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Environmental Health

SOIL EXCAVATION REPORT FOR

OLSON URBAN HOUSING, LLC

Former Impulse Motors 1210 Bockman Road San Lorenzo, CA

February 1, 2007 Project Number 040T.29222.73

Prepared by:

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eviewed by:

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February 1, 2007

Steven Plunkett
Department of Environmental Protection
Environmental Protection Division
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

RE: SOIL REMOVAL REPORT

1245 – 1415 Bockman Road San Lorenzo, California (the "Site")

Dear Mr. Plunkett,

At the request and authorization of Olson Urban Housing, LLC (Olson), SECOR International Incorporated (SECOR) has prepared this report detailing the results of remedial excavation of previously identified petroleum impacted soil at the above referenced Site. The completed remedial action was conducted in general accordance with SECOR's *Proposal for Excavation of Petroleum Impacted Soil*, dated December 11, 2006. In addition, the work was completed in accordance with the terms contained in the Master Consulting Services Agreement (MCSA) with the Olson Company dated November 28, 2001. Notification of proposed field activities was made to the Alameda County Health Care Services Agency (ACHCSA), prior to the implementation of field work. The results of the completed work are summarized in the following Executive Summary, and described in greater detail in the attached report.

EXECUTIVE SUMMARY

Previous environmental assessment activities completed by SECOR and others (SECOR, 2004, 2005; ACC, 2004) at the Site reported the presence of elevated concentrations of petroleum hydrocarbon impacts in soil. The results of these investigations also indicated that the area of soil impact was limited to two separate areas located in the vicinity of the former product fuel lines and dispenser islands. Based on the results of these investigations, SECOR was retained by Olson to complete remedial excavations to physically remove contaminated soils identified in the prior assessments.

Between December 19 and December 20, 2006, under the oversight of the ACHCSA, SECOR supervised the excavation and stockpiling of two (2) remedial soil excavations located in the vicinity of the two former fuel dispensers. Prior to performing the excavation, the Site buildings were surveyed, in order to accurately determine the location of the former dispenser islands. Subsequent to the Site survey, a hydraulic excavator was used to excavate soils to expose and removed contaminated material. The resulting excavated soil was stockpiles on the western portion of the Site using a rubber-tire wheel loader. During removal activities, clean overburden soil and obviously impacted soil were segregated into separate stockpiles (SP-1 and SP-2) based on the use of a photoionization detector calibrated to 100 ppmV hexane and on visual and olfactory observations.

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Segregated clean and impacted stockpiles were both placed on 6-mil thick plastic sheeting and periodically moistened to suppress dust. Stockpiles were covered with 6-mil plastic sheeting and sandbags during work stoppages to prevent the migration of contaminants and control fugitive dust.

Two remedial excavations were completed in the vicinity of each of the former fuel dispensers. The first excavation (EX-1; northern-most) measured approximately 48 feet (east-to-west) by approximately 16 feet (north-to-south). The second excavation (EX-2; southern-most) measured approximately 44 feet (east-to-west) by approximately 19 feet (north-to-south) to a depth of 10 feet bgs. Both excavations were limited to a depth of 10 feet bgs vertically, because of the presence of groundwater.

Approximately 500 cubic yards (cyd) of soil was excavated and stockpiled (based on ex-situ measurements). Stockpiled soil remains covered on-Site awaiting final waste characterization and disposal or re-use.

Based on the results of the completed excavations, the following were noted:

Encountered soils generally consisted of silt, clay and silt/clay mixtures to the total depth of excavation (approximately 10 feet bgs). Petroleum impacted soil was easily differentiated from clean soils based on petroleum odors and characteristic greenish gray colorations. PID readings during excavation ranged from 0 to 2,000 ppmV hexane.

First water was encountered at a depth of approximately 10 feet bgs. The presence of shallow water prevented the continuation of excavation in the vertical direction.

Excavation 1 (Northern Fuel Dispenser Excavation)

<u>Sidewall Samples</u> - The confirmation samples collected from the sidewalls of the excavation, reported no presence of TPHg or TPHd at or above the laboratory detection limits. Low concentrations of the fuel oxygenates, MtBE and TBA were reported in one of the southern sidewall samples at concentrations of 0.015 mg/Kg and 0.057 mg/Kg, respectively. Total lead concentrations ranged from 3.88 mg/Kg to 4.27 mg/Kg, well within typical background concentrations.

<u>Bottom Samples</u> – Because of the infiltration of groundwater into the bottom of the excavation, only one bottom sample was collected. The results of the bottom sample reported the presence of TPHg and TPHd at concentrations of 120 and 13 mg/Kg, respectively. MtBE and Ethylbenzene were also reported at concentrations of 0.4 and 0.15 mg/Kg, respectively. Total lead was reported at 6.34 mg/Kg. No other target analytes were reported above laboratory reporting limits.

Excavation 2 (Southern Fuel Dispenser Excavation)

<u>Sidewall Samples</u> – TPHg and TPHd were reported at very low concentrations in one of the sidewall confirmation samples, S-4-5 at concentrations of 0.78 mg/Kg and 19 mg/Kg, respectively. Very low concentrations of MtBE and TBA were reported at concentrations of 0.015 mg/Kg and 0.028 mg/Kg, respectively in this same sample.

Mr. Steven Plunkett February 1, 2007 Page 3

Total lead was reported at concentrations ranging from 3.47 mg/Kg to 16.5 mg/Kg, respectively, which is well within typical background concentrations. No other target analytes were reported in sidewall confirmation samples above laboratory reporting limits.

<u>Bottom Samples</u> – Because of infiltration of groundwater into the open excavation, SECOR was only able to collect one bottom verification sample. The sample was collected from the area where the highest PID readings had been observed at during the excavation process. The sample results reported the presence of TPHg at a concentration of 2.7 mg/Kg. Trace concentrations of MtBE and Ethylbenzene were also reported in this sample at concentrations of 0.003 mg/Kg and 0.003 mg/Kg, respectively. Total lead was reported at a concentration of 3.86 mg/Kg, respectively. No other target analytes were reported in this bottom sample at or above laboratory reporting limits.

Excavation Stockpiles -

<u>Stockpile 1 (Impacted Soil)</u> - Composite soil samples taken from the impacted stockpile exhibited concentrations of gasoline range hydrocarbons ranging from 1.4 - 47 mg/kg and a TPHd concentration of 14 mg/kg. Furthermore, the sample results reported the presence of MtBE, TBA, Ethylbenzene, toluene, and total xylenes at concentrations up to 0.005, 0.18, 0.002, and 0.74 mg/Kg, respectively.

Stockpile 2 (Clean overburden) - Composite soil samples taken from clean stockpiles exhibited concentrations of TPHd, Toluene, and Xylenes at 21, 0.004, and 0.005 mg/kg, respectively. Based on these results, SECOR recommends that the ACHCSA authorize the re-use of this material as backfill of the remedial excavation.

The concentrations of contaminants detected during the sampling (as discussed above) are all well below regulatory thresholds or, with respect to lead, well within typical background concentrations. Based on the result of the completed excavation sampling, the lateral limits of impact have been removed in all lateral directions. Very low concentrations of residual TPHg (120 ppm) and other minor petroleum constituents have been reported in the bottom sample collected from excavation one (northern dispenser). However, the residual petroleum concentrations are very low and benzene was not reported in any analyzed sample. Furthermore, the results of Hydropunch groundwater sampling slightly down gradient from the fuel dispensers conducted by SECOR (2005), reported no presence of any gasoline constituent at concentrations at or above laboratory reporting limits.

As a result of the completed remedial excavation and sample results, SECOR recommends that the ACHCSA grant no further action at the Site. This recommendation is based on the following observations/ data:

- Nondetect to low concentrations of reported target analytes in collected and analyzed confirmation samples;
- Absence of benzene in any analyzed samples;
- Presence of total lead at concentrations within published health screening guidance and within typical background concentrations;

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- Absence of TPHg and VOCs in previously collected (SECOR, 2005) Hydropunch groundwater samples collected and analyzed down-and cross-gradient from the former fuel dispensers with respect to groundwater flow; and,
- Absence of target analytes in the UST excavation (ACC, 2004) located down-gradient from the fuel dispenser islands with respect to groundwater flow.

To this end, based on the above, this report requests that the ACHCSA review the collected data and Site history for closure purposes. Upon receipt of permission to proceed, the open excavation will be partially backfilled using clean overburden soil removed and tested. Subsequently, the Site will be graded for planned redevelopment.

During field operations, the ACHCSA identified two (2) PVC pipes that protruded out of the ground. The pipes appeared to be temporary monitoring wells that may have been installed by others. SECOR has been unable to ascertain, for what purpose the pipes/wells were placed, of by whom. However, as requested by the ACHCSA, the pipes/wells will attempt to be gauged and then properly abandoned under permit. A supplemental well abandonment report will be provided under separate cover to document the well destruction.

Additionally, the ACHCSA has requested that a sensitive receptor survey be completed to identify the locations of any potential groundwater supply wells. The receptor survey is currently in progress and the results will be submitted to the ACHCSA under separate cover.

CLOSURE

It has been a pleasure to provide environmental consulting services for you on this project and we look forward to working with you in the future. Should there be any questions regarding the information provided within the accompanying report please do not hesitate to contact the undersigned at (909) 335-6116.

Respectfully submitted,

SECOR International Incorporated

Jason Adelaars Staff Scientist Kyle B. Emerson, CEG 1271 Senior Vice President

CC:

Mr. Gerald Ploof, The Olson Company

Mr. Preston Brooks, Cox, Castle, Nicholson, LLP

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1.0 INTRODUCTION

This report documents the methodology and results of the remedial excavation of petroleum impacted soil completed by SECOR International Incorporated (SECOR) at the former Impulse Motors, located at 1210 Bockman Road, San Lorenzo , California (the "Site")

The completed work was conducted in general accordance with SECOR's approved *Proposal for Excavation of Petroleum Impacted Soil*, dated December 11, 2006 and in accordance with the terms provided in the Olson Company's Master Consulting Services Agreement dated November 28, 2001. The scope of work and the results of the remedial effort are described in subsequent sections. The following subsections provide the site description and a summary of past operations as well as a description of site geology.

Prior to initiation of remedial actions at the Site, notification was made to Mr. Steven Plunkett of Alameda County Health Care Services Agency (ACHCA) who is providing regulatory oversight. Mr. Plunkett visited the Site to observe remedial actions at the Site on December 20, 2007.

1.1 SITE DESCRIPTION AND OPERATIONS

The Site is located on the south side of Bockman Road between Via Chiquita and Via Del Ray in San Lorenzo, California. The approximately three acres of property on the Site is addressed as 1210 through 1366 Bockman Road.

