Groundwater Monitoring and Progress Report
March 2005 Sampling Event

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Prepared for:

Sierra Pacific Industries

April 27, 2005

Project No. 9329.000, Task 28

Geomatrix Consultants

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GEOMATRIX

April 27, 2005
Project 9329.000, Task 28

Executive Officer
California Regional Water Quality Control Board
North Coast Region
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403

Attention: Dean Prat

Subject: Groundwater Monitoring and Progress Report
March 2005 Sampling Event
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Dear Mr. Prat:

As requested by Sierra Pacific Industries, we have enclosed a copy of the subject report.

Sincerely yours,
GEOMATRIX CONSULTANTS, INC.

Ross Steenson, PG, CHG
Senior Hydrogeologist

Edward P. Conti, CEG, CHG
Principal Geologist

RAS/EPC/abr
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Enclosure

cc: Bob Ellery, Sierra Pacific Industries (with enclosure)
Gordie Amos, Sierra Pacific Industries (with enclosure)
Fred Evenson, Law Offices of Frederic Evenson (with enclosure)
Jim Lamport, Ecological Rights Foundation (with enclosure)

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PROFESSIONAL CERTIFICATION

GROUNDWATER MONITORING AND PROGRESS REPORT
MARCH 2005 SAMPLING EVENT
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

April 27, 2005
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This report was prepared by Geomatrix Consultants, Inc., under the professional supervision of Ross A. Steenson. The findings, recommendations, specifications and/or professional opinions presented in this report were prepared in accordance with generally accepted professional hydrogeologic practice, and within the scope of the project. There is no other warranty, either express or implied.

Ross A. Steenson, PG, CHG
Senior Hydrogeologist

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MARCH 2005 SAMPLING EVENT

Sierra Pacific Industries
Arcata Division Sawmill
2593 New Navy Base Road
Arcata, California

1.0 INTRODUCTION

This report presents the methods and results of the March 2005 groundwater monitoring event and a progress report for remediation pilot study activities also performed during March 2005 at the Sierra Pacific Industries (SPI) Arcata Division Sawmill located in Arcata, California (the site, Figure 1). The groundwater monitoring event was performed in accordance with Monitoring and Reporting Program (MRP) No. R1-2003-0127, which was revised and reissued by the California Regional Water Quality Control Board, North Coast Region (RWQCB) on March 4, 2005. This revised MRP requires semi-annual or annual sampling of selected groundwater monitoring wells and semi-annual reporting.

The progress report for remediation pilot study activities was prepared in accordance with the *Pilot Study Work Plan for Implementation of Proposed Remedial Action* (Geomatrix, 2004b).

Geomatrix Consultants, Inc., (Geomatrix), has prepared this report on behalf of SPI to provide the status of groundwater monitoring performed under the MRP and remediation pilot study activities conducted at the site.

This report is organized as follows: Background, including a discussion of site history, subsurface lithology, and hydrogeology (Section 2.0); March 2005 Groundwater Monitoring Report methods and results (Section 3.0); Progress Report for remediation pilot study activities and results (Section 4.0); Wastewater Disposal (Section 5.0); Schedule for Future Activities (Section 6.0); and References (Section 7.0).

2.0 SITE BACKGROUND

This section provides background information regarding the site setting and history and discusses subsurface conditions at the site, including lithology and hydrogeology. Subsurface lithologic and hydrogeologic conditions at the site were previously investigated and described by EnviroNet (EnviroNet, 2002a).

2.1 HISTORY

The approximately 68-acre site is located on the Samoa Peninsula, along the northern shoreline of Humboldt Bay and approximately 4 miles west of the town of Arcata, California. The site is bounded to the east by the Mad River Slough, to the northwest by an old railroad grade, and to the south by New Navy Base Road and mud flats of Humboldt Bay (Figure 1).

