 10-31048
Matrix: Water
Date Analyzed: 12/16/10 19:21

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim

CAS Number	Analyte	RL	Result	Q
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	10	< 10	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	Ethylene Dibromide	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	119%
d8-Toluene	102%
Bromofluorobenzene	97.7%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
MB-121610	Method Blank	Low	110%	99.3%	98.8%.	102%	0
LCS-121610	Lab Control	Low	102%	104%	104%	101%	0
LCSD-121610	Lab Control Dup	Low	109%	104%	101%	100%	0
SA83L	SOILS-CAMPING-03	Low	126%	101%	93.1%	101%	0

	LCS/MB LIMITS		QC LIMITS	
SW8260C	Low	Med	Low	Med
(DCE) = d4-1,2-Dichloroethane	79-121	76-120	75-152	69-120
(TOL) = d8-Toluene	80-120	80-120	82-115	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	64-120	76-128
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 10-31047 to 10-31047

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
SA83M	Trip Blanks	5	119%	102%	97.7%	102%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	80-122	80-125
(TOL) = d8-Toluene	80-120	80-120
(BFB) = Bromofluorobenzene	80-120	80-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120

Prep Method: SW5030B
Log Number Range: 10-31048 to 10-31048

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-121610
LAB CONTROL SAMPLE

Lab Sample ID: LCS-121610
LIMS ID: 10-31047
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: FINN5/PAB
LCSD: FINN5/PAB
Date Analyzed LCS: 12/16/10 12:29
LCSD: 12/16/10 13:03

Sample Amount LCS: 5.00 g-dry-wt
LCSD: 5.00 g-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS		Spike Added-LCS	LCS Recovery	LCSD		Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	37.8		50.0	75.6%	40.3		50.0	80.6%	6.4%
Bromomethane	51.3	Q	50.0	103%	54.8	Q	50.0	110%	6.6%
Vinyl Chloride	56.4	Q	50.0	113%	58.8	Q	50.0	118%	4.2%
Chloroethane	52.2	Q	50.0	104%	57.4	Q	50.0	115%	9.5%
Methylene Chloride	42.6		50.0	85.2%	44.6		50.0	89.2%	4.6%
Acetone	344	Q	250	138%	332	Q	250	133%	3.6%
Carbon Disulfide	45.5		50.0	91.0%	45.2		50.0	90.4%	0.7%
1,1-Dichloroethene	45.6		50.0	91.2%	47.6		50.0	95.2%	4.3%
1,1-Dichloroethane	43.6		50.0	87.2%	46.1		50.0	92.2%	5.6%
trans-1,2-Dichloroethene	42.0		50.0	84.0%	45.7		50.0	91.4%	8.4%
cis-1,2-Dichloroethene	43.8		50.0	87.6%	46.3		50.0	92.6%	5.5%
Chloroform	43.8		50.0	87.6%	45.7		50.0	91.4%	4.2%
1,2-Dichloroethane	45.9		50.0	91.8%	46.2		50.0	92.4%	0.7%
2-Butanone	236		250	94.4%	240		250	96.0%	1.7%
1,1,1-Trichloroethane	38.7		50.0	77.4%	41.7		50.0	83.4%	7.5%
Carbon Tetrachloride	41.0		50.0	82.0%	43.3		50.0	86.6%	5.5%
Vinyl Acetate	42.6		50.0	85.2%	43.9		50.0	87.8%	3.0%
Bromodichloromethane	43.7		50.0	87.4%	45.4		50.0	90.8%	3.8%
1,2-Dichloropropane	44.5		50.0	89.0%	45.3		50.0	90.6%	1.8%
cis-1,3-Dichloropropene	42.7		50.0	85.4%	44.0		50.0	88.0%	3.0%
Trichloroethene	42.2		50.0	84.4%	43.9		50.0	87.8%	3.9%
Dibromochloromethane	44.2		50.0	88.4%	44.0		50.0	88.0%	0.5%
1,1,2-Trichloroethane	45.4		50.0	90.8%	45.6		50.0	91.2%	0.4%
Benzene	43.6		50.0	87.2%	45.3		50.0	90.6%	3.8%
trans-1,3-Dichloropropene	42.5		50.0	85.0%	43.8		50.0	87.6%	3.0%
2-Chloroethylvinylether	12.8	Q	50.0	25.6%	11.8	Q	50.0	23.6%	8.1%
Bromoform	42.4		50.0	84.8%	43.1		50.0	86.2%	1.6%
4-Methyl-2-Pentanone (MIBK)	213		250	85.2%	220		250	88.0%	3.2%
2-Hexanone	236		250	94.4%	230		250	92.0%	2.6%
Tetrachloroethene	40.6		50.0	81.2%	42.1		50.0	84.2%	3.6%
1,1,2,2-Tetrachloroethane	42.8		50.0	85.6%	43.7		50.0	87.4%	2.1%
Toluene	41.6		50.0	83.2%	43.0		50.0	86.0%	3.3%
Chlorobenzene	42.8		50.0	85.6%	43.0		50.0	86.0%	0.5%
Ethylbenzene	47.0		50.0	94.0%	47.8		50.0	95.6%	1.7%
Styrene	47.0		50.0	94.0%	46.5		50.0	93.0%	1.1%
Trichlorofluoromethane	60.2	Q	50.0	120%	52.2	Q	50.0	104%	14.2%
1,1,2-Trichloro-1,2,2-trifluoroetha	46.3		50.0	92.6%	49.8		50.0	99.6%	7.3%
m,p-Xylene	94.1		100	94.1%	95.2		100	95.2%	1.2%
o-Xylene	44.9		50.0	89.8%	44.4		50.0	88.8%	1.1%
1,2-Dichlorobenzene	44.8		50.0	89.6%	44.4		50.0	88.8%	0.9%
1,3-Dichlorobenzene	45.4		50.0	90.8%	45.3		50.0	90.6%	0.2%
1,4-Dichlorobenzene	45.8		50.0	91.6%	45.4		50.0	90.8%	0.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-121610
LAB CONTROL SAMPLE

Lab Sample ID: LCS-121610
LIMS ID: 10-31047
Matrix: Soil

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Acrolein	324 Q	250	130%	334 Q	250	134%	3.0%
Methyl Iodide	43.6	50.0	87.2%	43.8	50.0	87.6%	0.5%
Bromoethane	49.4	50.0	98.8%	50.5	50.0	101%	2.2%
Acrylonitrile	48.6	50.0	97.2%	49.8	50.0	99.6%	2.4%
1,1-Dichloropropene	41.5	50.0	83.0%	43.7	50.0	87.4%	5.2%
Dibromomethane	45.4	50.0	90.8%	45.8	50.0	91.6%	0.9%
1,1,1,2-Tetrachloroethane	40.8	50.0	81.6%	41.0	50.0	82.0%	0.5%
1,2-Dibromo-3-chloropropane	41.4	50.0	82.8%	41.9	50.0	83.8%	1.2%
1,2,3-Trichloropropane	39.9	50.0	79.8%	40.7	50.0	81.4%	2.0%
trans-1,4-Dichloro-2-butene	50.5	50.0	101%	51.0	50.0	102%	1.0%
1,3,5-Trimethylbenzene	44.4	50.0	88.8%	46.9	50.0	93.8%	5.5%
1,2,4-Trimethylbenzene	46.0	50.0	92.0%	47.7	50.0	95.4%	3.6%
Hexachlorobutadiene	42.1	50.0	84.2%	42.5	50.0	85.0%	0.9%
Ethylene Dibromide	43.2	50.0	86.4%	44.3	50.0	88.6%	2.5%
Bromochloromethane	46.3	50.0	92.6%	47.0	50.0	94.0%	1.5%
2,2-Dichloropropane	36.9	50.0	73.8%	39.6	50.0	79.2%	7.1%
1,3-Dichloropropane	43.8	50.0	87.6%	44.5	50.0	89.0%	1.6%
Isopropylbenzene	43.8	50.0	87.6%	45.8	50.0	91.6%	4.5%
n-Propylbenzene	49.0	50.0	98.0%	50.6	50.0	101%	3.2%
Bromobenzene	42.4	50.0	84.8%	43.1	50.0	86.2%	1.6%
2-Chlorotoluene	45.1	50.0	90.2%	46.1	50.0	92.2%	2.2%
4-Chlorotoluene	44.5	50.0	89.0%	45.6	50.0	91.2%	2.4%
tert-Butylbenzene	43.4	50.0	86.8%	45.0	50.0	90.0%	3.6%
sec-Butylbenzene	47.4	50.0	94.8%	48.8	50.0	97.6%	2.9%
4-Isopropyltoluene	46.4	50.0	92.8%	47.6	50.0	95.2%	2.6%
n-Butylbenzene	50.8	50.0	102%	51.9	50.0	104%	2.1%
1,2,4-Trichlorobenzene	44.9	50.0	89.8%	43.4	50.0	86.8%	3.4%
Naphthalene	43.7	50.0	87.4%	42.8	50.0	85.6%	2.1%
1,2,3-Trichlorobenzene	44.4	50.0	88.8%	42.4	50.0	84.8%	4.6%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	102%	109%
d8-Toluene	104%	104%
Bromofluorobenzene	104%	101%
d4-1,2-Dichlorobenzene	101%	100%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-121610**
 METHOD BLANK

Lab Sample ID: MB-121610
LIMS ID: 10-31047
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: NA
Date Received: NA

Instrument/Analyst: FINN5/PAB
Date Analyzed: 12/16/10 14:46

Sample Amount: 5.00 g-dry-wt
Purge Volume: 5.0 mL
Moisture: NA

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-121610
METHOD BLANK

Lab Sample ID: MB-121610
LIMS ID: 10-31047
Matrix: Soil
Date Analyzed: 12/16/10 14:46

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim

CAS Number	Analyte	RL	Result	Q
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	50	< 50	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	Ethylene Dibromide	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	99.3%
Bromofluorobenzene	98.8%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: SOILS-CAMPING-C SAMPLE

Lab Sample ID: SA83G
LIMS ID: 10-31042
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Date Extracted: 12/16/10
Date Analyzed: 12/17/10 15:01
Instrument/Analyst: NT6/JZ
GPC Cleanup: No

Sample Amount: 7.92 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 12.7%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	63	< 63 U
111-44-4	Bis-(2-Chloroethyl) Ether	63	< 63 U
95-57-8	2-Chlorophenol	63	< 63 U
541-73-1	1,3-Dichlorobenzene	63	< 63 U
106-46-7	1,4-Dichlorobenzene	63	< 63 U
100-51-6	Benzyl Alcohol	320	< 320 U
95-50-1	1,2-Dichlorobenzene	63	< 63 U
95-48-7	2-Methylphenol	63	< 63 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	63	< 63 U
106-44-5	4-Methylphenol	63	< 63 U
621-64-7	N-Nitroso-Di-N-Propylamine	63	< 63 U
67-72-1	Hexachloroethane	63	< 63 U
98-95-3	Nitrobenzene	63	< 63 U
78-59-1	Isophorone	63	< 63 U
88-75-5	2-Nitrophenol	63	< 63 U
105-67-9	2,4-Dimethylphenol	63	< 63 U
65-85-0	Benzoic Acid	630	< 630 U
111-91-1	bis(2-Chloroethoxy) Methane	63	< 63 U
120-83-2	2,4-Dichlorophenol	320	< 320 U
120-82-1	1,2,4-Trichlorobenzene	63	< 63 U
91-20-3	**Naphthalene**	**63**	**75**
106-47-8	4-Chloroaniline	320	< 320 U
87-68-3	Hexachlorobutadiene	63	< 63 U
59-50-7	4-Chloro-3-methylphenol	320	< 320 U
91-57-6	2-Methylnaphthalene	63	< 63 U
77-47-4	Hexachlorocyclopentadiene	320	< 320 U
88-06-2	2,4,6-Trichlorophenol	320	< 320 U
95-95-4	2,4,5-Trichlorophenol	320	< 320 U
91-58-7	2-Chloronaphthalene	63	< 63 U
88-74-4	2-Nitroaniline	320	< 320 U
131-11-3	Dimethylphthalate	63	< 63 U
208-96-8	Acenaphthylene	63	< 63 U
99-09-2	3-Nitroaniline	320	< 320 U
83-32-9	Acenaphthene	63	< 63 U
51-28-5	2,4-Dinitrophenol	630	< 630 U
100-02-7	4-Nitrophenol	320	< 320 U
132-64-9	Dibenzofuran	63	< 63 U
606-20-2	2,6-Dinitrotoluene	320	< 320 U
121-14-2	2,4-Dinitrotoluene	320	< 320 U
84-66-2	Diethylphthalate	63	< 63 U
7005-72-3	4-Chlorophenyl-phenylether	63	< 63 U
86-73-7	Fluorene	63	< 63 U
100-01-6	4-Nitroaniline	320	< 320 U
534-52-1	4,6-Dinitro-2-Methylphenol	630	< 630 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: SOILS-CAMPING-C SAMPLE

Lab Sample ID: SA83G
LIMS ID: 10-31042
Matrix: Soil
Date Analyzed: 12/17/10 15:01

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	63	< 63 U
101-55-3	4-Bromophenyl-phenylether	63	< 63 U
118-74-1	Hexachlorobenzene	63	< 63 U
87-86-5	Pentachlorophenol	320	< 320 U
85-01-8	**Phenanthrene**	**63**	**130**
86-74-8	Carbazole	63	< 63 U
120-12-7	Anthracene	63	< 63 U
84-74-2	Di-n-Butylphthalate	63	< 63 U
206-44-0	**Fluoranthene**	**63**	**150**
129-00-0	**Pyrene**	**63**	**130**
85-68-7	Butylbenzylphthalate	63	< 63 U
91-94-1	3,3'-Dichlorobenzidine	320	< 320 U
56-55-3	**Benzo(a)anthracene**	**63**	**61 J**
117-81-7	**bis(2-Ethylhexyl)phthalate**	**63**	**110**
218-01-9	**Chrysene**	**63**	**83**
117-84-0	Di-n-Octyl phthalate	63	< 63 U
50-32-8	**Benzo(a)pyrene**	**63**	**55 J**
193-39-5	Indeno(1,2,3-cd)pyrene	63	< 63 U
53-70-3	Dibenz(a,h)anthracene	63	< 63 U
191-24-2	**Benzo(g,h,i)perylene**	**63**	**39 J**
92-87-5	Benzidine	630	< 630 U
110-86-1	Pyridine	320	< 320 U
90-12-0	1-Methylnaphthalene	63	< 63 U
TOTBFA	**Total Benzofluoranthenes**	**63**	**88**

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	84.0%	2-Fluorobiphenyl	83.2%
d14-p-Terphenyl	75.6%	d4-1,2-Dichlorobenzene	75.2%
d5-Phenol	98.4%	2-Fluorophenol	75.5%
2,4,6-Tribromophenol	33.1%	d4-2-Chlorophenol	84.3%

ANALYTICAL RESOURCES INCORPORATED

SW8270 SEMIVOLATILES SOIL/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim

Client ID	NBZ	FBP	TPH	DCB	PHL	2FP	TBP	2CP	TOT OUT
MB-121610	82.4%	84.0%	97.6%	79.2%	91.2%	86.9%	113%	88.5%	0
LCS-121610	88.4%	91.2%	98.4%	80.0%	104%	90.7%	117%	94.7%	0
SOILS-CAMPING-C	84.0%	83.2%	75.6%	75.2%	98.4%	75.5%	33.1%	84.3%	0

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(46-102)	(32-106)
(FBP) = 2-Fluorobiphenyl	(51-105)	(39-107)
(TPH) = d14-p-Terphenyl	(55-124)	(31-130)
(DCB) = d4-1,2-Dichlorobenzene	(48-104)	(38-102)
(PHL) = d5-Phenol	(44-110)	(27-112)
(2FP) = 2-Fluorophenol	(38-112)	(22-108)
(TBP) = 2,4,6-Tribromophenol	(54-120)	(31-131)
(2CP) = d4-2-Chlorophenol	(50-103)	(36-104)

Prep Method: SW3546
Log Number Range: 10-31042 to 10-31042

FORM-II SW8270

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: LCS-121610
LAB CONTROL

Lab Sample ID: LCS-121610
LIMS ID: 10-31042
Matrix: Soil
Data Release Authorized:
Reported: 01/06/11

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Date Extracted: 12/16/10
Date Analyzed: 12/16/10 14:05
Instrument/Analyst: NT6/JZ
GPC Cleanup: No

Sample Amount: 7.50 g
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: NA

Analyte	Lab Control		Spike Added	Recovery
Phenol	1470		1670	88.0%
Bis-(2-Chloroethyl) Ether	1270		1670	76.0%
2-Chlorophenol	1230		1670	73.7%
1,3-Dichlorobenzene	1080		1670	64.7%
1,4-Dichlorobenzene	1080		1670	64.7%
Benzyl Alcohol	2970		3330	89.2%
1,2-Dichlorobenzene	1100		1670	65.9%
2-Methylphenol	1350		1670	80.8%
2,2'-Oxybis(1-Chloropropane)	1280		1670	76.6%
4-Methylphenol	2870		3330	86.2%
N-Nitroso-Di-N-Propylamine	1320		1670	79.0%
Hexachloroethane	1100		1670	65.9%
Nitrobenzene	1290		1670	77.2%
Isophorone	1380		1670	82.6%
2-Nitrophenol	1280		1670	76.6%
2,4-Dimethylphenol	1330		1670	79.6%
Benzoic Acid	4350		5000	87.0%
bis(2-Chloroethoxy) Methane	1290		1670	77.2%
2,4-Dichlorophenol	1330		1670	79.6%
1,2,4-Trichlorobenzene	1150		1670	68.9%
Naphthalene	1200		1670	71.9%
4-Chloroaniline	5130		4000	128%
Hexachlorobutadiene	1160		1670	69.5%
4-Chloro-3-methylphenol	1300		1670	77.8%
2-Methylnaphthalene	1360		1670	81.4%
Hexachlorocyclopentadiene	3670		5000	73.4%
2,4,6-Trichlorophenol	1380		1670	82.6%
2,4,5-Trichlorophenol	1410		1670	84.4%
2-Chloronaphthalene	1320		1670	79.0%
2-Nitroaniline	1880	Q	1670	113%
Dimethylphthalate	1380		1670	82.6%
Acenaphthylene	1380		1670	82.6%
3-Nitroaniline	6360	Q	4270	149%
Acenaphthene	1340		1670	80.2%
2,4-Dinitrophenol	7010	Q	5000	140%
4-Nitrophenol	2240	Q	1670	134%
Dibenzofuran	1530		1670	91.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: LCS-121610
LAB CONTROL

Lab Sample ID: LCS-121610
LIMS ID: 10-31042
Matrix: Soil
Date Analyzed: 12/16/10 14:05

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim

Analyte	Lab Control	Spike Added	Recovery
2,6-Dinitrotoluene	1480	1670	88.6%
2,4-Dinitrotoluene	1590	1670	95.2%
Diethylphthalate	1380	1670	82.6%
4-Chlorophenyl-phenylether	1350	1670	80.8%
Fluorene	1410	1670	84.4%
4-Nitroaniline	2170 Q	1670	130%
4,6-Dinitro-2-Methylphenol	5980	5000	120%
N-Nitrosodiphenylamine	1380	1670	82.6%
4-Bromophenyl-phenylether	1410	1670	84.4%
Hexachlorobenzene	1460	1670	87.4%
Pentachlorophenol	1510	1670	90.4%
Phenanthrene	1480	1670	88.6%
Carbazole	1440	1670	86.2%
Anthracene	1420	1670	85.0%
Di-n-Butylphthalate	1420	1670	85.0%
Fluoranthene	1550	1670	92.8%
Pyrene	1420	1670	85.0%
Butylbenzylphthalate	1290	1670	77.2%
3,3'-Dichlorobenzidine	5500	4270	129%
Benzo(a)anthracene	1470	1670	88.0%
bis(2-Ethylhexyl)phthalate	1440	1670	86.2%
Chrysene	1400	1670	83.8%
Di-n-Octyl phthalate	1400	1670	83.8%
Benzo(a)pyrene	1310	1670	78.4%
Indeno(1,2,3-cd)pyrene	1500	1670	89.8%
Dibenz(a,h)anthracene	1510	1670	90.4%
Benzo(g,h,i)perylene	1490	1670	89.2%
Benzidine	1680	3330	50.5%
Pyridine	1100	1670	65.9%
1-Methylnaphthalene	1280	1670	76.6%
Total Benzofluoranthenes	2930	3330	88.0%

Semivolatile Surrogate Recovery	
d5-Nitrobenzene	88.4%
2-Fluorobiphenyl	91.2%
d14-p-Terphenyl	98.4%
d4-1,2-Dichlorobenzene	80.0%
d5-Phenol	104%
2-Fluorophenol	90.7%
2,4,6-Tribromophenol	117%
d4-2-Chlorophenol	94.7%

Reported in µg/kg (ppb)

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: MB-121610
METHOD BLANK

Lab Sample ID: MB-121610
LIMS ID: 10-31042
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: NA
Date Received: NA

Date Extracted: 12/16/10
Date Analyzed: 12/16/10 13:32
Instrument/Analyst: NT6/JZ
GPC Cleanup: No