Currently, the Site consists of vacant land which is not being used for any purpose. The Site was formerly the location of the former Impulse Motors which provided automobile repair and fuel services. The facility has, subsequently been demolished in preparation of planned grading and redevelopment of the Site for planned residential purposes.

1.2 SITE GEOLOGY AND HYDROGEOLOGY

The Site is located in an area of recent alluvial fan deposits of Quaternary age. These deposits typically consist of tideland and floodplain deposits. Regionally, the Site and surrounding area is located northeast of the San Francisco Bay, the Santa Cruz Mountains, and the Pacific Ocean. The nearest active faults include the Hayward Fault and the San Andreas Fault (Peninsula) Zones, located approximately 2.5 miles northeast and 16 miles southwest, respectively, and the Calaveras Fault, located approximately 10 miles to the northeast.

The elevation of the Site is approximately 22 feet above mean sea level. The surface topography of the site has a minor slope toward the west-southwest at less than one percent. The surface runoff generally flows toward the San Francisco Bay, located approximately ½ mile southwest of the Site.

According to the EDR report, groundwater monitoring well data within a one mile radius indicates that groundwater is expected to be encountered at a depth of approximately 8 to 10 feet below the ground surface. The general groundwater flow direction is towards the west, in the direction of the San Francisco Bay. According to the EDR report, the Site is located within ½ mile of a 500 year flood zone.

2.0 BACKGROUND INFORMATION

Numerous investigations and environmental work have been completed at the Site by SECOR and others (SECOR, 2005a,b; ACC, 2004). A summary of the completed environmental work at the Site follows below.

On June 11, 2004, ACC Environmental Consultants submitted an Underground Storage Tank (UST) Closure Report to the ACHCSA that summarized the results of the removal of one 8,000 gallon and two (2) 6,000 gallon USTs and associated piping and fuel dispensers at the Site. Confirmation samples were collected and analyzed for the presence of DRO, GRO, Pb and VOCs (including the fuel oxygenates) following appropriate EPA test methods.

The results of the tank removal activities and field sampling reported the presence of GRO concentrations collected from beneath the product piping and fuel dispensers at concentrations ranging form 690 to 5,900 milligrams per kilogram (mg/Kg). Furthermore, low to non-detect concentrations of BTEX were reported in these samples. ACC interpreted the BTEX to TPHg ratio as indicating that the petroleum concentrations reported in soil as representative of "old" gasoline that likely resulted form a previous set of product dispensers. Target analytes were not reported in samples collected form the UST cavity.

In November, 2004, SECOR was retained to complete a Phase I Environmental Site Assessment Report that included the Site and adjoining properties. The results of the completed Phase I investigation identified the operation of historical retail fuel and automobile repair services at the Site. Based on the historical Site usage and the results of the ACC investigation SECOR recommended that Phase II ESA be completed at he Site to evaluate the potential presence of COPCs in soil and groundwater at the Site.

On December 16-17, 2004, SECOR completed a Phase II ESA at the Site that included the use of a Hydraulic push drilling rig (e.g.,GeoProbe™) and hand auger, to advance eight (8) borings at select locations throughout the Site to a maximum explored depth of approximately 14 feet bgs. The completed scope of work was performed to evaluate the former UST locations, product lines, fuel dispensers and below ground hydraulic lifts at the Site. The results of SECOR Phase II investigation and subsequent recommendations are follow below:

- Chemical analysis of selected samples for the presence of pesticides following EPA test
 method 8081A, reported no presence of pesticides at or above laboratory reporting limits
 in any analyzed soil samples to a total depth of approximately 0.5 to 1 feet bgs;
- Two borings completed within the former Impulse Motors building to evaluate soils around two (2) in-ground hydraulic lifts and a drainage sump. Neither boring detected levels of petroleum hydrocarbons (C6-C40) or PCBs at levels above laboratory reporting limits for both its 2 and 8 feet bgs samples. Therefore, SECOR considers these hydraulic lifts and drainage sump unlikely to represent an environmental concern to the Site, and recommends no further investigation.

- Groundwater samples HP-1 and HP-2 were proposed to verify the results of the
 previously completed ACC investigation (ACC, 2004), which indicated that
 contamination was not significant in the vicinity of the former USTs located at 1210
 Bockman Road (see Figure 2). HP-1 and HP-2 were located up-gradient (east) and
 down-gradient (west) from the former UST location, respectively. The results of testing
 at both HP-1 and HP-2 showed no TPH-g and VOC concentrations in collected
 groundwater samples at or above laboratory reporting limits.
- Several samples were obtained from two borings, SB-4 and SB-5, near the former fuel dispenser islands located in front of the Impulse Motors facility at 1210 Bockman Road. The analytical results from these sample locations are discussed as follows:
 - Total petroleum hydrocarbons analyzed against gasoline (TPH-g) were detected in boring SB-4 at 5 feet bgs, which was located adjacent to the northernmost fuel dispenser island at Impulse Motors of 1210 Bockman Road (see Figure 2). TPHg levels in this sample were detected at 4.9 parts per million (ppm). SB-4 at 5 feet bgs also exhibited concentrations of the VOCs Benzene, n-Butylbenzene, tert-Butylbenzene, Ethylbenzene, Isopropylbenzene, p-Isopropyltoluene, Methyltert-butyl ether (MtBE), Naphthalene, n-Propylbenzene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, and Xylenes (m-, p-) at levels of 0.003, 0.050, 0.002, 0.007, 0.030, 0.004, 0.11, 0.088, 0.11, 0.024, 0.002, and 0.005 milligrams per kilogram (mg/Kg), respectively. The TPH-g and BTEX were reported at levels in this sample were detected below their respective maximum soil screening levels (California RWQCB, 1996). This boring was placed in close proximity to ACC (2004) sample locations P3-2.0 and D3-2.0, which were sampled on April 29, 2004 upon UST and fuel dispenser removal and showed levels of both TPH-g and BTEX at levels above the California RWQCB maximum soil screening levels.
 - Total petroleum hydrocarbons analyzed against gasoline (TPH-g) were not detected in boring SB-5, which was located adjacent to the southernmost fuel dispenser island at Impulse Motors of 1210 Bockman Road (see Figure 2). SB-5 at 2 feet bgs, however, exhibited concentrations of the VOCs Ethylbenzene, Xylenes (m-, p-), and Xylenes (o-) at levels of 0.002, 0.009, and 0.003 milligrams per kilogram (mg/Kg), respectively. The TPH-g and VOC reported levels in this sample were detected either below their respective laboratory reporting limits or maximum soil screening levels (California RWQCB, 1996). This boring was placed in close proximity to ACC boring D1-2.0, which was sampled on April 29, 2004 upon UST and fuel dispenser removal and showed levels of both TPH-g and BTEX at levels above the California RWQCB maximum soil screening levels.

Based on the results of the completed investigation, SECOR concluded that petroleum impact was limited to shallow soils in the vicinity of the former fuel dispenser islands. As a result, SECOR recommended that these soils be excavated and disposed of off-Site at an approved receiving facility.

The excavation and removal of the identified petroleum impact in the vicinity of the fuel dispensers is the focus of the remainder of this report.

3.0 SOIL MANAGEMENT PROGRAM

3.1 SCOPE-OF-WORK

The scope of work consisted of the following general elements:

- Surveying the Site do determine the location of the former retail building, and location of the former fuel dispensers;
- Preparation of a Site specific health and safety plan;
- Notification of the Bay Area Air pollution Control District (CHECK NAME), of planned remedial excavation (completed by subcontractor);
- Notification of the ACHCSA of current Site condition and planned remedial excavation;
- Use of a track-mounted hydraulic excavator to excavate impacted fills. to enddump trucks. A wheel loader was used to relocate excavated soils to plastic lined stockpiles.
 - Segregation of excavated material into impacted and relatively clean stockpiles based on field observations (visual and olfactory) and voc readings using a photoionization detector.
 - Placement of stockpiles soil on 6-millimeter thick plastic sheeting and moistening to control dust.
 - Covering stockpiles with 6-millimiter thick plastic sheeting and sandbags to control fugitive dust and run-off;
- Collection of clean verification samples from excavation bottom and sidewalls in accordance with the sampling plan required by the ACHCSA for potential chemical analysis:
- Collection and field compositing of stockpile samples for waste characterization purposes;
- Analysis of collected soil samples at a State of California Laboratory for the presence of diesel and gasoline range organics (TPHg and TPHd, respectively) following modified EPA test method 8015B; benzene, toluene, ethylbenzene and total xylenes (collectively BTEX) and the fuel oxygenates following EPA test method 8260B; and, for total lead (Pb) following EPA test method 6010B
- Preparation and submittal of this report documenting the findings and results of the investigation.

3.2 EXCAVATION OF PETROLEUM IMPACTED SOIL

Between December 19 and December 20, 2006, SECOR supervised the excavation and stockpiling of two (2) excavations located in the location of the two former fuel dispensers. Mr. Steven Plunkett of the ACHCSA visited the Site to provide oversight on December 19, 2006. To complete the remedial activities, a hydraulic excavator (and Bobcat) was used to excavate soils to the surface and the excavated soil was relocated to stockpiles on the western portion of the Site using end-dump trucks. During removal activities, clean overburden soils and obviously impacted soil were segregated into separate stockpiles

(SP-1 and SP-2) based on visual and olfactory observations and by utilizing a photoionization detector calibrated to 100 ppmV hexane.

Segregated clean and impacted stockpiles were placed on 6-mil thick plastic sheeting and periodically moistened to suppress dust. Stockpiles were covered with 6-mil plastic sheeting and sandbags during work stoppages.

Two remedial excavations were completed in the vicinity of each of the former fuel dispensers. The first excavation (EX-1; northern-most) measured approximately 48 feet (east-to-west) by approximately 16 feet (north-to-south). The second excavation (EX-2; southern-most) measured approximately 44 feet (east-to-west) by approximately 19 feet (north-to-south) to a depth of 10 feet bgs.

Both excavations were limited to a depth of 10 feet bgs vertically, because of the presence of groundwater.

Approximately 500 cyd of soil was excavated and stockpiled (based on ex-situ measurements). Stockpiled soil remains covered on-Site awaiting final waste characterization and disposal.

3.3 SOIL SAMPLING

Verification samples were collected into laboratory provided 4-ounce glass jars with Teflon® -lined lids for potential chemical analysis. Samples were collected and the soil was deposited into clean, laboratory provided 4-ounce glass jars equipped with Teflon lids.