The site is currently an active sawmill; features are shown on Figure 2. The sawmill has operated at the site since approximately 1950. Prior to construction of the mill facilities, the site consisted of undeveloped sand dunes and mud flats. During construction of mill facilities in the 1950s and 1960s, portions of the Mad River Slough on the eastern, northern, and southern sides of the site were filled. The current mill facility consists of an administrative building, a main sawmill building, numerous wood-processing buildings, log storage areas, milled lumber storage areas, and loading/unloading areas. A 140-foot-deep water supply well (Feature 48 on Figure 2) provides water for log sprinkling. An older, shallow water supply well is located adjacent to the 140-foot well, but has not been used since it began to produce sand.

Wood surface protection activities historically conducted at the site included the use of an anti-stain solution containing chlorinated phenols, including pentachlorophenol (PCP) and tetrachlorophenol, to control sap stain and mold on a small amount of milled lumber. The anti-stain solution was applied in an aboveground dip tank located in the middle of the former green chain, which was located immediately south of the eastern end of the current sorter building (Feature 49 on Figure 2). Use of the solution containing chlorinated phenols in the former green chain area of the site reportedly commenced in the early to mid-1960s and was discontinued in 1985 (EnviroNet, 2002b). At the direction of the RWQCB, SPI stopped purchasing anti-stain solution containing chlorinated phenols in 1985 and commenced a process of relocating the remaining solution containing chlorinated phenols to a new dip tank facility for recycling (MFG, 2003). Due to the difficulty of disposing of the old solution containing chlorinated phenols, the remaining solution from the old dip tank was mixed with a new anti-stain solution that did not contain chlorinated phenols at the new dip tank facility (Feature 21 on Figure 2). Recycling of the solution containing chlorinated phenols in the new dip tank continued until 1987, at which time the drip basin adjacent to the old dip tank was cleaned out, filled with sand, and capped with 3 to 4 inches of concrete (MFG, 2003). The new dip tank has been cleaned three times since 1987.

The potential effects of wood surface protection activities on soil and groundwater have been investigated to depths of approximately 20 feet below ground surface (bgs). In 2002, investigation activities included the installation of 19 monitoring wells at the site: 15 monitoring wells (MW-1 through MW-12, MW-14, MW-17, and MW-18) were constructed to monitor shallow groundwater between depths of approximately 2 and 8 feet bgs, and four monitoring wells (MW-13D, MW-15D, MW-16D, and MW-19D) were constructed to monitor deeper groundwater between depths of approximately 15 and 20 feet bgs (EnviroNet, 2003). Two additional monitoring wells (MW-20 and MW-21) were installed in January and February 2004 to monitor shallow groundwater (Geomatrix, 2004a). Monitoring well locations are illustrated on Figure 3. Monitoring well construction details are included in Table 1.

2.2 LITHOLOGY

The site is located adjacent to the Mad River Slough near the northern shoreline of Humboldt Bay. The eastern, northern, and southern portions of the site were filled in the 1950s and 1960s.

Based on observations made during investigation activities at the site, subsurface lithology within the shallow zone (less than 8 feet bgs) is predominantly fine- to medium-grained sand of apparent sand dune origin. Wood and fill material was locally observed in this shallow zone during activities such as the installation of monitoring wells MW-13D and MW-15D. Soil beneath the fine- to medium-grained sand consisted of more sand and locally of fine-grained material, classified as "bay mud." The fine-grained material was encountered during the installation of monitoring wells MW-3, MW-10, MW-15D, MW-16D, and MW-17 at depths of approximately 6 to 8 feet bgs and during the installation of monitoring well MW-15 at a depth of approximately 15 feet bgs. Soil described during the installation of a water supply well at the site (Feature 48 on Figure 2) suggests that subsurface soil between the ground surface and 140 feet bgs is predominately composed of sand (EnviroNet, 2001).

2.3 HYDROGEOLOGY

The groundwater surface measured in 21 site monitoring wells has ranged between approximately 0.5 and 5 feet bgs in the 17 shallow wells (i.e., screened from 2 to 8 feet bgs) and between approximately 4 and 6 feet bgs in the four deeper wells (i.e., screened from 15 to 20 feet bgs). In the eastern portion of the site, groundwater flow generally is to the east, toward the Mad River Slough (MFG and Geomatrix, 2003). In the southwestern portion of the site, groundwater likely flows to the south-southeast, toward Humboldt Bay (MFG and Geomatrix, 2003).