Sample Amount: 7.50 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
108-95-2	Phenol	67	< 67 U
111-44-4	Bis-(2-Chloroethyl) Ether	67	< 67 U
95-57-8	2-Chlorophenol	67	< 67 U
541-73-1	1,3-Dichlorobenzene	67	< 67 U
106-46-7	1,4-Dichlorobenzene	67	< 67 U
100-51-6	Benzyl Alcohol	330	< 330 U
95-50-1	1,2-Dichlorobenzene	67	< 67 U
95-48-7	2-Methylphenol	67	< 67 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	67	< 67 U
106-44-5	4-Methylphenol	67	< 67 U
621-64-7	N-Nitroso-Di-N-Propylamine	67	< 67 U
67-72-1	Hexachloroethane	67	< 67 U
98-95-3	Nitrobenzene	67	< 67 U
78-59-1	Isophorone	67	< 67 U
88-75-5	2-Nitrophenol	67	< 67 U
105-67-9	2,4-Dimethylphenol	67	< 67 U
65-85-0	Benzoic Acid	670	< 670 U
111-91-1	bis(2-Chloroethoxy) Methane	67	< 67 U
120-83-2	2,4-Dichlorophenol	330	< 330 U
120-82-1	1,2,4-Trichlorobenzene	67	< 67 U
91-20-3	Naphthalene	67	< 67 U
106-47-8	4-Chloroaniline	330	< 330 U
87-68-3	Hexachlorobutadiene	67	< 67 U
59-50-7	4-Chloro-3-methylphenol	330	< 330 U
91-57-6	2-Methylnaphthalene	67	< 67 U
77-47-4	Hexachlorocyclopentadiene	330	< 330 U
88-06-2	2,4,6-Trichlorophenol	330	< 330 U
95-95-4	2,4,5-Trichlorophenol	330	< 330 U
91-58-7	2-Chloronaphthalene	67	< 67 U
88-74-4	2-Nitroaniline	330	< 330 U
131-11-3	Dimethylphthalate	67	< 67 U
208-96-8	Acenaphthylene	67	< 67 U
99-09-2	3-Nitroaniline	330	< 330 U
83-32-9	Acenaphthene	67	< 67 U
51-28-5	2,4-Dinitrophenol	670	< 670 U
100-02-7	4-Nitrophenol	330	< 330 U
132-64-9	Dibenzofuran	67	< 67 U
606-20-2	2,6-Dinitrotoluene	330	< 330 U
121-14-2	2,4-Dinitrotoluene	330	< 330 U
84-66-2	Diethylphthalate	67	< 67 U
7005-72-3	4-Chlorophenyl-phenylether	67	< 67 U
86-73-7	Fluorene	67	< 67 U
100-01-6	4-Nitroaniline	330	< 330 U
534-52-1	4,6-Dinitro-2-Methylphenol	670	< 670 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: MB-121610
METHOD BLANK

Lab Sample ID: MB-121610
LIMS ID: 10-31042
Matrix: Soil
Date Analyzed: 12/16/10 13:32

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	67	< 67 U
101-55-3	4-Bromophenyl-phenylether	67	< 67 U
118-74-1	Hexachlorobenzene	67	< 67 U
87-86-5	Pentachlorophenol	330	< 330 U
85-01-8	Phenanthrene	67	< 67 U
86-74-8	Carbazole	67	< 67 U
120-12-7	Anthracene	67	< 67 U
84-74-2	Di-n-Butylphthalate	67	< 67 U
206-44-0	Fluoranthene	67	< 67 U
129-00-0	Pyrene	67	< 67 U
85-68-7	Butylbenzylphthalate	67	< 67 U
91-94-1	3,3'-Dichlorobenzidine	330	< 330 U
56-55-3	Benzo(a)anthracene	67	< 67 U
117-81-7	bis(2-Ethylhexyl)phthalate	67	< 67 U
218-01-9	Chrysene	67	< 67 U
117-84-0	Di-n-Octyl phthalate	67	< 67 U
50-32-8	Benzo(a)pyrene	67	< 67 U
193-39-5	Indeno(1,2,3-cd)pyrene	67	< 67 U
53-70-3	Dibenz(a,h)anthracene	67	< 67 U
191-24-2	Benzo(g,h,i)perylene	67	< 67 U
92-87-5	Benzidine	670	< 670 U
110-86-1	Pyridine	330	< 330 U
90-12-0	1-Methylnaphthalene	67	< 67 U
TOTBFA	Total Benzofluoranthenes	67	< 67 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	82.4%	2-Fluorobiphenyl	84.0%
d14-p-Terphenyl	97.6%	d4-1,2-Dichlorobenzene	79.2%
d5-Phenol	91.2%	2-Fluorophenol	86.9%
2,4,6-Tribromophenol	113%	d4-2-Chlorophenol	88.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: CEMENT-RED-C SAMPLE

Lab Sample ID: SA83A
LIMS ID: 10-31036
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Date Extracted: 12/16/10
Date Analyzed: 12/17/10 09:49
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.9 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 5.00
Silica Gel: Yes

Percent Moisture: 0.9%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	31	< 31 U
53469-21-9	Aroclor 1242	31	< 31 U
12672-29-6	**Aroclor 1248**	**31**	**74**
11097-69-1	**Aroclor 1254**	**31**	**100**
11096-82-5	Aroclor 1260	31	< 31 U
11104-28-2	Aroclor 1221	31	< 31 U
11141-16-5	Aroclor 1232	31	< 31 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	95.6%
Tetrachlorometaxylene	84.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082

Sample ID: CEMENT-GREY-C SAMPLE

Lab Sample ID: SA83B
LIMS ID: 10-31037
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Date Extracted: 12/16/10
Date Analyzed: 12/17/10 11:00
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.2 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 5.00
Silica Gel: Yes

Percent Moisture: 13.6%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	**Aroclor 1248**	**33**	**380**
11097-69-1	**Aroclor 1254**	**33**	**620**
11096-82-5	**Aroclor 1260**	**33**	**140**
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	104%
Tetrachlorometaxylene	87.2%

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB SOIL/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim

Client ID	DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
MB-121610	96.2%	51-112	77.8%	46-111	0
LCS-121610	110%	51-112	83.5%	46-111	0
CEMENT-RED-C	95.6%	42-127	84.8%	50-114	0
CEMENT-RED-C MS	92.5%	42-127	81.5%	50-114	0
CEMENT-RED-C MSD	93.8%	42-127	81.0%	50-114	0
CEMENT-GREY-C	104%	42-127	87.2%	50-114	0

Microwave (MARS) Control Limits
Prep Method: SW3546
Log Number Range: 10-31036 to 10-31037

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082

Sample ID: CEMENT-RED-C
MS/MSD

Lab Sample ID: SA83A
LIMS ID: 10-31036
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Date Extracted MS/MSD: 12/16/10

Sample Amount MS: 12.9 g-dry-wt
MSD: 12.9 g-dry-wt

Date Analyzed MS: 12/17/10 10:12
MSD: 12/17/10 10:36

Final Extract Volume MS: 4.0 mL
MSD: 4.0 mL

Instrument/Analyst MS: ECD7/JGR
MSD: ECD7/JGR

Dilution Factor MS: 5.00
MSD: 5.00

GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Silica Gel: Yes

Percent Moisture: 0.9%

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Aroclor 1016	< 31.0 U	178	155	115%	187	155	121%	4.9%
Aroclor 1260	< 31.0 U	134	155	86.5%	139	155	89.7%	3.7%

Results reported in µg/kg (ppb)
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: CEMENT-RED-C
MATRIX SPIKE

Lab Sample ID: SA83A
LIMS ID: 10-31036
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Date Extracted: 12/16/10
Date Analyzed: 12/17/10 10:12
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.9 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 5.00
Silica Gel: Yes

Percent Moisture: 0.9%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	31	---
53469-21-9	Aroclor 1242	31	< 31 U
12672-29-6	Aroclor 1248	31	< 31 U
11097-69-1	**Aroclor 1254**	**31**	**150**
11096-82-5	Aroclor 1260	31	---
11104-28-2	Aroclor 1221	31	< 31 U
11141-16-5	Aroclor 1232	31	< 31 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	92.5%
Tetrachlorometaxylene	81.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: CEMENT-RED-C
MATRIX SPIKE DUP

Lab Sample ID: SA83A
LIMS ID: 10-31036
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Date Extracted: 12/16/10
Date Analyzed: 12/17/10 10:36
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.9 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 5.00
Silica Gel: Yes

Percent Moisture: 0.9%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	31	---
53469-21-9	Aroclor 1242	31	< 31 U
12672-29-6	Aroclor 1248	31	< 31 U
11097-69-1	**Aroclor 1254**	**31**	**160**
11096-82-5	Aroclor 1260	31	---
11104-28-2	Aroclor 1221	31	< 31 U
11141-16-5	Aroclor 1232	31	< 31 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	93.8%
Tetrachlorometaxylene	81.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082

Sample ID: LCS-121610
LAB CONTROL

Lab Sample ID: LCS-121610
LIMS ID: 10-31036
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: NA
Date Received: NA

Date Extracted: 12/16/10
Date Analyzed: 12/17/10 09:25
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.0 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 5.00
Silica Gel: Yes

Percent Moisture: NA

Analyte	Lab Control	Spike Added	Recovery
Aroclor 1016	160	167	95.8%
Aroclor 1260	161	167	96.4%

PCB Surrogate Recovery

Decachlorobiphenyl	110%
Tetrachlorometaxylene	83.5%

Results reported in µg/kg (ppb)

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: MB-121610
METHOD BLANK

Lab Sample ID: MB-121610
LIMS ID: 10-31036
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: NA
Date Received: NA

Date Extracted: 12/16/10
Date Analyzed: 12/17/10 09:02
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.0 g
Final Extract Volume: 4.0 mL
Dilution Factor: 5.00
Silica Gel: Yes

Percent Moisture: NA

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	96.2%
Tetrachlorometaxylene	77.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: CAULK-C
SAMPLE

Lab Sample ID: SA83I
LIMS ID: 10-31044
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Date Extracted: 12/15/10
Date Analyzed: 12/16/10 16:57
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 5.07 g-as-rec
Final Extract Volume: 40 mL
Dilution Factor: 5.00
Silica Gel: Yes

Percent Moisture: NA

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	790	< 790 U
53469-21-9	Aroclor 1242	790	< 790 U
12672-29-6	Aroclor 1248	1,400	< 1,400 Y
11097-69-1	**Aroclor 1254**	**790**	**1,600**
11096-82-5	Aroclor 1260	1,200	< 1,200 Y
11104-28-2	Aroclor 1221	790	< 790 U
11141-16-5	Aroclor 1232	790	< 790 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	NR
Tetrachlorometaxylene	92.9%

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB SOIL/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim

Client ID	DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
MB-121510	114%	51-127	95.1%	49-110	0
LCS-121510	102%	51-127	81.4%	49-110	0
CAULK-C	NR	22-168	92.9%	28-106	0

Medium Level Control Limits
Prep Method: SW3580A
Log Number Range: 10-31044 to 10-31044

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: LCS-121510
LAB CONTROL

Lab Sample ID: LCS-121510
LIMS ID: 10-31044
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: NA
Date Received: NA

Date Extracted: 12/15/10
Date Analyzed: 12/16/10 16:33
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 5.00 g-as-rec
Final Extract Volume: 40 mL
Dilution Factor: 5.00
Silica Gel: Yes

Percent Moisture: NA

Analyte	Lab Control	Spike Added	Recovery
Aroclor 1016	3620	4000	90.5%
Aroclor 1260	3730	4000	93.2%

PCB Surrogate Recovery

Decachlorobiphenyl	102%
Tetrachlorometaxylene	81.4%

Results reported in µg/kg (ppb)

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: MB-121510
METHOD BLANK

Lab Sample ID: MB-121510
LIMS ID: 10-31044
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: NA
Date Received: NA

Date Extracted: 12/15/10
Date Analyzed: 12/16/10 16:10
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 5.00 g
Final Extract Volume: 40 mL
Dilution Factor: 5.00
Silica Gel: Yes

Percent Moisture: NA

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	800	< 800 U
53469-21-9	Aroclor 1242	800	< 800 U
12672-29-6	Aroclor 1248	800	< 800 U
11097-69-1	Aroclor 1254	800	< 800 U
11096-82-5	Aroclor 1260	800	< 800 U
11104-28-2	Aroclor 1221	800	< 800 U
11141-16-5	Aroclor 1232	800	< 800 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	114%
Tetrachlorometaxylene	95.1%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Page 1 of 1
Matrix: Soil

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Received: 12/14/10

Data Release Authorized:
Reported: 12/17/10

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-121510	Method Blank	12/15/10	12/16/10	1.00	Diesel	5.0	< 5.0 U
10-31038	HC ID: ---		FID4A	1.0	Motor Oil	10	< 10 U
					o-Terphenyl		87.7%
SA83C	BRICK-RED-C	12/15/10	12/16/10	3.00	**Diesel**	**16**	**120**
10-31038	HC ID: **DRO/MOTOR OIL**		FID4A	1.0	**Motor Oil**	**33**	**620**
					o-Terphenyl		68.5%
SA83E	SOILS-SCRACKS-C	12/15/10	12/16/10	3.00	**Diesel**	**18**	**35**
10-31040	HC ID: **DRO/MOTOR OIL**		FID4A	1.0	**Motor Oil**	**37**	**230**
					o-Terphenyl		74.2%
SA83F	SOILS-NCRACKS-C	12/15/10	12/16/10	3.00	**Diesel**	**200**	**780**
10-31041	HC ID: **DRO/MOTOR OIL**		FID4A	10	**Motor Oil**	**410**	**3,500**
					o-Terphenyl		74.0%
SA83G	SOILS-CAMPING-C	12/15/10	12/16/10	1.00	**Diesel**	**5.6**	**16**
10-31042	HC ID: **DRO/MOTOR OIL**		FID4A	1.0	**Motor Oil**	**11**	**90**
					o-Terphenyl		68.4%
SA83H	SOILS-LANDSCAPE-C	12/15/10	12/16/10	3.00	**Diesel**	**220**	**400**
10-31043	HC ID: **DRO/MOTOR OIL**		FID4A	10	**Motor Oil**	**430**	**1,500**
					o-Terphenyl		68.0%
SA83N	SOILS-CAMPING-C-B	12/15/10	12/16/10	1.00	**Diesel**	**5.6**	**12**
10-31098	HC ID: **DRO/MOTOR OIL**		FID4A	1.0	**Motor Oil**	**11**	**65**
					o-Terphenyl		74.8%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20101216.b/1216a014.d
Method: /chem3/fid4a.i/20101216.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MS
Report Date: 12/17/2010
Macro: 23-OCT-2010
Calibration Dates: Gas:13-JUL-2010 Diesel:23-OCT-2010 M.Oil:23-OCT-2010

ARI ID: SA83MBS1
Client ID:
Injection: 16-DEC-2010 17:27
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.122	0.006	26152	38675	GAS (Tol-C12)	435147	30
C8	1.329	0.027	6633	16568	DIESEL (C12-C24)	119357	6
C10	2.939	-0.007	2042	4315	M.OIL (C24-C38)	25614	2
C12	3.999	-0.004	1769	1261	AK-102 (C10-C25)	241664	10
C14	4.757	-0.012	1069	3445	AK-103 (C25-C36)	23731	3
C16	5.415	-0.012	785	2325			
C18	6.058	0.036	827	748	CRUDE (Tol-C40)	583755	77
C20	6.593	-0.001	194	235			
C22	7.165	0.022	93	100			
C24	7.672	0.009	91	75			
C25	7.899	-0.017	96	104			
C26	8.152	0.000	125	81			
C28	8.614	0.003	1108	979			
C32	9.553	0.012	174	234			
C34	10.023	0.002	33	23	BUNKERC (C10-C38)	266670	34
Filter Peak	12.831	-0.002	896	458			
C36	10.504	0.002	44	44			
C38	10.983	0.008	61	39			
C40	11.449	-0.001	173	192			
o-terph	6.140	-0.008	857554	758845	JET-A (C10-C18)	219661	24
Triacon Surr	9.073	-0.014	603631	694109			

12/17/10

M Indicates manual integration within range.
Range Times: NW Diesel(4.003 - 7.663) AK102(2.95 - 7.92) Jet A(2.95 - 6.02)
NW M.Oil(7.66 - 10.97) AK103(7.92 - 10.50) OR Diesel(2.95 - 8.61)

Surrogate	Area	Amount	%Rec
o-Terphenyl	758845	39.5	87.7
Triacontane	694109	40.4	89.7

Analyte	RF	Curve Date
o-Terph Surr	19233.0	23-OCT-2010
Triacon Surr	17195.5	23-OCT-2010
Gas	14435.4	13-JUL-2010
Diesel	21400.0	23-OCT-2010
Motor Oil	11126.0	23-OCT-2010
AK102	24234.0	24-JUL-2010
AK103	6902.1	10-DEC-2009
JetA	9098.1	11-JAN-2010
CRUDE	7552.8	22-MAY-2010
Bunker C	7897.4	23-JUL-2010

Data File: /chem3/fid4a.i/20101216.b/1216a014.d

Date : 16-DEC-2010 17:27

Client ID:

Sample Info: SA83MBS1

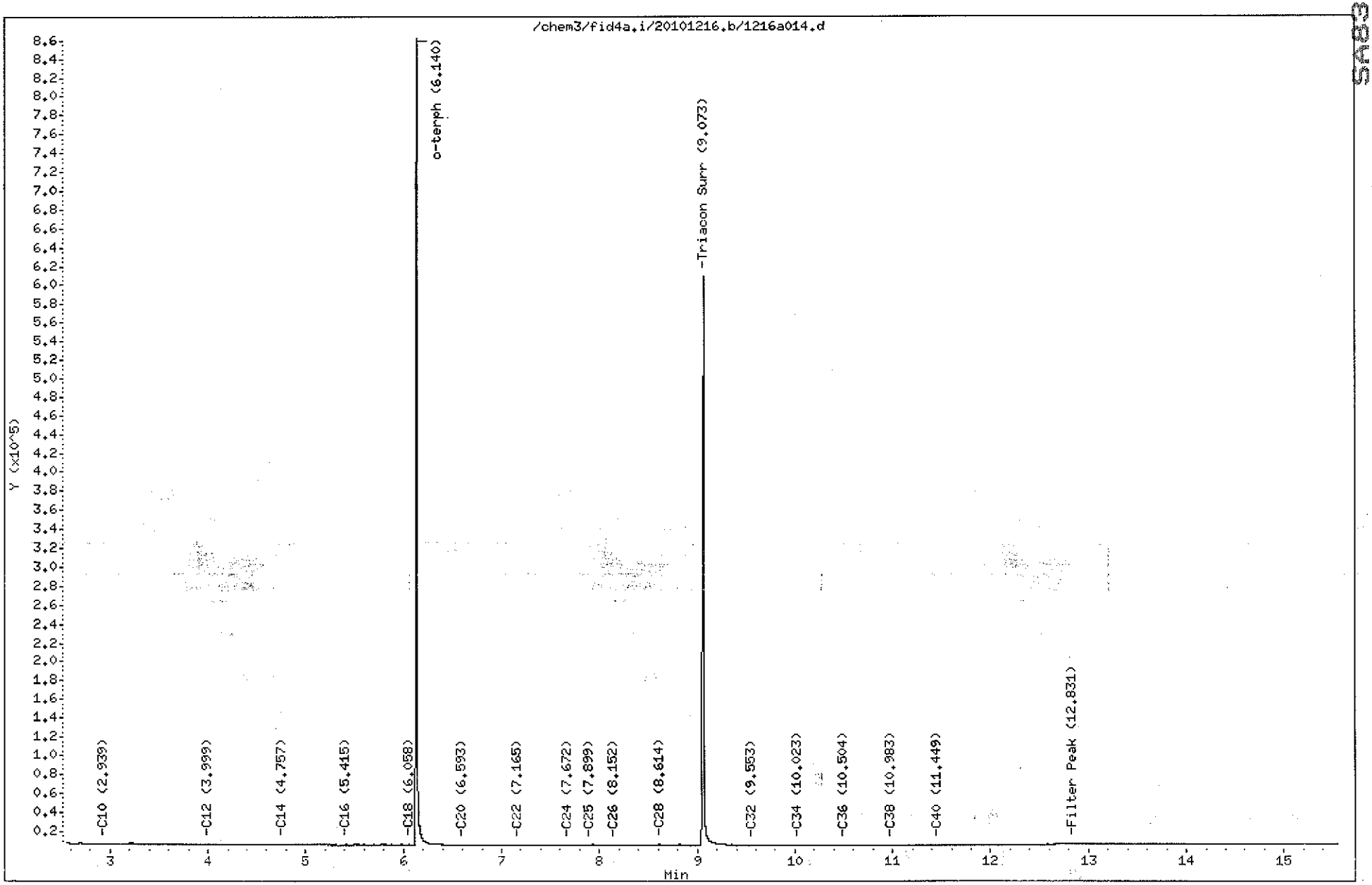
Column phase: RTX-1

Instrument: fid4a.i

Operator: MS

Column diameter: 0.25

SA83 : 000016



Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20101216.b/1216a006.d
Method: /chem3/fid4a.i/20101216.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MS
Report Date: 12/17/2010
Macro: 23-OCT-2010
Calibration Dates: Gas:13-JUL-2010 Diesel:23-OCT-2010 M.Oil:23-OCT-2010

ARI ID: SA83C
Client ID:
Injection: 16-DEC-2010 14:21
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.117	0.001	9602	10139	GAS (Tol-C12)	351208	24
C8	1.345	0.044	2253	6873	DIESEL (C12-C24)	7552106	353
C10	2.952	0.006	2207	3146	M.OIL (C24-C38)	21001483	1888
C12	4.000	-0.003	3707	4010	AK-102 (C10-C25)	8742557	361 M
C14	4.771	0.002	11020	11205	AK-103 (C25-C36)	19220797	2785 M
C16	5.418	-0.008	9070	16086			
C18	6.016	-0.006	20635	23483	CRUDE (Tol-C40)	29267536	3875 M
C20	6.609	0.016	38666	17466			
C22	7.136	-0.006	86540	159561			
C24	7.657	-0.006	132390	284110			
C25	7.909	-0.006	151216	284043			
C26	8.149	-0.003	151809	169232			
C28	8.615	0.005	206385	392431			
C32	9.541	0.000	148618	337841			
C34	10.025	0.005	93277	288405	BUNKERC (C10-C38)	28742456	3639 M
Filter Peak	12.831	-0.002	6248	4751			
C36	10.511	0.009	43556	43818			
C38	10.971	-0.004	24046	42512			
C40	11.463	0.014	10333	4230			
o-terph	6.131	-0.016	310024	197560	JET-A (C10-C18)	1476227	162
Triacon Surr	9.079	-0.008	248131	239818			