Stockpiles were sampled by collecting representative soil from four random locations and compositing the sample into one sample (composite sample) for chemical analysis. Samples were collected into pre-cleaned laboratory provided glass jars with Teflon lined lids.

All samples were placed into an ice-filled cooler and transported to Centrum Analytical Laboratories, Inc. (Centrum) in Riverside, California (a California-certified laboratory) under appropriate chain-of-custody.

4.0 LABORATORY TESTING PROGRAM

All soil samples obtained from the subsurface investigation were delivered under chain-of-custody (Appendix A) to Centrum located in Riverside, California. Centrum is certified to perform hazardous waste testing by the State of California Department of Health Services, Environmental Laboratory Accreditation Program.

Selected soil samples were analyzed for total lead following EPA Test method 6010B; TPHg and TPHd by modified EPA Test method 8015b; and BTEX and fuel oxygenates (BTEX, EDB, EDC, MtBE, TAME, ETBE, DIPE, TBA and EtOH) by EPA Test method 8260B. Analytical results are tabulated on Tables 1-3. Analytical laboratory test results are included in Appendix A and discussed in Section 5.0.

5.0 REMEDIATION RESULTS

5.1 FIELD OBSERVATIONS

Soils encountered during the remedial effort consisted of clay and silty clay mixtures with abundant debris (concrete, metal conduit, mortared brick etc.) to the maximum explored depth of approximately 10 feet bgs. Groundwater was encountered at a depth of 10 feet bgs.

In general, native soils had a dark black color and petroleum impacted soils were stained dark greenish gray in color. Measurements of VOCs utilizing a PID calibrated to 100 ppmV Hexane reported VOC concentrations ranging from 1-2000 ppmV.

During field operations, the ACHCSA identified two (2) PVC pipes that protruded out of the ground. The pipes appeared to be temporary monitoring wells that may have been installed by others. SECOR has been unable to ascertain, for purpose of the pipes/wells. However, as requested by the ACHCSA, the pipes/wells will be gauged and then properly abandoned under permit. A supplemental well abandonment report will be provided under separate cover to document the well destruction.

5.2 ANALYTICAL RESULTS

The laboratory test results are discussed below. Laboratory test results for primary COPCs are summarized in attached Tables 1 through 3 and the complete laboratory analytical test results are presented on the laboratory data sheets attached as Appendix A.

5.3 SOIL BACKFILL AND RESTORATION

Backfill and restoration of the open excavation is on hold pending approval of the ACHCSA to proceed

6.0 CONCLUSIONS AND RECOMMENDATIONS

Previously environmental assessment activities completed by SECOR and others (SECOR, 2004, 2005; ACC, 2004) at the Site, reported the presence of elevated concentrations of petroleum hydrocarbon impacted to soil. The results of these investigations also indicated that the area of soil impact was limited to two separate areas located in the vicinity of the former product fuel lines and dispenser islands. Based on the results of these investigations, SECOR was retained by Olson to complete remedial excavations to physically remove contaminated soils identified in the prior assessments.

Between December 19 and December 20, 2006, under the oversight of the ACHCSA, SECOR supervised the excavation and stockpiling of two (2) remedial soil excavations located in the vicinity of the two former fuel dispensers. Prior to performing the excavation, the Site buildings were surveyed, in order to accurately determine the location of the former dispenser islands. Subsequent to the Site survey, a hydraulic excavator was used to excavate soils to expose and removed contaminated material. The resulting excavated soil was stockpiles on the western portion of the Site using a rubber-tire wheel loader. During removal activities, clean overburden soil and obviously impacted soil were segregated into separate stockpiles (SP-1 and SP-2) based on visual and olfactory observations and by utilizing a photo-ionization detector calibrated to 100 ppmV hexane.

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Approximately 500 cubic yards (cyd) of soil was excavated and stockpiled (based on exsitu measurements). Stockpiled soil remains covered on-Site awaiting final waste characterization and disposal or re-use.

Based on the results of the completed excavations, the following were noted:

Encountered soils generally consisted of silt, clay and silt/clay mixtures to the total depth of excavation (approximately 10 feet bgs). Petroleum impacted soil was easily differentiated from clean soils based on petroleum odors and characteristic greenish gray colorations. PID readings during excavation ranged from 0 to 2,000 ppmV hexane.

First water was encountered at a depth of approximately 10 feet bgs. The presence of shallow water prevented the continuation of excavation in the vertical direction.

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Bottom Samples – Because of the infiltration of groundwater into the bottom of the excavation, only one bottom sample was collected. The results of the bottom sample reported the presence of TPHg and TPHd at concentrations of 120 and 13 mg/Kg, respectively. MtBE and Ethylbenzene were also reported at concentrations of 0.4 and 0.15 mg/Kg, respectively. Total lead was reported at 6.34 mg/Kg. No other target analytes were reported above laboratory reporting limits.

Excavation 2 (Southern Fuel Dispenser Excavation)

<u>Sidewall Samples</u> – TPHg and TPHd were reported at very low concentrations in one of the sidewall confirmation samples, S-4-5 at concentrations of 0.78 mg/Kg and 19 mg/Kg, respectively. Very low concentrations of MtBE and TBA were reported at concentrations of 0.015 mg/Kg and 0.028 mg/Kg, respectively in this same sample. Total lead was reported at concentrations ranging from 3.47 mg/Kg to 16.5 mg/Kg, respectively. No other target analytes were reported in sidewall confirmation samples above laboratory reporting limits.

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Excavation Stockpiles -

Stockpile 1 (Impacted Soil) - Composite soil samples taken from the impacted stockpile exhibited concentrations of gasoline range hydrocarbons ranging from 1.4 - 47 mg/kg and a TPHd concentration of 14 mg/kg. Furthermore, the sample results reported the presence of MtBE, TBA, Ethylbenzene, toluene, and total xylenes at concentrations up to 0.005, 0.18, 0.002, and 0.74 mg/Kg, respectively.

<u>Stockpile 2 (Clean overburden)</u> - Composite soil samples taken from clean stockpiles exhibited concentrations of TPHd, Toluene, and Xylenes at 21, 0.004, and 0.005 mg/kg, respectively. Based on these results, SECOR recommends that the ACHCSA authorize the re-use of this material as backfill of the remedial excavation.

Based on the result of the completed excavation sampling, the lateral limits of impact have been removed in all lateral directions. Very low concentrations of residual TPHg (120 ppm) and other minor petroleum constituents have been reported in the bottom sample collected from excavation one (northern dispenser). However, the residual petroleum concentrations are very low and benzene was not reported in any analyzed sample. Furthermore, the results of Hydropunch groundwater sampling slightly down gradient from the fuel dispensers conducted by SECOR (2005), did not report the presence of any gasoline constituent at concentrations at or above laboratory reporting limits.

As a result of the completed remedial excavation and sample results, SECOR recommends that the ACHCSA grant no further action at the Site. This recommendation is based on the following observations/ data:

- Nondetect to low concentrations of reported target analytes in collected and analyzed confirmation samples;
- · Absence of benzene in any analyzed samples;
- Presence of total lead at concentrations within published health screening guidance and within typical background concentrations;
- Absence of TPHg and VOCs in previously collected (SECOR, 2005) Hydropunch groundwater samples collected and analyzed down-and cross-gradient from the former fuel dispensers with respect to groundwater flow; and,
- Absence of target analytes in the UST excavation (ACC, 2004) located downgradient from the fuel dispenser islands with respect to groundwater flow.

To this end, based on the above, this report requests that the ACHCSA review the collected data and Site history for closure purposes. Upon receipt of permission to proceed, the open excavation will be partially backfilled using clean overburden soil removed and tested. Subsequently, the Site will be graded for planned redevelopment.

During field operations, the ACHCSA identified two (2) PVC pipes that protruded out of the ground. The pipes appeared to be temporary monitoring wells that may have been installed by others. SECOR has been unable to ascertain, for what purpose the pipes/wells were placed, of by whom. However, as requested by the ACHCSA, the pipes/wells will attempt to be gauged and then properly abandoned under permit. A supplemental well abandonment report will be provided under separate cover to document the well destruction.

Additionally, the ACHCSA has requested that a sensitive receptor survey be completed to identify the locations of any potential groundwater supply wells. The receptor survey is currently in progress and the results will be submitted to the ACHCSA under separate cover.

7.0 CLOSURE

The conclusions presented in this report are professional opinions based on data described in this report. The opinions of this report have been arrived at in accordance with currently accepted hydrogeologic and engineering standards and practices applicable to this location, and are subject to the following inherent limitations. SECOR makes no other warranty, either expressed or implied, concerning the conclusions and professional advice that is contained within the body of this report.

Inherent in most projects performed in a heterogeneous subsurface environment, continuing excavation and assessments may reveal findings that are different than those presented herein. This facet of the environmental profession should be considered when formulating professional opinions on the limited data collected on these projects.

This report has been issued with the clear understanding that it is the responsibility of the owner, or their representative, to make appropriate notifications to regulatory agencies. It is specifically not the responsibility of SECOR to conduct appropriate notifications as specified by current County and State regulations.

The information presented in this report is valid as of the date our exploration was performed. Site conditions may degrade with time; consequently, the findings presented herein are subject to change.

Notwithstanding the foregoing, this report was prepared in accordance with SECOR's Master Services Agreement with this Client, and to the extent any provisions of the report conflicts with the Master Services Agreement, the Master Services Agreement shall control.

