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# **REPORTS**

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**Site Investigation Report  
Former Axelson Facility  
2703 W. Marland Boulevard  
Hobbs, New Mexico**

September 6, 2001



*Prepared for:*

Beazer East, Inc.  
One Oxford Centre, Suite 3000  
Pittsburgh, Pennsylvania 15219



*Prepared by:*

**GeoTrans, Inc.**  
A TETRA TECH COMPANY

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## 1.0 INTRODUCTION

This report presents the results of the soil, groundwater and naturally occurring radioactive material investigation conducted by GeoTrans, Inc. (GeoTrans), during June 2001, for Beazer East, Inc. and Halliburton at the former Axelson, Inc. facility located at 2703 West Marland Boulevard, Hobbs, New Mexico (Site). A summary of the previous investigations conducted at the Site is also provided to assist in developing an overall understanding of the site conditions. A Site location map is presented on Figure 1 and a Site facility layout map is presented on Figure 2.

The Site is privately owned and currently leased to Reef Chemical, however, some of the Site's environmental liabilities are retained by Beazer East, Inc., on behalf of Carisbrook Industries.

The current investigation, documented in this report, was conducted in accordance with the *Site Assessment Work Plan, Former Axelson Facility, 2703 W. Marland Boulevard, Hobbs, New Mexico (HSI GeoTrans, October 2000)* (Work Plan) and in accordance with the New Mexico Hazardous Waste Bureau (HWB) letter dated March 9, 2001, the New Mexico Radiation Protection Program (RPP) letter dated March 20, 2001 and the New Mexico Oil and Conservation Division (OCD) letter dated March 29, 2001.

The objectives of the recently completed investigations were to: 1) characterize the on-site extent of subsurface petroleum hydrocarbon impacts in soil and groundwater in the vicinity of the septic tank and associated leach line(s); 2) characterize the sludge material in the concrete catch basins and septic tank located at the Site; 3) establish the on-site distribution of naturally occurring radioactive material in soil; and 4) evaluate the horizontal extent of potential groundwater impacts at the Site.

The remainder of this report is organized in eight sections:

- Section 2.0 – Site Background;
- Section 3.0 – Site Setting;
- Section 4.0 – Prior Investigations;
- Section 5.0 – 2001 Investigation; and
- Section 6.0 – Conclusions and Recommendations.

## **2.0 SITE BACKGROUND**

The Site is owned by Mr. William Staggs and was leased to Axelson, Inc. (Axelson) from 1980 to approximately 1997. Axelson used the Site to repair submersible rod sucker oil pumps and rods. The Site was unoccupied from 1997 until mid-1999, when the Site was leased by Performance Lift, Inc., an equipment distribution company. Performance Lift sold new equipment; any spent or excess fluids generated during nominal cleaning or repairing were contained and disposed by an outside vendor (Safety Kleen). Performance Lift occupied the Site until August 2000. The Site was unoccupied from August 2000 until January 2001, when Reef Chemical leased the Site. Reef Chemical, an oil field chemical distribution company, stores the following types of chemicals at the Site: corrosion inhibitors, parafin chemicals, scale inhibitors, water treatment chemicals, surfactants and bio-sides (for the treatment of bacteria). These chemicals are stored in above ground storage tanks and 55-gallon drums at the Site. Secondary containment is provided for all of the above ground storage tanks.

The Site occupies approximately 1.2 acres, with approximately 6,700 square feet of covered area (primarily occupied by the office/shop building). The shop portion of the building contains two concrete catch basins, that are connected to an exterior septic tank and associated leach line(s). The site septic tank (Figure 2) is reportedly still connected to the catch basins and has not been pumped out since at least 1990. The location, configuration and condition of the leach line(s) are not known. The restrooms located at the Site are connected to the City of Hobbs municipal sewer system.

A water well is located in the northwestern corner of the Site, as shown on Figure 2. A metal plate has been welded on top of the water well and reportedly the well has not been used since at least 1993. The well construction details, including total depth and well screen, are unknown. According to Mr. William Staggs, the current property owner, the well has been at the Site since at least the mid-1960s when the Site was owned by Mr. E.W. Cox.

A small, storage building was formerly located west of the office portion of the main building, as shown on Figure 2. This storage building was reportedly removed in 1997. A shack located south of the building was reportedly removed in 1999.

The Axelson operations consisted of cleaning and repairing submersible rod sucker oil pumps and rods. Equipment received at the Site for servicing was initially screened for Naturally Occurring Radioactive Materials (NORM) using a portable Geiger counter. Scale material on the equipment occasionally contained NORM. The scale material was cleaned off the equipment and stored in 55-gallon drums along the fenced area at the southeastern corner of the Site. The NORM impacted material was returned to the

oil company that generated the NORM for appropriate disposal. Pumps and miscellaneous parts were stored along the western angled portion of the Site, as shown on Figure 2.

Prior to repair, rod sucker oil pumps and rods were cleaned at an outdoor staging area when they were returned from the production fields. The wash water and sludge generated during the cleaning operations was contained in an above ground 7,000-gallon wash vat tank from 1994 through 1997 (Figure 2). The wash vat tank was self-contained and not connected to the septic tank. Wash water and sludge material was reportedly directed to the septic tank prior to installation of the wash vat tank.

A 500-gallon gasoline underground storage tank (UST) was formerly located south of the septic tank. The UST reportedly was removed by the Site owner in 1993. Additional information regarding the former gasoline tank is unknown. Axelson did not use the UST; therefore, the Site investigation activities did not address potential concerns associated with the former gasoline UST.

### **3.0 SITE SETTING**

The Site is located within the Southern Plains physiographic district. The Site soils consist of 17 to 19 feet of gray to brown silty sand and sandy silt. This is underlain by 3 to 6.5 feet of hard, brown, indurated sandstone, which is underlain by a brown, silty sand material. The Site is underlain by Pliocene Series of the Tertiary Ogallala Formation. The Ogallala Formation is a thick sequence of interbedded sand, silt and clay overlain by a well indurated calcareous sandstone.

The Ogallala Aquifer, identified within the Ogallala Formation, is a drinking water supply aquifer. Groundwater is located approximately 80 feet below ground surface (bgs) within the Ogallala Aquifer in the vicinity of the Site. There are no groundwater supply wells within a one mile radius of the facility. As mentioned in Section 2.0, a water well is located in the northwestern portion of the site, however, this is not a water supply well.

A 1995 soil and groundwater investigation at the Site identified perched groundwater approximately 30 to 32 feet bgs. During the June 2001 soil and groundwater investigation at the Site, perched groundwater was present at approximately 35 to 36 feet bgs.

## **4.0 PRIOR INVESTIGATIONS**

Environmental Management and Engineering, Inc. (EME) performed a screening level subsurface investigation at the Site in February 1995 and identified Site soil and groundwater impacts. Soil and groundwater samples were collected at the Site to assess the nature and extent of impacts associated with the septic tank and associated leach field and the concrete catch basins, as shown on Figure 3. Soil and groundwater analyses included total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and RCRA 8 Metals (including arsenic, barium, cadmium, total chromium, lead, mercury, selenium and silver). Surface soil samples were collected and analyzed for NORM. In addition, sludge samples were collected from each of the concrete catch basins, the septic tank and the wash vat tank for NORM, TPH, and RCRA 8 Metals analyses.

A summary of the historical analytical results is presented in Appendix A. The soil analytical results are presented in Tables A-1 through A-5 and the groundwater analytical results are presented in Tables A-6 through A-8. The 1995 laboratory analytical data sheets are also included in Appendix A.

The 1995 EME analytical results are compared to applicable regulatory action levels. The OCD recommended remediation action level for TPH in soil is 100 milligrams per kilogram (mg/kg). Other soil analytical results are compared to EPA Region 6 Human Health Medium-Specific Screening Levels (HHSLs) for industrial soils. The groundwater analytical results are compared to New Mexico Water Quality Control Commission Ground Water Standards (WQCCs) and/or the EPA Drinking Water Maximum Contaminant Levels (MCLs). When both a WQCC and MCL value were listed for a contaminant, the more stringent value was used for comparison.

### **4.1 1995 Soil Investigation**

Soil samples were collected from eight soil borings, one background boring, four sludge sample locations, and eleven surface soil sample locations to characterize the nature and extent of potential impacts to Site soils. The areas investigated include: the septic tank and associated leach line(s); the catch basins; one background location; and areas with historic NORM use. Boring logs created by EME during their soil investigation are presented in Appendix B.

#### **4.1.1 Septic Tank and Associated Leach Line(s)**

Eight borings were drilled and sampled in the vicinity of the septic tank and associated leach line(s), as presented on Figure 3. Borings H1-2, H1-4, H1-5, and H1-6, drilled with a hollow stem auger rig, extended to depths of 20, 18, 14, and 17 feet bgs, respectively, where refusal was encountered. Borings H1-1, H1-3, H1-7, and H1-8,



drilled with hollow stem auger and air rotary rigs, extended to 37 feet bgs. Perched groundwater was encountered in borings H1-1, H1-3, H1-7 and H1-8 at approximately 30 to 32 feet bgs. Soil borings H1-1, H1-3, and H1-7 were converted to two-inch diameter groundwater monitoring wells and labeled as MW-1, MW-2, and MW-3, respectively.

Visual petroleum impacts and odors were reported in boring H1-1 from 7 to 32 feet bgs; perched groundwater was present at 32 feet bgs. Visual petroleum impacts and odors were also noted in boring H1-2 from 9 to 18 feet bgs. A "solvent" odor was noted at approximately 15 feet bgs in boring H1-2. Visual impact and odors were not observed in borings H1-3 through H1-8.

Selected soil samples from borings H1-1 through H1-8 were analyzed for TPH, VOCs, SVOCs, and RCRA 8 Metals, as shown in Tables A-1 through A-4 (Appendix A). Six of the eleven soil samples contained TPH at concentrations greater than the OCD action level. These TPH concentrations were detected at depths of up to 29 feet bgs. The soil VOC, SVOC, and RCRA 8 Metal analytical results were below the EPA HHSLs for industrial soils.

One sludge sample was collected from the septic tank and one sludge sample was collected from the former wash vat tank. These samples were analyzed for TPH and RCRA 8 Metals. Both sludge samples contained TPH concentrations that exceeded the OCD action level, however, the metal results were below the EPA HHSLs for industrial soils.

#### 4.1.2 Catch Basins

Two sludge samples were collected from the concrete catch basins. The sludge samples were analyzed for TPH, VOCs, and RCRA 8 Metals. Both sludge samples contained TPH concentrations that exceeded the OCD action level. The sludge samples did not contain detectable concentrations of VOCs. RCRA 8 metal results for the sludge samples were below the EPA HHSLs for industrial soils.

#### 4.1.3 Background Sample

One surface background soil sample (HBG-1) was collected along the northeast boundary of the Site, as shown on Figure 3. The background area was considered to be unimpacted by normal facility operations. The background soil sample was analyzed for TPH and RCRA 8 Metals. The TPH and RCRA 8 metals concentrations were below the corresponding regulatory action levels.

#### 4.1.4 NORM Sampling

EME conducted a Site survey of radiation levels using a 2.0-inch thin window GM detector. The survey map was used to identify areas potentially impacted by NORM. Fourteen surface soil samples, collected from 0 to 0.5 feet bgs, and four sludge samples were collected and analyzed for NORM (specifically radium 226 and 228). Analytical NORM results are presented in Table A-5 (Appendix A) and sample locations are identified in Figure 3.

Six surface soil samples contained radium 226 at concentrations above the proposed State of New Mexico NORM regulatory action level for Radium 226 of 30 pico Curies per gram (pCi/gm). One sludge sample from the concrete catch basins contained radium 226 at concentrations above the proposed regulatory action level.

#### **4.2 1995 Groundwater Investigation**

Three soil borings were completed as monitoring wells at the Site to help characterize the potential Site impacts to groundwater. All three groundwater monitoring wells (MW-1 through MW-3) were completed as two-inch diameter wells and are screened from 25 to 35 feet bgs. In addition, a grab groundwater sample was collected from boring H1-8 and a water sample was collected from the water well located in the northwest corner of the Site. The water samples were analyzed for TPH, VOCs, and RCRA 8 Metals. The water analytical results are summarized in Tables A-6 through A-8 (Appendix A).

The groundwater flow direction and gradient had not been established at the Site since the elevations of the monitoring wells had not been surveyed. A review of the 7.5 Minute Series Hobbs West Quadrangle, New Mexico topographic map, indicates the regional groundwater flow direction in the vicinity of the Site is likely to be toward the south-southeast.

The TPH concentrations detected in groundwater samples ranged from less than 1 milligram per liter (mg/L) in the water well sample located in the northwest corner of the Site up to 680 mg/L in monitor well MW-1, located adjacent to the septic tank. The EPA has published Suggested No-Adverse Response Level (SNARL) concentrations for gasoline, diesel and kerosene of 5, 100 and 100 micrograms per liter (µg/L), respectively. The TPH analyses performed by EME in 1995 did not speciate the hydrocarbons, therefore, a comparison of the 1995 EME data to the SNARLs is not possible.

Groundwater samples collected from the monitoring wells and the grab groundwater boring contained concentrations of VOCs that exceeded some of the WQCCs or MCLs. The sample from the existing water well did not contain VOCs at concentrations that exceeded regulatory action levels.

Arsenic and barium were the only RCRA 8 Metals detected in the Site groundwater. The arsenic concentrations slightly exceeded the MCL. The barium concentrations were all below the MCL. It is unknown whether the 1995 water samples were field filtered, therefore, it is unknown whether the metal results are representative of dissolved or total metal concentrations.

#### **4.3 1997 NORM Cleanup Activities**

Safety & Environmental Solutions, Inc. (SESI) performed NORM cleanup activities at the Site for Chevron U.S.A. during May 1997. A NORM survey was conducted at the Site to evaluate the presence of NORM at the Site. Rods and pipes stored in the southeast corner of the Site and soil near the pipe storage area in the western portion of the Site contained NORM that exceeded the State actions levels. The New Mexico state action level for NORM is 50 micro roentgens/hour.

The NORM cleanup activities reportedly consisted of removing the impacted soils, containerizing the soil in drums, and removing the drums and impacted rods and pipes to a centralized controlled storage facility operated by Chevron in Eunice, New Mexico. This work was performed with approval from the Radiation Licensing and Registration Section of the New Mexico Environmental Department. The depth and volume of soils removed was not reported by SESI.

## **5.0 2001 INVESTIGATION**

This section presents a description of the Site Investigation conducted during June 2001, the methods used to complete the investigations, and soil, NORM and groundwater sample analytical results.

The objectives of the investigation were to characterize the on-site extent of soil and groundwater petroleum hydrocarbon impacts, evaluate the horizontal extent of groundwater impacts at the Site, and evaluate the on-site distribution of NORM in soil. The investigations focused on the eastern portion of the Site, specifically in the vicinity of the septic tank and associated leach line(s) (Figure 2).

Field activities included: drilling six soil borings and collecting soil samples; installing, developing, sampling and surveying four groundwater monitor wells; collecting groundwater level measurements at the new monitor wells; conducting a NORM survey; and collecting shallow soil samples from six locations for NORM laboratory analysis.

Soil samples were collected at six boring locations (SB-1 through SB-6, shown on Figure 4) using an air rotary drill rig. Four of the six soil borings were converted to groundwater monitor wells (MW-4, MW-5, MW-6 and MW-7). In addition, soil samples were collected from six shallow borings for NORM analysis at locations Borehole #1 through Borehole #6 shown on Figure 4.

The soil and groundwater samples were analyzed by Columbia Analytical Services in Kelso, Washington for: 1) petroleum hydrocarbons using EPA Method 8015 Modified; 2) VOCs using EPA Method 8260B; 3) SVOCs using EPA Method 8270; 4) dissolved RCRA 8 Metals; 5) toxic characteristic leaching procedure (TCLP) RCRA 8 Metals; 6) New Mexico Water Quality Control Commission (WQCC) metals and major cations and anions; 7) polycyclic aromatic hydrocarbons (PAHs) using EPA Method 8270C SIM; 8) total dissolved solids (TDS); 9) reactivity, corrosivity and ignitability (RCI); and 10) radium 226/228.

A copy of the laboratory analytical data sheets and chain-of-custody documentation are presented in Appendix C. Field procedures for the investigation are described below. Analytical results of the soil, NORM, and groundwater investigations are discussed in the following sections and presented in Tables 1 through 10.

### **5.1 Soil Investigation**

Six soil borings were sampled to evaluate the distribution of petroleum hydrocarbons in soil in the vicinity of the septic tank and associated leach line(s), as presented on Figure 4. Four of the soil borings were completed as groundwater monitoring wells.

An air rotary drill rig was used to drill the on-site soil borings, based on review of previous boring logs for the Site. The air rotary drill rig successfully completed the soil borings to a total depth of 35-45 feet.

Soil samples were collected at 5-foot intervals from ground surface to the total depth at each boring location, and in accordance with the Work Plan. Soil samples were visually inspected in the field to establish the soil texture and moisture content and were visually classified using the United Soil Classification System (USCS). The soil samples were also collected for field screening using a photoionization detector (PID) and potential laboratory analysis. The field PID readings are included on the soil boring logs presented in Appendix D. Groundwater was encountered in borings SB-1, SB-2, SB-5, SB-6 at approximately 35 to 36 feet in depth. Borings SB-3 and SB-4 only extended to 35 feet bgs, groundwater was not encountered in these borings.

The 5, 10 and 15-foot soil samples from the borings in the vicinity of the septic tank and associated leach line(s) (SB-1 through SB-4) were analyzed for TPH and total solids. The 5-foot soil samples from borings SB-5 and SB-6 were also analyzed for TPH and total solids. Deeper soil samples from these borings were archived, pending the analytical results of the shallower soil samples. Based on the initial results of the samples from borings SB-1 and SB-4, the 20, 25, 30 and 35 foot soil samples from these borings were also analyzed for TPH and total solids to evaluate the vertical distribution of petroleum hydrocarbons. The soil samples were shipped under chain-of-custody protocols to Columbia Analytical Services for analysis.

After sampling, soil borings SB-3 and SB-4 were backfilled with a cement sand slurry to ground surface. Soil borings SB-1, SB-2, SB-5 and SB-6 were completed as monitor wells.

#### **5.1.1 Site Lithology and Field Observations**

Site lithology was characterized by field observation of soil samples collected at five foot intervals in each of the six borings. The site is underlain by 15 to 20 feet of poorly graded, brown sandy silt or silty sand. Sandy gravel was encountered in one boring (SB-5) to a depth of five feet. A hard pan layer was encountered in two borings (SB-1, SB-3) at a depth of 20 feet. In all borings, poorly graded sand of varying color was detected from depths of 15 to 20 feet bgs to the total depth drilled of 35 to 45 feet. The overburden material observed is consistent with 1995 investigation.

Mild petroleum odors were present in the soil samples collected at approximately 14 feet bgs to total depth in borings SB-1, SB-3 and SB-4. A very mild petroleum odor was present in soil samples collected at boring SB-2 from approximately 26 to 44 feet bgs. No staining or discoloration was present in the soil samples collected. No petroleum odors, staining or discoloration were present in the soil samples collected from borings SB-5 and SB-6.

#### 5.1.2 Soil Analytical Results

A summary of the soil analytical results is presented in Tables 1 and 2. TPH concentrations detected in soil exceed the OCD action level of 100 ppm in borings SB-1 and SB-4. TPH concentrations in borings SB-2, SB-3, SB-5 and SB-6 are below the OCD action level.

The highest concentrations of diesel range, gasoline range and motor oil range petroleum hydrocarbons detected in boring SB-1 (MW-4), located approximately three feet east of the septic tank, were at 20 feet bgs, coincident with the depth of the hard pan layer at this location. The petroleum hydrocarbon concentrations in boring SB-1 decrease with the depth below the hard pan layer, however, the bottom sample at 35 feet bgs exceeds the OCD action level.

The highest concentrations of diesel range, gasoline range and motor oil range petroleum hydrocarbons detected in boring SB-4, located approximately 25 feet south of the septic tank, were at the 10-foot depth interval. The diesel and gasoline range hydrocarbons exceed the OCD action level for samples below 10 feet bgs. Only the diesel range hydrocarbons exceed the OCD action level at the total boring depth of 35 feet bgs.

Total solids ranged from 84.6 to 97.5 percent in soil samples collected from borings SB-1 through SB-6, as shown on Table 2.

#### **5.2 NORM Investigation**

SESI, a state certified NORM surveyor located in Hobbs, New Mexico, conducted the June 2001 NORM survey and subsequent sampling activities conducted at the Site to evaluate the extent of any residual NORM. Based on historical NORM data for the Site, six shallow soil borings were completed in June 2001 in the vicinity of the former borings H1-4A, H2-2A, H2-3A, H2-4A, H2-9A and H2-11A to assess the vertical extent of NORM at the Site. The June 2001 soil borings were sampled at 1, 2, and 3 feet bgs. In addition, a survey of the unpaved area was conducted to identify areas exceeding the exposure level limit. The NORM boring locations are shown on Figure 4. A copy of the SESI NORM Survey and Site Investigation report is included in Appendix E.



The one foot soil sample from each boring location (total of six samples) was analyzed for NORM and the remaining soil samples were archived, pending the analytical results of the shallower soil samples. Based on the NORM results for the 1-foot soil samples at borehole BH#5, the 2 and 3-foot soil samples were also analyzed for NORM. No other soil samples were analyzed.

#### 5.2.1 Soil Investigation

A one-foot soil sample was collected from each of six boring locations (BH#1 through BH#6) for analysis of radium-226 and radium-228. Samples were also collected at two and three feet bgs; the deeper samples were archived pending the analytical results of the one foot samples. These locations were near the 1995 sampling locations that had elevated NORM results. Soil samples were analyzed for Radium-226 and Radium-228 using EPA Method 901.1 Modified. Results for all six soil borings are included in Table 3.

#### 5.2.2 Exposure Survey

A survey of the unpaved areas of the facility was conducted on August 23, 2001. The intent of this survey was to identify and delineate areas of the Site that exceed the exposure limit of 50 micro roentgens per hour ( $\mu\text{R/hr}$ ). The survey was performed with a NaI scintillation probe attached to a ratemeter calibrated for exposure readings. A 20 feet x 20 feet grid was outlined beginning in the southwest corner of the Site. A natural background level of 11  $\mu\text{R/hr}$  was determined at an off-site location. The probe was held at a height of two-inches above the surface and readings were observed along the lines of the grid. Areas along the grid that exceeded 15  $\mu\text{R/hr}$  were further investigated to determine lateral extent.

#### 5.2.3 Results of NORM Site Investigation

##### *5.2.3.1 NORM Concentrations in Soils*

Soil results for Radium-226 ranged from 3.36 pCi/gm at BH#2 to a maximum concentration of 49.52 pCi/gm at BH#5. Radium-228 concentrations ranged from 0.43 pCi/gm at BH#1 to 1.82 pCi/gm at BH#5. Based on the initial results, the 2 and 3-foot soil samples from boring BH#5 were also analyzed for NORM. The reported radium-226 concentrations for these samples were 40.22 pCi/gm at 2 feet and 30.6 pCi/gm at 3 feet bgs. The radium-228 concentrations at boring BH#5 were less than 2 pCi/gm. The NORM soil results are included in Table 3.

Exempt quantities of Radium-226 are defined by the New Mexico Environment Department in the New Mexico Administrative Code Title 20, Chapter 3, Part 1, Subpart

14 (20 NMAC 3.1, Subpart 14). Exempt concentrations of radium-226 in soil are less than 30 pCi/g (above background), in a 15 centimeter (cm) layer, averaged over 100 square meters. All other NORM concentrations should be less than 150 pCi/g (above background), in a 15 cm layer, averaged over 100 square meters. Therefore, soils exceeding the exempt quantity standard were found at boring BH#5 to a depth of 3 feet (maximum depth sampled).

#### ***5.2.3.2 Exposure Survey Results***

The maximum exposure reading allowed for exempt NORM (20 NMAC 3.1.1403.C) is 50  $\mu$ R/hr including background. The exposure survey identified three areas where exposure measurements were greater than 15  $\mu$ R/hr (Appendix E, Figure 3). Exposure levels between 15-35  $\mu$ R/hr were measured along the northwest fence-line, (location of the former pipe and parts storage area). A second area was identified in the southeast corner of the facility. Exposure readings in this area ranged from 15-30  $\mu$ R/hr. Both these areas exhibited exposure readings below the 50  $\mu$ R/hr limit for exempt quantities. A third area was identified south of the former wash vat. The maximum exposure reading for this small area (less than six square feet) was 1150  $\mu$ R/hr. All other areas covered by the survey exhibited exposure levels less than 15  $\mu$ R/hr.

### ***5.3 Groundwater Investigation***

Groundwater sampling was conducted to characterize the horizontal extent of petroleum hydrocarbons, VOCs and metals in groundwater at the Site in the vicinity of the septic tank and associated leach line(s). In addition, the groundwater investigation was conducted to assess the Site groundwater flow direction and gradient. The groundwater investigation consisted of: 1) attempting to collect grab groundwater samples at two boring locations; 2) installing four monitor wells; 3) developing, sampling and surveying the newly installed monitor wells; and 4) and collecting water level data. The monitor wells locations are shown on Figure 4.

#### ***5.3.1 Grab Groundwater Sampling***

Two boring locations (SB-3 and SB-4) were completed to 35 feet bgs in the vicinity of the septic tank. The boreholes were dry and left open to allow groundwater to enter the borehole. After 24 hours, the boreholes were still dry. Therefore, grab groundwater samples were not collected at these locations.

#### ***5.3.2 Existing Monitor Wells***

In accordance with the Work Plan, the three existing monitor wells (MW-1 through MW-3) were to be redeveloped and sampled in conjunction with sampling the new wells at the Site. The monitor well construction details are presented in Table 4 and the well

locations are shown on Figure 4. The existing wells are completed with a screened interval from 25 to 35 feet in depth.

Water level information was collected at each of the existing wells on June 9 and 11, 2001, as shown on Table 5. Wells MW-1 and MW-2 were dry, therefore, the wells were not redeveloped or sampled. Approximately 0.5 to 2-inches of an oily/grease sludge material was present on the tip of the water level sounder at each well. Well MW-3 contained approximately 0.35 feet of water, an insufficient amount to sample, and an insufficient amount for well redevelopment.

#### 5.3.3 Monitor Well Installation and Development

Four monitor wells were installed at the Site in 2001 to provide permanent locations for establishing the groundwater flow direction, gradient and groundwater quality at the Site, in accordance with a request from OCD. The monitor well locations were based on the prior soil and grab groundwater analytical results. The monitor wells were installed at the Site using an air rotary drill rig. The monitor well construction details are presented in Table 4 and the well locations are shown on Figure 4. The monitor well boring logs are included in Appendix D.

Well MW-7 is upgradient of the septic tank, well MW-6 is cross-gradient of the septic tank and wells MW-4 and MW-5 are downgradient of the septic tank and associated leach line(s). The wells are completed with two-inch diameter PVC casing.

The new monitor wells were developed by surging for approximately five to ten minutes followed by pumping at least ten casing volumes with a submersible pump. Physical groundwater parameters (including pH, temperature and electrical conductivity) were measured in the field and recorded on well development data sheets after each purge volume. Physical groundwater parameters were measured until the parameters stabilized. The monitor well development data sheets are included in Appendix F.

Drill cuttings and decontamination, development and sampling purge water were collected in 55-gallon drums, labeled, and stored on-site pending the analytical results. The drums are stored along the fence at the eastern Site boundary.

#### 5.3.4 Groundwater Elevation and Movement

Water level data were collected from the new wells to establish the direction and gradient of groundwater at the Site. Groundwater elevations were measured twice, once prior to well development and again prior to purging and sampling.

The new and existing monitor wells were surveyed by Basin Surveys of Hobbs, New Mexico. The top-of-casing (TOC) elevation and location of each well was surveyed to a

temporary benchmark placed at the Site by Basin Surveys. A copy of the monitor well survey data is included in Appendix G. The survey data and water level data were used to evaluate the direction and gradient of groundwater at the Site.

Depth to groundwater ranged from 34.63 to 35.63 feet bgs. A summary of the water level data, groundwater flow direction and gradients is presented in Table 5. During June 2001, the groundwater flow direction was to the southeast (S52°E) and the gradient was 0.0014 feet per foot (ft/ft).

Free product material was not measured in any of the new monitor wells at the Site during June 2001.

#### 5.3.5 Monitor Well Sampling

Groundwater samples were collected from wells MW-4 through MW-7. Wells MW-1 and MW-2 were dry and MW-3 did not contain sufficient water for sample collection.

The new wells were purged using a submersible pump with disposable tubing until three casing volumes were removed before samples were collected for analysis. Physical groundwater parameters (including pH, temperature and electrical conductivity) were measured and recorded after each purge volume until they stabilized. Mild petroleum odors were observed in well MW-4. The monitor well sampling event data sheets are included in Appendix H. Groundwater samples were collected using a clean, new disposable bailer at each well, the samples were placed in laboratory-provided bottles. The samples were labeled, placed in a chilled, insulated container and shipped under chain-of-custody protocols to Columbia Analytical Services for analysis.

#### 5.3.6 Monitor Well Analytical Results

The monitor well analytical results are presented in Tables 6 through 10. A summary of the petroleum hydrocarbon analytical results for well MW-4 through MW-7 is presented on Figure 6. A duplicate sample was collected from MW-7 and labeled as QC (MW-7). Groundwater contour maps for TPH-G and TPH-D are presented on Figures 7 and 8, respectively.

The wells were sampled for: 1) TPH; 2) VOCs; 3) SVOCs; 4) dissolved RCRA 8 Metals; 5) TCLP RCRA 8 Metals; 6) New Mexico WQCC metals and major cations and anions; 7) PAHs; 8) TDS; 9) reactivity, corrosivity and ignitability, and; 10) radium 226/228.

The laboratory analytical results were compared to EPA published Suggested No-Adverse Response Level (SNARL) concentrations of gasoline and diesel of 5 and 100 ug/L, respectively, and to the most stringent criteria provided by the WQCC or the USEPA Drinking Water Maximum Contaminant Levels (MCLs).

Concentrations of petroleum hydrocarbons, 1,2-dichloroethane (1,2-DCA), fluoride and total dissolved solids (TDS) exceed the most stringent criteria in select wells. The method detection limit for lead exceeded applicable criteria and could not be evaluated. All the remaining constituents were detected at concentrations below the applicable criteria.

The highest concentrations of petroleum hydrocarbon constituents were detected in MW-4, located east of the septic tank. Petroleum hydrocarbon concentrations that exceeded the SNARL were also detected in MW-5 and MW-7 (Table 6). Three VOCs were detected in the groundwater, but only 1,2-DCA was detected at a concentration (in MW-6) that exceeds the MCL, but is below the WQCC (Table 7). Concentrations of PAHs did not exceed the WQCC and/or MCL action levels (Table 8). Fluoride was detected at a concentration marginally in excess of the WQCC in MW-7, but at a concentration below the MCL. Concentrations of TDS exceeded the WQCC and MCL in MW-4, and exceeded the MCL in MW-5, MW-6 and MW-7 (Table 9).

Concentrations of dissolved RCRA metals did not exceed the WQCC or MCL actions levels. The detection limit for lead exceeded the WQCC and MCL action levels, as shown on Table 10.

The ground and surface water protection criteria set forth by the WQCC in the New Mexico Administrative Code (MNAC 20.6.2.3103), establishes a combined radium-226 and radium-228 concentration of 30 pCi/L (picocuries per liter). The EPA Drinking Water MCL for radium-226 and radium-228 combined is 5 pCi/L. All combined radium-226 and radium-228 concentrations in groundwater were below the WQCC standard of 30 pCi/L (Table 9). Combined radium-226 and radium-228 concentrations from samples collected at MW-5 and QC (MW-7) exceed the MCL of 5 pCi/L.

#### **5.4 Water Well Abandonment**

In accordance with the October 2000 Work Plan, the on-site water well was scheduled to be abandoned as part of the site investigation field activities. The OCD deferred comment regarding the "plugging of the on-site water well located in the northwest part of the yard", in their March 29, 2001 letter. Therefore, the water well was not abandoned during the June 2001 Site investigation field.

Reportedly, this water well has not been used since at least 1993. A metal plate has been welded on top of the water well casing, however, a small opening is present in the weld which provides access to the interior of the well for surface runoff (i.e., soil, rain water, etc.). The water well may be a potential conduit to the groundwater aquifer beneath the Site.

The New Mexico State Engineers Office in Roswell maintains water well records for Lea County. This office was contacted to obtain historical construction information pertaining to the water well (i.e., depth, screened interval, etc.). Records were reviewed by legal property description, prior owner's name and available site maps. No records for the on-site water well, however, were on file with the State Engineers Office.

### **5.5 Sludge Material Investigation**

The on-site septic tank and two, concrete catch basins were sampled to characterize the sludge material and evaluate if this material was a RCRA hazardous waste pursuant to EPA CFR 40 part 261. The sample locations are shown on Figure 4.

The sludge samples were analyzed by Columbia Analytical Services for TPH using EPA Method 8015 Modified; total solids using EPA Method 160.3 Modified; SVOCs using EPA Method 8270; VOCs using EPA Method 8260B; reactivity, ignitability and corrosivity; and toxic characteristic leaching procedure (TCLP) for RCRA 8 Metals.

#### **5.5.1 Septic Tank Sampling**

A sludge sample was collected through an opening in the top of the concrete septic tank using a hand auger. The sludge material was present approximately six feet below the top of the septic tank and was at least one foot thick. The bottom of the septic tank was not encountered (at least eight feet deep). The sample consisted of a viscous black material with a strong petroleum odor.

The septic tank sample was placed in a laboratory supplied container, labeled ("septic tank"), placed in a chilled, insulated container and shipped under chain-of-custody protocols to Columbia Analytical Services for analysis.

#### **5.5.2 Concrete Catch Basins Sampling**

Sludge samples were collected from the two concrete catch basins located within the building using a hand auger. The catch basins were approximately 3 to 5 feet deep, contained approximately 4 to 8-inches of sludge material, and approximately 4-inches of water. Debris material (including paper, wire, metal, rubber, and plastic) was present in both catch basins. Each sample consisted of a viscous black material with a strong petroleum odor.

The catch basin sludge samples were placed in laboratory supplied containers, labeled ("CB-1" and "CB-2"), placed in a chilled, insulated container and shipped under chain-of-custody protocols to Columbia Analytical Services for analysis.



### 5.5.3 Sludge Analytical Results

A summary of the sludge analytical results is presented in Tables 11 through 15. The sampling results indicate that the sludge material is not a RCRA hazardous waste, and consists primarily of petroleum hydrocarbon compounds.

Concentrations of TPH in the sludge samples exceed the OCD action level, as shown on Table 11. Various VOCs and SVOCs were detected at low concentrations in all of the sludge samples collected (Tables 12 and 13). No exceedences of TCLP RCRA 8 metals were detected in any of the samples, and no indications of ignitability or corrosivity were detected (Table 14 and 15).

## **6.0 CONCLUSIONS AND RECOMMENDATIONS**

### **6.1 Conclusions**

The June 2001 investigation indicates that the Site is underlain by 15 to 20 feet of poorly graded, brown sandy silt or silty sand. A hard pan layer is present intermittently across the Site. Perched groundwater is located approximately 35 to 36 feet bgs, however, the historical depth to the perched water has fluctuated. The perched groundwater flows to the southeast and has a hydraulic gradient of 0.0014 foot/foot. The Ogallala Aquifer, a drinking water supply aquifer, is approximately 80 feet bgs. There are no water supply wells within a one mile radius of the Site.

The investigation confirmed that the Site soils are impacted by TPH and the perched groundwater is impacted with TPH, 1,2-DCA, fluoride, TDS and radium 226 at concentrations which exceed the regulatory limits (the MCL or the WQCC). The horizontal extent of the perched water impacts has not been delineated. The source of the Site impacts is attributed to the septic tank and leach lines(s).

Soil analytical results indicate that NORM was detected above regulatory action levels at one boring location to at least 3 feet bgs. The exposure survey identified one area of the unpaved portion of the facility where exposure measurements were greater than the maximum exposure level allowed for exempt NORM (20 NMAC 3.1.1403.C) of 50  $\mu$ R/hr. This area was identified south of the former wash vat and the maximum exposure reading for this small area (less than six square feet) was 1150  $\mu$ R/hr.

The sludge material in the two catch basins and the septic tank is characterized as a non-RCRA hazardous waste.

### **6.2 Recommendations**

The recommended actions to complete the characterization of perched groundwater impacts at the Site include installing two monitoring wells downgradient of the Site. In addition, monitoring wells MW-1 through MW-3 should be abandoned since they are no longer screened in the perched groundwater.

The total depth of the on-site water well should be measured and a grab groundwater sample should be collected. After sample collection, the on-site water well should be abandoned as it is not properly sealed and is a potential conduit to the perched groundwater at the Site.

The two catch basins and the septic tank should be cleaned out and the sludge material properly disposed of as a non-RCRA hazardous waste. The catch basins and septic tank should be backfilled with cement and properly abandoned.

The two identified areas of regulated NORM should be delineated both vertically and horizontally. Once the delineation is complete, the regulated NORM soil material should be removed and properly disposed.

## ***TABLES***

Table 1  
Summary of Soil Analytical Results  
Petroleum Hydrocarbons

June 2001

Sample ID	Sample Depth (feet)	TPH-d	TPH-g	TPH-mo
SB-1 (MW-4)	5	21	<10	97
	10	<b>1,300</b>	<b>1,500</b>	<b>270</b>
	15	<b>2,400</b>	<b>2,300</b>	<b>370</b>
	20	<b>6,500</b>	<b>7,000</b>	<b>470</b>
	25	<b>2,100</b>	<b>1,100</b>	<b>190</b>
	30	<b>860</b>	<b>290</b>	94
	35	<b>1,100</b>	<b>490</b>	<b>110</b>
SB-2 (MW-5)	5	<10	<10	<26
	10	<11	<11	<28
	15	<11	<11	<27
SB-3	5	<11	<11	<26
	10	<11	<11	<26
	15	<12	<12	<29
SB-4	5	<10	<10	<25
	10	<b>2,700</b>	<b>1,000</b>	<b>120</b>
	15	<b>1,000</b>	<b>300</b>	46
	20	<b>100</b>	10	31
	25	<10	<10	<26
	30	<b>630</b>	<b>170</b>	58
	35	<b>300</b>	76	43
SB-5 (MW-7)	5	<10	<10	<25
SB-6 (MW-6)	5	<11	<11	<27
NM OCD	---	100	100	100

Note: All results presented as milligrams per kilogram (mg/kg).  
 Petroleum Hydrocarbons analyzed using EPA Method 8015 Modified.  
 Concentrations in bold exceed the NM OCD recommended action level.

NM OCD = New Mexico Oil Conservation Division recommended remediation action level.  
 TPH-d = Total Petroleum Hydrocarbons as diesel range  
 TPH-g = Total Petroleum Hydrocarbons as gasoline range  
 TPH-mo = Total Petroleum Hydrocarbons as motor oil range

Table 2  
Summary of Soil Analytical Results  
Total Solids

June 2001

Sample ID	Sample Depth (feet)	Total Solids (%)
SB-1 (MW-4)	5	94.2
	10	86.4
	15	84.6
	20	85.9
	25	93.9
	30	95.1
	35	92.4
SB-2 (MW-5)	5	94.8
	10	86.3
	15	89.4
SB-3	5	91.5
	10	92.9
	15	86.2
SB-4	5	97.2
	10	87.8
	15	89.6
	20	97.5
	25	95.3
	30	95.2
	35	88.9
SB-5 (MW-7)	5	95.7
SB-6 (MW-6)	5	92.8

Note: All results presented as percent (%)  
Total Solids analyzed using EPA Method 160.3 Modified.



Table 3  
Summary of Soil Analytical Results  
NORM

June 2001

Sample ID	Sample Depth (ft. bgs.)	Radium 226 (pCi/gm)		Radium 228 (pCi/gm)		Total Radium (Ra-226+Ra-228) (pCi/gm)
		Result	Uncertainty	Result	Uncertainty	
Borehole #1	1	6.13	1.22	0.43	0.16	6.56
Borehole #2	1	3.36	1.17	0.46	0.16	3.82
Borehole #3	1	3.64	1.31	0.62	0.21	4.26
Borehole #4	1	3.64	1.46	0.89	0.27	4.53
Borehole #5	1	<b>49.52</b>	4.46	1.82	0.48	<b>51.34</b>
	2	<b>40.22</b>	3.46	1.52	0.45	<b>41.74</b>
	3	<b>30.60</b>	1.40	1.30	0.17	<b>31.90</b>
Borehole #6	1	4.32	1.4	0.66	0.23	4.98
NM NORM	---	---	---	---	---	30

Note: All results reported as pico Curies per gram (pCi/gm).  
Concentrations in bold exceed the proposed State of New Mexico NORM limit.  
Radium-226 and Radium-228 analyzed using EPA Method 901.1M

NM NORM = State of New Mexico Naturally Occurring Radioactive Material Limit  
ft. bgs. = feet below ground surface

Table 4  
Summary of  
Monitor Well Construction Details

June 2001

Well Number	Installation Date	Top of Casing Elevation (ft MSL)	Casing Diameter (inches)	Screen Interval (feet)	As Built Total Depth (feet)
MW-1	2/23/95	3,624.76	2	25-35	35
MW-2	2/23/95	3,624.34	2	25-35	35
MW-3	2/27/95	3,623.94	2	25-35	35
MW-4	6/5/01	3,624.74	2	30-45	45
MW-5	6/5/01	3,624.46	2	29-44	44
MW-6	6/6/01	3,623.97	2	30-45	45
MW-7	6/6/01	3,625.32	2	30-45	45

NOTE: All TOC elevations surveyed by Basin Surveys on June 8, 2001.

Wells MW-1 through MW-3 installed by Environmental Management & Engineering, Inc.

Wells MW-4 through MW-7 installed by GeoTrans, Inc.

ft MSL = feet mean sea level

Table 5  
Summary of  
Water Level and Flow Direction Data

June 2001

Well Number	Date	As Built Total Depth (feet)	Measured Depth to Water (feet)	Amount of Water in Well (feet)	Top of Casing Elevation (ft MSL)	Calculated Groundwater Elevation (ft MSL)	Groundwater Gradient Direction	Groundwater Gradient (ft/ft)
MW-1	6/9/01	35	dry *	na	3624.76	na	---	---
	6/11/01	35	dry *	na	3624.76	na	---	---
MW-2	6/9/01	35	dry *	na	3624.34	na	---	---
	6/11/01	35	dry *	na	3624.34	na	---	---
MW-3	6/9/01	35	34.65**	0.35	3623.94	na	---	---
	6/11/01	35	34.65**	0.35	3623.94	na	---	---
MW-4	6/9/01	45	35.35	9.65	3624.74	3589.39	---	---
	6/11/01	45	35.36	9.64	3624.74	3589.38	S52 <sup>0</sup> E	0.0014
MW-5	6/9/01	44	35.15	8.85	3624.46	3589.31	---	---
	6/11/01	44	35.15	8.85	3624.46	3589.31	S52 <sup>0</sup> E	0.0014
MW-6	6/9/01	45	34.62	10.38	3623.97	3589.35	---	---
	6/11/01	45	34.63	10.37	3623.97	3589.34	S52 <sup>0</sup> E	0.0014
MW-7	6/9/01	45	35.62	9.38	3625.11	3589.49	---	---
	6/11/01	45	35.63	9.37	3625.11	3589.48	S52 <sup>0</sup> E	0.0014

NOTE: Depth to water measured from mark or notch at top of well casing.

ft MSL = feet above Mean Sea Level

na = not applicable

--- = data not available

\* = approximately 0.5" to 2" of thick oily grease in bottom of well (no groundwater present).

\*\*= Standing water collected in sump of well. Not representative of perched groundwater.

Table 6  
Summary of Groundwater Analytical Results  
Petroleum Hydrocarbons

June 2001

Sample ID	TPH-d	TPH-g	TPH-mo
MW-4	<b>13,000</b>	<b>4,500</b>	2,500
MW-5	<b>490</b>	<b>140</b>	410
MW-6	<100	<b>&lt;100</b>	<260
MW-7	<b>210</b>	<b>110</b>	380
QC (MW-7)	<b>170</b>	<b>&lt;100</b>	440
SNARL	100	5	---

Note: Results reported as micrograms per liter ( $\mu\text{g/L}$ =ppb)  
 TPH analyzed using EPA Method 8015 Modified  
 Concentrations in bold exceed SNARL  
 QC (MW-7) sample is duplicate sample for MW-7

TPH-d = Total Petroleum Hydrocarbons as Diesel  
 TPH-g = Total Petroleum Hydrocarbons as Gasoline  
 TPH-mo = Total Petroleum Hydrocarbons as Motor Oil  
 SNARL = EPA Sugessted No-Adverse Response Levels

Table 7  
Summary of Groundwater Analytical Results  
VOCs and SVOCs

June 2001

Sample ID	1,1,1-Trichloroethane (1,1,1-TCA)	1,2-Dichloroethane (1,2-DCA)	Tetrachloroethene (PCE)
MW-4	nd	nd	nd
MW-5	nd	nd	nd
MW-6	2.0	<b>8.0</b>	3.0
MW-7	nd	nd	nd
QC (MW-7)	nd	nd	nd
Trip Blank	nd	nd	nd
MRL	0.5	0.5	0.5
WQCC	60	10	20
MCLs	200	5	5

Note: All results reported as micrograms per liter ( $\mu\text{g/L}$  = ppb). Only detected analytes listed.  
 Volatile Organic Compounds analyzed using EPA Method 8260B  
 Concentrations in bold exceed the WQCC or MCL values.  
 Semi Volatile Organic Compounds (SVOCs) not detected in the above listed water samples.  
 SVOCs analyzed using EPA Method 8270C.  
 Most stringent comparison criteria used when both WQCC and MCL values exist.  
 QC (MW-7) sample is duplicate sample for MW-7

WQCC = New Mexico Water Quality Control Commission Groundwater Standards

MCLs = U.S. EPA Drinking Water Maximum Contaminant Levels

MRL = Method Reporting Limit

Table 8  
Summary of Groundwater Analytical Results  
Polynuclear Aromatic Hydrocarbons (PAHs)

June 2001

Sample ID	2-Methylnaphthalene	Phenanthrene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene
MW-4	0.037	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.019
MW-5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW-6	<0.02	0.022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW-7	<0.02	0.071	0.026	0.024	0.025	0.057	0.062	0.061	0.03	0.029	0.023
QC (MW-7)	<0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
WQCC	---	---	---	---	---	---	---	0.7	---	---	---
MCLs	---	---	---	0.1	---	---	---	0.2	---	---	---

Note: All results reported as micrograms per liter (µg/L = ppb). Only detected analytes listed.

Polynuclear Aromatic Hydrocarbons analyzed using EPA Method 8270 SIM

Concentrations in bold exceed the WQCC or MCL values.

QC (MW-7) sample is duplicate sample for MW-7

Most stringent comparison criteria listed when both WQCC and MCL values exist.

WQCC = New Mexico Water Quality Control Commission Groundwater Standards

MCLs = U.S. EPA Drinking Water Maximum Contaminant Levels (August 2000)

--- = not available

Table 9  
Summary of Groundwater Analytical Results  
New Mexico Water Quality Control Commission (WQCC)

June 2001

Sample ID	Total Cyanide (mg/L)	Fluoride (mg/L)	Nitrate as Nitrogen (mg/L)	TDS (mg/L)	PCBs (µg/L)	Radium 226 (pCi/L)		Radium 228 (pCi/L)		Total Radium (Ra-226 + Ra-228) (pCi/L)
						Result	Uncertainty	Result	Uncertainty	
MW-4	<0.01	1.5	7.2	1,140	nd	1.55	0.35	2.16	0.58	3.71
MW-5	<0.01	1.6	4.3	916	nd	2.42	0.52	3.60	0.84	6.02
MW-6	<0.01	1.5	2.9	676	nd	2.06	0.45	2.14	0.57	4.20
MW-7	<0.01	2.2	8.1	908	nd	1.81	0.40	2.39	0.61	4.20
QC (MW-7)	<0.01	2.1	7.7	800	nd	2.4	0.52	3.19	0.76	5.59
WQCC	0.2	1.6	10	1000	0.001	---	---	---	---	30 pCi/L
MCLs	0.2	4	10	500	---	---	---	---	---	5 pCi/L

Note: All results reported a milligrams per liter (mg/L=ppm) unless noted otherwise.  
Concentrations in bold exceed the WQCC or MCL values.  
QC (MW-7) sample is duplicate sample for MW-7

WQCC = New Mexico Water Quality Control Commission Groundwater Standards  
MCLs = U.S. EPA Drinking Water Maximum Contaminant Levels  
TDS = Total Dissolved Solids using EPA Method 160.1  
PCBs = Polychlorinated biphenyls using EPA Method 8082  
Radium-226 analyzed using EPA Method 903.1  
Radium-228 analyzed using EPA Method 904

µg/L = micrograms per liter (µg/L = ppb)  
nd = not detected at or above the laboratory reporting limit  
pCi/L = pico Curies per liter

Table 10  
Summary of Groundwater Analytical Results  
Dissolved RCRA 8 Metals

June 2001

Sample ID	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Uranium
MW-4	<100	55.2	<5.0	<5.0	<100	<0.20	<8.0	<10	18.1
MW-5	<100	70.9	<5.0	<5.0	<100	<0.20	<8.0	<10	15.3
MW-6	<100	162	<5.0	<5.0	<100	<0.20	<8.0	<10	11.9
MW-7	<100	57.5	<5.0	<5.0	<100	<0.20	<8.0	<10	11.3
QC (MW-7)	<100	51.6	<5.0	<5.0	<100	<0.20	<8.0	<10	10.4
WQCC	100	1,000	10	50	50	2.0	50	50	---
MCLs	50	2000	5.0	100	15	2	50	50	---

Note: All results reported as micrograms per liter ( $\mu\text{g/L}$  = ppb).  
 RCRA Metals analyzed using EPA Method 6010B/7470B/7740/200.8  
 Concentrations in bold exceed the WQCC or MCL values.  
 Most stringent comparison criteria listed when both WQCC and MCL values exist.  
 QC (MW-7) sample is duplicate sample for MW-7

WQCC = New Mexico Water Quality Control Commission Groundwater Standards  
 MCLs = U.S. EPA Drinking Water Maximum Contaminant Levels



Table 11  
Summary of Sludge Analytical Results  
Petroleum Hydrocarbons and Total Solids

June 2001

Sample ID	Sample Depth (feet)	TPH-d	TPH-g	TPH-mo	Total Solids (%)
CB-1 (concrete catch basin)	Sludge	<b>70,000</b>	<b>74,000</b>	<b>68,000</b>	43.0
CB-2 (concrete catch basin)	Sludge	<b>350,000</b>	<b>41,000</b>	<b>51,000</b>	40.6
Septic Tank	Sludge	<b>110,000</b>	<b>42,000</b>	<b>40,000</b>	54.9
NM OCD	---	100	100	100	---

Note: All results presented as milligrams per kilogram (mg/kg) unless otherwise noted.  
 Petroleum Hydrocarbons analyzed using EPA Method 8015 Modified.  
 Percent Total Solids analyzed using EPA Method 160.3 Modified.  
 Concentrations in bold exceed the NM OCD recommended action level.

NM OCD = New Mexico Oil Conservation Division recommended remediation action level.  
 TPH-d = Total Petroleum Hydrocarbons as diesel range  
 TPH-g = Total Petroleum Hydrocarbons as gasoline range  
 TPH-mo = Total Petroleum Hydrocarbons as motor oil range

Table 12  
Summary of Sludge Analytical Results  
VOCs

June 2001

Sample ID	CB-1 (concrete catch basin)	CB-2 (concrete catch basin)	Septic Tank	Method Blank
Analyte / Sample Type	Sludge	Sludge	Sludge	---
Benzene	0.087	<1.2	<0.005	<0.05
Acetone	<2.0	<40	0.11	<2.0
Methylene Chloride	<0.1	<2.4	0.036	0.11
2-Butanone (MEK)	<2.0	<48	0.026	<2.0
Toluene	0.63	<1.2	<0.005	<0.05
Total Xylenes	2.53	5.5	<0.005	<0.05
Ethyl Benzene	0.075	6.6	<0.005	<0.05
Napthalene	3.6	44	<0.02	<0.2
Tetrachloroethene (PCE)	<0.05	<1.2	0.01	<0.05
Carbon Disulfide	<0.05	<1.2	0.0052	<0.05
Isopropylbenzene	0.31	<4.8	<0.02	<0.2
n-Propylbenzene	0.81	7.9	<0.02	<0.2
2-Chlorotoluene	7.9	25	<0.02	<0.2
4-Chlorotoluene	0.56	<4.8	<0.02	<0.2
sec-Butylbenzene	0.5	7.5	<0.02	<0.2
1,3-Dichlorobenzene	0.11	<1.2	<0.005	<0.05
1,4-Dichlorobenzene	1.1	<1.2	<0.005	<0.05
n-Butylbenzene	1	15	<0.02	<0.2
1,2-Dichlorobenzene	44	<1.2	<0.005	<0.05
1,3,5-Trimethylbenzene	1.00	<4.8	<0.02	<0.2
1,2,4-Trimethylbenzene	2.8	9.8	<0.02	<0.2
4-Isopropyltoluene	4.4	<4.8	<0.02	<0.2

Note: All results reported as milligrams per kilogram (mg/kg = ppm). Only detected analytes listed.  
Volatile Organic Compounds analyzed using EPA Method 8260B

Table 13  
Summary of Sludge Analytical Results  
SVOCs

June 2001

Sample ID	CB-1 (concrete catch basin)	CB-2 (concrete catch basin)	Septic Tank
Analyte / Sample Type	Sludge	Sludge	Sludge
Napthalene	30	270	15
2-Methylnapthalene	64	1000	32
Acenaphthene	<6.7	97	<5
Dibenzofuran	<6.7	220	<5
Fluorene	<6.7	230	<5
Phenanthrene	<6.7	370	<5
1,2-Dichlorobenzene	210	<1.2	79
Butyl Benzl Phthalate	14	<82	6.3
Bis(2-ethylhexyl) Phthalate	130	<82	62

Note: All results reported as milligrams per kilogram (mg/kg = ppm). Only detected analytes listed.  
Semi-Volatile Organic Compounds analyzed using EPA Method 8270C.

Table 14  
Summary of Sludge Analytical Results  
TCLP RCRA 8 Metals

June 2001

Sample ID	CB-1 (concrete catch basin)	CB-2 (concrete catch basin)	Septic Tank	USEPA Action Level
Analyte / Sample Type	Sludge	Sludge	Sludge	---
Arsenic	<0.1	<0.1	<0.1	5
Barium	3	3.3	<1.0	100
Cadmium	<0.01	<0.01	<0.01	1
Chromium (Total)	<0.01	0.02	<0.01	5
Lead	<0.05	<0.05	0.43	5
Mercury	<0.001	<0.001	<0.001	0.2
Selenium	<0.1	<0.1	<0.1	1
Silver	<0.02	<0.02	<0.02	5

Note: All results reported as milligrams per liter (mg/L = ppm).

Data represent TCLP RCRA 8 Metals analyzed using EPA Method 3010/3020/7000.

USEPA Action Level = TCLP action level as defined in EPA 40 CFR part 261.24

TCLP = Toxic Characteristic Leaching Procedure

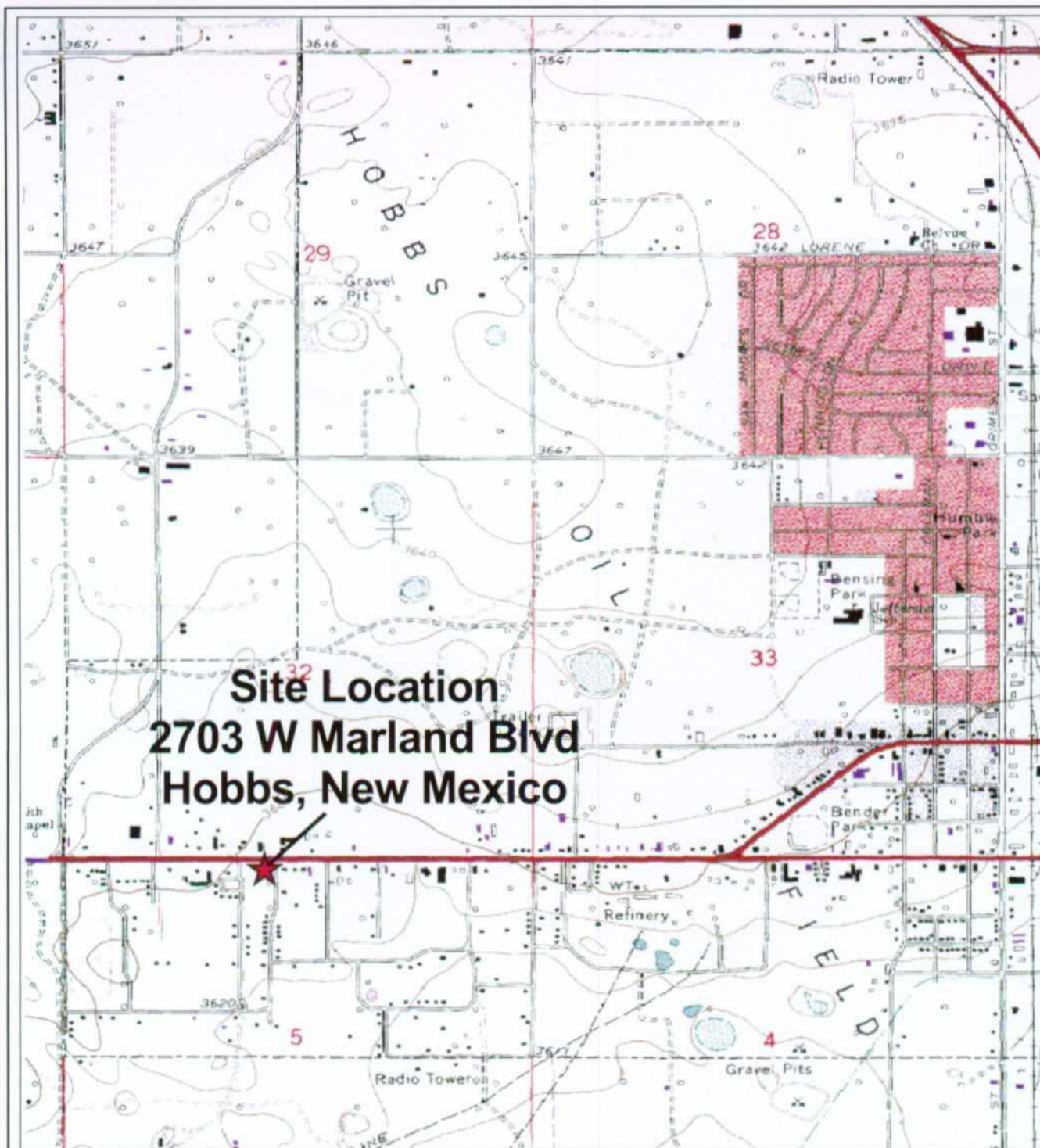
Table 15  
Summary of Sludge Analytical Results  
Reactivity, Corrosivity and Ignitability

June 2001

Sample ID	Sample Depth (feet)	Corrosivity (pH units)	Ignitability (Degrees F)	Cyanide (mg/kg)	Sulfide, Reactive (mg/kg)
CB-1 (concrete catch basin)	Sludge	8.06	>200	0.6	47
CB-2 (concrete catch basin)	Sludge	6.79	>200	<0.4	47
Septic Tank	Sludge	6.8	>200	<0.2	90

mg/kg = milligrams per kilogram

***FIGURES***



**Site Location**  
**2703 W Marland Blvd**  
**Hobbs, New Mexico**



**Title:** Site Location Map  
 Former Axelson Facility

**Location:** Hobbs, New Mexico

**File Name:** P:\Projects\Beezer\P253\Hobbs\Arcview\base\_maps.apr

**Checked By:**

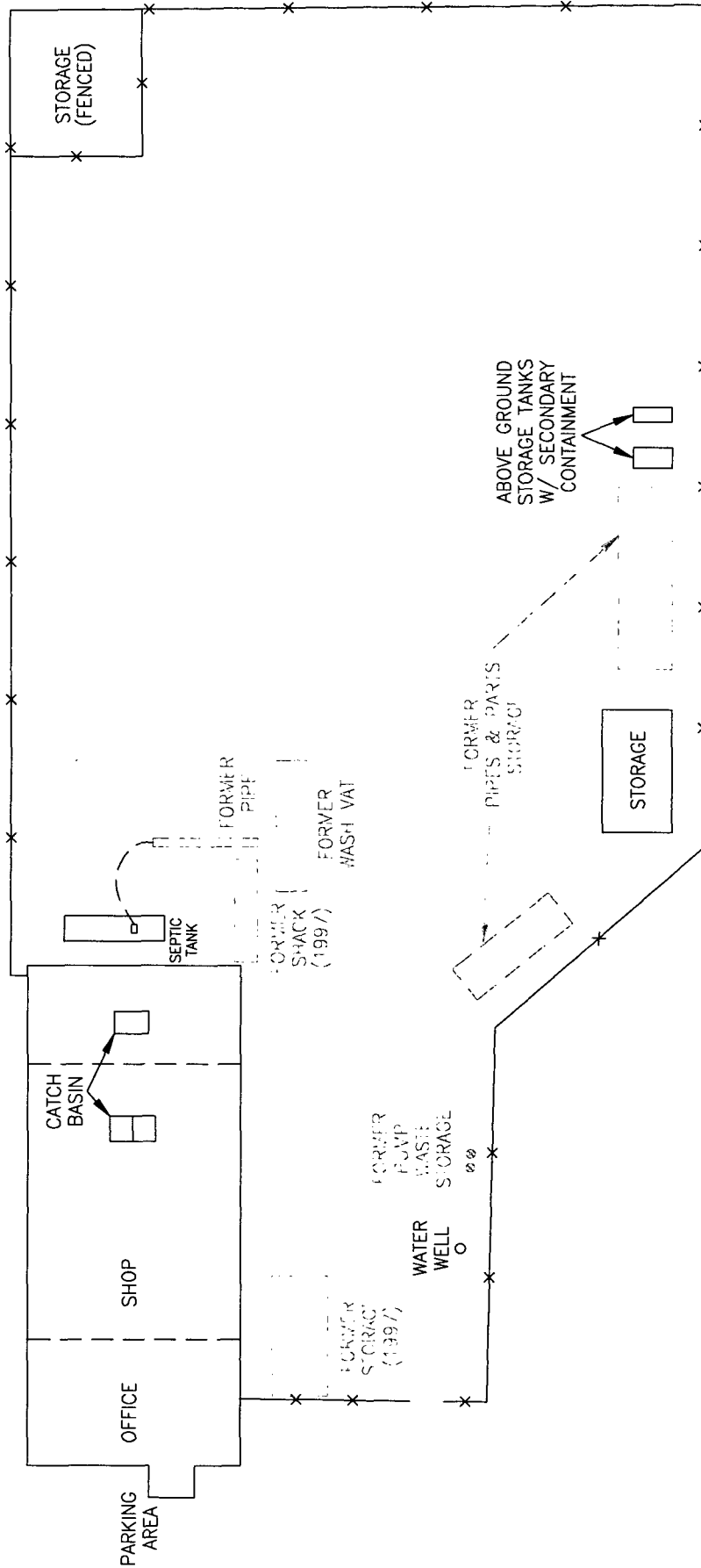
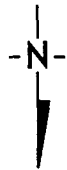
**Date:** 8/14/01

**Prepared By:** Tim Godwin

**Figure:**

 **GeoTrans, Inc.**

**1**



TITLE:

## Site Plot Plan

LOCATION:

Former Axelson Facility  
2703 West Morland Blvd., Hobbs, New Mexico

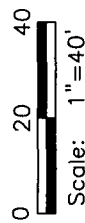


**GeoTrans, Inc.**

FIGURE:

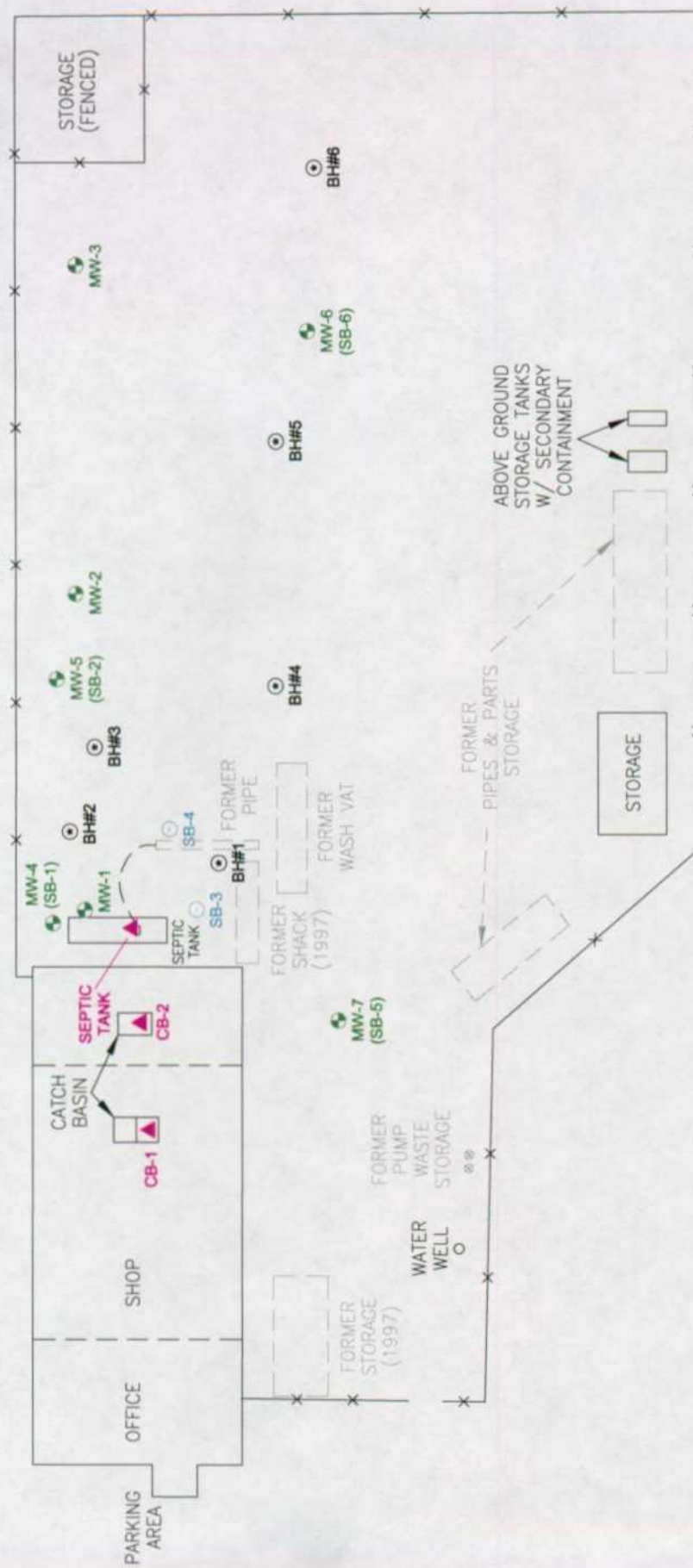
2

CHECKED: TRA  
DRAFTED: GHP  
DATE: 08-28-01









W. MARLAND BLVD.

### Explanation

- Monitor Well Location
- Soil Boring Location
- ▲ Sludge Sample Location
- ⊙ Approximate Norm Sample Location

0 20 40  
Scale: 1"=40'

TITLE:

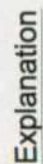
## Sampling Locations June 2001

LOCATION:

Former Axelson Facility  
2703 West Morland Blvd., Hobbs, New Mexico



CHECKED: TRA	FIGURE:
DRAFTED: GHP	
DATE: 08-28-01	4



Groundwater elevation contour (ft)

Groundwater Elevations June 2001

Former Axelson Facility  
2703 West Morland Blvd., Hobbs, New Mexico

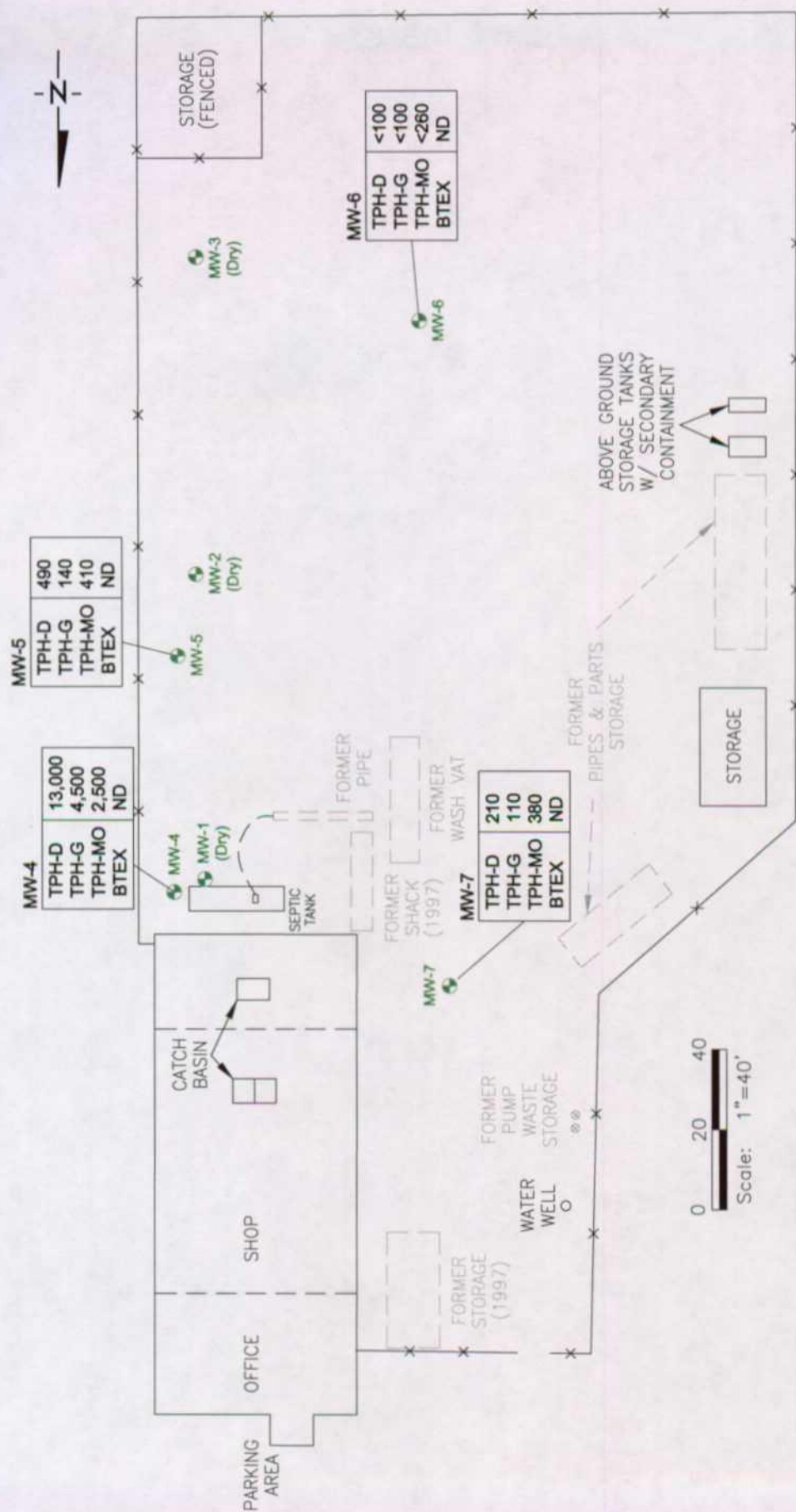


GeoTrans, Inc.