ORO
moil

M Indicates manual integration within range.
Range Times: NW Diesel(4.003 - 7.663) AK102(2.95 - 7.92) Jet A(2.95 - 6.02)
NW M.Oil(7.66 - 10.97) AK103(7.92 - 10.50) OR Diesel(2.95 - 8.61)

Surrogate	Area	Amount	%Rec
o-Terphenyl	197560	10.3	22.8 (x3)
Triacontane	239818	13.9	31.0

12/17/10

Analyte	RF	Curve Date
o-Terph Surr	19233.0	23-OCT-2010
Triacon Surr	17195.5	23-OCT-2010
Gas	14435.4	13-JUL-2010
Diesel	21400.0	23-OCT-2010
Motor Oil	11126.0	23-OCT-2010
AK102	24234.0	24-JUL-2010
AK103	6902.1	10-DEC-2009
JetA	9098.1	11-JAN-2010
CRUDE	7552.8	22-MAY-2010
Bunker C	7897.4	23-JUL-2010

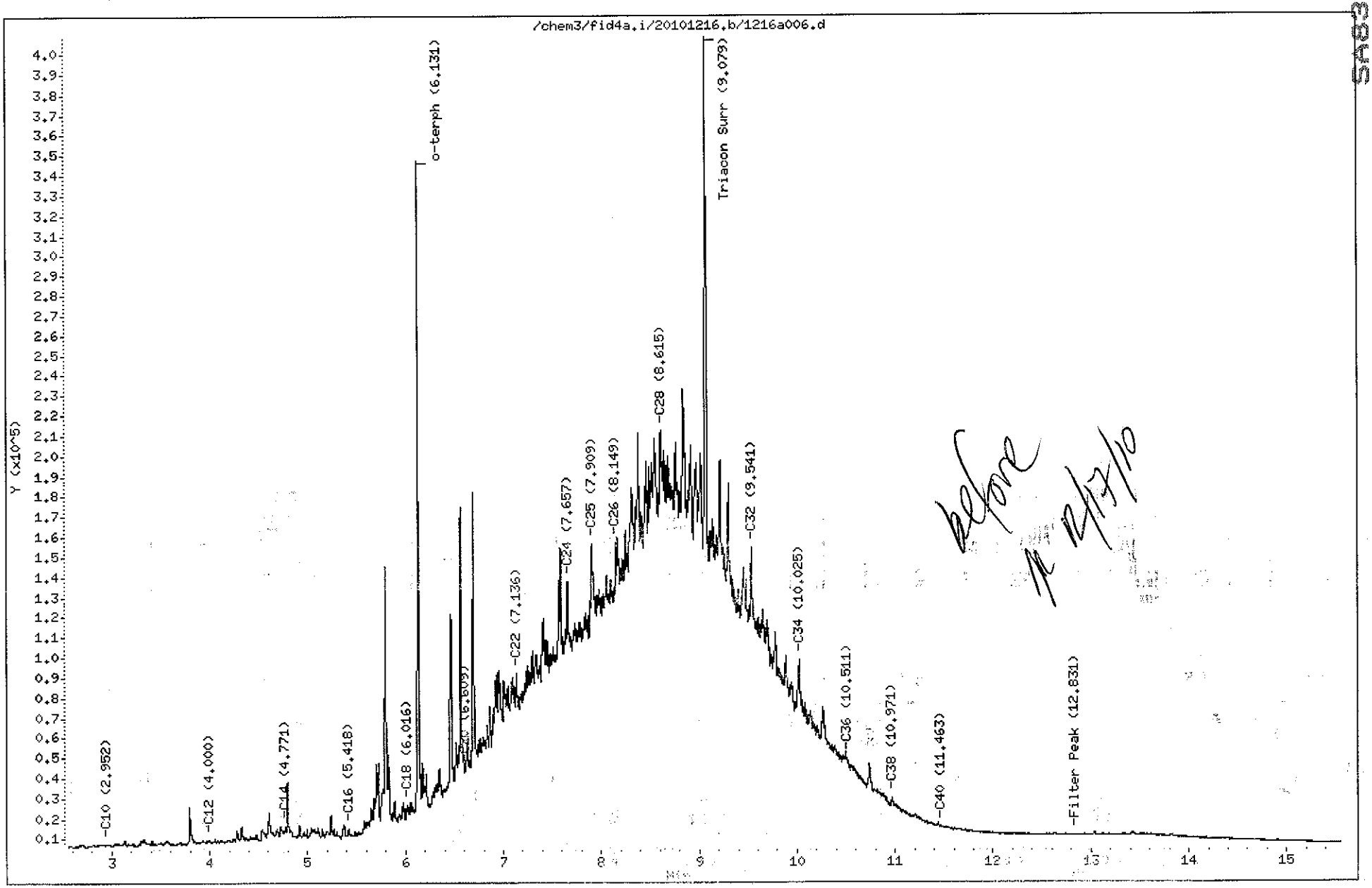
Data File: /chem3/fid4a.i/20101216.b/1216a006.d
Date : 16-DEC-2010 14:21
Client ID:
Sample Info: SA83C

Column phase: RTX-1

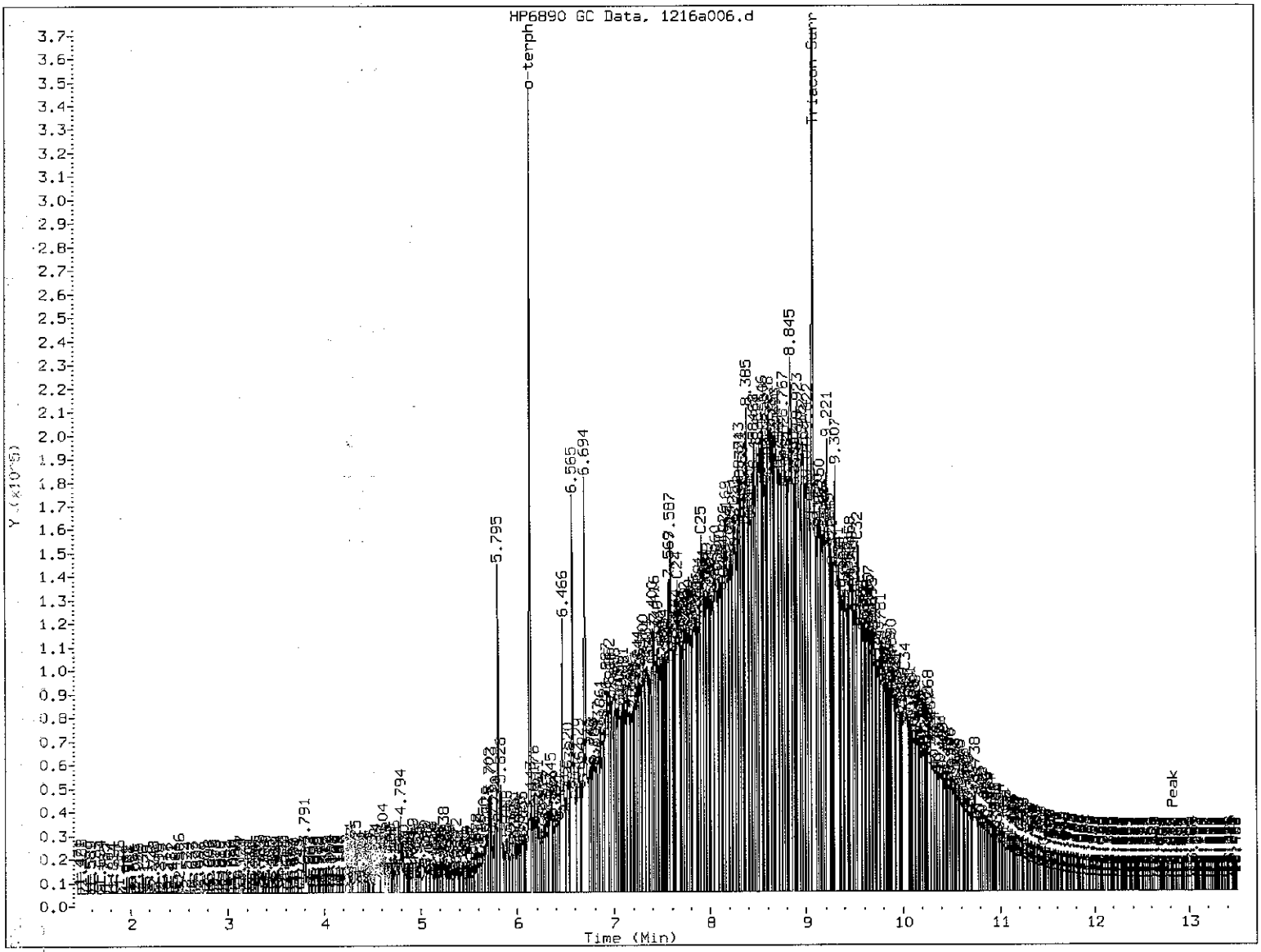
Instrument: fid4a.i

Operator: MS
Column diameter: 0.25

SA83 : 00018



FID:4A-2C/RTX-1 SA83C FID:4A SIGNAL



MANUAL INTEGRATION

After

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other skim surr

Analyst: [signature] Date: 12/17/10

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20101216.b/1216a007.d
Method: /chem3/fid4a.i/20101216.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MS
Report Date: 12/17/2010
Macro: 23-OCT-2010
Calibration Dates: Gas:13-JUL-2010 Diesel:23-OCT-2010 M.Oil:23-OCT-2010

ARI ID: SA83E
Client ID:
Injection: 16-DEC-2010 14:44
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.114	-0.002	8797	9055	GAS (Tol-C12)	1873146	130
C8	1.259	-0.042	2645	2918	DIESEL (C12-C24)	2034524	95
C10	2.955	0.009	1000	1695	M.OIL (C24-C38)	6941886	624
C12	4.012	0.008	67333	94843	AK-102 (C10-C25)	4021720	166 M
C14	4.756	-0.012	5750	5266	AK-103 (C25-C36)	6327606	917 M
C16	5.431	0.004	3777	8517			
C18	6.016	-0.006	4947	4748	CRUDE (Tol-C40)	11052679	1463 M
C20	6.570	-0.024	39580	61601			
C22	7.133	-0.010	17202	13768			
C24	7.670	0.007	23379	7804			
C25	7.912	-0.004	71420	127461			
C26	8.159	0.007	39045	33972			
C28	8.597	-0.013	61808	129583			
C32	9.528	-0.013	48196	123368			
C34	10.011	-0.009	34129	75648	BUNKERC (C10-C38)	10728388	1358 M
Filter Peak	12.828	-0.005	6819	5266			
C36	10.493	-0.009	21036	44875			
C38	10.969	-0.006	11971	18134			
C40	11.457	0.008	6221	2921			
o-terph	6.132	-0.015	315147	214008	JET-A (C10-C18)	2432781	267
Triacon Surr	9.064	-0.023	262457	225304			

DRO mg/l

M Indicates manual integration within range.
Range Times: NW Diesel(4.003 - 7.663) AK102(2.95 - 7.92) Jet A(2.95 - 6.02)
NW M.Oil(7.66 - 10.97) AK103(7.92 - 10.50) OR Diesel(2.95 - 8.61)

Surrogate	Area	Amount	%Rec
o-Terphenyl	214008	11.1	24.7 (x3)
Triacontane	225304	13.1	29.1

12/17/10

Analyte	RF	Curve Date
o-Terph Surr	19233.0	23-OCT-2010
Triacon Surr	17195.5	23-OCT-2010
Gas	14435.4	13-JUL-2010
Diesel	21400.0	23-OCT-2010
Motor Oil	11126.0	23-OCT-2010
AK102	24234.0	24-JUL-2010
AK103	6902.1	10-DEC-2009
JetA	9098.1	11-JAN-2010
CRUDE	7552.8	22-MAY-2010
Bunker C	7897.4	23-JUL-2010

Data File: /chem3/fid4a.i/20101216.b/1216a007.d

Date : 16-DEC-2010 14:44

Client ID:

Sample Info: SA83E

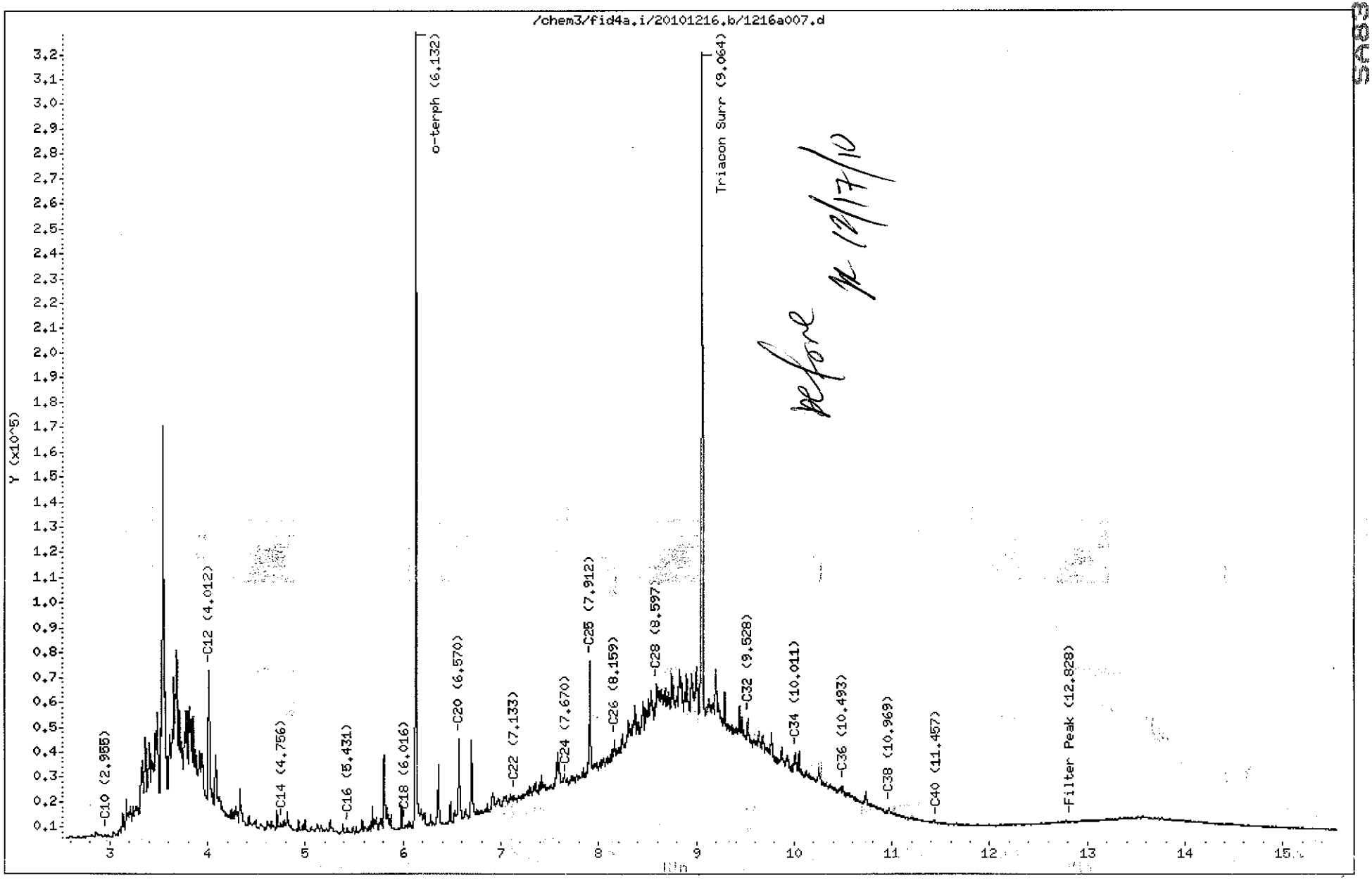
Column phase: RTX-1

Instrument: fid4a.i

Operator: MS

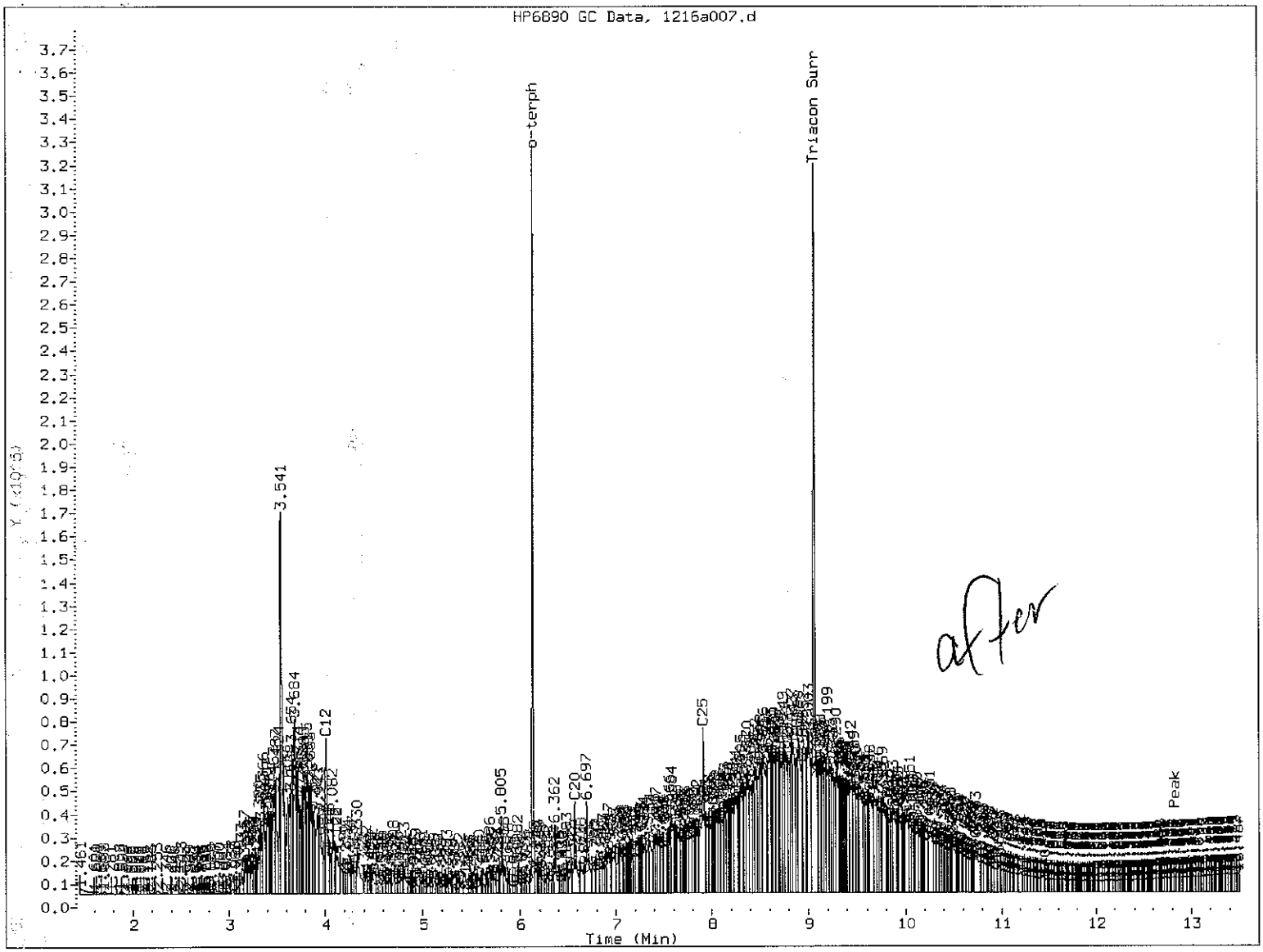
Column diameter: 0.25

SA83-00051



before M 12/17/10

FID:4A-2C/RTX-1 SA83E FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other Skim Surf

Analyst: JL Date: 12/17/10

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20101216.b/1216a008.d
Method: /chem3/fid4a.i/20101216.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MS
Report Date: 12/17/2010
Macro: 23-OCT-2010
Calibration Dates: Gas:13-JUL-2010 Diesel:23-OCT-2010 M.Oil:23-OCT-2010

ARI ID: SA83F
Client ID:
Injection: 16-DEC-2010 15:07

Dilution Factor: 10

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.113	-0.003	96965	63761	GAS (Tol-C12)	319409	22
C8	1.256	-0.045	3044	2764	DIESEL (C12-C24)	4138078	193
C10	2.946	0.000	1049	1495	M.OIL (C24-C38)	9460434	850
C12	4.009	0.005	1247	985	AK-102 (C10-C25)	4846643	200 M
C14	4.779	0.011	3627	3982	AK-103 (C25-C36)	8523871	1235
C16	5.425	-0.002	4823	5305			
C18	6.015	-0.006	10000	12480	CRUDE (Tol-C40)	14079155	1864 M
C20	6.565	-0.029	85636	118634			
C22	7.132	-0.011	49306	93362			
C24	7.673	0.010	62719	80658			
C25	7.913	-0.002	87558	117086			
C26	8.144	-0.008	75067	62459			
C28	8.618	0.008	91554	55053			
C32	9.524	-0.017	51518	129357			
C34	10.012	-0.008	35509	86825	BUNKERC (C10-C38)	13682350	1733 M
Filter Peak	12.836	0.003	4170	5554			
C36	10.493	-0.009	17484	21857			
C38	10.967	-0.008	9596	15906			
C40	11.454	0.005	4780	5561			
o-terph	6.131	-0.017	34624	21394	JET-A (C10-C18)	558333	61
Triacon Surr	----						

Dec. moil

M Indicates manual integration within range.
Range Times: NW Diesel(4.003 - 7.663) AK102(2.95 - 7.92) Jet A(2.95 - 6.02)
NW M.Oil(7.66 - 10.97) AK103(7.92 - 10.50) OR Diesel(2.95 - 8.61)