Tidal fluctuations in the Mad River Slough and nearby Humboldt Bay influence groundwater levels at the site in the vicinity of the slough. A 2002 tidal influence study conducted at the site by EnviroNet suggested that tidal effects become negligible at distances greater than 100 feet from the slough shore (EnviroNet, 2003).

3.0 MARCH 2005 MONITORING REPORT

This section presents field and laboratory methods and results of groundwater monitoring activities conducted during this period, as required by the MRP.

3.1 FIELD METHODS

On March 9, 2005, depth to water was measured in all site monitoring wells (MW-1 through MW-21, Figure 3) and at a monitoring point in the Mad River Slough using an electronic sounder (Table 2). Water levels were measured in the wells on the first day of sampling, before conducting groundwater sampling activities. Monitoring wells were gauged in sequence from lowest expected concentrations of constituents of concern (first) to highest expected concentrations (last), based on laboratory analytical results from the previous sampling event. Field personnel cleaned the meter used to measure the groundwater surface before using it at each location. The equipment was washed in an Alconox® detergent solution and then rinsed with distilled water.

Twelve monitoring wells (MW-1, MW-2, MW-6 through MW-9, MW-13D, MW-14, MW-15D, MW-16D, MW-20, and MW-21) were purged and sampled on March 9, 10, and 11, 2005, in accordance with the site MRP. For wells MW-6, MW-8, MW-9, MW-13D, MW-15D, and MW-16D, field personnel used dedicated, disposable Teflon® bailers to remove standing water in the well casing. For monitoring wells MW-1, MW-2, MW-7, MW-14, MW-20, and MW-21, field personnel used a peristaltic pump and disposable tubing for low-flow purging/sampling techniques in conjunction with pilot study activities (Section 4.0). Field personnel measured and recorded readings of temperature, pH, specific conductance, and total dissolved solids (TDS) on field sampling records during groundwater bailer purging activities. For bailer-purged wells, the purging activities were ceased when a minimum of three well casing volumes of water had been removed and water quality parameters stabilized to within 10 percent of specific conductance, 0.05 pH units for pH, and 1 degree Celsius for temperature. For peristaltic-pump-purged wells, copies of the field records for groundwater monitoring and sampling activities are included in Appendix A.

After purging, groundwater samples were collected using the dedicated Teflon® bailers and, for monitoring wells included in the pilot study program, a peristaltic pump and dedicated tubing. A field sample of groundwater was monitored for temperature, pH, specific conductance, and TDS just prior to collecting the groundwater sample to record the water quality parameters of the groundwater being sampled. These field parameters are summarized in Table 3. Historical laboratory analytical results for TDS also are shown in this table.

Groundwater collected from each of the 12 monitoring wells was placed in two 125-milliliter (ml) glass vials that were sealed with Teflon®-lined screw caps. After filling, the vials were labeled and placed in an ice-cooled, insulated chest for transport to the laboratory for analysis. Chain-of-custody records were completed for the samples and accompanied the samples until received by the laboratory. Copies of the chain-of-custody records for the groundwater samples are included in Appendix B.

An additional groundwater sample was collected from monitoring well MW-21 and submitted to the laboratory as a blind duplicate sample, labeled BD-01-200503. This sample was placed in two additional 125-ml glass vials sealed with Teflon®-lined screw caps and sent to the laboratory as described above.

3.2 LABORATORY METHODS

Groundwater samples collected from monitoring wells MW-1, MW-2, MW-6 through MW-9, MW-13D through MW-16D, MW-20, and MW-21 were analyzed at Alpha Analytical Laboratories, Inc. (Alpha), of Ukiah, California, a California Department of Health Services-certified analytical laboratory, as follows. The samples were analyzed for the chlorinated phenols (including PCP; 2,3,5,6-tetrachlorophenol; 2,3,4,6-tetrachlorophenol; 2,3,4,5-tetrachlorophenol; and, 2,4,6-trichlorophenol) in accordance with the Canadian Pulp method.