CHECKED:	TRA
DRAFTED:	GHP
DATE:	08-2

5





### Explanation

- MW-4 Monitor Well Location
- TPH-D Total petroleum hydrocarbons, diesel range
- TPH-G Total petroleum hydrocarbons, gasoline range
- TPH-MO Total petroleum hydrocarbons, motor oil range
- BTEX Benzene, Toluene, Ethylbenzene, Total Xylenes

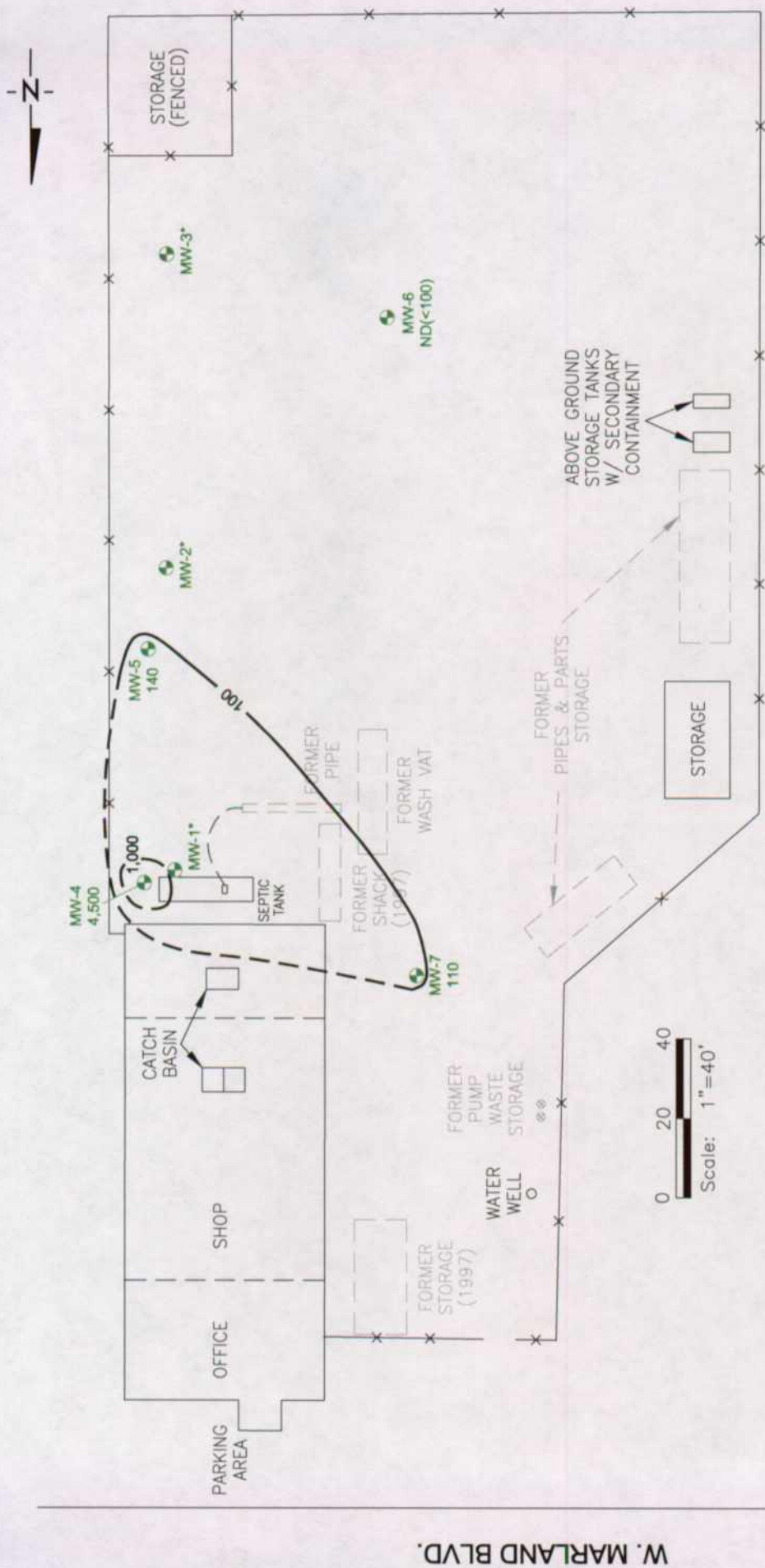
Note: All results reported as micrograms per liter (µg/L)

## TITLE: Summary of Petroleum Hydrocarbon Groundwater Analytical Results June 2001

LOCATION: Former Axelson Facility  
2703 West Morland Blvd., Hobbs, New Mexico



CHECKED: TRA  
DRAFTED: GHP  
DATE: 08-28-01



W. MARLAND BLVD.

### Explanation

- Monitor Well Location
- Well Dry or Insufficient Water for Sample Collection

### Notes:

1. Results reported as micrograms per liter ( $\mu\text{g}/\text{L} = \text{ppb}$ )
2. TPH-G = Total Petroleum Hydrocarbons as Gasoline

TITLE:

## TPH-G Groundwater Contour Map June 2001

LOCATION:

Former Axelson Facility  
2703 West Morland Blvd., Hobbs, New Mexico

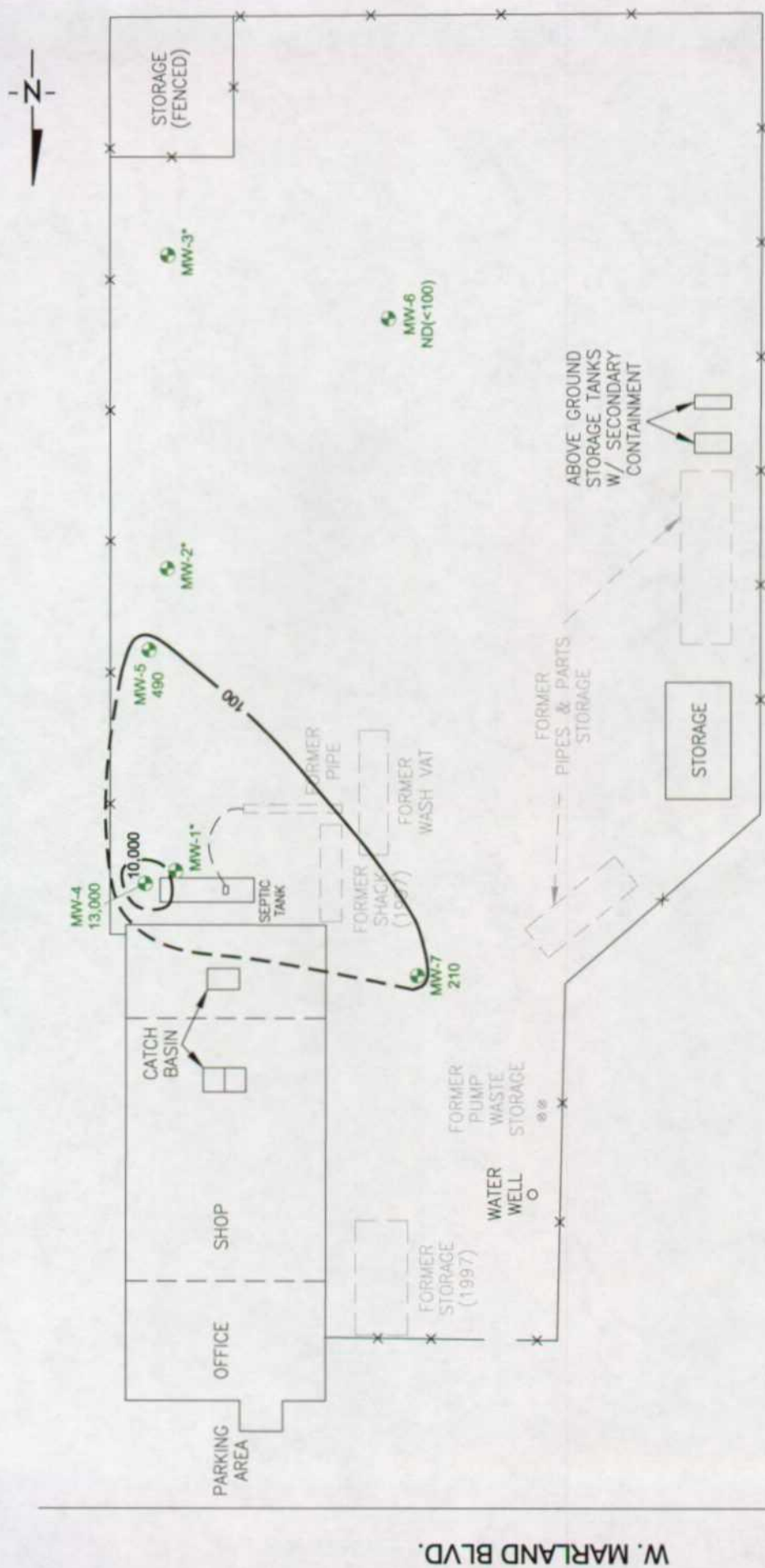
FIGURE:

CHECKED: TRA  
DRAFTED: GHP  
DATE: 08-28-01

**GeoTrans, Inc.**

7





W. MARLAND BLVD.

**Explanation**

- Monitor Well Location
- Well Dry or Insufficient Water for Sample Collection

**Notes:**

1. Results reported as micrograms per liter ( $\mu\text{g}/\text{L}=\text{ppb}$ )
2. TPH-D = Total Petroleum Hydrocarbons as Diesel

TITLE:

**TPH-D Groundwater Contour Map**

June 2001

LOCATION:

Former Axelson Facility  
2703 West Morland Blvd., Hobbs, New Mexico

CHECKED: TRA

DRAFTED: GHP

DATE:

08-28-01

FIGURE:

8

## ***APPENDIX A***

### **Summary of 1995 Analytical Data**

Table A-1  
Summary of Soil Analytical Results  
Total Petroleum Hydrocarbons

February 1995

Sample ID	Sample Depth (feet)	TPH (mg/kg)
H1-1E	6	<b>1,530</b>
H1-1L	20	<b>7,558</b>
H1-2E	8	<b>5,673</b>
H1-2H	14	<b>9,760</b>
H1-3I	16	12
H1-3K	29	<b>835</b>
H1-4F	12	22
H1-4H	16	6
H1-5D	14	7
H1-7D	29	< 1
H1-8D	29	<b>120</b>
H3-1A (concrete catch basin)	Sludge	<b>6,154</b>
H3-2 (concrete catch basin)	Sludge	<b>19,222</b>
H4-1 (septic tank)	Sludge	<b>10,000</b>
H5-1 (wash vat tank)	Sludge	<b>5,490</b>
HBG-1A (background)	0 - 0.5	47
NM OCD	---	100

Note: Data collected by Environmental Management & Engineering, Inc.  
Total Petroleum Hydrocarbons analyzed using EPA Method 418.1  
Concentrations in bold exceed the NM OCD recommended action level.

NM OCD = New Mexico Oil Conservation Division recommended remediation action level.  
TPH = Total Petroleum Hydrocarbons  
mg/kg = milligrams per kilogram (ppm)



Table A-2  
Summary of Soil Analytical Results  
Volatile Organic Compounds

February 1995

Sample ID	Sample Depth (ft. bgs.)	1,2,4-Trimethylbenzene	1,2-Dichlorobenzene	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	4-Isopropyltoluene	Ethylbenzene	n-Butylbenzene	n-Propylbenzene	Naphthalene	sec-Butylbenzene	tert-Butylbenzene	Toluene	Xylenes (total)
H1-1E	6 - 8	0.03	0.075	0.07	0.033	0.09	< 0.02	0.045	< 0.02	0.6	0.045	0.058	< 0.02	0.04
H1-1L	20 - 22	1.305	< 0.02	0.135	< 0.02	0.18	0.057	0.13	0.06	0.75	0.072	0.054	0.03	0.525
H1-2E	8 - 10	0.068	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.47	< 0.02	< 0.02	< 0.02	< 0.02
H1-2H	14 - 16	0.03	< 0.02	0.088	< 0.02	< 0.02	0.035	0.06	0.044	0.25	0.007	0.015	< 0.02	0.2
H1-3I	16 - 17	0.045	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.018	< 0.02	0.12	< 0.02	< 0.02	< 0.02	< 0.02
H1-3K	29 - 31	0.427	< 0.02	0.036	< 0.02	0.105	< 0.02	< 0.02	< 0.02	0.225	0.045	0.06	< 0.02	< 0.02
H1-8D	29 - 31	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
HHSLs	---	5.7	370	70	140	---	230	240	240	190	220	390	520	210

Note: Data collected by Environmental Management & Engineering, Inc.  
All results reported as milligrams per kilogram (mg/kg = ppm). Only detected analytes listed.  
Volatile Organic Compounds analyzed using EPA Method 8260.

HHSLs = U.S. EPA Region 6 Human Health Medium-Specific Screening Levels for industrial soils.

Table A-3  
Summary of Soil Analytical Results  
Semi Volatile Organic Compounds

February 1995

Sample ID	Sample Depth (ft. bgs.)	2-Methylnaphthalene	Naphthalene(SVOC)
H1-1E	6 - 8	2.6	0.7
H1-1L	20 - 22	3.15	0.87
H1-2E	8 - 10	< 0.1	0.58
H1-2H	14 - 16	1.5	0.8
H1-3I	16 - 17	< 0.1	< 0.1
H1-3K	29 - 31	0.18	0.28
H1-8D	29 - 31	< 0.1	< 0.1
HHSLs	---	---	190

Note: Data collected by Environmental Management & Engineering, Inc.  
All results reported as milligrams per kilogram (mg/kg = ppm). Only detected analytes listed.  
Semi Volatile Organic Compounds analyzed using EPA Method 8270.

HHSLs = U.S. EPA Region 6 Human Health Medium-Specific Screening Levels for industrial soils.

Table A-4  
Summary of Soil Analytical Results  
RCRA 8 Metals

February 1995

Sample ID	Sample Depth (ft. bgs.)	Arsenic	Barium	Cadmium	Chromium (Total)	Lead	Mercury	Selenium	Silver
H1-1E	6-8	6.8	78.0	1.3	12.0	14.0	<0.05	<0.1	2.3
H1-1L	20-22	2.7	61.0	0.5	7.0	7.0	<0.05	<0.1	1.2
H1-2E	8-10	11.0	37.0	0.9	8.0	12.0	<0.05	<0.1	1.5
H1-2H	14-16	5.1	166.0	0.8	9.0	9.0	<0.05	<0.1	1.7
H1-3I	16-17	5.9	808.0	1.1	10.0	12.0	<0.05	<0.1	1.7
H1-3K	29-31	4.3	140.0	0.3	4.0	3.0	<0.05	<0.1	<0.5
H1-5D	14-16	4.9	244.0	1.1	12.0	16.0	<0.05	<0.1	2.5
H1-8D	29-31	5.1	525.0	1.1	11.0	18.0	<0.05	<0.1	1.9
(concrete catch basin)	Sludge	11.0	53.0	6.8	12.0	179.0	<0.05	<0.1	1.3
(concrete catch basin)	Sludge	7.3	78.0	5.0	124.0	592.0	<0.05	<0.1	<0.5
(septic tank) H4-1	Sludge	6.5	104.0	10.0	86.0	776.0	<0.05	<0.1	0.9
H5-1	Sludge	4.8	129.0	9.9	206.0	660.0	<0.05	<0.1	<0.5
(wash vat tank) HBG-1A	Sludge	16.0	256.0	1.1	6.0	26.0	<0.05	<0.1	<0.5
(background)	0-0.5								
HHSLs	---	360	100,000	1,000	450	2,000	610	10,000	10,000

Note: Data collected by Environmental Management & Engineering, Inc.  
All results reported as milligrams per kilogram (mg/kg = ppm).  
RCRA 8 Metals analyzed using EPA Method 3010/3020/7000.

HHSLs = U.S. EPA Region 6 Human Health Medium-Specific Screening Levels for industrial soils.

Table A-5  
Summary of Soil Analytical Results  
Naturally Occurring Radioactive Material (NORM)

February 1995

Sample ID	Sample Depth (ft. bgs.)	Radium 226	Radium 228
H1-1A	0 - 0.5	3.2	<1.2
H1-4A	0 - 0.5	<b>35.3</b>	<1.4
H1-5A	0 - 0.5	<1.5	<0.8
H2-1A	0 - 0.5	15.8	<3.0
H2-2A	0 - 0.5	<b>387</b>	<b>45.3</b>
H2-3A	0 - 0.5	<b>405</b>	<b>49.3</b>
H2-4A	0 - 0.5	<b>76.6</b>	<1.9
H2-5A	0 - 0.5	23.9	2.5
H2-6A	0 - 0.5	21.5	<1.2
H2-7A	0 - 0.5	24	1.9
H2-8A	0 - 0.5	20.3	<0.7
H2-9A	0 - 0.5	<b>739</b>	<b>70.7</b>
H2-10A	0 - 0.5	<1.2	<0.6
H2-11A	0 - 0.5	<b>64.9</b>	<1.6
H3-1A (concrete catch basin)	Sludge	<b>104</b>	15
H3-2 (concrete catch basin)	Sludge	25.5	<0.7
H4-1 (septic tank)	Sludge	4.3	<0.4
H5-1 (wast vat tank)	Sludge	7.1	<0.7
NM NORM	---	30	30

Note: Data collected by Environmental Management & Engineering, Inc.  
All results reported as pico Curies per gram (pCi/gm).  
Concentrations in bold exceed the proposed State of New Mexico NORM limit.

NM NORM = Proposed State of New Mexico NORM Limit.

Table A-6  
Summary of Water Analytical Results  
Total Petroleum Hydrocarbons

February 1995

Sample ID	Location	TPH (mg/L)
H1-8	grab groundwater	1
H6-1	water well	<1
MW-1	monitor well	680
MW-2	monitor well	25
MW-3	monitor well	1

Note: Data collected by Environmental Management & Engineering, Inc.  
TPH analyzed using EPA Method 8015 Modified

TPH = Total Petroleum Hydrocarbons  
mg/L = milligrams per liter (ppm)

Table A-7  
Summary of Water Analytical Results  
Volatile Organic Compounds

February 1995

Sample ID	Location	1,2,4-Trimethylbenzene	1,2-Dichloroethane	1,3,5-Trimethylbenzene	4-Isopropyltoluene	Benzene	Ethylbenzene	n-Butylbenzene	Naphthalene	tert-Butylbenzene	Tetrachloroethene	Toluene	Xylenes (Total)
H1-8	grab groundwater	0.012	<0.005	<0.005	0.01	<0.005	<0.005	0.01	0.015	0.01	<0.005	<0.005	<0.005
H6-1	water well	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-1	monitor well	4.7	<0.005	1.5	1.0	<b>0.24</b>	0.28	<0.005	<0.005	<0.005	<0.005	<b>1.2</b>	<b>1.225</b>
MW-2	monitor well	0.14	<0.005	0.15	0.145	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.065	<0.005
MW-3	monitor well	<0.005	<b>0.01</b>	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<b>0.007</b>	<0.005	<0.005
WQCC	---	---	---	---	---	---	---	---	0.03	---	---	0.75	0.62
MCLs	---	---	0.005	---	---	0.005	0.7	---	---	---	0.005	---	---

Note: Data collected by Environmental Management & Engineering, Inc.

All results reported as milligrams per liter (mg/L = ppm). Only detected analytes listed.

Volatile Organic Compounds analyzed using EPA Method 8260.

Concentrations in bold exceed the WQCC or MCL values.

Semi Volatile Organic Compounds (SVOCs) not detected in the above listed water samples.

Most stringent comparison criteria listed when both WQCC and MCL values exist.

WQCC = New Mexico Water Quality Control Commission Groundwater Standards

MCLs = U.S. EPA Drinking Water Maximum Contaminant Levels

Table A-8  
Summary of Water Analytical Results  
RCRA 8 Metals

February 1995

Sample ID	Location	Arsenic	Barium	Cadmium	Chromium (Total)	Lead	Mercury	Selenium	Silver
H1-8	grab groundwater	<b>0.06</b>	0.08	< 0.02	< 0.3	< 0.3	< 0.005	< 0.01	< 0.05
H6-1	water well	<b>0.09</b>	0.08	< 0.02	< 0.3	< 0.3	< 0.005	< 0.01	< 0.05
MW-1	monitor well	<b>0.08</b>	0.14	< 0.02	< 0.3	< 0.3	< 0.005	< 0.01	< 0.05
MW-2	monitor well	<b>0.09</b>	0.08	< 0.02	< 0.3	< 0.3	< 0.005	< 0.01	< 0.05
MW-3	monitor well	<b>0.06</b>	0.07	< 0.02	< 0.3	< 0.3	< 0.005	< 0.01	< 0.05
WQCC	---	---	1.0	---	0.05	---	0.002	0.05	0.05
MCLs	---	0.05	---	0.005	---	0.015	---	---	---

Note: Data collected by Environmental Management & Engineering, Inc.

All results reported as milligrams per liter (mg/L = ppm).

RCRA 8 Metals analyzed using EPA Method 3010/3020/7000.

Concentrations in bold exceed the WQCC or MCL values.

Most stringent comparison criteria listed when both WQCC and MCL values exist.

WQCC = New Mexico Water Quality Control Commission Groundwater Standards

MCLs = U.S. EPA Drinking Water Maximum Contaminant Levels

***APPENDIX B***

1995 Soil Boring Logs



# SUBSURFACE EXPLORATION LOG

Client: Dresser Axelson  
 Project Number: DRS-94-E893  
 Project Location: Hobbs, NM  
 Boring Number: H1-1  
 Logged By: JT/GP  
 Drilled By: Anderson & Associates

Page: 1 of 4

Date: 02-22-95

Drilling Method: HSA

Sampling Method: SS

## WELL COMPLETION INFORMATION

Screen Dia: NA Length: NA Type: NA  
 Slot Size: NA  
 Riser Dia: NA Length: NA Type: NA

## DESCRIPTION

DEPTH	DESCRIPTION	INTERVAL	NUMBER	RECOVERY	BLOW COUNT	PID ppm	GRAPHIC	WELL COMP	WATER LVL	NORM
	Surface Elevation:									
	Limestone Fragments		A			0				0.2
1	Silt, Dark Gray to Dark Brown, Slightly Cayey		B			0				0.2
2										
3	Sand, Buff, Fine Grained, Silty		C			0				0.2
4										
5			D			0				0.2
6										
7	Petroleum Odor		E			7				0.2
8										
9			F			11				
10										
11			G			19				

SAMPLE TYPE: SS DRIVEN SPLIT SPOON RC ROCK CORE BORING METHOD: HAS HOLLOW STEM AUGER  
 ST PRESSED SHELBY TUBE CT CONT. TUBE DC DRIVEN CASING

# SUBSURFACE EXPLORATION LOG

Client: Dresser Axelson  
 Project Number: DRS-94-E893  
 Project Location: Hobbs, NM  
 Boring Number: H1-1 (Contd...)  
 Logged By: JT/GP  
 Drilled By: Anderson & Associates

Page: 2 of 4  
 Date: 02-22-95  
 Drilling Method: HSA  
 Sampling Method: SS

## WELL COMPLETION INFORMATION

Screen Dia: NA Length: NA Type: NA  
 Slot Size: NA  
 Riser Dia: NA Length: NA Type: NA

## DESCRIPTION

DEPTH	DESCRIPTION	INTERVAL	NUMBER	RECOVERY	BLOW COUNT	PID ppm	GRAPHIC	WELL COMP	WATER LVL	NORM
	Surface Elevation:									
	Petroleum odor									
12										
	Buff, Silty, Gray, Petroleum Odor									
13										
			H			9				
14										
	Sand, Silt, Light Gray, Petroleum Odor									
15										
			I			35				
16										
	Sand, Silt, Light Gray, Petroleum Odor									
17										
			J			30				
18										
	Petroleum Odor									
19										
			K			13				
20										
21										
			L			40				
22										

SAMPLE TYPE: SS DRIVEN SPLIT SPOON RC ROCK CORE BORING METHOD: HAS HOLLOW STEM AUGER  
 ST PRESSED SHELBY TUBE CT CONT. TUBE DC DRIVEN CASING

# SUBSURFACE EXPLORATION LOG

Client: Dresser Axelson  
 Project Number: DRS-94-E893  
 Project Location: Hobbs, NM  
 Boring Number: H1-1 (Contd...)  
 Logged By: JT/GP  
 Drilled By: Anderson & Associates

Page: 3 of 4  
 Date: 02-22-95  
 Drilling Method: HSA/AR  
 Sampling Method: SS

## WELL COMPLETION INFORMATION

Screen Dia: NA Length: NA Type: NA  
 Slot Size: NA  
 Riser Dia: NA Length: NA Type: NA

DEPTH	DESCRIPTION	INTERVAL	NUMBER	RECOVERY	BLOW COUNT	PID ppm	GRAPHIC	WELL COMP	WATER LVL	NORM
	Surface Elevation: Sandstone, White to Brown (02-23-95 switched to Air Rotary with tricone bit)									
23										
24										
25	Sand, Brown, Silty, Petroleum Odor									
26			M			10				
27										
28	Sand, Brown, Silty, Petroleum odor		N			12				
29										
30			O			8				
31	Groundwater Black Organic									
32			P			6				
33										

SAMPLE TYPE: SS DRIVEN SPLIT SPOON RC ROCK CORE BORING METHOD: HAS HOLLOW STEM AUGER  
 ST PRESSED SHELBY TUBE CT CONT. TUBE DC DRIVEN CASING

# SUBSURFACE EXPLORATION LOG

Client: Dresser Axelson  
 Project Number: DRS-94-E893  
 Project Location: Hobbs, NM  
 Boring Number: H1-1 (Contd...)  
 Logged By: JT/GP  
 Drilled By: Anderson & Associates

Page: 4 of 4

Date: 02-23-95

Drilling Method: AR

Sampling Method: SS

## WELL COMPLETION INFORMATION

Screen Dia: NA Length: NA Type: NA  
 Slot Size: NA  
 Riser Dia: NA Length: NA Type: NA

## DESCRIPTION

DEPTH	DESCRIPTION	INTERVAL	NUMBER	RECOVERY	BLOW COUNT	PID ppm	GRAPHIC	WELL COMP	WATER LVL	NORM
	Surface Elevation:									
34	Hole Adjusted to 37' Using Air Rotary Techniques									
35	Set Screen from 25' to 35'									
36										
37	Bottom									
38										
39										
40										
41										
42										
43										
44										

SAMPLE TYPE: SS DRIVEN SPLIT SPOON RC ROCK CORE BORING METHOD: HAS HOLLOW STEM AUGER  
 ST PRESSED SHELBY TUBE CT CONT. TUBE DC DRIVEN CASING

# SUBSURFACE EXPLORATION LOG

Client:	Dresser Axelson
Project Number:	DRS-94-E893
Project Location:	Hobbs, NM

Page: 1 of 1

Date: 02-22-95

Drilling Method: HSA

**Sampling Method: SS**

Boring Number: H1-2  
 Logged By: JT/GP  
 Drilled By: Anderson & Associates

# WELL COMPLETION INFORMATION

Screen Dia: NA      Length: NA      Type: NA

Slot Size: NA

Riser Dia: NA

Length: NA Type: NA

[illegible]

SAMPLE TYPE: SS DRIVEN SPLIT SPOON RC ROCK CORE BORING METHOD: HAS HOLLOW STEM AUGER  
ST PRESSED SHELBY TUBE CT CONT. TUBE DC DRIVEN CASING

# SUBSURFACE EXPLORATION LOG

Client: Dresser Axelson

Page: 1 of 1

Project Number: DRS-94-E893

Date: 02-23-95

Project Location: Hobbs, NM

Drilling Method: HSA

Sampling Method: SS

Boring Number: H1-3

Logged By: JT/GP

Drilled By: Anderson & Associates

## WELL COMPLETION INFORMATION

Screen Dia: NA Length: NA Type: NA

Slot Size: NA

Riser Dia: NA Length: NA Type: NA

## DESCRIPTION

DEPTH	DESCRIPTION	INTERVAL	NUMBER	RECOVERY	BLOW COUNT	PID	GRAPHIC	WELL COMP	WATER LVL	NORM
	Surface Elevation:					ppm				
	Sand, Some Stone		A			0				
	Sand, Silt, Clay		B			0				
	Sand, Silt, Buff		C			0				
4	Rock									
	Sand, Silt, Buff		D			0				
8	Sand, Silt, White Buff		E			0				
	Sand, White Buffy Limestone		F			0				
	Sand, Silt, Tan		G			0				
			H			0				
16			I			2				
	(02-23-95 Switched to Air Rotary with Tricone Bit) Rock									
20										
	Sand, Brown, Silty		J			4				
24										
28			K			10				
32										
36	Bottom									
40										
44										

SAMPLE TYPE: SS DRIVEN SPLIT SPOON RC ROCK CORE BORING METHOD: HAS HOLLOW STEM AUGER  
ST PRESSED SHELBY TUBE CT CONT. TUBE DC DRIVEN CASING

# SUBSURFACE EXPLORATION LOG

Client: Dresser Axelson

Project Number: DRS-94-E893

Project Location: Hobbs, NM

Page: 1 of 1

Date: 02-22-95

Drilling Method: HSA

Sampling Method: SS

Boring Number: H1-4

Logged By: JT/GP

Drilled By: Anderson & Associates

## WELL COMPLETION INFORMATION

Screen Dia: NA Length: NA Type: NA

Slot Size: NA

Riser Dia: NA Length: NA Type: NA

## DESCRIPTION

DEPTH	DESCRIPTION	INTERVAL	NUMBER	RECOVERY	BLOW COUNT	PID	GRAPHIC	WELL COMP	WATER LVL	NORM
	Surface Elevation:					ppm				
	Sand, Silty, Brown to gray		A			0				
2			B			0				
4			C			0				
6										
8										
10	Sand, Silt, White Buffy		D			0				
12			E			0				
14			F			0				
16			G			0				
18	Bottom		H			0				
20										
22										

SAMPLE TYPE: SS DRIVEN SPLIT SPOON RC ROCK CORE BORING METHOD: HAS HOLLOW STEM AUGER  
ST PRESSED SHELBY TUBE CT CONT. TUBE DC DRIVEN CASING

# SUBSURFACE EXPLORATION LOG

Client: Dresser Axelson  
 Project Number: DRS-94-E893  
 Project Location: Hobbs, NM  
 Boring Number: H1-5  
 Logged By: JT/GP  
 Drilled By: Anderson & Associates

Page: 1 of 1  
 Date: 02-22-95  
 Drilling Method: HSA  
 Sampling Method: SS

## WELL COMPLETION INFORMATION

Screen Dia: NA Length: NA Type: NA  
 Slot Size: NA  
 Riser Dia: NA Length: NA Type: NA

## DESCRIPTION

DEPTH		INTERVAL	NUMBER	RECOVERY	BLOW COUNT	PID	GRAPHIC	WELL COMP	WATER LVL	NORM
	Surface Elevation:					ppm				
	Sand and Gravel with Silt		A			0				0.2
1	Clay, Gray, Silty		B							
2	Sand, White, Silty, Gravel		NORM							
4										
5			B			0				0.2
6										
7										
8										
9										
10	Bottom		C			0				0.2
11										

SAMPLE TYPE: SS DRIVEN SPLIT SPOON RC ROCK CORE BORING METHOD: HAS HOLLOW STEM AUGER  
 ST PRESSED SHELBY TUBE CT CONT. TUBE DC DRIVEN CASING



# SUBSURFACE EXPLORATION LOG

Client: Dresser Axelson  
 Project Number: DRS-94-E893  
 Project Location: Hobbs, NM  
 Boring Number: H1-6  
 Logged By: JT/GP  
 Drilled By: Anderson & Associates

Page: 1 of 1  
 Date: 02-24-95  
 Drilling Method: HSA  
 Sampling Method: SS

## WELL COMPLETION INFORMATION

Screen Dia: NA Length: NA Type: NA  
 Slot Size: NA  
 Riser Dia: NA Length: NA Type: NA

DEPTH	DESCRIPTION	INTERVAL	NUMBER	RECOVERY	BLOW COUNT	PID	GRAPHIC	WELL COMP	WATER LVL	NORM
	Surface Elevation:									
	Sand and Gravel, White		A			0				0.2
2	Clay, dark Brown, Silty		B							
	Sand, Buff, Gravel, Silty		NORM							
4										
6										
8										
10			B			0				0.2
			C							
12										
14										
16			D			0				0.2
	Bottom (Refusal)									
18										
20										
22										

SAMPLE TYPE: SS DRIVEN SPLIT SPOON RC ROCK CORE BORING METHOD: HAS HOLLOW STEM AUGER  
 ST PRESSED SHELBY TUBE CT CONT. TUBE DC DRIVEN CASING

# SUBSURFACE EXPLORATION LOG

Contract: Dresser Axelson  
 Project Number: DRS-94-E893  
 Project Location: Hobbs, NM  
 Boring Number: H1-7  
 Logged By: JT/GP  
 Drilled By: Anderson & Associates

Page: 1 of 1  
 Date: 02-27-95  
 Drilling Method: HSA/AR  
 Sampling Method: SS

## WELL COMPLETION INFORMATION

Screen Dia: NA Length: NA Type: NA  
 Slot Size: NA  
 Riser Dia: NA Length: NA Type: NA

DEPTH	DESCRIPTION	INTERVAL	NUMBER	NORM #	BLOW COUNT	PID	GRAPHIC	WELL COMP	WATER LVL	NORM
	Surface Elevation:									
	Sand and Gravel, White		A	A		0				0.2
	Clay, Brown to Gray, Silty, Sandy, Damp			B						
4										
	Rock in Spoon (No Samples)									
	Rock									
8										
	Clay, White, Moist, Plastic									
	Rock									
	Sand, Silt, White, Buff		B			0				0.2
	Sand, Buff to White Silty, Dry									
			C			0				0.2
16										
	Rock (Switched to Air Rotary with Tricone Bit)									
20	Rock, Sandstone									
24										
	Sand, Brown, Silty									
28										
	Groundwater		D			0				0.2
32										
36										
	Bottom									
40										
44										

SAMPLE TYPE: SS DRIVEN SPLIT SPOON RC ROCK CORE BORING METHOD: HAS HOLLOW STEM AUGER  
 ST PRESSED SHELBY TUBE CT CONT. TUBE DC DRIVEN CASING

# SUBSURFACE EXPLORATION LOG

Client: Dresser Axelson  
 Project Number: DRS-94-E893  
 Project Location: Hobbs, NM

Page: 1 of 1

Date: 02-27-95

Drilling Method: HSA/AR  
 Sampling Method: SS

Boring Number: H1-8  
 Logged By: JT/GP  
 Drilled By: Harrison

## WELL COMPLETION INFORMATION

Screen Dia: NA Length: NA Type: NA  
 Slot Size: NA  
 Riser Dia: NA Length: NA Type: NA

DEPTH H	DESCRIPTION	INTERVAL	NUMBER	NORM #	BLOW COUNT	PID ppm	GRAPHIC	WELL COMP	WATER LVL	NORM
	Surface Elevation:									
	Sand and Gravel, White		A							
	Clay, Gray to Brown, Silty, Sandy			B						
4										
	Empty Spoon									
8	Sand, Buff, Silty									
12	Clay, White, Moist		B							
16	Sand, White, Silty, Fine Grained		C							
20	Rock, Sandstone, Brown, Indurated									
24	Rock Sandstone, Brown, Indurated, Very Hard									
28	Sand, Fine Grained, Brown, Silty									
32	Groundwater		D							
36										
	Bottom									
40										
44										

SAMPLE TYPE: SS DRIVEN SPLIT SPOON RC ROCK CORE BORING METHOD: HAS HOLLOW STEM AUGER  
 ST PRESSED SHELBY TUBE CT CONT. TUBE DC DRIVEN CASING

***APPENDIX C***

2001 Laboratory Data and  
Chain-of-Custody Documentation



July 11, 2001

Service Request No: K2103968

Tanya Akkerman  
GeoTrans  
3035 Prospect Park Drive, Suite 40  
Rancho Cordova, CA 95670

**Re: Former Axelson Facility (Site #2067)/P253-104**

Dear Tanya:

Enclosed are the results of the sample(s) submitted to our laboratory on June 7, 2001. For your reference, these analyses have been assigned our service request number K2103968.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3345.

Respectfully submitted,

**Columbia Analytical Services, Inc.**

Mingta Lin  
Project Chemist

ML/cb

Page 1 of 104

## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### Inorganic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- i The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.

### Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- B The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- E The reported value is estimated because of the presence of matrix interference.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.
- \* The duplicate analysis not within control limits. See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.

### Organic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- i The MRL/MDL has been elevated due to a chromatographic interference.
- X See case narrative.

### Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

00003

## **Case Narrative**



## COLUMBIA ANALYTICAL SERVICES, INC.

**Client:** GeoTrans, Inc.      **Service Request No.:** K2103968  
**Project:** Former Axelson Facility (Site #2067)      **Date Received:** Jun 7, 2001  
**Sample Matrix:** Soil

### CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), and Laboratory Control Sample (LCS).

#### Sample Receipt

A total of fifty soil and two sludge samples were received for analysis at Columbia Analytical Services on Jun 7, 2001. Selected soil samples were to be archived as instructed. The samples were received in good condition and consistent with the accompanying chain of custody form. The cooler temperature blanks were received at 9.3 and 13.6°C. The samples were stored in a refrigerator at 4°C/frozen at upon receipt at the laboratory.

#### Inorganic Parameters

The LCS recovery for Reactive Cyanide (by EPA Method 9010B) of 116 percent slightly exceeded the CAS upper control limit of 115 percent. However, the recovery was within the acceptance criteria provided by the Standard Reference Material Manufacturer. No further corrective action was taken.

The Reactive Cyanide and Reactive Sulfide recovery for the MS performed on sludge sample Septic Tank was below the CAS lower control limit due to suspected matrix interference. A duplicate MS analysis was performed and the results were similar to the MS, confirming the presence of matrix interference associated with this sample. No further corrective action was taken.

#### TCLP Metals

No QA/QC anomalies were observed during the analysis of this sample delivery group.

#### Fuel Hydrocarbon Identification & Quantitation by EPA Method 8015B

##### **Surrogate Exceptions:**

The surrogate control criteria for o-Terphenyl, 4-Bromofluorobenzene, and n-Triacontane in samples SB-1(20'), Septic Tank, and CB-1 are not applicable. The samples contained matrix interferences that prevented adequate resolution of the surrogate.

##### **MS Percent Recovery Exceptions**

The control criteria for matrix spike recovery of Diesel Range Organics (DRO) for sample SB-4(30') is not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

Approved by mtl Date 7/10/01

000004

## Volatile Organic Compounds by EPA Method 8260B

### **Internal Standard Exceptions:**

The internal standard recovery of Chlorobenzene-d5 and 1,4-Dichlorobenzene-d4 in sample Septic Tank was outside control criteria because of suspected matrix interference. The sample was re-analyzed and the re-analysis confirmed the matrix interference suspected in the original analysis. Results from the original analysis were reported. Results quantified against these internal standards may include a high bias resulting from the matrix effects on the analysis.

### **Surrogate Exceptions:**

The control criteria were exceeded for surrogate Toluene-d8 in sample Septic Tank due to matrix interferences. A re-analysis was performed and produced similar results. The results of the original analysis have been reported. The control criteria were exceeded for surrogates Toluene-d8 and 4-Bromofluorobenzene in sample CB-1 due to matrix interferences. A re-extraction and re-analysis were performed and produced similar results. The results of the original analysis have been reported.

### **Elevated Method Reporting Limits (MRLs)**

Sample CB-1 was analyzed using a mid-level, instead of a low-level, technique due to the extreme complexity associated with this sample. The MRLs were reported at those for the mid-level technique.

### **Holding Time Exceptions**

The initial analysis of sample CB-1 was performed within the recommended holding time. The sample required a dilution and re-analysis of 1,2-Dichlorobenzene because the analyte's concentration exceeded the instrument calibration range. The re-analysis was performed past the recommended holding time for this analyte.

### **Method Blank Exceptions:**

The Method Blanks KWG0103316-2 and KWG0103475-2 contained low levels of Methylene Chloride above the MRL (MRL). In accordance with the methodology, all sample results less than twenty times the level found in the Method Blank are flagged as estimated.

### **MS Percent Recovery Exceptions**

The control criteria for matrix spike recovery of 1,2-Dichlorobenzene for sample CB-1 is not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

The matrix spike recovery of Naphthalene for sample CB-1 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicates the analytical batch was in control. The matrix spike outlier does not indicate a significant data quality problem. No further corrective action was feasible.

## Semivolatile Organic Compounds by EPA Method 8270C

### **Surrogate Exceptions:**

The lower control criteria were exceeded for five out of the six surrogates in the initial extraction of Septic Tank. Since the low surrogate recovery may indicate a potential bias in the analysis, the sample was re-extracted and re-analyzed. The sample results from the re-analysis differ from the initial analysis, indicating potential effects on the quality with the initial sample results. Both sets of data have been reported.

The lower control criterion was exceeded for surrogate 2,4,6-Tribromophenol in the initial extraction of CB-1. Since the problem may indicate a potential bias in the analysis, the sample was re-extracted and re-analyzed. The sample results from the re-analysis differ from the initial analysis, indicating potential effects on the quality with the initial sample results. Both sets of data have been reported.

### **MS Percent Recovery Exceptions**

The spike recovery of N-Nitroso-di-n-propylamine for the MS/DMS performed on a Batch QC sample was outside the upper control criterion. Recovery in the associated LCS was acceptable which indicates the analytical batch was in control. No further corrective action was feasible.

Semivolatile Organic Compounds by EPA Method 8270C

**Holding Time Exceptions:**

The analyses of samples Septic Tank, CB-1 were initially performed within the recommended holding time. Re-extraction and re-analysis were required due to the lower surrogate recovery. The re-extractions were performed past the recommended holding time. With the exception of a high surrogate recovery due to matrix interference, the QA/QC results for the re-analyses were within control criteria. The sample results from the re-analyses differ from the initial analyses. Both sets of data have been reported. The data for the re-analysis, which was extracted past the recommended holding time, have been flagged to indicate holding time exceedance.

Approved by mtl Date 7/10/01

00006

**Chain of Custody  
Documentation**

K2103968



**Geotrans, Inc.**  
A TETRA TECH COMPANY

3035 PROSPECT PARK DRIVE  
SUITE 40  
SAN ANTONIO, CA 78202

LAB: COLUMBIA ANALYTICAL SERVICES  
Analysis Request and Chain of Custody Record

(916) 853-1800 FAX (916) 853-1860  
P253-104

PAGE 1 of 6

Project No.		Client/Project Name		Project Location		LABORATORY REMARKS	
P253-104		BEAZER EAST, INC. FORMER AXELSON FACILITY (SITE # 2067) HOBBS, NEW MEXICO		2703 WEST MARLBOROUGH HOBBS, NEW MEXICO 88340			
Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED
SB-3(5')	6/5/01 0909	X		JAR	SOIL	—	TPH (EPA 8015 MOD.)
SB-3(10')	0923	X					TPH (EPA 8015 MOD.)
SB-3(15')	0934	X					TPH (EPA 8015 MOD.)
SB-3(20')	0947	X					ARCHIVE
SB-3(25')	1002	X					ARCHIVE
SB-3(30')	1023	X					ARCHIVE
SB-3(35')	1033	X					ARCHIVE
SB-4(5')	1110	X					TPH (EPA 8015 MOD.)
SB-4(10')	1115	X					TPH (EPA 8015 MOD.)
SB-4(15')	1116	X					TPH (EPA 8015 MOD.)
TANYA ALKEMAN		Relinquished by: (Signature)		Date: 6/6/01 Time: 1530		Received by: (Signature) Date: 6/6/01 Time: 1530	
Tanya Alkeman		Relinquished by: (Signature)		Date: 6/7/01 Time: 1000		Received by: (Signature) Date: 6/7/01 Time: 1000	
Geotrans, Inc.		Relinquished by: (Signature)		Date: 6/7/01 Time: 1000		Received by: (Signature) Date: 6/7/01 Time: 1000	
SAMPLER REMARKS: BILL BEAZER EAST, INC. (REFERENCE SITE NO. 2067)		Received for laboratory: (Signature)		Date: 6/7/01 Time: 1000		Laboratory No.	
SEAL #		Data Results to: Geotrans, Inc.		Date: 6/7/01 Time: 1000		Laboratory No.	

ATTENTION: TANYA ALKEMAN



K2103968

Project No. (916) 853-1802		Client/Project Name		Project Location		LABORATORY REMARKS	
P253-104		BEAZER EAST, INC. FORMER AXELSON FACILITY SITE NO. 2067 HOBBS, NEW MEXICO		2203 WEST MARLANN BLVD HOBBS, NEW MEXICO 89240			
Field Sample No./ Identification	Date and Time	Grat	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED
SB-1(35')	6-5-01 1324	X		JAR	SOIL	-	ARCHIVE
SB-1(45')	1327	X					ARCHIVE
SB-1(45')	1330	X					ARCHIVE
SB-2(5')	1459	X					TP4 (EPA 8015 MOD.)
SB-2(10')	1503	X					TP4 (EPA 8015 MOD.)
SB-2(15')	1506	X					TP4 (EPA 8015 MOD.)
SB-2(20')	1530	X					ARCHIVE
SB-2(25')	1555	X					ARCHIVE
SB-2(30')	1556	X					ARCHIVE
SB-2(35')	1558	X					ARCHIVE
Samplers: (Signature)		Relinquished by: (Signature)		Date: 6/6/01		Intact	
Tanya Akerman		Tanya Akerman		Time: 1500			
Tanya Akerman		Tanya Akerman		Date: 6/7/01		Intact	
Affiliation		Affiliation		Time: 1000			
GEOTRANS, INC.		GEOTRANS, INC.		Date:		Intact	
		Received for laboratory: (Signature)		Date:		Laboratory No.	
SAMPLER REMARKS: BILL BEAZER EAST, INC. (REFERENCE SITE NO. 2067)		Data Results to: GEOTRANS, INC.		Date:			
		CLT TANYA AKERMAN		Time:			
SEAL #							





K2103968



**Geotrans, Inc.**  
A TETRA TECH COMPANY

3035 PROSPECT PARK DRIVE  
SUITE 40  
RANCHO CONCORDIA, CA 92670

CAS: COLUMBIA ANALYTICAL SERVICES

# Analysis Request and Chain of Custody Record

PAGES OF 6

(916) 853-1800 for (916) 853-1860

Project No.		Client/Project Name		Project Location		LABORATORY REMARKS	
0253-104		BEARER EAST, INC. FORMER ARDEN PROPERTY (SITE NO. 2067) 46885, NEW MEXICO		2703 WEST MARLAND BLVD 46885, NEW MEXICO 80240			
Field Sample No./ Identification	Date and Time	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
SB-6(45')	6/20/01 0912	X	JAR	SOIL	-	ARCHIVE	
SB-6(5')	1005	X				(EPA 8015 MOD.) TPH	
SB-5(10')	1009	X				ARCHIVE	
SB-5(15')	1013	X					
SB-5(20')	1015	X					
SB-5(25')	1037	X					
SB-5(30')	1039	X					
SB-5(35')	1041	X					
SB-5(40')	1047	X					
SB-5(45')	1052	X					
Samplers: (Signature)		Relinquished by: (Signature)		Date: 6/6/01		Intact	
Tanya Akerman		Tanya Akerman		Time: 1530			
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: 6/7/01		Intact	
Tanya Akerman		Tanya Akerman		Time: 1000			
Affiliation		Relinquished by: (Signature)		Date: 6/7/01		Intact	
Geotrans, Inc.		Geotrans, Inc.		Time: 1000			
SAMPLER REMARKS: BILL BEARER EAST, INC. (REFERENCE SITE NO. 2067)		Received for laboratory: (Signature)		Date: 6/6/01		Laboratory No.	
		Data Results to: BEST LABS, INC.		Date: 6/7/01			
		Tanya Akerman		Time: 1000			

SEAL #

K2103968



**Geotrans, Inc.**  
A TETRA TECH COMPANY

3035 PROSPECT PARK DRIVE

SUITE 40

PALM BEACH GARDENS, FL 33410

LAB: COLUMBIA ANALYTICAL SERVICES -

# Analysis Request and Chain of Custody Record

(916) 853-1800 FAX (916) 853-1860

PAGE 6 OF 10

Project No. P253-104		Client/Project Name BETAZEE EAST, INC. FELMEE ANDERSON FACILITY (SITE NO. 2067) 165835, NEW MEXICO		Project Location 2203 W. MARIANO BLVD H5885, NEW MEXICO 80540					
Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS	
SPRINTAVE 0927	6:00	X		JAR(2) 4oz	SLUDGE	—	TRIP REAG & METALS; R.C.T.; SVOC's (8220)		
SPRINTAVE 0927	0927	X		JAR(1) 4oz	SLUDGE	—	(8260) NOC's		
CB-1 11:50	11:50	X		JAR(2) 4oz	SLUDGE	—	TRIP REAG & METALS; R.C.T.; SVOC's (8220)		
CB-1 11:50	11:50	X		JAR(1) 4oz	SLUDGE	—	NOC's (8260)		
Samplers: (Signature) Tanya Ackerman		Relinquished by: (Signature) Tanya Ackerman		Date: 6/6/01 Time: 1500		Received by: (Signature) V.P.S. 6/6/01 1500		Date: 6/6/01 Time: 1500	Intact
Tanya Ackerman		Relinquished by: (Signature) Tanya Ackerman		Date: 6/7/01 Time: 1000		Received by: (Signature) C. J. P. Ochs		Date: 6/7/01 Time: 1000	Intact
Geotrans, Inc.		Relinquished by: (Signature) Geotrans, Inc.		Date: 6/7/01 Time: 1000		Received by: (Signature) C. J. P. Ochs		Date: 6/7/01 Time: 1000	Intact
SAMPLER REMARKS: BILL BETAZEE EAST, INC. (PETERSWEE SITE NO. 2067)		→ STRONG PETROLEUM ODR IN ALL SLUDGE SAMPLES		Received for laboratory: (Signature)		Date: 6/7/01 Time: 1000		Laboratory No.	
SEAL #				Data Results to:					

3968

GETTENS

Work Order K21

6/7/07

and opened on 6/7/01

by

14

- | Custody and Receipt |   | Analysis and Preservation |   | Packaging and Shipping |   | Bottle Condition and Labeling |  | Bottle Origin |   |
|---------------------|---|---------------------------|---|------------------------|---|-------------------------------|--|---------------|---|
| 1.                  | Were custody seals on outside of cooler?<br>If yes, how many and where? _____ | 2.                        | Were seals intact and signature & date correct? _____ | 3.                     | COC # _____   | 4.                            | Were custody papers properly filled out (ink, signed, etc.)? _____                   | 5.            | Type of packing material present <u>INSULATION</u>                                    |
|                     | Temperature of cooler(s) upon receipt: <u>6.4</u> <u>14.5</u> _____           |                           | Temperature Blank: <u>9.3</u> <u>13.6</u> _____       |                        | Did all bottles arrive in good condition (unbroken)? _____            |                               | Were all bottle labels complete (i.e. analysis, preservation, etc.)? _____           |               | Did all bottle labels and tags agree with custody papers? _____                       |
|                     |   |                           |   |                        | Were the correct types of bottles used for the tests indicated? _____ |                               | Were all of the preserved bottles received at the lab with the appropriate pH? _____ |               | Were VOA vials checked for absence of air bubbles, and if present, noted below? _____ |
|                     |   |                           |   |                        | Did the bottles originate from CAS/K or a branch laboratory? _____    |                               |  |               |   |

Explain any discrepancies.

Samples that required preservation or received out of temperature:

[illegible]

077013

**Total Solids**

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facil  
Sample Matrix: Soil

Service Request: K2103968

## Total Solids

Prep Method: NONE  
Analysis Method: 160.3M  
Test Notes:

Units: PERCENT  
Basis: WET

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SB-3(5')	K2103968-001	06/05/2001	06/07/2001	06/08/2001	91.5	
SB-3(10')	K2103968-002	06/05/2001	06/07/2001	06/08/2001	92.9	
SB-3(15')	K2103968-003	06/05/2001	06/07/2001	06/08/2001	86.2	
SB-4(5')	K2103968-008	06/05/2001	06/07/2001	06/08/2001	97.2	
SB-4(10')	K2103968-009	06/05/2001	06/07/2001	06/08/2001	87.8	
SB-4(15')	K2103968-010	06/05/2001	06/07/2001	06/08/2001	89.6	
SB-1(5')	K2103968-015	06/05/2001	06/07/2001	06/08/2001	94.2	
SB-1(10')	K2103968-016	06/05/2001	06/07/2001	06/08/2001	86.4	
SB-1(15')	K2103968-017	06/05/2001	06/07/2001	06/08/2001	84.6	
SB-2(5')	K2103968-024	06/05/2001	06/07/2001	06/08/2001	94.8	
SB-2(10')	K2103968-025	06/05/2001	06/07/2001	06/08/2001	86.3	
SB-2(15')	K2103968-026	06/05/2001	06/07/2001	06/08/2001	89.4	
SB-6(5')	K2103968-033	06/06/2001	06/07/2001	06/08/2001	92.8	
SB-5(5')	K2103968-042	06/06/2001	06/07/2001	06/08/2001	95.7	

00014

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facil  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/05/2001  
**Date Received:** 06/07/2001  
**Date Analyzed:** 06/08/2001

**Duplicate Sample Summary**  
**Total Solids**

**Prep Method:** NONE  
**Analysis Method:** 160.3M  
**Test Notes:**

**Units:** PERCENT  
**Basis:** WET

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
SB-3(5')	K2103968-001	91.5	92.3	91.9	<1	

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facil  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/05/2001  
**Date Received:** 06/07/2001  
**Date Analyzed:** 06/08/2001

**Duplicate Sample Summary**  
**Total Solids**

**Prep Method:** NONE  
**Analysis Method:** 160.3M  
**Test Notes:**

**Units:** PERCENT  
**Basis:** WET

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
SB-2(10')	K2103968-025	86.3	85.8	86.1	<1	

00016

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelsson Facil  
Sample Matrix: Soil

Service Request: K2103968

## Total Solids

Prep Method: NONE  
Analysis Method: 160.3M  
Test Notes:

Units: PERCENT  
Basis: WET

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SB-4(20')	K2103968-011	06/05/2001	06/07/2001	06/18/2001	97.5	
SB-4(25')	K2103968-012	06/05/2001	06/07/2001	06/18/2001	95.3	
SB-4(30')	K2103968-013	06/05/2001	06/07/2001	06/18/2001	95.2	
SB-4(35')	K2103968-014	06/05/2001	06/07/2001	06/18/2001	88.9	
SB-1(20')	K2103968-018	06/05/2001	06/07/2001	06/18/2001	85.9	
SB-1(25')	K2103968-019	06/05/2001	06/07/2001	06/18/2001	93.9	
SB-1(30')	K2103968-020	06/05/2001	06/07/2001	06/18/2001	95.1	
SB-1(35')	K2103968-021	06/05/2001	06/07/2001	06/18/2001	92.4	

00017



**COLUMBIA ANALYTICAL SERVICES, INC.**

QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facil  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/05/2001  
**Date Received:** 06/07/2001  
**Date Analyzed:** 06/18/2001

**Duplicate Sample Summary  
Total Solids**

**Prep Method:** NONE  
**Analysis Method:** 160.3M  
**Test Notes:**

**Units:** PERCENT  
**Basis:** WET

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
SB-4(20')	K2103968-011	97.5	98.7	98.1	1	

00018

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Sludge

**Service Request:** K2103968  
**Date Collected:** 6/6/01  
**Date Received:** 6/7/01

Total Solids

**Prep Method:** NONE  
**Analysis Method:** 160.3M  
**Test Notes:**

**Units:** Percent  
**Basis:** WET

Sample Name	Lab Code	Date Analyzed	Result	Result Notes
Septic Tank	K2103968-051	6/21/01	54.9	
CB-1	K2103968-052	6/21/01	43.0	

Approved By: \_\_\_\_\_

Date: 7/3/01

Total Solids/042095

Tsol\_Dod1 - Total Solids 7/3/01

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Sludge

Service Request: K2103968  
Date Collected: 6/6/01  
Date Received: 6/7/01

Duplicate Summary  
Total Solids

Prep Method: NONE  
Analysis Method: 160.3M  
Test Notes:

Units: PERCENT  
Basis: WET

Sample Name	Lab Code	Date Analyzed	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Septic Tank	K2103968-051	6/21/01	54.9	55.2	55.0	<1	

Approved By: \_\_\_\_\_

Total Solids/060595

Tsol\_Dod1 - TS DUP 7/3/01

Date: 7/3/01

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## **Inorganic Parameters**

**COLUMBIA ANALYTICAL SERVICES, INC.**

**Analytical Report**

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Sludge

**Service Request:** K2103968  
**Date Collected:** 6/6/01  
**Date Received:** 6/7/01  
**Date Extracted:** NA

Characteristics of Hazardous Waste  
 RCRA, 40 CFR Part 261

**Sample Name:** Septic Tank  
**Lab Code:** K2103968-051  
**Test Notes:**

**Basis:** As Received

Analyte	Analysis Method	Units	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes	Regulatory Limits
Corrosivity	SW-846 Sec. 7.2*	pH UNITS	--	--	1	6/14/01	6.80		$\leq 2$ or $\geq 12.5$
Ignitability	SW-846 Sec. 7.1*	DEG F	--	--	1	6/8/01	> 200		<140°F
Cyanide	9010B	mg/Kg (ppm)	0.8	0.2	1	6/19/01	ND		250 mg/Kg
Sulfide, Reactive	SW-846 Sec. 7.3*	mg/Kg (ppm)	20	-	1	6/13/01	90		500 mg/Kg

\* Analytical methods, regulatory limits and action levels used in this report are from Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., September 1986 and as amended by Update I, July 1992.

Approved By: \_\_\_\_\_

IS22/052595

03968WET.PW1 - charlw 6/22/01

Date: 6/22/01

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# COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Sludge

**Service Request:** K2103968  
**Date Collected:** 6/6/01  
**Date Received:** 6/7/01  
**Date Extracted:** NA

### Characteristics of Hazardous Waste RCRA, 40 CFR Part 261

**Sample Name:** CB-1  
**Lab Code:** K2103968-052  
**Test Notes:**

**Basis:** As Received

Analyte	Analysis Method	Units	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes	Regulatory Limits
Corrosivity	SW-846 Sec. 7.2*	pH UNITS	--	--	1	6/14/01	8.06		$\leq 2$ or $\geq 12.5$
Ignitability	SW-846 Sec. 7.1*	DEG F	--	--	1	6/8/01	> 200		<140°F
Cyanide	9010B	mg/Kg (ppm)	0.8	0.2	1	6/20/01	0.6	J	250 mg/Kg
Sulfide, Reactive	SW-846 Sec. 7.3*	mg/Kg (ppm)	20	-	1	6/15/01	47		500 mg/Kg

\* Analytical methods, regulatory limits and action levels used in this report are from Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., September 1986 and as amended by Update I, July 1992.