8.0 REFERENCES

- ACC Environmental Consultants (ACC), 2004, Underground Storage Tank Closure Report, Impulse Motors, 1210 Bockman Road, San Lorenzo, California, June 11.
- SECOR International, Incorporated (SECOR), 2004, Phase I Environmental Site Assessment, 1210-1415 Bockman Road, San Lorenzo, California, November 18
- SECOR, 2004, Phase II Environmental Site Assessment Report, 1210-1366 Bockman Road, San Lorenzo, California, December 22
- SECOR, 2006, Proposal to Conduct Phase II for Excavation of Petroleum Impacted Soils, Former Impulse Motors, 1210 Bockman Road, San Lorenzo, California, December 11

Table 1 Summary of Soil Analytical Results Olson - San Lorenzo 1245 - 1415 Bockman Road San Lorenzo, California

,			SECO	R Job No.: 04	4OT.29215.67
	Sample ID	Sampling Depth ⁽¹⁾	Sampling Date		'H ⁽²⁾ 15) ⁽³⁾ C13-C22 ⁽⁵⁾
	USEPA PRG (mg/Kg)		100ª	100ª
	N-1-5	5	12/20/2006	<0.02	<10
√* •	N-2-5	5	12/20/2006	<0.02	<10
Excavation 1	S-1-5	5	12/20/2006	<0.02	<10
(North)	S-2-5	5	12/20/2006	<0.02	<10
(140/111)	E-1-5	5	12/20/2006	<0.02	<10
	W-1-5	5	12/20/2006	<0.02	<10
	B-1	10	12/20/2006	120	13
	N-3-5	5	12/20/2006	<0.02	<10
	N-4-5	5	12/20/2006	<0.02	<10
Excavation 2	S-3-5	5	12/20/2006	<0.02	<10
(South)	S-4-5	5	12/20/2006	0.78	19
(Coutil)	E-2-5	5	12/20/2006	<0.02	<10
	W-2-5	5	12/20/2006	<0.02	23
	B-2	10	12/20/2006	2.7	<10
	CS-1	Composite	12/20/2006	4.4	<10
Impacted Soil	CS-2	Composite		14	14
	CS-3	Composite		47	<10
Clean Soil	CS-4		12/20/2006	<0.02	21
Olean boil	CS-5	Composite	12/20/2006	<0.02	<10

NOTES:

- (1) Sample depth is reported as feet below ground surface
- (2) Concentrations reported in mg/Kg
- (3) EPA Test Method
- (4) Characteristic carbon chain of Gasoline
- (5) Characteristic carbon chain of Diesel
- a Maximum Soil Screening Levels in mg/Kg; soil located <20 feet above groundwater;

Source: Cal/EPA CRWQCB-LA Interim Site Assessment & Cleanup Guidebook, 1!

< - Indicates the concentration was not detected about the laboratory method detection limit.

Only samples analyzed which reported detections were included on the table.

ABBREVIATIONS:

TPH - Total petroleum hydrocarbons

JSEPA PRG - United States Environmental Protection Agency Preliminary Remediation Goals

Table 2 Summary of Soil Analytical Results Olson - San Lorenzo 1245 - 1415 Bockman Road San Lorenzo, California SECOR, Joh No.: 0407 20215 67

		1						Job No.: 040	1.29215.67	
		Sampling Depth ⁽¹⁾	Sampling Sampling (8					SS ⁽²⁾		
	Sample ID				Date	Methyl-tert-butyl ether (MtBE)	tert-Butanol (TBA)	Benzene	Ethylbenzene	Toluene
	USEPA PRG for Res	sidential Soils(i	mg/Kg)	62		0.6	8.9	5200	2700	
	Samples						<u> </u>			
	N-1-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	<0.001	< 0.003	
Excavation 1	N-2-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	< 0.001	< 0.003	
	S-1-5	5	12/20/2006	0.015	0.057	<0.005	< 0.005	< 0.001	<0.003	
(North)	S-2-5	5	12/20/2006	0.002	<0.02	<0.005	<0.005	<0.001	< 0.003	
(110111)	E-1-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	<0.001	<0.003	
	W-1-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	<0.001	< 0.003	
	B-1	10	12/20/2006	0.4	<0.02	<0.005	0.15	<0.001	< 0.003	
-	N-3-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	<0.001	<0.003	
	N-4-5	5	12/20/2006	0.015	0.028	<0.005	< 0.005	<0.001	< 0.003	
Excavation 2	S-3-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	<0.001	< 0.003	
(South)	S-4-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	<0.001	<0.003	
(252)	E-2-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	<0.001	< 0.003	
	W-2-5	5	12/20/2006	<0.01	<0.02	<0.005	< 0.005	<0.001	< 0.003	
	B-2	10	12/20/2006	0.003	<0.02	<0.005	0.003	<0.001	<0.003	
Impacted	CS-1	Composite	12/20/2006	0.005	<0.02	<0.005	0.053	0.002	0.29	
Soil	CS-2	Composite	12/20/2006	<0.01	<0.02	<0.005	0.023	<0.001	0.74	
0011	CS-3	Composite	12/20/2006	<0.01	<0.02	<0.005	0.18	< 0.001	0.27	
Clean Soil	C\$-4	Composite	12/20/2006	<0.01	<0.02	<0.005	<0.005	0.004	0.005	
CICALI GUII	CS-5	Composite	12/20/2006	<0.01	<0.02	<0.005	<0.005	0.002	0.003	

NOTES:

- (1) Sample depth is reported as feet below ground surface
- (2) Concentrations reported in mg/Kg
- (3) EPA Test Method
- < Indicates the concentration was not detected above the laboratory method detection limit.

ABBREVIATIONS:

VOCs - volatile organic compounds

3EPA PRG - United States Environmental Protection Agency Preliminary Remediation Goals

Table 3 Summary of Soil Analytical Results Olson - San Lorenzo 1245 - 1415 Bockman Road San Lorenzo, California

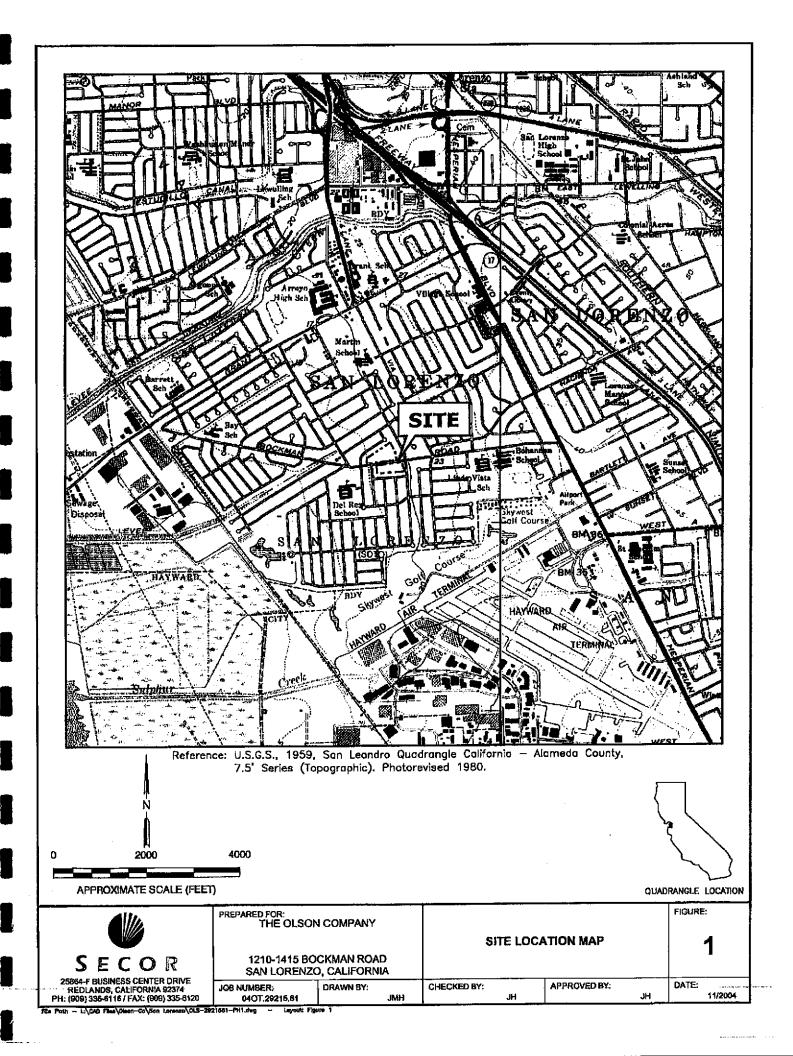
SECOR Job No.: 04OT.29215.67

±	0E001(000 No.: 0401.29215.01						
	Sample ID	Sampling Depth ⁽¹⁾	Sampling Date	Lea d by 6010			
	USEPA PRG (mg/Kg))		150			
	Samples						
	N-1-5	5	12/20/2006	4.06			
	N-2-5	5	12/20/2006	3.97			
Excavation 1	S-1-5	5	12/20/2006	4.27			
(North)	S-2-5	5	12/20/2006	4.10			
(140/11)	E-1-5	5	12/20/2006	4.03			
	W-1-5	5	12/20/2006	3.88			
	B-1	10	12/20/2006	6.34			
	N-3-5	5	12/20/2006	4.36			
	N-4-5	5	12/20/2006	3.47			
Excavation 1	S-3-5	5	12/20/2006	4.08			
(South)	S-4-5	5	12/20/2006	16.5			
(Oodin)	E-2-5	5	12/20/2006	3.89			
	W-2-5	5	12/20/2006	4.24			
	B-2	10	12/20/2006	3.86			
Clean Soil	CS-4	Composite	12/20/2006	5.84			
	CS-5	Composite	12/20/2006	4.82			

NOTES:

- (1) Sample depth is reported as feet below ground surface
- (2) Concentrations reported in mg/Kg
- (3) EPA Test Method
- < Indicates the concentration was not detected about the laboratory method detection lin ABBREVIATIONS:

3EPA PRG - United States Environmental Protection Agency Preliminary Remediation C Pb - Lead



BOCKMAN ROAD **SIDEWALK POWER POLE** N-1-5 CLEAN SOIL PILE (CS-4) N-2-5 B-1 CLEAN SOIL PILE (CS-5) S-1-5 S-2-5 E-1-5 N-3-5 N-4-5 SUSPECTED GROUNDWATER MONITORING WELLS W-2-5/ V E-2-5 \subset Ò S-3-5 I \circ V IMPACTED SOIL PILE (CS-1,2,3) APPROXIMATE SCALE IN FEET FIGURE: FOR: SITE PLAN SHOWING OLSON - SAN LORENZO SAMPLE LOCATIONS 1210-1366 BOCKMAN ROAD SECOR 25864-F BUSINESS CENTER DRIVE SAN LORENZO, CA

JOB NUMBER:

04OT.29215.54

REDLANDS, CA 92374 PHONE: (909) 335-6116 FAX: (909) 335-6120

DRAWN BY:

GH

CHECKED BY:

ΑĻ

APPROVED BY:

DATE:

12/21/06

APPENDIX A LABORATORY DATA SHEETS AND QA/QC RESULTS



Chambra Hadadious Wasti Testina Mobile & in House Galaginous

Client:

SECOR

25864-F Business Center Drive Redlands, CA 92374-4515

Date Sampled:

12/20/06

Date Received:

12/21/06

Job Number:

29082

Project: Olson - San Lorenzo

CASE NARRATIVE.

The following information applies to samples which were received on 12/21/06:

The samples were received at the laboratory chilled and sample containers were intact.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested. The date of issue for this report is 01/02/07.

Report approved by:

2007.01.02 15:44:34 -08'00'

Robert R. Clark, PhD

President

ELAP Lab# 2419, 2479, 2527, 2373, 2562

RL: Reporting Limit -- The lowest level at which the compound can be reliably detected under normal laboratory conditions.