Surrogate	Area	Amount	%Rec
o-Terphenyl	21394	1.1	24.7 (X3)
Triacontane	0	0.0	~~0.0~~

MR

12/17/10

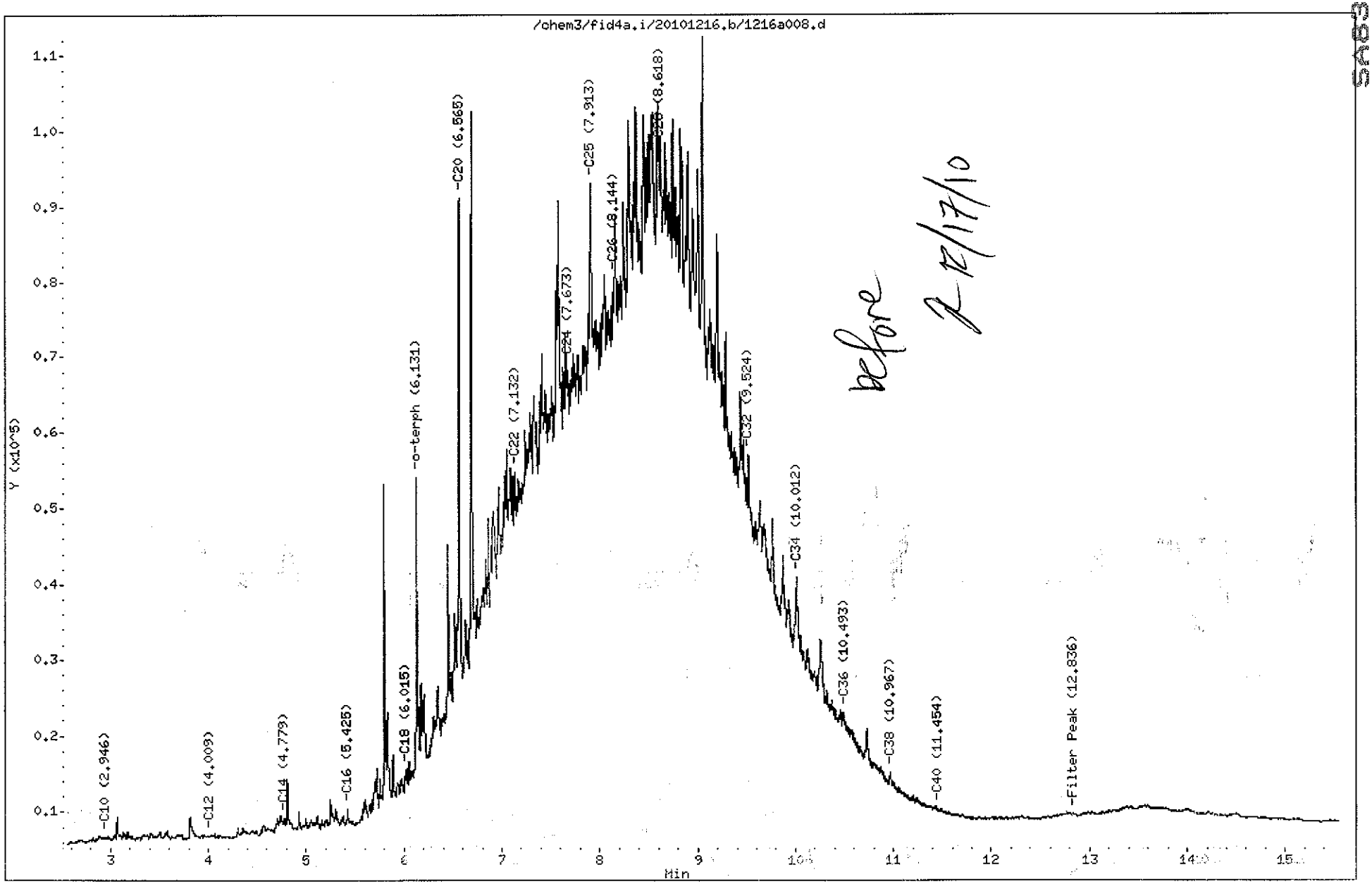
Analyte	RF	Curve Date
o-Terph Surr	19233.0	23-OCT-2010
Triacon Surr	17195.5	23-OCT-2010
Gas	14435.4	13-JUL-2010
Diesel	21400.0	23-OCT-2010
Motor Oil	11126.0	23-OCT-2010
AK102	24234.0	24-JUL-2010
AK103	6902.1	10-DEC-2009
JetA	9098.1	11-JAN-2010
CRUDE	7552.8	22-MAY-2010
Bunker C	7897.4	23-JUL-2010

Data File: /chem3/fid4a.i/20101216.b/1216a008.d
Date : 16-DEC-2010 15:07
Client ID:
Sample Info: SA83F,10

Column phase: RTX-1

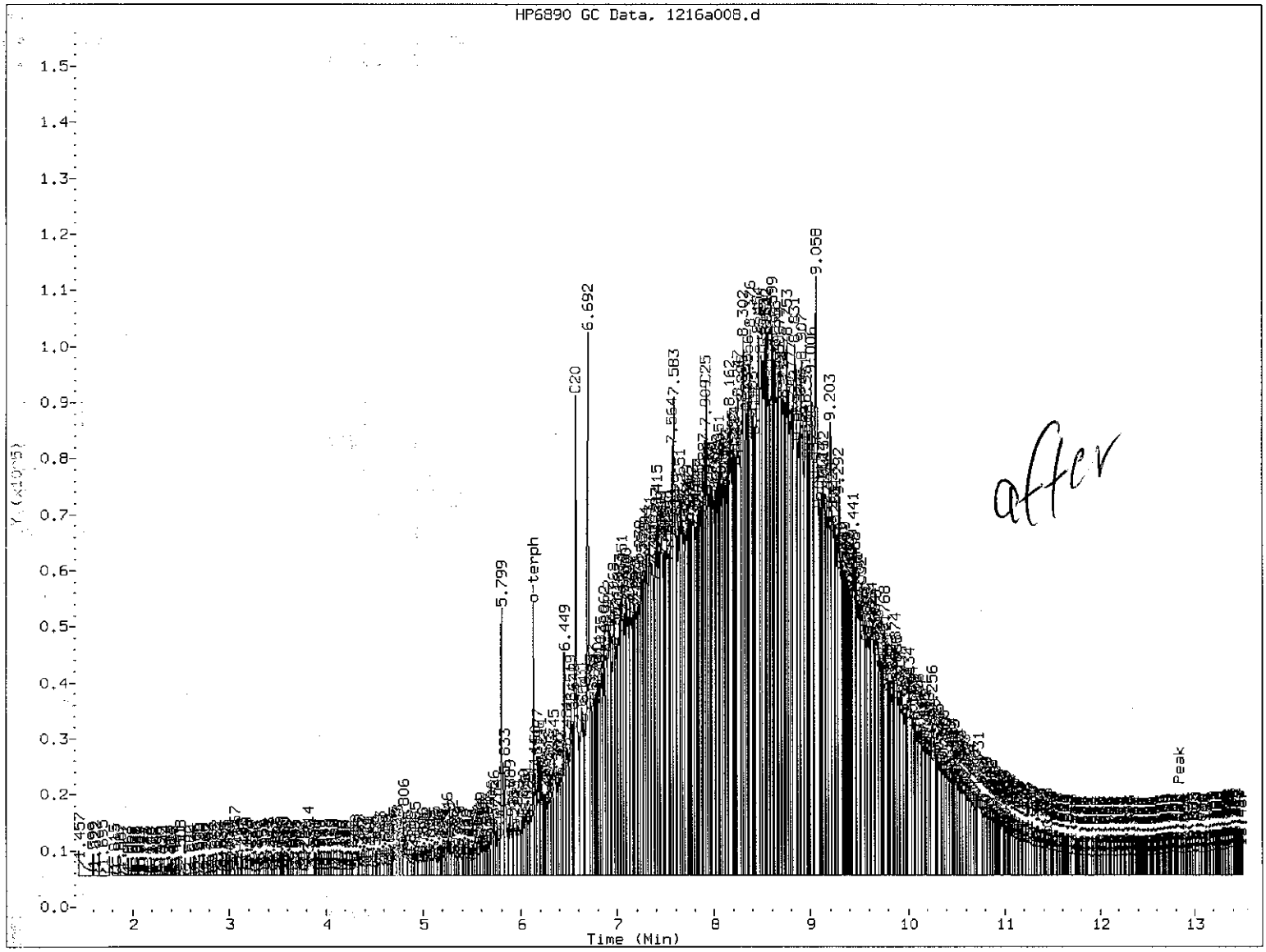
Instrument: fid4a.i

Operator: MS
Column diameter: 0.25



before 12/17/10

FID:4A-2C/RTX-1 SA83F FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other Skim Surr

Analyst: JL Date: 12/17/10

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20101216.b/1216a009.d
Method: /chem3/fid4a.i/20101216.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MS
Report Date: 12/17/2010
Macro: 23-OCT-2010
Calibration Dates: Gas:13-JUL-2010 Diesel:23-OCT-2010 M.Oil:23-OCT-2010

ARI ID: SA83G
Client ID:
Injection: 16-DEC-2010 15:31
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.119	0.004	17721	16558	GAS (Tol-C12)	692005	48
C8	1.304	0.003	5171	15164	DIESEL (C12-C24)	3011699	141
C10	2.943	-0.003	1983	3105	M.OIL (C24-C38)	8980314	807
C12	3.991	-0.012	2260	2194	AK-102 (C10-C25)	3610662	149 M
C14	4.774	0.006	12279	11873	AK-103 (C25-C36)	8183245	1186 M
C16	5.432	0.005	5989	8947			
C18	6.014	-0.008	10939	17799	CRUDE (Tol-C40)	12844005	1701 M
C20	6.610	0.016	15206	3929			
C22	7.135	-0.008	35014	43388			
C24	7.652	-0.011	50010	63857			
C25	7.911	-0.004	66330	90323			
C26	8.142	-0.010	63312	86653			
C28	8.609	-0.001	87468	98482			
C32	9.555	0.014	44255	40664			
C34	10.006	-0.014	33769	53216	BUNKERC (C10-C38)	12110696	1533 M
Filter Peak	12.827	-0.006	4707	3260			
C36	10.496	-0.005	18768	19835			
C38	10.967	-0.007	9908	14118			
C40	11.458	0.009	5340	9729			
o-terph	6.137	-0.011	742154	592328	JET-A (C10-C18)	682598	75
Triacon Surr	9.076	-0.010	542448	601191			

DRO not

M Indicates manual integration within range.
Range Times: NW Diesel(4.003 - 7.663) AK102(2.95 - 7.92) Jet A(2.95 - 6.02)
NW M.Oil(7.66 - 10.97) AK103(7.92 - 10.50) OR Diesel(2.95 - 8.61)

Surrogate	Area	Amount	%Rec
o-Terphenyl	592328	30.8	68.4
Triacontane	601191	35.0	77.7

Analyte	RF	Curve Date
o-Terph Surr	19233.0	23-OCT-2010
Triacon Surr	17195.5	23-OCT-2010
Gas	14435.4	13-JUL-2010
Diesel	21400.0	23-OCT-2010
Motor Oil	11126.0	23-OCT-2010
AK102	24234.0	24-JUL-2010
AK103	6902.1	10-DEC-2009
JetA	9098.1	11-JAN-2010
CRUDE	7552.8	22-MAY-2010
Bunker C	7897.4	23-JUL-2010

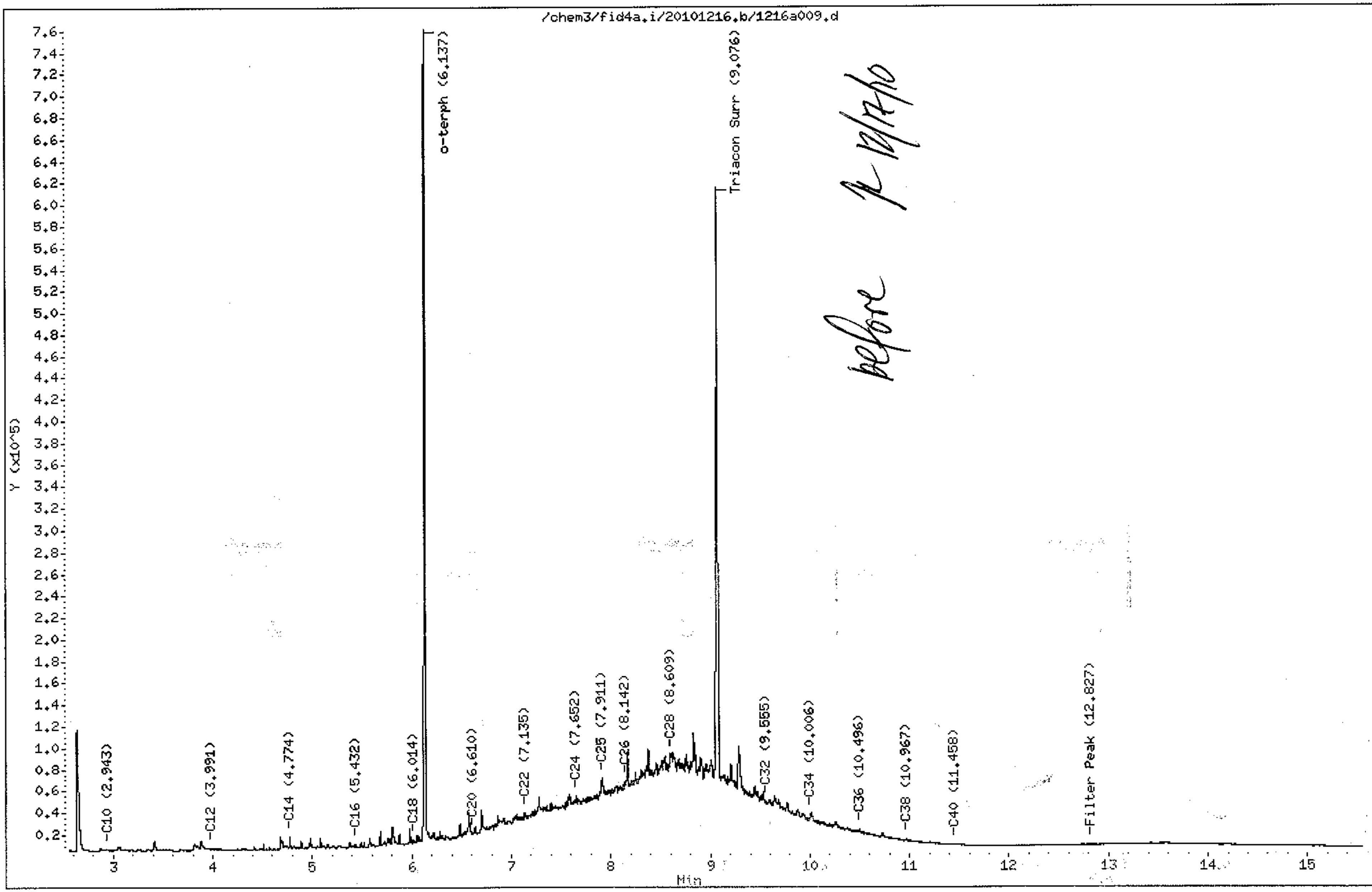
12/17/10

Data File: /chem3/fid4a.i/20101216.b/1216a009.d
Date : 16-DEC-2010 15:31
Client ID:
Sample Info: SA83G

Column phase: RTX-1

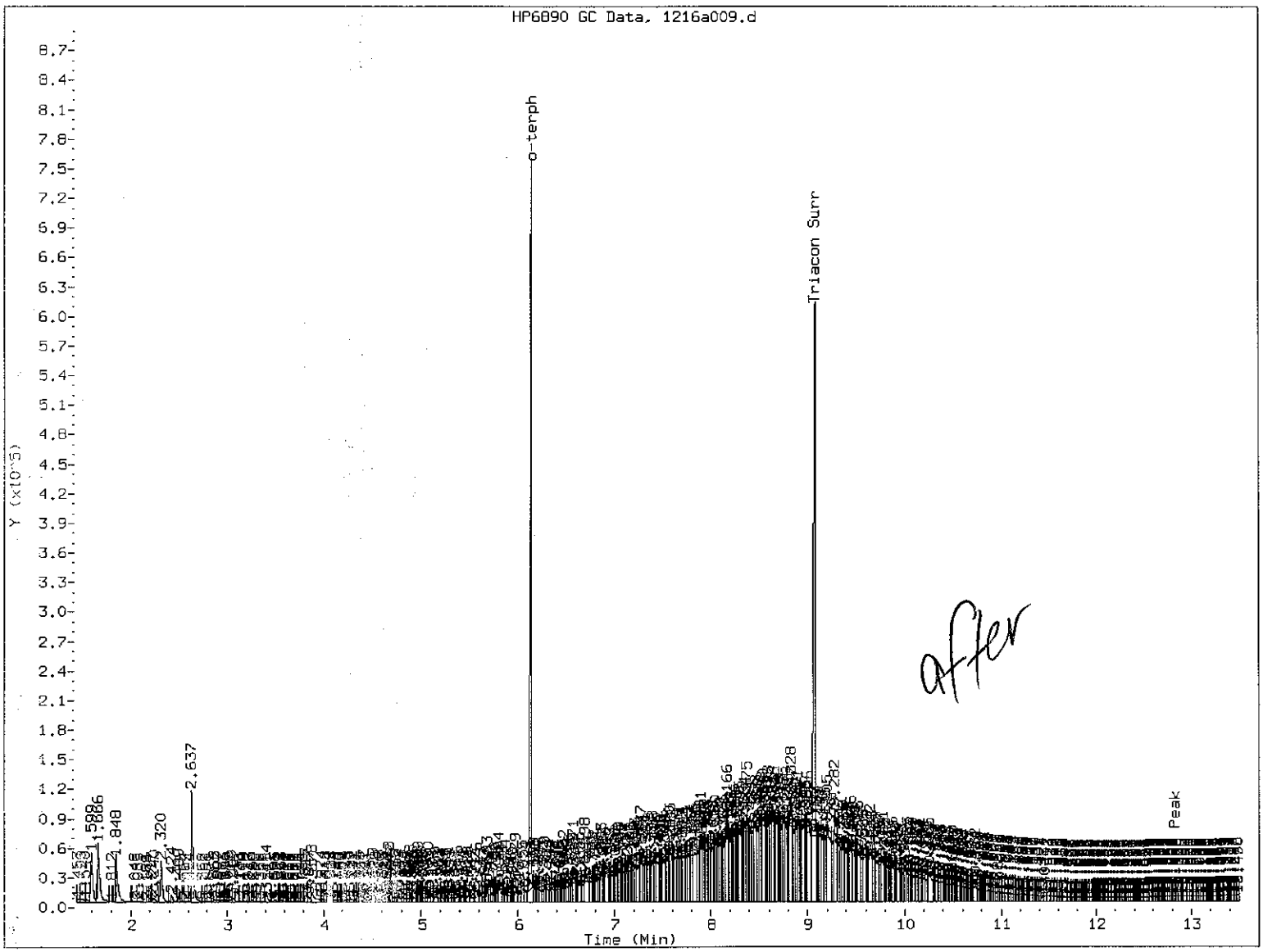
Instrument: fid4a.i

Operator: MS
Column diameter: 0.25



SA83 : 00057

FID:4A-2C/RTX-1 SA83G FID:4A SIGNAL



after

MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other skim surr

Analyst: _____ Date: 12/17/10

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20101216.b/1216a010.d
Method: /chem3/fid4a.i/20101216.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MS
Report Date: 12/17/2010
Macro: 23-OCT-2010
Calibration Dates: Gas:13-JUL-2010 Diesel:23-OCT-2010 M.Oil:23-OCT-2010

ARI ID: SA83H
Client ID:
Injection: 16-DEC-2010 15:54
Dilution Factor: 10

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.119	0.003	9226	17695	GAS (Tol-C12)	219758	15
C8	1.264	-0.037	4444	5538	DIESEL (C12-C24)	1977216	92
C10	2.947	0.001	2179	3623	M.OIL (C24-C38)	3853998	346
C12	4.006	0.002	1009	647	AK-102 (C10-C25)	2281807	94 M
C14	4.763	-0.006	2404	2435	AK-103 (C25-C36)	3528220	511 M
C16	5.430	0.003	4299	7154			
C18	6.017	-0.005	5657	6276	CRUDE (Tol-C40)	6102148	808 M
C20	6.564	-0.030	95213	94200			
C22	7.153	0.010	14595	13019			
C24	7.670	0.007	26040	52223			
C25	7.911	-0.005	32173	52710			
C26	8.164	0.012	29295	45456			
C28	8.592	-0.019	37989	61944			
C32	9.555	0.013	18189	5546			
C34	10.033	0.013	11172	4411	BUNKERC (C10-C38)	5918642	749 M
Filter Peak	12.842	0.009	1946	4205			
C36	10.509	0.007	6448	9720			
C38	10.981	0.006	2839	945			
C40	11.450	0.001	1579	461			
o-terph	6.133	-0.015	34306	19627	JET-A (C10-C18)	411295	45
Triacon Surr	9.051	-0.036	32308	25712			

DRO mo:1

M Indicates manual integration within range.
Range Times: NW Diesel(4.003 - 7.663) AK102(2.95 - 7.92) Jet A(2.95 - 6.02)
NW M.Oil(7.66 - 10.97) AK103(7.92 - 10.50) OR Diesel(2.95 - 8.61)

Surrogate	Area	Amount	%Rec
o-Terphenyl	19627	1.0	22.7
Triacontane	25712	1.5	33.2

(x3)