Approved By: \_\_\_\_\_

Date: 6/22/01

1S22/052595

03968WET.PW1 - charlhw (2) 6/22/01

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## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Soil

Service Request: K2103968  
Date Collected: NA  
Date Received: NA  
Date Extracted: NA

Characteristics of Hazardous Waste  
RCRA, 40 CFR Part 261

Sample Name: Method Blank  
Lab Code: K2103968-MB  
Test Notes:

Basis: As Received

Analyte	Analysis Method	Units	MRL	MDL	Dilution Factor	Date Analyzed	Result	Regulatory Limits
Ignitability	SW-846 Sec. 7.1*	DEG F	--	--	1	6/8/01	> 200	<140°F
Cyanide	9010B	mg/Kg (ppm)	0.01	0.002	1	6/19/01	ND	250 mg/Kg
Cyanide	9010B	mg/Kg (ppm)	0.01	0.002	1	6/20/01	ND	250 mg/Kg
Sulfide, Reactive	SW-846 Sec. 7.3*	mg/Kg (ppm)	20	-	1	6/13/01	ND	500 mg/Kg
Sulfide, Reactive	SW-846 Sec. 7.3*	mg/Kg (ppm)	20	-	1	6/15/01	ND	500 mg/Kg

\* Analytical methods, regulatory limits and action levels used in this report are from Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., September 1986 and as amended by Update I, July 1992.

Approved By: \_\_\_\_\_

Date: 6/22/01

1S22/052595

03968WET.PW1 - MB 6/22/01

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## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Sludge

**Service Request:** K2103968  
**Date Collected:** 6/6/01  
**Date Received:** 6/7/01  
**Date Extracted:** NA  
**Date Analyzed:** 6/8-20/01

Duplicate Summary  
Inorganic Parameters

**Sample Name:** Septic Tank  
**Lab Code:** K2103968-051DUP  
**Test Notes:**

Basis: As Received

Analyte	Units	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Corrosivity	pH UNITS	SW-846 Sec. 7.2	--	6.80	6.92	6.86	2	
Ignitability	DEG F	SW-846 Sec. 7.1	--	> 200	> 200	> 200	-	
Cyanide	mg/Kg (ppm)	9010B	0.8	ND	ND	ND	-	
Sulfide, Reactive	mg/Kg (ppm)	SW-846 Sec. 7.3	20	90	93	92	3	

Approved By: \_\_\_\_\_

Date: 6/22/01



## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Sludge

Service Request: K2103968  
Date Collected: 6/6/01  
Date Received: 6/7/01  
Date Extracted: NA  
Date Analyzed: 6/8-20/01

Matrix Spike Summary  
Inorganic Parameters

Sample Name: Septic Tank  
Lab Code: K2103968-051MS  
Test Notes:

Basis: As Received

Analyte	Units	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery	Result Notes
								Acceptance Limits	
Cyanide	mg/Kg (ppm)	9010B	0.8	10.2	ND	6.4	63	75-125	*
Sulfide, Reactive	mg/Kg (ppm)	SW-846 Sec. 7.3*	20	143	90	117	19	60-130	*

Approved By: \_\_\_\_\_  
03968WET.PWT-MS 6/22/01

Date: 6/22/01

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**COLUMBIA ANALYTICAL SERVICES, INC.**

QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**LCS Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** NA  
**Date Received:** NA  
**Date Extracted:** NA  
**Date Analyzed:** 6/8-20/01

Laboratory Control Sample Summary  
 Inorganic Parameters

**Sample Name:** Lab Control Sample  
**Lab Code:** K2103968-LCS  
**Test Notes:**

Basis: NA

Analyte	Units	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery	Result Notes
						Acceptance Limits	
Corrosivity	pH UNITS	SW-846 Sec. 7.2*	7.08	6.96	98	85-115	
Ignitability	DEG F	SW-846 Sec. 7.1*	81	80	99	85-115	
Cyanide	mg/Kg (ppm)	9010B	0.59	0.68	116	85-115	*
Cyanide	mg/Kg (ppm)	9010B	0.59	0.67	114	85-115	
Sulfide, Reactive	mg/Kg (ppm)	SW-846 Sec. 7.3*	2690	2310	86	60-130	
Sulfide, Reactive	mg/Kg (ppm)	SW-846 Sec. 7.3*	2690	2390	89	60-130	

Approved By: \_\_\_\_\_

Date: 6/22/01

LCS/52595

03968WET.PW1 - LCS 6/22/01

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**Total Metals**

## METALS

- Cover Page -  
INORGANIC ANALYSIS DATA PACKAGE

Client: GeoTrans, Inc.

Service Request: K2103968

Project No.: P253-104

Project Name: Former Axelson Facility (Site #2067)

<u>Sample No.</u>	<u>Lab Sample ID.</u>
Septic Tank	K2103968-051
Septic Tanks	K2103968-051S
CB-1	K2103968-052
Method Blank	K2103968-MB

Were ICP interelement corrections applied?

Yes/No YES

Were ICP background corrections applied?

Yes/No YESIf yes-were raw data generated before  
application of background corrections?Yes/No NOComments: TCLP Metals

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Date: 6/13/01

00027

## METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: GeoTrans, Inc.

Service Request: K2103968

Project No.: P253-104

Date Collected: 06/06/01

Project Name: Former Axelson Facility (Site #2067)

Date Received: 06/07/01

Matrix: TCLP

Units: MG/L

Basis: NA

Sample Name: Septic Tank

Lab Code: K2103968-051

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	6010B	0.1	1	6/12/01	6/13/01	0.1	U	
Barium	6010B	1.0	1	6/12/01	6/13/01	1.0	U	
Cadmium	6010B	0.01	1	6/12/01	6/13/01	0.01	U	
Chromium	6010B	0.01	1	6/12/01	6/13/01	0.01	U	
Lead	6010B	0.05	1	6/12/01	6/13/01	0.43		
Mercury	7470A	0.001	1	6/12/01	6/12/01	0.001	U	
Selenium	6010B	0.1	1	6/12/01	6/13/01	0.1	U	
Silver	6010B	0.02	1	6/12/01	6/13/01	0.02	U	

\* Solids: 0.0

Comments:

00028

## METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: GeoTrans, Inc.

Service Request: K2103968

Project No.: P253-104

Date Collected: 06/06/01

Project Name: Former Axelson Facility (Site #2067)

Date Received: 06/07/01

Matrix: TCLP

Units: MG/L

Basis: NA

Sample Name: CB-1

Lab Code: K2103968-052

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	6010B	0.1	1	6/12/01	6/13/01	0.1	U	
Barium	6010B	1.0	1	6/12/01	6/13/01	3.0		
Cadmium	6010B	0.01	1	6/12/01	6/13/01	0.01	U	
Chromium	6010B	0.01	1	6/12/01	6/13/01	0.01	U	
Lead	6010B	0.05	1	6/12/01	6/13/01	0.05	U	
Mercury	7470A	0.001	1	6/12/01	6/12/01	0.001	U	
Selenium	6010B	0.1	1	6/12/01	6/13/01	0.1	U	
Silver	6010B	0.02	1	6/12/01	6/13/01	0.02	U	

% Solids: 0.0

Comments:

00029

## METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: GeoTrans, Inc.

Service Request: K2103968

Project No.: P253-104

Date Collected:

Project Name: Former Axelson Facility (Site #2067)

Date Received:

Matrix: WATER

Units: MG/L

Basis: NA

Sample Name: Method Blank

Lab Code: K2103968-MB

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	6010B	0.1	1	6/12/01	6/13/01	0.1	U	
Barium	6010B	1.0	1	6/12/01	6/13/01	1.0	U	
Cadmium	6010B	0.01	1	6/12/01	6/13/01	0.01	U	
Chromium	6010B	0.01	1	6/12/01	6/13/01	0.01	U	
Lead	6010B	0.05	1	6/12/01	6/13/01	0.05	U	
Mercury	7470A	0.001	1	6/12/01	6/12/01	0.001	U	
Selenium	6010B	0.1	1	6/12/01	6/13/01	0.1	U	
Silver	6010B	0.02	1	6/12/01	6/13/01	0.02	U	

\* Solids: 0.0

Comments:

## METALS

- 5a -

## SPIKE SAMPLE RECOVERY

Client: GeoTrans, Inc.

Service Request: K2103968

Project No.: P253-104

Units: MG/L

Project Name: Former Axelson Facility (Site #2067)

Basis: NA

Matrix: TCLP

% Solids: 0.0

Sample Name: Septic Tanks

Lab Code: K2103968-051S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Arsenic	75 - 125	4.6		0.1	U	5.0	92		6010B
Barium	75 - 125	9.5		1.0	U	10.0	95		6010B
Cadmium	75 - 125	0.88		0.01	U	1.00	88		6010B
Chromium	75 - 125	4.26		0.01	U	5.00	85		6010B
Lead	75 - 125	4.76		0.43		5.00	87		6010B
Mercury	75 - 125	0.005		0.001	U	0.005	103		7470A
Selenium	75 - 125	1.0		0.1	U	1.0	95		6010B
Silver	75 - 125	0.89		0.02	U	1.00	89		6010B

Comments:

00031



**METALS**

- 7 -

**LABORATORY CONTROL SAMPLE**

Client: GeoTrans, Inc.

Service Request: K2103968

Project No.: P253-104

Project Name: Former Axelson Facility (Site #2067)

Aqueous LCS Source: Inorganic Ventures

Solid LCS Source:

Analyte	Aqueous mg/L			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Arsenic	5.00	4.95	99					
Barium	10.0	9.71	97					
Cadmium	1.00	0.953	95					
Chromium	5.00	4.70	94					
Lead	5.00	4.69	94					
Mercury	0.00500	0.00515	103					
Selenium	1.00	1.01	101					
Silver	1.00	0.907	91					

00032

**Fuel Identification and Quanification**  
**Method 8015 M**

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/05/2001  
**Date Received:** 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** SB-3(5')  
**Lab Code:** K2103968-001  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	11	1	06/08/01	06/13/01	KWG0103242	
Diesel Range Organics (DRO)	ND	U	11	1	06/08/01	06/13/01	KWG0103242	
Residual Range Organics (RRO)	ND	U	26	1	06/08/01	06/13/01	KWG0103242	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	60	20-150	06/13/01	Acceptable
o-Terphenyl	100	50-150	06/13/01	Acceptable
n-Triacontane	94	50-150	06/13/01	Acceptable

Comments:

00033

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/05/2001  
**Date Received:** 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** SB-3(10')  
**Lab Code:** K2103968-002  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND U	11	1	06/08/01	06/13/01	KWG0103242	
Diesel Range Organics (DRO)	ND U	11	1	06/08/01	06/13/01	KWG0103242	
Residual Range Organics (RRO)	ND U	26	1	06/08/01	06/13/01	KWG0103242	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	60	20-150	06/13/01	Acceptable
o-Terphenyl	95	50-150	06/13/01	Acceptable
n-Triacontane	90	50-150	06/13/01	Acceptable

Comments:

00034

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/05/2001  
**Date Received:** 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** SB-3(15')  
**Lab Code:** K2103968-003  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	12	1	06/08/01	06/13/01	KWG0103242	
Diesel Range Organics (DRO)	ND	U	12	1	06/08/01	06/13/01	KWG0103242	
Residual Range Organics (RRO)	ND	U	29	1	06/08/01	06/13/01	KWG0103242	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	59	20-150	06/13/01	Acceptable
o-Terphenyl	93	50-150	06/13/01	Acceptable
n-Triacontane	91	50-150	06/13/01	Acceptable

**Comments:**

00035

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/05/2001  
**Date Received:** 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** SB-4(5')  
**Lab Code:** K2103968-008  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	10	1	06/08/01	06/13/01	KWG0103242	
Diesel Range Organics (DRO)	ND	U	10	1	06/08/01	06/13/01	KWG0103242	
Residual Range Organics (RRO)	ND	U	25	1	06/08/01	06/13/01	KWG0103242	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	57	20-150	06/13/01	Acceptable
o-Terphenyl	91	50-150	06/13/01	Acceptable
n-Triacontane	87	50-150	06/13/01	Acceptable

Comments:

00036

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Soil

Service Request: K2103968  
Date Collected: 06/05/2001  
Date Received: 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

Sample Name: SB-4(10')  
Lab Code: K2103968-009  
Extraction Method: EPA 3550B  
Analysis Method: 8015M

Units: mg/Kg  
Basis: Dry  
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	1000	H	11	1	06/08/01	06/13/01	KWG0103242	
Diesel Range Organics (DRO)	2700	Y	11	1	06/08/01	06/13/01	KWG0103242	
Residual Range Organics (RRO)	120	Y	28	1	06/08/01	06/13/01	KWG0103242	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	61	20-150	06/13/01	Acceptable
o-Terphenyl	87	50-150	06/13/01	Acceptable
n-Triacontane	82	50-150	06/13/01	Acceptable

Comments:

00037

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/05/2001  
**Date Received:** 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** SB-4(15")  
**Lab Code:** K2103968-010  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	300	H	11	1	06/08/01	06/13/01	KWG0103242	
Diesel Range Organics (DRO)	1000	Y	11	1	06/08/01	06/13/01	KWG0103242	
Residual Range Organics (RRO)	46	Y	28	1	06/08/01	06/13/01	KWG0103242	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	61	20-150	06/13/01	Acceptable
o-Terphenyl	92	50-150	06/13/01	Acceptable
n-Triacontane	86	50-150	06/13/01	Acceptable

Comments: \_\_\_\_\_

00038



## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Soil

Service Request: K2103968  
Date Collected: 06/05/2001  
Date Received: 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

Sample Name: SB-4(20')  
Lab Code: K2103968-011  
Extraction Method: EPA 3550B  
Analysis Method: 8015M

Units: mg/Kg  
Basis: Dry  
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	10	H	10	1	06/19/01	06/20/01	KWG0103448	
Diesel Range Organics (DRO)	100	L	10	1	06/19/01	06/20/01	KWG0103448	
Residual Range Organics (RRO)	31	Y	25	1	06/19/01	06/20/01	KWG0103448	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	72	20-150	06/20/01	Acceptable
o-Terphenyl	117	50-150	06/20/01	Acceptable
triacontane	118	50-150	06/20/01	Acceptable

Comments: \_\_\_\_\_

00039

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/05/2001  
**Date Received:** 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** SB-4(25')  
**Lab Code:** K2103968-012  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	10	1	06/19/01	06/20/01	KWG0103448	
Diesel Range Organics (DRO)	ND	U	10	1	06/19/01	06/20/01	KWG0103448	
Residual Range Organics (RRO)	ND	U	26	1	06/19/01	06/20/01	KWG0103448	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	85	20-150	06/20/01	Acceptable
o-Terphenyl	125	50-150	06/20/01	Acceptable
n-Triacontane	129	50-150	06/20/01	Acceptable

Comments:

00040

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Soil

Service Request: K2103968  
Date Collected: 06/05/2001  
Date Received: 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

Sample Name: SB-4(30')  
Lab Code: K2103968-013  
Extraction Method: EPA 3550B  
Analysis Method: 8015M

Units: mg/Kg  
Basis: Dry  
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	170	H	10	1	06/19/01	06/20/01	KWG0103448	
Diesel Range Organics (DRO)	630	L	10	1	06/19/01	06/20/01	KWG0103448	
Residual Range Organics (RRO)	58	O	26	1	06/19/01	06/20/01	KWG0103448	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	81	20-150	06/20/01	Acceptable
o-Terphenyl	122	50-150	06/20/01	Acceptable
n-Triacontane	124	50-150	06/20/01	Acceptable

Comments: \_\_\_\_\_

00041

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Soil

Service Request: K2103968  
Date Collected: 06/05/2001  
Date Received: 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

Sample Name: SB-4(35')  
Lab Code: K2103968-014  
Extraction Method: EPA 3550B  
Analysis Method: 8015M

Units: mg/Kg  
Basis: Dry  
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	76	H	11	1	06/19/01	06/20/01	KWG0103448	
Diesel Range Organics (DRO)	300	L	11	1	06/19/01	06/20/01	KWG0103448	
Residual Range Organics (RRO)	43	O	28	1	06/19/01	06/20/01	KWG0103448	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	75	20-150	06/20/01	Acceptable
o-Terphenyl	117	50-150	06/20/01	Acceptable
n-Triacontane	121	50-150	06/20/01	Acceptable

Comments:

00042

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/05/2001  
**Date Received:** 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** SB-1(5')  
**Lab Code:** K2103968-015  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	10	1	06/08/01	06/13/01	KWG0103242	
Diesel Range Organics (DRO)	21	Y	10	1	06/08/01	06/13/01	KWG0103242	
Residual Range Organics (RRO)	97	Y	26	1	06/08/01	06/13/01	KWG0103242	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	56	20-150	06/13/01	Acceptable
o-Terphenyl	90	50-150	06/13/01	Acceptable
n-Triacontane	85	50-150	06/13/01	Acceptable

Comments:

00043

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/05/2001  
**Date Received:** 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** SB-1(10")  
**Lab Code:** K2103968-016  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	1500	H	11	1	06/08/01	06/13/01	KWG0103242	
Diesel Range Organics (DRO)	1300	Y	11	1	06/08/01	06/13/01	KWG0103242	
Residual Range Organics (RRO)	270	O	28	1	06/08/01	06/13/01	KWG0103242	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	90	20-150	06/13/01	Acceptable
o-Terphenyl	88	50-150	06/13/01	Acceptable
n-Triacontane	85	50-150	06/13/01	Acceptable

Comments:

00044

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Soil

Service Request: K2103968  
Date Collected: 06/05/2001  
Date Received: 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

Sample Name: SB-1(15')  
Lab Code: K2103968-017  
Extraction Method: EPA 3550B  
Analysis Method: 8015M

Units: mg/Kg  
Basis: Dry  
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	2300	H	11	1	06/08/01	06/13/01	KWG0103242	
Diesel Range Organics (DRO)	2400	Y	11	1	06/08/01	06/13/01	KWG0103242	
Residual Range Organics (RRO)	370	O	29	1	06/08/01	06/13/01	KWG0103242	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	122	20-150	06/13/01	Acceptable
o-Terphenyl	87	50-150	06/13/01	Acceptable
n-Triacontane	86	50-150	06/13/01	Acceptable

Comments: \_\_\_\_\_

00045

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/05/2001  
**Date Received:** 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** SB-1(20')  
**Lab Code:** K2103968-018  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	7000	DH	110	10	06/19/01	06/23/01	KWG0103448	
Diesel Range Organics (DRO)	6500	L	11	1	06/19/01	06/20/01	KWG0103448	
Residual Range Organics (RRO)	470	O	29	1	06/19/01	06/20/01	KWG0103448	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	307	20-150	06/20/01	Outside Control Limits
o-Terphenyl	112	50-150	06/20/01	Acceptable
n-Triacontane	115	50-150	06/20/01	Acceptable

Comments:

00046



## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Soil

Service Request: K2103968  
Date Collected: 06/05/2001  
Date Received: 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

Sample Name: SB-1(25')  
Lab Code: K2103968-019  
Extraction Method: EPA 3550B  
Analysis Method: 8015M

Units: mg/Kg  
Basis: Dry  
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	1100	H	10	1	06/19/01	06/20/01	KWG0103448	
Diesel Range Organics (DRO)	2100	L	10	1	06/19/01	06/20/01	KWG0103448	
Residual Range Organics (RRO)	190	O	26	1	06/19/01	06/20/01	KWG0103448	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	115	20-150	06/20/01	Acceptable
o-Terphenyl	131	50-150	06/20/01	Acceptable
Triaccontane	130	50-150	06/20/01	Acceptable

Comments: \_\_\_\_\_

00047

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/05/2001  
**Date Received:** 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** SB-1(30')  
**Lab Code:** K2103968-020  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	290	H	10	1	06/19/01	06/20/01	KWG0103448	
Diesel Range Organics (DRO)	860	L	10	1	06/19/01	06/20/01	KWG0103448	
Residual Range Organics (RRO)	94	O	26	1	06/19/01	06/20/01	KWG0103448	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	83	20-150	06/20/01	Acceptable
o-Terphenyl	122	50-150	06/20/01	Acceptable
n-Triacontane	122	50-150	06/20/01	Acceptable

Comments: \_\_\_\_\_

00048

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Soil

Service Request: K2103968  
Date Collected: 06/05/2001  
Date Received: 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

Sample Name: SB-1(35')  
Lab Code: K2103968-021  
Extraction Method: EPA 3550B  
Analysis Method: 8015M

Units: mg/Kg  
Basis: Dry  
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	490	H	11	1	06/19/01	06/21/01	KWG0103448	
Diesel Range Organics (DRO)	1100	L	11	1	06/19/01	06/21/01	KWG0103448	
Residual Range Organics (RRO)	110	O	27	1	06/19/01	06/21/01	KWG0103448	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	101	20-150	06/21/01	Acceptable
o-Terphenyl	130	50-150	06/21/01	Acceptable
n-Triacontane	129	50-150	06/21/01	Acceptable

Comments: \_\_\_\_\_

00049

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/05/2001  
**Date Received:** 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** SB-2(5')  
**Lab Code:** K2103968-024  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	10	1	06/08/01	06/13/01	KWG0103242	
Diesel Range Organics (DRO)	ND	U	10	1	06/08/01	06/13/01	KWG0103242	
Residual Range Organics (RRO)	ND	U	26	1	06/08/01	06/13/01	KWG0103242	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	57	20-150	06/13/01	Acceptable
o-Terphenyl	92	50-150	06/13/01	Acceptable
n-Triacontane	88	50-150	06/13/01	Acceptable

Comments:

00050

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Soil

Service Request: K2103968  
Date Collected: 06/05/2001  
Date Received: 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

Sample Name: SB-2(10')  
Lab Code: K2103968-025  
Extraction Method: EPA 3550B  
Analysis Method: 8015M

Units: mg/Kg  
Basis: Dry  
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	11	1	06/08/01	06/13/01	KWG0103242	
Diesel Range Organics (DRO)	ND	U	11	1	06/08/01	06/13/01	KWG0103242	
Residual Range Organics (RRO)	ND	U	28	1	06/08/01	06/13/01	KWG0103242	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	56	20-150	06/13/01	Acceptable
o-Terphenyl	86	50-150	06/13/01	Acceptable
n-Triacontane	82	50-150	06/13/01	Acceptable

Comments:

00051

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/05/2001  
**Date Received:** 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** SB-2(15')  
**Lab Code:** K2103968-026  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	11	1	06/08/01	06/13/01	KWG0103242	
Diesel Range Organics (DRO)	ND	U	11	1	06/08/01	06/13/01	KWG0103242	
Residual Range Organics (RRO)	ND	U	27	1	06/08/01	06/13/01	KWG0103242	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	54	20-150	06/13/01	Acceptable
o-Terphenyl	88	50-150	06/13/01	Acceptable
n-Triacontane	85	50-150	06/13/01	Acceptable

Comments:

00052

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/06/2001  
**Date Received:** 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** SB-6(5')  
**Lab Code:** K2103968-033  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	11	1	06/08/01	06/13/01	KWG0103242	
Diesel Range Organics (DRO)	ND	U	11	1	06/08/01	06/13/01	KWG0103242	
Residual Range Organics (RRO)	ND	U	27	1	06/08/01	06/13/01	KWG0103242	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	58	20-150	06/13/01	Acceptable
o-Terphenyl	87	50-150	06/13/01	Acceptable
n-Triacontane	83	50-150	06/13/01	Acceptable

**Comments:**

00053

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** 06/06/2001  
**Date Received:** 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** SB-5(5')  
**Lab Code:** K2103968-042  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	10	1	06/08/01	06/13/01	KWG0103242	
Diesel Range Organics (DRO)	ND	U	10	1	06/08/01	06/13/01	KWG0103242	
Residual Range Organics (RRO)	ND	U	25	1	06/08/01	06/13/01	KWG0103242	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	59	20-150	06/13/01	Acceptable
o-Terphenyl	88	50-150	06/13/01	Acceptable
n-Triacontane	85	50-150	06/13/01	Acceptable

Comments:

00054



## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Sludge

Service Request: K2103968  
Date Collected: 06/06/2001  
Date Received: 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

Sample Name: Septic Tank  
Lab Code: K2103968-051  
Extraction Method: EPA 3550B  
Analysis Method: 8015M

Units: mg/Kg  
Basis: Dry  
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	42000	DH	900	10	06/19/01	06/24/01	KWG0103584	
Diesel Range Organics (DRO)	110000	DF	900	10	06/19/01	06/24/01	KWG0103584	
Residual Range Organics (RRO)	40000	DO	2300	10	06/19/01	06/24/01	KWG0103584	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	416	20-150	06/23/01	Outside Control Limits
o-Terphenyl	0	50-150	06/23/01	Outside Control Limits
triacontane	0	50-150	06/23/01	Outside Control Limits

00055

Comments:

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Sludge

**Service Request:** K2103968  
**Date Collected:** 06/06/2001  
**Date Received:** 06/07/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** CB-1  
**Lab Code:** K2103968-052  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	74000	H	220	1	06/19/01	06/23/01	KWG0103584	
Diesel Range Organics (DRO)	70000	F	220	1	06/19/01	06/23/01	KWG0103584	
Residual Range Organics (RRO)	68000	F	560	1	06/19/01	06/23/01	KWG0103584	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	1243	20-150	06/23/01	Outside Control Limits
o-Terphenyl	75	50-150	06/23/01	Acceptable
n-Triacontane	0	50-150	06/23/01	Outside Control Limits

Comments:

00056

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** NA  
**Date Received:** NA

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** Method Blank  
**Lab Code:** KWG0103242-4  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	10	1	06/08/01	06/13/01	KWG0103242	
Diesel Range Organics (DRO)	ND	U	10	1	06/08/01	06/13/01	KWG0103242	
Residual Range Organics (RRO)	ND	U	25	1	06/08/01	06/13/01	KWG0103242	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	58	20-150	06/13/01	Acceptable
o-Terphenyl	90	50-150	06/13/01	Acceptable
Triacantane	86	50-150	06/13/01	Acceptable

**Comments:**

00057

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Sediment

**Service Request:** K2103968  
**Date Collected:** NA  
**Date Received:** NA

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** Method Blank  
**Lab Code:** KWG0103448-5  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	10	1	06/19/01	06/20/01	KWG0103448	
Diesel Range Organics (DRO)	ND	U	10	1	06/19/01	06/20/01	KWG0103448	
Residual Range Organics (RRO)	ND	U	25	1	06/19/01	06/20/01	KWG0103448	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	78	20-150	06/20/01	Acceptable
o-Terphenyl	119	50-150	06/20/01	Acceptable
n-Triacontane	123	50-150	06/20/01	Acceptable

Comments: \_\_\_\_\_

00058

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Sludge

**Service Request:** K2103968  
**Date Collected:** NA  
**Date Received:** NA

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** Method Blank  
**Lab Code:** KWG0103584-2  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND U	10	1	06/19/01	06/23/01	KWG0103584	
Diesel Range Organics (DRO)	ND U	10	1	06/19/01	06/23/01	KWG0103584	
Residual Range Organics (RRO)	ND U	25	1	06/19/01	06/23/01	KWG0103584	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	54	20-150	06/23/01	Acceptable
o-Terphenyl	89	50-150	06/23/01	Acceptable
n-Triacontane	93	50-150	06/23/01	Acceptable

00059

Comments: \_\_\_\_\_

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Soil

Service Request: K2103968

**Surrogate Recovery Summary**  
**Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan**

Extraction Method: EPA 3550B  
 Analysis Method: 8015M

Units: PERCENT  
 Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
SB-3(5')	K2103968-001	60	100	94
SB-3(10')	K2103968-002	60	95	90
SB-3(15')	K2103968-003	59	93	91
SB-4(5')	K2103968-008	57	91	87
SB-4(10')	K2103968-009	61	87	82
SB-4(15')	K2103968-010	61	92	86
SB-4(20')	K2103968-011	72	117	118
SB-4(25')	K2103968-012	85	125	129
SB-4(30')	K2103968-013	81	122	124
SB-4(35')	K2103968-014	75	117	121
SB-1(5')	K2103968-015	56	90	85
SB-1(10')	K2103968-016	90	88	85
SB-1(15')	K2103968-017	122	87	86
SB-1(20')	K2103968-018	307	*	112
SB-1(25')	K2103968-019	115	131	130
SB-1(30')	K2103968-020	83	122	122
SB-1(35')	K2103968-021	101	130	129
SB-2(5')	K2103968-024	57	92	88
SB-2(10')	K2103968-025	56	86	82
SB-2(15')	K2103968-026	54	88	85
SB-6(5')	K2103968-033	58	87	83
SB-5(5')	K2103968-042	59	88	85
Septic Tank	K2103968-051	416	*	0
CB-1	K2103968-052	1243	*	75
Method Blank	KWG0103242-4	58	90	86
Method Blank	KWG0103448-5	78	119	123
Method Blank	KWG0103584-2	54	89	93
SB-3(5')MS	KWG0103242-1	65	93	88
SB-3(5')DMS	KWG0103242-2	75	95	90
SB-4(30')MS	KWG0103448-1	91	127	135
SB-4(30')DMS	KWG0103448-2	75	115	122
Lab Control Sample	KWG0103242-3	71	91	87
Lab Control Sample	KWG0103448-4	91	117	120
Lab Control Sample	KWG0103584-1	67	95	96

**Surrogate Recovery Control Limits (%)**

Sur1 = 4-Bromofluorobenzene	20-150
Sur2 = o-Terphenyl	50-150
Sur3 = n-Triacontane	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

00060

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Soil

Service Request: K2103968  
Date Extracted: 06/08/2001  
Date Analyzed: 06/13/2001

Matrix Spike/Duplicate Matrix Spike Summary  
Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

Sample Name: SB-3(5')  
Lab Code: K2103968-001  
Extraction Method: EPA 3550B  
Analysis Method: 8015M

Units: mg/Kg  
Basis: Dry  
Level: Low  
Extraction Lot: KWG0103242

Analyte Name	Sample Result	SB-3(5')MS KWG0103242-1 Matrix Spike			SB-3(5')DMS KWG0103242-2 Duplicate Matrix Spike			% Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Diesel Range Organics (DRO)	ND	171	168	102	178	168	106	19-145	4	40
Residual Range Organics (RRO)	ND	194	168	116	190	168	113	50-150	2	40

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00061

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Extracted:** 06/19/2001  
**Date Analyzed:** 06/20/2001

**Matrix Spike/Duplicate Matrix Spike Summary**  
**Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan**

**Sample Name:** SB-4(30')  
**Lab Code:** K2103968-013  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low  
**Extraction Lot:** KWG0103448

Analyte Name	Sample Result	SB-4(30')MS KWG0103448-1 Matrix Spike			SB-4(30')DMS KWG0103448-2 Duplicate Matrix Spike			% Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Diesel Range Organics (DRO)	630	882	165	155 *	741	165	69	19-145	17	40
Residual Range Organics (RRO)	58	252	165	118	222	165	100	50-150	13	40

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00062



## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Soil

Service Request: K2103968  
Date Extracted: 06/08/2001  
Date Analyzed: 06/13/2001

Lab Control Spike Summary  
Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

Extraction Method: EPA 3550B  
Analysis Method: 8015M

Units: mg/Kg  
Basis: Dry  
Level: Low  
Extraction Lot: KWG0103242

Lab Control Sample  
KWG0103242-3  
Lab Control Spike

Analyte Name	Result	Expected	%Rec	%Rec Limits
Diesel Range Organics (DRO)	174	160	109	19-145
Residual Range Organics (RRO)	182	160	114	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00063

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Sediment

**Service Request:** K2103968  
**Date Extracted:** 06/19/2001  
**Date Analyzed:** 06/20/2001

**Lab Control Spike Summary**  
**Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan**

**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low  
**Extraction Lot:** KWG0103448

Lab Control Sample KWG0103448-4 Lab Control Spike				
Analyte Name	Result	Expected	%Rec	%Rec Limits
Diesel Range Organics (DRO)	165	160	103	19-145
Residual Range Organics (RRO)	140	160	87	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00064

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Sludge

**Service Request:** K2103968  
**Date Extracted:** 06/19/2001  
**Date Analyzed:** 06/23/2001

**Lab Control Spike Summary**  
**Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan**

**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low  
**Extraction Lot:** KWG0103584

Lab Control Sample  
KWG0103584-1  
Lab Control Spike

Analyte Name	Result	Expected	%Rec	% Rec Limits
Diesel Range Organics (DRO)	126	160	79	19-145
Residual Range Organics (RRO)	132	160	83	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00065

**Volatile Organic Compounds**  
**Method 8260 B**

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Sludge

Service Request: K2103968  
 Date Collected: 06/06/2001  
 Date Received: 06/07/2001

## Volatile Organic Compounds

Sample Name: Septic Tank  
 Lab Code: K2103968-051  
 Extraction Method: EPA 5030A  
 Analysis Method: 8260B

Units: ug/Kg  
 Basis: Wet  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Chloromethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Vinyl Chloride	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Bromomethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Chloroethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Trichlorofluoromethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Acetone	110		50	1	06/20/01	06/20/01	KWG0103475	
1,1-Dichloroethene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Carbon Disulfide	5.2		5.0	1	06/20/01	06/20/01	KWG0103475	
Methylene Chloride	36	B	10	1	06/20/01	06/20/01	KWG0103475	
trans-1,2-Dichloroethene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
cis-1,2-Dichloroethene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
2-Butanone (MEK)	26		20	1	06/20/01	06/20/01	KWG0103475	
2,2-Dichloropropane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
cis-1,2-Dichloroethene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Chloroform	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Bromochloromethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,1-Dichloropropene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Carbon Tetrachloride	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,2-Dichloroethane (EDC)	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Benzene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Trichloroethene (TCE)	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,2-Dichloropropane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Bromodichloromethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Dibromomethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
2-Hexanone	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
cis-1,3-Dichloropropene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Toluene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
trans-1,3-Dichloropropene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,1,2-Trichloroethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
4-Methyl-2-pentanone (MIBK)	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
1,3-Dichloropropane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Tetrachloroethene (PCE)	10		5.0	1	06/20/01	06/20/01	KWG0103475	
Bromochloromethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	

Comments:

00066

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Sludge

Service Request: K2103968  
 Date Collected: 06/06/2001  
 Date Received: 06/07/2001

## Volatile Organic Compounds

Sample Name: Septic Tank  
 Lab Code: K2103968-051  
 Extraction Method: EPA 5030A  
 Analysis Method: 8260B

Units: ug/Kg  
 Basis: Wet  
 Level: Low

Analyte Name	Result Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND U	20	1	06/20/01	06/20/01	KWG0103475	
Chlorobenzene	ND U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,1,1,2-Tetrachloroethane	ND U	5.0	1	06/20/01	06/20/01	KWG0103475	
Ethylbenzene	ND U	5.0	1	06/20/01	06/20/01	KWG0103475	
m,p-Xylenes	ND U	5.0	1	06/20/01	06/20/01	KWG0103475	
o-Xylene	ND U	5.0	1	06/20/01	06/20/01	KWG0103475	
Styrene	ND U	5.0	1	06/20/01	06/20/01	KWG0103475	
Bromoform	ND U	5.0	1	06/20/01	06/20/01	KWG0103475	
Isopropylbenzene	ND U	20	1	06/20/01	06/20/01	KWG0103475	
1,1,2,2-Tetrachloroethane	ND U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,2,3-Trichloropropane	ND U	5.0	1	06/20/01	06/20/01	KWG0103475	
Bromobenzene	ND U	5.0	1	06/20/01	06/20/01	KWG0103475	
n-Propylbenzene	ND U	20	1	06/20/01	06/20/01	KWG0103475	
2-Chlorotoluene	ND U	20	1	06/20/01	06/20/01	KWG0103475	
4-Chlorotoluene	ND U	20	1	06/20/01	06/20/01	KWG0103475	
1,3,5-Trimethylbenzene	ND U	20	1	06/20/01	06/20/01	KWG0103475	
tert-Butylbenzene	ND U	20	1	06/20/01	06/20/01	KWG0103475	
1,2,4-Trimethylbenzene	ND U	20	1	06/20/01	06/20/01	KWG0103475	
sec-Butylbenzene	ND U	20	1	06/20/01	06/20/01	KWG0103475	
1,3-Dichlorobenzene	ND U	5.0	1	06/20/01	06/20/01	KWG0103475	
4-Isopropyltoluene	ND U	20	1	06/20/01	06/20/01	KWG0103475	
1,4-Dichlorobenzene	ND U	5.0	1	06/20/01	06/20/01	KWG0103475	
n-Butylbenzene	ND U	20	1	06/20/01	06/20/01	KWG0103475	
1,2-Dichlorobenzene	ND U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,2-Dibromo-3-chloropropane	ND U	20	1	06/20/01	06/20/01	KWG0103475	
1,2,4-Trichlorobenzene	ND U	20	1	06/20/01	06/20/01	KWG0103475	
1,2,3-Trichlorobenzene	ND U	20	1	06/20/01	06/20/01	KWG0103475	
Naphthalene	ND U	20	1	06/20/01	06/20/01	KWG0103475	
Hexachlorobutadiene	ND U	20	1	06/20/01	06/20/01	KWG0103475	

Comments:

00067

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Sludge

Service Request: K2103968  
Date Collected: 06/06/2001  
Date Received: 06/07/2001

## Volatile Organic Compounds

Sample Name: Septic Tank  
Lab Code: K2103968-051

Units: ug/Kg  
Basis: Wet

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	105	75-132	06/20/01	Acceptable
Toluene-d8	66	85-109	06/20/01	Outside Control Limits
4-Bromofluorobenzene	70	49-131	06/20/01	Acceptable

Comments:

00068

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Sludge

Service Request: K2103968  
 Date Collected: 06/06/2001  
 Date Received: 06/07/2001

## Volatile Organic Compounds

Sample Name: CB-1  
 Lab Code: K2103968-052  
 Extraction Method: EPA 5035/5030B  
 Analysis Method: 8260B

Units: mg/Kg  
 Basis: Wet  
 Level: Med

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Chloromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Vinyl Chloride	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Bromomethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Chloroethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Trichlorofluoromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Acetone	ND	U	2.0	1	06/12/01	06/20/01	KWG0103316	
1,1-Dichloroethene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Carbon Disulfide	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Methylene Chloride	ND	U	0.10	1	06/12/01	06/20/01	KWG0103316	
trans-1,2-Dichloroethene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,1-Dichloroethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
2-Butanone (MEK)	ND	U	2.0	1	06/12/01	06/20/01	KWG0103316	
2,2-Dichloropropane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
cis-1,2-Dichloroethene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Chloroform	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Bromochloromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,1,1-Trichloroethane (TCA)	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,1-Dichloropropene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Carbon Tetrachloride	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,2-Dichloroethane (EDC)	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
<b>Benzene</b>	<b>0.087</b>		0.050	1	06/12/01	06/20/01	KWG0103316	
Trichloroethene (TCE)	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,2-Dichloropropane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Bromodichloromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Dibromomethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
2-Hexanone	ND	U	2.0	1	06/12/01	06/20/01	KWG0103316	
cis-1,3-Dichloropropene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
<b>Toluene</b>	<b>0.63</b>		0.050	1	06/12/01	06/20/01	KWG0103316	
trans-1,3-Dichloropropene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,1,2-Trichloroethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
4-Methyl-2-pentanone (MIBK)	ND	U	2.0	1	06/12/01	06/20/01	KWG0103316	
1,3-Dichloropropane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Tetrachloroethene (PCE)	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Dibromochloromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	

Comments:

00069



## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Sludge

Service Request: K2103968  
 Date Collected: 06/06/2001  
 Date Received: 06/07/2001

## Volatile Organic Compounds

Sample Name: CB-1  
 Lab Code: K2103968-052  
 Extraction Method: EPA 5035/5030B  
 Analysis Method: 8260B

Units: mg/Kg  
 Basis: Wet  
 Level: Med

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
Chlorobenzene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,1,1,2-Tetrachloroethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Ethylbenzene	0.75		0.050	1	06/12/01	06/20/01	KWG0103316	
m,p-Xylenes	0.63		0.050	1	06/12/01	06/20/01	KWG0103316	
o-Xylene	1.9		0.050	1	06/12/01	06/20/01	KWG0103316	
Styrene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Bromoform	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Isopropylbenzene	0.31		0.20	1	06/12/01	06/20/01	KWG0103316	
1,1,2,2-Tetrachloroethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,2,3-Trichloropropane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
m-Toluenes	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
n-Propylbenzene	0.81		0.20	1	06/12/01	06/20/01	KWG0103316	
2-Chlorotoluene	7.9		0.20	1	06/12/01	06/20/01	KWG0103316	
4-Chlorotoluene	0.56		0.20	1	06/12/01	06/20/01	KWG0103316	
1,3,5-Trimethylbenzene	1.0		0.20	1	06/12/01	06/20/01	KWG0103316	
tert-Butylbenzene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,2,4-Trimethylbenzene	2.8		0.20	1	06/12/01	06/20/01	KWG0103316	
sec-Butylbenzene	0.50		0.20	1	06/12/01	06/20/01	KWG0103316	
1,3-Dichlorobenzene	0.11		0.050	1	06/12/01	06/20/01	KWG0103316	
4-Isopropyltoluene	4.4		0.20	1	06/12/01	06/20/01	KWG0103316	
1,4-Dichlorobenzene	1.1		0.050	1	06/12/01	06/20/01	KWG0103316	
n-Butylbenzene	1.0		0.20	1	06/12/01	06/20/01	KWG0103316	
1,2-Dichlorobenzene	44		0.50	1	06/12/01	06/26/01	KWG0103316	*
1,2-Dibromo-3-chloropropane	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,2,4-Trichlorobenzene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,2,3-Trichlorobenzene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
Naphthalene	3.6		0.20	1	06/12/01	06/20/01	KWG0103316	
Hexachlorobutadiene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	

\* See Case Narrative

Comments:

00070

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Sludge

**Service Request:** K2103968  
**Date Collected:** 06/06/2001  
**Date Received:** 06/07/2001

Volatile Organic Compounds

**Sample Name:** CB-1  
**Lab Code:** K2103968-052

**Units:** mg/Kg  
**Basis:** Wet

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	52	45-141	06/20/01	Acceptable
Toluene-d8	39	50-139	06/20/01	Outside Control Limits
4-Bromofluorobenzene	32	50-143	06/20/01	Outside Control Limits

Comments: \_\_\_\_\_

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Soil

Service Request: K2103968  
 Date Collected: NA  
 Date Received: NA

## Volatile Organic Compounds

Sample Name: Method Blank  
 Lab Code: KWG0103316-2  
 Extraction Method: EPA 5035/5030B  
 Analysis Method: 8260B

Units: mg/Kg  
 Basis: Wet  
 Level: Med

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Chloromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Vinyl Chloride	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Bromomethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Chloroethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Trichlorofluoromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Acetone	ND	U	2.0	1	06/12/01	06/20/01	KWG0103316	
1,1-Dichloroethene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Carbon Disulfide	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Methylene Chloride	0.11		0.10	1	06/12/01	06/20/01	KWG0103316	
trans-1,2-Dichloroethene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
cis-1,2-Dichloroethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
2-Butanone (MEK)	ND	U	2.0	1	06/12/01	06/20/01	KWG0103316	
2,2-Dichloropropane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
cis-1,2-Dichloroethene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Chloroform	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Bromochloromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,1,1-Trichloroethane (TCA)	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,1-Dichloropropene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Carbon Tetrachloride	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,2-Dichloroethane (EDC)	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Benzene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Trichloroethene (TCE)	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,2-Dichloropropane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Bromodichloromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Dibromomethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
2-Hexanone	ND	U	2.0	1	06/12/01	06/20/01	KWG0103316	
cis-1,3-Dichloropropene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Toluene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
trans-1,3-Dichloropropene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,1,2-Trichloroethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
4-Methyl-2-pentanone (MIBK)	ND	U	2.0	1	06/12/01	06/20/01	KWG0103316	
1,3-Dichloropropane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Tetrachloroethene (PCE)	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Bromochloromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	

Comments:

00072

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Soil

Service Request: K2103968  
Date Collected: NA  
Date Received: NA

## Volatile Organic Compounds

Sample Name: Method Blank  
Lab Code: KWG0103316-2  
Extraction Method: EPA 5035/5030B  
Analysis Method: 8260B

Units: mg/Kg  
Basis: Wet  
Level: Med

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
Chlorobenzene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,1,1,2-Tetrachloroethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Ethylbenzene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
m,p-Xylenes	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
o-Xylene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Styrene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Bromoform	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Isopropylbenzene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,1,2,2-Tetrachloroethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,2,3-Trichloropropane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Bromobenzene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
n-Propylbenzene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
2-Chlorotoluene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
4-Chlorotoluene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,3,5-Trimethylbenzene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
tert-Butylbenzene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,2,4-Trimethylbenzene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
sec-Butylbenzene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,3-Dichlorobenzene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
4-Isopropyltoluene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,4-Dichlorobenzene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
n-Butylbenzene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,2-Dichlorobenzene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,2-Dibromo-3-chloropropane	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,2,4-Trichlorobenzene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,2,3-Trichlorobenzene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
Naphthalene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	
Hexachlorobutadiene	ND	U	0.20	1	06/12/01	06/20/01	KWG0103316	

Comments:

00073

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Soil

Service Request: K2103968  
Date Collected: NA  
Date Received: NA

## Volatile Organic Compounds

Sample Name: Method Blank  
Lab Code: KWG0103316-2

Units: mg/Kg  
Basis: Wet

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	95	45-141	06/20/01	Acceptable
Toluene-d8	113	50-139	06/20/01	Acceptable
4-Bromofluorobenzene	100	50-143	06/20/01	Acceptable

Comments: \_\_\_\_\_

01074

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Soil

Service Request: K2103968  
 Date Collected: NA  
 Date Received: NA

## Volatile Organic Compounds

Sample Name: Method Blank  
 Lab Code: KWG0103475-5  
 Extraction Method: EPA 5030A  
 Analysis Method: 8260B

Units: ug/Kg  
 Basis: Wet  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Chloromethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Vinyl Chloride	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Bromomethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Chloroethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Trichlorofluoromethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Acetone	ND	U	50	1	06/20/01	06/20/01	KWG0103475	
1,1-Dichloroethene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Carbon Disulfide	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
<b>Methylene Chloride</b>	<b>10</b>		10	1	06/20/01	06/20/01	KWG0103475	
trans-1,2-Dichloroethene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,1-Dichloroethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
2-Butanone (MEK)	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
2,2-Dichloropropane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
cis-1,2-Dichloroethene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Chloroform	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Bromochloromethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,1-Dichloropropene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Carbon Tetrachloride	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,2-Dichloroethane (EDC)	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Benzene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Trichloroethene (TCE)	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,2-Dichloropropane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Bromodichloromethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Dibromomethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
2-Hexanone	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
cis-1,3-Dichloropropene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Toluene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
trans-1,3-Dichloropropene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,1,2-Trichloroethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
4-Methyl-2-pentanone (MIBK)	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
1,3-Dichloropropane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Tetrachloroethene (PCE)	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Dibromochloromethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	

Comments:

01075

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Soil

Service Request: K2103968  
 Date Collected: NA  
 Date Received: NA

## Volatile Organic Compounds

Sample Name: Method Blank  
 Lab Code: KWG0103475-5  
 Extraction Method: EPA 5030A  
 Analysis Method: 8260B

Units: ug/Kg  
 Basis: Wet  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
Chlorobenzene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,1,1,2-Tetrachloroethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Ethylbenzene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
m,p-Xylenes	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
o-Xylene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Styrene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Bromoform	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
Isopropylbenzene	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
1,1,2,2-Tetrachloroethane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,2,3-Trichloropropane	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
m-Toluenes	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
n-Propylbenzene	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
2-Chlorotoluene	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
4-Chlorotoluene	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
1,3,5-Trimethylbenzene	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
tert-Butylbenzene	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
1,2,4-Trimethylbenzene	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
sec-Butylbenzene	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
1,3-Dichlorobenzene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
4-Isopropyltoluene	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
1,4-Dichlorobenzene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
n-Butylbenzene	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
1,2-Dichlorobenzene	ND	U	5.0	1	06/20/01	06/20/01	KWG0103475	
1,2-Dibromo-3-chloropropane	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
1,2,4-Trichlorobenzene	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
1,2,3-Trichlorobenzene	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
Naphthalene	ND	U	20	1	06/20/01	06/20/01	KWG0103475	
Hexachlorobutadiene	ND	U	20	1	06/20/01	06/20/01	KWG0103475	

Comments:

00076

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** NA  
**Date Received:** NA

## Volatile Organic Compounds

**Sample Name:** Method Blank  
**Lab Code:** KWG0103475-5

**Units:** ug/Kg  
**Basis:** Wet

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	108	75-132	06/20/01	Acceptable
Toluene-d8	89	85-109	06/20/01	Acceptable
4-Bromofluorobenzene	90	49-131	06/20/01	Acceptable

Comments: \_\_\_\_\_

00071



## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Sludge

Service Request: K2103968

Surrogate Recovery Summary  
Volatile Organic Compounds

Extraction Method: EPA 5030A  
Analysis Method: 8260B

Units: PERCENT  
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
Septic Tank	K2103968-051	105	66 *	70
Method Blank	KWG0103475-5	108	89	90
Lab Control Sample	KWG0103475-1	104	93	93
Duplicate Lab Control Sample	KWG0103475-2	103	91	95

## Surrogate Recovery Control Limits (%)

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Sur1 = Dibromofluoromethane	75-132
Sur2 = Toluene-d8	85-109
Sur3 = 4-Bromofluorobenzene	49-131

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Results flagged with an asterisk (\*) indicate values outside control criteria.  
Results flagged with a pound (#) indicate the control criteria is not applicable.

00078

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Sludge

Service Request: K2103968

Surrogate Recovery Summary  
Volatile Organic Compounds

Extraction Method: EPA 5035/5030B  
Analysis Method: 8260B

Units: PERCENT  
Level: Med

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
CB-1	K2103968-052	52	39 *	32 *
Method Blank	KWG0103316-2	95	113	100
CB-1MS	KWG0103316-3	58	40 *	40 *
CB-1DMS	KWG0103316-4	55	38 *	36 *
Lab Control Sample	KWG0103316-1	105	113	109

## Surrogate Recovery Control Limits (%)

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Sur1 = Dibromofluoromethane	45-141
Sur2 = Toluene-d8	50-139
Sur3 = 4-Bromofluorobenzene	50-143

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Results flagged with an asterisk (\*) indicate values outside control criteria.  
Results flagged with a pound (#) indicate the control criteria is not applicable.

00079

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Sludge

Service Request: K2103968  
 Date Extracted: 06/12/2001  
 Date Analyzed: 06/20/2001

Matrix Spike/Duplicate Matrix Spike Summary  
 Volatile Organic Compounds

Sample Name: CB-1  
 Lab Code: K2103968-052  
 Extraction Method: EPA 5035/5030B  
 Analysis Method: 8260B

Units: mg/Kg  
 Basis: Wet  
 Level: Med  
 Extraction Lot: KWG0103316

Analyte Name	Sample Result	CB-1MS KWG0103316-3 Matrix Spike			CB-1DMS KWG0103316-4 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
1,1-Dichloroethene	ND	5.25	5.00	105	4.92	5.00	98	51-127	7	40
Benzene	0.087	5.57	5.00	110	5.42	5.00	107	57-121	3	40
Trichloroethene (TCE)	ND	5.31	5.00	106	5.17	5.00	103	45-127	3	40
Toluene	0.63	5.96	5.00	107	5.64	5.00	100	34-134	6	40
Chlorobenzene	ND	4.88	5.00	98	4.79	5.00	96	37-126	2	40
1,2-Dichlorobenzene	44	43.7E	5.00	-15 #	43.3E	5.00	-22 #	34-131	1	40
Naphthalene	3.6	10.3	5.00	133	11.7	5.00	161 *	20-139	13	40

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00080

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Soil

Service Request: K2103968  
 Date Extracted: 06/12/2001  
 Date Analyzed: 06/20/2001

Lab Control Spike Summary  
 Volatile Organic Compounds

Extraction Method: EPA 5035/5030B  
 Analysis Method: 8260B

Units: mg/Kg  
 Basis: Wet  
 Level: Med  
 Extraction Lot: KWG0103316

Lab Control Sample  
 KWG0103316-1  
 Lab Control Spike

Analyte Name	Result	Expected	%Rec	%Rec Limits
Dichlorodifluoromethane	0.677	1.00	68	50-150
Chloromethane	0.875	1.00	87	50-150
Vinyl Chloride	0.915	1.00	91	50-150
Bromomethane	0.884	1.00	88	50-150
Chloroethane	0.824	1.00	82	50-150
Trichlorofluoromethane	0.695	1.00	69	50-150
Acetone	7.97	5.00	159 *	50-150
1,1-Dichloroethene	0.876	1.00	88	73-118
Carbon Disulfide	1.63	2.00	82	50-150
Methylene Chloride	1.11	1.00	111	50-150
trans-1,2-Dichloroethene	0.922	1.00	92	50-150
1,1-Dichloroethane	1.08	1.00	108	50-150
2-Butanone (MEK)	8.25	5.00	165 *	50-150
2,2-Dichloropropane	0.935	1.00	93	50-150
cis-1,2-Dichloroethene	1.00	1.00	100	50-150
Chloroform	0.953	1.00	95	50-150
Bromochloromethane	0.963	1.00	96	50-150
1,1,1-Trichloroethane (TCA)	0.812	1.00	81	50-150
1,1-Dichloropropene	0.881	1.00	88	50-150
Carbon Tetrachloride	0.751	1.00	75	50-150
1,2-Dichloroethane (EDC)	1.10	1.00	110	50-150
Benzene	0.952	1.00	95	78-116
Trichloroethene (TCE)	0.866	1.00	87	79-119
1,2-Dichloropropane	0.972	1.00	97	50-150
Bromodichloromethane	0.905	1.00	90	50-150
Dibromomethane	1.06	1.00	106	50-150
2-Hexanone	7.76	5.00	155 *	50-150
cis-1,3-Dichloropropene	1.05	1.00	105	50-150
Toluene	0.977	1.00	98	77-118
trans-1,3-Dichloropropene	0.893	1.00	89	50-150
1,1,2-Trichloroethane	0.999	1.00	100	50-150
4-Methyl-2-pentanone (MIBK)	7.24	5.00	145	50-150
1,3-Dichloropropane	1.01	1.00	100	50-150
Tetrachloroethene (PCE)	0.707	1.00	71	50-150
Dibromochloromethane	0.773	1.00	77	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00081

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Soil

Service Request: K2103968  
 Date Extracted: 06/12/2001  
 Date Analyzed: 06/20/2001

Lab Control Spike Summary  
 Volatile Organic Compounds

Extraction Method: EPA 5035/5030B  
 Analysis Method: 8260B

Units: mg/Kg  
 Basis: Wet  
 Level: Med  
 Extraction Lot: KWG0103316

Analyte Name	Lab Control Sample KWG0103316-1 Lab Control Spike			%Rec Limits
	Result	Expected	%Rec	
1,2-Dibromoethane (EDB)	0.960	1.00	96	50-150
Chlorobenzene	0.872	1.00	87	80-117
1,1,1,2-Tetrachloroethane	0.826	1.00	83	50-150
Ethylbenzene	0.887	1.00	89	50-150
m,p-Xylenes	1.78	2.00	89	50-150
o-Xylene	0.912	1.00	91	50-150
Styrene	0.927	1.00	93	50-150
Bromoform	0.754	1.00	75	50-150
Isopropylbenzene	0.862	1.00	86	50-150
1,1,2,2-Tetrachloroethane	1.23	1.00	123	50-150
1,1,2-Trichloropropane	1.24	1.00	124	50-150
Bromobenzene	0.920	1.00	92	50-150
n-Propylbenzene	0.960	1.00	96	50-150
2-Chlorotoluene	0.931	1.00	93	50-150
4-Chlorotoluene	0.951	1.00	95	50-150
1,3,5-Trimethylbenzene	0.956	1.00	96	50-150
tert-Butylbenzene	0.833	1.00	83	50-150
1,2,4-Trimethylbenzene	0.964	1.00	96	50-150
sec-Butylbenzene	0.905	1.00	90	50-150
1,3-Dichlorobenzene	0.953	1.00	95	50-150
4-Isopropyltoluene	0.830	1.00	83	50-150
1,4-Dichlorobenzene	0.917	1.00	92	50-150
n-Butylbenzene	0.796	1.00	80	50-150
1,2-Dichlorobenzene	0.966	1.00	97	79-120
1,2-Dibromo-3-chloropropane	0.986	1.00	99	50-150
1,2,4-Trichlorobenzene	0.891	1.00	89	50-150
1,2,3-Trichlorobenzene	0.915	1.00	91	50-150
Naphthalene	1.17	1.00	117	57-135
Hexachlorobutadiene	0.661	1.00	66	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00082

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Soil

Service Request: K2103968  
Date Extracted: 06/20/2001  
Date Analyzed: 06/20/2001

Lab Control Spike Summary  
Volatile Organic Compounds

Extraction Method: EPA 5030A  
Analysis Method: 8260B

Units: ug/Kg  
Basis: Wet  
Level: Low  
Extraction Lot: KWG0103475

Lab Control Sample  
KWG0103475-1  
Lab Control Spike

Analyte Name	Result	Expected	%Rec	%Rec Limits
Dichlorodifluoromethane	129	100	129	50-150
Chloromethane	96.0	100	96	50-150
Vinyl Chloride	121	100	121	50-150
Bromomethane	108	100	108	50-150
Chloroethane	121	100	121	50-150
Trichlorofluoromethane	115	100	115	50-150
Acetone	438	500	88	50-150
1,1-Dichloroethene	140	100	140 *	73-118
Carbon Disulfide	225	200	112	50-150
Methylene Chloride	116	100	116	50-150
trans-1,2-Dichloroethene	148	100	148	50-150
1,1-Dichloroethane	133	100	133	50-150
2-Butanone (MEK)	526	500	105	50-150
2,2-Dichloropropane	142	100	142	50-150
cis-1,2-Dichloroethene	133	100	133	50-150
Chloroform	130	100	130	50-150
Bromochloromethane	120	100	120	50-150
1,1,1-Trichloroethane (TCA)	136	100	136	50-150
1,1-Dichloropropene	125	100	125	50-150
Carbon Tetrachloride	140	100	140	50-150
1,2-Dichloroethane (EDC)	124	100	124	50-150
Benzene	116	100	116	78-116
Trichloroethene (TCE)	122	100	122 *	79-119
1,2-Dichloropropane	115	100	115	50-150
Bromodichloromethane	119	100	119	50-150
Dibromomethane	120	100	120	50-150
2-Hexanone	530	500	106	50-150
cis-1,3-Dichloropropene	119	100	119	50-150
Toluene	116	100	116	77-118
trans-1,3-Dichloropropene	119	100	119	50-150
1,1,2-Trichloroethane	114	100	114	50-150
4-Methyl-2-pentanone (MIBK)	542	500	108	50-150
1,3-Dichloropropane	109	100	109	50-150
Tetrachloroethene (PCE)	133	100	133	50-150
Dibromochloromethane	116	100	116	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00083

## COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Soil

Service Request: K2103968  
 Date Extracted: 06/20/2001  
 Date Analyzed: 06/20/2001

Lab Control Spike Summary  
 Volatile Organic Compounds

Extraction Method: EPA 5030A  
 Analysis Method: 8260B

Units: ug/Kg  
 Basis: Wet  
 Level: Low  
 Extraction Lot: KWG0103475

Lab Control Sample  
 KWG0103475-1  
 Lab Control Spike

Analyte Name	Result	Expected	%Rec	%Rec Limits
1,2-Dibromoethane (EDB)	113	100	113	50-150
Chlorobenzene	116	100	116	80-117
1,1,1,2-Tetrachloroethane	120	100	119	50-150
Ethylbenzene	124	100	124	50-150
m,p-Xylenes	245	200	123	50-150
o-Xylene	117	100	117	50-150
Styrene	120	100	120	50-150
Bromoform	121	100	121	50-150
Isopropylbenzene	122	100	122	50-150
1,1,2,2-Tetrachloroethane	109	100	109	50-150
1,1,2-Trichloropropane	113	100	113	50-150
Bromobenzene	113	100	113	50-150
n-Propylbenzene	121	100	121	50-150
2-Chlorotoluene	113	100	113	50-150
4-Chlorotoluene	114	100	114	50-150
1,3,5-Trimethylbenzene	119	100	119	50-150
tert-Butylbenzene	125	100	125	50-150
1,2,4-Trimethylbenzene	124	100	124	50-150
sec-Butylbenzene	129	100	129	50-150
1,3-Dichlorobenzene	121	100	121	50-150
4-Isopropyltoluene	125	100	125	50-150
1,4-Dichlorobenzene	115	100	115	50-150
n-Butylbenzene	124	100	124	50-150
1,2-Dichlorobenzene	114	100	114	79-120
1,2-Dibromo-3-chloropropane	119	100	119	50-150
1,2,4-Trichlorobenzene	122	100	122	50-150
1,2,3-Trichlorobenzene	122	100	122	50-150
Naphthalene	116	100	116	57-135
Hexachlorobutadiene	140	100	140	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00084

**Semi-Volatile Organic Compounds by GC / MS**  
**Method 8270 C**



## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Sludge

Service Request: K2103968  
 Date Collected: 06/06/2001  
 Date Received: 06/07/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: Septic Tank  
 Lab Code: K2103968-051  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
N-Nitrosodimethylamine	ND	U	20	10	06/13/01	06/22/01	KWG0103330	
Aniline	ND	U	10	10	06/13/01	06/22/01	KWG0103330	
Bis(2-chloroethyl) Ether	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Phenol	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
2-Chlorophenol	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
1,3-Dichlorobenzene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
1,4-Dichlorobenzene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
1,2-Dichlorobenzene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Benzyl Alcohol	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Bis(2-chloroisopropyl) Ether	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
2-Methylphenol	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
1,2-Dichloroethane	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
N-Nitrosodi-n-propylamine	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
4-Methylphenol†	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Nitrobenzene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Isophorone	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
2-Nitrophenol	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
2,4-Dimethylphenol	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Bis(2-chloroethoxy)methane	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
2,4-Dichlorophenol	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Benzoic Acid	ND	U	20	10	06/13/01	06/22/01	KWG0103330	
1,2,4-Trichlorobenzene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Naphthalene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
4-Chloroaniline	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Hexachlorobutadiene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
4-Chloro-3-methylphenol	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
2-Methylnaphthalene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Hexachlorocyclopentadiene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
2,4,6-Trichlorophenol	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
2,4,5-Trichlorophenol	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
2-Chloronaphthalene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
2-Nitroaniline	ND	U	20	10	06/13/01	06/22/01	KWG0103330	
Acenaphthylene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Dimethyl Phthalate	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
1,2-Dinitrotoluene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	

Comments:

00085

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Sludge

Service Request: K2103968  
 Date Collected: 06/06/2001  
 Date Received: 06/07/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: Septic Tank  
 Lab Code: K2103968-051  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
3-Nitroaniline	ND	U	20	10	06/13/01	06/22/01	KWG0103330	
2,4-Dinitrophenol	ND	U	20	10	06/13/01	06/22/01	KWG0103330	
Dibenzofuran	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
4-Nitrophenol	ND	U	20	10	06/13/01	06/22/01	KWG0103330	
2,4-Dinitrotoluene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Fluorene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
4-Chlorophenyl Phenyl Ether	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Diethyl Phthalate	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
4-Nitroaniline	ND	U	20	10	06/13/01	06/22/01	KWG0103330	
2-Methyl-4,6-dinitrophenol	ND	U	20	10	06/13/01	06/22/01	KWG0103330	
N-Nitrosodiphenylamine	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
4-Bromophenyl Phenyl Ether	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Hexachlorobenzene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Pentachlorophenol	ND	U	20	10	06/13/01	06/22/01	KWG0103330	
Phenanthrene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Anthracene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Di-n-butyl Phthalate	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Fluoranthene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Pyrene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Butyl Benzyl Phthalate	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
3,3'-Dichlorobenzidine	ND	U	20	10	06/13/01	06/22/01	KWG0103330	
Benz(a)anthracene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Chrysene	ND	U	3.3	10	06/13/01	06/22/01	KWG0103330	
Bis(2-ethylhexyl) Phthalate	6.4	D	3.3	10	06/13/01	06/22/01	KWG0103330	
Di-n-octyl Phthalate	ND	U	17	50	06/13/01	06/22/01	KWG0103330	
Benzo(b)fluoranthene	ND	U	17	50	06/13/01	06/22/01	KWG0103330	
Benzo(k)fluoranthene	ND	U	17	50	06/13/01	06/22/01	KWG0103330	
Benzo(a)pyrene	ND	U	17	50	06/13/01	06/22/01	KWG0103330	
Indeno(1,2,3-cd)pyrene	ND	U	17	50	06/13/01	06/22/01	KWG0103330	
Dibenz(a,h)anthracene	ND	U	17	50	06/13/01	06/22/01	KWG0103330	
Benzo(g,h,i)perylene	ND	U	17	50	06/13/01	06/22/01	KWG0103330	