ND: Not Detected -- The compound was analyzed for, but was not found to be present at or above the Reporting Limit.

NA: Not Analyzed -- This compound was not on the list of compounds requested for analysis.

Page 1 of 22



Lead by EPA 6010B

Client: SECOR

Project: Olson - San Lorenzo

Job No.: 29082 Matrix: Soil Analyst: TLB
 Date Sampled:
 12/20/06

 Date Received:
 12/21/06

 Date Digested:
 12/27/06

Date Analyzed: 12/27-28/06 Batch Number: 6010S3839

	Reporting Limit	Lead
Sample ID	mg/Kg	mg/Kg
Method Blank	10	ND
N-1-5	1.0	4.06
N-2-5	1.0	3.97
N-3-5	1.0	4.36
N-4-5	1.0	347
S-1-5	1.0	4.27
S-2-5	1.0	4.10
S-3-5	1.0	4.08
S-4-5	9.0	16.5
E-1-5	1.0	4.03
E-2-5	1.0	3.89
W-1-5	1.0	3.88
W-2-5	1.0	4.24
B-1	1.0	6.34
B-2	1.0	3.86
CS-4	1.0	5.84
CS-5	1.0	4.82
	amanin a amanin 1995 merekalaran 1995 a 1995 a 1995 a 1995 a	
ng ang unitable panak kanasan. Pang dinang manag panak kanasan.		
era, ki ayar arasan da kabana a	a a marinina a la artimenta na la materia de la minima fanta a la marina de la marina fanta de la marina fanta Transportation de la marina de l	er en millione militare de la million rationale de la company de la company de la company de la company de la c



QC Sample Report - Metals by EPA 6010B

Matrix: Soil

Batch Number: 6010S3839

Batch Accuracy Results

Spike Sample ID: Laborator	y Control	Sample			Analytical Notes:
Compound	Spike Concentration (mg/Kg)	Spike Sample % Recovery	% Recovery Acceptance Limits	Pass/Fail	
Lead	50	97	75 <i>-</i> 125	Pass	
	v				

Batch Precision Results

MS/MSD Sample ID: 29078	3-4					Analytical Notes:
Compound	MS Sample Result (mg/Kg)	MSD Sample Result (mg/Kg)	Relative Percent Difference (RPD)	RPD Acceptance Limit	Pass/Fail	
Lead	64.77	72.39	eres e e e e e	20%	an in the same of the	

MS: Matrix Spike

LCS: Laboratory Control Sample

MSD; Matrix Spike Duplicate

LCSD: Laboratory Control Sample Duplicate



Extractable Hydrocarbons as Diesel by mod. EPA 8015B

Client:

SECOR

Project:

Olson - San Lorenzo

Job No.:

29082

Matrix: Analyst:

ΑW

Soil

Date Sampled: 12/20/06

Date Received: 12/21/06

Date Extracted: 12/22/06

Date Analyzed: 12/22-23/06

Batch Number: 8015DS3989

	Reporting Limit	Diesel	Surrogate (OTP)
Sample ID	mg/Kg	mg/Kg	Limit: 50 - 150%
Method Blank	10	ND	93 %
N-1-5	10	ND	106 %
N-2-5	10	ND	103 %
N-3-5	10	ND	83 %
N-4-5	10	ND	84 %
S-1-5	10	ND	89 %
S-2-5	10	ND	92 %
S-3-5	10	ND	104 %
S-4-5	10	19	112 %
E-1-5	10	ND ·	93 %
E-2-5	10	ND	90 %
W-1-5	10	ND	99 %
W-2-5	10	23	96 %
B-1	HARABINH I HARAN BERTARAN IA MERIKAN IA INI. 10	. 20 2 20 2 20 20 20 20 20 20 20 20 20 20	109 %
B-2	10	ND	93 %
= =: CS-4	10 -		100 %
CS-5	10	ND	98 %
	avies remier i imme su Massavies fallet un amus sin	oure no opinio de la cele (1979 de las 1970 High T	A BORNE BIBLIONE BANG DE ATT TOTAL DE BOLD BER
	tenporaren aturkan oleh pupua beralli aterilia.		
i. Al languago olaba nasa sagusasa	Paramanan kacamatan basar aya kacamatan kacamatan kacamatan kacamatan kacamatan kacamatan kacamatan kacamatan	nik nik salah germana karing di Salah Regi.	a dina kalaminin na manana dina kana kana ka
edining <u>Probability and all</u>			



QC Sample Report - Extractable Hydrocarbons as Diesel by mod. EPA 8015B

Matrix: Soil

Batch Number: 8015DS3989

Batch Accuracy Results

Spike Sample ID: Laborator	y Control	Sample			Analytical Note
Compound	Spike Concentration (mg/Kg)	Spike Sample % Recovery	% Recovery Acceptance Limits	Pass/Fail	÷-
Diesel	100	- Filippi	70 <i>-</i> 130	Pass	
			railvēkā		

Batch Precision Results

Analytical Notes:

MS: Matrix Spike

LCS: Laboratory Control Sample

MSD: Matrix Spike Duplicate

LCSD: Laboratory Control Sample Duplicate



C4 to C40 Hydrocarbons by GCMS and GC/FID

Client:

SECOR

Project:

Olson - San Lorenzo

Job No.:

29082

Matrix: Analyst: Soil

TH / AW

Date Sampled:

12/20/06

Date Received:

12/21/06

Batch Number:

MS2TPHGS1057

MS2TPHGS1058 8015DS3989

Carbon Chain Length:	C4-C12	C12-C22	C22-C40
Reporting Limits:	0.50	10	20
Units:	mg/Kg	mg/Kg	mg/Kg
Method Blank	ND ND	ND	DN
CS-1	4.4	ND	24
CS-2	14	14	74
CS-3	47	ND	ND
A			
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		DOÇER OLDER GERZ FORDALA ÇA AŞ AHHAMAN FIRM FORD T	eereere lood own teknool in en onder 1910 op 1914. Tereen eere lood own teknool in de onder 1911 op 1914. Dit de 1914 op 1914 op 1914 op 1914 op 1914 op 1914 op
	errander (ned sammer Levalta)	en ji u puni sa 100 mesende este belega suur	
eg killi harrin olari 19 et Aktoreografia olarik, ete	Againg Complete Space against a control of a	era ne ere a da Nobello uji Koja odla sjega	ing i Balangan ang Karaban Ali
. 1 1 Marianta de la compansión de la comp	e a la grandida de la comunida que la filla e a c	each an agas how his cours have wood learns bear.	ila kari ta arawan in ini
	tanti tanti in a manana a sa sa sa sa	e e e e e e e e e e e e e e e e e e e	region in the contractor regions of the CV in the
		an again. • with the time a con-	u a lubo de el al vegen la compania de los los de
Method:	GCMS	GC/FID	GC/FID
Date Extracted:	N/A	12/22/06	12/22/06
Date Analyzed:	12/27-29/06	12/22-23/06	12/22-23/06



QC Sample Report - Extractable Hydrocarbons as Diesel by GC/FID

Matrix: Soil

Batch Number: 8015DS3989

Batch Accuracy Results

Spike Sample ID: Laborator	y Control	Sample			Analytical No
Compound	Spike Concentration (mg/Kg)	Spike Sample % Recovery	% Recovery Acceptance Limits	Pass/Fail	
Diesel		90		Pass	
			<u> Hinaraja</u>		

Batch Precision Results

MS/MSD Sample ID: N-2-5					
Compound	MS Sample Result (mg/Kg)	MSD Sample Result (mg/Kg)	Relative Percent Difference (RPD)	RPD Acceptance Limit	Pass/Fail
Pianal	04.6	02.7	40/	25%	Pass
Diesel	91.5	92.7	1%	23%	rass

Analytical Notes:	Analytical Notes:							
}								
·								

MS: Matrix Spike

LCS: Laboratory Control Sample

MSD: Matrix Spike Duplicate

LCSD: Laboratory Control Sample Duplicate



Volatile Hydrocarbons as Gasoline by GCMS

Client:

SECOR

Project:

Olson - San Lorenzo

Job No.:

29082

Matrix: Analyst: Soil TH

Date Sampled:

12/20/06

Date Received:

12/21/06

Date Analyzed:

12/27-29/06

Batch Number:

MS2TPHGS1057

MS2TPHGS1058

	Reporting	Volatile Hydrocarbons as
0	Limit	Gasoline
Sample ID Method Blank	mg/Kg 0.20	mg/Kg ND
N-1-5	0.20	polymotica a tydiki iki iki iki iki iki iki iki iki iki
rami, militari di minimi	and a substitution of the	ND ND
N-2-5	0.20	
N-3-5 - 186 - 188 (11.8) (11.7) (2.11) (1.7)	0.20	ND Day bearing the control of the co
N-4-5	0.20	NO
S-1-5	0.20	ND
S-2-5	0.20	No
S-3-5	0.20	ND
S-4-5	0.20	0.78
E-1-5	0.20	ND
E-2-5	0.20	
W-1-5	0.20	ND
W-2-5	0.20	ND
B-1	10	120
B-2	0.20	2.7
CS-4	0.20	ND
CS-5	0.20	NO CONTRACTOR OF THE PROPERTY
descent (1) le des describits i	en dem were alle alle de la persone et le commune	
	<u> 1864 (Alfahanga Louis ng Militi Nilita BATCA</u>	



QC Sample Report - Volatile Hydrocarbons as Gasoline by GCMS

Matrix: Soil

Batch Number: MS2TPHGS1057

Batch Accuracy Results

Spike Sample ID: Laboratory Co	Analytical Notes:					
Compound	Spike Concentration (mg/Kg)	Spike Sample % Recovery	% Recovery Acceptance Limits	Pass/Fail		**
Gasoline	2.0	98	70 - 130	Pass		
		and a series and an exercise				

Batch Precision Results

MS/MSD Sample ID: Laboratory	Control S	Sample				Analytical Notes:
Compound	MS Sample Result (mg/Kg)	MSD Sample Result (mg/Kg)	Relative Percent Difference (RPD)	RPD Acceptance Limit	Pass/Fail	
Tyles was an Myrom sign and amore amount of	in a lift marrie			HAIL:	Page	
Gasoline	1.97	1.78	10%		Pass	,