3.3 LABORATORY DATA QUALITY REVIEW

Geomatrix reviewed the quality of laboratory data generated for the groundwater sampling as discussed in Appendix C. Based on the procedures and data quality review, the analytical data quality is satisfactory and the sample results appear to be representative.

3.4 RESULTS OF GROUNDWATER MONITORING

Monitoring and sampling results from site wells include groundwater elevation measurements, field measurements of water quality parameters, and laboratory analysis of groundwater samples. Groundwater elevation data provide information on subsurface hydraulic conditions, discussed below as occurrence and movement of groundwater. Groundwater quality is

evaluated based on the laboratory analysis of chlorinated phenols. The results are presented below.

3.4.1 Occurrence and Movement of Groundwater

The groundwater surface measured in shallow monitoring wells at the site (i.e., screened from approximately 2 to 8 feet bgs) ranged from 0.85 to 5.22 feet below the measuring point, with associated groundwater elevations ranging from 4.39 to 9.49 feet above mean sea level (msl), relative to the North American Vertical Datum of 1988. Groundwater elevation data from these monitoring wells indicate that the direction of shallow groundwater flow is generally to the east (Figure 4). The magnitude of the lateral hydraulic gradient ranges from approximately 0.01 foot/foot in the former green chain vicinity to as much as approximately 0.03 foot/foot beneath the sawmill and maintenance buildings. Groundwater elevations within 100 feet of the Mad River Slough shoreline are subject to tidal fluctuations (EnviroNet, 2003) and as such, were not used to evaluate the flow direction or gradient of shallow groundwater.

The groundwater surface measured in deep monitoring wells at the site (i.e., screened from approximately 15 to 20 feet bgs) ranged from 4.22 to 5.48 feet below the measuring point, with associated groundwater elevations ranging from 5.61 to 6.60 feet above msl, relative to the North American Vertical Datum of 1988. Groundwater elevation data from these monitoring wells indicate that the direction of deep groundwater flow is generally to the east (Figure 5) at a lateral hydraulic gradient of approximately 0.01 foot/foot.

3.4.2 Groundwater Analytical Results

Twelve groundwater monitoring wells were sampled during this period (MW-1, MW-2, MW-6 through MW-9, MW-13D, MW-14, MW-15D, MW-16D, MW-20, and MW-21). Laboratory analytical reports and sample chain-of-custody records are included in Appendix B. The results for the chlorinated phenol analyses are presented in Table 4. PCP results also are illustrated on Figure 6 (shallow groundwater).

PCP and tetrachlorophenols were detected in groundwater samples from 3 of the 12 monitoring wells (MW-7, MW-20 and MW-21; Table 4; PCP is also shown on Figure 6), with 2,4,6-trichlorophenol detected in two of the wells (MW-20 and MW-21). The detected concentrations of PCP were 24,000 micrograms per liter (µg/L) in the sample from MW-7; 4,700 µg/L and 4,600 µg/L in the samples from MW-21 (for primary and blind duplicate samples, respectively); and 71 µg/L in the sample from MW-20. In the last two sampling events, the samples from MW-20 have been non-detect.

4.0 PILOT STUDY PROGRESS REPORT

This section presents a summary of activities performed in accordance with the *Pilot Study Work Plan for Implementation of Proposed Remedial Action* (Geomatrix, 2004b) during the subject period. The objectives of the Pilot Study are to:

- Demonstrate that in situ destruction of contaminants is occurring in the subsurface through natural attenuation processes.
- Demonstrate that discharges of wood surface protection chemicals to surface water have been abated.
- Implement risk management measures to protect current and future personnel working on-site from participating in activities that would results in exposure to unacceptable risk.

During the subject period, the second of three annual groundwater sampling events for the pilot study was conducted.

4.1 DEMONSTRATION OF NATURAL ATTENUATION – GROUNDWATER SAMPLING

Geomatrix collected groundwater samples from selected monitoring wells for the pilot study being conducted at the site. The groundwater sampling was performed to identify natural attenuation parameters, pentachlorophenol-breakdown products, and concentrations of dioxins and furans. This sampling effort was the second of three sampling events that will be conducted over a two-year period.