00086

Comments:

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Sludge

**Service Request:** K2103968  
**Date Collected:** 06/06/2001  
**Date Received:** 06/07/2001

## Semi-Volatile Organic Compounds by GC/MS

**Sample Name:** Septic Tank  
**Lab Code:** K2103968-051

**Units:** mg/Kg  
**Basis:** Wet

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	10	26-97	06/22/01	Outside Control Limits
Phenol-d6	19	37-109	06/22/01	Outside Control Limits
Nitrobenzene-d5	29	35-116	06/22/01	Outside Control Limits
2-Fluorobiphenyl	44	45-109	06/22/01	Outside Control Limits
2,4,6-Tribromophenol	21	19-131	06/22/01	Acceptable
Terphenyl-d14	36	48-140	06/22/01	Outside Control Limits

## † Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments:

00087

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Sludge

Service Request: K2103968  
 Date Collected: 06/06/2001  
 Date Received: 06/07/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: Septic Tank  
 Lab Code: K2103968-051  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
N-Nitrosodimethylamine	ND	U	30	5	06/27/01	07/02/01	KWG0103701	*
Aniline	ND	U	15	5	06/27/01	07/02/01	KWG0103701	*
Bis(2-chloroethyl) Ether	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Phenol	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
2-Chlorophenol	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
1,3-Dichlorobenzene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
1,4-Dichlorobenzene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
1,2-Dichlorobenzene	79	D	5.0	5	06/27/01	07/02/01	KWG0103701	*
Benzyl Alcohol	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Bis(2-chloroisopropyl) Ether	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
2-Methylphenol	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Hexachloroethane	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
N-Nitrosodi-n-propylamine	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
4-Methylphenol†	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Nitrobenzene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Isophorone	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
2-Nitrophenol	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
2,4-Dimethylphenol	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Bis(2-chloroethoxy)methane	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
2,4-Dichlorophenol	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Benzoic Acid	ND	U	30	5	06/27/01	07/02/01	KWG0103701	*
1,2,4-Trichlorobenzene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Naphthalene	15	D	5.0	5	06/27/01	07/02/01	KWG0103701	*
4-Chloroaniline	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Hexachlorobutadiene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
4-Chloro-3-methylphenol	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
2-Methylnaphthalene	32	D	5.0	5	06/27/01	07/02/01	KWG0103701	*
Hexachlorocyclopentadiene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
2,4,6-Trichlorophenol	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
2,4,5-Trichlorophenol	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
2-Chloronaphthalene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
2-Nitroaniline	ND	U	30	5	06/27/01	07/02/01	KWG0103701	*
Acenaphthylene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Dimethyl Phthalate	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
2,6-Dinitrotoluene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*

Comments:

00088

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Sludge

Service Request: K2103968  
 Date Collected: 06/06/2001  
 Date Received: 06/07/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: Septic Tank  
 Lab Code: K2103968-051  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
3-Nitroaniline	ND	U	30	5	06/27/01	07/02/01	KWG0103701	*
2,4-Dinitrophenol	ND	U	30	5	06/27/01	07/02/01	KWG0103701	*
Dibenzofuran	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
4-Nitrophenol	ND	U	30	5	06/27/01	07/02/01	KWG0103701	*
2,4-Dinitrotoluene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Fluorene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
4-Chlorophenyl Phenyl Ether	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Diethyl Phthalate	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
4-Nitroaniline	ND	U	30	5	06/27/01	07/02/01	KWG0103701	*
2-Methyl-4,6-dinitrophenol	ND	U	30	5	06/27/01	07/02/01	KWG0103701	*
Nitrosodiphenylamine	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
4-Bromophenyl Phenyl Ether	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Hexachlorobenzene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Pentachlorophenol	ND	U	30	5	06/27/01	07/02/01	KWG0103701	*
Phenanthrene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Anthracene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Di-n-butyl Phthalate	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Fluoranthene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Pyrene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Butyl Benzyl Phthalate	6.3	D	5.0	5	06/27/01	07/02/01	KWG0103701	*
3,3'-Dichlorobenzidine	ND	U	30	5	06/27/01	07/02/01	KWG0103701	*
Benz(a)anthracene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Chrysene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Bis(2-ethylhexyl) Phthalate	62	D	5.0	5	06/27/01	07/02/01	KWG0103701	*
Di-n-octyl Phthalate	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Benzo(b)fluoranthene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Benzo(k)fluoranthene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Benzo(a)pyrene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Indeno(1,2,3-cd)pyrene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Dibenz(a,h)anthracene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*
Benzo(g,h,i)perylene	ND	U	5.0	5	06/27/01	07/02/01	KWG0103701	*

\* See Case Narrative

Comments:

00089

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Sludge

**Service Request:** K2103968  
**Date Collected:** 06/06/2001  
**Date Received:** 06/07/2001

## Semi-Volatile Organic Compounds by GC/MS

**Sample Name:** Septic Tank  
**Lab Code:** K2103968-051

**Units:** mg/Kg  
**Basis:** Wet

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	96	26-97	07/02/01	Acceptable
Phenol-d6	102	37-109	07/02/01	Acceptable
Nitrobenzene-d5	96	35-116	07/02/01	Acceptable
2-Fluorobiphenyl	130	45-109	07/02/01	Outside Control Limits
2,4,6-Tribromophenol	144	19-131	07/02/01	Outside Control Limits
Terphenyl-d14	109	48-140	07/02/01	Acceptable

## † Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments:

00090

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Sludge

Service Request: K2103968  
 Date Collected: 06/06/2001  
 Date Received: 06/07/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: CB-1  
 Lab Code: K2103968-052  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
N-Nitrosodimethylamine	ND	U	40	10	06/13/01	06/22/01	KWG0103330	
Aniline	ND	U	20	10	06/13/01	06/22/01	KWG0103330	
Bis(2-chloroethyl) Ether	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Phenol	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
2-Chlorophenol	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
1,3-Dichlorobenzene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
1,4-Dichlorobenzene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
1,2-Dichlorobenzene	50	D	6.7	10	06/13/01	06/22/01	KWG0103330	
Benzyl Alcohol	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Bis(2-chloroisopropyl) Ether	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
2-Methylphenol	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
1,2-Dichloroethane	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
N-Nitrosodi-n-propylamine	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
4-Methylphenol†	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Nitrobenzene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Isophorone	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
2-Nitrophenol	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
2,4-Dimethylphenol	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Bis(2-chloroethoxy)methane	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
2,4-Dichlorophenol	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Benzoic Acid	ND	U	40	10	06/13/01	06/22/01	KWG0103330	
1,2,4-Trichlorobenzene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Naphthalene	10	D	6.7	10	06/13/01	06/22/01	KWG0103330	
4-Chloroaniline	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Hexachlorobutadiene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
4-Chloro-3-methylphenol	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
2-Methylnaphthalene	23	D	6.7	10	06/13/01	06/22/01	KWG0103330	
Hexachlorocyclopentadiene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
2,4,6-Trichlorophenol	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
2,4,5-Trichlorophenol	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
2-Chloronaphthalene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
2-Nitroaniline	ND	U	40	10	06/13/01	06/22/01	KWG0103330	
Acenaphthylene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Dimethyl Phthalate	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Dinitrotoluene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	

Comments:

00091

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Sludge

Service Request: K2103968  
 Date Collected: 06/06/2001  
 Date Received: 06/07/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: CB-1  
 Lab Code: K2103968-052  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
3-Nitroaniline	ND	U	40	10	06/13/01	06/22/01	KWG0103330	
2,4-Dinitrophenol	ND	U	40	10	06/13/01	06/22/01	KWG0103330	
Dibenzofuran	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
4-Nitrophenol	ND	U	40	10	06/13/01	06/22/01	KWG0103330	
2,4-Dinitrotoluene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Fluorene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
4-Chlorophenyl Phenyl Ether	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Diethyl Phthalate	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
4-Nitroaniline	ND	U	40	10	06/13/01	06/22/01	KWG0103330	
2-Methyl-4,6-dinitrophenol	ND	U	40	10	06/13/01	06/22/01	KWG0103330	
N-Nitrosodiphenylamine	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
4-Bromophenyl Phenyl Ether	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Hexachlorobenzene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Pentachlorophenol	ND	U	40	10	06/13/01	06/22/01	KWG0103330	
Phenanthrene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Anthracene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Di-n-butyl Phthalate	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Fluoranthene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Pyrene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Butyl Benzyl Phthalate	11	D	6.7	10	06/13/01	06/22/01	KWG0103330	
3,3'-Dichlorobenzidine	ND	U	40	10	06/13/01	06/22/01	KWG0103330	
Benz(a)anthracene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Chrysene	ND	U	6.7	10	06/13/01	06/22/01	KWG0103330	
Bis(2-ethylhexyl) Phthalate	58	D	6.7	10	06/13/01	06/22/01	KWG0103330	
Di-n-octyl Phthalate	ND	U	67	100	06/13/01	06/23/01	KWG0103330	
Benzo(b)fluoranthene	ND	U	67	100	06/13/01	06/23/01	KWG0103330	
Benzo(k)fluoranthene	ND	U	67	100	06/13/01	06/23/01	KWG0103330	
Benzo(a)pyrene	ND	U	67	100	06/13/01	06/23/01	KWG0103330	
Indeno(1,2,3-cd)pyrene	ND	U	67	100	06/13/01	06/23/01	KWG0103330	
Dibenz(a,h)anthracene	ND	U	67	100	06/13/01	06/23/01	KWG0103330	
Benzo(g,h,i)perylene	ND	U	67	100	06/13/01	06/23/01	KWG0103330	

Comments:



## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Sludge

**Service Request:** K2103968  
**Date Collected:** 06/06/2001  
**Date Received:** 06/07/2001

## Semi-Volatile Organic Compounds by GC/MS

**Sample Name:** CB-1  
**Lab Code:** K2103968-052

**Units:** mg/Kg  
**Basis:** Wet

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	13	26-97	06/22/01	Outside Control Limits
Phenol-d6	19	37-109	06/22/01	Outside Control Limits
Nitrobenzene-d5	45	35-116	06/22/01	Acceptable
2-Fluorobiphenyl	59	45-109	06/22/01	Acceptable
2,4,6-Tribromophenol	0	19-131	06/22/01	Outside Control Limits
Terphenyl-d14	63	48-140	06/22/01	Acceptable

## † Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments:

00093

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Sludge

Service Request: K2103968  
 Date Collected: 06/06/2001  
 Date Received: 06/07/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: CB-1  
 Lab Code: K2103968-052  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
N-Nitrosodimethylamine	ND	U	40	5	06/27/01	07/02/01	KWG0103701	*
Aniline	ND	U	20	5	06/27/01	07/02/01	KWG0103701	*
Bis(2-chloroethyl) Ether	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Phenol	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
2-Chlorophenol	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
1,3-Dichlorobenzene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
1,4-Dichlorobenzene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
1,2-Dichlorobenzene	210	D	33	25	06/27/01	07/03/01	KWG0103701	*
Benzyl Alcohol	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Bis(2-chloroisopropyl) Ether	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
2-Methylphenol	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Hexachloroethane	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
N-Nitrosodi-n-propylamine	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
4-Methylphenol†	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Nitrobenzene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Isophorone	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
2-Nitrophenol	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
2,4-Dimethylphenol	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Bis(2-chloroethoxy)methane	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
2,4-Dichlorophenol	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Benzoic Acid	ND	U	40	5	06/27/01	07/02/01	KWG0103701	*
1,2,4-Trichlorobenzene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Naphthalene	30	D	6.7	5	06/27/01	07/02/01	KWG0103701	*
4-Chloroaniline	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Hexachlorobutadiene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
4-Chloro-3-methylphenol	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
2-Methylnaphthalene	64	D	6.7	5	06/27/01	07/02/01	KWG0103701	*
Hexachlorocyclopentadiene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
2,4,6-Trichlorophenol	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
2,4,5-Trichlorophenol	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
2-Chloronaphthalene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
2-Nitroaniline	ND	U	40	5	06/27/01	07/02/01	KWG0103701	*
Acenaphthylene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Dimethyl Phthalate	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
2,6-Dinitrotoluene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*

Comments:

00094

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Sludge

Service Request: K2103968  
 Date Collected: 06/06/2001  
 Date Received: 06/07/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: CB-1  
 Lab Code: K2103968-052  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
3-Nitroaniline	ND	U	40	5	06/27/01	07/02/01	KWG0103701	*
2,4-Dinitrophenol	ND	U	40	5	06/27/01	07/02/01	KWG0103701	*
Dibenzofuran	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
4-Nitrophenol	ND	U	40	5	06/27/01	07/02/01	KWG0103701	*
2,4-Dinitrotoluene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Fluorene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
4-Chlorophenyl Phenyl Ether	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Diethyl Phthalate	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
4-Nitroaniline	ND	U	40	5	06/27/01	07/02/01	KWG0103701	*
2-Methyl-4,6-dinitrophenol	ND	U	40	5	06/27/01	07/02/01	KWG0103701	*
Nitrosodiphenylamine	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
4-Bromophenyl Phenyl Ether	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Hexachlorobenzene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Pentachlorophenol	ND	U	40	5	06/27/01	07/02/01	KWG0103701	*
Phenanthrene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Anthracene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Di-n-butyl Phthalate	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Fluoranthene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Pyrene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Butyl Benzyl Phthalate	14	D	6.7	5	06/27/01	07/02/01	KWG0103701	*
3,3'-Dichlorobenzidine	ND	U	40	5	06/27/01	07/02/01	KWG0103701	*
Benz(a)anthracene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Chrysene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Bis(2-ethylhexyl) Phthalate	130	D	6.7	5	06/27/01	07/02/01	KWG0103701	*
Di-n-octyl Phthalate	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Benzo(b)fluoranthene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Benzo(k)fluoranthene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Benzo(a)pyrene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Indeno(1,2,3-cd)pyrene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Dibenz(a,h)anthracene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*
Benzo(g,h,i)perylene	ND	U	6.7	5	06/27/01	07/02/01	KWG0103701	*

\* See Case Narrative

Comments:

00095

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Sludge

**Service Request:** K2103968  
**Date Collected:** 06/06/2001  
**Date Received:** 06/07/2001

## Semi-Volatile Organic Compounds by GC/MS

**Sample Name:** CB-1  
**Lab Code:** K2103968-052

**Units:** mg/Kg  
**Basis:** Wet

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	58	26-97	07/02/01	Acceptable
Phenol-d6	147	37-109	07/02/01	Outside Control Limits
Nitrobenzene-d5	85	35-116	07/02/01	Acceptable
2-Fluorobiphenyl	78	45-109	07/02/01	Acceptable
2,4,6-Tribromophenol	81	19-131	07/02/01	Acceptable
Terphenyl-d14	83	48-140	07/02/01	Acceptable

## † Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments:

00096

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Soil

Service Request: K2103968  
 Date Collected: NA  
 Date Received: NA

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: Method Blank  
 Lab Code: KWG0103330-4  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
N-Nitrosodimethylamine	ND	U	2.0	1	06/13/01	06/19/01	KWG0103330	
Aniline	ND	U	1.0	1	06/13/01	06/19/01	KWG0103330	
Bis(2-chloroethyl) Ether	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Phenol	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
2-Chlorophenol	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
1,3-Dichlorobenzene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
1,4-Dichlorobenzene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
1,2-Dichlorobenzene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Benzyl Alcohol	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Bis(2-chloroisopropyl) Ether	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
2-Methylphenol	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
1,1-Dichloroethane	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
N-Nitrosodi-n-propylamine	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
4-Methylphenol†	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Nitrobenzene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Isophorone	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
2-Nitrophenol	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
2,4-Dimethylphenol	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Bis(2-chloroethoxy)methane	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
2,4-Dichlorophenol	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Benzoic Acid	ND	U	2.0	1	06/13/01	06/19/01	KWG0103330	
1,2,4-Trichlorobenzene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Naphthalene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
4-Chloroaniline	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Hexachlorobutadiene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
4-Chloro-3-methylphenol	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
2-Methylnaphthalene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Hexachlorocyclopentadiene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
2,4,6-Trichlorophenol	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
2,4,5-Trichlorophenol	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
2-Chloronaphthalene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
2-Nitroaniline	ND	U	2.0	1	06/13/01	06/19/01	KWG0103330	
Acenaphthylene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Dimethyl Phthalate	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
1,3-Dinitrotoluene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	

Comments:

00097

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Soil

Service Request: K2103968  
 Date Collected: NA  
 Date Received: NA

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: Method Blank  
 Lab Code: KWG0103330-4  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
3-Nitroaniline	ND	U	2.0	1	06/13/01	06/19/01	KWG0103330	
2,4-Dinitrophenol	ND	U	2.0	1	06/13/01	06/19/01	KWG0103330	
Dibenzofuran	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
4-Nitrophenol	ND	U	2.0	1	06/13/01	06/19/01	KWG0103330	
2,4-Dinitrotoluene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Fluorene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
4-Chlorophenyl Phenyl Ether	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Diethyl Phthalate	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
4-Nitroaniline	ND	U	2.0	1	06/13/01	06/19/01	KWG0103330	
2-Methyl-4,6-dinitrophenol	ND	U	2.0	1	06/13/01	06/19/01	KWG0103330	
N-Nitrosodiphenylamine	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
4-Bromophenyl Phenyl Ether	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Hexachlorobenzene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Pentachlorophenol	ND	U	2.0	1	06/13/01	06/19/01	KWG0103330	
Phenanthrene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Anthracene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Di-n-butyl Phthalate	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Fluoranthene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Pyrene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Butyl Benzyl Phthalate	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
3,3'-Dichlorobenzidine	ND	U	2.0	1	06/13/01	06/19/01	KWG0103330	
Benz(a)anthracene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Chrysene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Bis(2-ethylhexyl) Phthalate	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Di-n-octyl Phthalate	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Benzo(b)fluoranthene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Benzo(k)fluoranthene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Benzo(a)pyrene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Indeno(1,2,3-cd)pyrene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Dibenz(a,h)anthracene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	
Benzo(g,h,i)perylene	ND	U	0.33	1	06/13/01	06/19/01	KWG0103330	

Comments:

00098

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** NA  
**Date Received:** NA

## Semi-Volatile Organic Compounds by GC/MS

**Sample Name:** Method Blank  
**Lab Code:** KWG0103330-4

**Units:** mg/Kg  
**Basis:** Wet

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	62	26-97	06/19/01	Acceptable
Phenol-d6	72	37-109	06/19/01	Acceptable
Nitrobenzene-d5	79	35-116	06/19/01	Acceptable
2-Fluorobiphenyl	80	45-109	06/19/01	Acceptable
2,4,6-Tribromophenol	82	19-131	06/19/01	Acceptable
Terphenyl-d14	96	48-140	06/19/01	Acceptable

## † Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments:

00099

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Soil

Service Request: K2103968  
 Date Collected: NA  
 Date Received: NA

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: Method Blank  
 Lab Code: KWG0103701-4  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
N-Nitrosodimethylamine	ND	U	2.0	1	06/27/01	07/02/01	KWG0103701	
Aniline	ND	U	1.0	1	06/27/01	07/02/01	KWG0103701	
Bis(2-chloroethyl) Ether	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Phenol	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
2-Chlorophenol	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
1,3-Dichlorobenzene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
1,4-Dichlorobenzene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
1,2-Dichlorobenzene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Benzyl Alcohol	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Bis(2-chloroisopropyl) Ether	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
2-Methylphenol	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Hexachloroethane	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
N-Nitrosodi-n-propylamine	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
4-Methylphenol†	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Nitrobenzene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Isophorone	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
2-Nitrophenol	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
2,4-Dimethylphenol	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Bis(2-chloroethoxy)methane	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
2,4-Dichlorophenol	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Benzoic Acid	ND	U	2.0	1	06/27/01	07/02/01	KWG0103701	
1,2,4-Trichlorobenzene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Naphthalene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
4-Chloroaniline	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Hexachlorobutadiene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
4-Chloro-3-methylphenol	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
2-Methylnaphthalene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Hexachlorocyclopentadiene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
2,4,6-Trichlorophenol	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
2,4,5-Trichlorophenol	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
2-Chloronaphthalene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
2-Nitroaniline	ND	U	2.0	1	06/27/01	07/02/01	KWG0103701	
Acenaphthylene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Dimethyl Phthalate	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
2,6-Dinitrotoluene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	

Comments:

0-1100



## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Soil

Service Request: K2103968  
 Date Collected: NA  
 Date Received: NA

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: Method Blank  
 Lab Code: KWG0103701-4  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
3-Nitroaniline	ND	U	2.0	1	06/27/01	07/02/01	KWG0103701	
2,4-Dinitrophenol	ND	U	2.0	1	06/27/01	07/02/01	KWG0103701	
Dibenzofuran	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
4-Nitrophenol	ND	U	2.0	1	06/27/01	07/02/01	KWG0103701	
2,4-Dinitrotoluene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Fluorene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
4-Chlorophenyl Phenyl Ether	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Diethyl Phthalate	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
4-Nitroaniline	ND	U	2.0	1	06/27/01	07/02/01	KWG0103701	
2-Methyl-4,6-dinitrophenol	ND	U	2.0	1	06/27/01	07/02/01	KWG0103701	
Nitrosodiphenylamine	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
4-Bromophenyl Phenyl Ether	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Hexachlorobenzene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Pentachlorophenol	ND	U	2.0	1	06/27/01	07/02/01	KWG0103701	
Phenanthrene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Anthracene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Di-n-butyl Phthalate	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Fluoranthene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Pyrene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Butyl Benzyl Phthalate	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
3,3'-Dichlorobenzidine	ND	U	2.0	1	06/27/01	07/02/01	KWG0103701	
Benz(a)anthracene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Chrysene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Bis(2-ethylhexyl) Phthalate	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Di-n-octyl Phthalate	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Benzo(b)fluoranthene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Benzo(k)fluoranthene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Benzo(a)pyrene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Indeno(1,2,3-cd)pyrene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Dibenz(a,h)anthracene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	
Benzo(g,h,i)perylene	ND	U	0.33	1	06/27/01	07/02/01	KWG0103701	

Comments:

00101

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Soil

**Service Request:** K2103968  
**Date Collected:** NA  
**Date Received:** NA

## Semi-Volatile Organic Compounds by GC/MS

**Sample Name:** Method Blank  
**Lab Code:** KWG0103701-4

**Units:** mg/Kg  
**Basis:** Wet

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	41	26-97	07/02/01	Acceptable
Phenol-d6	48	37-109	07/02/01	Acceptable
Nitrobenzene-d5	54	35-116	07/02/01	Acceptable
2-Fluorobiphenyl	53	45-109	07/02/01	Acceptable
2,4,6-Tribromophenol	55	19-131	07/02/01	Acceptable
Terphenyl-d14	61	48-140	07/02/01	Acceptable

## † Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments:

00102

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Sludge

**Service Request:** K2103968

**Surrogate Recovery Summary**  
**Semi-Volatile Organic Compounds by GC/MS**

**Extraction Method:** EPA 3541  
**Analysis Method:** 8270C

**Units:** PERCENT  
**Level:** Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>	<u>Sur4</u>	<u>Sur5</u>	<u>Sur6</u>
Septic Tank	K2103968-051	10 D *	19 D *	29 D *	44 D *	21 D	36 D *
CB-1	K2103968-052	13 D #	19 D #	45 D #	59 D #	0 D *	63 D #
Method Blank	KWG0103330-4	62	72	79	80	82	96
Batch QC	K2104056-001	48	59	62	65	84	85
Batch QCMS	KWG0103330-1	60	78	83	76	111	116
Batch QCDMS	KWG0103330-2	75	96	104	95	126	133
Lab Control Sample	KWG0103330-3	64	68	68	79	86	94

**Surrogate Recovery Control Limits (%)**

Sur1 = 2-Fluorophenol	26-97	Sur5 = 2,4,6-Tribromophenol	19-131
Sur2 = Phenol-d6	37-109	Sur6 = Terphenyl-d14	48-140
Sur3 = Nitrobenzene-d5	35-116		
Sur4 = 2-Fluorobiphenyl	45-109		

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

00103

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)  
Sample Matrix: Sludge

Service Request: K2103968

Surrogate Recovery Summary  
Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3541  
Analysis Method: 8270C

Units: PERCENT  
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>	<u>Sur4</u>	<u>Sur5</u>	<u>Sur6</u>
Septic Tank	K2103968-051	96 D	102 D	96 D #	130 D #	144 D *	109 D #
CB-1	K2103968-052	58 D #	147 D #	85 D #	78 D #	81 D #	83 D #
Method Blank	KWG0103701-4	41	48	54	53	55	61
Lab Control Sample	KWG0103701-3	62	72	79	77	88	98

## Surrogate Recovery Control Limits (%)

Sur1 = 2-Fluorophenol	26-97	Sur5 = 2,4,6-Tribromophenol	19-131
Sur2 = Phenol-d6	37-109	Sur6 = Terphenyl-d14	48-140
Sur3 = Nitrobenzene-d5	35-116		
Sur4 = 2-Fluorobiphenyl	45-109		

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

00104

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Soil

Service Request: K2103968  
 Date Extracted: 06/13/2001  
 Date Analyzed: 06/20/2001

Matrix Spike/Duplicate Matrix Spike Summary  
 Semi-Volatile Organic Compounds by GC/MS

Sample Name: Batch QC  
 Lab Code: K2104056-001  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low  
 Extraction Lot: KWG0103330

Analyte Name	Sample Result	Batch QCMS KWG0103330-1 Matrix Spike			Batch QCDMS KWG0103330-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Phenol	ND	2.31	3.33	69	2.98	3.33	89	51-102	25	40
2-Chlorophenol	ND	2.38	3.33	71	3.03	3.33	91	54-100	24	40
1,4-Dichlorobenzene	ND	2.08	3.33	63	2.74	3.33	82	47-98	27	40
N-Nitrosodi-n-propylamine	ND	2.95	3.33	89	3.69	3.33	111 *	48-109	22	40
1,2,4-Trichlorobenzene	ND	2.20	3.33	66	2.92	3.33	88	52-102	28	40
4-Chloro-3-methylphenol	ND	2.98	3.33	89	3.51	3.33	105	68-105	16	40
Acenaphthene	ND	2.68	3.33	80	3.23	3.33	97	40-124	18	40
4-Nitrophenol	ND	3.31	3.33	99	3.84	3.33	115	59-115	15	40
2,4-Dinitrotoluene	ND	3.43	3.33	103	3.96	3.33	119	66-123	14	40
2-Chlorophenol	ND	2.93	3.33	88	3.42	3.33	103	49-105	16	40
Pyrene	ND	3.01	3.33	90	3.49	3.33	105	35-145	15	40

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00105

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Soil

Service Request: K2103968  
 Date Extracted: 06/13/2001  
 Date Analyzed: 06/19/2001

Lab Control Spike Summary  
 Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low  
 Extraction Lot: KWG0103330

Analyte Name	Lab Control Sample KWG0103330-3 Lab Control Spike			%Rec Limits
	Result	Expected	%Rec	
N-Nitrosodimethylamine	2.44	3.32	73	42-118
Aniline	1.62	3.32	49	21-98
Bis(2-chloroethyl) Ether	2.38	3.32	72	38-110
Phenol	2.34	3.32	70	51-98
2-Chlorophenol	2.32	3.32	70	51-101
1,3-Dichlorobenzene	2.33	3.32	70	39-110
1,4-Dichlorobenzene	2.26	3.32	68	36-105
1,2-Dichlorobenzene	2.37	3.32	71	41-107
Benzyl Alcohol	2.30	3.32	69	59-103
Bis(2-chloroisopropyl) Ether	2.31	3.32	70	38-110
2-Methylphenol	2.30	3.32	69	56-101
Hexachloroethane	2.23	3.32	67	39-107
N-Nitrosodi-n-propylamine	2.49	3.32	75	54-96
4-Methylphenol	2.21	3.32	66	53-99
Nitrobenzene	2.18	3.32	65	51-106
Isophorone	2.51	3.32	75	62-102
2-Nitrophenol	2.50	3.32	75	61-102
2,4-Dimethylphenol	2.33	3.32	70	53-99
Bis(2-chloroethoxy)methane	2.42	3.32	73	54-104
2,4-Dichlorophenol	2.44	3.32	74	61-103
Benzoic Acid	2.21	3.32	66	16-128
1,2,4-Trichlorobenzene	2.37	3.32	71	50-100
Naphthalene	2.47	3.32	74	53-103
4-Chloroaniline	2.19	3.32	66	19-112
Hexachlorobutadiene	2.50	3.32	75	48-111
4-Chloro-3-methylphenol	2.38	3.32	72	64-112
2-Methylnaphthalene	2.29	3.32	69	57-95
Hexachlorocyclopentadiene	2.71	3.32	82	14-118
2,4,6-Trichlorophenol	2.63	3.32	79	67-104
2,4,5-Trichlorophenol	2.69	3.32	81	67-105
2-Chloronaphthalene	2.53	3.32	76	59-99
2-Nitroaniline	2.56	3.32	77	47-104
Acenaphthylene	2.62	3.32	79	60-105
Dimethyl Phthalate	2.59	3.32	78	68-102
2,6-Dinitrotoluene	2.76	3.32	83	69-107

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00106

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Soil

Service Request: K2103968  
 Date Extracted: 06/13/2001  
 Date Analyzed: 06/19/2001

Lab Control Spike Summary  
 Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low  
 Extraction Lot: KWG0103330

Analyte Name	Lab Control Sample KWG0103330-3 Lab Control Spike			%Rec Limits
	Result	Expected	%Rec	
Acenaphthene	2.49	3.32	75	57-108
3-Nitroaniline	2.56	3.32	77	21-133
2,4-Dinitrophenol	2.35	3.32	71	41-119
Dibenzofuran	2.48	3.32	75	65-99
4-Nitrophenol	2.39	3.32	72	55-121
2,4-Dinitrotoluene	2.58	3.32	78	63-123
Fluorene	2.51	3.32	75	63-109
4-Chlorophenyl Phenyl Ether	2.58	3.32	78	63-101
Diethyl Phthalate	2.62	3.32	79	66-113
4-Nitroaniline	2.48	3.32	75	60-116
2-Ethyl-4,6-dinitrophenol	2.76	3.32	83	61-114
Nitrosodiphenylamine	2.69	3.32	81	69-109
4-Bromophenyl Phenyl Ether	2.91	3.32	88	69-105
Hexachlorobenzene	2.98	3.32	90	68-112
Pentachlorophenol	2.93	3.32	88	58-110
Phenanthrene	2.78	3.32	84	62-102
Anthracene	2.95	3.32	89	68-107
Di-n-butyl Phthalate	3.01	3.32	91	67-107
Fluoranthene	2.97	3.32	89	64-105
Pyrene	2.54	3.32	76	53-123
Butyl Benzyl Phthalate	2.67	3.32	80	55-119
3,3'-Dichlorobenzidine	2.89	3.32	87	38-124
Benz(a)anthracene	2.73	3.32	82	64-111
Chrysene	2.75	3.32	83	72-99
Bis(2-ethylhexyl) Phthalate	2.75	3.32	83	57-117
Di-n-octyl Phthalate	2.76	3.32	83	47-136
Benzo(b)fluoranthene	2.76	3.32	83	67-118
Benzo(k)fluoranthene	2.70	3.32	81	63-117
Benzo(a)pyrene	2.78	3.32	84	69-113
Indeno(1,2,3-cd)pyrene	2.88	3.32	86	55-124
Dibenz(a,h)anthracene	3.17	3.32	95	68-124
Benzo(g,h,i)perylene	2.85	3.32	86	60-117

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00107

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Soil

Service Request: K2103968  
 Date Extracted: 06/27/2001  
 Date Analyzed: 07/02/2001

Lab Control Spike Summary  
 Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low  
 Extraction Lot: KWG0103701

Analyte Name	Lab Control Sample KWG0103701-3 Lab Control Spike			%Rec Limits
	Result	Expected	%Rec	
N-Nitrosodimethylamine	2.32	3.32	70	42-118
Aniline	1.59	3.32	48	21-98
Bis(2-chloroethyl) Ether	2.29	3.32	69	38-110
Phenol	2.36	3.32	71	51-98
2-Chlorophenol	2.28	3.32	69	51-101
1,3-Dichlorobenzene	2.23	3.32	67	39-110
1,4-Dichlorobenzene	2.25	3.32	68	36-105
1,2-Dichlorobenzene	2.26	3.32	68	41-107
Benzyl Alcohol	2.65	3.32	80	59-103
Bis(2-chloroisopropyl) Ether	2.39	3.32	72	38-110
2-Methylphenol	2.39	3.32	72	56-101
Hexachloroethane	2.11	3.32	63	39-107
N-Nitrosodi-n-propylamine	2.90	3.32	87	54-96
4-Methylphenol	2.36	3.32	71	53-99
Nitrobenzene	2.38	3.32	72	51-106
Isophorone	2.52	3.32	76	62-102
2-Nitrophenol	2.35	3.32	71	61-102
2,4-Dimethylphenol	2.14	3.32	64	53-99
Bis(2-chloroethoxy)methane	2.28	3.32	69	54-104
2,4-Dichlorophenol	2.30	3.32	69	61-103
Benzoic Acid	2.30	3.32	69	16-128
1,2,4-Trichlorobenzene	2.15	3.32	65	50-100
Naphthalene	2.26	3.32	68	53-103
4-Chloroaniline	2.13	3.32	64	19-112
Hexachlorobutadiene	2.15	3.32	65	48-111
4-Chloro-3-methylphenol	2.60	3.32	78	64-112
2-Methylnaphthalene	2.25	3.32	68	57-95
Hexachlorocyclopentadiene	1.71	3.32	51	14-118
2,4,6-Trichlorophenol	2.73	3.32	82	67-104
2,4,5-Trichlorophenol	2.73	3.32	82	67-105
2-Chloronaphthalene	2.43	3.32	73	59-99
2-Nitroaniline	2.91	3.32	87	47-104
Acenaphthylene	2.62	3.32	79	60-105
Dimethyl Phthalate	2.61	3.32	79	68-102
2,6-Dinitrotoluene	2.85	3.32	86	69-107

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00108



## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)  
 Sample Matrix: Soil

Service Request: K2103968  
 Date Extracted: 06/27/2001  
 Date Analyzed: 07/02/2001

Lab Control Spike Summary  
 Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Wet  
 Level: Low  
 Extraction Lot: KWG0103701

Analyte Name	Lab Control Sample KWG0103701-3 Lab Control Spike			%Rec Limits
	Result	Expected	%Rec	
Acenaphthene	2.53	3.32	76	57-108
3-Nitroaniline	2.75	3.32	83	21-133
2,4-Dinitrophenol	2.50	3.32	75	41-119
Dibenzofuran	2.47	3.32	74	65-99
4-Nitrophenol	2.62	3.32	79	55-121
2,4-Dinitrotoluene	2.76	3.32	83	63-123
Fluorene	2.59	3.32	78	63-109
4-Chlorophenyl Phenyl Ether	2.63	3.32	79	63-101
Diethyl Phthalate	2.75	3.32	83	66-113
4-Nitroaniline	2.60	3.32	78	60-116
4-Methyl-4,6-dinitrophenol	2.90	3.32	87	61-114
Nitrosodiphenylamine	2.75	3.32	83	69-109
4-Bromophenyl Phenyl Ether	2.77	3.32	83	69-105
Hexachlorobenzene	2.85	3.32	86	68-112
Pentachlorophenol	2.74	3.32	82	58-110
Phenanthrene	2.70	3.32	81	62-102
Anthracene	2.70	3.32	81	68-107
Di-n-butyl Phthalate	3.05	3.32	92	67-107
Fluoranthene	2.76	3.32	83	64-105
Pyrene	2.77	3.32	83	53-123
Butyl Benzyl Phthalate	2.98	3.32	90	55-119
3,3'-Dichlorobenzidine	2.90	3.32	87	38-124
Benz(a)anthracene	2.94	3.32	88	64-111
Chrysene	2.85	3.32	86	72-99
Bis(2-ethylhexyl) Phthalate	2.71	3.32	81	57-117
Di-n-octyl Phthalate	2.53	3.32	76	47-136
Benzo(b)fluoranthene	2.86	3.32	86	67-118
Benzo(k)fluoranthene	2.81	3.32	84	63-117
Benzo(a)pyrene	2.95	3.32	89	69-113
Indeno(1,2,3-cd)pyrene	3.03	3.32	91	55-124
Dibenz(a,h)anthracene	3.27	3.32	98	68-124
Benzo(g,h,i)perylene	2.97	3.32	89	60-117

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00109





July 5, 2001

Service Request No: K2104091

Tanya Akkerman  
GeoTrans  
3035 Prospect Park Drive, Suite 40  
Rancho Cordova, CA 95670

**Re: Former Axelson Facility (Site #2067)/253-104**

Dear Tanya:

Enclosed are the results of the sample(s) submitted to our laboratory on June 12, 2001. For your reference, these analyses have been assigned our service request number K2104091.

The analysis of Radium 226/228 is performed by Seven Trens Laboratories, and the analysis is still in progress. The Radium 226.228 report will be submitted separately.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3345.

Respectfully submitted,

**Columbia Analytical Services, Inc.**

Mingta Lin  
Project Chemist

ML/dj

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### Inorganic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- i The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.

### Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- B The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- E The reported value is estimated because of the presence of matrix interference.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.
- \* The duplicate analysis not within control limits. See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.

### Organic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- i The MRL/MDL has been elevated due to a chromatographic interference.
- X See case narrative.

### Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- J The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

00003

## **Case Narrative**

**COLUMBIA ANALYTICAL SERVICES, INC.**

**Client:** Beazer East, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Water

**Service Request No.:** K2104091  
**Date Received:** June 12, 2001

**CASE NARRATIVE**

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), and Laboratory Control Sample (LCS).

**Sample Receipt**

Six Water samples (including one trip blank) were received for analysis at Columbia Analytical Services on June 12, 2001. The samples were received in good condition and consistent with the accompanying chain of custody form. The cooler temperature blank ranged from 8.0 to 14.2°C upon receipt of the samples. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Inorganic Parameters**

The LCS recovery of 116 percent slightly exceeded the CAS upper control criteria of 115 percent. However, the recovery was within the Standard Reference Material manufacturer's specification of 127 percent. Field sample results are not significantly affected. No further corrective action was feasible.

**Total and Dissolved Metals**

No QA/QC anomalies were observed during the analysis of this sample delivery group.

**Diesel and Oil Range Organics by EPA Method 8015B**

No QA/QC anomalies were observed during the analysis of this sample delivery group.

**Gasoline Range Organics by EPA Method 8015B**

No QA/QC anomalies were observed during the analysis of this sample delivery group.

**PCB Aroclors by EPA Method 8082**

No QA/QC anomalies were observed during the analysis of this sample delivery group.

Approved by \_\_\_\_\_

mtl

Date \_\_\_\_\_

7/3/01

00004

**Volatile Organic Compounds by EPA Method 8260B**

No QA/QC anomalies were observed during the analysis of this sample delivery group.

**Polycyclic Aromatic Hydrocarbons by EPA Method 8270C-SIM**

No QA/QC anomalies were observed during the analysis of this sample delivery group.

**Semivolatile Organic Compounds by EPA Method 8270C**

No QA/QC anomalies were observed during the analysis of this sample delivery group.

Approved by \_\_\_\_\_

*mtl*

Date \_\_\_\_\_

*7/3/01*

00005



**Chain of Custody  
Documentation**

[illegible]

SHORT HOLD TIME

Project/Client GIUTRINS Work Order K21 04091  
Cooler received on 6/12/01 and opened on 6/12/01 by AP

1. Were custody seals on outside of cooler?  
If yes, how many and where? 10/5 YES ☒ NO ☐
2. Were seals intact and signature & date correct? YES ☐ NO ☒
3. COC #  
Temperature of cooler(s) upon receipt: 7.9 11.2 13.1 13.9 12.0  
Temperature Blank: 8.0 11.2 13.2 14.2 12.8
4. Were custody papers properly filled out (ink, signed, etc.)? YES ☒ NO ☐
5. Type of packing material present INSERT, BUBBLE
6. Did all bottles arrive in good condition (unbroken)? YES ☒ NO ☐
7. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES ☒ NO ☐
8. Did all bottle labels and tags agree with custody papers? YES ☒ NO ☐
9. Were the correct types of bottles used for the tests indicated? YES ☒ NO ☐
10. Were all of the preserved bottles received at the lab with the appropriate pH? YES ☒ NO ☐
11. Were VOA vials checked for absence of air bubbles, and if present, noted below? YES ☒ NO ☐
12. Did the bottles originate from CAS/K or a branch laboratory? YES ☒ NO ☐

Explain any discrepancies ALL SAMPLES FOR CB-1 LABELED CB 2A

Samples that required preservation or received out of temperature:

ALL OUT OF TEMP

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials
MW-7	HNO <sub>3</sub>	2ml	T28062	14p	✓	AP
MW-6	HNO <sub>3</sub>	2ml	T28062	14p	✓	AP
MW-5	HNO <sub>3</sub>	2ml	T28062	14p	✓	AP
MW-4	HNO <sub>3</sub>	2ml	T28062	14p	✓	AP
QC	HNO <sub>3</sub>	2ml	T28062	14p	✓	AP

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## **Inorganic Parameters**

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:  
Project:  
Sample Matrix:

GeoTrans, Inc.  
Former Axelson Facility (Site #2067)/P253-104  
Water

Service Request: K2104091  
Date Collected: 6/11/01  
Date Received: 6/12/01

Inorganic Parameters

Sample Name: MW-7  
Lab Code: K2104091-001  
Test Notes:

Basis: NA

Analyte	Units	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Cyanide, Total	mg/L (ppm)	335.2	0.01	1	NA	6/19/01	ND	
Fluoride	mg/L (ppm)	300.0	0.2	1	NA	6/13/01	2.2	
Nitrate as Nitrogen	mg/L (ppm)	300.0	0.1	1	NA	6/13/01	8.1	
Solids, Total Dissolved (TDS)	mg/L (ppm)	160.1	5	1	NA	6/13/01	908	

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_

6/27/01

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Page No.:

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 6/11/01  
**Date Received:** 6/12/01

## Inorganic Parameters

**Sample Name:** MW-6  
**Lab Code:** K2104091-002  
**Test Notes:**

**Basis:** NA

Analyte	Units	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Cyanide, Total	mg/L (ppm)	335.2	0.01	1	NA	6/19/01	ND	
Fluoride	mg/L (ppm)	300.0	0.2	1	NA	6/13/01	1.5	
Nitrate as Nitrogen	mg/L (ppm)	300.0	0.1	1	NA	6/13/01	2.9	
Solids, Total Dissolved (TDS)	mg/L (ppm)	160.1	5	1	NA	6/13/01	676	

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:  
Project:  
Sample Matrix:

GeoTrans, Inc.  
Former Axelson Facility (Site #2067)/P253-104  
Water

Service Request: K2104091  
Date Collected: 6/11/01  
Date Received: 6/12/01

Inorganic Parameters

Sample Name: MW-5  
Lab Code: K2104091-003  
Test Notes:

Basis: NA

Analyte	Units	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Cyanide, Total	mg/L (ppm)	335.2	0.01	1	NA	6/19/01	ND	
Fluoride	mg/L (ppm)	300.0	0.2	1	NA	6/13/01	1.6	
Nitrate as Nitrogen	mg/L (ppm)	300.0	0.1	1	NA	6/13/01	4.3	
Solids, Total Dissolved (TDS)	mg/L (ppm)	160.1	5	1	NA	6/13/01	916	

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_

6/27/01

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 6/11/01  
**Date Received:** 6/12/01

## Inorganic Parameters

**Sample Name:** MW-4  
**Lab Code:** K2104091-004  
**Test Notes:**

**Basis:** NA

Analyte	Units	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Cyanide, Total	mg/L (ppm)	335.2	0.01	1	NA	6/19/01	ND	
Fluoride	mg/L (ppm)	300.0	0.2	1	NA	6/13/01	1.5	
Nitrate as Nitrogen	mg/L (ppm)	300.0	0.1	1	NA	6/13/01	7.2	
Solids, Total Dissolved (TDS)	mg/L (ppm)	160.1	5	1	NA	6/13/01	1140	

Approved By: \_\_\_\_\_

Date: 6/27/01



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Water

Service Request: K2104091  
Date Collected: 6/11/01  
Date Received: 6/12/01

Inorganic Parameters

Sample Name: QC  
Lab Code: K2104091-005  
Test Notes:

Basis: NA

Analyte	Units	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Cyanide, Total	mg/L (ppm)	335.2	0.01	1	NA	6/19/01	ND	
Fluoride	mg/L (ppm)	300.0	0.2	1	NA	6/13/01	2.1	
Nitrate as Nitrogen	mg/L (ppm)	300.0	0.1	1	NA	6/13/01	7.7	
Solids, Total Dissolved (TDS)	mg/L (ppm)	160.1	5	1	NA	6/13/01	800	

Approved By: \_\_\_\_\_

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Date: 6/27/01

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Page No.:

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Water

Service Request: K2104091  
Date Collected: NA  
Date Received: NA

## Inorganic Parameters

Sample Name: Method Blank  
Lab Code: K2104091-MB  
Test Notes:

Basis: NA

Analyte	Units	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Cyanide, Total	mg/L (ppm)	335.2	0.01	1	NA	6/19/01	ND	
Fluoride	mg/L (ppm)	300.0	0.2	1	NA	6/13/01	ND	
Nitrate as Nitrogen	mg/L (ppm)	300.0	0.1	1	NA	6/13/01	ND	
Solids, Total Dissolved (TDS)	mg/L (ppm)	160.1	5	1	NA	6/13/01	ND	

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_

6/27/01

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## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Water

Service Request: K2104091  
Date Collected: 6/11/01  
Date Received: 6/12/01  
Date Extracted: NA  
Date Analyzed: 6/13-19/01

Duplicate Summary  
Inorganic Parameters

Sample Name: MW-7  
Lab Code: K2104091-001DUP  
Test Notes:

Basis: NA

Analyte	Units	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Cyanide, Total	mg/L (ppm)	335.2	0.01	ND	ND	ND	-	
Fluoride	mg/L (ppm)	300.0	0.2	2.2	2.2	2.2	< 1	
Nitrate as Nitrogen	mg/L (ppm)	300.0	0.1	8.1	8.1	8.1	< 1	
Solids, Total Dissolved (TDS)	mg/L (ppm)	160.1	5	908	892	900	2	

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_

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**COLUMBIA ANALYTICAL SERVICES, INC.**

QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 6/11/01  
**Date Received:** 6/12/01  
**Date Extracted:** NA  
**Date Analyzed:** 6/13-19/01

Matrix Spike Summary  
 Inorganic Parameters

**Sample Name:** MW-7  
**Lab Code:** K2104091-001MS  
**Test Notes:**

**Basis:** NA

Analyte	Units	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery	Result Notes
								Acceptance Limits	
Cyanide, Total	mg/L (ppm)	335.2	0.01	0.10	ND	0.08	80	75-125	
Fluoride	mg/L (ppm)	300.0	0.2	10	2.2	13.3	111	80-120	
Nitrate as Nitrogen	mg/L (ppm)	300.0	0.1	10	8.1	19.9	118	80-120	

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_

6/27/01

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Page No.:

**COLUMBIA ANALYTICAL SERVICES, INC.**

**QA/QC Report**

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**LCS Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** NA  
**Date Received:** NA  
**Date Extracted:** NA  
**Date Analyzed:** 6/13-19/01

**Laboratory Control Sample Summary  
 Inorganic Parameters**

**Sample Name:** Lab Control Sample  
**Lab Code:** K2104091-LCS  
**Test Notes:**

**Basis:** NA

Analyte	Units	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery	Result Notes
						Acceptance Limits	
Cyanide, Total	mg/L (ppm)	335.2	0.59	0.68	116	85-115	*
Fluoride	mg/L (ppm)	300.0	12.1	12.2	101	90-110	
Nitrate as Nitrogen	mg/L (ppm)	300.0	10.3	10.4	101	90-110	
Solids, Total Dissolved (TDS)	mg/L (ppm)	160.1	1060	1030	97	85-115	

**Approved By:** \_\_\_\_\_ **Date:** 6/27/01

## **Dissolved Metals**

## DISSOLVED METALS

- Cover Page -

## INORGANIC ANALYSIS DATA PACKAGE

Client: GeoTrans, Inc.

Service Request: K2104091

Project No.: P253-104

Project Name: Former Axelson Facility (Site #2067)

<u>Sample No.</u>	<u>Lab Sample ID.</u>
MW-7	K2104091-001 DISS
MW-7D	K2104091-001 DISSD
MW-7S	K2104091-001 DISSS
MW-6	K2104091-002 DISS
MW-5	K2104091-003 DISS
MW-4	K2104091-004 DISS
QC	K2104091-005 DISS
QCD	K2104091-005 DISSD
QCS	K2104091-005 DISSS
Method Blank	K2104091-MB

Were ICP interelement corrections applied?

Yes/No YES

Were ICP background corrections applied?

Yes/No YESIf yes-were raw data generated before  
application of background corrections?Yes/No NOComments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Date: 6/26/01

## DISSOLVED METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: GeoTrans, Inc.

Service Request: K2104091

Project No.: P253-104

Date Collected: 06/11/01

Project Name: Former Axelson Facility (Site #2067)

Date Received: 06/12/01

Matrix: WATER

Units: µG/L

Basis: NA

Sample Name: MW-7

Lab Code: K2104091-001 DISS

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	6010B	100	1	6/19/01	6/20/01	100	U	
Barium	6010B	5.0	1	6/19/01	6/20/01	57.5		
Cadmium	6010B	5.0	1	6/19/01	6/20/01	5.0	U	
Chromium	6010B	5.0	1	6/19/01	6/20/01	5.0	U	
Lead	6010B	100	1	6/19/01	6/20/01	100	U	
Mercury	7470A	0.20	1	6/13/01	6/13/01	0.20	U	
Selenium	7740	8.00	4	6/18/01	6/20/01	8.00	U	
Silver	6010B	10	1	6/19/01	6/20/01	10	U	
Uranium	200.8	0.02	1	6/18/01	6/19/01	11.3		

% Solids: 0.0

Comments:

00018



## DISSOLVED METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: GeoTrans, Inc.

Service Request: K2104091

Project No.: P253-104

Date Collected: 06/11/01

Project Name: Former Axelson Facility (Site #2067)

Date Received: 06/12/01

Matrix: WATER

Units: µG/L

Basis: NA

Sample Name: MW-6

Lab Code: K2104091-002 DISS

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	6010B	100	1	6/19/01	6/20/01	100	U	
Barium	6010B	5.0	1	6/19/01	6/20/01	162		
Cadmium	6010B	5.0	1	6/19/01	6/20/01	5.0	U	
Chromium	6010B	5.0	1	6/19/01	6/20/01	5.0	U	
Lead	6010B	100	1	6/19/01	6/20/01	100	U	
Mercury	7470A	0.20	1	6/13/01	6/13/01	0.20	U	
Selenium	7740	8.00	4	6/18/01	6/20/01	8.00	U	
Silver	6010B	10	1	6/19/01	6/20/01	10	U	
Uranium	200.8	0.02	1	6/18/01	6/19/01	11.9		

% Solids: 0.0

Comments:

00019

**DISSOLVED METALS**

-1-

**INORGANIC ANALYSIS DATA SHEET**

Client: GeoTrans, Inc.

Service Request: K2104091

Project No.: P253-104

Date Collected: 06/11/01

Project Name: Former Axelson Facility (Site #2067)

Date Received: 06/12/01

Matrix: WATER

Units: µg/L

Basis: NA

Sample Name: MW-5

Lab Code: K2104091-003 DISS

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	6010B	100	1	6/19/01	6/20/01	100	U	
Barium	6010B	5.0	1	6/19/01	6/20/01	70.9		
Cadmium	6010B	5.0	1	6/19/01	6/20/01	5.0	U	
Chromium	6010B	5.0	1	6/19/01	6/20/01	5.0	U	
Lead	6010B	100	1	6/19/01	6/20/01	100	U	
Mercury	7470A	0.20	1	6/13/01	6/13/01	0.20	U	
Selenium	7740	8.00	4	6/18/01	6/20/01	8.00	U	
Silver	6010B	10	1	6/19/01	6/20/01	10	U	
Uranium	200.8	0.02	1	6/18/01	6/19/01	15.3		

% Solids: 0.0

Comments:

00020

## DISSOLVED METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: GeoTrans, Inc.

Service Request: K2104091

Project No.: P253-104

Date Collected: 06/11/01

Project Name: Former Axelson Facility (Site #2067)

Date Received: 06/12/01

Matrix: WATER

Units: µG/L

Basis: NA

Sample Name: MW-4

Lab Code: K2104091-004 DISS

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	6010B	100	1	6/19/01	6/20/01	100	U	
Barium	6010B	5.0	1	6/19/01	6/20/01	55.2		
Cadmium	6010B	5.0	1	6/19/01	6/20/01	5.0	U	
Chromium	6010B	5.0	1	6/19/01	6/20/01	5.0	U	
Lead	6010B	100	1	6/19/01	6/20/01	100	U	
Mercury	7470A	0.20	1	6/13/01	6/13/01	0.20	U	
Selenium	7740	8.00	4	6/18/01	6/20/01	8.00	U	
Silver	6010B	10	1	6/19/01	6/20/01	10	U	
Uranium	200.8	0.02	1	6/18/01	6/19/01	18.1		

% Solids: 0.0

Comments:

00021

## DISSOLVED METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: GeoTrans, Inc.

Service Request: K2104091

Project No.: P253-104

Date Collected: 06/11/01

Project Name: Former Axelson Facility (Site #2067)

Date Received: 06/12/01

Matrix: WATER

Units: µg/L

Basis: NA

Sample Name: QC

Lab Code: K2104091-005 DISS

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	6010B	100	1	6/19/01	6/20/01	100	U	
Barium	6010B	5.0	1	6/19/01	6/20/01	51.6		
Cadmium	6010B	5.0	1	6/19/01	6/20/01	5.0	U	
Chromium	6010B	5.0	1	6/19/01	6/20/01	5.0	U	
Lead	6010B	100	1	6/19/01	6/20/01	100	U	
Mercury	7470A	0.20	1	6/13/01	6/13/01	0.20	U	
Selenium	7740	8.00	4	6/18/01	6/20/01	8.00	U	
Silver	6010B	10	1	6/19/01	6/20/01	10	U	
Uranium	200.8	0.02	1	6/18/01	6/19/01	10.4		

% Solids: 0.0

Comments:

00022

## DISSOLVED METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: GeoTrans, Inc.

Service Request: K2104091

Project No.: P253-104

Date Collected:

Project Name: Former Axelson Facility (Site #2067)

Date Received:

Matrix: WATER

Units: µG/L

Basis: NA

Sample Name: Method Blank

Lab Code: K2104091-MB

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	6010B	100	1	6/19/01	6/20/01	100	U	
Barium	6010B	5.0	1	6/19/01	6/20/01	5.0	U	
Cadmium	6010B	5.0	1	6/19/01	6/20/01	5.0	U	
Chromium	6010B	5.0	1	6/19/01	6/20/01	5.0	U	
Lead	6010B	100	1	6/19/01	6/20/01	100	U	
Mercury	7470A	0.20	1	6/13/01	6/13/01	0.20	U	
Selenium	7740	2.00	1	6/18/01	6/20/01	2.00	U	
Silver	6010B	10	1	6/19/01	6/20/01	10	U	
Uranium	200.8	0.02	1	6/18/01	6/19/01	0.02	U	

% Solids: 0.0

Comments:

00023

DISSOLVED METALS  
- 5a -  
SPIKE SAMPLE RECOVERY

Client: GeoTrans, Inc.

Service Request: K2104091

Project No.: P253-104

Units: µG/L

Project Name: Former Axelson Facility (Site #2067)

Basis: NA

Matrix: WATER

% Solids: 0.0

Sample Name: MW-7S

Lab Code: K2104091-001 DISSS

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Mercury	75 - 125	0.88		0.20	U	1.00	88		7470A

Comments:

00024

DISSOLVED METALS  
- 5a -  
SPIKE SAMPLE RECOVERY

Client: GeoTrans, Inc.

Service Request: K2104091

Project No.: P253-104

Units: µG/L

Project Name: Former Axelson Facility (Site #2067)

Basis: NA

Matrix: WATER

% Solids: 0.0

Sample Name: QCS

Lab Code: K2104091-005 DISSS

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Arsenic	75 - 125	1870		100	U	2000	93		6010B
Barium	75 - 125	1980		51.6		2000	96		6010B
Cadmium	75 - 125	58.5		5.0	U	50.0	117		6010B
Chromium	75 - 125	185		5.0	U	200	93		6010B
Lead	75 - 125	485		100	U	500	97		6010B
Selenium	75 - 125	21.5		8.00	U	20.0	108		7740
Silver	75 - 125	46.0		10.0	U	50.0	92		6010B
Uranium	75 - 125	33.0		10.4		20.0	113		200.8

Comments: \_\_\_\_\_

00025

DISSOLVED METALS

- 6 -

DUPLICATES

Client: GeoTrans, Inc.

Service Request: K2104091

Project No.: P253-104

Units: µg/L

Project Name: Former Axelson Facility (Site #2067)

Basis: NA

Matrix: WATER

% Solids: 0.0

Sample Name: MW-7D

Lab Code: K2104091-001 DISSD

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Mercury		0.20	U	0.20	U			7470A

00026



## DISSOLVED METALS

- 6 -

## DUPLICATES

Client: GeoTrans, Inc.

Service Request: K2104091

Project No.: P253-104

Units: µG/L

Project Name: Former Axelson Facility (Site #2067)

Basis: NA

Matrix: WATER

% Solids: 0.0

Sample Name: QCD

Lab Code: K2104091-005 DISSD

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Arsenic		100	U	100	U			6010B
Barium		51.6		54.9		6		6010B
Cadmium		5.0	U	5.0	U			6010B
Chromium		5.0	U	5.0	U			6010B
Lead		100	U	100	U			6010B
Selenium		8.00	U	8.00	U			7740
Silver		10	U	10	U			6010B
Uranium		10.4		10.8		4		200.8

00027

## DISSOLVED METALS

- 7 -

## LABORATORY CONTROL SAMPLE

Client: GeoTrans, Inc.

Service Request: K2104091

Project No.: P253-104

Project Name: Former Axelson Facility (Site #2067)

Aqueous LCS Source: Inorganic Ventures

Solid LCS Source:

Analyte	Aqueous ug/L			Solid (mg/kg)					
	True	Found	%R	True	Found	C	Limits	%R	
Arsenic	2500	2450	98						
Barium	5000	5030	101						
Cadmium	1250	1230	98						
Chromium	500	502	100						
Lead	2500	2540	102						
Mercury	5.00	4.65	93						
Selenium	20.0	20.0	100						
Silver	625	605	97						
Uranium	20.0	20.6	103						

00028

**Fuel Identification and Quanification**  
**Method 8015 M**

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** MW-7  
**Lab Code:** K2104091-001  
**Extraction Method:** EPA 3510C  
**Analysis Method:** 8015M

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	110	Y	110	1	06/18/01	06/20/01	KWG0103415	
Diesel Range Organics (DRO)	210	Y	110	1	06/18/01	06/20/01	KWG0103415	
Residual Range Organics (RRO)	380	Y	260	1	06/18/01	06/20/01	KWG0103415	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	79	35-150	06/20/01	Acceptable
o-Terphenyl	108	50-150	06/20/01	Acceptable
n-Triacontane	108	50-150	06/20/01	Acceptable

Comments:

00029

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** MW-6  
**Lab Code:** K2104091-002  
**Extraction Method:** EPA 3510C  
**Analysis Method:** 8015M

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	100	1	06/18/01	06/20/01	KWG0103415	
Diesel Range Organics (DRO)	ND	U	100	1	06/18/01	06/20/01	KWG0103415	
Residual Range Organics (RRO)	ND	U	260	1	06/18/01	06/20/01	KWG0103415	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	70	35-150	06/20/01	Acceptable
o-Terphenyl	98	50-150	06/20/01	Acceptable
Triacotane	101	50-150	06/20/01	Acceptable

Comments: \_\_\_\_\_

00030

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** MW-5  
**Lab Code:** K2104091-003  
**Extraction Method:** EPA 3510C  
**Analysis Method:** 8015M

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	140	Y	100	1	06/18/01	06/20/01	KWG0103415	
Diesel Range Organics (DRO)	490	F	100	1	06/18/01	06/20/01	KWG0103415	
Residual Range Organics (RRO)	410	Y	250	1	06/18/01	06/20/01	KWG0103415	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	67	35-150	06/20/01	Acceptable
o-Terphenyl	89	50-150	06/20/01	Acceptable
n-Triacontane	90	50-150	06/20/01	Acceptable

Comments:

00031

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** MW-4  
**Lab Code:** K2104091-004  
**Extraction Method:** EPA 3510C  
**Analysis Method:** 8015M

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	4500	H	110	1	06/18/01	06/20/01	KWG0103415	
Diesel Range Organics (DRO)	13000	F	110	1	06/18/01	06/20/01	KWG0103415	
Residual Range Organics (RRO)	2500	O	260	1	06/18/01	06/20/01	KWG0103415	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	71	35-150	06/20/01	Acceptable
o-Terphenyl	90	50-150	06/20/01	Acceptable
Triaccontane	92	50-150	06/20/01	Acceptable

Comments: \_\_\_\_\_

00032

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** QC  
**Lab Code:** K2104091-005  
**Extraction Method:** EPA 3510C  
**Analysis Method:** 8015M

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	100	1	06/18/01	06/20/01	KWG0103415	
Diesel Range Organics (DRO)	170	Y	100	1	06/18/01	06/20/01	KWG0103415	
Residual Range Organics (RRO)	440	Y	250	1	06/18/01	06/20/01	KWG0103415	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	65	35-150	06/20/01	Acceptable
o-Terphenyl	88	50-150	06/20/01	Acceptable
n-Triacontane	91	50-150	06/20/01	Acceptable

Comments:

00033



## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Water

Service Request: K2104091  
Date Collected: NA  
Date Received: NA

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

Sample Name: Method Blank  
Lab Code: KWG0103415-7  
Extraction Method: EPA 3510C  
Analysis Method: 8015M

Units: ug/L  
Basis: NA  
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	100	1	06/18/01	06/20/01	KWG0103415	
Diesel Range Organics (DRO)	ND	U	100	1	06/18/01	06/20/01	KWG0103415	
Residual Range Organics (RRO)	ND	U	250	1	06/18/01	06/20/01	KWG0103415	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	75	35-150	06/20/01	Acceptable
o-Terphenyl	106	50-150	06/20/01	Acceptable
n-Triacontane	106	50-150	06/20/01	Acceptable

Comments: \_\_\_\_\_

00034

## COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091

**Surrogate Recovery Summary**  
**Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan**

**Extraction Method:** EPA 3510C  
**Analysis Method:** 8015M

**Units:** PERCENT  
**Level:** Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
MW-7	K2104091-001	79	108	108
MW-6	K2104091-002	70	98	101
MW-5	K2104091-003	67	89	90
MW-4	K2104091-004	71	90	92
QC	K2104091-005	65	88	91
Method Blank	KWG0103415-7	75	106	106
MW-7MS	KWG0103415-1	71	91	95
MW-7DMS	KWG0103415-2	71	89	93
Lab Control Sample	KWG0103415-5	70	95	98
Duplicate Lab Control Sample	KWG0103415-6	71	93	99

**Surrogate Recovery Control Limits (%)**

Sur1 = 4-Bromofluorobenzene	35-150
Sur2 = o-Terphenyl	50-150
Sur3 = n-Triacontane	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.  
Results flagged with a pound (#) indicate the control criteria is not applicable.