MS: Matrix Spike

LCS: Laboratory Control Sample

MSD: Matrix Spike Duplicate

LCSD: Laboratory Control Sample Duplicate



QC Sample Report - Volatile Hydrocarbons as Gasoline by GCMS

Matrix: Soil

Batch Number: MS2TPHGS1058

Batch Accuracy Results

Spike Sample ID: Laboratory Co	Analytical Notes:				
Compound	Spike Concentration (mg/Kg)	Spike Sample % Recovery	% Recovery Acceptance Limits	Pass/Fail	
Gasoline	2.0	91	70 - 130	Pass	

Batch Precision Results

MS/MSD Sample ID: Laboratory	Control S	Sample				Analytical Notes:
Compound	MS Sample Result (mg/Kg)	MSD Sample Result (mg/Kg)	Relative Percent Difference (RPD)	RPD Acceptance Limit	Pass/Fail	
Gasoline	1.85	1.83	1%	25%	Pass	

MS: Matrix Spike

LCS: Laboratory Control Sample

MSD: Matrix Spike Duplicate

LCSD: Laboratory Control Sample Duplicate



Volatile Organic Compounds by EPA 8260B

Client:

SECOR

Project: Olson - San Lorenzo

Job No.: 29082

Matrix: Soil Analyst: TH

Date Sampled:

12/20/06

Date Received:

12/21/06

Date Analyzed: Batch Number:

12/27-29/06 MS2TPHGS1057

MS2TPHGS1058

5	Sample ID:	Blank	N-1-5	N-2-5	N-3-5	N-4-5	S-1-5
Compounds	RL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
tert-Amyl Methyl Ether (TAME) 0.002	ND	ND	ND	ND	ND	ND
Benzene	0.001	ND	ND.	ND	ND	ND	ND
tert-Butanol (TBA)	0.020	ND	ND	ND	ND	0.028	0.057
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
Diisopropyl Ether (DIPE)	0.002	ND	ND	ND	ND	ND	ND
Ethanol	1.0	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Ethyl tert-Butyl Ether (EtBE)	0.002	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (MtBE)	0.002	ND	ND	ND	ND	0.015	0.015
Toluene	0.001	ND	ND	ND	ND	ND	ND
Xylenes, m-,p-	0.002	ND	ND:	ND	ND	ND	ND
Xylene, o-	0.001	ND	ND	ND	ND	ND	ND

Surrogates in % Recovery (Acceptance Limits: 70 - 130%)

Sample ID:	Blank	N-1-5	N-2-5	N-3-5	N-4-5	S-1-5
Dibromofluoromethane	108	102	107	103	99	76
Toluene-d8	105	105	105	105	106	107
Bromofluorobenzene	97	97	95	97	98	97



Client: SECOR

Project: Olson - San Lorenzo

Job No.: 29082 Matrix: Soil

Analyst: TH

Date Sampled:

12/20/06

Date Received:

12/21/06

Date Analyzed: Batch Number:

12/27-29/06 MS2TPHGS1057

MS2TPHGS1058

S	ample ID:	S-2-5	S-3-5	S-4-5	E-1-5	E-2-5	W-1-5
Compounds	RL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
tert-Amyl Methyl Ether (TAME	0.002	ND	ND	ND	ND	ND	ND
Benzene	0.001	ND	ND	ND	ND	ND	ND
tert-Butanol (TBA)	0.020	NĐ	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	DI	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.001	ND	ND	ND	ND	NĐ	ND
Diisopropyl Ether (DIPE)	0.002	ND	ND	ND	ND	ND	ND
Ethanol	1.0	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Ethyl tert-Butyl Ether (EtBE)	0.002	ND	ND	ΝĐ	ND	ND	ND
Methyl-tert-butyl ether (MtBE)	0.002	0.002	ND	ND	ND	ND	ND
Toluene	0.001	ND	ND	ND	ND	ND	ND
Xylenes, m-,p-	0.002	ND	ND	ND	ND	ND	ND
Xylene, o-	0.001	ND	ND_	ND	ND	ND	ND

Sample ID:	S-2-5	S-3-5	S-4-5	E-1-5	E-2-5	W-1-5
Dibromofluoromethane	102	102	109	72	102	98
Toluene-d8	105	105	107	106	104	106
Bromofluorobenzene	98	99	98	98	97	97



Client: SECOR

Project: Olson - San Lorenzo

Job No.: 29082 Matrix: Soil Analyst: TH Date Sampled:

12/20/06

Date Received:

12/21/06

Date Analyzed: Batch Number:

12/27-29/06 MS2TPHGS1057

MS2TPHGS1058

	Sample ID:	W-2-5	B-2	CS-4	CS-5	
Compounds	RL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
tert-Amyl Methyl Ether (TAME	E) 0.002	ND	ND	ND	ND	
Benzene	0.001	ND	ND	ND	ND	
tert-Butanol (TBA)	0.020	ND	ND	ND	ND	
1,2-Dibromoethane	0.002	ND	ND	ND	ND	
1,2-Dichloroethane	0.001	ND	ND	ND	ND	
Diisopropyl Ether (DIPE)	0.002	DN	ND	ND	ND	Waitinal o id lilik Webbil
Ethanol	1.0	ND	ND	ND	ND	
Ethylbenzene	0.001	ND	0.003	ND	ND	
Ethyl tert-Butyl Ether (EtBE)	0.002	ND	ND	ND	ND	
Methyl-tert-butyl ether (MtBE)	0.002	ND	0.003	ND	ND	
Toluene	0.001	ND	ND	0.004	0.002	
Xylenes, m-,p-	0.002	ND	0.002	0.003	0.002	
Xylene, o-	0.001	ND	ND	0.002	0.001	

ourlogates in a recovery (Acceptain	ICC LITTES.	10 - 100707			
Sample ID:	W-2-5	B-2	CS-4	CS-5	
Dibromofluoromethane	105	97	101	99	
Toluene-d8	105	96	97	97	
Bromofluorobenzene	93	101	89	89	



Client: SECOR

Project: Olson - San Lorenzo

Job No.: 29082 Matrix: Soil Analyst: TH Date Sampled:

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12/20/06

Date Received: Date Analyzed:

12/21/06

Batch Number:

12/27-29/06 MS2TPHGS1057

MS2TPHGS1058

Sar	nple ID:	B-1
Compounds	RL	mg/Kg
tert-Amyl Methyl Ether (TAME)	0.10	ND
Benzene	0.050	NO PER PROPERTY OF THE PROPERT
tert-Butanol (TBA)	1.0	ND
1,2-Dibromoethane	0.10	
1,2-Dichloroethane	0.050	ND
Diisopropyl Ether (DIPE)	0.10	ND A COLOR COL
Ethanol	50	ND
Ethylbenzene	0.050	0.15
Ethyl tert-Butyl Ether (EtBE)	0.10	ND
Methyl-tert-butyl ether (MtBE)	0.10	0.40
Toluene	0.050	ND
Xylenes, m-,p-	0.10	ND
Xylene, o-	0.050	ND

Sample ID:	B-1
Dibromofluoromethane	. 72 - E. H. 18 March J. H. 18 H.
Toluene-d8	106
Bromofluorobenzene	. 1100 - 1254 - 1254 - 1254 - 1254 - 1255 - 1255 - 1255 - 1255 - 1255 - 1255 - 1255 - 1255 - 1255 - 1255 - 125



Client:

SECOR

Project: Olson - San Lorenzo

Job No.: 29082

Matrix: Soil

Analyst: TH

Date Sampled:

Date Received:

Date Analyzed:

12/21/06 12/27-29/06

12/20/06

Batch Number:

MS2TPHGS1057

MS2TPHGS1058

	Sample ID:	Blank	CS-1	
Compounds	RL	mg/Kg	mg/Kg	
Acetone	0.050	ND	ND	
tert-Amyl Methyl Ether (TAN	VIE) 0.002	ND	ND	
Benzene	0.001	ND	ND	
Bromobenzene	0.005	ND	ND	
Bromochloromethane	0.005	ND	ND	
Bromodichloromethane	0.001	ND	ND	
Bromoform	0.005	ND	ND	
Bromomethane	0.005	ND	ND	ane.
tert-Butanol (TBA)	0.020	ND	ND	
2-Butanone (MEK)	0.010	ND:	ND ND	
n-Butylbenzene	0.002	ND	0.031	
sec-Butylbenzene	0.002	ND	ND	adii,
tert-Butylbenzene	0.002	ND	ND	
Carbon disulfide	0.010	ND	ND :	
Carbon tetrachloride	0.001	ND	ND	
Chlorobenzene	0.001	ND	ND	
Chloroethane	0.005	ND .	ND	
Chloroform	0.002	ND	ND	
Chloromethane	0.001	ND	ND	
2-Chlorotoluene	0.002	ND	ND	
4-Chlorotoluene	0.002	ND	ND	
Dibromochloromethane	0.002	ND	ND I I I I I I I I I I I I I I I I I I I	
1,2-Dibromoethane	0.002	ND	ND	
1,2-Dibromo-3-chloropropa	ne 0.010	ND	ND	
Dibromomethane	0.001	ND	ND	
1,2-Dichlorobenzene	0.001	ND	ND III III III III III III III III III I	
1,3-Dichlorobenzene	0.002	ND	ND	, .
1,4-Dichlorobenzene	0.002	ND	COND CONTRACTOR OF THE CONTRACTOR OF T	
Dichlorodifluoromethane	0.005	ND	ND	
1,1-Dichloroethane	0.001	ND	ND 1	
1,2-Dichloroethane	0.001	ND	ND	
1,1-Dichloroethene	0.005	ND	ND	
cis-1,2-Dichloroethene	0.002	ND	ND	
trans-1,2-Dichloroethene	0.002	ND	ND	1 m 1
1,2-Dichloropropane	0.001	ND	ND	e waara aa a
1,3-Dichloropropane	0.001	ND	ND The second of	
2,2-Dichloropropane	0.001	ND	ND	
1,1-Dichloropropene	0.001	ND		



Client:

SECOR

Project: Olson - San Lorenzo

Job No.: 29082

Matrix: Soil

Analyst: TH

Date Sampled:

Date Received:

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12/20/06

Date Analyzed: Batch Number:

12/27-29/06 MS2TPHGS1057

MS2TPHGS1058

	Sample ID:	Blank	CS-1	
Compounds	RL	mg/Kg	mg/Kg	
cis-1,3-Dichloropropene	0.001	ND	ND	
trans-1,3-Dichloropropene	0.001	ND	ND	
Diisopropyl Ether (DIPE)	0.002	ND	ND	
Ethylbenzene	0.001	ND	0.053	
Ethyl tert-Butyl Ether (EtBE)	0.002	ND	ND	
Hexachlorobutadiene	0,001	ND	ND	
2-Hexanone	0.010	ND	ND	
Isopropylbenzene	0.001	ND	0.018	
p-Isopropyltoluene	0.002	ND	0.029	
Methylene chloride	0.050	ND:	ND	
4-Methyl-2-pentanone	0.010	ND	ND	•
Methyl tert-Butyl Ether (MtB	E) 0.002	ND	0.005	
Naphthalene	0.002	ND	0.18	
n-Propylbenzene	0.001	ND	0.081	
Styrene	0.001	ND	ND	
1,1,1,2-Tetrachloroethane	0.001	ND	ND	
1,1,2,2-Tetrachloroethane	0.002	ND	ND	
Tetrachloroethene	0.001	ND	ND	
Toluene	0.001	ND	0.002	
1,2,3-Trichlorobenzene	0.002	ND	ND	
1,2,4-Trichlorobenzene	0.002	ND	ND	
1,1,1-Trichloroethane	0.001	ND	ND	
1,1,2-Trichloroethane	0.003	ND	ND	
Trichloroethene	0.001	ND	ND	
1,2,3-Trichloropropane	0.003	ND	ND	
Trichlorofluoromethane	0.001	ND	ND	
Trichlorotrifluoroethane	0.005	ND	ND	
1,2,4-Trimethylbenzene	0.001	ND	1.9	
1,3,5-Trimethylbenzene	0.001	ND	0.24	
Vinyl chloride	0.002	ND	ND	
Xylenes, m-,p-	0.002	ND	0.20	
Xylene, o-	0.001	ND	0.091	

Sample ID:	Blank	CS-1	
Dibromofluoromethane	108	96	
Toluene-d8	105	98	
Bromofluorobenzene	97	96	



Client:

SECOR

Project: Olson - San Lorenzo

Job No.: 29082

Matrix: Soil

Analyst: TH

Date Sampled:

12/20/06

Date Received:

12/21/06

Date Analyzed: Batch Number:

12/27-29/06 MS2TPHGS1057

MS2TPHGS1058

Sample	ID: CS-2	
Compounds R	<u></u>	
Acetone 0.:		
tert-Amyl Methyl Ether (TAME) 0.0		
Benzene 0.0		
Bromobenzene 0.0		
Bromochloromethane 0.0	the second of the second	
Bromodichloromethane 0.0		
Bromoform 0.0		
Bromomethane 0.0		
tert-Butanol (TBA) 0.		A CONTRACTOR OF THE STATE OF TH
2-Butarione (MEK) 0.0	er grand and the first first	
n-Butylbenzene 0.0		and the second of the second o
sec-Butylbenzene 0.0		
tert-Butylbenzene 0.0		
	50 ND	
Carbon tetrachloride 0.0		en e
Chlorobenzene 0.0		医抗性神经 加工工作中的 电电流 法国际国际的 医阿拉特氏性 医二氏性
Chloroethane 0.0		entra aramana in la alemba sektor tranti comprendita do la selección de la Media Media de Media (Milla Media de
Chloroform 0.0	a contract a series of the contract of	
Chloromethane 0.0		A CONTRACTOR CONTRACTO
2-Chlorotoluene 0.0		
4-Chlorotoluene 0.0		
Dibromochloromethane 0.0	and the state of t	
1,2-Dibromoethane 0.0		
1,2-Dibromo-3-chloropropane 0.0		
Dibromomethane 0.0		
1,2-Dichlorobenzene 0.0		
1,3-Dichlorobenzene 0.0		
1,4-Dichlorobenzene 0.0 Dichlorodifluoromethane 0.0		initirationnelle (1919–2019). Par Albii Bratia (2017) Tirbiinii ea
Dichlorodifluoromethane 0.0 1,1-Dichloroethane 0.0	1	
1,2-Dichloroethane 0.0		. et 1744 mm. Processor. Horistoffich. 2007. The first for the first section of the section of the section of
1,1-Dichloroethene 0.0		
cis-1,2-Dichloroethene 0.0		a o Papor marino dellara DELO INVO II marana kaliboa monominario monario a rafi Ilio Na aminina Tanàna
	10 ND	
	05 ND	HIHAANI AAAN TARAA AA AA AA AA AA AA AA AA HAA AA AA AA
I	05 ND	
2,2-Dichloropropane 0.0	and the second of the second o	HETERREN HAR STANKEN DER STEINE WERTE DER HETER VON DER HAR HAR HAR DER STANKEN DER HAR DER HAR DER HAR DER HA Der konnen der har der
	05 ND	
1, 1-Dichlotopropene	UJ INU.	<u> Samuel Common de la Capacida de la common de</u>



Client: SECOR

Project: Olson - San Lorenzo

Date Sampled: Date Received: 12/20/06

12/21/06

Job No.: 29082

Date Analyzed:

12/27-29/06

Matrix: Soil

MS2TPHGS1057

Analyst: TH

Batch Number:

MS2TPHGS1058

Sa	mple ID:	CS-2		
Compounds	RL	mg/Kg		v .
cis-1,3-Dichloropropene	0.005	ND		en en la compania de
trans-1,3-Dichloropropene	0.005	ND		
Diisopropyl Ether (DIPE)	0.010	ND		nan an ing makamat ing manahanan ang ang an
Ethylbenzene	0.005	0.023		
Ethyl tert-Butyl Ether (EtBE)	0.010	ND	and the second of the second o	According to the left of the first of the first time.
Hexachlorobutadiene	0.005	ND		
2-Hexanone	0.050	ND		and the same of th
Isopropylbenzene	0.005	0.019		
p-Isopropyltoluene	0.010	0.11		error and a company of the second second
Methylene chloride	0.25	ND		
4-Methyl-2-pentanone	0.050	ND		
Methyl tert-Butyl Ether (MtBE)		ND		
Naphthalene	0.010	0.37		
n-Propylbenzene	0.005	0.13		
Styrene	0.005	NÐ		
1,1,1,2-Tetrachioroethane	0.005	ND		
1,1,2,2-Tetrachloroethane	0.010	ND	e er	Harris A. S. J. Waterman, S. C. Communication
Tetrachloroethene	0.005	ND		FALLES BEBLE BANGER
Toluene	0.005	ND		
1,2,3-Trichlorobenzene	0.010	ND		
1,2,4-Trichlorobenzene	0.010	ND		e en el entre el
1,1,1-Trichloroethane	0.005	ND		
1,1,2-Trichloroethane	0.015	ND	,	
Trichloroethene	0.005	ND		
1,2,3-Trichloropropane	0.015	ND		e. Bullion and the control of the contr
Trichlorofluoromethane	0.005	ND		
Trichlorotrifluoroethane	0.025	ND		a contraction of the contraction
1,2,4-Trimethylbenzene	0.005	1.5		
1,3,5-Trimethylbenzene	0.005	0.46		and the second second second
Vinyl chloride	0.010	ND STEELY		
Xylenes, m-,p-	0.010	0.12		
Xylene, o-	0.005	0.62		

Cultogates in the trace of the contract of the test of	
Sample ID: CS-2	
Dibromofluoromethane 95	
Toluene-d8 96	
Bromofluorobenzene 100	



Client: SECOR

Project: Olson - San Lorenzo

Job No.: 29082 Matrix: Soil Analyst: TH Date Sampled:

12/20/06

12/2

Date Received: Date Analyzed: 12/21/06 12/27-29/06

Batch Number:

MS2TPHGS1057

MS2TPHGS1058

S	ample ID:	CS-3
Compounds	RL	mg/Kg
Acetone	2.5	ND
tert-Amyl Methyl Ether (TAME	0.10	ND
Benzene	0.050	ND
Bromobenzene	0.25	ND
Bromochloromethane	0.25	ND
Bromodichloromethane	0.050	
Bromoform	0.25	ND
Bromomethane	0.25	ND
tert-Butanol (TBA)	1.0	ND
2-Butanone (MEK)	0.50	- ND
n-Butylbenzene	0.10	0.49
sec-Butylbenzene	0.10	0.20
tert-Butylbenzene	0.10	ND
Carbon disulfide	0.50	NO NO CONTRACTO DE LA CONTRACTOR DE LA CONT
Carbon tetrachloride	0.050	ND
Chlorobenzene	0.050	
Chloroethane	0.25	ND Para and the company of the company
Chloroform	0.10	
Chloromethane	0.050	ND The region of the common of the common region of the common of the common of the common common of the common of
2-Chlorotoluene	0.10	
4-Chlorotoluene	0.10	ND The Anna Barrier Committee of the Committee
Dibromochloromethane	0.10	ND ND
1,2-Dibromoethane	0.10	ND
1,2-Dibromo-3-chloropropane	0.50	
Dibromomethane	0.050	ND
1,2-Dichlorobenzene	0.050	
1,3-Dichlorobenzene	0.10	ND Consider the first of the construction of t
1,4-Dichlorobenzene	0.10	
Dichlorodifluoromethane	0.25	ND FOR CONTRACTOR STATE SECURITION OF THE REPORT OF THE SECURITIES
1,1-Dichloroethane	0.050	
1,2-Dichloroethane	0.050	ND THE NAME OF THE PROPERTY O
1,1-Dichloroethene	0.25	
cis-1,2-Dichloroethene trans-1,2-Dichloroethene	0.10 0.10	
1,2-Dichloropropane	0.050	ND
	0.050	ND
1,3-Dichloropropane	* ·	\$10 PM (19 10 10 10 10 10 10 10 10 10 10 10 10 10
2,2-Dichloropropane	0.050	 A construction of the control of the c
1,1-Dichloropropene	0.050	



Client: SECOR

Project: Olson - San Lorenzo

Job No.: 29082

Matrix: Soil Analyst: TH Date Sampled:

ne Sampled.