12/17/10

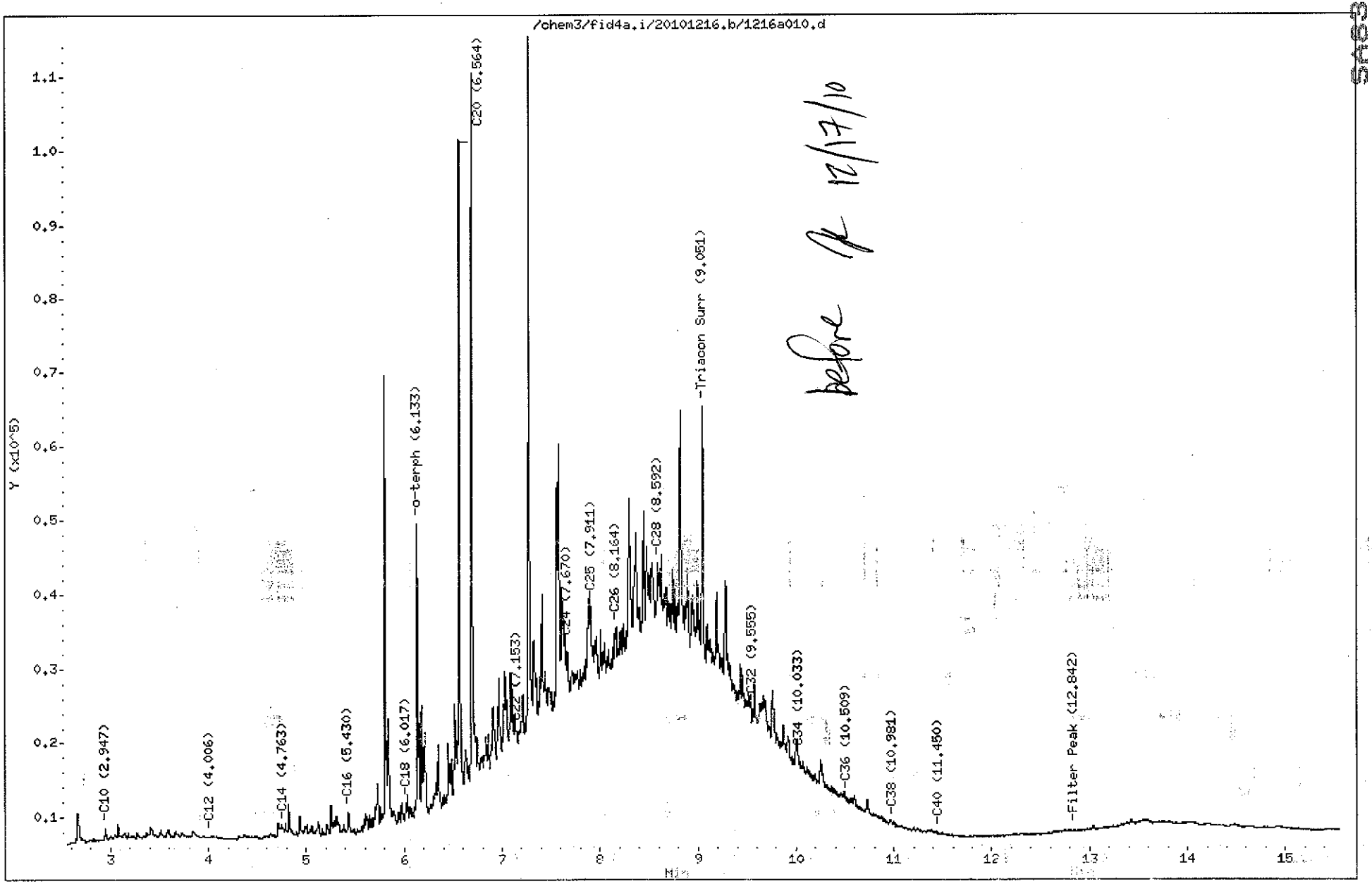
Analyte	RF	Curve Date
o-Terph Surr	19233.0	23-OCT-2010
Triacon Surr	17195.5	23-OCT-2010
Gas	14435.4	13-JUL-2010
Diesel	21400.0	23-OCT-2010
Motor Oil	11126.0	23-OCT-2010
AK102	24234.0	24-JUL-2010
AK103	6902.1	10-DEC-2009
JetA	9098.1	11-JAN-2010
CRUDE	7552.8	22-MAY-2010
Bunker C	7897.4	23-JUL-2010

Data File: /chem3/fid4a.i/20101216.b/1216a010.d
Date : 16-DEC-2010 15:54
Client ID:
Sample Info: SA83H,10

Column phase: RTX-1

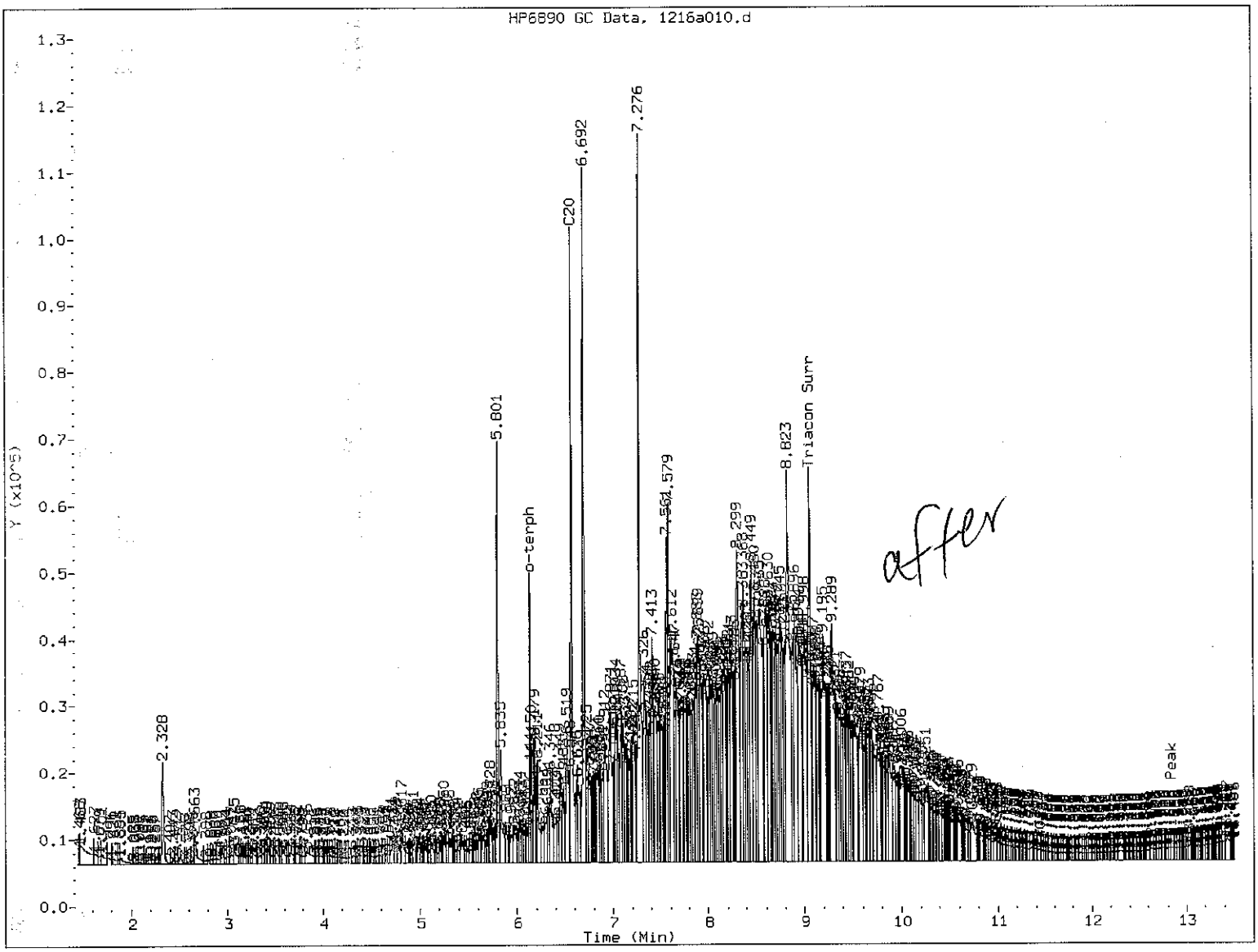
Instrument: fid4a.i

Operator: MS
Column diameter: 0.25



before 12/17/10

FID:4A-2C/RTX-1 SA83H FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other Stim SURR

Analyst: JK Date: 12/17/10

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20101216.b/1216a011.d
Method: /chem3/fid4a.i/20101216.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MS
Report Date: 12/17/2010
Macro: 23-OCT-2010
Calibration Dates: Gas:13-JUL-2010 Diesel:23-OCT-2010 M.Oil:23-OCT-2010

ARI ID: SA83N
Client ID:
Injection: 16-DEC-2010 16:17

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.116	0.000	15157	12468	GAS (Tol-C12)	379048	26
C8	1.293	-0.008	10557	26335	DIESEL (C12-C24)	2173481	~~102~~
C10	2.946	0.000	1306	1957	M.OIL (C24-C38)	6391079	~~574~~
C12	3.998	-0.006	1698	2015	AK-102 (C10-C25)	2557178	106 M
C14	4.777	0.008	6671	5869	AK-103 (C25-C36)	5877613	852 M
C16	5.427	0.000	5277	9517			
C18	6.014	-0.008	8905	13998	CRUDE (Tol-C40)	9048005	1198 M
C20	6.570	-0.024	34621	70241			
C22	7.132	-0.011	23719	53104			
C24	7.671	0.008	31166	60956			
C25	7.913	-0.003	47839	83023			
C26	8.143	-0.009	44304	46998			
C28	8.612	0.001	62267	75797			
C32	9.545	0.004	33042	15439			
C34	10.006	-0.014	24649	38286	BUNKERC (C10-C38)	8638804	1094 M
Filter Peak	12.829	-0.004	2849	1292			
C36	10.493	-0.009	13346	15988			
C38	10.969	-0.006	6579	13682			
C40	11.457	0.008	3063	4036			
o-terph	6.137	-0.010	819842	647209	JET-A (C10-C18)	522843	57
Triacon Surr	9.076	-0.011	578690	624461			

DRO/MOI

M Indicates manual integration within range.
Range Times: NW Diesel(4.003 - 7.663) AK102(2.95 - 7.92) Jet A(2.95 - 6.02)
NW M.Oil(7.66 - 10.97) AK103(7.92 - 10.50) OR Diesel(2.95 - 8.61)

Surrogate	Area	Amount	%Rec
o-Terphenyl	647209	33.7	74.8
Triacontane	624461	36.3	80.7

JK 12/17/10

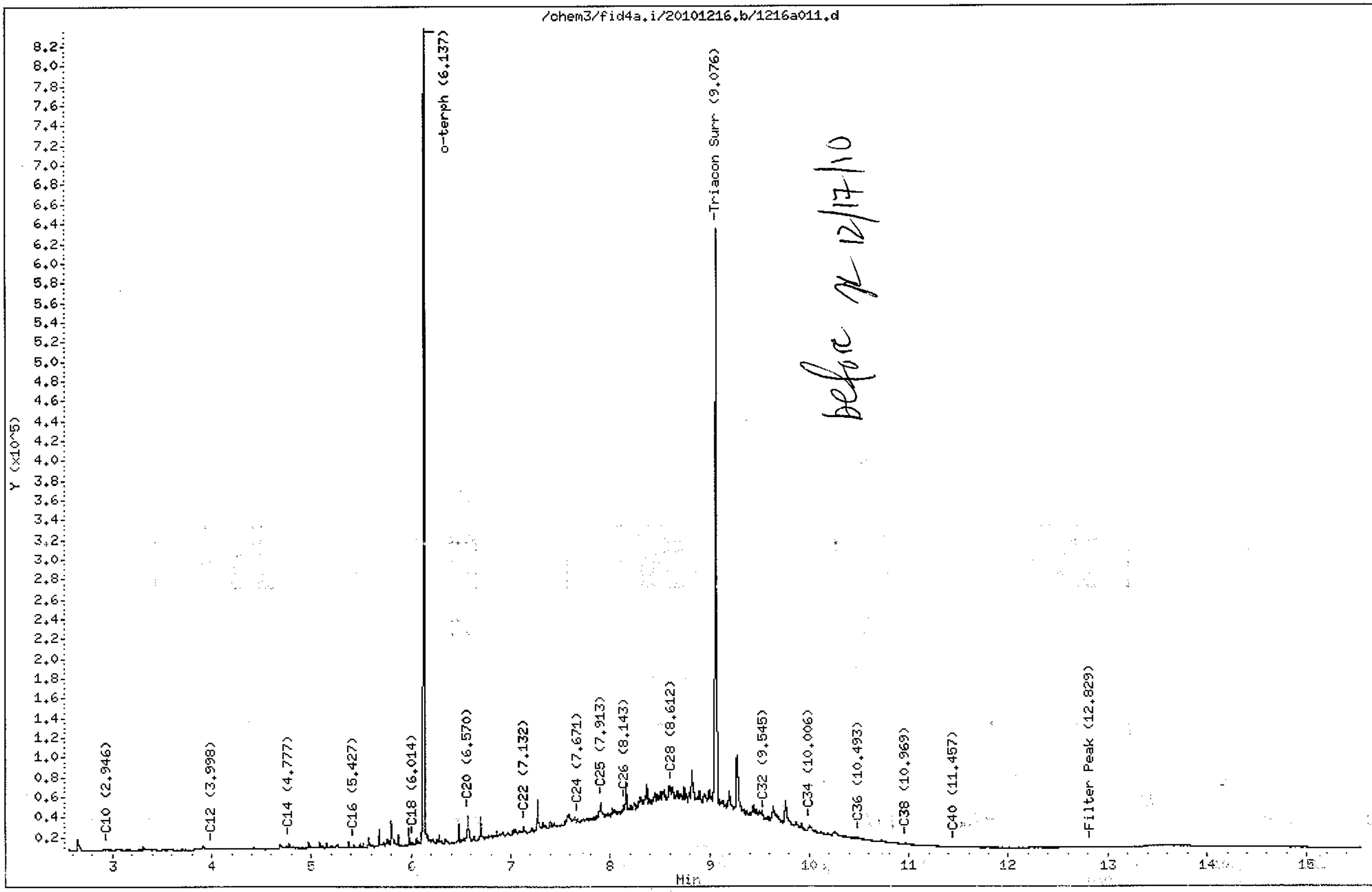
Analyte	RF	Curve Date
o-Terph Surr	19233.0	23-OCT-2010
Triacon Surr	17195.5	23-OCT-2010
Gas	14435.4	13-JUL-2010
Diesel	21400.0	23-OCT-2010
Motor Oil	11126.0	23-OCT-2010
AK102	24234.0	24-JUL-2010
AK103	6902.1	10-DEC-2009
JetA	9098.1	11-JAN-2010
CRUDE	7552.8	22-MAY-2010
Bunker C	7897.4	23-JUL-2010

Data File: /chem3/fid4a.i/20101216.b/1216a011.d
Date : 16-DEC-2010 16:17
Client ID:
Sample Info: SA83N

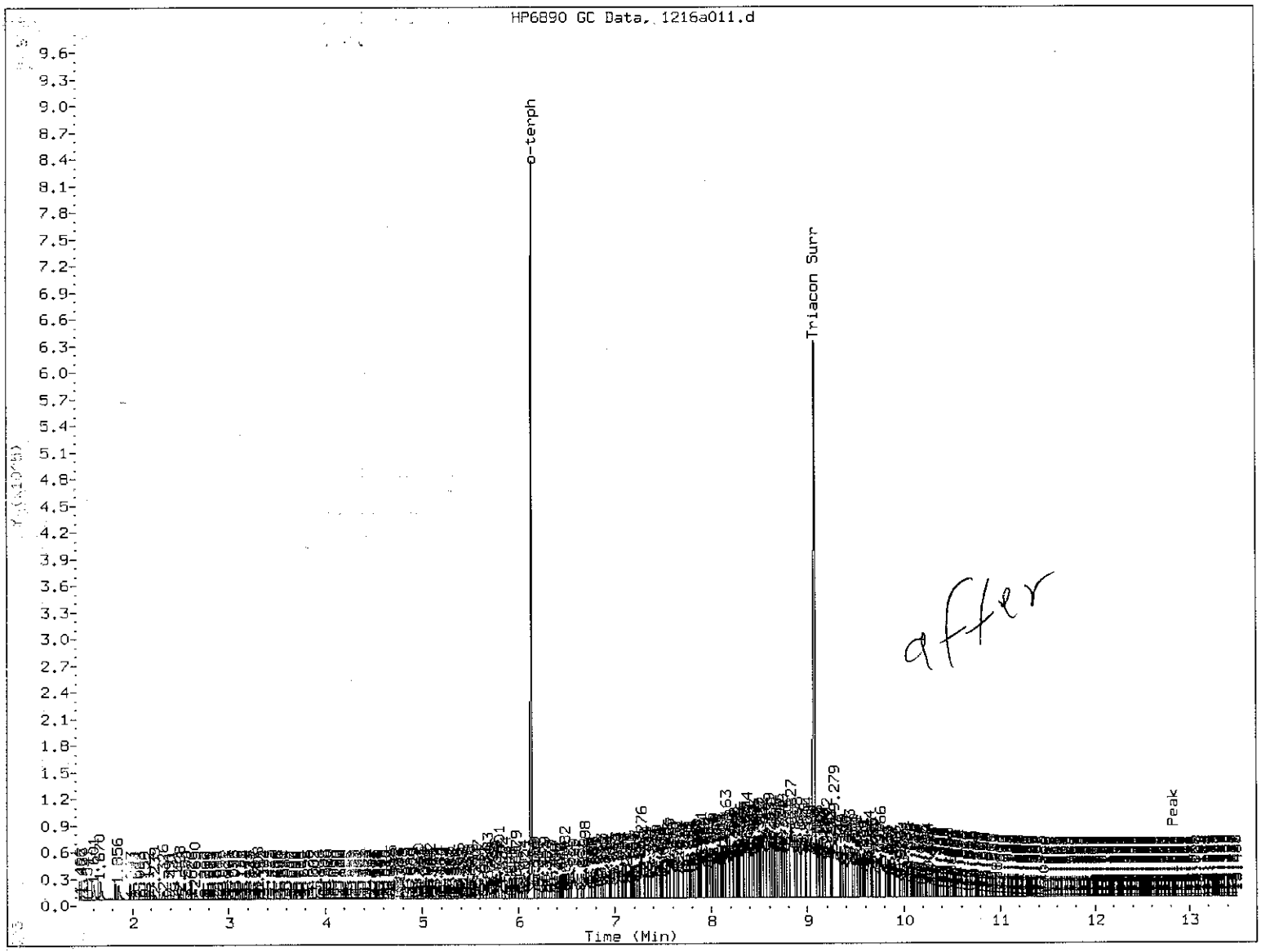
Column phase: RTX-1

Instrument: fid4a.i

Operator: MS
Column diameter: 0.25



FID:4A-2C/RTX-1 SA83N FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other skim surr

Analyst: _____ Date: 12/17/10

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim

Client ID	OTER	TOT OUT
121510MBS	87.7%	0
121510LCS	86.3%	0
121510LCSD	88.7%	0
BRICK-RED-C	68.5%	0
SOILS-SCRACKS-C	74.2%	0
SOILS-NCRACKS-C	74.0%	0
SOILS-CAMPING-C	68.4%	0
SOILS-LANDSCAPE-C	68.0%	0
SOILS-CAMPING-C-B	74.8%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(64-134)	(52-130)

Prep Method: SW3546
Log Number Range: 10-31038 to 10-31098

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID

Sample ID: LCS-121510
LCS/LCSD

Lab Sample ID: LCS-121510
LIMS ID: 10-31038
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 12/15/10

Date Analyzed LCS: 12/16/10 16:41
LCSD: 12/16/10 17:04
Instrument/Analyst LCS: FID4A/JGR
LCSD: FID4A/JGR

Sample Amount LCS: 10.0 g
LCSD: 10.0 g
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	121	150	80.7%	121	150	80.7%	0.0%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	86.3%	88.7%

Results reported in mg/kg
RPD calculated using sample concentrations per SW846.