00035

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Extracted:** 06/18/2001  
**Date Analyzed:** 06/20/2001

**Matrix Spike/Duplicate Matrix Spike Summary**  
**Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan**

**Sample Name:** MW-7  
**Lab Code:** K2104091-001  
**Extraction Method:** EPA 3510C  
**Analysis Method:** 8015M

**Units:** ug/L  
**Basis:** NA  
**Level:** Low  
**Extraction Lot:** KWG0103415

Analyte Name	Sample Result	MW-7MS KWG0103415-1 Matrix Spike			MW-7DMS KWG0103415-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Diesel Range Organics (DRO)	210	3150	3200	92	3080	3200	90	50-150	2	30
Residual Range Organics (RRO)	380	3150	3200	87	2800	3200	76	50-150	12	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00036

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Extracted:** 06/18/2001  
**Date Analyzed:** 06/20/2001

**Lab Control Spike Summary**  
**Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan**

**Extraction Method:** EPA 3510C  
**Analysis Method:** 8015M

**Units:** ug/L  
**Basis:** NA  
**Level:** Low  
**Extraction Lot:** KWG0103415

Lab Control Sample KWG0103415-5 Lab Control Spike				
Analyte Name	Result	Expected	%Rec	%Rec Limits
Diesel Range Organics (DRO)	1600	1600	100	60-140
Residual Range Organics (RRO)	1400	1600	87	60-140

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00037

**Gasoline Range Organics**  
**Method 8015 B**

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Gasoline Range Organics

**Sample Name:** MW-7  
**Lab Code:** K2104091-001  
**Extraction Method:** EPA 5035/5030B  
**Analysis Method:** 8015B

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND U	50	1	06/21/01	06/21/01	KWG0103544	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	86	70-130	06/21/01	Acceptable

Comments: \_\_\_\_\_

00038

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Gasoline Range Organics

**Sample Name:** MW-6  
**Lab Code:** K2104091-002  
**Extraction Method:** EPA 5035/5030B  
**Analysis Method:** 8015B

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND U	50	1	06/21/01	06/21/01	KWG0103544	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	86	70-130	06/21/01	Acceptable

Comments: \_\_\_\_\_

00039

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Gasoline Range Organics

**Sample Name:** MW-5  
**Lab Code:** K2104091-003  
**Extraction Method:** EPA 5035/5030B  
**Analysis Method:** 8015B

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND U	50	1	06/21/01	06/21/01	KWG0103544	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	89	70-130	06/21/01	Acceptable

Comments: \_\_\_\_\_

00040



## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Water

Service Request: K2104091  
Date Collected: 06/11/2001  
Date Received: 06/12/2001

## Gasoline Range Organics

Sample Name: MW-4  
Lab Code: K2104091-004  
Extraction Method: EPA 5035/5030B  
Analysis Method: 8015B

Units: ug/L  
Basis: NA  
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	120	H	50	1	06/21/01	06/21/01	KWG0103544	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	89	70-130	06/21/01	Acceptable

Comments: \_\_\_\_\_

00041

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Gasoline Range Organics

**Sample Name:** QC  
**Lab Code:** K2104091-005  
**Extraction Method:** EPA 5035/5030B  
**Analysis Method:** 8015B

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND U	50	1	06/21/01	06/21/01	KWG0103544	*

\* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	91	70-130	06/21/01	Acceptable

Comments: \_\_\_\_\_

00042

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** NA  
**Date Received:** NA

## Gasoline Range Organics

**Sample Name:** Method Blank  
**Lab Code:** KWG0103544-4  
**Extraction Method:** EPA 5035/5030B  
**Analysis Method:** 8015B

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	50	1	06/21/01	06/21/01	KWG0103544	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	87	70-130	06/21/01	Acceptable

Comments: \_\_\_\_\_

00043

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091

**Surrogate Recovery Summary**  
**Gasoline Range Organics**

**Extraction Method:** EPA 5035/5030B  
**Analysis Method:** 8015B

**Units:** PERCENT  
**Level:** Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>
MW-7	K2104091-001	86
MW-6	K2104091-002	86
MW-5	K2104091-003	89
MW-4	K2104091-004	89
QC	K2104091-005	91
Method Blank	KWG0103544-4	87
QCMS	KWG0103544-1	95
QCDMS	KWG0103544-2	94
Lab Control Sample	KWG0103544-3	97

---

**Surrogate Recovery Control Limits (%)**

Sur1 = 1,4-Difluorobenzene 70-130

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Results flagged with an asterisk (\*) indicate values outside control criteria.  
Results flagged with a pound (#) indicate the control criteria is not applicable.

00044

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Water

Service Request: K2104091  
Date Extracted: 06/21/2001  
Date Analyzed: 06/21/2001

Matrix Spike/Duplicate Matrix Spike Summary  
Gasoline Range Organics

Sample Name: QC  
Lab Code: K2104091-005  
Extraction Method: EPA 5035/5030B  
Analysis Method: 8015B

Units: ug/L  
Basis: NA  
Level: Low  
Extraction Lot: KWG0103544

Analyte Name	Sample Result	QCMS KWG0103544-1 Matrix Spike			QCDMS KWG0103544-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Gasoline Range Organics (GRO)	ND	839	1000	84	798	1000	80	70-121	5	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00045

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Extracted:** 06/21/2001  
**Date Analyzed:** 06/21/2001

**Lab Control Spike Summary**  
**Gasoline Range Organics**

**Extraction Method:** EPA 5035/5030B  
**Analysis Method:** 8015B

**Units:** ug/L  
**Basis:** NA  
**Level:** Low  
**Extraction Lot:** KWG0103544

	Lab Control Sample KWG0103544-3 Lab Control Spike			%Rec
Analyte Name	Result	Expected	%Rec	Limits
Gasoline Range Organics (GRO)	932	1000	93	76-138

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00046

**Polynuclear Aromatic Hydrocarbons**  
**Method 8270C SIM**

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Polynuclear Aromatic Hydrocarbons

Sample Name: MW-7  
 Lab Code: K2104091-001  
 Extraction Method: EPA 3520  
 Analysis Method: 8270C SIM

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
2-Methylnaphthalene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Acenaphthylene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Acenaphthene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Dibenzofuran	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Fluorene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Phenanthrene	0.071		0.020	1	06/13/01	06/28/01	KWG0103328	
Anthracene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Fluoranthene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Pyrene	0.026		0.020	1	06/13/01	06/28/01	KWG0103328	
Benz(a)anthracene	0.024		0.020	1	06/13/01	06/28/01	KWG0103328	
Chrysene	0.025		0.020	1	06/13/01	06/28/01	KWG0103328	
Benzo(b)fluoranthene	0.057		0.020	1	06/13/01	06/28/01	KWG0103328	
Benzo(k)fluoranthene	0.062		0.020	1	06/13/01	06/28/01	KWG0103328	
Benzo(a)pyrene	0.061		0.020	1	06/13/01	06/28/01	KWG0103328	
Indeno(1,2,3-cd)pyrene	0.030		0.020	1	06/13/01	06/28/01	KWG0103328	
Dibenz(a,h)anthracene	0.029		0.020	1	06/13/01	06/28/01	KWG0103328	
Benzo(g,h,i)perylene	0.023		0.020	1	06/13/01	06/28/01	KWG0103328	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	46	26-105	06/28/01	Acceptable
Fluoranthene-d10	80	25-117	06/28/01	Acceptable
Terphenyl-d14	65	30-120	06/28/01	Acceptable

Comments:

00047



## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Polynuclear Aromatic Hydrocarbons

Sample Name: MW-6  
 Lab Code: K2104091-002  
 Extraction Method: EPA 3520  
 Analysis Method: 8270C SIM

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
2-Methylnaphthalene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Acenaphthylene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Acenaphthene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Dibenzofuran	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Fluorene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Phenanthrene	0.022		0.020	1	06/13/01	06/28/01	KWG0103328	
Anthracene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Fluoranthene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Pyrene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Benz(a)anthracene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Benz(a)pyrene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Benzo(b)fluoranthene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Benzo(k)fluoranthene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Benzo(a)pyrene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Dibenz(a,h)anthracene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Benzo(g,h,i)perylene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	57	26-105	06/28/01	Acceptable
Fluoranthene-d10	82	25-117	06/28/01	Acceptable
Terphenyl-d14	68	30-120	06/28/01	Acceptable

Comments:

00048

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Polynuclear Aromatic Hydrocarbons

Sample Name: MW-5  
 Lab Code: K2104091-003  
 Extraction Method: EPA 3520  
 Analysis Method: 8270C SIM

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
2-Methylnaphthalene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Acenaphthylene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Acenaphthene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Dibenzofuran	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Fluorene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Phenanthrene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Anthracene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Fluoranthene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Pyrene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Benz(a)anthracene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Chrysene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Benzo(b)fluoranthene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Benzo(k)fluoranthene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Benzo(a)pyrene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Dibenz(a,h)anthracene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Benzo(g,h,i)perylene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	46	26-105	06/28/01	Acceptable
Fluoranthene-d10	69	25-117	06/28/01	Acceptable
Terphenyl-d14	58	30-120	06/28/01	Acceptable

Comments:

00049

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Polynuclear Aromatic Hydrocarbons

Sample Name: MW-4  
 Lab Code: K2104091-004  
 Extraction Method: EPA 3520  
 Analysis Method: 8270C SIM

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	
2-Methylnaphthalene	0.037		0.019	1	06/13/01	06/28/01	KWG0103328	
Acenaphthylene	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	
Acenaphthene	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	
Dibenzofuran	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	
Fluorene	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	
Phenanthrene	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	
Anthracene	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	
Fluoranthene	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	
Pyrene	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	
Benz(a)anthracene	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	
Benz(a)pyrene	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	
Benzo(b)fluoranthene	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	
Benzo(k)fluoranthene	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	
Benzo(a)pyrene	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	
Indeno(1,2,3-cd)pyrene	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	
Dibenz(a,h)anthracene	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	
Benzo(g,h,i)perylene	ND	U	0.019	1	06/13/01	06/28/01	KWG0103328	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	58	26-105	06/28/01	Acceptable
Fluoranthene-d10	81	25-117	06/28/01	Acceptable
Terphenyl-d14	68	30-120	06/28/01	Acceptable

Comments: 00050

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Polynuclear Aromatic Hydrocarbons

Sample Name: QC  
 Lab Code: K2104091-005  
 Extraction Method: EPA 3520  
 Analysis Method: 8270C SIM

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	
2-Methylnaphthalene	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	
Acenaphthylene	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	
Acenaphthene	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	
Dibenzofuran	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	
Fluorene	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	
Phenanthrene	0.070		0.020	1	06/13/01	06/27/01	KWG0103328	
Anthracene	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	
Fluoranthene	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	
Pyrene	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	
Benz(a)anthracene	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	
Chrysene	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	
Benzo(b)fluoranthene	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	
Benzo(k)fluoranthene	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	
Benzo(a)pyrene	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	
Dibenz(a,h)anthracene	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	
Benzo(g,h,i)perylene	ND	U	0.020	1	06/13/01	06/27/01	KWG0103328	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	54	26-105	06/27/01	Acceptable
Fluoranthene-d10	70	25-117	06/27/01	Acceptable
Terphenyl-d14	49	30-120	06/27/01	Acceptable

Comments:

00051

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Water

Service Request: K2104091  
Date Collected: NA  
Date Received: NA

## Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank  
Lab Code: KWG0103328-4  
Extraction Method: EPA 3520C  
Analysis Method: 8270C SIM

Units: ug/L  
Basis: NA  
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
2-Methylnaphthalene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Acenaphthylene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Acenaphthene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Dibenzofuran	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Fluorene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Phenanthrene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Anthracene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Fluoranthene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Pyrene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Benz(a)anthracene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Benz(b)fluoranthene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Benzo(k)fluoranthene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Benzo(a)pyrene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Dibenz(a,h)anthracene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	
Benzo(g,h,i)perylene	ND	U	0.020	1	06/13/01	06/28/01	KWG0103328	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	67	26-105	06/28/01	Acceptable
Fluoranthene-d10	77	25-117	06/28/01	Acceptable
Terphenyl-d14	69	30-120	06/28/01	Acceptable

Comments:

00052

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Water

Service Request: K2104091

Surrogate Recovery Summary  
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3520  
Analysis Method: 8270C SIM

Units: PERCENT  
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
MW-7	K2104091-001	46	80	65
MW-6	K2104091-002	57	82	68
MW-5	K2104091-003	46	69	58
MW-4	K2104091-004	58	81	68
QC	K2104091-005	54	70	49
Method Blank	KWG0103328-4	67	77	69
QCMS	KWG0103328-1	65	83	58
QCDMS	KWG0103328-2	56	84	64
Lab Control Sample	KWG0103328-3	67	91	72

## Surrogate Recovery Control Limits (%)

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Sur1 = Fluorene-d10	26-105
Sur2 = Fluoranthene-d10	25-117
Sur3 = Terphenyl-d14	30-120

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Results flagged with an asterisk (\*) indicate values outside control criteria.  
Results flagged with a pound (#) indicate the control criteria is not applicable.

00053

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Extracted: 06/13/2001  
 Date Analyzed: 06/27/2001

Matrix Spike/Duplicate Matrix Spike Summary  
 Polynuclear Aromatic Hydrocarbons

Sample Name: QC  
 Lab Code: K2104091-005  
 Extraction Method: EPA 3520  
 Analysis Method: 8270C SIM

Units: ug/L  
 Basis: NA  
 Level: Low  
 Extraction Lot: KWG0103328

Analyte Name	Sample Result	QCMS KWG0103328-1 Matrix Spike			QCDMS KWG0103328-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Naphthalene	ND	1.77	2.55	69	1.51	2.48	61	45-135	16	30
2-Methylnaphthalene	ND	1.84	2.55	72	1.53	2.48	62	45-135	18	30
Acenaphthylene	ND	2.01	2.55	79	1.76	2.48	71	45-135	13	30
Acenaphthene	ND	1.85	2.55	72	1.62	2.48	65	31-122	13	30
Dibenzofuran	ND	1.92	2.55	75	1.69	2.48	68	45-135	13	30
Fluorene	ND	2.01	2.55	79	1.78	2.48	72	45-135	12	30
Phenanthrene	0.070	2.07	2.55	78	2.02	2.48	79	45-135	2	30
Anthracene	ND	2.09	2.55	82	2.05	2.48	83	45-135	2	30
Fluoranthene	ND	2.23	2.55	87	2.27	2.48	92	45-135	2	30
Pyrene	ND	1.83	2.55	72	1.95	2.48	79	31-124	7	30
Benz(a)anthracene	ND	2.05	2.55	80	2.13	2.48	86	45-135	4	30
Chrysene	ND	1.88	2.55	74	1.96	2.48	79	45-135	4	30
Benzo(b)fluoranthene	ND	2.04	2.55	80	2.20	2.48	89	45-135	8	30
Benzo(k)fluoranthene	ND	1.95	2.55	76	1.96	2.48	79	45-135	1	30
Benzo(a)pyrene	ND	2.17	2.55	85	2.22	2.48	90	28-151	2	30
Indeno(1,2,3-cd)pyrene	ND	2.23	2.55	88	2.20	2.48	89	45-135	1	30
Dibenz(a,h)anthracene	ND	2.26	2.55	89	2.28	2.48	92	45-135	1	30
Benzo(g,h,i)perylene	ND	1.91	2.55	75	1.90	2.48	77	45-135	1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00054

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Extracted:** 06/13/2001  
**Date Analyzed:** 06/28/2001

**Lab Control Spike Summary**  
**Polynuclear Aromatic Hydrocarbons**

**Extraction Method:** EPA 3520C  
**Analysis Method:** 8270C SIM

**Units:** ug/L  
**Basis:** NA  
**Level:** Low  
**Extraction Lot:** KWG0103328

Lab Control Sample  
KWG0103328-3  
Lab Control Spike

Analyte Name	Result	Expected	%Rec	%Rec Limits
Naphthalene	1.79	2.50	72	23-107
2-Methylnaphthalene	1.83	2.50	73	30-119
Acenaphthylene	2.01	2.50	80	41-112
Acenaphthene	1.86	2.50	75	40-109
Dibenzofuran	1.94	2.50	77	44-113
Fluorene	2.02	2.50	81	49-114
Phenanthrene	2.12	2.50	85	61-112
Anthracene	2.22	2.50	89	55-114
Fluoranthene	2.51	2.50	100	67-121
Pyrene	2.01	2.50	80	52-128
Benz(a)anthracene	2.28	2.50	91	58-128
Chrysene	2.17	2.50	87	64-120
Benzo(b)fluoranthene	2.45	2.50	98	39-146
Benzo(k)fluoranthene	2.37	2.50	95	42-146
Benzo(a)pyrene	2.48	2.50	99	39-141
Indeno(1,2,3-cd)pyrene	2.44	2.50	98	24-160
Dibenz(a,h)anthracene	2.56	2.50	102	35-153
Benzo(g,h,i)perylene	2.17	2.50	87	31-137

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00055



**Polychlorinated Biphenyls  
(PCBs)  
Method 8082**

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Polychlorinated Biphenyls (PCBs)

**Sample Name:** MW-7  
**Lab Code:** K2104091-001  
**Extraction Method:** EPA 3520  
**Analysis Method:** 8082

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.20	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1221	ND	U	0.40	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1232	ND	U	0.20	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1242	ND	U	0.20	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1248	ND	U	0.20	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1254	ND	U	0.20	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1260	ND	U	0.20	1	06/15/01	06/19/01	KWG0103421	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	41	0-143	06/19/01	Acceptable

Comments:

00056

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Polychlorinated Biphenyls (PCBs)

**Sample Name:** MW-6  
**Lab Code:** K2104091-002  
**Extraction Method:** EPA 3520  
**Analysis Method:** 8082

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.22	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1221	ND	U	0.44	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1232	ND	U	0.22	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1242	ND	U	0.22	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1248	ND	U	0.22	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1254	ND	U	0.22	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1260	ND	U	0.22	1	06/15/01	06/19/01	KWG0103421	

rogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	31	0-143	06/19/01	Acceptable

Comments: \_\_\_\_\_ 00057

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Polychlorinated Biphenyls (PCBs)

**Sample Name:** MW-5  
**Lab Code:** K2104091-003  
**Extraction Method:** EPA 3520  
**Analysis Method:** 8082

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.20	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1221	ND	U	0.39	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1232	ND	U	0.20	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1242	ND	U	0.20	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1248	ND	U	0.20	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1254	ND	U	0.20	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1260	ND	U	0.20	1	06/15/01	06/20/01	KWG0103421	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	26	0-143	06/20/01	Acceptable

Comments:

00058

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Polychlorinated Biphenyls (PCBs)

**Sample Name:** MW-4  
**Lab Code:** K2104091-004  
**Extraction Method:** EPA 3520  
**Analysis Method:** 8082

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.19	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1221	ND	U	0.39	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1232	ND	U	0.19	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1242	ND	U	0.19	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1248	ND	U	0.19	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1254	ND	U	0.19	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1260	ND	U	0.19	1	06/15/01	06/20/01	KWG0103421	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	20	0-143	06/20/01	Acceptable

Comments:

00059

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Polychlorinated Biphenyls (PCBs)

**Sample Name:** QC  
**Lab Code:** K2104091-005  
**Extraction Method:** EPA 3520  
**Analysis Method:** 8082

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.20	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1221	ND	U	0.40	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1232	ND	U	0.20	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1242	ND	U	0.20	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1248	ND	U	0.20	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1254	ND	U	0.20	1	06/15/01	06/20/01	KWG0103421	
Aroclor 1260	ND	U	0.20	1	06/15/01	06/20/01	KWG0103421	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	23	0-143	06/20/01	Acceptable

Comments:

00060

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** NA  
**Date Received:** NA

## Polychlorinated Biphenyls (PCBs)

**Sample Name:** Method Blank  
**Lab Code:** KWG0103421-4  
**Extraction Method:** EPA 3520  
**Analysis Method:** 8082

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.20	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1221	ND	U	0.40	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1232	ND	U	0.20	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1242	ND	U	0.20	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1248	ND	U	0.20	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1254	ND	U	0.20	1	06/15/01	06/19/01	KWG0103421	
Aroclor 1260	ND	U	0.20	1	06/15/01	06/19/01	KWG0103421	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	72	0-143	06/19/01	Acceptable

Comments: \_\_\_\_\_

00061

## COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Water

Service Request: K2104091

Surrogate Recovery Summary  
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3520  
Analysis Method: 8082

Units: PERCENT  
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>
MW-7	K2104091-001	41
MW-6	K2104091-002	31
MW-5	K2104091-003	26
MW-4	K2104091-004	20
QC	K2104091-005	23
Method Blank	KWG0103421-4	72
QCMS	KWG0103421-1	29
QCDMS	KWG0103421-2	27
Lab Control Sample	KWG0103421-3	72

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**Surrogate Recovery Control Limits (%)**

Sur1 = Decachlorobiphenyl 0-143

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Results flagged with an asterisk (\*) indicate values outside control criteria.  
Results flagged with a pound (#) indicate the control criteria is not applicable.

00062



## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Extracted:** 06/15/2001  
**Date Analyzed:** 06/20/2001

**Matrix Spike/Duplicate Matrix Spike Summary**  
**Polychlorinated Biphenyls (PCBs)**

**Sample Name:** QC  
**Lab Code:** K2104091-005  
**Extraction Method:** EPA 3520  
**Analysis Method:** 8082

**Units:** ug/L  
**Basis:** NA  
**Level:** Low  
**Extraction Lot:** KWG0103421

Analyte Name	Sample Result	QCMS KWG0103421-1 Matrix Spike			QCDMS KWG0103421-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Aroclor 1016	ND	3.29	3.92	84	3.22	3.92	82	48-140	2	30
Aroclor 1260	ND	3.41	3.92	87	3.36	3.92	86	58-136	1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00063

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Extracted:** 06/15/2001  
**Date Analyzed:** 06/19/2001

**Lab Control Spike Summary**  
**Polychlorinated Biphenyls (PCBs)**

**Extraction Method:** EPA 3520  
**Analysis Method:** 8082

**Units:** ug/L  
**Basis:** NA  
**Level:** Low  
**Extraction Lot:** KWG0103421

Analyte Name	Lab Control Sample KWG0103421-3 Lab Control Spike			%Rec
	Result	Expected	%Rec	Limits
Aroclor 1016	1.69	2.00	84	60-124
Aroclor 1260	1.71	2.00	85	65-131

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00064

**Volatile Organic Compounds**  
**Method 8260**

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Volatile Organic Compounds

Sample Name: MW-7  
 Lab Code: K2104091-001  
 Extraction Method: EPA 5030B  
 Analysis Method: 8260B

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.17	1	06/20/01	06/20/01	KWG0103506	
Chloromethane	ND	U	0.50	0.14	1	06/20/01	06/20/01	KWG0103506	
Vinyl Chloride	ND	U	0.50	0.26	1	06/20/01	06/20/01	KWG0103506	
Bromomethane	0.26	J	0.50	0.22	1	06/20/01	06/20/01	KWG0103506	
Chloroethane	ND	U	0.50	0.22	1	06/20/01	06/20/01	KWG0103506	
Trichlorofluoromethane	ND	U	0.50	0.18	1	06/20/01	06/20/01	KWG0103506	
Acetone	5.2	J	20	2.3	1	06/20/01	06/20/01	KWG0103506	
1,1-Dichloroethene	ND	U	0.50	0.12	1	06/20/01	06/20/01	KWG0103506	
Carbon Disulfide	ND	U	0.50	0.16	1	06/20/01	06/20/01	KWG0103506	
Methylene Chloride	0.35	J	1.0	0.24	1	06/20/01	06/20/01	KWG0103506	
trans-1,2-Dichloroethene	ND	U	0.50	0.14	1	06/20/01	06/20/01	KWG0103506	
1,1-Dichloroethane	ND	U	0.50	0.091	1	06/20/01	06/20/01	KWG0103506	
2-Butanone (MEK)	ND	U	20	3.7	1	06/20/01	06/20/01	KWG0103506	
2,2-Dichloropropane	ND	U	0.50	0.22	1	06/20/01	06/20/01	KWG0103506	
cis-1,2-Dichloroethene	ND	U	0.50	0.12	1	06/20/01	06/20/01	KWG0103506	
Chloroform	ND	U	0.50	0.096	1	06/20/01	06/20/01	KWG0103506	
Bromochloromethane	ND	U	0.50	0.13	1	06/20/01	06/20/01	KWG0103506	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.16	1	06/20/01	06/20/01	KWG0103506	
1,1-Dichloropropene	ND	U	0.50	0.13	1	06/20/01	06/20/01	KWG0103506	
Carbon Tetrachloride	ND	U	0.50	0.17	1	06/20/01	06/20/01	KWG0103506	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.16	1	06/20/01	06/20/01	KWG0103506	
Benzene	ND	U	0.50	0.11	1	06/20/01	06/20/01	KWG0103506	
Trichloroethene (TCE)	ND	U	0.50	0.12	1	06/20/01	06/20/01	KWG0103506	
1,2-Dichloropropane	ND	U	0.50	0.17	1	06/20/01	06/20/01	KWG0103506	
Bromodichloromethane	ND	U	0.50	0.085	1	06/20/01	06/20/01	KWG0103506	
Dibromomethane	ND	U	0.50	0.10	1	06/20/01	06/20/01	KWG0103506	
2-Hexanone	ND	U	20	4.0	1	06/20/01	06/20/01	KWG0103506	
cis-1,3-Dichloropropene	ND	U	0.50	0.081	1	06/20/01	06/20/01	KWG0103506	
Toluene	0.12	J	0.50	0.098	1	06/20/01	06/20/01	KWG0103506	
trans-1,3-Dichloropropene	ND	U	0.50	0.091	1	06/20/01	06/20/01	KWG0103506	
1,1,2-Trichloroethane	ND	U	0.50	0.10	1	06/20/01	06/20/01	KWG0103506	
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.8	1	06/20/01	06/20/01	KWG0103506	
1,3-Dichloropropane	ND	U	0.50	0.076	1	06/20/01	06/20/01	KWG0103506	
Tetrachloroethene (PCE)	0.27	J	0.50	0.11	1	06/20/01	06/20/01	KWG0103506	
Dibromochloromethane	ND	U	0.50	0.082	1	06/20/01	06/20/01	KWG0103506	

Comments:

00065

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Volatile Organic Compounds

Sample Name: MW-7  
 Lab Code: K2104091-001  
 Extraction Method: EPA 5030B  
 Analysis Method: 8260B

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	2.0	0.073	1	06/20/01	06/20/01	KWG0103506	
Chlorobenzene	ND	U	0.50	0.098	1	06/20/01	06/20/01	KWG0103506	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.16	1	06/20/01	06/20/01	KWG0103506	
Ethylbenzene	ND	U	0.50	0.10	1	06/20/01	06/20/01	KWG0103506	
m,p-Xylenes	ND	U	0.50	0.19	1	06/20/01	06/20/01	KWG0103506	
o-Xylene	ND	U	0.50	0.079	1	06/20/01	06/20/01	KWG0103506	
Styrene	ND	U	0.50	0.099	1	06/20/01	06/20/01	KWG0103506	
Bromoform	ND	U	0.50	0.28	1	06/20/01	06/20/01	KWG0103506	
Isopropylbenzene	ND	U	2.0	0.068	1	06/20/01	06/20/01	KWG0103506	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.14	1	06/20/01	06/20/01	KWG0103506	
1,2,3-Trichloropropane	ND	U	0.50	0.26	1	06/20/01	06/20/01	KWG0103506	
m-Toluenes	ND	U	2.0	0.10	1	06/20/01	06/20/01	KWG0103506	
n-Propylbenzene	ND	U	2.0	0.097	1	06/20/01	06/20/01	KWG0103506	
2-Chlorotoluene	ND	U	2.0	0.16	1	06/20/01	06/20/01	KWG0103506	
4-Chlorotoluene	ND	U	2.0	0.093	1	06/20/01	06/20/01	KWG0103506	
1,3,5-Trimethylbenzene	ND	U	2.0	0.17	1	06/20/01	06/20/01	KWG0103506	
tert-Butylbenzene	ND	U	2.0	0.17	1	06/20/01	06/20/01	KWG0103506	
1,2,4-Trimethylbenzene	ND	U	2.0	0.19	1	06/20/01	06/20/01	KWG0103506	
sec-Butylbenzene	ND	U	2.0	0.13	1	06/20/01	06/20/01	KWG0103506	
1,3-Dichlorobenzene	ND	U	0.50	0.15	1	06/20/01	06/20/01	KWG0103506	
4-Isopropyltoluene	ND	U	2.0	0.13	1	06/20/01	06/20/01	KWG0103506	
1,4-Dichlorobenzene	ND	U	0.50	0.087	1	06/20/01	06/20/01	KWG0103506	
n-Butylbenzene	ND	U	2.0	0.27	1	06/20/01	06/20/01	KWG0103506	
1,2-Dichlorobenzene	ND	U	0.50	0.085	1	06/20/01	06/20/01	KWG0103506	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1.0	1	06/20/01	06/20/01	KWG0103506	
1,2,4-Trichlorobenzene	ND	U	2.0	0.22	1	06/20/01	06/20/01	KWG0103506	
1,2,3-Trichlorobenzene	ND	U	2.0	0.33	1	06/20/01	06/20/01	KWG0103506	
Naphthalene	0.30	J	2.0	0.29	1	06/20/01	06/20/01	KWG0103506	
Hexachlorobutadiene	ND	U	2.0	0.38	1	06/20/01	06/20/01	KWG0103506	

Comments:

00066

**COLUMBIA ANALYTICAL SERVICES, INC.****Analytical Results**

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

**Volatile Organic Compounds**

**Sample Name:** MW-7  
**Lab Code:** K2104091-001

**Units:** ug/L  
**Basis:** NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	96	87-115	06/20/01	Acceptable
Toluene-d8	91	83-116	06/20/01	Acceptable
4-Bromofluorobenzene	82	75-120	06/20/01	Acceptable

**Comments:** \_\_\_\_\_

00067

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Volatile Organic Compounds

Sample Name: MW-6  
 Lab Code: K2104091-002  
 Extraction Method: EPA 5030B  
 Analysis Method: 8260B

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND U	0.50	0.17	1	06/21/01	06/21/01	KWG0103506	
Chloromethane	ND U	0.50	0.14	1	06/21/01	06/21/01	KWG0103506	
Vinyl Chloride	ND U	0.50	0.26	1	06/21/01	06/21/01	KWG0103506	
Bromomethane	ND U	0.50	0.22	1	06/21/01	06/21/01	KWG0103506	
Chloroethane	ND U	0.50	0.22	1	06/21/01	06/21/01	KWG0103506	
Trichlorofluoromethane	ND U	0.50	0.18	1	06/21/01	06/21/01	KWG0103506	
Acetone	2.6 J	20	2.3	1	06/21/01	06/21/01	KWG0103506	
1,1-Dichloroethene	0.14 J	0.50	0.12	1	06/21/01	06/21/01	KWG0103506	
Carbon Disulfide	ND U	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
Methylene Chloride	0.57 J	1.0	0.24	1	06/21/01	06/21/01	KWG0103506	
trans-1,2-Dichloroethene	ND U	0.50	0.14	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichloroethane	0.36 J	0.50	0.091	1	06/21/01	06/21/01	KWG0103506	
2-Butanone (MEK)	ND U	20	3.7	1	06/21/01	06/21/01	KWG0103506	
2,2-Dichloropropane	ND U	0.50	0.22	1	06/21/01	06/21/01	KWG0103506	
cis-1,2-Dichloroethene	ND U	0.50	0.12	1	06/21/01	06/21/01	KWG0103506	
Chloroform	ND U	0.50	0.096	1	06/21/01	06/21/01	KWG0103506	
Bromochloromethane	ND U	0.50	0.13	1	06/21/01	06/21/01	KWG0103506	
1,1,1-Trichloroethane (TCA)	2.0	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
1,1-Dichloropropene	ND U	0.50	0.13	1	06/21/01	06/21/01	KWG0103506	
Carbon Tetrachloride	ND U	0.50	0.17	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichloroethane (EDC)	8.0	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
Benzene	ND U	0.50	0.11	1	06/21/01	06/21/01	KWG0103506	
Trichloroethene (TCE)	ND U	0.50	0.12	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichloropropane	ND U	0.50	0.17	1	06/21/01	06/21/01	KWG0103506	
Bromodichloromethane	ND U	0.50	0.085	1	06/21/01	06/21/01	KWG0103506	
Dibromomethane	ND U	0.50	0.10	1	06/21/01	06/21/01	KWG0103506	
2-Hexanone	ND U	20	4.0	1	06/21/01	06/21/01	KWG0103506	
cis-1,3-Dichloropropene	ND U	0.50	0.081	1	06/21/01	06/21/01	KWG0103506	
Toluene	0.12 J	0.50	0.098	1	06/21/01	06/21/01	KWG0103506	
trans-1,3-Dichloropropene	ND U	0.50	0.091	1	06/21/01	06/21/01	KWG0103506	
1,1,2-Trichloroethane	ND U	0.50	0.10	1	06/21/01	06/21/01	KWG0103506	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.8	1	06/21/01	06/21/01	KWG0103506	
1,3-Dichloropropane	ND U	0.50	0.076	1	06/21/01	06/21/01	KWG0103506	
Tetrachloroethene (PCE)	3.0	0.50	0.11	1	06/21/01	06/21/01	KWG0103506	
Bromochloromethane	ND U	0.50	0.082	1	06/21/01	06/21/01	KWG0103506	

Comments:

00068

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Volatile Organic Compounds

Sample Name: MW-6  
 Lab Code: K2104091-002  
 Extraction Method: EPA 5030B  
 Analysis Method: 8260B

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	2.0	0.073	1	06/21/01	06/21/01	KWG0103506	
Chlorobenzene	ND	U	0.50	0.098	1	06/21/01	06/21/01	KWG0103506	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
Ethylbenzene	ND	U	0.50	0.10	1	06/21/01	06/21/01	KWG0103506	
m,p-Xylenes	ND	U	0.50	0.19	1	06/21/01	06/21/01	KWG0103506	
o-Xylene	ND	U	0.50	0.079	1	06/21/01	06/21/01	KWG0103506	
Styrene	ND	U	0.50	0.099	1	06/21/01	06/21/01	KWG0103506	
Bromoform	ND	U	0.50	0.28	1	06/21/01	06/21/01	KWG0103506	
Isopropylbenzene	ND	U	2.0	0.068	1	06/21/01	06/21/01	KWG0103506	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.14	1	06/21/01	06/21/01	KWG0103506	
1,2,3-Trichloropropane	ND	U	0.50	0.26	1	06/21/01	06/21/01	KWG0103506	
Bromobenzene	ND	U	2.0	0.10	1	06/21/01	06/21/01	KWG0103506	
n-Propylbenzene	ND	U	2.0	0.097	1	06/21/01	06/21/01	KWG0103506	
2-Chlorotoluene	ND	U	2.0	0.16	1	06/21/01	06/21/01	KWG0103506	
4-Chlorotoluene	ND	U	2.0	0.093	1	06/21/01	06/21/01	KWG0103506	
1,3,5-Trimethylbenzene	ND	U	2.0	0.17	1	06/21/01	06/21/01	KWG0103506	
tert-Butylbenzene	ND	U	2.0	0.17	1	06/21/01	06/21/01	KWG0103506	
1,2,4-Trimethylbenzene	ND	U	2.0	0.19	1	06/21/01	06/21/01	KWG0103506	
sec-Butylbenzene	ND	U	2.0	0.13	1	06/21/01	06/21/01	KWG0103506	
1,3-Dichlorobenzene	ND	U	0.50	0.15	1	06/21/01	06/21/01	KWG0103506	
4-Isopropyltoluene	ND	U	2.0	0.13	1	06/21/01	06/21/01	KWG0103506	
1,4-Dichlorobenzene	ND	U	0.50	0.087	1	06/21/01	06/21/01	KWG0103506	
n-Butylbenzene	ND	U	2.0	0.27	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichlorobenzene	ND	U	0.50	0.085	1	06/21/01	06/21/01	KWG0103506	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1.0	1	06/21/01	06/21/01	KWG0103506	
1,2,4-Trichlorobenzene	ND	U	2.0	0.22	1	06/21/01	06/21/01	KWG0103506	
1,2,3-Trichlorobenzene	ND	U	2.0	0.33	1	06/21/01	06/21/01	KWG0103506	
Naphthalene	ND	U	2.0	0.29	1	06/21/01	06/21/01	KWG0103506	
Hexachlorobutadiene	ND	U	2.0	0.38	1	06/21/01	06/21/01	KWG0103506	

Comments:

00069



## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Volatile Organic Compounds

**Sample Name:** MW-6  
**Lab Code:** K2104091-002

**Units:** ug/L  
**Basis:** NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	97	87-115	06/21/01	Acceptable
Toluene-d8	90	83-116	06/21/01	Acceptable
4-Bromofluorobenzene	81	75-120	06/21/01	Acceptable

**Comments:** \_\_\_\_\_

00070

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Volatile Organic Compounds

Sample Name: MW-5  
 Lab Code: K2104091-003  
 Extraction Method: EPA 5030B  
 Analysis Method: 8260B

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.17	1	06/21/01	06/21/01	KWG0103506	
Chloromethane	ND	U	0.50	0.14	1	06/21/01	06/21/01	KWG0103506	
Vinyl Chloride	ND	U	0.50	0.26	1	06/21/01	06/21/01	KWG0103506	
Bromomethane	ND	U	0.50	0.22	1	06/21/01	06/21/01	KWG0103506	
Chloroethane	ND	U	0.50	0.22	1	06/21/01	06/21/01	KWG0103506	
Trichlorofluoromethane	ND	U	0.50	0.18	1	06/21/01	06/21/01	KWG0103506	
Acetone	ND	U	20	2.3	1	06/21/01	06/21/01	KWG0103506	
1,1-Dichloroethene	ND	U	0.50	0.12	1	06/21/01	06/21/01	KWG0103506	
Carbon Disulfide	0.19	J	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
Methylene Chloride	0.30	J	1.0	0.24	1	06/21/01	06/21/01	KWG0103506	
trans-1,2-Dichloroethene	ND	U	0.50	0.14	1	06/21/01	06/21/01	KWG0103506	
1,1-Dichloroethane	ND	U	0.50	0.091	1	06/21/01	06/21/01	KWG0103506	
2-Butanone (MEK)	ND	U	20	3.7	1	06/21/01	06/21/01	KWG0103506	
2,2-Dichloropropane	ND	U	0.50	0.22	1	06/21/01	06/21/01	KWG0103506	
cis-1,2-Dichloroethene	ND	U	0.50	0.12	1	06/21/01	06/21/01	KWG0103506	
Chloroform	ND	U	0.50	0.096	1	06/21/01	06/21/01	KWG0103506	
Bromochloromethane	ND	U	0.50	0.13	1	06/21/01	06/21/01	KWG0103506	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
1,1-Dichloropropene	ND	U	0.50	0.13	1	06/21/01	06/21/01	KWG0103506	
Carbon Tetrachloride	ND	U	0.50	0.17	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
Benzene	ND	U	0.50	0.11	1	06/21/01	06/21/01	KWG0103506	
Trichloroethene (TCE)	ND	U	0.50	0.12	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichloropropane	ND	U	0.50	0.17	1	06/21/01	06/21/01	KWG0103506	
Bromodichloromethane	ND	U	0.50	0.085	1	06/21/01	06/21/01	KWG0103506	
Dibromomethane	ND	U	0.50	0.10	1	06/21/01	06/21/01	KWG0103506	
2-Hexanone	ND	U	20	4.0	1	06/21/01	06/21/01	KWG0103506	
cis-1,3-Dichloropropene	ND	U	0.50	0.081	1	06/21/01	06/21/01	KWG0103506	
Toluene	ND	U	0.50	0.098	1	06/21/01	06/21/01	KWG0103506	
trans-1,3-Dichloropropene	ND	U	0.50	0.091	1	06/21/01	06/21/01	KWG0103506	
1,1,2-Trichloroethane	ND	U	0.50	0.10	1	06/21/01	06/21/01	KWG0103506	
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.8	1	06/21/01	06/21/01	KWG0103506	
1,3-Dichloropropane	ND	U	0.50	0.076	1	06/21/01	06/21/01	KWG0103506	
Tetrachloroethene (PCE)	0.31	J	0.50	0.11	1	06/21/01	06/21/01	KWG0103506	
Dibromochloromethane	ND	U	0.50	0.082	1	06/21/01	06/21/01	KWG0103506	

Comments:

00071

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Volatile Organic Compounds

Sample Name: MW-5  
 Lab Code: K2104091-003  
 Extraction Method: EPA 5030B  
 Analysis Method: 8260B

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	2.0	0.073	1	06/21/01	06/21/01	KWG0103506	
Chlorobenzene	ND	U	0.50	0.098	1	06/21/01	06/21/01	KWG0103506	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
Ethylbenzene	ND	U	0.50	0.10	1	06/21/01	06/21/01	KWG0103506	
m,p-Xylenes	ND	U	0.50	0.19	1	06/21/01	06/21/01	KWG0103506	
o-Xylene	ND	U	0.50	0.079	1	06/21/01	06/21/01	KWG0103506	
Styrene	ND	U	0.50	0.099	1	06/21/01	06/21/01	KWG0103506	
Bromoform	ND	U	0.50	0.28	1	06/21/01	06/21/01	KWG0103506	
Isopropylbenzene	ND	U	2.0	0.068	1	06/21/01	06/21/01	KWG0103506	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.14	1	06/21/01	06/21/01	KWG0103506	
1,2,3-Trichloropropane	ND	U	0.50	0.26	1	06/21/01	06/21/01	KWG0103506	
m-Xylene	ND	U	2.0	0.10	1	06/21/01	06/21/01	KWG0103506	
n-Propylbenzene	ND	U	2.0	0.097	1	06/21/01	06/21/01	KWG0103506	
2-Chlorotoluene	ND	U	2.0	0.16	1	06/21/01	06/21/01	KWG0103506	
4-Chlorotoluene	ND	U	2.0	0.093	1	06/21/01	06/21/01	KWG0103506	
1,3,5-Trimethylbenzene	ND	U	2.0	0.17	1	06/21/01	06/21/01	KWG0103506	
tert-Butylbenzene	ND	U	2.0	0.17	1	06/21/01	06/21/01	KWG0103506	
1,2,4-Trimethylbenzene	ND	U	2.0	0.19	1	06/21/01	06/21/01	KWG0103506	
sec-Butylbenzene	ND	U	2.0	0.13	1	06/21/01	06/21/01	KWG0103506	
1,3-Dichlorobenzene	ND	U	0.50	0.15	1	06/21/01	06/21/01	KWG0103506	
4-Isopropyltoluene	ND	U	2.0	0.13	1	06/21/01	06/21/01	KWG0103506	
1,4-Dichlorobenzene	ND	U	0.50	0.087	1	06/21/01	06/21/01	KWG0103506	
n-Butylbenzene	ND	U	2.0	0.27	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichlorobenzene	ND	U	0.50	0.085	1	06/21/01	06/21/01	KWG0103506	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1.0	1	06/21/01	06/21/01	KWG0103506	
1,2,4-Trichlorobenzene	ND	U	2.0	0.22	1	06/21/01	06/21/01	KWG0103506	
1,2,3-Trichlorobenzene	ND	U	2.0	0.33	1	06/21/01	06/21/01	KWG0103506	
Naphthalene	ND	U	2.0	0.29	1	06/21/01	06/21/01	KWG0103506	
Hexachlorobutadiene	ND	U	2.0	0.38	1	06/21/01	06/21/01	KWG0103506	

Comments:

00072

**COLUMBIA ANALYTICAL SERVICES, INC.****Analytical Results**

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

**Volatile Organic Compounds**

**Sample Name:** MW-5  
**Lab Code:** K2104091-003

**Units:** ug/L  
**Basis:** NA

<b>Surrogate Name</b>	<b>%Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Note</b>
Dibromofluoromethane	95	87-115	06/21/01	Acceptable
Toluene-d8	91	83-116	06/21/01	Acceptable
4-Bromofluorobenzene	82	75-120	06/21/01	Acceptable

**Comments:** \_\_\_\_\_

00073

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Volatile Organic Compounds

Sample Name: MW-4  
 Lab Code: K2104091-004  
 Extraction Method: EPA 5030B  
 Analysis Method: 8260B

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.17	1	06/21/01	06/21/01	KWG0103506	
Chloromethane	ND	U	0.50	0.14	1	06/21/01	06/21/01	KWG0103506	
Vinyl Chloride	ND	U	0.50	0.26	1	06/21/01	06/21/01	KWG0103506	
Bromomethane	ND	U	0.50	0.22	1	06/21/01	06/21/01	KWG0103506	
Chloroethane	ND	U	0.50	0.22	1	06/21/01	06/21/01	KWG0103506	
Trichlorofluoromethane	ND	U	0.50	0.18	1	06/21/01	06/21/01	KWG0103506	
Acetone	3.4	J	20	2.3	1	06/21/01	06/21/01	KWG0103506	
1,1-Dichloroethene	ND	U	0.50	0.12	1	06/21/01	06/21/01	KWG0103506	
Carbon Disulfide	0.18	J	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
Methylene Chloride	0.27	J	1.0	0.24	1	06/21/01	06/21/01	KWG0103506	
trans-1,2-Dichloroethene	ND	U	0.50	0.14	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichloroethane	ND	U	0.50	0.091	1	06/21/01	06/21/01	KWG0103506	
2-Butanone (MEK)	ND	U	20	3.7	1	06/21/01	06/21/01	KWG0103506	
2,2-Dichloropropane	ND	U	0.50	0.22	1	06/21/01	06/21/01	KWG0103506	
cis-1,2-Dichloroethene	ND	U	0.50	0.12	1	06/21/01	06/21/01	KWG0103506	
Chloroform	0.17	J	0.50	0.096	1	06/21/01	06/21/01	KWG0103506	
Bromochloromethane	ND	U	0.50	0.13	1	06/21/01	06/21/01	KWG0103506	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
1,1-Dichloropropene	ND	U	0.50	0.13	1	06/21/01	06/21/01	KWG0103506	
Carbon Tetrachloride	ND	U	0.50	0.17	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
Benzene	ND	U	0.50	0.11	1	06/21/01	06/21/01	KWG0103506	
Trichloroethene (TCE)	ND	U	0.50	0.12	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichloropropane	ND	U	0.50	0.17	1	06/21/01	06/21/01	KWG0103506	
Bromodichloromethane	ND	U	0.50	0.085	1	06/21/01	06/21/01	KWG0103506	
Dibromomethane	ND	U	0.50	0.10	1	06/21/01	06/21/01	KWG0103506	
2-Hexanone	ND	U	20	4.0	1	06/21/01	06/21/01	KWG0103506	
cis-1,3-Dichloropropene	ND	U	0.50	0.081	1	06/21/01	06/21/01	KWG0103506	
Toluene	0.12	J	0.50	0.098	1	06/21/01	06/21/01	KWG0103506	
trans-1,3-Dichloropropene	ND	U	0.50	0.091	1	06/21/01	06/21/01	KWG0103506	
1,1,2-Trichloroethane	ND	U	0.50	0.10	1	06/21/01	06/21/01	KWG0103506	
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.8	1	06/21/01	06/21/01	KWG0103506	
1,3-Dichloropropane	ND	U	0.50	0.076	1	06/21/01	06/21/01	KWG0103506	
Tetrachloroethene (PCE)	0.28	J	0.50	0.11	1	06/21/01	06/21/01	KWG0103506	
Bromochloromethane	ND	U	0.50	0.082	1	06/21/01	06/21/01	KWG0103506	

Comments:

00074

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Volatile Organic Compounds

Sample Name: MW-4  
 Lab Code: K2104091-004  
 Extraction Method: EPA 5030B  
 Analysis Method: 8260B

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	2.0	0.073	1	06/21/01	06/21/01	KWG0103506	
Chlorobenzene	ND	U	0.50	0.098	1	06/21/01	06/21/01	KWG0103506	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
Ethylbenzene	ND	U	0.50	0.10	1	06/21/01	06/21/01	KWG0103506	
m,p-Xylenes	ND	U	0.50	0.19	1	06/21/01	06/21/01	KWG0103506	
o-Xylene	0.27	J	0.50	0.079	1	06/21/01	06/21/01	KWG0103506	
Styrene	ND	U	0.50	0.099	1	06/21/01	06/21/01	KWG0103506	
Bromoform	ND	U	0.50	0.28	1	06/21/01	06/21/01	KWG0103506	
Isopropylbenzene	ND	U	2.0	0.068	1	06/21/01	06/21/01	KWG0103506	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.14	1	06/21/01	06/21/01	KWG0103506	
1,2,3-Trichloropropane	ND	U	0.50	0.26	1	06/21/01	06/21/01	KWG0103506	
Bromobenzene	ND	U	2.0	0.10	1	06/21/01	06/21/01	KWG0103506	
n-Propylbenzene	ND	U	2.0	0.097	1	06/21/01	06/21/01	KWG0103506	
2-Chlorotoluene	ND	U	2.0	0.16	1	06/21/01	06/21/01	KWG0103506	
4-Chlorotoluene	ND	U	2.0	0.093	1	06/21/01	06/21/01	KWG0103506	
1,3,5-Trimethylbenzene	1.0	J	2.0	0.17	1	06/21/01	06/21/01	KWG0103506	
tert-Butylbenzene	ND	U	2.0	0.17	1	06/21/01	06/21/01	KWG0103506	
1,2,4-Trimethylbenzene	0.29	J	2.0	0.19	1	06/21/01	06/21/01	KWG0103506	
sec-Butylbenzene	ND	U	2.0	0.13	1	06/21/01	06/21/01	KWG0103506	
1,3-Dichlorobenzene	ND	U	0.50	0.15	1	06/21/01	06/21/01	KWG0103506	
4-Isopropyltoluene	0.73	J	2.0	0.13	1	06/21/01	06/21/01	KWG0103506	
1,4-Dichlorobenzene	ND	U	0.50	0.087	1	06/21/01	06/21/01	KWG0103506	
n-Butylbenzene	ND	U	2.0	0.27	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichlorobenzene	ND	U	0.50	0.085	1	06/21/01	06/21/01	KWG0103506	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1.0	1	06/21/01	06/21/01	KWG0103506	
1,2,4-Trichlorobenzene	ND	U	2.0	0.22	1	06/21/01	06/21/01	KWG0103506	
1,2,3-Trichlorobenzene	ND	U	2.0	0.33	1	06/21/01	06/21/01	KWG0103506	
Naphthalene	0.52	J	2.0	0.29	1	06/21/01	06/21/01	KWG0103506	
Hexachlorobutadiene	ND	U	2.0	0.38	1	06/21/01	06/21/01	KWG0103506	

Comments:

00075

**COLUMBIA ANALYTICAL SERVICES, INC.****Analytical Results**

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

**Volatile Organic Compounds**

**Sample Name:** MW-4  
**Lab Code:** K2104091-004

**Units:** ug/L  
**Basis:** NA

<b>Surrogate Name</b>	<b>%Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Note</b>
Dibromofluoromethane	97	87-115	06/21/01	Acceptable
Toluene-d8	93	83-116	06/21/01	Acceptable
4-Bromofluorobenzene	85	75-120	06/21/01	Acceptable

**Comments:** \_\_\_\_\_

00076

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Volatile Organic Compounds

Sample Name: QC  
 Lab Code: K2104091-005  
 Extraction Method: EPA 5030B  
 Analysis Method: 8260B

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.17	1	06/21/01	06/21/01	KWG0103506	
Chloromethane	ND	U	0.50	0.14	1	06/21/01	06/21/01	KWG0103506	
Vinyl Chloride	ND	U	0.50	0.26	1	06/21/01	06/21/01	KWG0103506	
Bromomethane	ND	U	0.50	0.22	1	06/21/01	06/21/01	KWG0103506	
Chloroethane	ND	U	0.50	0.22	1	06/21/01	06/21/01	KWG0103506	
Trichlorofluoromethane	ND	U	0.50	0.18	1	06/21/01	06/21/01	KWG0103506	
Acetone	3.4	J	20	2.3	1	06/21/01	06/21/01	KWG0103506	
1,1-Dichloroethene	ND	U	0.50	0.12	1	06/21/01	06/21/01	KWG0103506	
Carbon Disulfide	ND	U	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
Methylene Chloride	0.52	J	1.0	0.24	1	06/21/01	06/21/01	KWG0103506	
trans-1,2-Dichloroethene	ND	U	0.50	0.14	1	06/21/01	06/21/01	KWG0103506	
1,1-Dichloroethane	ND	U	0.50	0.091	1	06/21/01	06/21/01	KWG0103506	
2-Butanone (MEK)	ND	U	20	3.7	1	06/21/01	06/21/01	KWG0103506	
2,2-Dichloropropane	ND	U	0.50	0.22	1	06/21/01	06/21/01	KWG0103506	
cis-1,2-Dichloroethene	ND	U	0.50	0.12	1	06/21/01	06/21/01	KWG0103506	
Chloroform	ND	U	0.50	0.096	1	06/21/01	06/21/01	KWG0103506	
Bromochloromethane	ND	U	0.50	0.13	1	06/21/01	06/21/01	KWG0103506	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
1,1-Dichloropropene	ND	U	0.50	0.13	1	06/21/01	06/21/01	KWG0103506	
Carbon Tetrachloride	ND	U	0.50	0.17	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
Benzene	ND	U	0.50	0.11	1	06/21/01	06/21/01	KWG0103506	
Trichloroethene (TCE)	ND	U	0.50	0.12	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichloropropane	ND	U	0.50	0.17	1	06/21/01	06/21/01	KWG0103506	
Bromodichloromethane	ND	U	0.50	0.085	1	06/21/01	06/21/01	KWG0103506	
Dibromomethane	ND	U	0.50	0.10	1	06/21/01	06/21/01	KWG0103506	
2-Hexanone	ND	U	20	4.0	1	06/21/01	06/21/01	KWG0103506	
cis-1,3-Dichloropropene	ND	U	0.50	0.081	1	06/21/01	06/21/01	KWG0103506	
Toluene	0.10	J	0.50	0.098	1	06/21/01	06/21/01	KWG0103506	
trans-1,3-Dichloropropene	ND	U	0.50	0.091	1	06/21/01	06/21/01	KWG0103506	
1,1,2-Trichloroethane	ND	U	0.50	0.10	1	06/21/01	06/21/01	KWG0103506	
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.8	1	06/21/01	06/21/01	KWG0103506	
1,3-Dichloropropane	ND	U	0.50	0.076	1	06/21/01	06/21/01	KWG0103506	
Tetrachloroethene (PCE)	0.28	J	0.50	0.11	1	06/21/01	06/21/01	KWG0103506	
Dibromochloromethane	ND	U	0.50	0.082	1	06/21/01	06/21/01	KWG0103506	

Comments:

00077



## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Volatile Organic Compounds

Sample Name: QC  
 Lab Code: K2104091-005  
 Extraction Method: EPA 5030B  
 Analysis Method: 8260B

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	2.0	0.073	1	06/21/01	06/21/01	KWG0103506	
Chlorobenzene	ND	U	0.50	0.098	1	06/21/01	06/21/01	KWG0103506	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
Ethylbenzene	ND	U	0.50	0.10	1	06/21/01	06/21/01	KWG0103506	
m,p-Xylenes	ND	U	0.50	0.19	1	06/21/01	06/21/01	KWG0103506	
o-Xylene	ND	U	0.50	0.079	1	06/21/01	06/21/01	KWG0103506	
Styrene	ND	U	0.50	0.099	1	06/21/01	06/21/01	KWG0103506	
Bromoform	ND	U	0.50	0.28	1	06/21/01	06/21/01	KWG0103506	
Isopropylbenzene	ND	U	2.0	0.068	1	06/21/01	06/21/01	KWG0103506	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.14	1	06/21/01	06/21/01	KWG0103506	
1,2,3-Trichloropropane	ND	U	0.50	0.26	1	06/21/01	06/21/01	KWG0103506	
m-Toluenobenzene	ND	U	2.0	0.10	1	06/21/01	06/21/01	KWG0103506	
n-Propylbenzene	ND	U	2.0	0.097	1	06/21/01	06/21/01	KWG0103506	
2-Chlorotoluene	ND	U	2.0	0.16	1	06/21/01	06/21/01	KWG0103506	
4-Chlorotoluene	ND	U	2.0	0.093	1	06/21/01	06/21/01	KWG0103506	
1,3,5-Trimethylbenzene	ND	U	2.0	0.17	1	06/21/01	06/21/01	KWG0103506	
tert-Butylbenzene	ND	U	2.0	0.17	1	06/21/01	06/21/01	KWG0103506	
1,2,4-Trimethylbenzene	ND	U	2.0	0.19	1	06/21/01	06/21/01	KWG0103506	
sec-Butylbenzene	ND	U	2.0	0.13	1	06/21/01	06/21/01	KWG0103506	
1,3-Dichlorobenzene	ND	U	0.50	0.15	1	06/21/01	06/21/01	KWG0103506	
4-Isopropyltoluene	ND	U	2.0	0.13	1	06/21/01	06/21/01	KWG0103506	
1,4-Dichlorobenzene	ND	U	0.50	0.087	1	06/21/01	06/21/01	KWG0103506	
n-Butylbenzene	ND	U	2.0	0.27	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichlorobenzene	ND	U	0.50	0.085	1	06/21/01	06/21/01	KWG0103506	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1.0	1	06/21/01	06/21/01	KWG0103506	
1,2,4-Trichlorobenzene	ND	U	2.0	0.22	1	06/21/01	06/21/01	KWG0103506	
1,2,3-Trichlorobenzene	ND	U	2.0	0.33	1	06/21/01	06/21/01	KWG0103506	
Naphthalene	ND	U	2.0	0.29	1	06/21/01	06/21/01	KWG0103506	
Hexachlorobutadiene	ND	U	2.0	0.38	1	06/21/01	06/21/01	KWG0103506	

Comments:

00078

**COLUMBIA ANALYTICAL SERVICES, INC.****Analytical Results**

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

**Volatile Organic Compounds**

**Sample Name:** QC  
**Lab Code:** K2104091-005

**Units:** ug/L  
**Basis:** NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	94	87-115	06/21/01	Acceptable
Toluene-d8	92	83-116	06/21/01	Acceptable
4-Bromofluorobenzene	84	75-120	06/21/01	Acceptable

**Comments:** \_\_\_\_\_

00079

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Volatile Organic Compounds

Sample Name: Trip Blank  
 Lab Code: K2104091-006  
 Extraction Method: EPA 5030B  
 Analysis Method: 8260B

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.17	1	06/21/01	06/21/01	KWG0103506	
Chloromethane	ND	U	0.50	0.14	1	06/21/01	06/21/01	KWG0103506	
Vinyl Chloride	ND	U	0.50	0.26	1	06/21/01	06/21/01	KWG0103506	
Bromomethane	ND	U	0.50	0.22	1	06/21/01	06/21/01	KWG0103506	
Chloroethane	ND	U	0.50	0.22	1	06/21/01	06/21/01	KWG0103506	
Trichlorofluoromethane	ND	U	0.50	0.18	1	06/21/01	06/21/01	KWG0103506	
Acetone	ND	U	20	2.3	1	06/21/01	06/21/01	KWG0103506	
1,1-Dichloroethene	ND	U	0.50	0.12	1	06/21/01	06/21/01	KWG0103506	
Carbon Disulfide	0.47	J	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
Methylene Chloride	0.70	J	1.0	0.24	1	06/21/01	06/21/01	KWG0103506	
trans-1,2-Dichloroethene	ND	U	0.50	0.14	1	06/21/01	06/21/01	KWG0103506	
cis-1,2-Dichloroethene	ND	U	0.50	0.091	1	06/21/01	06/21/01	KWG0103506	
2-Butanone (MEK)	ND	U	20	3.7	1	06/21/01	06/21/01	KWG0103506	
2,2-Dichloropropane	ND	U	0.50	0.22	1	06/21/01	06/21/01	KWG0103506	
cis-1,2-Dichloroethene	ND	U	0.50	0.12	1	06/21/01	06/21/01	KWG0103506	
Chloroform	ND	U	0.50	0.096	1	06/21/01	06/21/01	KWG0103506	
Bromochloromethane	ND	U	0.50	0.13	1	06/21/01	06/21/01	KWG0103506	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
1,1-Dichloropropene	ND	U	0.50	0.13	1	06/21/01	06/21/01	KWG0103506	
Carbon Tetrachloride	ND	U	0.50	0.17	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
Benzene	ND	U	0.50	0.11	1	06/21/01	06/21/01	KWG0103506	
Trichloroethene (TCE)	ND	U	0.50	0.12	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichloropropane	ND	U	0.50	0.17	1	06/21/01	06/21/01	KWG0103506	
Bromodichloromethane	ND	U	0.50	0.085	1	06/21/01	06/21/01	KWG0103506	
Dibromomethane	ND	U	0.50	0.10	1	06/21/01	06/21/01	KWG0103506	
2-Hexanone	ND	U	20	4.0	1	06/21/01	06/21/01	KWG0103506	
cis-1,3-Dichloropropene	ND	U	0.50	0.081	1	06/21/01	06/21/01	KWG0103506	
Toluene	0.28	J	0.50	0.098	1	06/21/01	06/21/01	KWG0103506	
trans-1,3-Dichloropropene	ND	U	0.50	0.091	1	06/21/01	06/21/01	KWG0103506	
1,1,2-Trichloroethane	ND	U	0.50	0.10	1	06/21/01	06/21/01	KWG0103506	
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.8	1	06/21/01	06/21/01	KWG0103506	
1,3-Dichloropropane	ND	U	0.50	0.076	1	06/21/01	06/21/01	KWG0103506	
Tetrachloroethene (PCE)	ND	U	0.50	0.11	1	06/21/01	06/21/01	KWG0103506	
Bromochloromethane	ND	U	0.50	0.082	1	06/21/01	06/21/01	KWG0103506	

Comments:

00080

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Volatile Organic Compounds

Sample Name: Trip Blank  
 Lab Code: K2104091-006  
 Extraction Method: EPA 5030B  
 Analysis Method: 8260B

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	2.0	0.073	1	06/21/01	06/21/01	KWG0103506	
Chlorobenzene	ND	U	0.50	0.098	1	06/21/01	06/21/01	KWG0103506	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.16	1	06/21/01	06/21/01	KWG0103506	
Ethylbenzene	ND	U	0.50	0.10	1	06/21/01	06/21/01	KWG0103506	
m,p-Xylenes	ND	U	0.50	0.19	1	06/21/01	06/21/01	KWG0103506	
o-Xylene	ND	U	0.50	0.079	1	06/21/01	06/21/01	KWG0103506	
Styrene	ND	U	0.50	0.099	1	06/21/01	06/21/01	KWG0103506	
Bromoform	ND	U	0.50	0.28	1	06/21/01	06/21/01	KWG0103506	
Isopropylbenzene	ND	U	2.0	0.068	1	06/21/01	06/21/01	KWG0103506	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.14	1	06/21/01	06/21/01	KWG0103506	
1,2,3-Trichloropropane	ND	U	0.50	0.26	1	06/21/01	06/21/01	KWG0103506	
Bromobenzene	ND	U	2.0	0.10	1	06/21/01	06/21/01	KWG0103506	
n-Propylbenzene	ND	U	2.0	0.097	1	06/21/01	06/21/01	KWG0103506	
2-Chlorotoluene	ND	U	2.0	0.16	1	06/21/01	06/21/01	KWG0103506	
4-Chlorotoluene	ND	U	2.0	0.093	1	06/21/01	06/21/01	KWG0103506	
1,3,5-Trimethylbenzene	ND	U	2.0	0.17	1	06/21/01	06/21/01	KWG0103506	
tert-Butylbenzene	ND	U	2.0	0.17	1	06/21/01	06/21/01	KWG0103506	
1,2,4-Trimethylbenzene	ND	U	2.0	0.19	1	06/21/01	06/21/01	KWG0103506	
sec-Butylbenzene	ND	U	2.0	0.13	1	06/21/01	06/21/01	KWG0103506	
1,3-Dichlorobenzene	ND	U	0.50	0.15	1	06/21/01	06/21/01	KWG0103506	
4-Isopropyltoluene	ND	U	2.0	0.13	1	06/21/01	06/21/01	KWG0103506	
1,4-Dichlorobenzene	ND	U	0.50	0.087	1	06/21/01	06/21/01	KWG0103506	
n-Butylbenzene	ND	U	2.0	0.27	1	06/21/01	06/21/01	KWG0103506	
1,2-Dichlorobenzene	ND	U	0.50	0.085	1	06/21/01	06/21/01	KWG0103506	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1.0	1	06/21/01	06/21/01	KWG0103506	
1,2,4-Trichlorobenzene	ND	U	2.0	0.22	1	06/21/01	06/21/01	KWG0103506	
1,2,3-Trichlorobenzene	ND	U	2.0	0.33	1	06/21/01	06/21/01	KWG0103506	
Naphthalene	ND	U	2.0	0.29	1	06/21/01	06/21/01	KWG0103506	
Hexachlorobutadiene	ND	U	2.0	0.38	1	06/21/01	06/21/01	KWG0103506	

Comments:

00081

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Volatile Organic Compounds

**Sample Name:** Trip Blank  
**Lab Code:** K2104091-006

**Units:** ug/L  
**Basis:** NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	94	87-115	06/21/01	Acceptable
Toluene-d8	90	83-116	06/21/01	Acceptable
4-Bromofluorobenzene	81	75-120	06/21/01	Acceptable

**Comments:** \_\_\_\_\_

00082

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: NA  
 Date Received: NA

## Volatile Organic Compounds

Sample Name: Method Blank  
 Lab Code: KWG0103506-4  
 Extraction Method: EPA 5030B  
 Analysis Method: 8260B