4.1.1 Field Methods

Eight monitoring wells (MW-1, MW-2, MW-3, MW-5, MW-7, MW-14, MW-20, and MW-21) were purged and sampled on March 9 through 11, 2005, in conjunction with the routine groundwater monitoring event for the MRP. Field personnel used a peristaltic pump and tubing dedicated to purge groundwater using low-flow techniques, at a rate of approximately 250 to 500 milliliters per minute. Measurements of temperature, pH, specific conductance, dissolved oxygen, and reduction-oxidation potential were collected during purging via a flow-through cell and recorded on field sampling records, included in Appendix A; field measurements are summarized in Table 5.

Field personnel collected groundwater samples after purging a minimum of three pore-tube volumes and stabilization of monitored water quality parameters including: measurements of

specific conductance to within 10 percent; measurements of pH to within 0.05 pH units; and measurements of temperature to within 1 degree Celsius. Groundwater was sampled from the peristaltic pump and tubing in laboratory-supplied containers, which were labeled and placed in an ice-cooled, insulated chest for transport to the laboratories for analysis. Chain-of-custody records were completed for the samples and accompanied the samples until received by the laboratories. Copies of the chain-of-custody records for the groundwater samples are included in Appendix B.

An additional groundwater sample was collected from monitoring well MW-21 and submitted to the laboratory as a blind duplicate sample, labeled BD-01-200503. This sample also was placed in laboratory-supplied containers and sent to the laboratory as described above.

4.1.2 Laboratory Methods

Groundwater samples collected from the monitoring wells were analyzed at the following laboratories: Alpha; Friedman & Bruya, Inc. (Friedman & Bruya), of Seattle, Washington; Frontier Analytical Laboratory (Frontier), of El Dorado, California; Severn Trent Laboratories, Inc. (STL), of Pleasanton, California; and K Prime, Inc. of Santa Rosa, California. These laboratories are all certified by the California Department of Health Services for laboratory chemical analysis. Groundwater samples were analyzed as follows:

- Natural attenuation parameters: total organic carbon (EPA Method 415.1); calcium and magnesium (EPA Method 200.7); alkalinity (Standard Method 2320B); chloride, nitrate, and sulfate (EPA Method 300.0); iron (II) and manganese (II) (EPA Method 6010B); and dissolved methane and carbon dioxide (RSK 175).
- Pentachlorophenol and breakdown products, including tetrachlorophenols, trichlorophenols, dichlorophenols, and chlorophenols (EPA Method 8270 Selective Ion Monitoring [SIM]).
- Phenol (EPA Method 8270 SIM).
- Dioxins and furans (EPA Method 1613).

4.1.3 Groundwater Analytical Results

Laboratory analytical reports and chain-of-custody records for pilot study groundwater samples are included in Appendix B. Table 5 summarizes results for field and geochemical parameters; Table 6 and Figure 6 summarize results for chlorinated phenols and phenol, with sampling results for PCP (by the Canadian Pulp Method); and Table 7 summarizes results for dioxins and furans.

PCP was detected in all eight wells (MW-1, MW-2, MW-3, MW-5, MW-7, MW-14, MW-20. and MW-21) sampled this period. Consistent with the routine groundwater monitoring and the first pilot study sampling event, the highest concentration was detected in the sample from well MW-7 (12,000 μg/L). The samples from wells MW-20 and MW-21 had PCP detections of 100 μg/L and 5,500 μg/L; these detections generally are similar to previous events. In contrast, the samples from wells MW-1, MW-2, MW-3, MW-5 (upgradient), and MW-14 had detections of PCP at 2 μg/L; samples from these wells have been non-detect since 2002. Because of these unexpected detections, all at the same concentration and with no chlorinated phenol breakdown products, we contacted the analytical laboratory. The laboratory confirmed the positive presence of PCP in these samples (Jim Bruya, personal communication, 2005) based on a review of instrument data and the preceding laboratory method blank data (non-detect). Then, we reviewed our field sampling and sample handling procedures, but have not identified a deficiency that may have led to these detections in wells MW-1, MW-2, MW-3, MW-5, and MW-14. At this time, we consider these PCP data for these five wells to be anomalous, and will re-evaluate the situation during the next appropriate sampling event.