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20101216.b/1216a012.d
Method: /chem3/fid4a.i/20101216.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MS
Report Date: 12/17/2010
Macro: 23-OCT-2010
Calibration Dates: Gas:13-JUL-2010 Diesel:23-OCT-2010 M.Oil:23-OCT-2010

ARI ID: SA83LCSS1
Client ID:
Injection: 16-DEC-2010 16:41
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.131	0.016	28051	48241	GAS (Tol-C12)	4031919	279
C8	1.300	-0.001	13104	35426	DIESEL (C12-C24)	25873593	1209
C10	2.950	0.004	81274	81548	M.OIL (C24-C38)	315321	28
C12	3.999	-0.005	251446	193187	AK-102 (C10-C25)	28785776	1188 M
C14	4.765	-0.003	431454	433152	AK-103 (C25-C36)	214189	31
C16	5.430	0.004	711520	865620			
C18	6.029	0.007	641214	791087	CRUDE (Tol-C40)	30224316	4002 M
C20	6.595	0.001	475777	581857			
C22	7.138	-0.004	229498	238806			
C24	7.655	-0.008	69196	74450			
C25	7.902	-0.013	29373	47660			
C26	8.143	-0.009	12293	21135			
C28	8.612	0.002	7099	8757			
C32	9.545	0.004	216	135			
C34	10.008	-0.012	67	77	BUNKERC (C10-C38)	29001530	3672 M
Filter Peak	12.822	-0.010	1187	540			
C36	10.497	-0.004	105	82			
C38	10.982	0.007	29	18			
C40	11.457	0.008	200	167			
o-terph	6.147	-0.001	852421	746927	JET-A (C10-C18)	20726882	2278
Triacon Surr	9.074	-0.013	594560	714486			

M Indicates manual integration within range.
Range Times: NW Diesel(4.003 - 7.663) AK102(2.95 - 7.92) Jet A(2.95 - 6.02)
NW M.Oil(7.66 - 10.97) AK103(7.92 - 10.50) OR Diesel(2.95 - 8.61)

Surrogate	Area	Amount	%Rec
o-Terphenyl	746927	38.8	86.3
Triacontane	714486	41.6	92.3

12/17/10

Analyte	RF	Curve Date
o-Terph Surr	19233.0	23-OCT-2010
Triacon Surr	17195.5	23-OCT-2010
Gas	14435.4	13-JUL-2010
Diesel	21400.0	23-OCT-2010
Motor Oil	11126.0	23-OCT-2010
AK102	24234.0	24-JUL-2010
AK103	6902.1	10-DEC-2009
JetA	9098.1	11-JAN-2010
CRUDE	7552.8	22-MAY-2010
Bunker C	7897.4	23-JUL-2010

Data File: /chem3/fid4a.i/20101216.b/1216a012.d

Date : 16-DEC-2010 16:41

Client ID:

Sample Info: SA83LCSS1

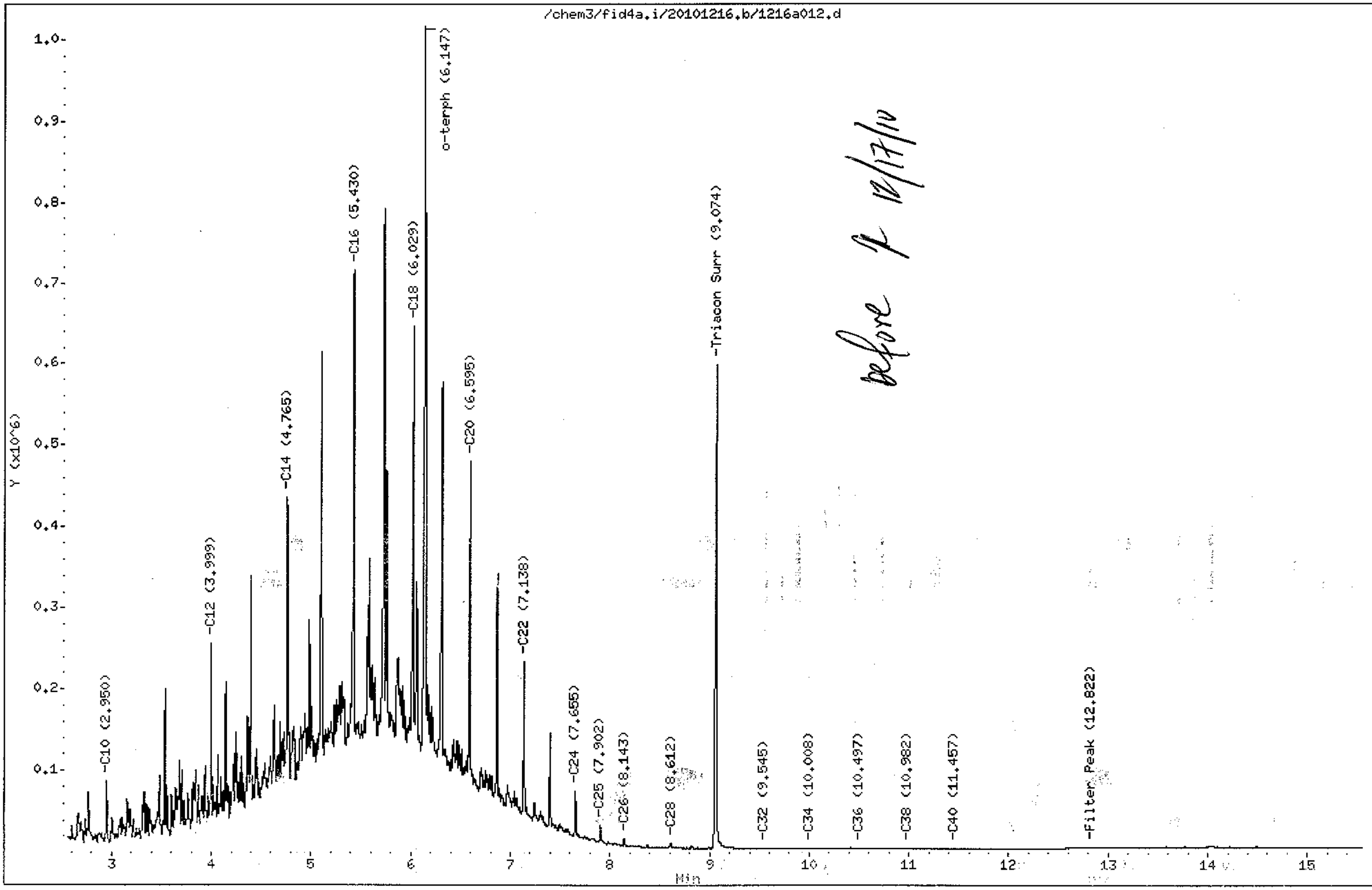
Column phase: RTX-1

Page 1

Instrument: fid4a.i

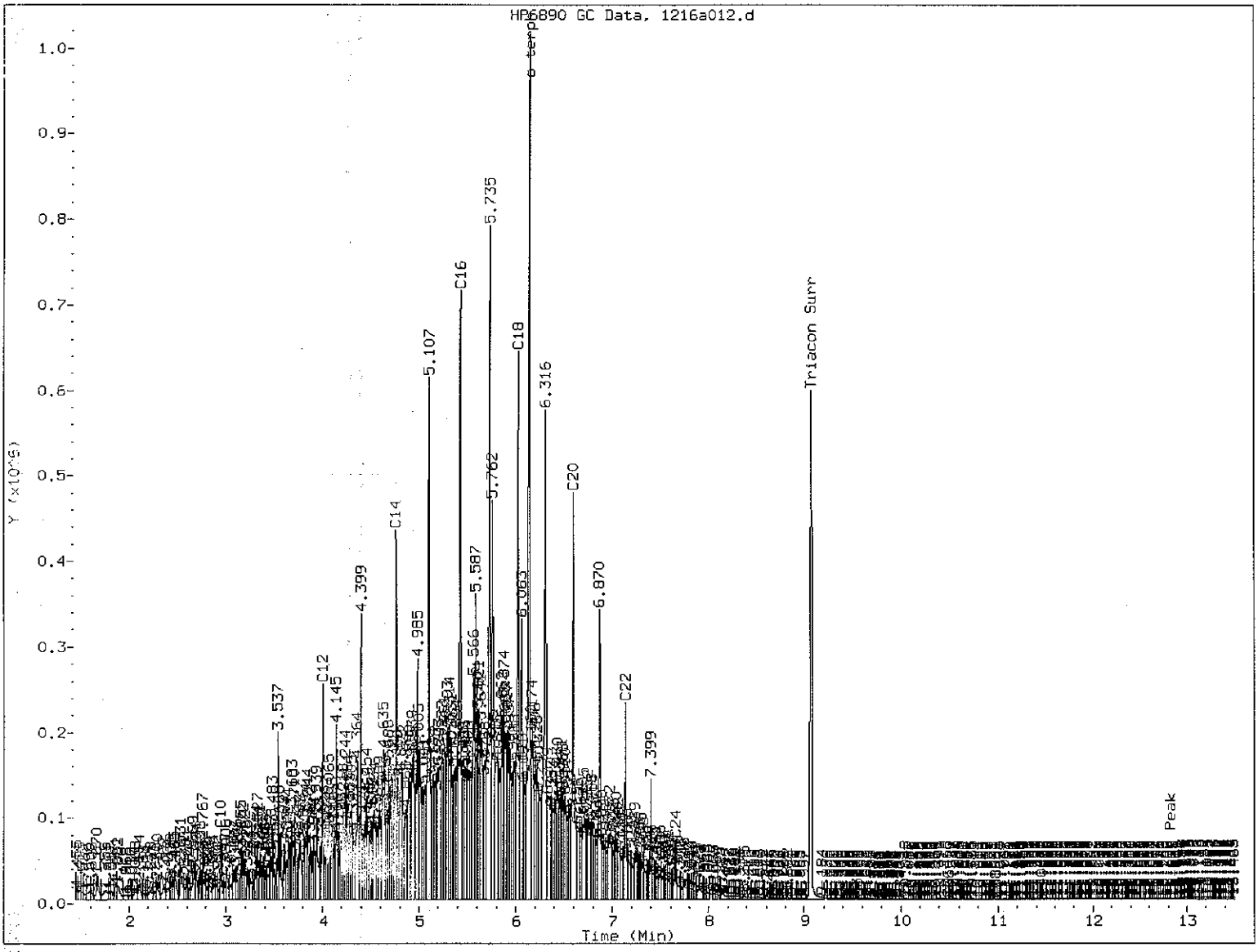
Operator: MS

Column diameter: 0.25



SA83:00068

FID:4A-2C/RTX-1 SA83LCSS1 FID:4A SIGNAL



after

MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other Skim Surr

Analyst: _____ Date: 12/17/10

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20101216.b/1216a013.d
Method: /chem3/fid4a.i/20101216.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MS
Report Date: 12/17/2010
Macro: 23-OCT-2010
Calibration Dates: Gas:13-JUL-2010 Diesel:23-OCT-2010 M.Oil:23-OCT-2010

ARI ID: SA83LCSDS1
Client ID:
Injection: 16-DEC-2010 17:04
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.132	0.016	28667	65947	GAS (Tol-C12)	4122825	286
C8	1.301	0.000	13516	53294	DIESEL (C12-C24)	25834215	1207
C10	2.952	0.006	79674	83261	M.OIL (C24-C38)	316361	28
C12	3.999	-0.004	247793	183009	AK-102 (C10-C25)	28785557	1188 M
C14	4.765	-0.003	431808	514127	AK-103 (C25-C36)	211833	31
C16	5.430	0.004	733742	911508			
C18	6.029	0.008	636260	835797	CRUDE (Tol-C40)	30277493	4009 M
C20	6.596	0.003	463960	613465			
C22	7.139	-0.004	237817	251417			
C24	7.654	-0.009	70533	90621			
C25	7.903	-0.012	29831	58968			
C26	8.145	-0.007	12618	21539			
C28	8.613	0.003	2295	2223			
C32	9.547	0.006	167	175			
C34	10.025	0.005	40	16	BUNKERC (C10-C38)	28998944	3672 M
Filter Peak	12.823	-0.010	1031	750			
C36	10.506	0.004	53	48			
C38	10.978	0.003	55	47			
C40	11.456	0.007	220	126			
o-terph	6.147	0.000	887527	767772	JET-A (C10-C18)	20935632	2301
Triacon Surr	9.073	-0.014	598015	707130			

M Indicates manual integration within range.
Range Times: NW Diesel(4.003 - 7.663) AK102(2.95 - 7.92) Jet A(2.95 - 6.02)
NW M.Oil(7.66 - 10.97) AK103(7.92 - 10.50) OR Diesel(2.95 - 8.61)

12/17/10

Surrogate	Area	Amount	%Rec
o-Terphenyl	767772	39.9	88.7
Triacontane	707130	41.1	91.4

Analyte	RF	Curve Date
o-Terph Surr	19233.0	23-OCT-2010
Triacon Surr	17195.5	23-OCT-2010
Gas	14435.4	13-JUL-2010
Diesel	21400.0	23-OCT-2010
Motor Oil	11126.0	23-OCT-2010
AK102	24234.0	24-JUL-2010
AK103	6902.1	10-DEC-2009
JetA	9098.1	11-JAN-2010
CRUDE	7552.8	22-MAY-2010
Bunker C	7897.4	23-JUL-2010

Data File: /chem3/fid4a.i/20101216.b/1216a013.d

Date : 16-DEC-2010 17:04

Client ID:

Sample Info: SA83LCSDS1

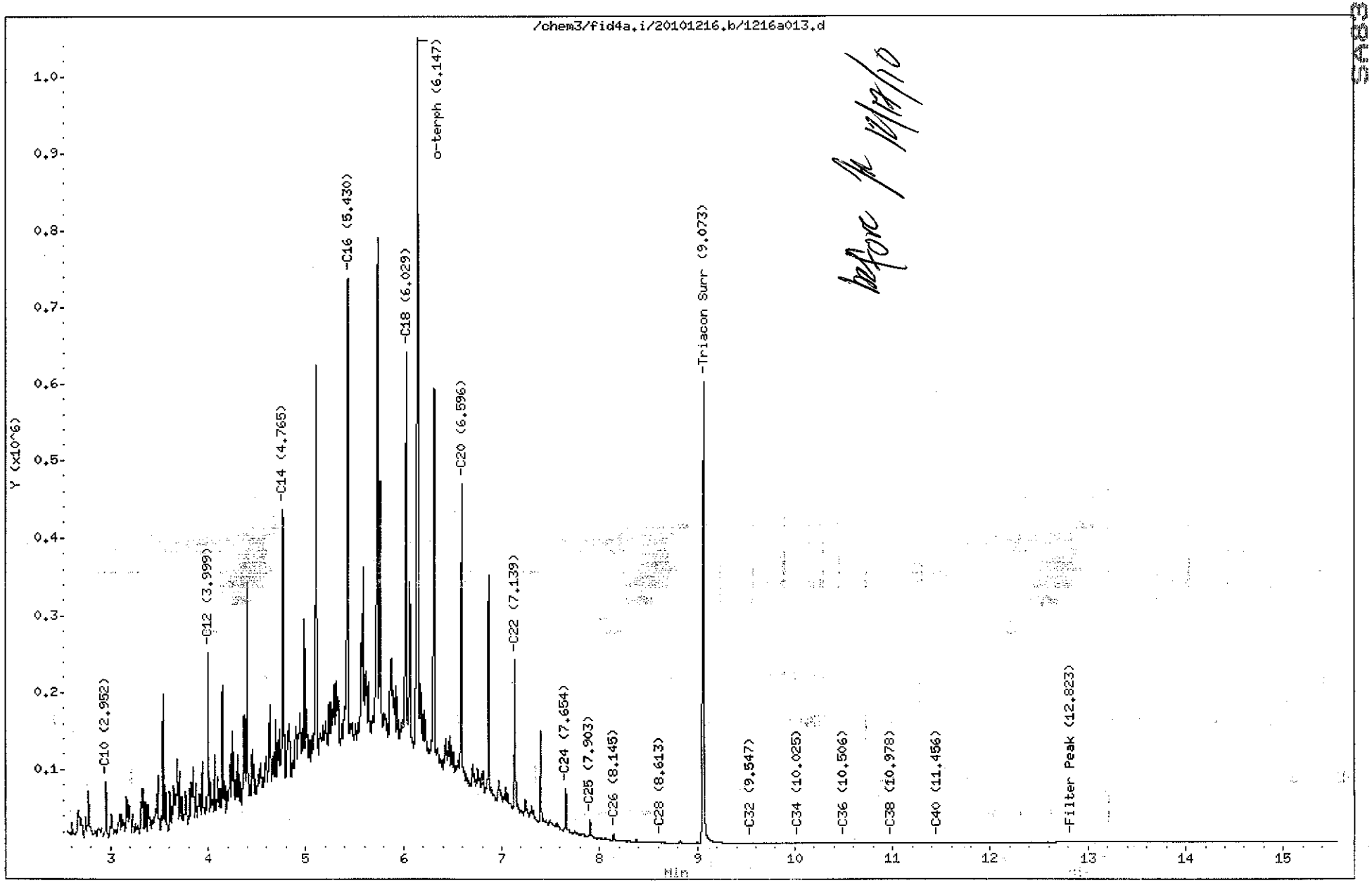
Column phase: RTX-1

Instrument: fid4a.i

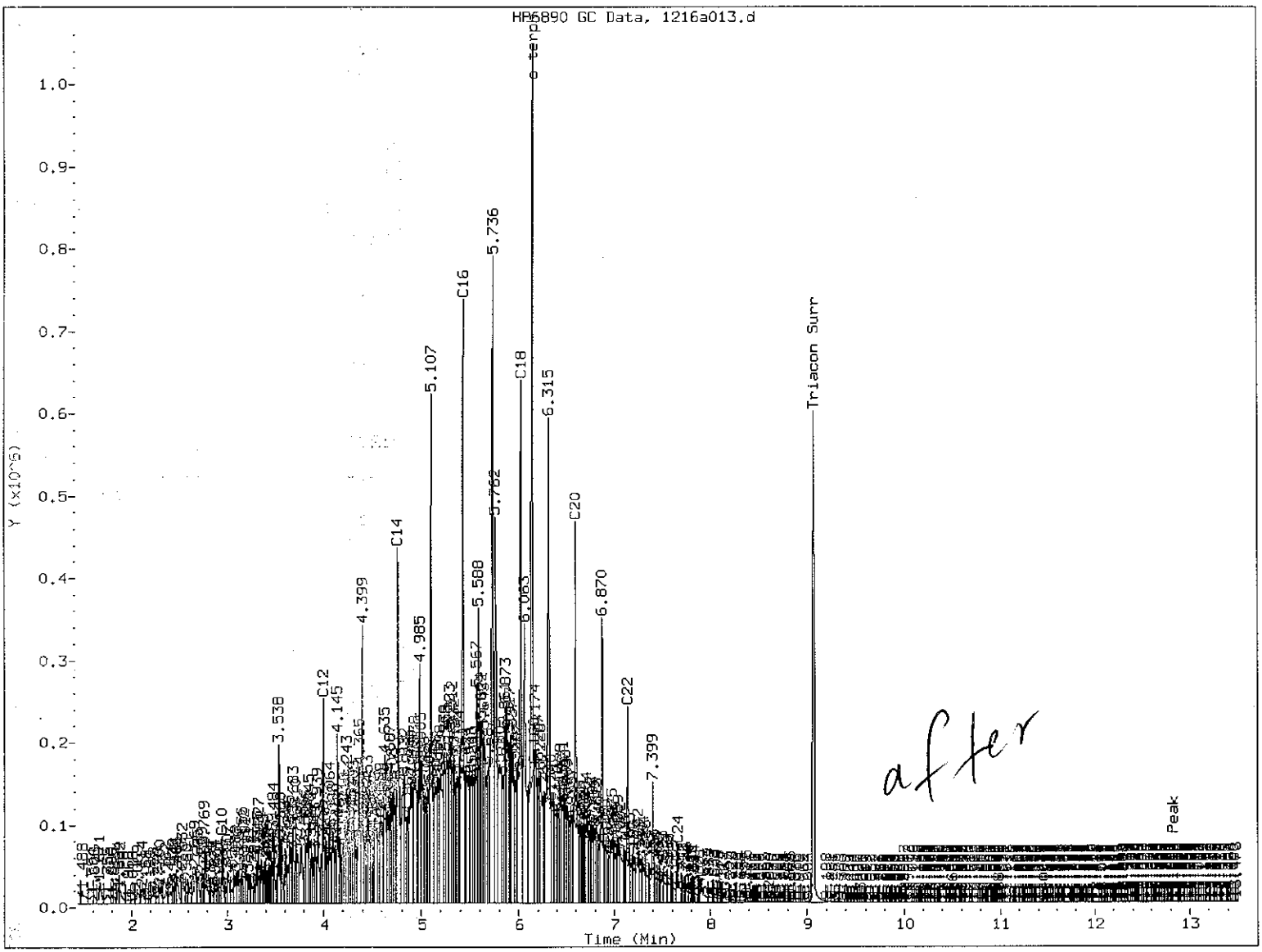
Operator: MS

Column diameter: 0.25

SA83-000071



FID:4A-2C/RTX-1 SA83LCSDS1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other Skim Grp

Analyst: _____ Date: 12/17/10

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 12/14/10

ARI Job: SA83
Project: Sunny Jim Encampment Site
COS-Sunny Jim

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
10-31038-121510MB1	Method Blank	10.0 g	1.00 mL	-	12/15/10
10-31038-121510LCS1	Lab Control	10.0 g	1.00 mL	-	12/15/10
10-31038-121510LCSD1	Lab Control Dup	10.0 g	1.00 mL	-	12/15/10
10-31038-SA83C	BRICK-RED-C	9.18 g	3.00 mL	D	12/15/10
10-31040-SA83E	SOILS-SCRACKS-C	8.19 g	3.00 mL	D	12/15/10
10-31041-SA83F	SOILS-NCRACKS-C	7.38 g	3.00 mL	D	12/15/10
10-31042-SA83G	SOILS-CAMPING-C	8.94 g	1.00 mL	D	12/15/10
10-31043-SA83H	SOILS-LANDSCAPE-C	6.91 g	3.00 mL	D	12/15/10
10-31098-SA83N	SOILS-CAMPING-C-B	8.89 g	1.00 mL	D	12/15/10

Basis: D=Dry Weight W=As Received

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: CEMENT-RED-C SAMPLE

Lab Sample ID: SA83A
LIMS ID: 10-31036
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Percent Total Solids: 99.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	12/15/10	6010B	12/16/10	7440-38-2	**Arsenic**	5	**13**	
3050B	12/15/10	6010B	12/16/10	7440-43-9	**Cadmium**	0.2	**0.5**	
3050B	12/15/10	6010B	12/16/10	7440-47-3	**Chromium**	0.5	**11.3**	
3050B	12/15/10	6010B	12/16/10	7440-50-8	**Copper**	0.2	**15.6**	
3050B	12/15/10	6010B	12/16/10	7439-92-1	**Lead**	2	**39**	
3050B	12/15/10	6010B	12/16/10	7440-66-6	**Zinc**	1	**234**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: CEMENT-GREY-C
SAMPLE

Lab Sample ID: SA83B
LIMS ID: 10-31037
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Percent Total Solids: 90.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	12/15/10	6010B	12/16/10	7440-38-2	Arsenic	30	30	U
3050B	12/15/10	6010B	12/16/10	7440-43-9	Cadmium	1	1	U
3050B	12/15/10	6010B	12/16/10	**7440-47-3**	**Chromium**	3	**17**	
3050B	12/15/10	6010B	12/16/10	**7440-50-8**	**Copper**	1	**9**	
3050B	12/15/10	6010B	12/16/10	7439-92-1	Lead	10	10	U
3050B	12/15/10	6010B	12/16/10	**7440-66-6**	**Zinc**	5	**80**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: BRICK-RED-C
SAMPLE