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.17	1	06/20/01	06/20/01	KWG0103506	
Chloromethane	ND	U	0.50	0.14	1	06/20/01	06/20/01	KWG0103506	
Vinyl Chloride	ND	U	0.50	0.26	1	06/20/01	06/20/01	KWG0103506	
Bromomethane	ND	U	0.50	0.22	1	06/20/01	06/20/01	KWG0103506	
Chloroethane	ND	U	0.50	0.22	1	06/20/01	06/20/01	KWG0103506	
Trichlorofluoromethane	ND	U	0.50	0.18	1	06/20/01	06/20/01	KWG0103506	
Acetone	3.5	J	20	2.3	1	06/20/01	06/20/01	KWG0103506	
1,1-Dichloroethene	ND	U	0.50	0.12	1	06/20/01	06/20/01	KWG0103506	
Carbon Disulfide	ND	U	0.50	0.16	1	06/20/01	06/20/01	KWG0103506	
Methylene Chloride	0.43	J	1.0	0.24	1	06/20/01	06/20/01	KWG0103506	
trans-1,2-Dichloroethene	ND	U	0.50	0.14	1	06/20/01	06/20/01	KWG0103506	
1,1-Dichloroethane	ND	U	0.50	0.091	1	06/20/01	06/20/01	KWG0103506	
2-Butanone (MEK)	ND	U	20	3.7	1	06/20/01	06/20/01	KWG0103506	
2,2-Dichloropropane	ND	U	0.50	0.22	1	06/20/01	06/20/01	KWG0103506	
cis-1,2-Dichloroethene	ND	U	0.50	0.12	1	06/20/01	06/20/01	KWG0103506	
Chloroform	ND	U	0.50	0.096	1	06/20/01	06/20/01	KWG0103506	
Bromochloromethane	ND	U	0.50	0.13	1	06/20/01	06/20/01	KWG0103506	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.16	1	06/20/01	06/20/01	KWG0103506	
1,1-Dichloropropene	ND	U	0.50	0.13	1	06/20/01	06/20/01	KWG0103506	
Carbon Tetrachloride	ND	U	0.50	0.17	1	06/20/01	06/20/01	KWG0103506	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.16	1	06/20/01	06/20/01	KWG0103506	
Benzene	ND	U	0.50	0.11	1	06/20/01	06/20/01	KWG0103506	
Trichloroethene (TCE)	ND	U	0.50	0.12	1	06/20/01	06/20/01	KWG0103506	
1,2-Dichloropropane	ND	U	0.50	0.17	1	06/20/01	06/20/01	KWG0103506	
Bromodichloromethane	ND	U	0.50	0.085	1	06/20/01	06/20/01	KWG0103506	
Dibromomethane	ND	U	0.50	0.10	1	06/20/01	06/20/01	KWG0103506	
2-Hexanone	ND	U	20	4.0	1	06/20/01	06/20/01	KWG0103506	
cis-1,3-Dichloropropene	ND	U	0.50	0.081	1	06/20/01	06/20/01	KWG0103506	
Toluene	ND	U	0.50	0.098	1	06/20/01	06/20/01	KWG0103506	
trans-1,3-Dichloropropene	ND	U	0.50	0.091	1	06/20/01	06/20/01	KWG0103506	
1,1,2-Trichloroethane	ND	U	0.50	0.10	1	06/20/01	06/20/01	KWG0103506	
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.8	1	06/20/01	06/20/01	KWG0103506	
1,3-Dichloropropane	ND	U	0.50	0.076	1	06/20/01	06/20/01	KWG0103506	
Tetrachloroethene (PCE)	ND	U	0.50	0.11	1	06/20/01	06/20/01	KWG0103506	
Dibromochloromethane	ND	U	0.50	0.082	1	06/20/01	06/20/01	KWG0103506	

Comments:

00083

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: NA  
 Date Received: NA

## Volatile Organic Compounds

Sample Name: Method Blank  
 Lab Code: KWG0103506-4  
 Extraction Method: EPA 5030B  
 Analysis Method: 8260B

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	2.0	0.073	1	06/20/01	06/20/01	KWG0103506	
Chlorobenzene	ND	U	0.50	0.098	1	06/20/01	06/20/01	KWG0103506	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.16	1	06/20/01	06/20/01	KWG0103506	
Ethylbenzene	ND	U	0.50	0.10	1	06/20/01	06/20/01	KWG0103506	
m,p-Xylenes	ND	U	0.50	0.19	1	06/20/01	06/20/01	KWG0103506	
o-Xylene	ND	U	0.50	0.079	1	06/20/01	06/20/01	KWG0103506	
Styrene	ND	U	0.50	0.099	1	06/20/01	06/20/01	KWG0103506	
Bromoform	ND	U	0.50	0.28	1	06/20/01	06/20/01	KWG0103506	
Isopropylbenzene	ND	U	2.0	0.068	1	06/20/01	06/20/01	KWG0103506	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.14	1	06/20/01	06/20/01	KWG0103506	
1,2,3-Trichloropropane	ND	U	0.50	0.26	1	06/20/01	06/20/01	KWG0103506	
m-Xylene	ND	U	2.0	0.10	1	06/20/01	06/20/01	KWG0103506	
n-Propylbenzene	ND	U	2.0	0.097	1	06/20/01	06/20/01	KWG0103506	
2-Chlorotoluene	ND	U	2.0	0.16	1	06/20/01	06/20/01	KWG0103506	
4-Chlorotoluene	ND	U	2.0	0.093	1	06/20/01	06/20/01	KWG0103506	
1,3,5-Trimethylbenzene	ND	U	2.0	0.17	1	06/20/01	06/20/01	KWG0103506	
tert-Butylbenzene	ND	U	2.0	0.17	1	06/20/01	06/20/01	KWG0103506	
1,2,4-Trimethylbenzene	ND	U	2.0	0.19	1	06/20/01	06/20/01	KWG0103506	
sec-Butylbenzene	ND	U	2.0	0.13	1	06/20/01	06/20/01	KWG0103506	
1,3-Dichlorobenzene	ND	U	0.50	0.15	1	06/20/01	06/20/01	KWG0103506	
4-Isopropyltoluene	ND	U	2.0	0.13	1	06/20/01	06/20/01	KWG0103506	
1,4-Dichlorobenzene	ND	U	0.50	0.087	1	06/20/01	06/20/01	KWG0103506	
n-Butylbenzene	ND	U	2.0	0.27	1	06/20/01	06/20/01	KWG0103506	
1,2-Dichlorobenzene	ND	U	0.50	0.085	1	06/20/01	06/20/01	KWG0103506	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1.0	1	06/20/01	06/20/01	KWG0103506	
1,2,4-Trichlorobenzene	ND	U	2.0	0.22	1	06/20/01	06/20/01	KWG0103506	
1,2,3-Trichlorobenzene	ND	U	2.0	0.33	1	06/20/01	06/20/01	KWG0103506	
Naphthalene	ND	U	2.0	0.29	1	06/20/01	06/20/01	KWG0103506	
Hexachlorobutadiene	ND	U	2.0	0.38	1	06/20/01	06/20/01	KWG0103506	

Comments: 00084

**COLUMBIA ANALYTICAL SERVICES, INC.****Analytical Results**

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** NA  
**Date Received:** NA

**Volatile Organic Compounds**

**Sample Name:** Method Blank  
**Lab Code:** KWG0103506-4

**Units:** ug/L  
**Basis:** NA

<b>Surrogate Name</b>	<b>%Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Note</b>
Dibromofluoromethane	95	87-115	06/20/01	Acceptable
Toluene-d8	90	83-116	06/20/01	Acceptable
4-Bromofluorobenzene	84	75-120	06/20/01	Acceptable

**Comments:** \_\_\_\_\_

00085



## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Water

Service Request: K2104091

Surrogate Recovery Summary  
Volatile Organic Compounds

Extraction Method: EPA 5030B  
Analysis Method: 8260B

Units: PERCENT  
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
MW-7	K2104091-001	96	91	82
MW-6	K2104091-002	97	90	81
MW-5	K2104091-003	95	91	82
MW-4	K2104091-004	97	93	85
QC	K2104091-005	94	92	84
Trip Blank	K2104091-006	94	90	81
Method Blank	KWG0103506-4	95	90	84
MW-7MS	KWG0103506-1	96	93	88
MW-7DMS	KWG0103506-2	96	94	89
Lab Control Sample	KWG0103506-3	95	94	92

## Surrogate Recovery Control Limits (%)

Sur1 = Dibromofluoromethane	87-115
Sur2 = Toluene-d8	83-116
Sur3 = 4-Bromofluorobenzene	75-120

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

00086

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Extracted:** 06/20/2001  
**Date Analyzed:** 06/20/2001

**Matrix Spike/Duplicate Matrix Spike Summary**  
**Volatile Organic Compounds**

**Sample Name:** MW-7  
**Lab Code:** K2104091-001  
**Extraction Method:** EPA 5030B  
**Analysis Method:** 8260B

**Units:** ug/L  
**Basis:** NA  
**Level:** Low  
**Extraction Lot:** KWG0103506

Analyte Name	Sample Result	MW-7MS KWG0103506-1 Matrix Spike			MW-7DMS KWG0103506-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
1,1-Dichloroethene	ND	12.1	10.0	121	11.7	10.0	117	42-178	3	30
Benzene	ND	11.7	10.0	117	11.4	10.0	114	65-138	2	30
Trichloroethene (TCE)	ND	11.7	10.0	117	11.5	10.0	114	58-146	2	30
Toluene	0.12	11.3	10.0	112	11.0	10.0	109	68-135	2	30
Chlorobenzene	ND	10.0	10.0	100	9.81	10.0	98	71-124	2	30
1,2-Dichlorobenzene	ND	10.7	10.0	107	10.4	10.0	104	71-121	3	30
Naphthalene	0.30	10.4	10.0	101	10.6	10.0	103	50-145	2	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00087

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Extracted:** 06/20/2001  
**Date Analyzed:** 06/20/2001

**Lab Control Spike Summary**  
**Volatile Organic Compounds**

**Extraction Method:** EPA 5030B  
**Analysis Method:** 8260B

**Units:** ug/L  
**Basis:** NA  
**Level:** Low  
**Extraction Lot:** KWG0103506

Analyte Name	Lab Control Sample KWG0103506-3 Lab Control Spike			%Rec Limits
	Result	Expected	%Rec	
Dichlorodifluoromethane	11.6	10.0	116	50-150
Chloromethane	9.24	10.0	92	50-150
Vinyl Chloride	9.68	10.0	97	50-150
Bromomethane	11.1	10.0	110	50-150
Chloroethane	10.5	10.0	105	50-150
Trichlorofluoromethane	10.9	10.0	109	50-150
Acetone	72.1	50.0	144	50-150
1,1-Dichloroethene	11.0	10.0	110	62-148
Carbon Disulfide	20.1	20.0	101	50-150
Methylene Chloride	12.0	10.0	120	50-150
trans-1,2-Dichloroethene	10.9	10.0	109	50-150
1,2-Dichloroethane	11.3	10.0	113	50-150
2-Butanone (MEK)	69.6	50.0	139	50-150
2,2-Dichloropropane	10.1	10.0	101	50-150
cis-1,2-Dichloroethene	10.2	10.0	102	50-150
Chloroform	11.0	10.0	110	50-150
Bromochloromethane	10.4	10.0	104	50-150
1,1,1-Trichloroethane (TCA)	11.2	10.0	112	50-150
1,1-Dichloropropene	10.9	10.0	109	50-150
Carbon Tetrachloride	11.2	10.0	112	50-150
1,2-Dichloroethane (EDC)	12.1	10.0	121	50-150
Benzene	10.8	10.0	108	77-114
Trichloroethene (TCE)	10.7	10.0	107	69-124
1,2-Dichloropropane	10.4	10.0	104	50-150
Bromodichloromethane	11.0	10.0	110	50-150
Dibromomethane	11.3	10.0	113	50-150
2-Hexanone	59.6	50.0	119	50-150
cis-1,3-Dichloropropene	10.8	10.0	108	50-150
Toluene	10.3	10.0	103	75-118
trans-1,3-Dichloropropene	10.1	10.0	101	50-150
1,1,2-Trichloroethane	11.3	10.0	113	50-150
4-Methyl-2-pentanone (MIBK)	61.0	50.0	122	50-150
1,3-Dichloropropane	10.7	10.0	107	50-150
Tetrachloroethene (PCE)	9.43	10.0	94	50-150
Dibromochloromethane	9.84	10.0	98	50-150

\* indicates values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00088

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Extracted:** 06/20/2001  
**Date Analyzed:** 06/20/2001

**Lab Control Spike Summary**  
**Volatile Organic Compounds**

**Extraction Method:** EPA 5030B  
**Analysis Method:** 8260B

**Units:** ug/L  
**Basis:** NA  
**Level:** Low  
**Extraction Lot:** KWG0103506

Analyte Name	Lab Control Sample KWG0103506-3 Lab Control Spike			%Rec Limits
	Result	Expected	%Rec	
1,2-Dibromoethane (EDB)	10.6	10.0	106	50-150
Chlorobenzene	9.53	10.0	95	79-110
1,1,1,2-Tetrachloroethane	10.1	10.0	101	50-150
Ethylbenzene	9.75	10.0	98	50-150
m,p-Xylenes	19.3	20.0	97	50-150
o-Xylene	9.36	10.0	94	50-150
Styrene	9.69	10.0	97	50-150
Bromoform	9.63	10.0	96	50-150
Isopropylbenzene	9.12	10.0	91	50-150
1,1,2,2-Tetrachloroethane	13.2	10.0	132	50-150
1,2,3-Trichloropropane	12.7	10.0	127	50-150
Bromobenzene	10.2	10.0	102	50-150
n-Propylbenzene	10.5	10.0	105	50-150
2-Chlorotoluene	10.5	10.0	105	50-150
4-Chlorotoluene	10.8	10.0	108	50-150
1,3,5-Trimethylbenzene	10.8	10.0	108	50-150
tert-Butylbenzene	10.1	10.0	101	50-150
1,2,4-Trimethylbenzene	11.1	10.0	110	50-150
sec-Butylbenzene	10.7	10.0	107	50-150
1,3-Dichlorobenzene	10.6	10.0	106	50-150
4-Isopropyltoluene	10.1	10.0	101	50-150
1,4-Dichlorobenzene	10.3	10.0	103	50-150
n-Butylbenzene	10.7	10.0	107	50-150
1,2-Dichlorobenzene	10.0	10.0	100	80-110
1,2-Dibromo-3-chloropropane	10.5	10.0	105	50-150
1,2,4-Trichlorobenzene	9.15	10.0	92	50-150
1,2,3-Trichlorobenzene	10.0	10.0	100	50-150
Naphthalene	10.5	10.0	105	64-125
Hexachlorobutadiene	9.27	10.0	93	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00089

**Semi-Volatile Organic Compounds by GC / MS**  
**Method 8270 C**

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: MW-7  
 Lab Code: K2104091-001  
 Extraction Method: EPA 3520C  
 Analysis Method: 8270C

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Bis(2-chloroethyl) Ether	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Phenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2-Chlorophenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
1,3-Dichlorobenzene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
1,4-Dichlorobenzene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
1,2-Dichlorobenzene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Benzyl alcohol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Bis(2-chloroisopropyl) Ether	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2-Methylphenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Hexachloroethane	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
N-Nitrosodi-n-propylamine	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
4-Methylphenol†	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Nitrobenzene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Isophorone	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2-Nitrophenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2,4-Dimethylphenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Bis(2-chloroethoxy)methane	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2,4-Dichlorophenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Benzoic acid	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
1,2,4-Trichlorobenzene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
4-Chloroaniline	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Hexachlorobutadiene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
4-Chloro-3-methylphenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Hexachlorocyclopentadiene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2,4,6-Trichlorophenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2,4,5-Trichlorophenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2-Chloronaphthalene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2-Nitroaniline	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
Dimethyl Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2,6-Dinitrotoluene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
3-Nitroaniline	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
2,4-Dinitrophenol	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
4-Nitrophenol	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
2,4-Dinitrotoluene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
4-Chlorophenyl Phenyl Ether	ND	U	10	1	06/13/01	06/16/01	KWG0103324	

Comments:

00090

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Semi-Volatile Organic Compounds by GC/MS

**Sample Name:** MW-7  
**Lab Code:** K2104091-001  
**Extraction Method:** EPA 3520C  
**Analysis Method:** 8270C

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diethyl Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
4-Nitroaniline	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
2-Methyl-4,6-dinitrophenol	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
N-Nitrosodiphenylamine	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
4-Bromophenyl Phenyl Ether	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Hexachlorobenzene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Pentachlorophenol	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
Di-n-butyl Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Butyl Benzyl Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
3,3'-Dichlorobenzidine	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
Bis(2-ethylhexyl) Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
1-octyl Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	63	19-107	06/16/01	Acceptable
Phenol-d6	71	32-115	06/16/01	Acceptable
Nitrobenzene-d5	80	42-117	06/16/01	Acceptable
2-Fluorobiphenyl	80	33-120	06/16/01	Acceptable
2,4,6-Tribromophenol	86	30-121	06/16/01	Acceptable
Terphenyl-d14	80	39-120	06/16/01	Acceptable

## † Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments:

00091

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: MW-6  
 Lab Code: K2104091-002  
 Extraction Method: EPA 3520C  
 Analysis Method: 8270C

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Bis(2-chloroethyl) Ether	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Phenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2-Chlorophenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
1,3-Dichlorobenzene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
1,4-Dichlorobenzene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
1,2-Dichlorobenzene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Benzyl alcohol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Bis(2-chloroisopropyl) Ether	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2-Methylphenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Hexachloroethane	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
N-Nitrosodi-n-propylamine	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
4-Methylphenol†	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Nitrobenzene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Isophorone	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2-Nitrophenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2,4-Dimethylphenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Bis(2-chloroethoxy)methane	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2,4-Dichlorophenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Benzoic acid	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
1,2,4-Trichlorobenzene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
4-Chloroaniline	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Hexachlorobutadiene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
4-Chloro-3-methylphenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Hexachlorocyclopentadiene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2,4,6-Trichlorophenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2,4,5-Trichlorophenol	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2-Chloronaphthalene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2-Nitroaniline	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
Dimethyl Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
2,6-Dinitrotoluene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
3-Nitroaniline	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
2,4-Dinitrophenol	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
4-Nitrophenol	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
2,4-Dinitrotoluene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
4-Chlorophenyl Phenyl Ether	ND	U	10	1	06/13/01	06/16/01	KWG0103324	

Comments:

00092



## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: MW-6  
 Lab Code: K2104091-002  
 Extraction Method: EPA 3520C  
 Analysis Method: 8270C

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diethyl Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
4-Nitroaniline	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
2-Methyl-4,6-dinitrophenol	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
N-Nitrosodiphenylamine	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
4-Bromophenyl Phenyl Ether	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Hexachlorobenzene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Pentachlorophenol	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
Di-n-butyl Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Butyl Benzyl Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
3,3'-Dichlorobenzidine	ND	U	26	1	06/13/01	06/16/01	KWG0103324	
Bis(2-ethylhexyl) Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
1-octyl Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	60	19-107	06/16/01	Acceptable
Phenol-d6	68	32-115	06/16/01	Acceptable
Nitrobenzene-d5	77	42-117	06/16/01	Acceptable
2-Fluorobiphenyl	76	33-120	06/16/01	Acceptable
2,4,6-Tribromophenol	80	30-121	06/16/01	Acceptable
Terphenyl-d14	85	39-120	06/16/01	Acceptable

## † Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments: \_\_\_\_\_

00093

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: MW-5  
 Lab Code: K2104091-003  
 Extraction Method: EPA 3520C  
 Analysis Method: 8270C

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Bis(2-chloroethyl) Ether	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Phenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2-Chlorophenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
1,3-Dichlorobenzene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
1,4-Dichlorobenzene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
1,2-Dichlorobenzene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Benzyl alcohol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Bis(2-chloroisopropyl) Ether	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2-Methylphenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Hexachloroethane	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
N-Nitrosodi-n-propylamine	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
4-Methylphenol†	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Nitrobenzene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Isophorone	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2-Nitrophenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2,4-Dimethylphenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Bis(2-chloroethoxy)methane	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2,4-Dichlorophenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Benzoic acid	ND	U	26	1	06/13/01	06/18/01	KWG0103324	
1,2,4-Trichlorobenzene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
4-Chloroaniline	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Hexachlorobutadiene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
4-Chloro-3-methylphenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Hexachlorocyclopentadiene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2,4,6-Trichlorophenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2,4,5-Trichlorophenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2-Chloronaphthalene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2-Nitroaniline	ND	U	26	1	06/13/01	06/18/01	KWG0103324	
Dimethyl Phthalate	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2,6-Dinitrotoluene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
3-Nitroaniline	ND	U	26	1	06/13/01	06/18/01	KWG0103324	
2,4-Dinitrophenol	ND	U	26	1	06/13/01	06/18/01	KWG0103324	
4-Nitrophenol	ND	U	26	1	06/13/01	06/18/01	KWG0103324	
2,4-Dinitrotoluene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
4-Chlorophenyl Phenyl Ether	ND	U	10	1	06/13/01	06/18/01	KWG0103324	

Comments:

00094

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: MW-5  
 Lab Code: K2104091-003  
 Extraction Method: EPA 3520C  
 Analysis Method: 8270C

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diethyl Phthalate	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
4-Nitroaniline	ND	U	26	1	06/13/01	06/18/01	KWG0103324	
2-Methyl-4,6-dinitrophenol	ND	U	26	1	06/13/01	06/18/01	KWG0103324	
N-Nitrosodiphenylamine	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
4-Bromophenyl Phenyl Ether	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Hexachlorobenzene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Pentachlorophenol	ND	U	26	1	06/13/01	06/18/01	KWG0103324	
Di-n-butyl Phthalate	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Butyl Benzyl Phthalate	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
3,3'-Dichlorobenzidine	ND	U	26	1	06/13/01	06/18/01	KWG0103324	
Bis(2-ethylhexyl) Phthalate	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
n-octyl Phthalate	ND	U	10	1	06/13/01	06/18/01	KWG0103324	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	58	19-107	06/18/01	Acceptable
Phenol-d6	63	32-115	06/18/01	Acceptable
Nitrobenzene-d5	71	42-117	06/18/01	Acceptable
2-Fluorobiphenyl	73	33-120	06/18/01	Acceptable
2,4,6-Tribromophenol	86	30-121	06/18/01	Acceptable
Terphenyl-d14	60	39-120	06/18/01	Acceptable

## † Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments:

00095

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: MW-4  
 Lab Code: K2104091-004  
 Extraction Method: EPA 3520C  
 Analysis Method: 8270C

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Bis(2-chloroethyl) Ether	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Phenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2-Chlorophenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
1,3-Dichlorobenzene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
1,4-Dichlorobenzene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
1,2-Dichlorobenzene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Benzyl alcohol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Bis(2-chloroisopropyl) Ether	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2-Methylphenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Hexachloroethane	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
N-Nitrosodi-n-propylamine	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
4-Methylphenol†	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Nitrobenzene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Isophorone	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2-Nitrophenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2,4-Dimethylphenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Bis(2-chloroethoxy)methane	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2,4-Dichlorophenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Benzoic acid	ND	U	25	1	06/13/01	06/18/01	KWG0103324	
1,2,4-Trichlorobenzene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
4-Chloroaniline	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Hexachlorobutadiene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
4-Chloro-3-methylphenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Hexachlorocyclopentadiene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2,4,6-Trichlorophenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2,4,5-Trichlorophenol	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2-Chloronaphthalene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2-Nitroaniline	ND	U	25	1	06/13/01	06/18/01	KWG0103324	
Dimethyl Phthalate	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
2,6-Dinitrotoluene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
3-Nitroaniline	ND	U	25	1	06/13/01	06/18/01	KWG0103324	
2,4-Dinitrophenol	ND	U	25	1	06/13/01	06/18/01	KWG0103324	
4-Nitrophenol	ND	U	25	1	06/13/01	06/18/01	KWG0103324	
2,4-Dinitrotoluene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
4-Chlorophenyl Phenyl Ether	ND	U	10	1	06/13/01	06/18/01	KWG0103324	

Comments:

00096

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Semi-Volatile Organic Compounds by GC/MS

**Sample Name:** MW-4  
**Lab Code:** K2104091-004  
**Extraction Method:** EPA 3520C  
**Analysis Method:** 8270C

**Units:** ug/L  
**Basis:** NA  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diethyl Phthalate	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
4-Nitroaniline	ND	U	25	1	06/13/01	06/18/01	KWG0103324	
2-Methyl-4,6-dinitrophenol	ND	U	25	1	06/13/01	06/18/01	KWG0103324	
N-Nitrosodiphenylamine	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
4-Bromophenyl Phenyl Ether	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Hexachlorobenzene	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Pentachlorophenol	ND	U	25	1	06/13/01	06/18/01	KWG0103324	
Di-n-butyl Phthalate	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
Butyl Benzyl Phthalate	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
3,3'-Dichlorobenzidine	ND	U	25	1	06/13/01	06/18/01	KWG0103324	
Bis(2-ethylhexyl) Phthalate	ND	U	10	1	06/13/01	06/18/01	KWG0103324	
-octyl Phthalate	ND	U	10	1	06/13/01	06/18/01	KWG0103324	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	68	19-107	06/18/01	Acceptable
Phenol-d6	77	32-115	06/18/01	Acceptable
Nitrobenzene-d5	87	42-117	06/18/01	Acceptable
2-Fluorobiphenyl	79	33-120	06/18/01	Acceptable
2,4,6-Tribromophenol	91	30-121	06/18/01	Acceptable
Terphenyl-d14	55	39-120	06/18/01	Acceptable

## † Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments:

00097

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: QC  
 Lab Code: K2104091-005  
 Extraction Method: EPA 3520C  
 Analysis Method: 8270C

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Bis(2-chloroethyl) Ether	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
Phenol	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
2-Chlorophenol	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
1,3-Dichlorobenzene	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
1,4-Dichlorobenzene	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
1,2-Dichlorobenzene	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
Benzyl alcohol	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
Bis(2-chloroisopropyl) Ether	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
2-Methylphenol	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
Hexachloroethane	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
N-Nitrosodi-n-propylamine	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
4-Methylphenol†	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
Nitrobenzene	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
Isophorone	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
2-Nitrophenol	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
2,4-Dimethylphenol	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
Bis(2-chloroethoxy)methane	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
2,4-Dichlorophenol	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
Benzoic acid	ND	U	24	1	06/13/01	06/18/01	KWG0103324	
1,2,4-Trichlorobenzene	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
4-Chloroaniline	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
Hexachlorobutadiene	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
4-Chloro-3-methylphenol	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
Hexachlorocyclopentadiene	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
2,4,6-Trichlorophenol	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
2,4,5-Trichlorophenol	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
2-Chloronaphthalene	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
2-Nitroaniline	ND	U	24	1	06/13/01	06/18/01	KWG0103324	
Dimethyl Phthalate	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
2,6-Dinitrotoluene	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
3-Nitroaniline	ND	U	24	1	06/13/01	06/18/01	KWG0103324	
2,4-Dinitrophenol	ND	U	24	1	06/13/01	06/18/01	KWG0103324	
4-Nitrophenol	ND	U	24	1	06/13/01	06/18/01	KWG0103324	
2,4-Dinitrotoluene	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
4-Chlorophenyl Phenyl Ether	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	

Comments:

00098

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: QC  
 Lab Code: K2104091-005  
 Extraction Method: EPA 3520C  
 Analysis Method: 8270C

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diethyl Phthalate	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
4-Nitroaniline	ND	U	24	1	06/13/01	06/18/01	KWG0103324	
2-Methyl-4,6-dinitrophenol	ND	U	24	1	06/13/01	06/18/01	KWG0103324	
N-Nitrosodiphenylamine	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
4-Bromophenyl Phenyl Ether	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
Hexachlorobenzene	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
Pentachlorophenol	ND	U	24	1	06/13/01	06/18/01	KWG0103324	
Di-n-butyl Phthalate	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
Butyl Benzyl Phthalate	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
3,3'-Dichlorobenzidine	ND	U	24	1	06/13/01	06/18/01	KWG0103324	
Di-(2-ethylhexyl) Phthalate	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	
Octyl Phthalate	ND	U	9.6	1	06/13/01	06/18/01	KWG0103324	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	64	19-107	06/18/01	Acceptable
Phenol-d6	72	32-115	06/18/01	Acceptable
Nitrobenzene-d5	85	42-117	06/18/01	Acceptable
2-Fluorobiphenyl	79	33-120	06/18/01	Acceptable
2,4,6-Tribromophenol	85	30-121	06/18/01	Acceptable
Terphenyl-d14	78	39-120	06/18/01	Acceptable

## † Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments: \_\_\_\_\_

00099

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: NA  
 Date Received: NA

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: Method Blank  
 Lab Code: KWG0103324-6  
 Extraction Method: EPA 3520C  
 Analysis Method: 8270C

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Bis(2-chloroethyl) Ether	ND U	10	1	06/13/01	06/16/01	KWG0103324	
Phenol	ND U	10	1	06/13/01	06/16/01	KWG0103324	
2-Chlorophenol	ND U	10	1	06/13/01	06/16/01	KWG0103324	
1,3-Dichlorobenzene	ND U	10	1	06/13/01	06/16/01	KWG0103324	
1,4-Dichlorobenzene	ND U	10	1	06/13/01	06/16/01	KWG0103324	
1,2-Dichlorobenzene	ND U	10	1	06/13/01	06/16/01	KWG0103324	
Benzyl alcohol	ND U	10	1	06/13/01	06/16/01	KWG0103324	
Bis(2-chloroisopropyl) Ether	ND U	10	1	06/13/01	06/16/01	KWG0103324	
2-Methylphenol	ND U	10	1	06/13/01	06/16/01	KWG0103324	
Hexachloroethane	ND U	10	1	06/13/01	06/16/01	KWG0103324	
N-Nitrosodi-n-propylamine	ND U	10	1	06/13/01	06/16/01	KWG0103324	
4-Methylphenol†	ND U	10	1	06/13/01	06/16/01	KWG0103324	
Nitrobenzene	ND U	10	1	06/13/01	06/16/01	KWG0103324	
Isophorone	ND U	10	1	06/13/01	06/16/01	KWG0103324	
2-Nitrophenol	ND U	10	1	06/13/01	06/16/01	KWG0103324	
2,4-Dimethylphenol	ND U	10	1	06/13/01	06/16/01	KWG0103324	
Bis(2-chloroethoxy)methane	ND U	10	1	06/13/01	06/16/01	KWG0103324	
2,4-Dichlorophenol	ND U	10	1	06/13/01	06/16/01	KWG0103324	
Benzoic acid	ND U	25	1	06/13/01	06/16/01	KWG0103324	
1,2,4-Trichlorobenzene	ND U	10	1	06/13/01	06/16/01	KWG0103324	
4-Chloroaniline	ND U	10	1	06/13/01	06/16/01	KWG0103324	
Hexachlorobutadiene	ND U	10	1	06/13/01	06/16/01	KWG0103324	
4-Chloro-3-methylphenol	ND U	10	1	06/13/01	06/16/01	KWG0103324	
Hexachlorocyclopentadiene	ND U	10	1	06/13/01	06/16/01	KWG0103324	
2,4,6-Trichlorophenol	ND U	10	1	06/13/01	06/16/01	KWG0103324	
2,4,5-Trichlorophenol	ND U	10	1	06/13/01	06/16/01	KWG0103324	
2-Chloronaphthalene	ND U	10	1	06/13/01	06/16/01	KWG0103324	
2-Nitroaniline	ND U	25	1	06/13/01	06/16/01	KWG0103324	
Dimethyl Phthalate	ND U	10	1	06/13/01	06/16/01	KWG0103324	
2,6-Dinitrotoluene	ND U	10	1	06/13/01	06/16/01	KWG0103324	
3-Nitroaniline	ND U	25	1	06/13/01	06/16/01	KWG0103324	
2,4-Dinitrophenol	ND U	25	1	06/13/01	06/16/01	KWG0103324	
4-Nitrophenol	ND U	25	1	06/13/01	06/16/01	KWG0103324	
2,4-Dinitrotoluene	ND U	10	1	06/13/01	06/16/01	KWG0103324	
4-Chlorophenyl Phenyl Ether	ND U	10	1	06/13/01	06/16/01	KWG0103324	

Comments:

00100



## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Collected: NA  
 Date Received: NA

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: Method Blank  
 Lab Code: KWG0103324-6  
 Extraction Method: EPA 3520C  
 Analysis Method: 8270C

Units: ug/L  
 Basis: NA  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diethyl Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
4-Nitroaniline	ND	U	25	1	06/13/01	06/16/01	KWG0103324	
2-Methyl-4,6-dinitrophenol	ND	U	25	1	06/13/01	06/16/01	KWG0103324	
N-Nitrosodiphenylamine	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
4-Bromophenyl Phenyl Ether	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Hexachlorobenzene	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Pentachlorophenol	ND	U	25	1	06/13/01	06/16/01	KWG0103324	
Di-n-butyl Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
Butyl Benzyl Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
3,3'-Dichlorobenzidine	ND	U	25	1	06/13/01	06/16/01	KWG0103324	
Bis(2-ethylhexyl) Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	
1-octyl Phthalate	ND	U	10	1	06/13/01	06/16/01	KWG0103324	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	73	19-107	06/16/01	Acceptable
Phenol-d6	82	32-115	06/16/01	Acceptable
Nitrobenzene-d5	92	42-117	06/16/01	Acceptable
2-Fluorobiphenyl	90	33-120	06/16/01	Acceptable
2,4,6-Tribromophenol	87	30-121	06/16/01	Acceptable
Terphenyl-d14	102	39-120	06/16/01	Acceptable

## † Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments: 00101

## COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Water

Service Request: K2104091

Surrogate Recovery Summary  
Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3520C  
Analysis Method: 8270C

Units: PERCENT  
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>	<u>Sur4</u>	<u>Sur5</u>	<u>Sur6</u>
MW-7	K2104091-001	63	71	80	80	86	80
MW-6	K2104091-002	60	68	77	76	80	85
MW-5	K2104091-003	58	63	71	73	86	60
MW-4	K2104091-004	68	77	87	79	91	55
QC	K2104091-005	64	72	85	79	85	78
Method Blank	KWG0103324-6	73	82	92	90	87	102
QCMS	KWG0103324-1	56	65	74	82	87	73
QCDMS	KWG0103324-2	59	66	70	81	93	81
Lab Control Sample	KWG0103324-5	62	66	73	78	83	90

## Surrogate Recovery Control Limits (%)

Sur1 = 2-Fluorophenol	19-107	Sur5 = 2,4,6-Tribromophenol	30-121
Sur2 = Phenol-d6	32-115	Sur6 = Terphenyl-d14	39-120
Sur3 = Nitrobenzene-d5	42-117		
Sur4 = 2-Fluorobiphenyl	33-120		

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

00102

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Water

Service Request: K2104091  
Date Extracted: 06/13/2001  
Date Analyzed: 06/18/2001

Matrix Spike/Duplicate Matrix Spike Summary  
Semi-Volatile Organic Compounds by GC/MS

Sample Name: QC  
Lab Code: K2104091-005  
Extraction Method: EPA 3520C  
Analysis Method: 8270C

Units: ug/L  
Basis: NA  
Level: Low  
Extraction Lot: KWG0103324

Analyte Name	Sample Result	QCMS KWG0103324-1 Matrix Spike			QCDMS KWG0103324-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Phenol	ND	68.0	99.0	69	66.1	97.1	68	55-96	3	50
2-Chlorophenol	ND	65.0	99.0	66	63.1	97.1	65	56-99	3	50
1,4-Dichlorobenzene	ND	62.0	99.0	63	59.2	97.1	61	46-95	5	50
N-Nitrosodi-n-propylamine	ND	86.6	99.0	88	76.2	97.1	78	43-122	13	50
1,2,4-Trichlorobenzene	ND	64.0	99.0	65	61.3	97.1	63	51-98	4	50
4-Chloro-3-methylphenol	ND	82.3	99.0	83	71.9	97.1	74	56-128	14	50
4-Nitrophenol	ND	86.9	99.0	88	71.2	97.1	73	60-132	20	50
2,4-Dinitrotoluene	ND	86.6	99.0	88	75.6	97.1	78	67-138	14	50
Pentachlorophenol	ND	90.9	99.0	92	89.9	97.1	93	44-138	1	50

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00103

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Water

Service Request: K2104091  
 Date Extracted: 06/13/2001  
 Date Analyzed: 06/16/2001

Lab Control Spike Summary  
 Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3520C  
 Analysis Method: 8270C

Units: ug/L  
 Basis: NA  
 Level: Low  
 Extraction Lot: KWG0103324

Lab Control Sample  
 KWG0103324-5  
 Lab Control Spike

Analyte Name	Result	Expected	%Rec	%Rec Limits
Bis(2-chloroethyl) Ether	68.8	100	69	58-97
Phenol	65.3	100	65	33-112
2-Chlorophenol	67.2	100	67	38-112
1,3-Dichlorobenzene	64.7	100	65	45-135
1,4-Dichlorobenzene	64.3	100	64	51-89
1,2-Dichlorobenzene	67.0	100	67	52-94
Benzyl alcohol	73.0	100	73	59-106
Bis(2-chloroisopropyl) Ether	68.7	100	69	44-110
2-Methylphenol	66.5	100	66	46-108
Hexachloroethane	62.5	100	63	50-92
N-Nitrosodi-n-propylamine	79.8	100	80	55-102
4-Methylphenol	67.0	100	67	25-150
Nitrobenzene	66.9	100	67	56-106
Isophorone	78.6	100	79	66-106
2-Nitrophenol	73.8	100	74	47-116
2,4-Dimethylphenol	67.8	100	68	47-93
Bis(2-chloroethoxy)methane	72.6	100	73	66-97
2,4-Dichlorophenol	72.3	100	72	48-112
Benzoic acid	63.4	100	63	10-133
1,2,4-Trichlorobenzene	66.1	100	66	55-92
4-Chloroaniline	72.2	100	72	58-105
Hexachlorobutadiene	66.2	100	66	52-101
4-Chloro-3-methylphenol	78.7	100	79	62-111
Hexachlorocyclopentadiene	31.0	100	31	10-71
2,4,6-Trichlorophenol	76.8	100	77	44-125
2,4,5-Trichlorophenol	78.3	100	78	58-113
2-Chloronaphthalene	70.3	100	70	66-96
2-Nitroaniline	81.0	100	81	65-119
Dimethyl Phthalate	76.6	100	77	56-117
2,6-Dinitrotoluene	82.8	100	83	75-110
3-Nitroaniline	82.7	100	83	65-129
2,4-Dinitrophenol	75.5	100	76	49-127
4-Nitrophenol	71.2	100	71	45-132
2,4-Dinitrotoluene	81.4	100	81	75-120
4-Chlorophenyl Phenyl Ether	77.7	100	78	68-105

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00104

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Water

**Service Request:** K2104091  
**Date Extracted:** 06/13/2001  
**Date Analyzed:** 06/16/2001

**Lab Control Spike Summary**  
**Semi-Volatile Organic Compounds by GC/MS**

**Extraction Method:** EPA 3520C  
**Analysis Method:** 8270C

**Units:** ug/L  
**Basis:** NA  
**Level:** Low  
**Extraction Lot:** KWG0103324

Analyte Name	Lab Control Sample KWG0103324-5			%Rec Limits
	Lab Control Spike			
	Result	Expected	%Rec	
Diethyl Phthalate	77.6	100	78	62-117
4-Nitroaniline	76.7	100	77	54-142
2-Methyl-4,6-dinitrophenol	86.7	100	87	63-128
N-Nitrosodiphenylamine	79.1	100	79	59-108
4-Bromophenyl Phenyl Ether	80.2	100	80	70-111
Hexachlorobenzene	77.8	100	78	66-117
Pentachlorophenol	80.1	100	80	59-121
Di-n-butyl Phthalate	84.9	100	85	67-112
Butyl Benzyl Phthalate	78.5	100	79	70-114
3,3'-Dichlorobenzidine	79.9	100	80	35-130
Bis(2-ethylhexyl) Phthalate	79.7	100	80	69-117
Dodecyl Phthalate	87.3	100	87	68-120

Values flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00105



**AXELSON**











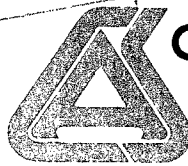






AUG 06 2001

BY:



**Columbia  
Analytical  
Services** INC.

*An Employee-Owned Company*

August 1, 2001

Service Request No: K2104091

Tanya Akkerman  
GeoTrans  
3035 Prospect Park Drive, Suite 40  
Rancho Cordova, CA 95670

**Re: Former Axelson Facility (Site #2067)/253-104**

Dear Tanya:

Enclosed are the additional pages for the sample(s) submitted to our laboratory on June 12, 2001. For your reference, these analyses have been assigned our service request number K2104091.

These pages pertain to the Radium 226/228 results. The analysis has been performed by STL-Richland. the STL report number is 13962.

Please call if you have any questions. My extension is 3345.

Respectfully submitted,

**Columbia Analytical Services, Inc.**

Mingta Lin  
Project Chemist

ML/ee

Page 1 of \_\_\_\_\_

## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- i The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- B The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- E The reported value is estimated because of the presence of matrix interference.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.
- \* The duplicate analysis not within control limits. See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- i The MRL/MDL has been elevated due to a chromatographic interference.
- X See case narrative.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- N The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.



Analytical Data Package Prepared For

# COLUMBIA ANALYTICAL SERVICES

Radiochemical Analysis By

**STL Richland**

*2800 G.W. Way, Richland, Wa 99352, (509) 375-3131*

Assigned Laboratory Code:

Data Package Contains 17 Pages

Report No.: 13962

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
17594		MW-4	J1F190182-4	EE55T1AC	9EE55T10	1170508
		MW-4	J1F190182-4	EE55T1AA	9EE55T10	1170510
		MW-5	J1F190182-3	EE55R1AC	9EE55R10	1170508
		MW-5	J1F190182-3	EE55R1AA	9EE55R10	1170510
		MW-6	J1F190182-2	EE55P1AC	9EE55P10	1170508
		MW-6	J1F190182-2	EE55P1AA	9EE55P10	1170510
		MW-7	J1F190182-1	EE55L1AC	9EE55L10	1170508
		MW-7	J1F190182-1	EE55L1AA	9EE55L10	1170510
		QC	J1F190182-5	EE55W1AC	9EE55W10	1170508
		QC	J1F190182-5	EE55W1AA	9EE55W10	1170510

## CASE NARRATIVE

July 30, 2001

Columbia Analytical Services, Inc.  
1317 South 13<sup>th</sup> Avenue  
Kelso, WA 98626

Attention: Mingta Lin

---

Date Received by Lab	:	June 19, 2001
Number of Samples	:	Five Water Samples
SDG Number	:	17594
Purchase Order	:	K2104091

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### **I. Introduction**

On June 19, 2001, five water samples were received by the STL Richland laboratory (STLR) for radiochemical analysis. Upon receipt, these samples were assigned the STLR identification number as described on the cover page of the Analytical Data Package report form. These samples were assigned to Lot Number J1F190182.

### **II. Analytical Results/Methodology**

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information; analytical results and the appropriate associated statistical errors.

The requested analyses were:

Radium-226 by method RICHRC5005 (EPA 903.1)

Radium-228 by method RICHRC5005 (EPA 904)

Columbia Analytical Services, Inc.  
July 30, 2001  
Page 2

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### III. Quality Control

The analytical results for each analysis performed includes a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank and one duplicate sample. Any exceptions have been noted in the "comments" section.

### IV. Comments

#### Radium-226 Analysis:


The LCS, batch blank and sample results are within contractual requirements. There was not sufficient volume available for a duplicate analysis.

#### Radium-228 Analysis:

The LCS, LCS duplicate, batch blank and sample results are within contractual requirements. There was not sufficient volume available for a duplicate analysis.

I certify that this Certificate of Analysis is in compliance with the Quality Assurance Summary (QAS), both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:



Andy Kopriva  
Project Manager

000003

## Drinking Water Method Cross References

DRINKING WATER ASTM METHOD CROSS REFERENCES		
Referenced Method	Isotope(s)	STL Richland's SOP number
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D57174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-241 (unless otherwise specified in the case narrative)		
The Gross Beta LCS is prepared with Sr/Y-90 (unless otherwise specified in the case narrative)		

## Uncertainty Estimation

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship,  $R = \text{constants} * f(x,y,z,...)$ . The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties ( $u_i$ ) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty ( $u_c$ ) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value ( $S/\sqrt{n}$ ), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

## Report Definitions

<b>Action Lev</b>	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
<b>Batch</b>	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
<b>Bias</b>	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
<b>COC No</b>	Chain of Custody Number assigned by the Client or STL Richland.
<b>Count Error (#s)</b>	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
<b>Total Uncert (#s) <i>u<sub>c</sub> - Combined Uncertainty.</i></b>	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, <i>u<sub>c</sub> the combined uncertainty</i> . The uncertainty is absolute and in the same units as the result.
<b>(#s), Coverage Factor</b>	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
<b>CRDL (RL)</b>	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
<b>Lc</b>	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. $Lc = (1.645 * \sqrt{2 * (BkgrndCnt / BkgrndCntMin) / SCntMin}) * (ConvFct / (Eff * Yld * Abn * Vol)) * IngrFct$ . For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
<b>Lot-Sample No</b>	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
<b>MDC MDA</b>	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. $MDC = (4.65 * \sqrt{((BkgrndCnt / BkgrndCntMin) / SCntMin) + 2.71 / SCntMin}) * (ConvFct / (Eff * Yld * Abn * Vol)) * IngrFct$ . For LSC methods the batch blank is used as a measure of the background variability.
<b>Primary Detector</b>	The instrument identifier associated with the analysis of the sample aliquot.
<b>Ratio U-234/U-238</b>	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
<b>Rst/MDC</b>	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
<b>Rst/TotUcert</b>	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
<b>Report DB No</b>	Sample Identifier used by the report system. The number is based upon the first five digits of the <b>Work Order</b> Number.
<b>RER</b>	The equation Replicate Error Ratio = $(S-D) / [\sqrt{TPUs^2 + TPUD^2}]$ as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPU <sub>s</sub> is the total uncertainty of the original sample and TPU <sub>d</sub> is the total uncertainty of the duplicate sample.
<b>SDG</b>	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
<b>Sum Rpt Alpha Spec Rst(s)</b>	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
<b>Work Order</b>	The LIMS software assign test specific identifier.
<b>Yield</b>	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

# Sample Results Summary

Date: 30-Jul-01

## STL Richland

Ordered by Client Sample ID, Batch No.

Report No. : 13962

SDG No: 17594

Client ID	Work Order Number	Parameter	Result +- Uncertainty	Qual	Units	Yield	MDC MDA	RER
MW-4	EE55T1AC	RA-226	1.55E+00 +- 3.5E-01 (2s)		pCi/L	100.00%	1.49E-01	
MW-4	EE55T1AA	RA-228	2.16E+00 +- 5.8E-01 (2s) J		pCi/L	88.95%	4.93E-01	
MW-5	EE55R1AC	RA-226	2.42E+00 +- 5.2E-01 (2s)		pCi/L	100.00%	1.12E-01	
MW-5	EE55R1AA	RA-228	3.60E+00 +- 8.4E-01 (2s)		pCi/L	88.37%	4.80E-01	
MW-6	EE55P1AC	RA-226	2.06E+00 +- 4.5E-01 (2s)		pCi/L	100.00%	1.60E-01	
MW-6	EE55P1AA	RA-228	2.14E+00 +- 5.7E-01 (2s) J		pCi/L	87.79%	5.04E-01	
MW-7	EE55L1AC	RA-226	1.81E+00 +- 4.0E-01 (2s)		pCi/L	100.00%	1.31E-01	
MW-7	EE55L1AA	RA-228	2.39E+00 +- 6.1E-01 (2s) J		pCi/L	89.83%	4.68E-01	
QC	EE55W1AC	RA-226	2.40E+00 +- 5.2E-01 (2s)		pCi/L	100.00%	1.07E-01	
QC	EE55W1AA	RA-228	3.19E+00 +- 7.6E-01 (2s)		pCi/L	89.24%	3.28E-01	

Number of Results: 10

# QC Results Summary

Date: 30-Jul-01

## STL Richland

Ordered by QC Type, Batch No.

Report No. : 13962

SDG No.: 17594

QC Type	Work Order Number	Parameter	Result +- Uncertainty	Qual	Units	Yield	Recovery	Bias	MDC MDA
BLANK QC	EE6QJ1AA	RA-226	8.48E-03 +- 3.80E-02 (2s)	U	pCi/L	100.00%			7.98E-02
BLANK QC	EE6QN1AA	RA-228	5.40E-01 +- 2.36E-01 (2s)	J	pCi/L	89.53%			3.01E-01
LCS	EE6QJ1AC	RA-226	1.36E+00 +- 3.17E-01 (2s)		pCi/L	100.00%	97.50%	0.0	8.80E-02
LCS	EE6QN1AC	RA-228	5.98E+00 +- 1.30E+00 (2s)		pCi/L	90.70%	116.62%	0.2	3.06E-01
LCS	EE6QN1AD	RA-228	5.42E+00 +- 1.20E+00 (2s)		pCi/L	88.95%	106.23%	0.1	3.18E-01

Number of Results: 5

## FORM I

Date: 30-Jul-01

## SAMPLE RESULTS

Lab Name: STL Richland  
Lot-Sample No.: J1F190182-4  
Client Sample ID: MW-4

SDG: 17594  
Report No.: 13962  
COC No.:

Collection Date: 6/11/01 12:50:00 PM  
Received Date: 6/19/01 10:45:00 AM

Matrix: WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 1170508 Work Order: EE55T1AC Report DB ID: 9EE55T10												
RA-226	1.55E+00		1.8E-01	3.5E-01	1.49E-01	pCi/L	100.00%	(10.4)	7/24/01 02:19 p		0.9804	RICHRC5005
						6.82E-02	1.00E+00	(16.9)			L	ASC4HA
Batch: 1170510 Work Order: EE55T1AA Report DB ID: 9EE55T10												
RA-228	2.16E+00	J	3.9E-01	5.8E-01	4.93E-01	pCi/L	88.95%	(4.4)	7/26/01 07:58 a		0.9804	RICHRC5005
						2.31E-01	3.00E+00	(11.1)			L	GPC1D

Number of Results: 2

Comments:

0000008

STL Richland  
rptSTLrchSample v3.76

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.  
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.



## FORM I

Date: 30-Jul-01

## SAMPLE RESULTS

Lab Name: STL Richland

SDG: 17594

Collection Date: 6/11/01 11:30:00 AM

Lot-Sample No.: J1F190182-3

Report No.: 13962

Received Date: 6/19/01 10:45:00 AM

Client Sample ID: MW-5

COC No.:

Matrix: WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert( 2 s)	MDC MDA, Rpt Unit, Action Lev Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 1170508 Work Order: EE55R1AC Report DB ID: 9EE55R10											
RA-226	2.42E+00		2.1E-01	5.2E-01	1.12E-01 pCi/L	100.00%	(21.6)	7/24/01 02:19 p		1.0006	RICHRC5005
					5.01E-02	1.00E+00	(22.7)			L	ASC3HA
Batch: 1170510 Work Order: EE55R1AA Report DB ID: 9EE55R10											
RA-228	3.60E+00		4.5E-01	8.4E-01	4.80E-01 pCi/L	88.37%	(7.5)	7/26/01 08:02 a		1.0006	RICHRC5005
					2.26E-01	3.00E+00	(15.9)			L	GPC1C

Number of Results: 2

Comments:

0000009

STL Richland

rptSTLRehSample v3.76

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

## FORM I

Date: 30-Jul-01

## SAMPLE RESULTS

Lab Name: STL Richland

SDG: 17594

Collection Date: 6/11/01 10:35:00 AM

Lot-Sample No.: J1F190182-2

Report No.: 13962

Received Date: 6/19/01 10:45:00 AM

Client Sample ID: MW-6

COC No.:

Matrix: WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert( 2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 1170508 Work Order: EE55P1AC Report DB ID: 9EE55P10												
RA-226	2.06E+00		2.2E-01	4.5E-01	1.60E-01	pCi/L	100.00%	(12.9)	7/24/01 02:19 p		1.0008	RICHRCS005
						7.34E-02	1.00E+00	(19.1)			L	ASC2HB
Batch: 1170510 Work Order: EE55P1AA Report DB ID: 9EE55P10												
RA-228	2.14E+00	J	3.9E-01	5.7E-01	5.04E-01	pCi/L	87.79%	(4.3)	7/26/01 08:02 a		1.0008	RICHRCS005
						2.37E-01	3.00E+00	(11.)			L	GPC1B

Number of Results: 2

Comments:

000010

STL Richland

rpSTLRehSample v3.76

MDC|MDA,Lc

- Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.

## FORM I

Date: 30-Jul-01

## SAMPLE RESULTS

Lab Name: STL Richland

SDG: 17594

Collection Date: 6/11/01 9:30:00 AM

Lot-Sample No.: J1F190182-1

Report No.: 13962

Received Date: 6/19/01 10:45:00 AM

Client Sample ID: MW-7

COC No.:

Matrix: WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error ( 2 s )	Total Uncert( 2 s )	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 1170508 Work Order: EE55L1AC Report DB ID: 9EE55L10												
RA-226	1.81E+00		1.9E-01	4.0E-01	1.31E-01	pCi/L	100.00%	(13.7)	7/24/01 02:19 p		0.9865	RICHRC5005
						5.98E-02	1.00E+00	(19.1)			L	ASC1HA
Batch: 1170510 Work Order: EE55L1AA Report DB ID: 9EE55L10												
RA-228	2.39E+00	J	3.9E-01	6.1E-01	4.68E-01	pCi/L	89.83%	(5.1)	7/26/01 08:02 a		0.9865	RICHRC5005
						2.19E-01	3.00E+00	(12.3)			L	GPC1A

Number of Results: 2

Comments:

000011

STL Richland

rptSTLRehSample-3.76

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.  
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.

## FORM I

Date: 30-Jul-01

## SAMPLE RESULTS

Lab Name: STL Richland  
Lot-Sample No.: J1F190182-5  
Client Sample ID: QC

SDG: 17594  
Report No.: 13962  
COC No.:

Collection Date: 6/11/01 9:30:00 AM  
Received Date: 6/19/01 10:45:00 AM  
Matrix: WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert( 2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 1170508	Work Order: EE55W1AC			Report DB ID: 9EE55W10								
RA-226	2.40E+00		2.3E-01	5.2E-01	1.07E-01	pCi/L	100.00%	(22.5)	7/24/01 02:46 p		0.9831	RICHRC5005
						4.65E-02	1.00E+00	(21.1)			L	ASC7UA
Batch: 1170510	Work Order: EE55W1AA			Report DB ID: 9EE55W10								
RA-228	3.19E+00		4.3E-01	7.6E-01	3.28E-01	pCi/L	89.24%	(9.7)	7/26/01 07:58 a		0.9831	RICHRC5005
						1.47E-01	3.00E+00	(15.)			L	GPC2A

Number of Results: 2

Comments:

000012

STL Richland  
rptSTLRechSample v3.76

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

## FORM II

Date: 30-Jul-01

## BLANK RESULTS

Lab Name: STL Richland

SDG: 17594

Lot-Sample No.: J1F190000-508

Report No.: 13962

Matrix: WATER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert( 2 s)	MDC MDA ,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 1170508 Work Order: EE6QJ1AA Report DB ID: EE6QJ1AB												
RA-226	8.48E-03	U	3.8E-02	3.8E-02	7.98E-02	pCi/L	100.00%	0.11	7/24/01 02:46 p		1.0006	RICHR5005
					3.42E-02	1.00E+00		0.45			L	ASC8RC

Number of Results: 1

Comments:

000013

STL Richland

rptSTLRchBlank v3.75

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.  
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

# FORM II

Date: 30-Jul-01

## BLANK RESULTS

Lab Name: STL Richland      SDG: 17594      Matrix: WATER  
 Lot-Sample No.: J1F190000-510      Report No.: 13962

Parameter	Result	Qual	Count Error (2 s)	Total Uncert( 2 s)	MDC MDA ,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 1170510      Work Order: EE6QN1AA      Report DB ID: EE6QN1AB												
RA-228	5.40E-01	J	2.1E-01	2.4E-01	3.01E-01	pCi/L	89.53%	(1.8)	7/26/01 07:58 a	1.0006	L	RICHRC5005
					1.34E-01	3.00E+00		(5.1)				GPC2B

Number of Results: 1

Comments:

000014

STL Richland  
 rptSTLRehBlank v3.75

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.

## FORM II

Date: 30-Jul-01

## LCS RESULTS

Lab Name: STL Richland

SDG: 17594

Lot-Sample No.: J1F190000-508

Report No.: 13962

Matrix: WATER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert (2 s)	MDC MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 1170508 Work Order: EE6QJ1AC Report DB ID: EE6QJ1CS													
RA-226	1.36E+00		1.7E-01	3.2E-01	8.80E-02	pCi/L	100.00%	1.40E+00	7.7E-02	97.50%	7/25/01 01:12 p	1.0001	RICHRC5005
Rec Limits:								70.	130.	0.0		L	ASC9HC

Number of Results: 1

Comments:

000015

STL Richland

rptSTLRehLes v3.75

Bias

- (Result/Expected)-1 as defined by ANSI N13.30.

## FORM II

Date: 30-Jul-01

## LCS RESULTS

Lab Name: STL Richland

SDG: 17594

Lot-Sample No.: J1F190000-510

Report No.: 13962

Matrix: WATER

Parameter	Result	Qual	Count Error ( 2 s )	Total Uncert(2 s)	MDC MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 1170510    Work Order: EE6QN1AC    Report DB ID: EE6QN1CS													
RA-228	5.98E+00		5.6E-01	1.3E+00	3.06E-01	pCi/L	90.70%	5.13E+00	2.6E-01	116.62%	7/26/01 07:58 a	1.0001	RICHRC5005
							Rec Limits:	70.	130.	0.2			
Batch: 1170510    Work Order: EE6QN1AD    Report DB ID: EE6QN1DS													
RA-228	5.42E+00		5.4E-01	1.2E+00	3.18E-01	pCi/L	88.95%	5.11E+00	2.6E-01	106.23%	7/26/01 07:58 a	1.0005	RICHRC5005
							Rec Limits:	70.	130.	0.1			

Number of Results: 2

Comments:

000016

STL Richland Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRichLcs v3.75





U-211110

# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

DATE \_\_\_\_\_ PAGE \_\_\_\_\_ OF \_\_\_\_\_

PROJECT NAME					ANALYSIS REQUESTED				
PROJECT MANAGER					NUMBER OF CONTAINERS				
COMPANY/ADDRESS									
SAMPLERS SIGNATURE									
PHONE									
SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	REMARKS				
MW-7	6/11	0900	EE55L	↓	4091-1				
MW-6	108	1035	EE55P	↓	2				
MW-5	1130	1130	EE55R	↓	3				
MW-4	1250	1250	EE55T	↓	4				
QC-2	0930	0930	EE55W	↓	5				
JIF190182									
SDC-17594									
RECEIVED BY: M. Lyons					INVOICE INFORMATION: P.O.# 2104091				
Signature M. Lyons					Shipping VIA: _____				
Printed Name M. Lyons					Shipping #: _____				
Firm SDC					Condition: _____				
Date/Time 6-18-01 10:45					Lab No: 102104091				
RECEIVED BY: _____					REPORT REQUIREMENTS: I. Routine Report _____				
Signature _____					II. Report (includes DUP MS, MSD, as required, may be charged as samples) _____				
Printed Name _____					III. Data Validation Report (includes All Raw Data) _____				
Firm _____					IV. CLP Deliverable Report _____				
Date/Time _____					Requested Report Date 6/26				
RECEIVED BY: _____					SPECIAL INSTRUCTIONS/COMMENTS:				
Signature _____					Date package include QA/QC summary & electronic deliverables.				
Printed Name _____					* Radium 226/228.				
Firm _____					Sent to Severa Trent for Labware				
Date/Time _____									

000017



July 6, 2001

Service Request No: K2104103

Tanyan Akkerman  
GeoTrans  
3035 Prospect Park Drive, Suite 40  
Rancho Cordova, CA 95670

**Re: Former Axelson Facility (Site #2067)/P235-104**

Dear Tanyan:

Enclosed are the results of the sample(s) submitted to our laboratory on June 12, 2001. For your reference, these analyses have been assigned our service request number K2104103.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3345.

Respectfully submitted,

**Columbia Analytical Services, Inc.**

Mingta Lin  
Project Chemist

ML/ee

Page 1 of 52

## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### Inorganic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- i The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.

### Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- B The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- E The reported value is estimated because of the presence of matrix interference.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.
- \* The duplicate analysis not within control limits. See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.

### Organic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- i The MRL/MDL has been elevated due to a chromatographic interference.
- X See case narrative.

### Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

00003

## **Case Narrative**

**COLUMBIA ANALYTICAL SERVICES, INC.**

**Client:** Beazer East, Inc.  
**Project:** Former Axelson Facility (Site #2067)  
**Sample Matrix:** Sludge

**Service Request No.:** K2104103  
**Date Received:** June 12, 2001

**CASE NARRATIVE**

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

**Sample Receipt**

One sludge sample, along with 5 water samples (logged in under a different work order) were received for analysis at Columbia Analytical Services on June 12, 2001. The sample identity was labeled as CB-2 on the sample container, but listed as CB-1 on the Chain-of-Custody form (COC). Sample ID: CB-2 was used for the report as instructed by Ms. Tanyan Akkerman at GeoTrans, Inc. The samples were received in good condition, the cooler temperature blank was received at 8.0 °C. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

**Inorganic Parameters**

The spike recovery of Cyanide (analyzed by EPA Method 9010B) in the MS performed on a batch QC sample was below the lower control criteria. The recovery from the DMS also had lower recovery, indicating that the matrix interference may be present on this sample. All other QC results (e.g., LCS recovery) indicated that the analysis was in control, no further corrective action was taken.

The Relative Percent Difference (RPD) for the replicate analysis of Cyanide on a batch QC sample was outside the CAS control criteria. The Cyanide concentration in this QC sample was not significantly higher than the quantitation limit. Replicate RPD criterion was established based on a middle level at the calibration range, and was not applicable for the measurements close to the quantitation limit.

**TCPL Metals**

No QA/QC anomalies were observed during the analysis of this sample delivery group.

**Fuel Hydrocarbon Identification by EPA 8015M**

No QA/QC anomalies were observed during the analysis of this sample delivery group.

Approved by mtl Date 7/6/01

00004

**Volatiles by EPA Method 8260B**

**Surrogate Recovery Exceptions:**

The surrogate control criteria for Toluene-d8, 4-Bromofluorobenzene in sample CB-2 are not applicable. The analysis of this sample required a dilution, which resulted in a surrogate concentration below the MRL. No further corrective action was taken.

**Elevated MRLs:**

Sample CB-2 had to be diluted due to high levels of target analytes. The reporting limits have been elevated accordingly.

**LCS Recovery Exceptions:**

The upper control criterion was exceeded Acetone, 2-Butanone (MEK), and 2-Hexanone in LCS KWG0103316-1. These analytes were not detected in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was feasible.

**Semivolatiles by EPA Method 8270C**

**Surrogate Recovery Exceptions:**

The surrogate control criteria for all surrogates in sample CB-2 are not applicable. The analysis of this sample required a dilution, which resulted in surrogate concentrations being below the MRL. No further corrective action was taken.

**LCS Recovery Exceptions:**

The upper control criterion was exceeded for N-Nitrosodi-n-propylamine LCS KWG0103517-3. This analyte was not detected in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was feasible.

Approved by

*mtl*

Date

7/6/01

00005

**Chain of Custody  
Documentation**





**Columbia Analytical Services Inc.**  
**Cooler Receipt And Preservation Form**

Project/Client

Work Order, K21.

Cooler received on

and opened on

by

1. Were custody seals on outside of cooler?

If yes, how many and where?

YES ☒ NO ☐

2. Were seals intact and signature & date correct?

~~YES NO~~

3. COC #

Temperature of cooler(s) upon receipt:

Temperature Blank:

4. Were custody papers properly filled out (ink, signed, etc.)?

~~YES~~ NO

5. Type of packing material present

6. Did all bottles arrive in good condition (unbroken)?

☒ YES ☐ NO

7. Were all bottle labels complete (i.e. analysis, preservation, etc.)?

☒ YES ☐ NO

8. Did all bottle labels and tags agree with custody papers?

YES ☒ NO ☐

9. Were the correct types of bottles used for the tests indicated?

**YES NO**

10. Were all of the preserved bottles received at the lab with the appropriate pH?

**YES NO**

11. Were VOA vials checked for absence of air bubbles, and if present, noted below?

~~YES NO~~

12. Did the bottles originate from CAS/K or a branch laboratory?

YES ~~NO~~

Explain any discrepancies

Explain any discrepancies All samples for CB-1 labeled as CB-2  
Per Tanya Akkerman (GeoTrans), correct ID should be CB-2. Proceed w/ analysis  
even cooler temperature high - with 6/14/01.

Samples that required preservation or received out of temperature:

[illegible]

00007

**Total Solids**

**COLUMBIA ANALYTICAL SERVICES, INC.**

**Analytical Results**

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facil/P253-104  
**Sample Matrix:** Sludge

**Service Request:** K2104103

**Total Solids**

**Prep Method:** NONE  
**Analysis Method:** 160.3M  
**Test Notes:**

**Units:** PERCENT  
**Basis:** WET

<b>Sample Name</b>	<b>Lab Code</b>	<b>Date Collected</b>	<b>Date Received</b>	<b>Date Analyzed</b>	<b>Result</b>	<b>Result Notes</b>
CB-2	K2104103-001	06/11/2001	06/12/2001	06/15/2001	40.6	

00008

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facil/P253-104  
**Sample Matrix:** Sludge

**Service Request:** K2104103  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001  
**Date Analyzed:** 06/15/2001

**Duplicate Sample Summary**  
**Total Solids**

**Prep Method:** NONE  
**Analysis Method:** 160.3M  
**Test Notes:**

**Units:** PERCENT  
**Basis:** WET

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
CB-2	K2104103-001	40.6	40.2	40.4	<1	

00009

# **Inorganics**

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Sludge

**Service Request:** K2104103  
**Date Collected:** 6/11/01  
**Date Received:** 6/12/01  
**Date Extracted:** NA

Characteristics of Hazardous Waste  
RCRA, 40 CFR Part 261

**Sample Name:** CB-2  
**Lab Code:** K2104103-001  
**Test Notes:**

**Basis:** Wet

Analyte	Analysis Method	Units	MRL	MDL	Dilution Factor	Date Analyzed	Result	Regulatory Limits
Corrosivity	SW-846 Sec. 7.2*	pH UNITS	--	--	1	6/14/01	6.79	$\leq 2$ or $\geq 12.5$
Ignitability	SW-846 Sec. 7.1*	DEG F	--	--	1	6/23/01	> 200	<140°F
Cyanide	9010B	mg/Kg (ppm)	0.4	0.08	1	6/20/01	ND	250 mg/Kg
Sulfide, Reactive	SW-846 Sec. 7.2*	mg/Kg (ppm)	20	--	1	6/16/01	47	500 mg/Kg

\* Analytical methods, regulatory limits and action levels used in this report are from Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., September 1986 and as amended by Update I, July 1992.