12/20/06

Date Received:

12/21/06

Date Analyzed: Batch Number:

12/27-29/06 MS2TPHG\$1057

MS2TPHGS1058

S	ample ID:	CS-3
Compounds	RL	mg/Kg
cis-1,3-Dichloropropene	0.050	ND
trans-1,3-Dichloropropene	0.050	
Diisopropyl Ether (DIPE)	0.10	ND
Ethylbenzene	0.050	(a) (0.18
Ethyl tert-Butyl Ether (EtBE)	0.10	ND
Hexachlorobutadiene	0.050	ND The second of
2-Hexanone	0.50	ND
Isopropylbenzene	0.050	0:17
p-Isopropyltoluene	0.10	0.075
Methylene chloride	2.5	
4-Methyl-2-pentanone	0.50	ND
Methyl tert-Butyl Ether (MtBE)	0.10	THE ND TO BE A SECOND OF THE SECOND OF T
Naphthalene	0.10	0.81
n-Propylbenzene	0.050	0.87
Styrene	0.050	ND
1,1,1,2-Tetrachloroethane	0.050	
1,1,2,2-Tetrachloroethane	0.10	ND Balance Chamberger (1917) (1918) (1917) (1917) (1918) (1918) (1918) (1918) (1918) (1918) (1918) (1918) (1918)
Tetrachloroethene	0.050	NO TO THE REPORT OF THE PROPERTY OF THE PROPER
Toluene	0.050	ND . The control of the
1,2,3-Trichlorobenzene	0.10	
1,2,4-Trichlorobenzene	0.10	ND
1,1,1-Trichloroethane	0.050	ND ND
1,1,2-Trichloroethane	0.15	ND
Trichloroethene	0.050	
1,2,3-Trichloropropane	0.15	ND
Trichlorofluoromethane	0.050	
Trichlorotrifluoroethane	0.25	ND
1,2,4-Trimethylbenzene	0.050	
1,3,5-Trimethylbenzene	0.050	0.73 - North Land Commission Commission (North Commission Commission Commission Commission Commission Commission Com
Vinyl chloride	0.10	
Xylenes, m-,p-	0.10	0.27
Xylene, o-	0.050	

Sunogales in the Recovery	(Acceptance Links: 70 - 130 %)
S	ample ID: CS-3
Toluene-d8	114
Bromofluorobenzene	



QC Sample Report - Volatile Organic Compounds by EPA 8260B

Matrix: Soil

Batch Number: MS28260S1057

Spike Sample ID: Laboratory Control Sample

Batch Accuracy Results

	pike Concentration ng/Kg)	Spike Sample % Recovery	Recovery cceptance Limits	ass/Faił
Compound	Spike (mg//	Spil % F	- Acc -	Pag

Compound	Spike Cono (mg/Kg)	Spike Samp % Recovery	% Recovery Acceptance	Pass/Fait
1,1-Dichloroethene	0.050	99	70 - 130	Pass
Benzene	0.050	107	70 - 130	Pass
Trichloroethene	0.050	109	70 - 130	Pass
Toluene	0.050	108	70 - 130	Pass
Chlorobenzene	0.050	112	70 - 130	Pass

Analytical Notes:

Batch Precision Results

Compound	MS Sample Result (mg/Kg)	MSD Sample Result (mg/Kg)	Relative Percent Difference (RPD)	RPD Acceptance Limit	Pass/Fail
1,1-Dichloroethene	0.0332	0.0389	16%	25%	Pass
Benzene	0.0478	0.0504	5%	25%	Pass
Trichloroethene	0.0486	0.0526	8%	25%	Pass
Toluene	0.0505	0.0521	3%	25%	Pass
Chlorobenzene	0.0501	0.0518	3%	25%	Pass

Ana	vtical	Notes:

MS: Matrix Spike

LCS: Laboratory Control Sample

MSD: Matrix Spike Duplicate

LCSD: Laboratory Control Sample Duplicate



QC Sample Report - Volatile Organic Compounds by EPA 8260B

Matrix: Soil

Batch Number: MS28260S1058

Batch Accuracy Results

Spike Sample ID: Laboratory Control Sample						
Compound	Spike Concentration (mg/Kg)	Spike Sample % Recovery	% Recovery Acceptance Limits	Pass/Fail		
1,1-Dichloroethene	0.050	92	70 - 130	Pass		
Benzene	0.050	105	70 - 130	Pass		
Trichloroethene	0.050	100	70 - 130	Pass		
Toluene	0.050	105	70 - 130	Pass		

Analytical Notes:	
	5 n
	,
	:
	:
1	

Batch Precision Results

MS/MSD	Sample ID:	Laboratory	y Control	Sample

Compound	MS Sample Result (mg/Kg)	MSD Sample Result (mg/Kg)	Relative Percent Difference (RPD)	RPD Acceptance Limit	Pass/Fail
1,1-Dichloroethene	0.0461	0.0461	0%	25%	Pass
Benzene	0.0523	0.0513	2%	25%	Pass
Trichloroethene	0.0499	0.0485	3%	25%	Pass
Toluene	0.0525	0.0510	3%	25%	Pass
Chlorobenzene	0.0508	0.0513	1%	25%	Pass

Analytical Notes:	

MS: Matrix Spike

LCS: Laboratory Control Sample

MSD: Matrix Spike Duplicate

LCSD: Laboratory Control Sample Duplicate



Chain of Custody Record

Voice: 562.498.7005

Centrum Job #

29082 29077

3299 Hill Street, Suite 305 www.centrum-labs.com lab@centrum-labs.com Page _____ of

	Fax: 951.779.0344				Fax: 562.498.8617	J			Pia	ease C	ircle	Δn	alve	e Da	- CILLO	efor	1	_		
Project No: Z Z Project Manager: BRIAN VIGGIAND			Project Name: DUSON - SAN LORENZO Phone: Fax: BY1991212 @ Secor.com					Q	Carbon Chain (specify ranges)	P438			or PCBs, or Pest/PCB 55/12	80109	RCRA, or PP	stec	or 1864		Turn-Around Time see note* 24 Hr. RUSH * 48 Hr. RUSH * Rormal TAT	
Cilent Name (Report and Bill			Address:		Nute: Reports and Involce w	til be sent here	LUFT Diesel, of EPA 80158 DRO	EPA:	Fuel ID (TVH, TEH), Carbo	BTEXMARE Only		VUCE: BIEXUX/yenetes Only	or oco	TAL CEA	Title 22 (CAM), or	S. TSS	PH. or 413.2.		Other * Requires PRIOR approval, additional charges apply Requested due date:	
Centrum ID	Sample ID (As it should appear on report)	Date eampled	Time sampled	Sample matrix	Site location	Containers:	LUFT®	LUFTG	7. 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	9021B:	ö	3	BOBIAN	1	Metals:	HO TOS	418.1 (TRPH).		Remarks/Special Instructions	
	N-1-5	12/20/01	1200	SOIL	SAN LORENZO	JARS	X	X				X	T	X		T				
2	N-2-5	1	1200				X	X				ζ		X		\top				
3	N-3-5		1430				X	X			\	(X		1			CONTACT SPIAN PROSE PROSE ANALYSET	
4	N-4-5		1430				X	X				X		X	1	1	İ	† †	COLULA	
5	5-1-5		1200				X	X	T			1	1	V	1	\top	T	+	SCIND.	
ie	5-2-45		1200				X	X		\top	T'S	Ī	†-	X		\dagger	\dagger	1-1	QQ EST	
7	5-3-5		1430				X	Ý			15	7		V		\dagger	+	† †	40 AU 501	
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9	E-1-5		1200				X	$\overrightarrow{\wedge}$			1	7	+			╁	╁	1 1		
ID I) Relinquis	E-2-5 ed by: (Sampler's Signature)	1	1430	Time:	3) Relinquished by:		X	Ŷ	Time;		7			X				廿		
Received	by:		tz/20	(600) Time:	a 4) Received by:	···	Date				be con				*				Sample Disposal	
							U-A THO		Time:		Nied?					O Fn	om F	ield	Client will pick up Cl Return to client	
The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.				form under	5) Retinquished by:	Date:	_	Time:	All D	All sample containers intact? (Seyes No										
the Terms and Conditions set forth on the back hereof. (aboratory Notes:							172	/Ob	, IIC	DarW- Rep	Report Formats: Check all applicable									
						-					Paper r	eport		PDF n	port (knotude	s omai	li addres	es}	
											LARWO	ЮB	0	EDF (nclude	global	ID)	12 ED0	D (GISKEY) 🖸 EDD (Other) *	

Centrum Analytical Laboratories, Inc.

Chain of Custody Record

Centrum Job #

29082 he

1401 Research Park Drive, Suite 100 Riverside, CA 92507 Voice: 951.779.0310 = 800.798.9336

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Page 2 of 2

	Fax: 951.779,0344				Fax: 562.498.861	,		_	۴Je	188	Circ	le A	naly	808 R	equ	ete	1		·
Project No: Project Manual Client Name	Project Name: OCSON - SAN CORENZO Phone: Fax: email: DV1991040 @ SCOV. COM Address: Kuts: Reports and Invoice will be sent here				EPA (Q158 DRO)		hality(apecity ranges)		رے دوری	ANO		or PCBs, or Pessipos	or RCRA, or PP		20100		Turn-Around Time see note* 24 Hr. RUSH * 48 Hr. RUSH * Normal TAT Other * Requires PRIQR approval,		
(Report and Billin	Report and 2	seel, or EPAG	LUFT Gas, or EPA 1015B GRD	BTEX/MtB	777 SC	BTEX/Oxygenates		8270C, or 625	Pestion 7	₹ !	TCLP, STLC	5, 155 Sour & 4413	5	additional charges apply Requested due date:					
Centrum ID	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers:	LUFT Diesel,	LUFT G	Fuel ID (8021B:		VOC#:	SVOC#:	1081A18082:	Metals:	Metals:	ST INS		Remarks/Special Instructions
11	W-1-5	17 SO	1200	SOIL	SANLOREN	JARS	X	X				X		X					
12	W-2-5	430	1490	1	1	1	X	X				×		X			T		· (T
13	B~1		1530				X	X	T			X		$\overline{}$			1		CONTROL
14	B-2		1530				X	X	\exists		1	X		X			1		CONTACT
15	C5-1		1510						지	1	X						1		DUIO
16	CS-2		KTO						X		X		П				Ť		PRIOR AMALIES
17	C5-3		1510						X	-	Z		П		П				AT ALTO
18	C5-4		1510				X	X		Ĭ		Χ		X			1		- <i>r</i>
19	C5-5	11	1500	1_	L	12	X	X				X	П	X		T			
										T	_						7		
1) Relinquisi	hed by: (Sampler's Signature	<u> </u>	Date:	160C	3) Relinquished by:	Dat	Time:		To be completed by Laboratory personnel: Sample Dis							Sample Disposal			
			Time:	4) Received by:	Date: Time:				Chilled? Yes Temp 4 C From Field Client will pick up								☐ Client will pick up		
The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.					6) Reinquished by: FIRE CY 6) Received for Laborationy by: OLD STREET				Time:		Custody seals? □ Yes No □ Return to client All sample containers intact? Silves □ No □ Courier □ UPS Fed Ex □ Hand carried Sample Locator Number								
Laboratory Notes:									2 110	F	gebou	t Forn	nats:	Check	all app	desik	e		·
											□ Pa	per re	port	□ PDI	repo	rt (Incl	ode en	tall addr	nes)
										j		RWQ	8		F (Inclu	de glot	al ID)	0 E	OD (GISKEY) DEDD (Other) * * with prior approval only
												-							/14N