Lab Sample ID: SA83C
LIMS ID: 10-31038
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Percent Total Solids: 91.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	12/15/10	6010B	12/16/10	7440-38-2	Arsenic	5	5	U
3050B	12/15/10	6010B	12/16/10	**7440-43-9**	**Cadmium**	0.2	**1.0**	
3050B	12/15/10	6010B	12/16/10	**7440-47-3**	**Chromium**	0.5	**21.2**	
3050B	12/15/10	6010B	12/16/10	**7440-50-8**	**Copper**	0.2	**18.7**	
3050B	12/15/10	6010B	12/16/10	**7439-92-1**	**Lead**	2	**69**	
3050B	12/15/10	6010B	12/16/10	**7440-66-6**	**Zinc**	1	**329**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: CONCRETE-CRUMBLE-C SAMPLE

Lab Sample ID: SA83D
LIMS ID: 10-31039
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Percent Total Solids: 94.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	12/15/10	6010B	12/16/10	**7440-38-2**	**Arsenic**	10	**40**	
3050B	12/15/10	6010B	12/16/10	**7440-43-9**	**Cadmium**	0.5	**2.5**	
3050B	12/15/10	6010B	12/16/10	**7440-47-3**	**Chromium**	1	**27**	
3050B	12/15/10	6010B	12/16/10	**7440-50-8**	**Copper**	0.5	**58.4**	
3050B	12/15/10	6010B	12/16/10	**7439-92-1**	**Lead**	5	**272**	
3050B	12/15/10	6010B	12/16/10	**7440-66-6**	**Zinc**	3	**1,240**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SOILS-SCRACKS-C
SAMPLE

Lab Sample ID: SA83E
LIMS ID: 10-31040
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Percent Total Solids: 79.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	12/15/10	6010B	12/16/10	7440-38-2	Arsenic	6	6	U
3050B	12/15/10	6010B	12/16/10	**7440-43-9**	**Cadmium**	0.3	**1.4**	
3050B	12/15/10	6010B	12/16/10	**7440-47-3**	**Chromium**	0.6	**22.9**	
3050B	12/15/10	6010B	12/16/10	**7440-50-8**	**Copper**	0.3	**32.3**	
3050B	12/15/10	6010B	12/16/10	**7439-92-1**	**Lead**	3	**51**	
3050B	12/15/10	6010B	12/16/10	**7440-66-6**	**Zinc**	1	**565**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SOILS-NCRACKS-C
SAMPLE

Lab Sample ID: SA83F
LIMS ID: 10-31041
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Percent Total Solids: 71.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	12/15/10	6010B	12/16/10	7440-38-2	Arsenic	20	20	U
3050B	12/15/10	6010B	12/16/10	**7440-43-9**	**Cadmium**	0.7	**8.7**	
3050B	12/15/10	6010B	12/16/10	**7440-47-3**	**Chromium**	2	**47**	
3050B	12/15/10	6010B	12/16/10	**7440-50-8**	**Copper**	0.7	**144**	
3050B	12/15/10	6010B	12/16/10	**7439-92-1**	**Lead**	7	**4,020**	
3050B	12/15/10	6010B	12/16/10	**7440-66-6**	**Zinc**	3	**3,740**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SOILS-CAMPING-C
SAMPLE

Lab Sample ID: SA83G
LIMS ID: 10-31042
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Percent Total Solids: 86.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	12/15/10	6010B	12/16/10	7440-38-2	Arsenic	6	6	U
3050B	12/15/10	6010B	12/16/10	7440-43-9	Cadmium	0.2	0.2	U
3050B	12/15/10	6010B	12/16/10	**7440-47-3**	**Chromium**	0.6	**12.1**	
3050B	12/15/10	6010B	12/16/10	**7440-50-8**	**Copper**	0.2	**18.4**	
3050B	12/15/10	6010B	12/16/10	**7439-92-1**	**Lead**	2	**25**	
3050B	12/15/10	6010B	12/16/10	**7440-66-6**	**Zinc**	1	**68**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SOILS-LANDSCAPE-C
SAMPLE

Lab Sample ID: SA83H
LIMS ID: 10-31043
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Percent Total Solids: 68.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	12/15/10	6010B	12/16/10	**7440-38-2**	**Arsenic**	7	**8**	
3050B	12/15/10	6010B	12/16/10	**7440-43-9**	**Cadmium**	0.3	**2.2**	
3050B	12/15/10	6010B	12/16/10	**7440-47-3**	**Chromium**	0.7	**29.4**	
3050B	12/15/10	6010B	12/16/10	**7440-50-8**	**Copper**	0.3	**61.8**	
3050B	12/15/10	6010B	12/16/10	**7439-92-1**	**Lead**	3	**348**	
3050B	12/15/10	6010B	12/16/10	**7440-66-6**	**Zinc**	1	**1,040**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: CAULK-C
SAMPLE

Lab Sample ID: SA83I
LIMS ID: 10-31044
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Percent Total Solids: 100%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	12/15/10	6010B	12/16/10	**7440-38-2**	**Arsenic**	5	**9**	
3050B	12/15/10	6010B	12/16/10	**7440-43-9**	**Cadmium**	0.2	**2.1**	
3050B	12/15/10	6010B	12/16/10	**7440-47-3**	**Chromium**	0.5	**17.4**	
3050B	12/15/10	6010B	12/16/10	**7440-50-8**	**Copper**	0.2	**82.0**	
3050B	12/15/10	6010B	12/16/10	**7439-92-1**	**Lead**	2	**302**	
3050B	12/15/10	6010B	12/16/10	**7440-66-6**	**Zinc**	1	**776**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SOILS-CAMPING-C-B
SAMPLE

Lab Sample ID: SA83N
LIMS ID: 10-31098
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Percent Total Solids: 86.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	12/15/10	6010B	12/16/10	7440-38-2	Arsenic	5	5	U
3050B	12/15/10	6010B	12/16/10	7440-43-9	Cadmium	0.2	0.2	U
3050B	12/15/10	6010B	12/16/10	**7440-47-3**	**Chromium**	0.5	**14.3**	
3050B	12/15/10	6010B	12/16/10	**7440-50-8**	**Copper**	0.2	**20.8**	
3050B	12/15/10	6010B	12/16/10	**7439-92-1**	**Lead**	2	**22**	
3050B	12/15/10	6010B	12/16/10	**7440-66-6**	**Zinc**	1	**83**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: CEMENT-RED-C
MATRIX SPIKE

Lab Sample ID: SA83A
LIMS ID: 10-31036
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010B	13	213	194	103%	
Cadmium	6010B	0.5	51.1	48.4	105%	
Chromium	6010B	11.3	56.8	48.4	94.0%	
Copper	6010B	15.6	70.9	48.4	114%	
Lead	6010B	39	221	194	93.8%	
Zinc	6010B	234	326	48.4	190%	H

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: CEMENT-RED-C DUPLICATE

Lab Sample ID: SA83A
LIMS ID: 10-31036
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010B	13	12	8.0%	+/- 5	L
Cadmium	6010B	0.5	0.4	22.2%	+/- 0.2	L
Chromium	6010B	11.3	8.7	26.0%	+/- 20%	*
Copper	6010B	15.6	15.7	0.6%	+/- 20%	
Lead	6010B	39	39	0.0%	+/- 20%	
Zinc	6010B	234	282	18.6%	+/- 20%	

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: SA83LCS
LIMS ID: 10-31037
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010B	204	200	102%	
Cadmium	6010B	51.5	50.0	103%	
Chromium	6010B	50.5	50.0	101%	
Copper	6010B	51.1	50.0	102%	
Lead	6010B	200	200	100%	
Zinc	6010B	50	50	100%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: SA83MB
LIMS ID: 10-31037
Matrix: Soil
Data Release Authorized:
Reported: 12/17/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim
Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	12/15/10	6010B	12/16/10	7440-38-2	Arsenic	5	5	U
3050B	12/15/10	6010B	12/16/10	7440-43-9	Cadmium	0.2	0.2	U
3050B	12/15/10	6010B	12/16/10	7440-47-3	Chromium	0.5	0.5	U
3050B	12/15/10	6010B	12/16/10	7440-50-8	Copper	0.2	0.2	U
3050B	12/15/10	6010B	12/16/10	7439-92-1	Lead	2	2	U
3050B	12/15/10	6010B	12/16/10	7440-66-6	Zinc	1	1	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
pH by Method SW9045

Data Release Authorized:
Reported: 12/16/10
Date Received: 12/14/10

QC Report No: SA83-Floyd Snider
Project: Sunny Jim Encampment Site
COS-Sunny Jim

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	RL	Result
CEMENT-RED-C SA83A 10-31036	12/14/10	Soil	12/16/10	0.01	10.13
CEMENT-GREY-C SA83B 10-31037	12/14/10	Soil	12/16/10	0.01	9.90

Reported in std units

RL-Analytical reporting limit
U-Undetected at reported detection limit

REPLICATE RESULTS-CONVENTIONALS
SA83-Floyd Snider

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 12/16/10

Project: Sunny Jim Encampment Site
Event: COS-Sunny Jim
Date Sampled: 12/14/10
Date Received: 12/14/10

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: SA83A Client ID: CEMENT-RED-C					
pH	12/16/10	std units	10.13	10.23	0.10

pH is evaluated as the Absolute Difference between the values rather than Relative Percent Difference

LAB CONTROL RESULTS-CONVENTIONALS
SA83-Floyd Snider

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 12/16/10

Project: Sunny Jim Encampment Site
Event: COS-Sunny Jim
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	LCS	Spike Added	Recovery
pH	12/16/10	std units	7.00	7.00	0.00

pH is evaluated as the Absolute Difference between the values rather than Percent Recovery.

HAZARDOUS MATERIALS
MANAGEMENT • TRAINING • LAB SERVICES

December 17, 2010

NVL LABS
HAZARDOUS MATERIALS SERVICES

Sue Dunnihoo
Analytical Resources, Incorporated
4611 S. 134th Place Suite 100
Tukwila, WA 98168

RE: Bulk Asbestos Fiber Analysis, NVL Batch # 3016495.00

Dear Ms. Dunnihoo,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with U.S. EPA/600/R-93/116 Test Method.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

Nick Ly, Technical Director

NVL LABORATORIES, INC
4706 AURORA AVE N
SEATTLE WA 98103-6910
TEL 206.547.0100
FAX 206.634.1936
nvllabs@nvllabs.com

NVLAP Lab Code 102063-0

www.nvllabs.com
1.888.NVL.LABS (685.5227)

Enc.: Sample Results

NVL Laboratories, Inc.
4708 Aurora Ave. N., Seattle, WA 98103
Tel: 206.547.0100, Fax: 206.634.1936
www.nvllabs.com

NVLAP
For the scope of accreditation under NVLAP Lab Code 102083-0

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: Analytical Resources, Incorporated
Address: 4611 S. 134th Place Suite 100
Tukwila, WA 98168

Attention: Ms. Sue Dunnihoo
Project Location: N/A

Batch #: 3016495.00
Client Project #: Sunny Jim Encampment Site
Date Received: 12/15/2010
Samples Received: 9
Samples Analyzed: 9
Method: EPA/600R-93/116

Lab ID: 30092373 **Client Sample #: Cement-Red-01**
Location: N/A

Layer 1 of 2	Description: Red hard brittle material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
	Binder/Filler, Mineral grains	None Detected ND	**None Detected ND**
Layer 2 of 2	Description: Gray cementitious material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
	Fine particles, Cement/Binder	None Detected ND	**None Detected ND**

Lab ID: 30092374 **Client Sample #: Cement-Red-02**
Location: N/A

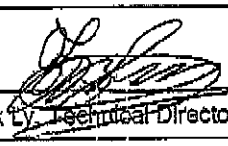
Layer 1 of 3	Description: Red hard brittle material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
	Binder/Filler, Mineral grains	None Detected ND	**None Detected ND**
Layer 2 of 3	Description: Black thin asphaltic mastic		
	Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
	Asphalt/Binder, Mastic/Binder	None Detected ND	**None Detected ND**
Layer 3 of 3	Description: Gray cementitious material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
	Fine particles, Cement/Binder	None Detected ND	**None Detected ND**

Lab ID: 30092375 **Client Sample #: Cement-Red-04**
Location: N/A

Layer 1 of 1	Description: Red hard brittle material with trace paint		
	Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
	Binder/Filler, Mineral grains, Paint	None Detected ND	**None Detected ND**

Lab ID: 30092376 **Client Sample #: Cement-Grey-01**
Location: N/A

Sampled by: Client
Analyzed by: Nadezhda Prysyazhnyuk **Date:** 12/17/2010
Reviewed by: Nick Ly **Date:** 12/17/2010



Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using EPA 600/R-93/116 Method with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.

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Tel: 206.547.0100, Fax: 206.634.1936
www.nvllabs.com

NVLAP
For the scope of accreditation under NVLAP Lab Code 102063-0

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: Analytical Resources, Incorporated
Address: 4611 S. 134th Place Suite 100
Tukwila, WA 98168

Attention: Ms. Sue Dunnihoo
Project Location: N/A

Batch #: 3016495.00
Client Project #: Sunny Jim Encampment Site
Date Received: 12/15/2010
Samples Received: 9
Samples Analyzed: 9
Method: EPA/600R-93/116

Layer 1 of 2	**Description:** Gray hard brittle material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
	Fine particles, Binder/Filler	Cellulose 3%	**Chrysotile 3%**
Layer 2 of 2	**Description:** Off-white sandy material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
	Fine particles, Binder/Filler, Sand	Cellulose 10%	**None Detected ND**

Lab ID: 30092377 **Client Sample #: Cement-Grey-02**
Location: N/A

Layer 1 of 2	**Description:** Gray hard brittle material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
	Fine particles, Binder/Filler	Cellulose 2%	**Chrysotile 3%**
Layer 2 of 2	**Description:** Off-white sandy material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
	Fine particles, Binder/Filler, Sand	Cellulose 12%	**None Detected ND**

Lab ID: 30092378 **Client Sample #: Cement-Grey-03**
Location: N/A

Layer 1 of 1	**Description:** Gray hard brittle material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
	Fine particles, Binder/Filler	Cellulose 2%	**Chrysotile 3%**

Lab ID: 30092379 **Client Sample #: Caulk-01**
Location: N/A

Layer 1 of 2	**Description:** Gray soft material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
	Binder/Filler	None Detected ND	**None Detected ND**

Sampled by: Client
Analyzed by: Nadezhda Prysyazhnyuk **Date:** 12/17/2010
Reviewed by: Nick Ly **Date:** 12/17/2010

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using EPA 600/R-93/116 Method with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9% 10%=5-18%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.

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For the scope of accreditation under NVLAP Lab Code 102063-0

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: Analytical Resources, Incorporated
Address: 4611 S. 134th Place Suite 100
Tukwila, WA 98168

Attention: Ms. Sue Dunnihoo
Project Location: N/A

Batch #: 3016495.00
Client Project #: Sunny Jim Encampment Site
Date Received: 12/15/2010
Samples Received: 9
Samples Analyzed: 9
Method: EPA/600R-93/116

Layer 2 of 2	**Description:** Black material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
	Binder/Filler, Fine particles	Cellulose 5%	**None Detected ND**

Lab ID: 30092380 **Client Sample #: Caulk-02**
Location: N/A

Layer 1 of 1	**Description:** Yellow soft material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
	Binder/Filler	None Detected ND	**None Detected ND**

Lab ID: 30092381 **Client Sample #: Caulk-03**
Location: N/A

Layer 1 of 2	**Description:** Black asphaltic material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
	Asphalt/Binder	Cellulose 5%	**None Detected ND**
Layer 2 of 2	**Description:** Trace gray sandy material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
	Binder/Filler, Sand	None Detected ND	**None Detected ND**

Sampled by: Client
Analyzed by: Nadezhda Prysyazhnyuk **Date:** 12/17/2010
Reviewed by: Nick Ly **Date:** 12/17/2010
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using EPA 600/R-93/116 Method with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.

SUBCONTRACTOR ANALYSIS REQUEST
CUSTODY TRANSFER 12/15/10

BATCH ID
3016495.00

ARI Project: SA90

Laboratory: NVL Laboratories, Inc
Lab Contact: Perry Cheston
Lab Address: 4708 Aurora Ave. N.
Seattle, WA 98103
Phone: 206-547-0100
Fax: 206-344-1878

ARI Client: Floyd Snider
Project ID: Sunny Jim Encampment Site
ARI PM: Sue Dunnihoo
Phone: (206)695-6207
Fax: 206-695-6201

Analytical Protocol: In-house
Special Instructions:

Requested Turn Around: 12/17/10
Email Results (Y/N): Yes

Limits of Liability. *Subcontractor is expected to perform all requested services in accordance with appropriate methodology following Standard Operating Procedures that meet standards for the industry. The total liability of ARI, its officers, agents, employees, or sucessors, arising out of or in connection with the requested services, shall not exceed the negotiated amount for said services. The agreement by the Subcontractor to perform services requested by ARI releases ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Subcontractor.*

ARI ID	Client ID/ Add'l ID	Sampled	Matrix	Bottles	Analyses
10-31101-SA90A	Cement-Red-01	12/14/10 10:20	Solid	1	Asbestos (Sub)
Special Instructions: USEPA 600/R-93 1116					
10-31102-SA90B	Cement-Red-02	12/14/10 10:35	Solid	1	Asbestos (Sub)
Special Instructions: USEPA 600/R-93 1116					
10-31103-SA90C	Cement-Red-04	12/14/10 11:00	Solid	1	Asbestos (Sub)
Special Instructions: USEPA 600/R-93 1116					
10-31104-SA90D	Cement-Grey-01	12/14/10 11:55	Solid	1	Asbestos (Sub)
Special Instructions: USEPA 600/R-93 1116					
10-31105-SA90E	Cement-Grey-02	12/14/10 12:00	Solid	1	Asbestos (Sub)
Special Instructions: USEPA 600/R-93 1116					
10-31106-SA90F	Cement-Grey-03	12/14/10 12:05	Solid	1	Asbestos (Sub)
Special Instructions: USEPA 600/R-93 1116					
10-31107-SA90G	Caulk-01	12/14/10 15:20	Solid	1	Asbestos (Sub)
Special Instructions: USEPA 600/R-93 1116					
10-31108-SA90H	Caulk-02	12/14/10 15:25	Solid	1	Asbestos (Sub)
Special Instructions: USEPA 600/R-93 1116					

Carrier		Airbill		Date	
Relinquished by: Natalie Bentley	Company: ARI	Date: 12/15/2010		Time: 12:27	
Received by: [signature]	Company: NVL	Date: 12/15/10		Time: 12:30	

Analyzed by Nadia [signature] NVL 12/17/10 9:35 AM

Subcontractor Custody Form - SA90
Page 1 of 2

SUBCONTRACTOR ANALYSIS REQUEST
CUSTODY TRANSFER 12/15/10

ANALYTICAL RESOURCES INCORPORATED

ARI Project: SA90

Laboratory: NVL Laboratories, Inc
Lab Contact: Perry Cheston

ARI Client: Floyd Snider
Project ID: COS-Sunny Jim

ARI Sample ID	Client Sample ID/ Add'l Sample ID	Sampled	Matrix	Bottles	Analyses
10-31109-SA90I	Caulk-03	12/14/10 16:00	Solid	1	Asbestos (Sub)

Special Instructions: USEPA 600/R-93 1116

BATCH ID
3016495.00

Carrier	Airbill		Date
Relinquished by	Company	Date	Time
Received by	Company	Date	Time

City of Seattle
Sunny Jim Encampment Plot

Investigation Data Report

Appendix B
Data Validation Report

City of Seattle
Sunny Jim Encampment Plot

Data Validation Report

Prepared for

City of Seattle
700 5th Avenue
Seattle, Washington 98104

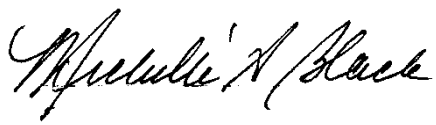
Prepared by

FLOYD | SNIDER
601 Union Street
Suite 600
Seattle, Washington 98101

February 4, 2010

Approved for Release:

Jessi Massingale, PE



Chell Black

Table of Contents

Appendix A

Appendix B

1.0 Project Narrative

1.1 OVERVIEW OF DATA VALIDATION

This report summarizes the results of the Compliance Screening (Level I) performed on the cement, concrete, brick, caulk, and soil sample data for the Sunny Jim Encampment Plot Investigation Sampling Event. A complete list of samples is provided below.

Project Sample Index

SDG (Batch)	Sample ID	Lab ID	SW9045	NWTPH -Dx	6010B	SW8082	SW8260C	SW8260C
SA83	Cement-Red-C	SA83A	X		X	X		
SA83	Cement-Grey-C	SA83B	X		X	X		
SA83	Brick-Red-C	SA83C		X	X			
SA83	Concrete-Crumble-C	SA83D			X			
SA83	Soils-Scracks-C	SA83E		X	X			
SA83	Soils-Ncracks-C	SA83F		X	X			
SA83	Soils-Camping-C	SA83G		X	X			X
SA83	Soils-Landscape-C	SA83H		X	X			
SA83	Caulk-C	SA83I			X	X		
SA83	Soils-Camping-03	SA83L					X	
SA83	Trip Blank	SA83M					X	
SA83	Soils-Camping-C-B	SA83N		X	X			

The chemical analyses were performed by Analytical Resources Inc. (ARI), Tukwila, WA. A total of two cement composites, one brick composite, one concrete composite, one caulk composite, and five soil composite samples were collected on December 14, 2010 and submitted to ARI for chemical analyses. The analytical methods include the following:

- pH—USEPA Method 9045
- Diesel & Motor Oil—NWTPH-Dx
- Selected Metals—USEPA Method 6010B
- PCBs—USEPA Method 8082
- VOCs—USEPA Method 8260C
- SVOCs—USEPA Method 8270D

The data were reviewed using guidance and quality control criteria documented in the analytical methods*; National Functional Guidelines for Inorganic data Review* (USEPA 1994 and 2004), and *National Functional Guidelines for Organic data Review* (USEPA 1999 and 2008).