Approved By: \_\_\_\_\_

Date: 6/26/01

1S22/052595

04103WET.PW1 - charhw 6/26/01

00010

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Soil

Service Request: K2104103  
Date Collected: NA  
Date Received: NA  
Date Extracted: NA

Characteristics of Hazardous Waste  
RCRA, 40 CFR Part 261

Sample Name: Method Blank  
Lab Code: K2104103-MB  
Test Notes:

Basis: Wet

Analyte	Analysis Method	Units	MRL	MDL	Dilution Factor	Date Analyzed	Result	Regulatory Limits
Ignitability	SW-846 Sec. 7.1*	DEG F	--	--	1	6/23/01	> 200	<140°F
Cyanide	9010B	mg/Kg (ppm)	0.4	0.08	1	6/20/01	ND	250 mg/Kg
Sulfide, Reactive	SW-846 Sec. 7.3*	mg/Kg (ppm)	20	--	1	6/16/01	ND	500 mg/Kg

\* Analytical methods, regulatory limits and action levels used in this report are from Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., September 1986 and as amended by Update I, July 1992.

Approved By: \_\_\_\_\_

1S22/052595

04103WET.PW1 - MB 6/26/01

Date: 6/26/01

00011

Page No.:



## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Sludge

**Service Request:** K2104103  
**Date Collected:** 6/11/01  
**Date Received:** 6/12/01  
**Date Extracted:** NA  
**Date Analyzed:** 6/14-23/01

Duplicate Summary  
Inorganic Parameters

**Sample Name:** CB-2  
**Lab Code:** K2104103-001MS  
**Test Notes:**

Basis: Wet

Analyte	Units	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Corrosivity	pH UNITS	SW-846 Sec. 7.2	--	6.79	6.87	6.83	1	
Ignitability	DEG F	SW-846 Sec. 7.1	--	> 200	> 200	> 200	-	
Cyanide	mg/Kg (ppm)	9010B	0.4	0.6	1.0	0.8	50	* L1
Sulfide, Reactive	mg/Kg (ppm)	SW-846 Sec. 7.3	20	90	93	92	3	L2

L1 Duplicate analysis was performed on Batch QC; Lab Code K2103968-052.  
L2 Duplicate analysis was performed on Batch QC; Lab Code K2103968-051.

Approved By: \_\_\_\_\_

Date: 6/26/01

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Sludge

Service Request: K2104103  
Date Collected: 6/11/01  
Date Received: 6/12/01  
Date Extracted: NA  
Date Analyzed: 6/16-20/01

Matrix Spike Summary  
Inorganic Parameters

Sample Name: CB-2  
Lab Code: K2104103-001MS  
Test Notes:

Basis: Wet

Analyte	Units	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery	Result Notes
								Acceptance Limits	
Cyanide	mg/Kg (ppm)	9010B	0.01	3.7	0.6	2.0	54	75-125	* M1
Sulfide, Reactive	mg/Kg (ppm)	SW-846 Sec. 7.3*	20	143	90	117	19	-	M2

M1 Matrix Spike analysis was performed on Lab Code K2103968-052.  
M2 Matrix Spike analysis was performed on Lab Code K2103968-051.

Approved By: \_\_\_\_\_  
04103WET.PWT-MS 6/26/01

Date: 6/26/01

00013

Page No.:

**COLUMBIA ANALYTICAL SERVICES, INC.**

QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**LCS Matrix:** Soil

**Service Request:** K2104103  
**Date Collected:** NA  
**Date Received:** NA  
**Date Extracted:** NA  
**Date Analyzed:** 6/14-23/01

Laboratory Control Sample Summary  
 Inorganic Parameters

**Sample Name:** Lab Control Sample  
**Lab Code:** K2104103-LCS  
**Test Notes:**

Basis: NA

Analyte	Units	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Corrosivity	pH UNITS	SW-846 Sec. 7.2*	7.08	6.96	98	85-115	
Ignitability	DEG F	SW-846 Sec. 7.1*	81	81	100	85-115	
Cyanide	mg/Kg (ppm)	9010B	0.59	0.67	114	85-115	
Sulfide, Reactive	mg/Kg (ppm)	SW-846 Sec. 7.2*	2680	2410	90	-	

Approved By: \_\_\_\_\_

LCS/52595

Date: \_\_\_\_\_

6/24/01

**TCLP Metals**  
**Method 1311 / 6010 / 7470 A**

## TCLP METALS

- Cover Page -  
INORGANIC ANALYSIS DATA PACKAGE

Client: GeoTrans, Inc.

Service Request: K2104103

Project No.: P253-104

Project Name: Former Axelson Facility (Site #2067)

Sample No.Lab Sample ID.

CB-2

K2104103-001

CB-2D

K2104103-001D

CB-2S

K2104103-001S

Method Blank

K2104103-MB

Were ICP interelement corrections applied?

Yes/No YES

Were ICP background corrections applied?

Yes/No YESIf yes-were raw data generated before  
application of background corrections?Yes/No NOComments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## TCLP METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: GeoTrans, Inc.

Service Request: K2104103

Project No.: P253-104

Date Collected: 06/11/01

Project Name: Former Axelson Facility (Site #2067)

Date Received: 06/12/01

Matrix: TCLP

Units: MG/L

Basis: NA

Sample Name: CB-2

Lab Code: K2104103-001

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	6010B	0.1	1	6/20/01	6/21/01	0.1	U	
Barium	6010B	1.0	1	6/20/01	6/21/01	3.3		
Cadmium	6010B	0.01	1	6/20/01	6/21/01	0.01	U	
Chromium	6010B	0.01	1	6/20/01	6/21/01	0.02		
Lead	6010B	0.05	1	6/20/01	6/21/01	0.05	U	
Mercury	7470A	0.001	1	6/21/01	6/22/01	0.001	U	
Selenium	6010B	0.1	1	6/20/01	6/21/01	0.1	U	
Silver	6010B	0.02	1	6/20/01	6/21/01	0.02	U	

% Solids: 0.0

Comments:

00016

## TCLP METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: GeoTrans, Inc.

Service Request: K2104103

Project No.: P253-104

Date Collected:

Project Name: Former Axelson Facility (Site #2067)

Date Received:

Matrix: TCLP

Units: MG/L

Basis: NA

Sample Name: Method Blank

Lab Code: K2104103-MB

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	6010B	0.1	1	6/20/01	6/21/01	0.1	U	
Barium	6010B	1.0	1	6/20/01	6/21/01	1.0	U	
Cadmium	6010B	0.01	1	6/20/01	6/21/01	0.01	U	
Chromium	6010B	0.01	1	6/20/01	6/21/01	0.01	U	
Lead	6010B	0.05	1	6/20/01	6/21/01	0.05	U	
Mercury	7470A	0.001	1	6/21/01	6/22/01	0.001	U	
Selenium	6010B	0.1	1	6/20/01	6/21/01	0.1	U	
Silver	6010B	0.02	1	6/20/01	6/21/01	0.02	U	

% Solids: 0.0

Comments:

00017

TCLP METALS  
- 5a -  
SPIKE SAMPLE RECOVERY

Client: GeoTrans, Inc.

Service Request: K2104103

Project No.: P253-104

Units: MG/L

Project Name: Former Axelson Facility (Site #2067)

Basis: NA

Matrix: TCLP

% Solids: 0.0

Sample Name: CB-2S

Lab Code: K2104103-001S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Arsenic	75 - 125	4.8		0.1	U	5.0	96		6010B
Barium	75 - 125	11.8		3.3		10.0	86		6010B
Cadmium	75 - 125	0.87		0.01	U	1.00	87		6010B
Chromium	75 - 125	4.39		0.02		5.00	87		6010B
Lead	75 - 125	4.27		0.05	U	5.00	85		6010B
Mercury	75 - 125	0.004		0.001	U	0.005	88		7470A
Selenium	75 - 125	0.9		0.1	U	1.0	93		6010B
Silver	75 - 125	0.91		0.02	U	1.00	91		6010B

Comments: \_\_\_\_\_



## TCLP METALS

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## DUPLICATES

Client: GeoTrans, Inc.

Service Request: K2104103

Project No.: P253-104

Units: MG/L

Project Name: Former Axelson Facility (Site #2067)

Basis: NA

Matrix: TCLP

% Solids: 0.0

Sample Name: CB-2D

Lab Code: K2104103-001D

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Arsenic		0.1	U	0.1	U			6010B
Barium	1.0	3.3		3.1		4		6010B
Cadmium		0.01	U	0.01	U			6010B
Chromium	0.0	0.02		0.02		5		6010B
Lead		0.05	U	0.05	U			6010B
Mercury		0.001	U	0.001	U			7470A
Selenium		0.1	U	0.1	U			6010B
Silver		0.02	U	0.02	U			6010B

## TCLP METALS

- 7 -

## LABORATORY CONTROL SAMPLE

Client: GeoTrans, Inc.

Service Request: K2104103

Project No.: P253-104

Project Name: Former Axelson Facility (Site #2067)

Aqueous LCS Source: Inorganic Ventures

Solid LCS Source:

Analyte	Aqueous mg/L			Solid (mg/kg)					
	True	Found	%R	True	Found	C	Limits	%R	
Arsenic	5.00	5.27	105						
Barium	10.0	10.4	104						
Cadmium	1.00	0.990	99						
Chromium	5.00	4.91	98						
Lead	5.00	4.80	96						
Mercury	0.00500	0.00464	93						
Selenium	1.00	1.04	104						
Silver	1.00	0.942	94						

**Fuel Identification and Quanification**  
**Method 8015 M**

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Sludge

Service Request: K2104103  
Date Collected: 06/11/2001  
Date Received: 06/12/2001

## Fuel Identification and Quantitation - Silica Gel Treated

Sample Name: CB-2  
Lab Code: K2104103-001  
Extraction Method: EPA 3550B  
Analysis Method: 8015M

Units: mg/Kg  
Basis: Dry  
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	41000	H	240	1	06/19/01	06/23/01	KWG0103584	
Diesel Range Organics (DRO)	350000	DF	2400	10	06/19/01	06/25/01	KWG0103584	
Residual Range Organics (RRO)	51000	O	590	1	06/19/01	06/23/01	KWG0103584	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	396	20-150	06/23/01	Outside Control Limits
o-Terphenyl	0	50-150	06/23/01	Outside Control Limits
n-Triacontane	0	50-150	06/23/01	Outside Control Limits

Comments:

00021

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Sediment

**Service Request:** K2104103  
**Date Collected:** NA  
**Date Received:** NA

## Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

**Sample Name:** Method Blank  
**Lab Code:** KWG0103448-5  
**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	10	1	06/19/01	06/20/01	KWG0103448	
Diesel Range Organics (DRO)	ND	U	10	1	06/19/01	06/20/01	KWG0103448	
Residual Range Organics (RRO)	ND	U	25	1	06/19/01	06/20/01	KWG0103448	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	78	20-150	06/20/01	Acceptable
o-Terphenyl	119	50-150	06/20/01	Acceptable
n-Triacontane	123	50-150	06/20/01	Acceptable

Comments: \_\_\_\_\_

00022

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Sludge

Service Request: K2104103  
Date Collected: NA  
Date Received: NA

## Fuel Identification and Quantitation - Silica Gel Treated

Sample Name: Method Blank  
Lab Code: KWG0103584-2  
Extraction Method: EPA 3550B  
Analysis Method: 8015M

Units: mg/Kg  
Basis: Dry  
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND	U	10	1	06/19/01	06/23/01	KWG0103584	
Diesel Range Organics (DRO)	ND	U	10	1	06/19/01	06/23/01	KWG0103584	
Residual Range Organics (RRO)	ND	U	25	1	06/19/01	06/23/01	KWG0103584	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	54	20-150	06/23/01	Acceptable
o-Terphenyl	89	50-150	06/23/01	Acceptable
n-Triacontane	93	50-150	06/23/01	Acceptable

Comments:

00023

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Sludge

Service Request: K2104103

Surrogate Recovery Summary  
Fuel Identification and Quantitation - Silica Gel Treated

Extraction Method: EPA 3550B  
Analysis Method: 8015M

Units: PERCENT  
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
CB-2	K2104103-001	396 *	0 *	0 *
Method Blank	KWG0103448-5	78	119	123
Method Blank	KWG0103584-2	54	89	93
Batch QC	K2103968-013	81	122	124
Batch QCMS	KWG0103448-1	91	127	135
Batch QCDMS	KWG0103448-2	75	115	122
Lab Control Sample	KWG0103448-4	91	117	120
Lab Control Sample	KWG0103584-1	67	95	96

## Surrogate Recovery Control Limits (%)

Sur1 = 4-Bromofluorobenzene	20-150
Sur2 = o-Terphenyl	50-150
Sur3 = n-Triacontane	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

00024

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Soil

Service Request: K2104103  
Date Extracted: 06/19/2001  
Date Analyzed: 06/20/2001

Matrix Spike/Duplicate Matrix Spike Summary  
Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan

Sample Name: Batch QC  
Lab Code: K2103968-013  
Extraction Method: EPA 3550B  
Analysis Method: 8015M

Units: mg/Kg  
Basis: Dry  
Level: Low  
Extraction Lot: KWG0103448

Analyte Name	Sample Result	Batch QCMS KWG0103448-1 Matrix Spike			Batch QCDMS KWG0103448-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Diesel Range Organics (DRO)	630	882	165	155 *	741	165	69	19-145	17	40
Residual Range Organics (RRO)	58	252	165	118	222	165	100	50-150	13	40

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00025



## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Sediment

**Service Request:** K2104103  
**Date Extracted:** 06/19/2001  
**Date Analyzed:** 06/20/2001

**Lab Control Spike Summary**  
**Fuel Identification and Quantitation (FIQ) Hydrocarbon Scan**

**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low  
**Extraction Lot:** KWG0103448

Lab Control Sample  
KWG0103448-4  
**Lab Control Spike**

Analyte Name	Lab Control Spike			%Rec Limits
	Result	Expected	%Rec	
Diesel Range Organics (DRO)	165	160	103	19-145
Residual Range Organics (RRO)	140	160	87	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00026

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Sludge

**Service Request:** K2104103  
**Date Extracted:** 06/19/2001  
**Date Analyzed:** 06/23/2001

**Lab Control Spike Summary**  
**Fuel Identification and Quantitation - Silica Gel Treated**

**Extraction Method:** EPA 3550B  
**Analysis Method:** 8015M

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Low  
**Extraction Lot:** KWG0103584

Lab Control Sample KWG0103584-1				
Lab Control Spike				
Analyte Name	Result	Expected	%Rec	%Rec Limits
Diesel Range Organics (DRO)	126	160	79	19-145
Residual Range Organics (RRO)	132	160	83	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00027

**Volatile Organic Compounds**  
**Method 8260 B**

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Sludge

Service Request: K2104103  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Volatile Organic Compounds

Sample Name: CB-2  
 Lab Code: K2104103-001  
 Extraction Method: EPA 5035/5030B  
 Analysis Method: 8260B

Units: mg/Kg  
 Basis: Dry  
 Level: Med

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Chloromethane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Vinyl Chloride	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Bromomethane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Chloroethane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Trichlorofluoromethane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Acetone	ND	U	48	1	06/22/01	06/22/01	KWG0103555	
1,1-Dichloroethene	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Carbon Disulfide	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Methylene Chloride	ND	U	2.4	1	06/22/01	06/22/01	KWG0103555	
trans-1,2-Dichloroethene	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
1,2-Dichloroethane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
2-Butanone (MEK)	ND	U	48	1	06/22/01	06/22/01	KWG0103555	
2,2-Dichloropropane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
cis-1,2-Dichloroethene	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Chloroform	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Bromochloromethane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
1,1,1-Trichloroethane (TCA)	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
1,1-Dichloropropene	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Carbon Tetrachloride	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
1,2-Dichloroethane (EDC)	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Benzene	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Trichloroethene (TCE)	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
1,2-Dichloropropane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Bromodichloromethane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Dibromomethane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
2-Hexanone	ND	U	48	1	06/22/01	06/22/01	KWG0103555	
cis-1,3-Dichloropropene	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Toluene	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
trans-1,3-Dichloropropene	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
1,1,2-Trichloroethane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
4-Methyl-2-pentanone (MIBK)	ND	U	48	1	06/22/01	06/22/01	KWG0103555	
1,3-Dichloropropane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Tetrachloroethene (PCE)	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Bromochloromethane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	

Comments:

00028

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Sludge

Service Request: K2104103  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Volatile Organic Compounds

Sample Name: CB-2  
 Lab Code: K2104103-001  
 Extraction Method: EPA 5035/5030B  
 Analysis Method: 8260B

Units: mg/Kg  
 Basis: Dry  
 Level: Med

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	4.8	1	06/22/01	06/22/01	KWG0103555	
Chlorobenzene	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
1,1,1,2-Tetrachloroethane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Ethylbenzene	6.6		1.2	1	06/22/01	06/22/01	KWG0103555	
m,p-Xylenes	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
o-Xylene	5.5		1.2	1	06/22/01	06/22/01	KWG0103555	
Styrene	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Bromoform	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Isopropylbenzene	ND	U	4.8	1	06/22/01	06/22/01	KWG0103555	
1,1,2,2-Tetrachloroethane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
1,2,3-Trichloropropane	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
Bromobenzene	ND	U	4.8	1	06/22/01	06/22/01	KWG0103555	
n-Propylbenzene	7.9		4.8	1	06/22/01	06/22/01	KWG0103555	
2-Chlorotoluene	25		4.8	1	06/22/01	06/22/01	KWG0103555	
4-Chlorotoluene	ND	U	4.8	1	06/22/01	06/22/01	KWG0103555	
1,3,5-Trimethylbenzene	ND	U	4.8	1	06/22/01	06/22/01	KWG0103555	
tert-Butylbenzene	ND	U	4.8	1	06/22/01	06/22/01	KWG0103555	
1,2,4-Trimethylbenzene	9.8		4.8	1	06/22/01	06/22/01	KWG0103555	
sec-Butylbenzene	7.5		4.8	1	06/22/01	06/22/01	KWG0103555	
1,3-Dichlorobenzene	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
4-Isopropyltoluene	ND	U	4.8	1	06/22/01	06/22/01	KWG0103555	
1,4-Dichlorobenzene	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
n-Butylbenzene	15		4.8	1	06/22/01	06/22/01	KWG0103555	
1,2-Dichlorobenzene	ND	U	1.2	1	06/22/01	06/22/01	KWG0103555	
1,2-Dibromo-3-chloropropane	ND	U	4.8	1	06/22/01	06/22/01	KWG0103555	
1,2,4-Trichlorobenzene	ND	U	4.8	1	06/22/01	06/22/01	KWG0103555	
1,2,3-Trichlorobenzene	ND	U	4.8	1	06/22/01	06/22/01	KWG0103555	
Naphthalene	44		4.8	1	06/22/01	06/22/01	KWG0103555	
Hexachlorobutadiene	ND	U	4.8	1	06/22/01	06/22/01	KWG0103555	

Comments:

00029

**COLUMBIA ANALYTICAL SERVICES, INC.****Analytical Results**

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Sludge

**Service Request:** K2104103  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

**Volatile Organic Compounds**

**Sample Name:** CB-2  
**Lab Code:** K2104103-001

**Units:** mg/Kg  
**Basis:** Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	60	45-141	06/22/01	Acceptable
Toluene-d8	39	50-139	06/22/01	Outside Control Limits
4-Bromofluorobenzene	35	50-143	06/22/01	Outside Control Limits

**Comments:** \_\_\_\_\_

00030

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Soil

Service Request: K2104103  
 Date Collected: NA  
 Date Received: NA

## Volatile Organic Compounds

Sample Name: Method Blank  
 Lab Code: KWG0103316-2  
 Extraction Method: EPA 5035/5030B  
 Analysis Method: 8260B

Units: mg/Kg  
 Basis: Dry  
 Level: Med

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Chloromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Vinyl Chloride	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Bromomethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Chloroethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Trichlorofluoromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Acetone	ND	U	2.0	1	06/12/01	06/20/01	KWG0103316	
1,1-Dichloroethene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Carbon Disulfide	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Methylene Chloride	0.11		0.10	1	06/12/01	06/20/01	KWG0103316	
trans-1,2-Dichloroethene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,1-Dichloroethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
2-Butanone (MEK)	ND	U	2.0	1	06/12/01	06/20/01	KWG0103316	
2,2-Dichloropropane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
cis-1,2-Dichloroethene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Chloroform	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Bromochloromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,1,1-Trichloroethane (TCA)	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,1-Dichloropropene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Carbon Tetrachloride	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,2-Dichloroethane (EDC)	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Benzene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Trichloroethene (TCE)	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,2-Dichloropropane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Bromodichloromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Dibromomethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
2-Hexanone	ND	U	2.0	1	06/12/01	06/20/01	KWG0103316	
cis-1,3-Dichloropropene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Toluene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
trans-1,3-Dichloropropene	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,1,2-Trichloroethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
4-Methyl-2-pentanone (MIBK)	ND	U	2.0	1	06/12/01	06/20/01	KWG0103316	
1,3-Dichloropropane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Tetrachloroethene (PCE)	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	
Dibromochloromethane	ND	U	0.050	1	06/12/01	06/20/01	KWG0103316	

Comments:

00031

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Soil

Service Request: K2104103  
 Date Collected: NA  
 Date Received: NA

## Volatile Organic Compounds

Sample Name: Method Blank  
 Lab Code: KWG0103316-2  
 Extraction Method: EPA 5035/5030B  
 Analysis Method: 8260B

Units: mg/Kg  
 Basis: Dry  
 Level: Med

Analyte Name	Result Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	
Chlorobenzene	ND U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,1,1,2-Tetrachloroethane	ND U	0.050	1	06/12/01	06/20/01	KWG0103316	
Ethylbenzene	ND U	0.050	1	06/12/01	06/20/01	KWG0103316	
m,p-Xylenes	ND U	0.050	1	06/12/01	06/20/01	KWG0103316	
o-Xylene	ND U	0.050	1	06/12/01	06/20/01	KWG0103316	
Styrene	ND U	0.050	1	06/12/01	06/20/01	KWG0103316	
Bromoform	ND U	0.050	1	06/12/01	06/20/01	KWG0103316	
Isopropylbenzene	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,1,2,2-Tetrachloroethane	ND U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,1,3,3-Trichloropropane	ND U	0.050	1	06/12/01	06/20/01	KWG0103316	
m-Toluenes	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	
n-Propylbenzene	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	
2-Chlorotoluene	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	
4-Chlorotoluene	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,3,5-Trimethylbenzene	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	
tert-Butylbenzene	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,2,4-Trimethylbenzene	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	
sec-Butylbenzene	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,3-Dichlorobenzene	ND U	0.050	1	06/12/01	06/20/01	KWG0103316	
4-Isopropyltoluene	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,4-Dichlorobenzene	ND U	0.050	1	06/12/01	06/20/01	KWG0103316	
n-Butylbenzene	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,2-Dichlorobenzene	ND U	0.050	1	06/12/01	06/20/01	KWG0103316	
1,2-Dibromo-3-chloropropane	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,2,4-Trichlorobenzene	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	
1,2,3-Trichlorobenzene	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	
Naphthalene	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	
Hexachlorobutadiene	ND U	0.20	1	06/12/01	06/20/01	KWG0103316	

Comments:

00032



## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Soil

**Service Request:** K2104103  
**Date Collected:** NA  
**Date Received:** NA

## Volatile Organic Compounds

**Sample Name:** Method Blank  
**Lab Code:** KWG0103316-2

**Units:** mg/Kg  
**Basis:** Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	95	45-141	06/20/01	Acceptable
Toluene-d8	113	50-139	06/20/01	Acceptable
4-Bromofluorobenzene	100	50-143	06/20/01	Acceptable

Comments: \_\_\_\_\_

00033

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Soil

Service Request: K2104103  
 Date Collected: NA  
 Date Received: NA

## Volatile Organic Compounds

Sample Name: Method Blank  
 Lab Code: KWG0103555-2  
 Extraction Method: EPA 5035/5030B  
 Analysis Method: 8260B

Units: mg/Kg  
 Basis: Dry  
 Level: Med

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Chloromethane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Vinyl Chloride	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Bromomethane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Chloroethane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Trichlorofluoromethane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Acetone	ND	U	2.0	1	06/22/01	06/22/01	KWG0103555	
1,1-Dichloroethene	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Carbon Disulfide	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Methylene Chloride	ND	U	0.10	1	06/22/01	06/22/01	KWG0103555	
trans-1,2-Dichloroethene	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Dichloroethane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
2-Butanone (MEK)	ND	U	2.0	1	06/22/01	06/22/01	KWG0103555	
2,2-Dichloropropane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
cis-1,2-Dichloroethene	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Chloroform	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Bromochloromethane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
1,1,1-Trichloroethane (TCA)	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
1,1-Dichloropropene	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Carbon Tetrachloride	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
1,2-Dichloroethane (EDC)	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Benzene	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Trichloroethene (TCE)	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
1,2-Dichloropropane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Bromodichloromethane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Dibromomethane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
2-Hexanone	ND	U	2.0	1	06/22/01	06/22/01	KWG0103555	
cis-1,3-Dichloropropene	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Toluene	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
trans-1,3-Dichloropropene	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
1,1,2-Trichloroethane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
4-Methyl-2-pentanone (MIBK)	ND	U	2.0	1	06/22/01	06/22/01	KWG0103555	
1,3-Dichloropropane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Tetrachloroethene (PCE)	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Bromochloromethane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	

Comments:

00034

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Soil

Service Request: K2104103  
 Date Collected: NA  
 Date Received: NA

## Volatile Organic Compounds

Sample Name: Method Blank  
 Lab Code: KWG0103555-2  
 Extraction Method: EPA 5035/5030B  
 Analysis Method: 8260B

Units: mg/Kg  
 Basis: Dry  
 Level: Med

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	
Chlorobenzene	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
1,1,1,2-Tetrachloroethane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Ethylbenzene	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
m,p-Xylenes	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
o-Xylene	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Styrene	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Bromoform	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Isopropylbenzene	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	
1,1,2,2-Tetrachloroethane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
1,2,3-Trichloropropane	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
Bromobenzene	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	
n-Propylbenzene	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	
2-Chlorotoluene	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	
4-Chlorotoluene	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	
1,3,5-Trimethylbenzene	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	
tert-Butylbenzene	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	
1,2,4-Trimethylbenzene	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	
sec-Butylbenzene	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	
1,3-Dichlorobenzene	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
4-Isopropyltoluene	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	
1,4-Dichlorobenzene	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
n-Butylbenzene	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	
1,2-Dichlorobenzene	ND	U	0.050	1	06/22/01	06/22/01	KWG0103555	
1,2-Dibromo-3-chloropropane	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	
1,2,4-Trichlorobenzene	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	
1,2,3-Trichlorobenzene	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	
Naphthalene	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	
Hexachlorobutadiene	ND	U	0.20	1	06/22/01	06/22/01	KWG0103555	

Comments:

00035

**COLUMBIA ANALYTICAL SERVICES, INC.****Analytical Results**

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Soil

**Service Request:** K2104103  
**Date Collected:** NA  
**Date Received:** NA

**Volatile Organic Compounds**

**Sample Name:** Method Blank  
**Lab Code:** KWG0103555-2

**Units:** mg/Kg  
**Basis:** Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	89	45-141	06/22/01	Acceptable
Toluene-d8	100	50-139	06/22/01	Acceptable
4-Bromofluorobenzene	93	50-143	06/22/01	Acceptable

**Comments:** \_\_\_\_\_

**00036**

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Sludge

**Service Request:** K2104103

**Surrogate Recovery Summary**  
**Volatile Organic Compounds**

**Extraction Method:** EPA 5035/5030B  
**Analysis Method:** 8260B

**Units:** PERCENT  
**Level:** Med

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>		<u>Sur2</u>		<u>Sur3</u>	
CB-2	K2104103-001	60	#	39	#	35	#
Method Blank	KWG0103316-2	95		113		100	
Method Blank	KWG0103555-2	89		100		93	
Batch QC	K2104055-001	105		110		99	
Batch QCMS	KWG0103316-5	102		104		105	
Batch QCDMS	KWG0103316-6	95		95		97	
Lab Control Sample	KWG0103316-1	105		113		109	
Lab Control Sample	KWG0103555-1	101		106		106	

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**Surrogate Recovery Control Limits (%)**

Sur1 = Dibromofluoromethane	45-141
Sur2 = Toluene-d8	50-139
Sur3 = 4-Bromofluorobenzene	50-143

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

00037

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Soil

Service Request: K2104103  
 Date Extracted: 06/12/2001  
 Date Analyzed: 06/22/2001

Matrix Spike/Duplicate Matrix Spike Summary  
 Volatile Organic Compounds

Sample Name: Batch QC  
 Lab Code: K2104055-001  
 Extraction Method: EPA 5035/5030B  
 Analysis Method: 8260B

Units: mg/Kg  
 Basis: Dry  
 Level: Med  
 Extraction Lot: KWG0103316

Analyte Name	Sample Result	Batch QCMS KWG0103316-5 Matrix Spike			Batch QCDMS KWG0103316-6 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
1,1-Dichloroethene	ND	0.965	1.01	95	0.892	1.01	88	51-127	8	40
Benzene	ND	1.03	1.01	102	0.961	1.01	95	57-121	7	40
Trichloroethene (TCE)	ND	0.975	1.01	96	0.903	1.01	89	45-127	8	40
Toluene	ND	0.971	1.01	96	0.895	1.01	88	34-134	8	40
Chlorobenzene	ND	0.948	1.01	94	0.879	1.01	87	37-126	8	40
1,2-Dichlorobenzene	ND	0.925	1.01	91	0.901	1.01	89	34-131	3	40
Naphthalene	2.5	3.10	1.01	56	3.05	1.01	50	20-139	2	40

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00038

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Soil

Service Request: K2104103  
 Date Extracted: 06/12/2001  
 Date Analyzed: 06/20/2001

Lab Control Spike Summary  
 Volatile Organic Compounds

Extraction Method: EPA 5035/5030B  
 Analysis Method: 8260B

Units: mg/Kg  
 Basis: Dry  
 Level: Med  
 Extraction Lot: KWG0103316

Lab Control Sample  
 KWG0103316-1  
 Lab Control Spike

Analyte Name	Result	Expected	%Rec	%Rec Limits
Dichlorodifluoromethane	0.677	1.00	68	50-150
Chloromethane	0.875	1.00	87	50-150
Vinyl Chloride	0.915	1.00	91	50-150
Bromomethane	0.884	1.00	88	50-150
Chloroethane	0.824	1.00	82	50-150
Trichlorofluoromethane	0.695	1.00	69	50-150
Acetone	7.97	5.00	159 *	50-150
1,1-Dichloroethene	0.876	1.00	88	73-118
Carbon Disulfide	1.63	2.00	82	50-150
Methylene Chloride	1.11	1.00	111	50-150
trans-1,2-Dichloroethene	0.922	1.00	92	50-150
1,1-Dichloroethane	1.08	1.00	108	50-150
2-Butanone (MEK)	8.25	5.00	165 *	50-150
2,2-Dichloropropane	0.935	1.00	93	50-150
cis-1,2-Dichloroethene	1.00	1.00	100	50-150
Chloroform	0.953	1.00	95	50-150
Bromochloromethane	0.963	1.00	96	50-150
1,1,1-Trichloroethane (TCA)	0.812	1.00	81	50-150
1,1-Dichloropropene	0.881	1.00	88	50-150
Carbon Tetrachloride	0.751	1.00	75	50-150
1,2-Dichloroethane (EDC)	1.10	1.00	110	50-150
Benzene	0.952	1.00	95	78-116
Trichloroethene (TCE)	0.866	1.00	87	79-119
1,2-Dichloropropane	0.972	1.00	97	50-150
Bromodichloromethane	0.905	1.00	90	50-150
Dibromomethane	1.06	1.00	106	50-150
2-Hexanone	7.76	5.00	155 *	50-150
cis-1,3-Dichloropropene	1.05	1.00	105	50-150
Toluene	0.977	1.00	98	77-118
trans-1,3-Dichloropropene	0.893	1.00	89	50-150
1,1,2-Trichloroethane	0.999	1.00	100	50-150
4-Methyl-2-pentanone (MIBK)	7.24	5.00	145	50-150
1,3-Dichloropropane	1.01	1.00	100	50-150
Tetrachloroethene (PCE)	0.707	1.00	71	50-150
Dibromochloromethane	0.773	1.00	77	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00039

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Soil

Service Request: K2104103  
 Date Extracted: 06/12/2001  
 Date Analyzed: 06/20/2001

Lab Control Spike Summary  
 Volatile Organic Compounds

Extraction Method: EPA 5035/5030B  
 Analysis Method: 8260B

Units: mg/Kg  
 Basis: Dry  
 Level: Med  
 Extraction Lot: KWG0103316

Lab Control Sample  
 KWG0103316-1  
 Lab Control Spike

Analyte Name	Result	Expected	%Rec	%Rec Limits
1,2-Dibromoethane (EDB)	0.960	1.00	96	50-150
Chlorobenzene	0.872	1.00	87	80-117
1,1,1,2-Tetrachloroethane	0.826	1.00	83	50-150
Ethylbenzene	0.887	1.00	89	50-150
m,p-Xylenes	1.78	2.00	89	50-150
o-Xylene	0.912	1.00	91	50-150
Styrene	0.927	1.00	93	50-150
Bromoform	0.754	1.00	75	50-150
Isopropylbenzene	0.862	1.00	86	50-150
1,1,2,2-Tetrachloroethane	1.23	1.00	123	50-150
1,2,3-Trichloropropane	1.24	1.00	124	50-150
m-Toluenes	0.920	1.00	92	50-150
n-Propylbenzene	0.960	1.00	96	50-150
2-Chlorotoluene	0.931	1.00	93	50-150
4-Chlorotoluene	0.951	1.00	95	50-150
1,3,5-Trimethylbenzene	0.956	1.00	96	50-150
tert-Butylbenzene	0.833	1.00	83	50-150
1,2,4-Trimethylbenzene	0.964	1.00	96	50-150
sec-Butylbenzene	0.905	1.00	90	50-150
1,3-Dichlorobenzene	0.953	1.00	95	50-150
4-Isopropyltoluene	0.830	1.00	83	50-150
1,4-Dichlorobenzene	0.917	1.00	92	50-150
n-Butylbenzene	0.796	1.00	80	50-150
1,2-Dichlorobenzene	0.966	1.00	97	79-120
1,2-Dibromo-3-chloropropane	0.986	1.00	99	50-150
1,2,4-Trichlorobenzene	0.891	1.00	89	50-150
1,2,3-Trichlorobenzene	0.915	1.00	91	50-150
Naphthalene	1.17	1.00	117	57-135
Hexachlorobutadiene	0.661	1.00	66	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00040



## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Soil

Service Request: K2104103  
 Date Extracted: 06/22/2001  
 Date Analyzed: 06/22/2001

Lab Control Spike Summary  
 Volatile Organic Compounds

Extraction Method: EPA 5035/5030B  
 Analysis Method: 8260B

Units: mg/Kg  
 Basis: Dry  
 Level: Med  
 Extraction Lot: KWG0103555

Lab Control Sample  
 KWG0103555-1  
 Lab Control Spike

Analyte Name	Result	Expected	%Rec	%Rec Limits
Dichlorodifluoromethane	0.721	0.990	73	50-150
Chloromethane	0.843	0.990	85	50-150
Vinyl Chloride	0.923	0.990	93	50-150
Bromomethane	0.796	0.990	80	50-150
Chloroethane	0.746	0.990	75	50-150
Trichlorofluoromethane	0.750	0.990	76	50-150
Acetone	5.08	4.95	103	50-150
1,1-Dichloroethene	0.925	0.990	93	73-118
Carbon Disulfide	1.78	1.98	90	50-150
Methylene Chloride	0.994	0.990	100	50-150
trans-1,2-Dichloroethene	0.990	0.990	100	50-150
1,1-Dichloroethane	1.01	0.990	102	50-150
2-Butanone (MEK)	5.15	4.95	104	50-150
2,2-Dichloropropane	0.975	0.990	98	50-150
cis-1,2-Dichloroethene	0.990	0.990	100	50-150
Chloroform	0.913	0.990	92	50-150
Bromochloromethane	0.907	0.990	92	50-150
1,1,1-Trichloroethane (TCA)	0.870	0.990	88	50-150
1,1-Dichloropropene	0.951	0.990	96	50-150
Carbon Tetrachloride	0.844	0.990	85	50-150
1,2-Dichloroethane (EDC)	0.905	0.990	91	50-150
Benzene	0.981	0.990	99	78-116
Trichloroethene (TCE)	0.953	0.990	96	79-119
1,2-Dichloropropane	0.969	0.990	98	50-150
Bromodichloromethane	0.869	0.990	88	50-150
Dibromomethane	0.910	0.990	92	50-150
2-Hexanone	4.99	4.95	101	50-150
cis-1,3-Dichloropropene	1.05	0.990	106	50-150
Toluene	0.943	0.990	95	77-118
trans-1,3-Dichloropropene	0.943	0.990	95	50-150
1,1,2-Trichloroethane	0.947	0.990	96	50-150
4-Methyl-2-pentanone (MIBK)	5.19	4.95	105	50-150
1,3-Dichloropropane	0.908	0.990	92	50-150
Tetrachloroethene (PCE)	0.885	0.990	89	50-150
Dibromochloromethane	0.808	0.990	82	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00041

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Soil

**Service Request:** K2104103  
**Date Extracted:** 06/22/2001  
**Date Analyzed:** 06/22/2001

**Lab Control Spike Summary**  
**Volatile Organic Compounds**

**Extraction Method:** EPA 5035/5030B  
**Analysis Method:** 8260B

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Med  
**Extraction Lot:** KWG0103555

Analyte Name	Lab Control Sample KWG0103555-1 Lab Control Spike			%Rec Limits
	Result	Expected	%Rec	
1,2-Dibromoethane (EDB)	0.906	0.990	91	50-150
Chlorobenzene	0.897	0.990	91	80-117
1,1,1,2-Tetrachloroethane	0.912	0.990	92	50-150
Ethylbenzene	0.932	0.990	94	50-150
m,p-Xylenes	1.81	1.98	91	50-150
o-Xylene	0.904	0.990	91	50-150
Styrene	0.906	0.990	91	50-150
Bromoform	0.743	0.990	75	50-150
Isopropylbenzene	0.875	0.990	88	50-150
1,1,2,2-Tetrachloroethane	0.960	0.990	97	50-150
1,1,2-Trichloropropane	0.923	0.990	93	50-150
Bromobenzene	0.922	0.990	93	50-150
n-Propylbenzene	0.964	0.990	97	50-150
2-Chlorotoluene	0.901	0.990	91	50-150
4-Chlorotoluene	0.920	0.990	93	50-150
1,3,5-Trimethylbenzene	0.950	0.990	96	50-150
tert-Butylbenzene	0.924	0.990	93	50-150
1,2,4-Trimethylbenzene	0.978	0.990	99	50-150
sec-Butylbenzene	0.932	0.990	94	50-150
1,3-Dichlorobenzene	0.945	0.990	95	50-150
4-Isopropyltoluene	0.913	0.990	92	50-150
1,4-Dichlorobenzene	0.901	0.990	91	50-150
n-Butylbenzene	0.986	0.990	100	50-150
1,2-Dichlorobenzene	0.887	0.990	90	79-120
1,2-Dibromo-3-chloropropane	0.753	0.990	76	50-150
1,2,4-Trichlorobenzene	0.853	0.990	86	50-150
1,2,3-Trichlorobenzene	0.814	0.990	82	50-150
Naphthalene	0.916	0.990	92	57-135
Hexachlorobutadiene	0.870	0.990	88	50-150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00042

**Polynuclear Aromatic Hydrocarbons**  
**Method 8270C SIM**

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Sludge

Service Request: K2104103  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: CB-2  
 Lab Code: K2104103-001  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Dry  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
N-Nitrosodimethylamine	ND	U	490	5	06/21/01	06/29/01	KWG0103517	
Aniline	ND	U	250	5	06/21/01	06/29/01	KWG0103517	
Bis(2-chloroethyl) Ether	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Phenol	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
2-Chlorophenol	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
1,3-Dichlorobenzene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
1,4-Dichlorobenzene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
1,2-Dichlorobenzene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Benzyl Alcohol	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Bis(2-chloroisopropyl) Ether	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
2-Methylphenol	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
1,2-Dichloroethane	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
N-Nitrosodi-n-propylamine	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
4-Methylphenol†	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Nitrobenzene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Isophorone	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
2-Nitrophenol	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
2,4-Dimethylphenol	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Bis(2-chloroethoxy)methane	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
2,4-Dichlorophenol	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Benzoic Acid	ND	U	490	5	06/21/01	06/29/01	KWG0103517	
1,2,4-Trichlorobenzene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Naphthalene	270	D	82	5	06/21/01	06/29/01	KWG0103517	
4-Chloroaniline	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Hexachlorobutadiene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
4-Chloro-3-methylphenol	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
2-Methylnaphthalene	1000	D	82	5	06/21/01	06/29/01	KWG0103517	
Hexachlorocyclopentadiene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
2,4,6-Trichlorophenol	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
2,4,5-Trichlorophenol	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
2-Chloronaphthalene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
2-Nitroaniline	ND	U	490	5	06/21/01	06/29/01	KWG0103517	
Acenaphthylene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Dimethyl Phthalate	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
1,2-Dinitrotoluene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	

Comments:

00043

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Sludge

Service Request: K2104103  
 Date Collected: 06/11/2001  
 Date Received: 06/12/2001

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: CB-2  
 Lab Code: K2104103-001  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Dry  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	97	D	82	5	06/21/01	06/29/01	KWG0103517	
3-Nitroaniline	ND	U	490	5	06/21/01	06/29/01	KWG0103517	
2,4-Dinitrophenol	ND	U	490	5	06/21/01	06/29/01	KWG0103517	
Dibenzofuran	220	D	82	5	06/21/01	06/29/01	KWG0103517	
4-Nitrophenol	ND	U	490	5	06/21/01	06/29/01	KWG0103517	
2,4-Dinitrotoluene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Fluorene	230	D	82	5	06/21/01	06/29/01	KWG0103517	
4-Chlorophenyl Phenyl Ether	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Diethyl Phthalate	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
4-Nitroaniline	ND	U	490	5	06/21/01	06/29/01	KWG0103517	
2-Methyl-4,6-dinitrophenol	ND	U	490	5	06/21/01	06/29/01	KWG0103517	
N-Nitrosodiphenylamine	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
4-Bromophenyl Phenyl Ether	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Hexachlorobenzene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Pentachlorophenol	ND	U	490	5	06/21/01	06/29/01	KWG0103517	
Phenanthrene	370	D	82	5	06/21/01	06/29/01	KWG0103517	
Anthracene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Di-n-butyl Phthalate	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Fluoranthene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Pyrene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Butyl Benzyl Phthalate	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
3,3'-Dichlorobenzidine	ND	U	490	5	06/21/01	06/29/01	KWG0103517	
Benz(a)anthracene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Chrysene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Bis(2-ethylhexyl) Phthalate	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Di-n-octyl Phthalate	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Benzo(b)fluoranthene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Benzo(k)fluoranthene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Benzo(a)pyrene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Indeno(1,2,3-cd)pyrene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Dibenz(a,h)anthracene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	
Benzo(g,h,i)perylene	ND	U	82	5	06/21/01	06/29/01	KWG0103517	

Comments:

00044

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Sludge

**Service Request:** K2104103  
**Date Collected:** 06/11/2001  
**Date Received:** 06/12/2001

## Semi-Volatile Organic Compounds by GC/MS

**Sample Name:** CB-2  
**Lab Code:** K2104103-001

**Units:** mg/Kg  
**Basis:** Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	87	26-97	06/29/01	Acceptable
Phenol-d6	96	37-109	06/29/01	Acceptable
Nitrobenzene-d5	111	35-116	06/29/01	Acceptable
2-Fluorobiphenyl	172	45-109	06/29/01	Outside Control Limits
2,4,6-Tribromophenol	87	19-131	06/29/01	Acceptable
Terphenyl-d14	141	48-140	06/29/01	Outside Control Limits

## † Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

**Comments:**

00045

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Soil

Service Request: K2104103  
 Date Collected: NA  
 Date Received: NA

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: Method Blank  
 Lab Code: KWG0103517-4  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Dry  
 Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
N-Nitrosodimethylamine	ND	U	2.0	1	06/21/01	06/22/01	KWG0103517	
Aniline	ND	U	1.0	1	06/21/01	06/22/01	KWG0103517	
Bis(2-chloroethyl) Ether	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Phenol	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
2-Chlorophenol	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
1,3-Dichlorobenzene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
1,4-Dichlorobenzene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
1,2-Dichlorobenzene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Benzyl Alcohol	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Bis(2-chloroisopropyl) Ether	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
2-Methylphenol	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Hexachloroethane	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
N-Nitrosodi-n-propylamine	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
4-Methylphenol†	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Nitrobenzene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Isophorone	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
2-Nitrophenol	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
2,4-Dimethylphenol	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Bis(2-chloroethoxy)methane	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
2,4-Dichlorophenol	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Benzoic Acid	ND	U	2.0	1	06/21/01	06/22/01	KWG0103517	
1,2,4-Trichlorobenzene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Naphthalene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
4-Chloroaniline	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Hexachlorobutadiene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
4-Chloro-3-methylphenol	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
2-Methylnaphthalene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Hexachlorocyclopentadiene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
2,4,6-Trichlorophenol	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
2,4,5-Trichlorophenol	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
2-Chloronaphthalene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
2-Nitroaniline	ND	U	2.0	1	06/21/01	06/22/01	KWG0103517	
Acenaphthylene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Dimethyl Phthalate	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
2,6-Dinitrotoluene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	

Comments:

00046

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Soil

Service Request: K2104103

Date Collected: NA

Date Received: NA

## Semi-Volatile Organic Compounds by GC/MS

Sample Name: Method Blank  
 Lab Code: KWG0103517-4  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg

Basis: Dry

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
3-Nitroaniline	ND	U	2.0	1	06/21/01	06/22/01	KWG0103517	
2,4-Dinitrophenol	ND	U	2.0	1	06/21/01	06/22/01	KWG0103517	
Dibenzofuran	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
4-Nitrophenol	ND	U	2.0	1	06/21/01	06/22/01	KWG0103517	
2,4-Dinitrotoluene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Fluorene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
4-Chlorophenyl Phenyl Ether	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Diethyl Phthalate	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
4-Nitroaniline	ND	U	2.0	1	06/21/01	06/22/01	KWG0103517	
2-Methyl-4,6-dinitrophenol	ND	U	2.0	1	06/21/01	06/22/01	KWG0103517	
Nitrosodiphenylamine	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
4-Bromophenyl Phenyl Ether	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Hexachlorobenzene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Pentachlorophenol	ND	U	2.0	1	06/21/01	06/22/01	KWG0103517	
Phenanthrene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Anthracene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Di-n-butyl Phthalate	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Fluoranthene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Pyrene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Butyl Benzyl Phthalate	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
3,3'-Dichlorobenzidine	ND	U	2.0	1	06/21/01	06/22/01	KWG0103517	
Benz(a)anthracene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Chrysene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Bis(2-ethylhexyl) Phthalate	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Di-n-octyl Phthalate	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Benzo(b)fluoranthene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Benzo(k)fluoranthene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Benzo(a)pyrene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Indeno(1,2,3-cd)pyrene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Dibenz(a,h)anthracene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	
Benzo(g,h,i)perylene	ND	U	0.33	1	06/21/01	06/22/01	KWG0103517	

Comments:

00047



## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Former Axelson Facility (Site #2067)/P253-104  
**Sample Matrix:** Soil

**Service Request:** K2104103  
**Date Collected:** NA  
**Date Received:** NA

## Semi-Volatile Organic Compounds by GC/MS

**Sample Name:** Method Blank  
**Lab Code:** KWG0103517-4

**Units:** mg/Kg  
**Basis:** Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	71	26-97	06/22/01	Acceptable
Phenol-d6	84	37-109	06/22/01	Acceptable
Nitrobenzene-d5	96	35-116	06/22/01	Acceptable
2-Fluorobiphenyl	89	45-109	06/22/01	Acceptable
2,4,6-Tribromophenol	89	19-131	06/22/01	Acceptable
Terphenyl-d14	92	48-140	06/22/01	Acceptable

## † Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments:

00048

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Former Axelson Facility (Site #2067)/P253-104  
Sample Matrix: Sludge

Service Request: K2104103

Surrogate Recovery Summary  
Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3541  
Analysis Method: 8270C

Units: PERCENT  
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>	<u>Sur4</u>	<u>Sur5</u>	<u>Sur6</u>
CB-2	K2104103-001	87 D #	96 D #	111 D #	172 D #	87 D #	141 D #
Method Blank	KWG0103517-4	71	84	96	89	89	92
Batch QC	K2104218-026	32	40	45	51	72	89
Batch QCMS	KWG0103517-1	76	84	91	88	92	106
Batch QCDMS	KWG0103517-2	71	80	90	87	93	100
Lab Control Sample	KWG0103517-3	77	84	93	86	92	101

## Surrogate Recovery Control Limits (%)

Sur1 = 2-Fluorophenol	26-97	Sur5 = 2,4,6-Tribromophenol	19-131
Sur2 = Phenol-d6	37-109	Sur6 = Terphenyl-d14	48-140
Sur3 = Nitrobenzene-d5	35-116		
Sur4 = 2-Fluorobiphenyl	45-109		

Results flagged with an asterisk (\*) indicate values outside control criteria.  
Results flagged with a pound (#) indicate the control criteria is not applicable.

00049

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Soil

Service Request: K2104103  
 Date Extracted: 06/21/2001  
 Date Analyzed: 06/22/2001

Matrix Spike/Duplicate Matrix Spike Summary  
 Semi-Volatile Organic Compounds by GC/MS

Sample Name: Batch QC  
 Lab Code: K2104218-026  
 Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Dry  
 Level: Low  
 Extraction Lot: KWG0103517

Analyte Name	Sample Result	Batch QCMS KWG0103517-1 Matrix Spike			Batch QCDMS KWG0103517-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Phenol	ND	2.94	3.45	85	2.89	3.45	84	51-102	2	40
2-Chlorophenol	ND	2.84	3.45	82	2.91	3.45	84	54-100	2	40
1,4-Dichlorobenzene	ND	2.78	3.45	81	2.67	3.45	78	47-98	4	40
N-Nitrosodi-n-propylamine	ND	3.27	3.45	95	3.30	3.45	96	48-109	1	40
1,2,4-Trichlorobenzene	ND	2.73	3.45	79	2.77	3.45	80	52-102	2	40
4-Chloro-3-methylphenol	ND	3.04	3.45	88	3.01	3.45	87	68-105	1	40
Acenaphthene	ND	3.07	3.45	89	2.90	3.45	84	40-124	6	40
4-Nitrophenol	ND	2.87	3.45	83	3.04	3.45	88	59-115	6	40
2,4-Dinitrotoluene	ND	3.27	3.45	95	3.24	3.45	94	66-123	1	40
Pentachlorophenol	ND	3.01	3.45	87	3.12	3.45	91	49-105	4	40
Pyrene	ND	2.94	3.45	85	2.79	3.45	81	35-145	5	40

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00050

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Soil

Service Request: K2104103  
 Date Extracted: 06/21/2001  
 Date Analyzed: 06/22/2001

Lab Control Spike Summary  
 Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Dry  
 Level: Low  
 Extraction Lot: KWG0103517

Analyte Name	Lab Control Sample KWG0103517-3 Lab Control Spike			%Rec Limits
	Result	Expected	%Rec	
N-Nitrosodimethylamine	3.08	3.33	93	42-118
Aniline	2.42	3.33	73	21-98
Bis(2-chloroethyl) Ether	2.88	3.33	87	38-110
Phenol	2.93	3.33	88	51-98
2-Chlorophenol	2.86	3.33	86	51-101
1,3-Dichlorobenzene	2.74	3.33	82	39-110
1,4-Dichlorobenzene	2.72	3.33	82	36-105
1,2-Dichlorobenzene	2.81	3.33	85	41-107
Benzyl Alcohol	3.11	3.33	94	59-103
Bis(2-chloroisopropyl) Ether	3.00	3.33	90	38-110
2-Methylphenol	2.87	3.33	86	56-101
1,1-Dichloroethane	2.54	3.33	76	39-107
N-Nitrosodi-n-propylamine	3.34	3.33	100 *	54-96
4-Methylphenol	2.88	3.33	87	53-99
Nitrobenzene	2.98	3.33	90	51-106
Isophorone	3.07	3.33	92	62-102
2-Nitrophenol	3.00	3.33	90	61-102
2,4-Dimethylphenol	2.77	3.33	83	53-99
Bis(2-chloroethoxy)methane	2.79	3.33	84	54-104
2,4-Dichlorophenol	2.77	3.33	83	61-103
Benzoic Acid	2.77	3.33	83	16-128
1,2,4-Trichlorobenzene	2.69	3.33	81	50-100
Naphthalene	2.76	3.33	83	53-103
4-Chloroaniline	2.88	3.33	87	19-112
Hexachlorobutadiene	2.70	3.33	81	48-111
4-Chloro-3-methylphenol	3.14	3.33	94	64-112
2-Methylnaphthalene	2.65	3.33	80	57-95
Hexachlorocyclopentadiene	2.53	3.33	76	14-118
2,4,6-Trichlorophenol	3.03	3.33	91	67-104
2,4,5-Trichlorophenol	3.05	3.33	92	67-105
2-Chloronaphthalene	2.81	3.33	84	59-99
2-Nitroaniline	3.31	3.33	99	47-104
Acenaphthylene	2.96	3.33	89	60-105
Dimethyl Phthalate	2.91	3.33	88	68-102
2,6-Dinitrotoluene	3.24	3.33	97	69-107

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00051

## COLUMBIA ANALYTICAL SERVICES, INC.

## QA/QC Report

Client: GeoTrans, Inc.  
 Project: Former Axelson Facility (Site #2067)/P253-104  
 Sample Matrix: Soil

Service Request: K2104103  
 Date Extracted: 06/21/2001  
 Date Analyzed: 06/22/2001

Lab Control Spike Summary  
 Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3541  
 Analysis Method: 8270C

Units: mg/Kg  
 Basis: Dry  
 Level: Low  
 Extraction Lot: KWG0103517

Analyte Name	Lab Control Sample KWG0103517-3 Lab Control Spike			%Rec Limits
	Result	Expected	%Rec	
Acenaphthene	2.87	3.33	86	57-108
3-Nitroaniline	3.14	3.33	94	21-133
2,4-Dinitrophenol	2.86	3.33	86	41-119
Dibenzofuran	2.83	3.33	85	65-99
4-Nitrophenol	2.98	3.33	89	55-121
2,4-Dinitrotoluene	3.13	3.33	94	63-123
Fluorene	2.82	3.33	85	63-109
4-Chlorophenyl Phenyl Ether	3.05	3.33	92	63-101
Diethyl Phthalate	2.95	3.33	89	66-113
4-Nitroaniline	3.08	3.33	93	60-116
2-Methyl-4,6-dinitrophenol	3.23	3.33	97	61-114
N-Nitrosodiphenylamine	3.03	3.33	91	69-109
4-Bromophenyl Phenyl Ether	3.05	3.33	92	69-105
Hexachlorobenzene	3.06	3.33	92	68-112
Pentachlorophenol	3.00	3.33	90	58-110
Phenanthrene	2.83	3.33	85	62-102
Anthracene	2.92	3.33	88	68-107
Di-n-butyl Phthalate	3.07	3.33	92	67-107
Fluoranthene	2.96	3.33	89	64-105
Pyrene	2.80	3.33	84	53-123
Butyl Benzyl Phthalate	3.09	3.33	93	55-119
3,3'-Dichlorobenzidine	3.31	3.33	100	38-124
Benz(a)anthracene	3.14	3.33	94	64-111
Chrysene	2.97	3.33	89	72-99
Bis(2-ethylhexyl) Phthalate	3.06	3.33	92	57-117
Di-n-octyl Phthalate	3.19	3.33	96	47-136
Benzo(b)fluoranthene	3.09	3.33	93	67-118
Benzo(k)fluoranthene	2.84	3.33	85	63-117
Benzo(a)pyrene	3.12	3.33	94	69-113
Indeno(1,2,3-cd)pyrene	3.41	3.33	102	55-124
Dibenz(a,h)anthracene	3.65	3.33	110	68-124
Benzo(g,h,i)perylene	3.26	3.33	98	60-117

Results flagged with an asterisk (\*) indicate values outside control criteria.

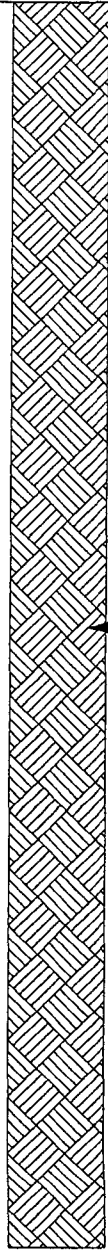
Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00052

***APPENDIX D***

**2001 Soil Boring and Monitor Well Logs**

PROJECT NUMBER	P718-101	BORING NUMBER	SB-3
PROJECT NAME	Former Axelson Facility (Site No. 2067)	DATE DRILLING BEGAN	6/5/2001
LOCATION	2703 West Marland Boulevard	DATE DRILLING ENDED	6/5/2001
DRILLING METHOD	Air Rotary	NORTHING	
SAMPLING METHOD	Grab	EASTING	
DEPTH TO SATURATED SOIL (ft)		GROUND SURFACE ELEVATION (ft, MSL)	
STATIC WATER DEPTH (ft)		BOREHOLE DIAMETER	8"
LOGGED BY	Tanya Akkerman	BOREHOLE DEPTH (feet)	35
REMARKS	Soil boring.		

PID (ppm)	BLOW COUNTS	RECOVERY (ft)	SAMPLE ID	SAMPLE DEPTH (ft, BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION (% Gravel, Sand, Silt, Clay)	BOREHOLE ABANDONMENT
3.9			SB-3 (5')	5			<b>SANDY SILT:</b> Brown (10YR 4/3); (0,10,90,0); fine, poorly graded sands; dry to slightly damp. No odor. Light brown mottling present at approximately 14 feet.	 Neat Cement
2.0			SB-3 (10')	10				
3.0			SB-3 (15')	15				
2.8			SB-3 (20')	20				
							Hard pan layer present.	
2.2			SB-3 (25')	25			<b>SILTY SAND:</b> Very pale brown (10YR 8/2); (0,75,25,0); fine, poorly graded sands; dry. No odor. Small rock fragments present.	
18.8			SB-3 (30')	30	SP		<b>SAND:</b> Very pale brown (10YR 8/4) to Red (2.5YR 6/6); (0,100,0,0); fine, poorly graded sands; slightly damp to moist. Mild petroleum odor.	
44.5			SB-3 (35')	35				

SBLOG BZRHOBS.GPJ LAEWN01.GDT 9/6/01

Signature of Geologist

Signature of Reviewer

PROJECT NUMBER	P718-101	BORING NUMBER	SB-4
PROJECT NAME	Former Axelson Facility (Site No. 2067)	DATE DRILLING BEGAN	6/5/2001
LOCATION	2703 West Marland Boulevard	DATE DRILLING ENDED	6/5/2001
DRILLING METHOD	Air Rotary	NORTHING	
SAMPLING METHOD	Grab	EASTING	
DEPTH TO SATURATED SOIL (ft)		GROUND SURFACE ELEVATION (ft, MSL)	
STATIC WATER DEPTH (ft)		BOREHOLE DIAMETER	8'
LOGGED BY	Tanya Akkerman	BOREHOLE DEPTH (feet)	35
REMARKS	Soil boring.		

PID (ppm)	BLOW COUNTS	RECOVERY (ft)	SAMPLE ID.	SAMPLE DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION (% Gravel, Sand, Silt, Clay)	BOREHOLE ABANDONMENT
2.6			SB-4 (5')	5			<b>SANDY SILT:</b> White (10YR 8/1) to Very pale brown (10YR 8/2); (0,10,90,0); fine, poorly graded sands; dry. No odor.	
176			SB-4 (10')	10				
39.4			SB-4 (15')	15	SM		<b>SILTY SAND:</b> Very pale brown (10YR 8/2); (0,75,25,0); fine, poorly graded sands; dry. Mild petroleum odor.	
10.9			SB-4 (20')	20			<b>SANDY GRAVEL:</b> Brown (10YR 4/3); (90,10,0,0); medium, well graded, angular gravel; fine sands; dry.	
1.9			SB-4 (25')	25			<b>SAND:</b> Very pale brown (10YR 8/4) to Reddish brown (5YR 6/4); (0,100,0,0); fine, poorly graded sands; slightly damp to moist. Mild petroleum odor.	
126.6			SB-4 (30')	30	SP			
60.3			SB-4 (35')	35				

Neat Cement





SBLOG BZRHOBBS.GPJ LAEWN01.GDT 9/6/01

Signature of Geologist

Signature of Reviewer



PROJECT NUMBER	P718-101	WELL NUMBER	MW-4
PROJECT NAME	Former Axelson Facility (Site No. 2067)	DATE DRILLING BEGAN	6/5/2001
LOCATION	2703 West Marland Boulevard	DATE DRILLING ENDED	6/6/2001
DRILLING METHOD	Air Rotary	NORTHING	618888.513
SAMPLING METHOD	Grab	EASTING	899187.068
DEPTH TO SATURATED SOIL (ft)	37	GROUND SURFACE ELEVATION (ft, MSL)	3625.11
STATIC WATER DEPTH (ft)	35.36	TOC ELEVATION (ft, MSL)	3624.74
LOGGED BY	Tanya Akkerman	CASING DIAMETER/TYPE	2"
REMARKS	Converted from soil boring SB-1		

PID (ppm)	BLOW COUNTS	RECOVERY (ft)	SAMPLE ID.	SAMPLE DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION (% Gravel, Sand, Silt, Clay)	WELL DIAGRAM
5.7			SB-1 (5')	5			SILTY SAND: White (10YR 8/1) to Gray (10YR 6/1); (0,20,80,0); fine to medium, poorly graded sands; dry to slightly moist. Very mild to mild petroleum hydrocarbon odor.	
190			SB-1 (10')	10	SM			
95.9			SB-1 (15')	15				
236.3			SB-1 (20')	20			Hard pan layer present.	
142.2			SB-1 (25')	25				
37.3			SB-1 (30')	30			SAND: Very pale brown (10YR 7/3) to Light brown (10YR 6/4); (0,0,100,0); fine, poorly graded sands; slightly damp to moist. Mild petroleum odor.	
198			SB-1 (35')	35	SP			
20			SB-1 (40')	40				
10.1			SB-1 (45')	45				
								T.D. = 45'

MWLOG 62RRHOBBS.GPJ LAEWMN01.GDT 9/6/01

## WELL CONSTRUCTION LOG

PROJECT NUMBER	P718-101	WELL NUMBER	MW-5
PROJECT NAME	Former Axelson Facility (Site No. 2067)	DATE DRILLING BEGAN	6/5/2001
LOCATION	2703 West Marland Boulevard	DATE DRILLING ENDED	6/6/2001
DRILLING METHOD	Air Rotary	NORTHING	618829.994
SAMPLING METHOD	Grab	EASTING	899186.066
DEPTH TO SATURATED SOIL (ft)	37	GROUND SURFACE ELEVATION (ft, MSL)	3624.80
STATIC WATER DEPTH (ft)	35.15	TOC ELEVATION (ft, MSL)	3624.46
LOGGED BY	Tanya Akkerman	CASING DIAMETER/TYPE	2"
REMARKS	Converted from soil boring SB-2		

PID (ppm)	BLOW COUNTS	RECOVERY (%)	SAMPLE ID	SAMPLE DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION (% Gravel, Sand, Silt, Clay)	WELL DIAGRAM
0.0			SB-2 (5')	5			<b>SANDY SILT:</b> Very pale brown (10YR 8/2); (0,10,90,0); fine sands; dry. No odor.	<p>Neat Cement</p> <p>2" SCH 40 PVC</p> <p>Bentonite</p> <p>Silica sand</p> <p>0.020" Slotted PVC Screen</p> <p>T.D. = 44'</p>
0.5			SB-2 (10')	10				
0.0			SB-2 (15')	15	SP		<b>SAND:</b> Very pale brown (10YR 8/2); (0,0,100,0); fine sands, poorly graded; dry.	
4.4			SB-2 (20')	20			Hard pan layer present.	
1.5			SB-2 (25')	25	SM		<b>SILTY SAND:</b> Very pale brown (10YR 8/2); (0,90,10,0); fine, poorly graded sands; dry. No odor.	
67.8			SB-2 (30')	30			<b>SAND:</b> Light reddish brown (5YR 6/4) to Light brown (7.5YR 6/4); (0,100,0,0); fine, poorly graded sands; slightly damp to moist. Very mild petroleum odor.	
62.2			SB-2 (35')	35	SP			
13.9			SB-2 (40')	40				
3.1			SB-2 (45')	45				

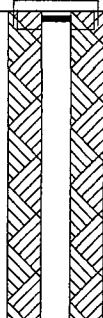
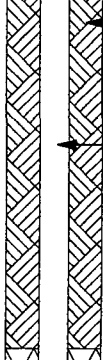
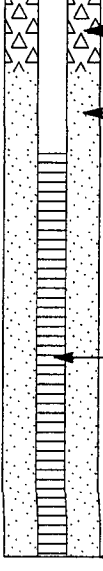
MWLOG B2RH08BS.GPJ LAEWNN01.GDT 9/6/01

Signature of Geologist

Signature of Reviewer

## WELL CONSTRUCTION LOG

PROJECT NUMBER	P718-101	WELL NUMBER	MW-6
PROJECT NAME	Former Axelson Facility (Site No. 2067)	DATE DRILLING BEGAN	6/6/2001
LOCATION	2703 West Marland Boulevard	DATE DRILLING ENDED	6/6/2001
DRILLING METHOD	Air Rotary	NORTHING	618746.778
SAMPLING METHOD	Grab	EASTING	899124.996
DEPTH TO SATURATED SOIL (ft)	37	GROUND SURFACE ELEVATION (ft, MSL)	3624.34
STATIC WATER DEPTH (ft)	34.63	TOC ELEVATION (ft, MSL)	3623.97
LOGGED BY	Tanya Akkerman	CASING DIAMETER/TYPE	2"
REMARKS	Converted from soil boring SB-6		

PID (ppm)	BLOW COUNTS	RECOVERY (ft)	SAMPLE ID.	SAMPLE DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION (% Gravel, Sand, Silt, Clay)	WELL DIAGRAM
2.8			SB-6 (5')	5			SANDY SILT: Very pale brown (10YR 7/2) to White (10YR 8/1) to Gray (10YR 6/1); (0,25,75,0); fine, poorly graded sands; dry. No odor.	
3.2			SB-6 (10')	10				
1.9			SB-6 (15')	15				
1.3			SB-6 (20')	20			Hard pan layer present.	
1.8			SB-6 (25')	25				
1.8			SB-6 (30')	30			SAND: Pink (7.5YR 7/4) to Very pale brown (10YR 7/3); (0,0,100,0); fine, poorly graded sands; dry to slightly damp. No odor.	
2.6			SB-6 (35')	35	SP			
2.0			SB-6 (40')	40				
2.3			SB-6 (45')	45				


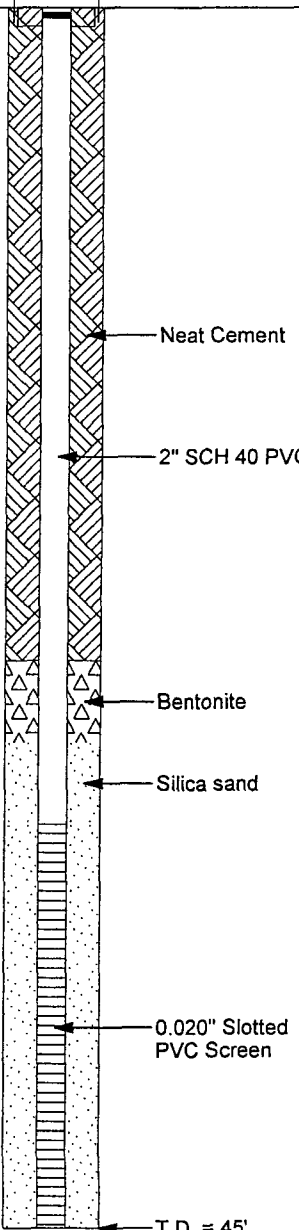








MWLOG-BZRHOBS.GPJ LAEWNN01.GDT 9/6/01

Signature of Geologist

Signature of Reviewer

## WELL CONSTRUCTION LOG

PROJECT NUMBER	P718-101	WELL NUMBER	MW-7
PROJECT NAME	Former Axelson Facility (Site No. 2067)	DATE DRILLING BEGAN	6/6/2001
LOCATION	2703 West Marland Boulevard	DATE DRILLING ENDED	6/6/2001
DRILLING METHOD	Air Rotary	NORTHING	618911.786
SAMPLING METHOD	Grab	EASTING	899117.644
DEPTH TO SATURATED SOIL (ft)	37	GROUND SURFACE ELEVATION (ft, MSL)	3625.32
STATIC WATER DEPTH (ft)	35.63	TOC ELEVATION (ft, MSL)	3625.11
LOGGED BY	Tanya Akkerman	CASING DIAMETER/TYPE	2'
REMARKS	Converted from soil boring SB-5		

PID (ppm)	BLOW COUNTS	RECOVERY (ft)	SAMPLE ID.	SAMPLE DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION (% Gravel, Sand, Silt, Clay)	WELL DIAGRAM
2.1			SB-5 (5')	5			Asphalt. <b>SANDY GRAVEL:</b> Light yellowish brown (10YR 6/4); (85,15,0,0); fine sands, medium, sub-rounded gravel; dry. No odor.	
2.3			SB-5 (10')	10			<b>SANDY SILT:</b> Very pale brown (10YR 7/4); (0,20,80,0); fine, poorly graded sands; dry. No odor.	
2.2			SB-5 (15')	15				
1.9			SB-5 (20')	20			<b>SAND:</b> Very pale brown (10YR 7/3) to Reddish yellow (7.5YR 6/6); (0,100,0,0); fine, poorly graded sands; dry to slightly damp. No odor.	
2.0			SB-5 (25')	25			(21-23') Hard pan layer present.	
1.9			SB-5 (30')	30				
3.2			SB-5 (35')	35				
2.3			SB-5 (40')	40				
2.3			SB-5 (45')	45				

Signature of Geologist

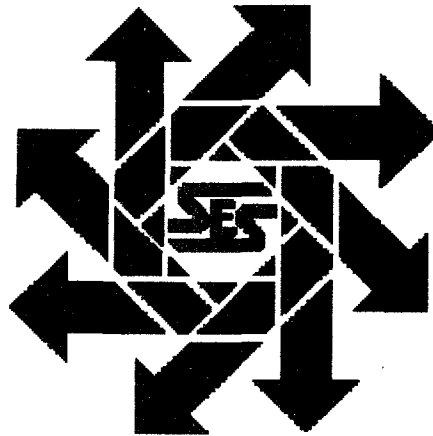
Signature of Reviewer

***APPENDIX E***

**2001 SESI NORM Survey and Site Investigation Report**

**HSI GEOTRANS  
NORM Survey and Site Investigation  
2703 West Marland  
Hobbs, Lea County, New Mexico**

**August 23, 2001**



*Prepared for:*

**HSI GEOTRANS  
3035 Prospect Park Drive Suite 40  
Rancho Cordova, California 95670**

*By:*

***Safety & Environmental Solutions, Inc.  
703 E. Clinton, Suite 102  
Hobbs, New Mexico 88240  
(505) 397-0510***

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## **I. Background**

In June 2001 Safety & Environmental Solutions, Inc. (SESI) was engaged by HSI GEOTRANS to perform a Naturally Occurring Radioactive Material (NORM) survey and site investigation at the old Axelson yard located at 2703 West Marland in Hobbs, New Mexico.(Figure 1).

Previously the subject area was used as an oil well pump shop and the pump barrels may have contained NORM scale, which may have contaminated the yard during the cleaning and storage process.

The purpose of the investigation was to determine the extent, if any, of NORM contamination in the yard of the subject property.

## **II. Work Performed**

### **Soil Boring and Sampling**

Six (6) borehole locations were provided by GEOTRANS. (Figure 2) SESI was to take samples at 1, 2 and 3ft. intervals. The 1ft. samples were to be sent to a laboratory and analyzed for NORM content. The remaining samples were to be archived for later analysis if required.

Sampling was completed on June 20, 2001, using SESI personnel from Hobbs. A Giddings trailer-mounted drill, Model 25-SCT was used to bore test holes with a 4-in. continuous auger. Samples from the test holes generally were collected in thin-walled sampling tubes using SOPs found in Environmental Protection Agency, 1984, Characterization of Hazardous Waste Site - A Methods Manual: Vol. II. Initially, soil samples were collected at 1,2, and 3 ft. intervals. At the completion of drilling, the boreholes were backfilled with drill cuttings.

The 1 ft. samples were delivered along with Chain of Custody to American Radiation Services, 1726 Wooddale Ct., Baton Rouge, Louisiana 70806 on June 22, 2001for analysis. Copies of the analytical results are found in Appendix A. On August 22, 2001, SESI was instructed by GEOTRANS to send the 2 ft. and 3 ft. samples from borehole # 5 for analysis. Copies of the analytical results are found in Appendix B.

### **NORM Survey**

On August 23, 2001, SESI personnel conducted a NORM survey of the unpaved portion of the yard at the subject property. The survey was conducted with a Ludlum Measurements Model 3 Survey Meter, serial # 155994 using a 44-2 probe, serial # RN013125. Ludlum Measurements calibrated the instrument on July 23, 2001. (Appendix B)



The unpaved portion of the yard at the subject property was surveyed on a 20 ft grid. The probe was passed over the ground at an approximate height of 2 inches and the readings recorded by the operator. The survey revealed only one area that exceeded the action level of 50 uR. That area is approximately 2 ft. X 2ft. in size and is located 43 ft. from the southwest corner of the building and 54 ft. from the east fence line. The reading for that area was 1150 uR. (Figure 3) No other areas were observed to have readings above the action level.

### **III. Conclusions and Recommendations**

Results of the NORM survey suggest only one area of concern in the unpaved portion of the yard. SESI recommends that area be further investigated and/or the contaminated soil removed as soon as possible.

### **IV. Report Figures**

**Figure 1 – Vicinity Map**

**Figure 2 – Site Map – Borehole Locations**

**Figure 3 – Site Map – Survey Results**

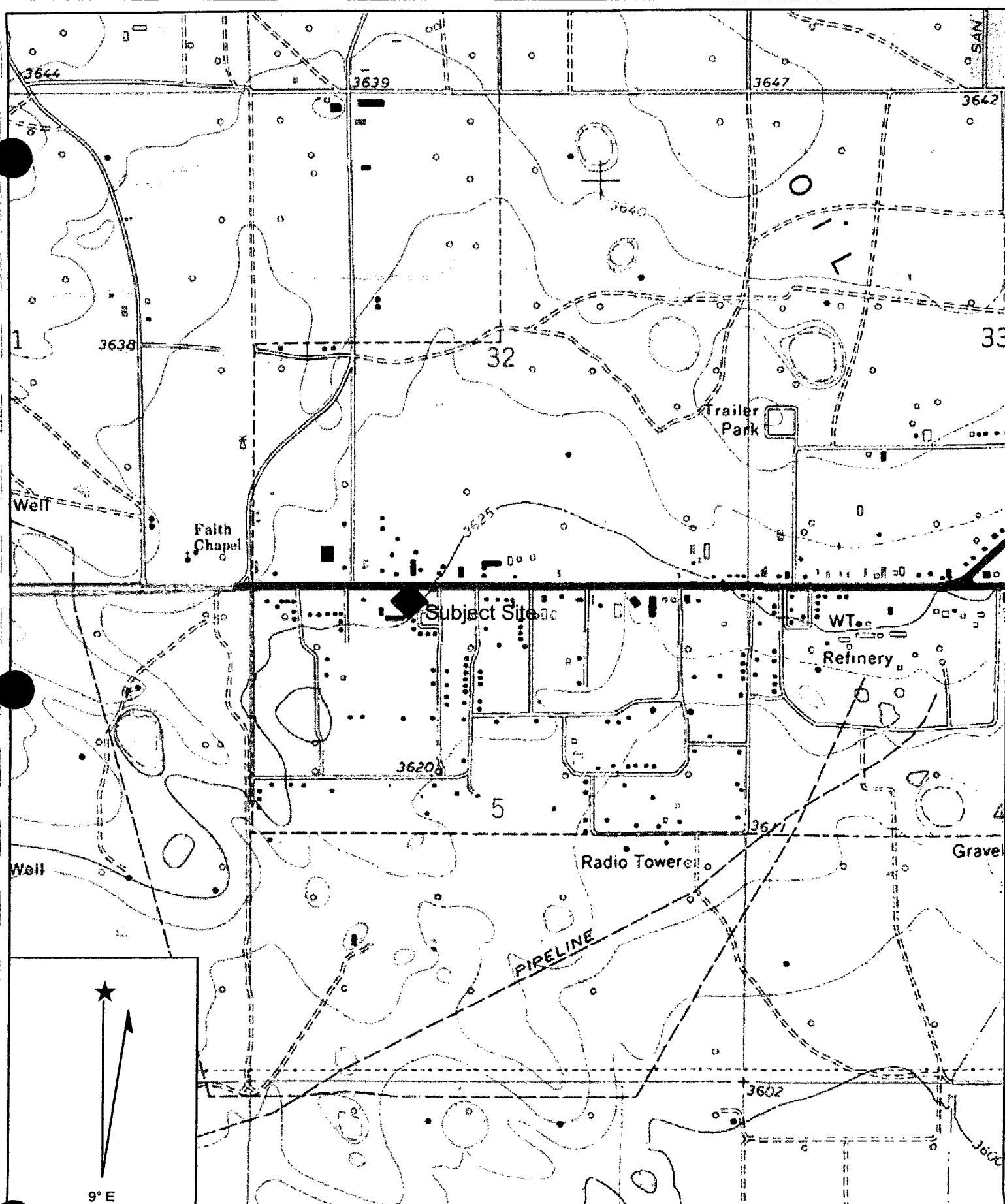
**V. Report Appendices**

**Appendix A. Laboratory Analytical Reports – Bore Hole 1 – 6 1 ft.**

**Appendix B. Laboratory Analytical Reports – Bore Hole 5 2 ft. and 3 ft.**

**Appendix C. Credentials**

Figure 1.  
Vicinity Map

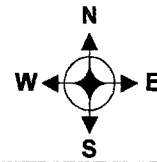


Name: HOBBS WEST  
 Date: 8/24/2001  
 Scale: 1 inch equals 1333 feet

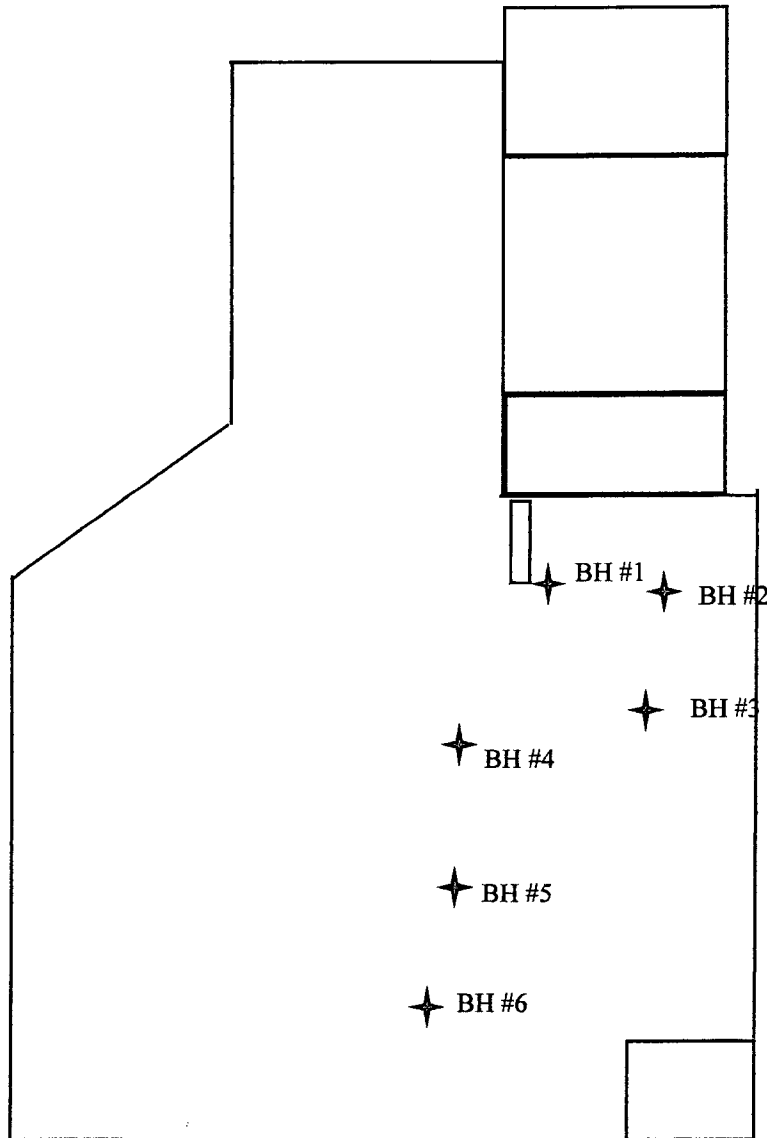
Location: 032° 41' 44.7" N 103° 10' 11.6" W  
 Caption: HSI GEOTRANS

2703 West Marland  
 Hobbs, Lea County, New Mex.

Figure 2.  
Site Map Borehole Locations



Marland



Not To Scale

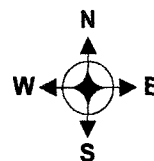
**HIS Geotrans**

**Former Axelson  
Building  
2703 West Marland  
Hobbs, New Mexico**

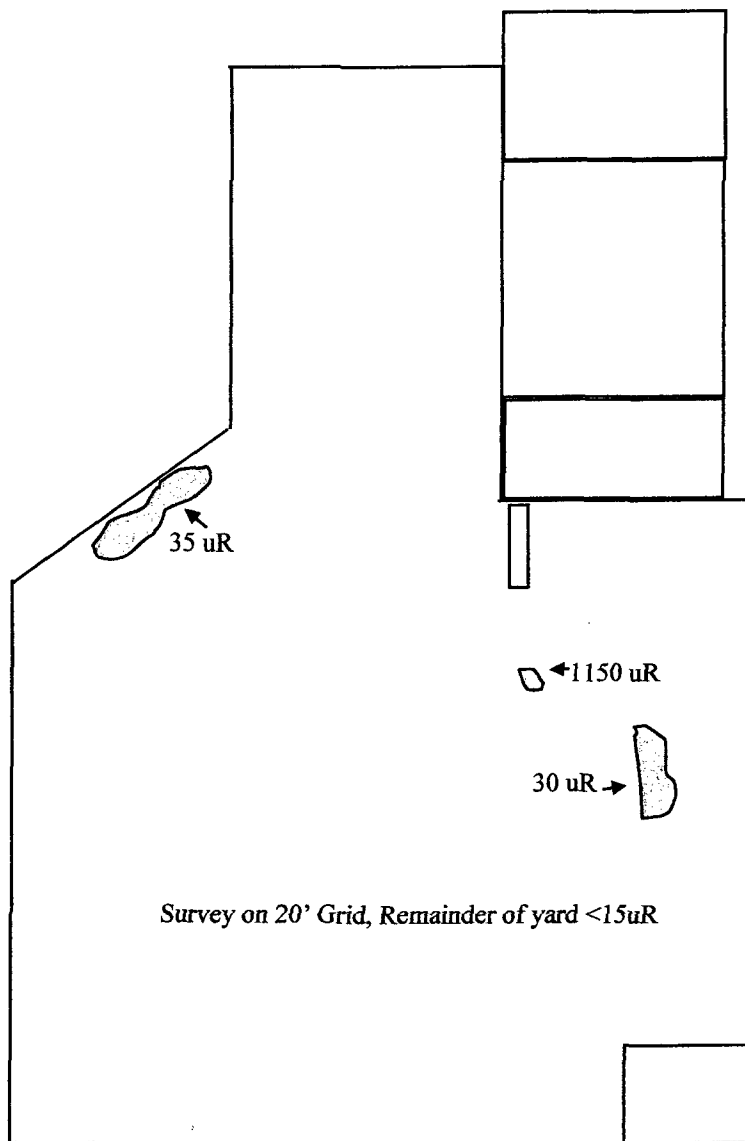
**Safety & Environmental Solutions, Inc.**



Figure 3.  
Site Map – Survey Results



## Marland

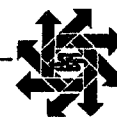


Not To Scale

**HIS Geotrans**

**Former Axelson  
Building  
2703 West Marland  
Hobbs, New Mexico**

**Safety & Environmental Solutions, Inc.**





Appendix A  
Laboratory Analytical Reports  
Bore Holes 1 –6 1 ft.

Appendix B  
Laboratory Analytical Reports  
Bore Hole 5 2ft. and 3 ft.



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (225) 927-6822

## **American Radiation Services, Inc.**

### **Laboratory Analysis Report**

#### **Prepared For:**

#### **Safety & Environmental Solutions**

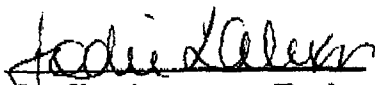
**Bob Allen**

**703 East Clinton**

**Hobbs, NM 88240**

**Phone: 505-397-0510**

**Fax: 505-393-4388**

  
**Quality Assurance Review**

---

**Danny L. Coleman**  
**Laboratory Manager**

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (225) 927-6822

ARS Tracking Number: ARS-01-1216 P.O. Number: Verbal W/ Bob Allen  
Client I.D.: Bore Hole #5, 2' ARS Sample I.D.: ARS-01-5017  
Date Sampled: 06/20/01 Date Received: 8/23/01  
Time Sampled: 0730 Time Received: 0900  
Type of Sample: Solid Date of Report: 8/23/01

Analysis Description	Analysis Result	Analysis Error + 2 Sigma	Analysis Units	Analysis Result	Analysis Error + 2 Sigma	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	40.22	3.46	pCi/gm	1.488	0.128	Bq/gm	EPA 901.1M	08/23/01 09:46	dr
Ra-228	1.52	0.45	pCi/gm	0.056	0.017	Bq/gm	EPA 901.1M	08/23/01 09:46	dr
Pb-210	4.80	1.66	pCi/gm	0.178	0.061	Bq/gm	EPA 901.1M	08/23/01 09:46	dr
Total Activity	129.36	N/A	pCi/gm	4.786	N/A	Bq/gm	EPA 901.1M	08/23/01 09:46	dr

Notes:

*David Allen*  
Quality Assurance Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.



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**ARS Tracking Number:** ARS-01-1216      **P.O. Number:** Verbal W/ Bob Allen  
**Client I.D.:** Bore Hole #5, 3'      **ARS Sample I.D.:** ARS-01-5018  
**Date Sampled:** 06/20/01      **Date Received:** 8/23/01  
**Time Sampled:** 0750      **Time Received:** 0900  
**Type of Sample:** Solid      **Date of Report:** 8/23/01

Analysis Description	Analysis Result	Analysis Error + 2 Sigma	Analysis Units	Analysis Result	Analysis Error + 2 Sigma	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	30.60	1.40	pCi/gm	1.132	0.052	Bq/gm	EPA 901.1M	08/23/01 09:49	rb
Ra-228	1.30	0.17	pCi/gm	0.048	0.006	Bq/gm	EPA 901.1M	08/23/01 09:49	rb
Pb-210	3.28	0.68	pCi/gm	0.121	0.025	Bq/gm	EPA 901.1M	08/23/01 09:49	rb
Total Activity	94.57	N/A	pCi/gm	3.499	N/A	Bq/gm	EPA 901.1M	08/23/01 09:49	rb

Notes:

*Jodie Zoller*  
 Quality Assurance Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (225) 927-6822

### Notes:

#### Comments:

- 1.0) Soil and Sludge analysis are reported on a wet basis or an as received basis unless otherwise indicated.
- 2.0) The data in this report are within the limits of uncertainty specified in the reference method unless specified.
- 3.0) Modified analysis procedures are procedures that are modified to meet the certain specifications. An example may be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix.
- 4.0) Derived Air Concentrations and Effluent Release Concentrations are obtained from 10 CFR 20 Appendix B.
- 5.0) Total activity is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring radioactive decay chains and other prominent radioactive nuclides. Total activity may be lower than actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of nuclides that emit solely alpha or beta particles.
- 6.0) Ra-228 is determined via secular equilibrium with its daughter, Actinium 228. (Gamma Spectroscopy only).
- 7.0) U-238 is determined via secular equilibrium with its daughter, Thorium 234. (Gamma Spectroscopy only).
- 8.0) All Gamma spectroscopy was performed utilizing high purity germanium detectors (HPGe).

#### Method References:

- 1.0) EPA 600/4-80-032, Prescribed Procedures for the Measurements of Radioactivity in Drinking Water, August 1980.
- 2.0) Standard Methods for the Examination of Water and Waste Water, 18th, 1992.
- 3.0) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, (9/86). (Updated through 1995).
- 4.0) EPA 600/4-79-020, Methods for Chemical Analysis of Water and Waste, March 1983.
- 5.0) HASL 300

#### Definitions:

- |       |                 |  |
|-------|-----------------|--|
| 1.0)  | BDL             | Analyte not detected because the value was below the detection limit.                  |
| 2.0)  | ND              | Not detected above the detection limit.  |
| 3.0)  | Detection Limit | The minimum amount of the analyte that ARS can detect utilizing the specific analysis. |
| 4.0)  | B               | Method Blank   |
| 5.0)  | D               | Method Duplicate   |
| 6.0)  | MS              | Matrix Spike   |
| 7.0)  | S               | Spike  |
| 8.0)  | RS              | Reference Spike  |
| 9.0)  | *SC             | Subcontracted out to another qualified laboratory                                      |
| 10.0) | NR              | Not Referenced   |
| 11.0) | N/A             | Not Applicable   |

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

*HSI GEOTRANS NORM Survey and Site Investigation*  
*August 23, 2001*

*2703 West Marland*  
*Hobbs, Lea County, New Mexico*

---

Appendix C  
Calibration Certificate



Designer and Manufacturer  
of  
Scientific and Industrial  
Instruments

# CERTIFICATE OF CALIBRATION

**LUDLUM MEASUREMENTS, INC.**  
POST OFFICE BOX 810 PH. 915-235-5494  
501 OAK STREET FAX NO. 915-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER SAFETY & ENVIRONMENT SOLUTIONS

ORDER NO. 266554/257119

Model 3 Serial No. 155994  
Mfg. Ludlum Measurements, Inc. Model 44-2 Serial No. RN013125

Cal. Date 23-Jul-01 Cal Due Date 23-Jul-02 Cal. Interval 1 Year Meterface 202-654

Check mark ☒ applies to applicable instr. and/or detector IAW mfg. spec. T. 74 °F RH 30 % Alt 700.8 mm Hg

☐ New Instrument ☐ Instrument Received ☐ Within Toler. +/-10% ☐ 10-20% ☐ Out of Tol. ☒ Requiring Repair ☐ Other-See comments

☒ Mechanical ck. ☒ Meter Zeroed ☐ Background Subtract ☐ Input Sens. Linearity

☒ F/S Resp. ck. ☒ Reset ck. ☐ Window Operation ☒ Geotropism

☒ Audio ck. ☐ Alarm Setting ck. ☒ Batt. ck. (Min. Volt) 2.2 VDC

☐ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89. ☒ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set 734 V Input Sens. 36 mV Det. Oper. 734 V at 36 mV Threshold Dial Ratio = mV

☐ HV Readout (2 points) Ref./Inst. / V Ref./Inst. / V

## COMMENTS:

Cs-137 ~ 1 µCi check source SN 2861 reads ~ 45 µR/hr @ x10 (450 µR/hr) with source placed on top of probe.  
No "As Found Reading" due to shattered crystal.

Gamma Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

RANGE/MULTIPLIER	REFERENCE CAL. POINT	INSTRUMENT REC'D "AS FOUND READING"	INSTRUMENT METER READING*
X 100	4000 µR/hr		40
X 100	1000 µR/hr		11
X 10	400 µR/hr = 67100 cpm		40
X 10	100 µR/hr		11
X 1	6710 cpm	N/A	40
X 1	11680 cpm		10
X 0.1	671 cpm		40
X 0.1	1168 cpm		10

\*Uncertainty within ± 10% C.F. within ± 20%

ALL Range(s) Calibrated Electronically

REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*	REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
Digital Readout			Log Scale		

Ludlum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323-1978 State of Texas Calibration License No. LO-1963

## Reference Instruments and/or Sources:

Cs-137 Gamma S/N ☐ 1162 ☐ G112 ☒ M565 ☐ S105 ☐ T1008 ☐ T879 ☐ E552 ☒ E551 ☐ Neutron Am-241 Be S/N T-304

☐ Alpha S/N ☐ Beta S/N ☐ Other

m 500 S/N 132899 ☐ Oscilloscope S/N ☒ Multimeter S/N 75460209

Calibrated By: Domingo Garcia Date 23 Jul 01

Reviewed By: Duane Jackson Date 23-Jul-01

This certificate shall not be reproduced except in full, without the written approval of Ludlum Measurements, Inc.  
FORM C22A 12/28/2000

☐ Passed Dielectric (Hi-Pot) and Continuity Test



## Appendix D

### Creditals

## QUALIFICATIONS AND CREDENTIALS

### James R. (Bob) Allen CHMM, REM, CET, CES

#### Qualifications Summary

James R. (Bob) Allen is a Safety and Environmental Professional with more than 15 years of experience relating to occupational safety and health, hazardous materials, and environmental cleanup and 13 years of experience in finance and management industries.

Mr. Allen was a successful bank president, management and safety consultant prior to joining Safety & Environmental Solutions, Inc. Mr. Allen continually draws from his finance, management, and regulatory compliance experience in his current position as President of SES, Inc. Mr. Allen is responsible for the development and implementation of safety and environmental programs for a wide variety of industries such as oil & gas production, petrochemical, and refineries. Mr. Allen has delivered a broad curriculum of safety and environmental training for industrial clients as well as serving as an adjunct professor at New Mexico Junior College, Hobbs, New Mexico.

#### Education

B.B.A., New Mexico State University, Las Cruces, New Mexico

#### Registrations and Affiliations

- Certified Hazardous Materials Manager, Master Level, CHMM #10551 – *Institute of Hazardous Materials Management*
- Registered Environmental Manager REM #7773 - *National Registry of Environmental Professionals*
- Certified Environmental Trainer #94-209 in Occupational Safety and Health and Management and Transportation of Hazardous Materials and Waste -*Natl. Environmental Training Association*
- Registered Environmental Professional, *Texas Registry of Environmental Professionals* - #611
- Certified Environmental Compliance Manager - *Columbia Southern University*
- Certified Environmental Specialist #10583 - *Environmental Assessment Association*
- Professional Member, *American Society of Safety Engineers (ASSE)*
- Past Chairman, SE New Mexico Section, Permian Basin Chapter, *ASSE*
- Member, *International Registry of Environmental Engineers and Compliance Professionals*
- Past Member, Board of Directors, *West Texas Safety Training Center*
- Instructor, Medic First Aid (Basic) - International Registry # 17942, *EMP America*
- Instructor, Medic First Aid (BLS/PRO) - International Registry # 17942, *EMP America*
- Corporate Representative, *National Fire Protection Association*
- Corporate Representative, *Association of Energy Service Contractors*
- Incident Commander, 29 CFR 1910.120
- Licensed Radiation Safety Consultant, *State of New Mexico* #398-6
- Defensive Driving Instructor #45671 - *National Safety Council*
- Judge, International Intercollegiate Environmental Design Contest 2000, *Waste Education Research Consortium (WERC)*



# Certificate of Registration as a Radiation Safety Consultant for Industrial Uses

Radiation Licensing & Registration Section  
NM Environment Department

(Registration does not imply approval by this agency)

Name <u>James R. (Bob) Allen</u>	<u>P.O. Box 1613</u>	<u>398-6</u>
	Street Address	Registration Number
Profession/Business <u>Safety &amp;</u>	<u>Hobbs, New Mexico 88240</u>	<u>10/31/2001</u>
	City State Zip Code	Expiration Date
<u>Environmental Solutions, Inc.</u>		<u>William H. Hays</u>
	Telephone	Certifying Official

PROVISIONS OF CERTIFICATE:

THE PERSON OR BUSINESS NAMED IN THIS CERTIFICATE IS REGISTERED WITH THE NEW MEXICO RADIATION LICENSING AND REGISTRATION SECTION AS HAVING THE KNOWLEDGE AND TRAINING PERTAINING TO RADIATION PROTECTION AND SAFETY TO PROVIDE SERVICES AND CONSULTATION TO PERSONNEL PERFORMING NORM SURVEYS FOR PROPERTIES UTILIZED IN THE OIL AND GAS INDUSTRIES. THIS TRAINING INCLUDES CLASSROOM INSTRUCTION TOGETHER WITH ACTUAL HANDS-ON FIELD SURVEY TRAINING.

THE ABOVE NAMED REGISTRANT SHALL NOT PERFORM SERVICES WHICH ARE NOT SPECIFICALLY INDICATED BY THIS CERTIFICATE.

NMED 023H 3/92

POST or FILE. Certificate must be available for inspection.



# Certificate of Registration for Training

Radiation Licensing & Registration Section  
NM Environment Department

(Registration does not imply approval by this agency)

Name	James R. Allen	P.O. Box 1613	434-9N
Profession/Business	Safety & Environmental Solutions, Inc.	Street Address Hobbs, New Mexico 88240	Registration Number 10-31-2002
City	State	Zip Code	Expiration Date
	505/397-0510		Margaret M. Lopez
	Telephone		Certifying Official

## PROVISIONS OF CERTIFICATE:

THE PERSON NAMED IN THIS CERTIFICATE IS REGISTERED WITH THE NEW MEXICO RADIATION LICENSING AND REGISTRATION SECTION AS HAVING THE KNOWLEDGE AND TRAINING PERTAINING TO RADIATION PROTECTION AND SAFETY, TO PROVIDE SERVICES AND CONSULTATION TO PERSONNEL PERFORMING NORM SURVEYS FOR PROPERTIES UTILIZED IN THE OIL AND GAS INDUSTRIES. THIS TRAINING INCLUDES CLASSROOM INSTRUCTION TOGETHER WITH ACTUAL HANDS-ON FIELD SURVEY TRAINING.

THE ABOVE NAMED REGISTRANT SHALL NOT PERFORM SERVICES WHICH ARE NOT SPECIFICALLY INDICATED BY THIS CERTIFICATE.

POST or FILE. Certificate must be available for inspection.

***APPENDIX F***

2001 Well Development Data Sheets

WELL or DATE

## WATER LEVEL DATA

WELL LOCATION 2703 W. MARLAND BLVD

HOBBS, NEW MEXICO

MEASURING POINT NOTCH AT

TOP OF WELL CASING

ELEVATION: MEASURING POINT (SITE NO. 2067)

~~GROUND LEVEL~~ Pas3-104

[illegible]

# PROJECT

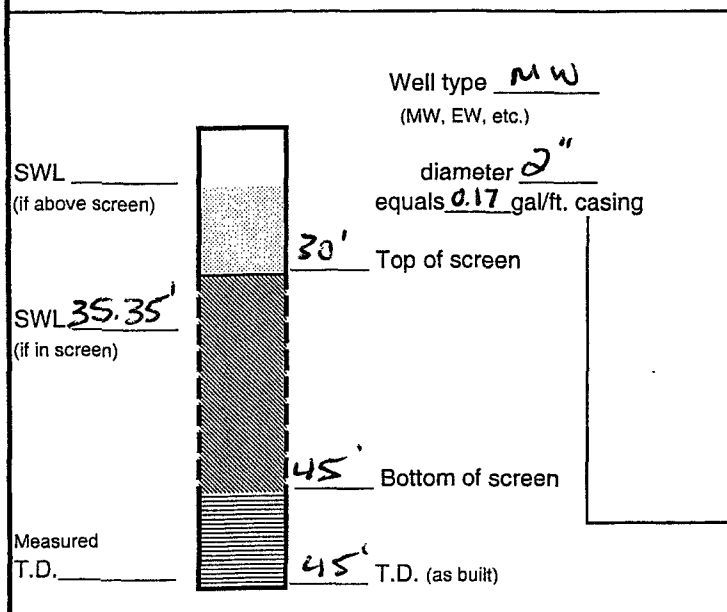
## HSI GEOTRANS



# WELL DEVELOPMENT RECORD FORMER AXELSON FACILITY SITE NO. 2067

Project Name/Client 2703 W. MARLAND BLVD Sample Location MW-4 Date 6/9/01  
HEBBS, N.M.

Project Number P253-104 Samplers T. AKKERMAN



Action	Time	Pump rate (gpm)	Water level
Start pump	<u>12:40</u>		
	<u>12:53</u>		<u>37.08'</u>
Stop	<u>12:57</u>		<u>36.33'</u>
Sampled			
Final water level			

## Purge Calculation

$$0.17 \text{ gal/ft} \times 9.65 \text{ ft.} = 1.6 \times 10 = 16 \text{ gals.}$$

T.D. -SWL one vol. Purge vol.  
 (10 casings)

Purging apparatus / Sampling apparatus / Method

PURGE USING SUBMERSIBLE GRIND AS PUMP  
AND DISPOSABLE TUBING

Actual gallons purged 18

Actual Volumes purged 117

Field observations / additional comments

Gallons purged	TEMP (°F) (circle one)	EC (us/cm) (ms/cm) (circle one)	pH	Turbidity
1 <u>1.6</u>	<u>26.0</u>	<u>1770</u>	<u>7.28</u>	<u>CLOUDY / SANDY</u>
2 <u>3.2</u>	<u>22.8</u>	<u>1765</u>	<u>7.25</u>	<u>CLOUDY / SANDY</u>
3 <u>4.8</u>	<u>21.8</u>	<u>1760</u>	<u>7.26</u>	<u>CLOUDY / SANDY</u>
4 <u>6.4</u>	<u>21.2</u>	<u>1773</u>	<u>7.28</u>	<u>CLOUDY / SANDY</u>
5 <u>8.0</u>	<u>21.2</u>	<u>1775</u>	<u>7.27</u>	<u>CLOUDY / SANDY</u>
6 <u>9.6</u>	<u>21.2</u>	<u>1778</u>	<u>7.29</u>	<u>CLOUDY / SANDY</u>
7 <u>11.2</u>	<u>21.0</u>	<u>1781</u>	<u>7.27</u>	<u>CLOUDY / SANDY</u>
8 <u>12.8</u>	<u>20.8</u>	<u>1783</u>	<u>7.28</u>	<u>MURKY / SANDY</u>
9 <u>14.4</u>	<u>21.3</u>	<u>1783</u>	<u>7.29</u>	<u>MURKY / SUGGY</u>
10 <u>16.0</u>	<u>21.2</u>	<u>1795</u>	<u>7.30</u>	<u>MURKY</u>
11				
12				
13				

(Approximately one set of parameters per casing volume)

## WELL DEVELOPMENT RECORD FORMER AXELSON FACILITY SITE NO. 2067

Project Name/Client 2703 WEST MARLAND BLVD  
14085, N.M. Sample Location MW-S Date 6/9/01

Project Number P253-124 Samplers T. AKERMAN

Well type MW  
 (MW, EW, etc.)

diameter 2"  
 equals 0.17 gal/ft. casing

SWL \_\_\_\_\_  
 (if above screen)

SWL 35.15'  
 (if in screen)

Measured T.D. \_\_\_\_\_

29' Top of screen

44' Bottom of screen

44' T.D. (as built)

Action	Time	Pump rate (gpm)	Water level
Start pump	<u>11:58</u>		
	<u>12:00</u>		<u>36.31</u>
	<u>12:08</u>		<u>36.52</u>
Stop	<u>12:13</u>		<u>35.92</u>
Sampled			
Final water level			

### Purge Calculation

$$0.17 \text{ gal/ft} \times 8.85 \text{ ft.} = 1.5 \times 10 = 15 \text{ gals.}$$

Purge vol. (10 casings)  
 T.D. -SWL one vol.

Purging apparatus / Sampling apparatus / Method

PURGE USING SUBMERSIBLE GEORUNFOS PUMP  
AND DISPOSABLE TUBING

Actual gallons purged 20+

Actual Volumes purged 13+

Field observations / additional comments

Gallons purged	TEMP (°C / °F) (circle one)	EC (us/cm / (ms/cm)) (circle one)	pH	Turbidity
1 <u>1.5</u>	<u>23.1</u>	<u>1468</u>	<u>7.38</u>	<u>CLOUDY / SANDY</u>
2 <u>3.0</u>	<u>21.5</u>	<u>1438</u>	<u>7.33</u>	<u>CLOUDY / SANDY</u>
3 <u>4.5</u>	<u>20.7</u>	<u>1440</u>	<u>7.39</u>	<u>CLOUDY / SANDY</u>
4 <u>6.0</u>	<u>20.5</u>	<u>1437</u>	<u>7.31</u>	<u>CLOUDY / SANDY</u>
5 <u>7.5</u>	<u>20.3</u>	<u>1443</u>	<u>7.38</u>	<u>CLOUDY / SANDY</u>
6 <u>9.0</u>	<u>20.3</u>	<u>1443</u>	<u>7.38</u>	<u>CLOUDY / SANDY</u>
7 <u>10.5</u>	<u>20.2</u>	<u>1451</u>	<u>7.38</u>	<u>MURKY / SANDY</u>
8 <u>12.0</u>	<u>20.3</u>	<u>1451</u>	<u>7.36</u>	<u>MURKY / SANDY</u>
9 <u>13.5</u>	<u>20.3</u>	<u>1455</u>	<u>7.37</u>	<u>MURKY</u>
10 <u>15.0</u>	<u>20.3</u>	<u>1452</u>	<u>7.36</u>	<u>MURKY - SLIGHTLY</u>
11				
12				
13				

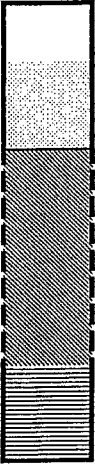
(Approximately one set of parameters per casing volume)



## **WELL DEVELOPMENT RECORD** FORMER ARLSON FACILITY SITE NO. 2067

Project Name/Client 2703 W. MARLBORO BLVD Sample Location MW-6 Date 6/9/01  
1623 BS, N.M.

Project Number P253-104 Samplers T. AKKERMAN

<p>Well type <u>MW</u>          (MW, EW, etc.)</p> <p>diameter <u>2"</u>          equals <u>0.17</u> gal/ft. casing</p> <p>SWL _____          (if above screen)</p> <p>SWL <u>34.62'</u>          (if in screen)</p> <p>Measured T.D. _____</p> <div style="text-align: center;">  </div> <p><u>30'</u> Top of screen</p> <p><u>45'</u> Bottom of screen</p> <p><u>45'</u> T.D. (as built)</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Action</th> <th>Time</th> <th>Pump rate (gpm)</th> <th>Water level</th> </tr> </thead> <tbody> <tr> <td>Start pump</td> <td><u>11:18</u></td> <td></td> <td></td> </tr> <tr> <td></td> <td><u>11:24</u></td> <td></td> <td><u>39.65</u></td> </tr> <tr> <td></td> <td><u>11:28</u></td> <td></td> <td><u>38.05</u></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Stop</td> <td><u>11:34</u></td> <td></td> <td><u>35.64</u></td> </tr> <tr> <td>Sampled</td> <td><u>-</u></td> <td></td> <td></td> </tr> <tr> <td>Final water level</td> <td><u>-</u></td> <td></td> <td></td> </tr> </tbody> </table> <p style="text-align: center;"><u>Purge Calculation</u></p> <p><u>0.17</u> gal/ft * <u>10.38</u> ft. = <u>1.7</u> x10= <u>17</u> gals.</p> <p style="text-align: right;">Purge vol. (10 casings)</p> <p style="text-align: center;">T.D. -SWL      one vol.</p>	Action	Time	Pump rate (gpm)	Water level	Start pump	<u>11:18</u>				<u>11:24</u>		<u>39.65</u>		<u>11:28</u>		<u>38.05</u>													Stop	<u>11:34</u>		<u>35.64</u>	Sampled	<u>-</u>			Final water level	<u>-</u>		
Action	Time	Pump rate (gpm)	Water level																																						
Start pump	<u>11:18</u>																																								
	<u>11:24</u>		<u>39.65</u>																																						
	<u>11:28</u>		<u>38.05</u>																																						
Stop	<u>11:34</u>		<u>35.64</u>																																						
Sampled	<u>-</u>																																								
Final water level	<u>-</u>																																								

Purging apparatus / Sampling apparatus / Method  
PURGE USING SUBMERSIBLE GRINDERS PUMP  
AND DISPOSABLE TUBING

Actual gallons purged 20

Actual Volumes purged ~~0.22~~ 13+

Field observations / additional comments

Gallons purged	TEMP <u>°</u> F (circle one)	EC <u>(us/cm)</u> / (ms/cm) (circle one)	pH	Turbidity
1 <u>1.7</u>	<u>24.8</u>	<u>1135</u>	<u>7.30</u>	<u>CLOUDY / SANDY</u>
2 <u>3.4</u>	<u>21.4</u>	<u>1083</u>	<u>7.25</u>	<u>CLOUDY / SANDY</u>
3 <u>5.1</u>	<u>20.3</u>	<u>1084</u>	<u>7.22</u>	<u>CLOUDY / SANDY</u>
4 <u>6.8</u>	<u>19.9</u>	<u>1103</u>	<u>7.23</u>	<u>CLOUDY / SANDY</u>
5 <u>8.5</u>	<u>19.8</u>	<u>1108</u>	<u>7.21</u>	<u>CLOUDY / SANDY</u>
6 <u>10.2</u>	<u>19.7</u>	<u>1121</u>	<u>7.21</u>	<u>CLOUDY / SANDY</u>
7 <u>11.9</u>	<u>19.6</u>	<u>1137</u>	<u>7.17</u>	<u>CLOUDY / SANDY</u>
8 <u>13.6</u>	<u>19.4</u>	<u>1140</u>	<u>7.20</u>	<u>CLOUDY / SANDY</u>
9 <u>15.3</u>	<u>19.0</u>	<u>1150</u>	<u>7.19</u>	<u>MURKY / SANDY</u>
10 <u>17.0</u>	<u>18.9</u>	<u>1154</u>	<u>7.17</u>	<u>MURKY / SLIGHT SAND</u>
11				
12				
13				

(Approximately one set of parameters per casing volume)



# WELL DEVELOPMENT RECORD

FORMER ANELSON FACILITY SITE NO. 2867

Project Name/Client 2703 W. MARLAND BLVD Sample Location MW-7 Date 6/9/01  
140235, N.M.

Project Number P253-104 Samplers T. AKKerman

Well type MW  
 (MW, EW, etc.)

diameter 2"  
 equals 0.17 gal/ft. casing

SWL \_\_\_\_\_  
 (if above screen)

SWL 35.62'  
 (if in screen)

Measured T.D. \_\_\_\_\_

30' Top of screen

45' Bottom of screen

45' T.D. (as built)

Action	Time	Pump rate (gpm)	Water level
Start pump	10:23		
	10:26		37.22'
	10:30		36.95'
	10:33		36.45'
	10:40		37.18'
Stop	10:40		—
Sampled			
Final water level			

## Purge Calculation

0.17 gal/ft \* 9.38 ft. = 1.6 x10= 16 gals.

T.D. -SWL one vol. Purge vol. (10 casings)

Purging apparatus / Sampling apparatus / Method  
PURGE USING SUBMERSIBLE GRUNDOS PUMP,  
AND DISPOSABLE TUBING.

Actual gallons purged 16+  
 Actual Volumes purged 10

## Field observations / additional comments

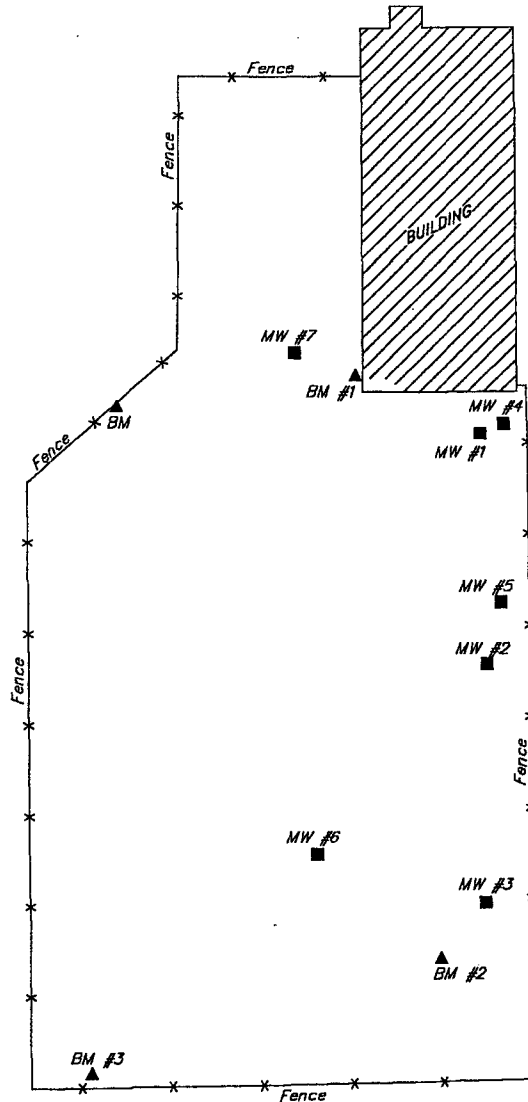
Gallons purged	TEMP °F (circle one)	EC (us/cm) (ms/cm) (circle one)	pH	Turbidity
1 1.6	21.4	1423	7.93	CLOUDY
2 3.2	20.3	1407	7.41	CLOUDY
3 4.8	20.0	1392	7.47	CLOUDY
4 6.4	20.1	1387	7.40	CLOUDY
5 8.0	21.5	1401	7.41	CLOUDY/SANDY
6 9.6	21.4	1389	7.40	CLOUDY/SANDY
7 11.2	20.7	1352	7.47	CLOUDY/SANDY
8 12.8	20.0	1345	7.41	CLOUDY/SANDY
9 14.4	19.8°	1345	7.48	CLOUDY/SANDY
10 16.0	19.8	1342	7.45	CLOUDY
11				
12				
13				

(Approximately one set of parameters per casing volume)

***APPENDIX G***

2001 Monitor Well Survey Data

# MARLAND BLVD



NOTE:  
ALL BEARINGS AREA BASED ON STATE  
PLANE COORDINATES NEW MEXICO EAST  
ZONE, AND ELEVATIONS ARE GROUND  
ELEVATIONS.

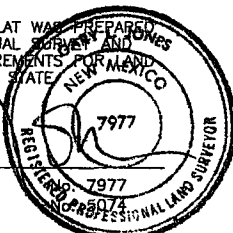
- ▲ - DENOTES BENCHMARKS  
■ - DENOTES MONITOR WELLS

NAME	NORTHING	EASTING	ELEV. (TOC)	ELEV.(PVC)
MW #1	618885.317	899179.310	3625.11'	3624.76'
MW #2	618809.659	899181.415	3624.60'	3624.34'
MW #3	618730.921	899181.132	3624.18'	3623.94'
MW #4	618888.513	899187.068	3625.11'	3624.74'
MW #5	618829.994	899186.066	3624.80'	3624.46'
MW #6	618746.778	899124.996	3624.34'	3623.97'
MW #7	618911.786	899117.644	3625.32'	3625.11'

NAME	NORTHING	EASTING	ELEVATION
BM	618894.084	899059.172	3624.67'
BM #1	618904.464	899138.025	3625.55'
BM #2	618712.681	899166.434	3624.38'
BM #3	618674.096	899050.494	3624.56'

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED  
FROM FIELD NOTES OF AN ACTUAL SURVEY AND  
MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND  
SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES N.M. P.S.  
TEXAS P.L.S.



50 0 50 100 FEET

## GEO TRANS, INC.

REF: MONITOR WELLS - 2703 WEST MARLAND BLVD.

MONITOR WELLS LOCATED AT

2703 W. MARLAND BLVD,

CITY OF HOBBS, LEA COUNTY, NEW MEXICO.

**Basin Surveys** P.O. BOX 1786-HOBBS, NEW MEXICO

W.O. Number: 18428

Drawn By: K. GOAD

Date: 06-18-2001

Disk: KJG #5 - 18428.DWG

Survey Date: 06-11-2001

Sheet 1 of 1 Sheets

***APPENDIX H***

2001 Monitor Well Sampling Data Sheets

WELL or DATE 6/11/01

# WATER LEVEL DATA FORMER AXELSON FACILITY

WELL LOCATION 2703 W. MARIANO BLVD  
HOBBS, NEW MEXICO  
ELEVATION: MEASURING POINT (SITE NO. 20675)

MEASURING POINT NOTCH AT  
TOP OF WELL CASING  
GROUND LEVEL P253-104

WELL OR DATE	TIME	MEASURING DEVICE	READING	CONVERSIONS or CORRECTIONS	WATER LEVEL		BY	COMMENTS
					DEPTH	ELEVATION		
MONITOR WELL SAMPLING EVENT								
MW-7	0824	SOLINST # 14319			35.63'		JA	
MW-6	0827	↓			34.63'		JA	
MW-5	0830				35.15'		JA	
MW-4	0832				35.36'		JA	VERY MILD PETROLEUM ODOR IN GROUNDWATER
<u>NOTE:</u> WELLS MW-1, MW-2 AND MW-3 WERE DRY OR DID NOT CONTAIN SUFFICIENT AMOUNT OF WATER FOR SAMPLING.								

HSI GEOTRANS

## WELL SAMPLING RECORD FORMER ATELSON FACILITY SITE NO. 2067

Project Name/Client 2703 W. MARLAND BLVD  
HOBBS, N. M. Sample Location MW-4 Date 6/11/01

Project Number P253-104 Samplers T. ALVERMAN

Well type MW  
 (MW, EW, etc.)

diameter 2"  
 equals 0.17 gal/ft. casing

SWL \_\_\_\_\_  
 (if above screen)

SWL 35.36'  
 (if in screen)

Measured T.D. \_\_\_\_\_

30' Top of screen

45' Bottom of screen

45' T.D. (as built)

Action	Time	Pump rate (gpm)	Water level
Start pump	12:24		
Stop	12:38		
Sampled	12:50		
Final water level			

### Purge Calculation

0.17 gal/ft \* 9.64 ft. = 1.6 x3= 4.8 gals.

T.D. - SWL one vol. Purge vol. (3 casings)

### Purging apparatus / Sampling apparatus / Method

PURGE AND SAMPLE USING DISPOSABLE BAILEY.

Actual gallons purged 5  
 Actual Volumes purged 3+

COC # \_\_\_\_\_  
 Sample I.D. Analysis Lab  
MW-4: 8270, 8260, COLUMBIA  
Chloride, 8015 m60, PCBs (602), ANALYTICAL  
DISSOLVED REA & METALS, SERVICES  
PAHS, Sim, F, NO<sub>3</sub> AS N;  
TOS, RADON 220628  
WALL METALS, CATIONS, ANIONS

### Field observations / additional comments

VERY MILD PETROLEUM OIL IN WATER. NO SHEEN OBSERVED.

Gallons purged	TEMP °C / F (circle one)	EC (us/cm) / (ms/cm) (circle one)	pH	Turbidity (NTU)
1 <u>1.6</u>	<u>23.0</u>	<u>1720</u>	<u>7.32</u>	<u>CLOUDY / SANDY</u>
2 <u>3.2</u>	<u>20.6</u>	<u>1752</u>	<u>7.30</u>	<u>CLOUDY / SANDY</u>
3 <u>4.8</u>	<u>20.3</u>	<u>1788</u>	<u>7.28</u>	<u>CLOUDY / SANDY</u>
<u>SAMPLE</u>				
5				

approximately one set of parameters per casing volume

# GeoTrans, Inc.

WELL SAMPLING RECORD FORMER AXELSON FACILITY SITE NO 2867

Project Name/Client 2703 W. MARLAND BVD  
LABS, U.M. Sample Location MW-5 Date 6/11/01

Project Number 0853-104 Samplers T. AKKERMAN

Well type MW  
 (MW, EW, etc.)

diameter 2"  
 equals 0.17 gal/ft. casing

SWL \_\_\_\_\_  
 (if above screen)

SWL 35.15'  
 (if in screen)

Measured  
 T.D. \_\_\_\_\_

29' Top of screen

44' Bottom of screen

44' T.D. (as built)

Action	Time	Pump rate (gpm)	Water level
Start pump	<u>11:08</u>		
Stop	<u>11:20</u>		
Sampled	<u>11:30</u>		
Final water level			

## Purge Calculation

$$0.17 \text{ gal/ft} \times 8.85 \text{ ft.} = 1.5 \times 3 = 4.5 \text{ gals.}$$

T.D. -SWL one vol. Purge vol.  
 (3 casings)

Purging apparatus / Sampling apparatus / Method

PURGE AND SAMPLE USING DISPOSABLE  
BAILER.

Actual gallons purged 4.5  
 Actual Volumes purged 3

COC # \_\_\_\_\_

Sample I.D.	Analysis	Lab
<u>MW-5:</u>	<u>8270 8260</u>	<u>COLUMBIA</u>
<u>Chloride, 8015 mho,</u>		
<u>DEBS (8082), PAHS,</u>		<u>ANALYTICAL</u>
<u>SIM, F, NO, AS, N, TDS,</u>		<u>SERVICES</u>
<u>RADIUM 226/228,</u>		
<u>DISSOLVED TRACE METALS,</u>		
<u>WQCC METALS, CATIONS,</u>		
<u>AND ANIONS</u>		

Field observations / additional comments

Gallons purged	TEMP (°F) (circle one)	EC (µs/cm) / (ms/cm) (circle one)	pH	Turbidity (NTU)
1 <u>1.5</u>	<u>22.7</u>	<u>1460</u>	<u>7.42</u>	<u>CLOUDY / SANDY</u>
2 <u>3.0</u>	<u>20.0</u>	<u>1445</u>	<u>7.41</u>	<u>CLOUDY / SANDY</u>
3 <u>4.5</u>	<u>20.0</u>	<u>1403</u>	<u>7.40</u>	<u>CLOUDY / SANDY</u>
<u>SAMPLE</u>				

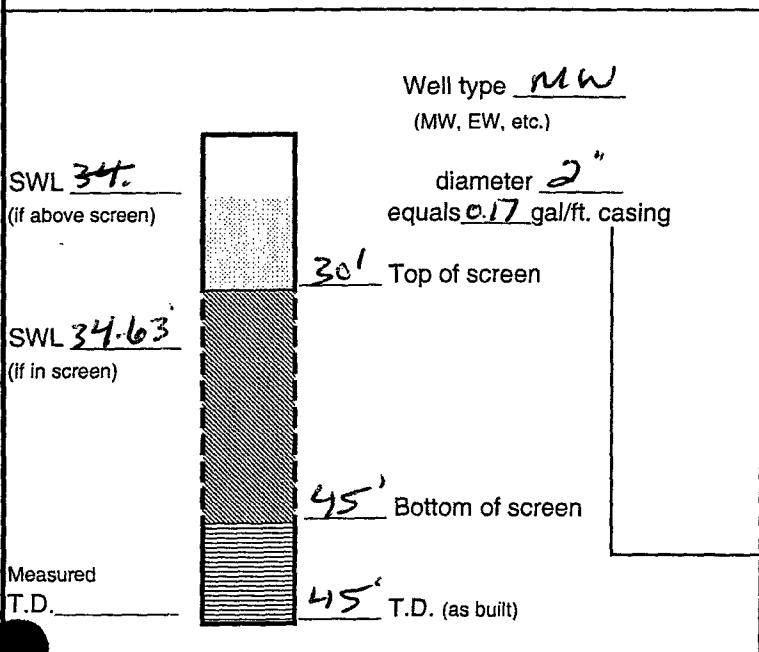
approximately one set of parameters per casing volume



## WELL SAMPLING RECORD FORNER AXELSON FACILITY SITE NO. 2067

Project Name/Client 2703 W. MARLAND BLVD  
14025 N.M. Sample Location MW-6 Date 6/14/01

Project Number P253-104 Samplers T. AKKERMAN



Action	Time	Pump rate (gpm)	Water level
Start pump	<u>10:15</u>		
Stop	<u>10:20</u>		
Sampled	<u>10:35</u>		
Final water level			

### Purge Calculation

$$0.17 \text{ gal/ft} \times 10.37 \text{ ft} = 1.8 \times 3 = 5.4 \text{ gals.}$$

T.D. -SWL one vol. Purge vol. (3 casings)

Purging apparatus / Sampling apparatus / Method

PURGE AND SAMPLE USING DISPOSABLE BAILER.

Actual gallons purged 6  
 Actual Volumes purged 3+

COC # \_\_\_\_\_

Sample I.D.	Analysis	Lab
<u>MW-6</u>	<u>8270, 8260</u>	<u>COLUMBIA</u>
	<u>Chloride, TDS, NO<sub>3</sub> ASV,</u>	
	<u>F, Sim, BOD, MP</u>	<u>ANALYTICAL</u>
	<u>PAHS, PCBs (8000),</u>	
	<u>DISSOLVED ALUMINUM, SILICA</u>	
	<u>RAIUM 226, 228,</u>	
	<u>WQCC METALS, CARBON</u>	
	<u>AND ANIONS</u>	

Field observations / additional comments

Gallons purged	TEMP ° F (circle one)	EC (us/cm) (ms/cm) (circle one)	pH	Turbidity (NTU)
1 <u>1.8</u>	<u>25.5</u>	<u>1143</u>	<u>7.33</u>	<u>CLOUDY / SANDY</u>
2 <u>3.6</u>	<u>19.3</u>	<u>1147</u>	<u>7.26</u>	<u>CLOUDY / SANDY</u>
3 <u>5.4</u>	<u>19.8</u>	<u>1158</u>	<u>7.32</u>	<u>CLOUDY / SANDY</u>
<u>SAMPLE</u>				

## WELL SAMPLING RECORD

FORMER AXELSON FACILITY SITE NO. 2067

2703 W. MARIANO BLVD

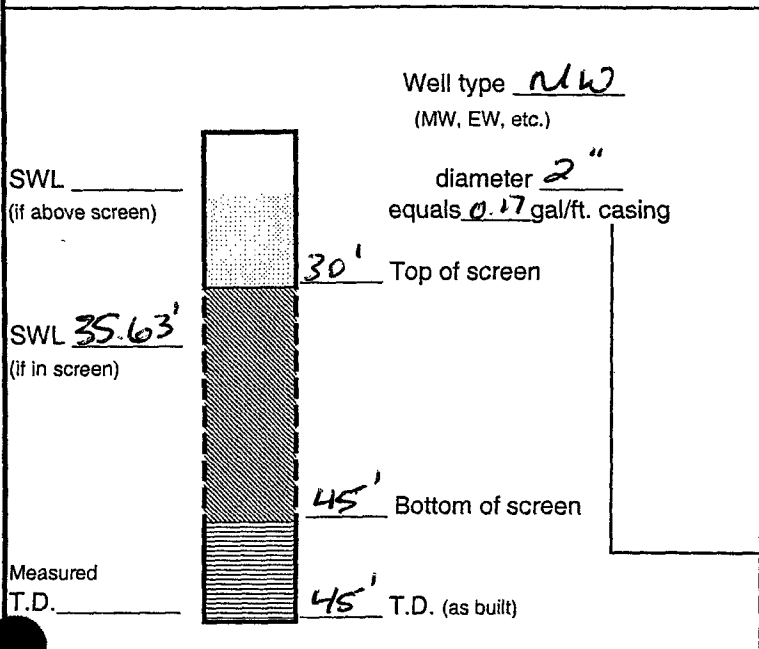
Project Name/Client HBOS, N. M.

Sample Location MW-7

Date 6/11/01

Project Number P253-104

Samplers T. AKKERMAN



Action	Time	Pump rate (gpm)	Water level
Start pump	<u>0855</u>		
Stop	<u>0909</u>		
Sampled	<u>0930</u>		
Final water level			

### Purge Calculation

$$0.17 \text{ gal/ft} \times 9.37 \text{ ft.} = 1.6 \times 3 = 4.8 \text{ gals.}$$

T.D. - SWL one vol. Purge vol. (3 casings)

Purging apparatus / Sampling apparatus / Method

PURGE AND SAMPLE USING DISPOSABLE BAILER.

Actual gallons purged 5  
Actual Volumes purged 3+

COC # \_\_\_\_\_

Sample I.D. Analysis Lab

MW-7: 8260, 8270; Columbia  
BOISND: TOX, NO3AS, ANALYTICAL  
F, PAHS, Sim CYANIDE  
RADON 226/228, SERVICES  
DISSOLVED ALKALIMETALS  
PCBS (8062), WQCC  
METALS, CATIONS AND  
ANIONS.

Field observations / additional comments

Gallons purged	TEMP °C / F (circle one)	EC (us/cm) / (ms/cm) (circle one)	pH	Turbidity (NTU)
1 1.6	21.0	1326	7.66	CLOUDY / SANDY
2 3.2	19.6	1338	7.54	CLOUDY / SANDY
3 4.8	19.4	1328	7.53	CLOUDY / SANDY
SAMPLE				

approximately one set of parameters per casing volume