Floyd|Snider's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk

assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, reasons, and validation criteria are included as Appendix A. The Qualified Data Summary Table is included in Appendix B. Data validation worksheets (excel worksheets) will be kept on file at Floyd|Snider.

2.0 Data Validation Report
pH by USEPA Method 9045

This report documents the review of analytical data from the analyses of cement samples and the associated laboratory quality control (QC) samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Jessi Massingale.

2.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and any anomalies were discussed in the case narrative.

2.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation	Lab control sample
Extraction and analysis holding times	Lab sample duplicates

All QC requirements were met without exception, and did not require further evaluation.

2.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the lab control sample percent recovery values.

All data, as reported by the lab, are acceptable for use.

3.0 Data Validation Report
Diesel and Motor Oil by NWTPH-Dx

This report documents the review of analytical data from the analyses of brick and soil samples and the associated laboratory quality control (QC) samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Jessi Massingale.

3.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and any anomalies were discussed in the case narrative.

3.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation	Surrogate recoveries
Extraction and analysis holding times	Laboratory control sample (LCS) and LCS duplicate (LCSD)
Blank contamination	Field duplicates

Appendix A presents data validation criteria tables for diesel range hydrocarbon analysis. All QC requirements were met without exception, and did not require further evaluation.

3.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the LCS and LCSD recovery values.

All data, as reported by the lab, are acceptable for use.

4.0 Data Validation Report
Selected Metals by USEPA Method 6010B

This report documents the review of analytical data from the analyses of cement, brick, concrete, soil and caulk samples and the associated laboratory quality control (QC) samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Jessi Massingale.

4.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

4.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation	[1] Matrix spike (MS)
Extraction and analysis holding times	[2] Lab sample duplicates
Blank contamination	Field duplicates
Laboratory control sample (LCS)	Target analyte list

Notes
1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued, as discussed below

Appendix A presents data validation criteria tables for inorganic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

4.2.2 Matrix Spike

The Matrix Spike Recovery for Zinc was 190% and outside control limits (75-125%) high by 65%. The sample concentration of 234 mg/kg was ≥4x the spike amount of 48.4 mg/kg. Per USEPA guidelines the spike recovery limits no longer apply when the original sample concentration is greater than 4x the spike amount, and the data should be reported with no additional qualifiers.

4.2.2 Lab sample duplicates

The Cement-Red-C/Cement-Red-C Lab Duplicate relative percent difference (RPD) for Chromium was 26% and outside the laboratory control limits of 20%, high by 6%. Per USEPA

guidelines the results for Chromium should be qualified "J" as estimated. Professional judgment is to be used to determine the sample similarity within the analysis batch. Although the lab labeled all the samples as having a soil matrix for the purpose of testing, the samples were composed of different media including cement, brick, caulk, concrete and soil. In addition, each sample was composited by the lab from at least three discreet samples. Therefore, it is with professional judgment that the remaining samples of other media in the analysis batch are not sufficiently similar to merit qualification based on this information. Only the Chromium result from the Cement-Red-C sample will be "J" qualified as noted in Qualified Data Summary Table included in Appendix B.

4.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the matrix spike and laboratory control sample percent recovery values.

All data are acceptable for use as qualified; see the Qualified Data Summary Table in Appendix B for details.

5.0 Data Validation Report
PCBs by USEPA Method 8082

This report documents the review of analytical data from the analyses of cement and caulk samples and the associated laboratory quality control (QC) samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Jessi Massingale.

5.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

5.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation	Surrogate recoveries
Extraction and analysis holding times	Laboratory control sample (LCS)
Blank contamination	[1] Matrix spike (MS) and MS Duplicate (MSD)

Notes
1 Quality control results are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

5.2.1 Matrix Spike and Matrix Spike Duplicate

The Matrix Spike and Matrix Spike Duplicate percent recoveries for Aroclor 1016 were outside advisory control limits high. The relative percent difference for the recovery concentrations were within control limits, and the percent recovery for Aroclor 1016 in the LCS was within control limits. Per USEPA guidelines data is not qualified based on MS/MSD data alone, and therefore it is with professional judgment that no Aroclor 1016 data be based on this information as acceptable accuracy was demonstrated in the LCS recovery.

5.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the laboratory control sample percent recovery values.

All data, as reported by the lab, are acceptable for use.

6.0 Data Validation Report
VOCs by USEPA Method 8260C

This report documents the review of analytical data from the analyses of soil samples and the associated laboratory quality control (QC) samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Jessi Massingale.

6.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

6.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation	Surrogate recoveries
Extraction and analysis holding times	[1] Laboratory control sample (LCS) and LCS duplicate (LCSD)
Blank contamination	[2] Continuing Calibration

Notes
1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued, as discussed below

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

6.2.1 Laboratory Control Sample and Laboratory Control Sample Duplicate

The LCS/LCSD percent recoveries for Acetone (138% and 133% respectively) were outside control limits (60-131%) high by 7% and 2%, but were within the Marginal Exceedance Limits (48-143%), which are three to four standard deviations around the mean. The National Environmental Laboratory Accreditation Conference (NELAC) Standard advises corrective action only with five or more standard deviations. USEPA guidelines only speak to the recovery of the deuterated monitoring compounds added to the LCS, therefore it is with professional judgment that no Acetone data be qualified based on this recovery information.

The LCS percent recovery for 2,2-Dichloropropane (73.8%) was outside control limits (74-123%) low by 0.2%, but was within the Marginal Exceedance Limits (66-131%). The LCSD percent recovery was within control limits. With the LCS percent recovery being slightly outside control limits, being within the marginal exceedance limits, and the LCSD percent recovery

being within control limits, it is with professional judgment that no 2,2-Dichloropropane data be qualified based on this recovery information.

6.2.2 Continuing Calibration

The continuing calibrations for Bromomethane, Vinyl Chloride, Chloroethane, Acetone, Trichlorofluoromethane, and Acrolein were outside the laboratory control limits high, and for 2-Chloroetylvinylether, outside of control limits low. Per USEPA guidelines all detected results are to be flagged "J" as estimated. The only detected compound in a field sample was Acetone in sample "Soils-Camping-C", this result will be "J" qualified as noted in Qualified Data Summary Table included in Appendix B.

6.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the laboratory control sample and laboratory control sample duplicate percent recovery values.

All data, as reported by the lab, are acceptable for use.

7.0 Data Validation Report
SVOCs by USEPA Method 8270D

This report documents the review of analytical data from the analyses of soil samples and the associated laboratory quality control (QC) samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Jessi Massingale.

7.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

7.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation	[1] Continuing Calibration
Extraction and analysis holding times	[1] Laboratory control sample (LCS)
Blank contamination	[1] Matrix spike (MS) and MS Duplicate (MSD)
Surrogate recoveries	

Notes
1 Quality control results are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

7.2.1 Continuing Calibration

The continuing calibrations for 2-Nitroaniline, 3-Nitroaniline, 2,4-Dinitrophenol, 4-Nitrophenol, and 4-Nitroaniline were outside the laboratory control limits high. All results from the associated field sample were non-detects. Per USEPA Guidelines only detected compounds are qualified based on this information, therefore no data has been qualified.

7.2.2 Laboratory control sample

The LCS percent recoveries for 4-Chloroaniline, 2-Nitroaniline, 3-Nitroaniline, 4-Nitrophenol, 4-Nitroaniline, and 3,3'-Dichlrobenzidine were outside control limits high. All results from the associated field sample were non-detects. Per USEPA Guidelines only detected compounds are qualified based on this information, therefore no data has been qualified.

7.2.3 Matrix Spike and Matrix Spike Duplicate

No Matrix Spike or Matrix Spike Duplicate was analyzed due to the sample batch containing only one soil sample. No MS/MSD request was present on the chain of custody for this analysis and the project staff was aware that it would not be run due to the small sample size without a specific request. Per USEPA guidelines data is not to be qualified based on MS/MSD data alone, therefore, it is with professional judgment that no data be qualified as all other quality control objectives for this analysis were met.

7.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the laboratory control sample percent recovery values for the majority of the analyzed compounds.

All data, as reported by the lab, are acceptable for use.

City of Seattle
Sunny Jim Encampment Plot

Data Validation Report

Appendix A
Data Qualifier Definitions and Criteria Tables

DATA VALIDATION QUALIFIER CODES
National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is a Floyd|Snider qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

Floyd|Snider Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range and Gasoline Range (Based on USEPA National Functional Guidelines as applied to criteria in NWTPH-Dx and NWTPH-Gx, June 1997, Ecology & Oregon DEQ)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature & Preservation	4°C± 2°C Water: HCl to pH < 2	J/UJ if greater than 6 deg. C
Holding Time	Ext. Waters: 14 days preserved 7 days unpreserved Ext. Solids: 14 Days Analysis: 40 days from extraction	J/UJ if hold times exceeded J/R if exceeded > 3X (Floyd|Snider PJ)
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: R2 >0.990 If used, RSD of response factors <20%	Narrate if fewer than 5 calibration levels or if %R >15% J/UJ if R2 <0.990 J/UJ if %RSD > 20%
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 85% to 115%	Narrate if frequency not met. J/UJ if %R < 85% J if %R >115%
Method Blank	At least one per batch (<10 samples) Method Blank No results >RL	U (at the RL) if sample result is < RL & < 5X blank result.
		U (at reported sample value) if sample result is > RL and < 5X blank result
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in the field blank after method blank qualifiers are assigned.
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J if both %R > upper control limit (UCL) J/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked. Use PJ if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (<10 samples) RPD < lab control limit	J if RPD > lab control limits

Validation QC Element	Acceptance Criteria	Action
LCS (not required by method)	%R within lab control limits	J/UJ if %R < LCL J if %R > UCL J/R if any %R <10% (Floyd|Snider PJ)
Surrogates	2-fluorobiphenyl, p-terphenyl, o-terphenyl, and/or pentacosane added to all samples (inc. QC samples). %R = 50-150%	J/UJ if %R < LCL J if %R > UCL J/R if any %R <10% No action if 2 or more surrogates are used, and only one is outside control limits. (Floyd|Snider PJ)
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J
Field Duplicates	Use project control limits, if stated in QAPP Floyd|Snider default: water: RPD < 35% solids: RPD < 50%	Narrate (Floyd|Snider PJ to qualify)
Two analyses for one sample (dilution)	Report only one result per analyte	"DNR" (or client requested qualifier) all results that should not be reported

Abbreviation:
PJ Professional judgment

Floyd|Snider Validation Guidelines for Metals Analysis by ICP-MS (Based on Inorganic NFG 1994 & 2004)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature and Preservation	Cooler temperature: 4°C ±2° Waters: Nitric Acid to pH < 2 For Dissolved Metals: 0.45um filter & preserve after filtration	Floyd|Snider Professional Judgment—no qualification based on cooler temperature outliers J/UJ if pH preservation requirements are not met
Holding Time	180 days from date sampled Frozen tissues—HT extended to 2 years	J/UJ if holding time exceeded
Tune	Prior to ICAL monitoring compounds analyzed 5 times wih Std Dev. < 5% mass calibration <0.1 amu from True Value Resolution < 0.9 AMU @ 10% peak height or <0.75 amu @ 5% peak height	Use Professional Judgment to evaluate tune J/UJ if tune criteria not met
Initial Calibration	Blank + minimum 1 standard If more than 1 standard, r>0.995	J/UJ if r<0.995 (for multi point cal)
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R within ±10% of true value	J/UJ if %R 75–89% J if %R = 111-125% R if %R > 125% R if %R < 75%
Continuing Calibration Verification (CCV)	Every ten samples, immediately following ICV/ICB and at end of run ±10% of true value	J/UJ if %R = 75–89% J if %R 111-125% R if %R > 125% R if %R < 75%

Initial and Continuing Calibration Blanks (ICB/CCB)	After each ICV and CCV
	every ten samples and end of run
	| blank | < IDL (MDL)
		Action level is 5x absolute value of blank conc.
		For (+)blanks, U results < action level
		For (-) blanks, J/UJ results < action level

Validation QC Element	Acceptance Criteria	Action
Reporting Limit Standard (CRI)	2x RL analyzed beginning of run Not required for Al, Ba, Ca, Fe, Mg, Na, K %R = 70%-130% (50%-150% Co,Mn, Zn)	R, < 2x RL if %R < 50% (< 30% Co,Mn, Zn) J < 2x RL, UJ if %R 50-69% (30%-49% Co,Mn, Zn) J < 2x RL if %R 130%-180% (150%-200% Co,Mn, Zn) R < 2x RL if %R > 180% (200% Co, Mn, Zn)
Interference Check Samples (ICSA/ICSAB)	Required by SW 6020, but not 200.8 ICSAB %R 80% - 120% for all spiked elements | ICSA | < IDL (MDL) for all unspiked elements	For samples with Al, Ca, Fe, or Mg > ICS levels R if %R < 50% J if %R >120% J/UJ if %R = 50% to 79% Use Professional Judgment for ICSA to determine if bias is present
Method Blank	One per matrix per batch (batch not to exceed 20 samples) blank < MDL	Action level is 5x blank concentration U results < action level
Laboratory Control Sample (LCS)	One per matrix per batch Blank Spike: %R within 80%-120%	R if %R < 50% J/UJ if %R = 50-79% J if %R >120%
	CRM: Result within manufacturer's certified acceptance range or project guidelines	J/UJ if < LCL, J if > UCL
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	One per matrix per batch 75-125% for samples where results do not exceed 4x spike level	J if %R>125% J/UJ if %R <75% J/R if %R<30% or J/UJ if Post Spike %R 75%-125% Qualify all samples in batch
Post-digestion Spike	If Matrix Spike is outside 75-125%, Spike parent sample at 2x the sample conc.	No qualifiers assigned based on this element
Laboratory Duplicate (or MS/MSD)	One per matrix per batch RPD < 20% for samples > 5x RL Diff < RL for samples > RL and < 5 x RL (Diff < 2x RL for solids)	J/UJ if RPD > 20% or diff > RL All samples in batch
Serial Dilution	5x dilution one per matrix %D < 10% for original sample values > 50x MDL	J/UJ if %D >10% All samples in batch

Validation QC Element	Acceptance Criteria	Action
Internal Standards	Every sample SW6020: 60%-125% of cal blank IS 200.8: 30%-120% of cal blank IS	J /UJ all analytes associated with IS outlier
Field Blank	Blank < MDL	Action level is 5x blank conc. U sample values < AL in associated field samples only
Field Duplicate	For results > 5x RL: Water: RPD < 35% Solid: RPD < 50% For results < 5 x RL: Water: Diff < RL Solid: Diff < 2x RL	J/UJ in parent samples only
Linear Range	Sample concentrations must fall within range	J values over range

Floyd|Snider Validation Guidelines for Volatile Analysis by GC/MS (Based on Organic NFG 1999)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature	4°C±2°C Water: HCl to pH < 2	J/UJ if greater than 6 deg. C (Floyd|Snider PJ)
Hold Time	Waters: 14 days preserved 7 Days: unpreserved (for aromatics) Solids: 14 Days	J/UJ if hold times exceeded If exceeded by > 3X HT: J/R (Floyd|Snider PJ)
Tuning	BFB Beginning of each 12 hour period Method acceptance criteria	R all analytes in all samples associated with the tune
Initial Calibration (Minimum 5 stds.)	RRF > 0.05	(Floyd|Snider PJ) If MDL= reporting limit: J/R if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05
	%RSD < 30%	(Floyd|Snider PJ) J if %RSD > 30%
Continuing Calibration (Prior to each 12 hr. shift)	RRF > 0.05	(Floyd|Snider PJ) If MDL= reporting limit: J/R if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05
	%D <25%	(Floyd|Snider PJ) If > +/-90%: J/RIf -90% to -26%: J (high bias) If 26% to 90%: J/UJ (low bias)
Method Blank	One per matrix per batch No results > CRQL	U if sample result is less than CRQL and less than appropriate 5X or 10X rule (raise sample value to CRQL)
		U if sample result is greater than or equal to CRQL and less than appropriate 5X and 10X rule (at reported sample value)
	No TICs present	R TICs using 10X rule
Storage Blank	One per SDG <CRQL	U the specific analyte(s) results in all assoc. samples using the 5x or 10x rule

Validation QC Element	**Acceptance Criteria**	**Action**
Trip Blank	Frequency as per project QAPP	Same as method blank for positive results remaining in trip blank after method blank qualifiers are assigned
Field Blanks (if required in QAPP)	No results > CRQL	Apply 5X/10X rule; U < action level
MS/MSD (recovery)	One per matrix per batch Use method acceptance criteria	Qualify parent only unless other QC indicates systematic problems: J if both %R > UCL J/UJ if both %R < LCL J/R if both %R < 10% PJ if only one %R outlier
MS/MSD (RPD)	One per matrix per batch Use method acceptance criteria	J in parent sample if RPD > CL
LCS *low conc. H2O VOA*	One per lab batch Within method control limits	J assoc. cmpd if > UCL J/R assoc. cmpd if < LCL J/R all cmpds if half are < LCL
LCS *regular VOA (H2O & solid)*	One per lab batch Lab or method control limits	J if %R > UCL J/UJ if %R <LCL J/R if %R < 10% (Floyd|Snider PJ)
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J/UJ assoc. cmpd. in all samples
Surrogates	Added to all samples Within method control limits	J if %R >UCL J/UJ if %R <LCL but >10% J/R if <10%
Internal Standard (IS)	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	J if > 200% J/UJ if < 50% J/R if < 25% RT>30 seconds, narrate and Notify PM
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (Floyd|Snider PJ)
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NJ the TIC unless: R common laboratory contaminants See Technical Director for ID issues

Validation QC Element	Acceptance Criteria	Action
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	See Technical Director if outliers

Notes:

PJ[1] No action if there are 4+ surrogates and only 1 outlier

Floyd|Snider Validation Guidelines for Semivolatile Analysis by GC/MS (Based on Organic NFG 1999)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature	4°C ± 2°	J/UJ if greater than 6 deg. C (Floyd|Snider PJ)
Holding Time	Water: 7 days from collection Soil: 14 days from collection Analysis: 40 days from extraction	Water: J/UJ if ext. > 7 and < 21 days J/R if ext > 21 days (Floyd|Snider PJ) Solids/Wastes: J/UJ if ext. > 14 and < 42 days J/R if ext. > 42 days (Floyd|Snider PJ) J/UJ if analysis >40 days
Tuning	DFTPP Beginning of each 12 hour period Method acceptance criteria	R all analytes in all samples associated with the tune
Initial Calibration (Minimum 5 stds.)	RRF > 0.05	(Floyd|Snider PJ) If MDL= reporting limit: J/R if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05
	%RSD < 30%	(Floyd|Snider PJ) J if %RSD > 30%
Continuing Calibration (Prior to each 12 hr. shift)	RRF > 0.05	(Floyd|Snider PJ) If MDL= reporting limit: J/R if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF < 0.05
	%D <25%	(Floyd|Snider PJ) If > +/-90%: J/RIf -90% to -26%: J (high bias) If 26% to 90%: J/UJ (low bias)
Method Blank	One per matrix per batch No results > CRQL	U if sample result is less than CRQL and less than appropriate 5X or 10X rule (raise sample value to CRQL)
		U if sample result is greater than or equal to CRQL and less than appropriate 5X and 10X rule (at reported sample value)

Validation QC Element	Acceptance Criteria	Action
Method Blank (continued)	No TICs present	RTICs using 10X rule
Field Blanks (Not Required)	No results > CRQL	Apply 5X/10X rule; U < action level
MS/MSD (recovery)	One per matrix per batch Use method acceptance criteria	Qualify parent only unless other QC indicates systematic problems: J if both %R > UCL J/UJ if both %R < LCL J/R if both %R < 10% Floyd|Snider PJ if only one %R outlier
MS/MSD (RPD)	One per matrix per batch Use method acceptance criteria	J in parent sample if RPD > CL
LCS CLP **low conc. H2O only**	One per lab batch Within method control limits	J assoc. cmpd if > UCL J/R assoc. cmpd if < LCL J/R all cmpds if half are < LCL
LCS **regular SVOA (H2O & solid)**	One per lab batch Lab or method control limits	J if %R > UCL J/UJ if %R <LCL J /R if %R < 10% (Floyd|Snider PJ)
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J/UJ associated compounds in all samples
Surrogates	Minimum of 3 acid and 3 base/neutral compounds Use method acceptance criteria	Do not qualify if only 1 acid and/or 1 B/N surrogate is out unless <10% J if %R > UCL J/UJ if %R < LCL J/R if %R < 10%
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	J if > 200% J/UJ if < 50% J/R if < 25% RT>30 seconds, narrate and Notify PM
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (Floyd|Snider PJ)

Validation QC Element	Acceptance Criteria	Action
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NJ the TIC unless: R common laboratory contaminants See Technical Director for ID issues
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	See Technical Director if outliers

Abbreviation:
PJ Professional judgment

City of Seattle
Sunny Jim Encampment Plot

Data Validation Report

Appendix B
Qualified Data Summary Table

Qualified Data Summary Table
Sunny Jim Site Evaluation Sampling Event

SDG	Sample ID	Lab ID	Method	Analyte	Result	Units	Lab Qualifier	DV Qualifiers
SA83	Cement-Red-C	SA83A	6010B	Chromium	11.3	mg/kg		J
SA83	Soils-Camping-03	SA83L	8260C	Acetone	34	µg/kg	Q	J

Qualifiers:
- J Estimated concentration.
- Q A detected analyte with an initial or continuing calibration that does not meet established acceptance criteria.