Consistent with the first pilot study sampling event in March 2004, PCP degradation products (tetra-, tri-, di-, and chloro-phenols) were detected in groundwater samples from wells MW-7, MW-20, and MW-21. No PCP degradation products were detected in wells MW-1, MW-2, MW-3, MW-5, and MW-14. For MW-7, where PCP was detected at 12,000 μg/L, tetrachlorophenol concentrations ranged from 17 to 490 μg/L, trichlorophenol concentrations ranged from 1 to 290 μg/L, dichlorophenol concentrations ranged from non-detect to 610 μg/L, and chlorophenol ranged from non-detect to 890 μg/L. Phenol was detected in the groundwater sample from MW-7 at 3 μg/L. For MW-21 (downgradient of MW-7), where PCP was detected at 5,500 μg/L, the concentrations of PCP degradation products detected in the primary and duplicate groundwater samples were lower than in the samples from well MW-7. Tetrachlorophenol concentrations ranged from 4 to 110 μg/L, trichlorophenol concentrations ranged from non-detect to 250 μg/L, dichlorophenol concentrations ranged from non-detect to 310 μg/L, and concentrations of chlorophenols ranged from non-detect to 270 μg/L. No phenol was detected in the sample from well MW-21. For MW-20 (in the former interim remedial measure excavation backfill), where PCP was detected at 100 μg/L, the concentrations of PCP degradation products detected were the lowest of well samples MW-7, MW-20, and MW-21. Tetrachlorophenol concentrations ranged from 2 to 12 μg/L, trichlorophenol concentrations ranged from non-detect to 5 μg/L, dichlorophenol concentrations ranged from non-detect to

15 µg/L, and concentrations of chlorophenols ranged from non-detect to 9 µg/L. No phenol was detected in the sample from well MW-20.

Concentrations of dioxins and furans, which refer to a complex mixture of various dioxin and furan congeners, are generally summarized in terms of their 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) toxic equivalency (TEQ) based on toxic equivalency factors adopted by the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (Cal-EPA, 2003). TEQ results for groundwater samples analyzed for dioxins and furans ranged from 0.00188 to 176 picograms per liter (pg/L; parts per quadrillion), with only two samples showing detections greater than 1 pg/L: MW-20 at 71 pg/L and the primary sample from MW-21 at 176 pg/L (note that the duplicate sample from this well had a TEQ of 0.351 pg/L).

4.1.4 Laboratory Data Quality Review

Geomatrix reviewed the laboratory data generated for the pilot study groundwater sampling as discussed in Appendix C. Based on our review, the data generated during this period for the pilot study sampling event appear to be accurate and representative, with the exception of the detections of PCP in samples from wells MW-1, MW-2, MW-3, MW-5, and MW-14, as discussed in Section 4.1.3.

5.0 WASTEWATER DISPOSAL

The purge water and equipment wash water generated by the environmental activities conducted during March 2005 and discussed herein were placed in two steel, 55-gallon drums and labeled. The drums, which were not completely filled during these activities, are being temporarily stored at the site and, once completely filled with purge water, will be disposed of by SPI in accordance with applicable regulations.

6.0 FUTURE MONITORING AND SAMPLING SCHEDULE

For the MRP, the semi-annual groundwater monitoring event will be performed in August or September 2005. The next pilot study groundwater sampling event will be performed in February or March 2006 in conjunction with the routine groundwater monitoring event.

7.0 REFERENCES

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TABLES

TABLE 1

MONITORING WELL CONSTRUCTION DETAILS [1]

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Well No.	Date Installed	Total Boring Depth (ft bgs)	Total Well Depth (ft bgs)	Well Diameter (inches)	Latitude[2]	Longitude[2]	Ground Level Elevation[2] (ft msl)	Top of Casing Elevation[2] (ft msl)	Screened Interval (ft bgs)	Screen Slot Size (inches)	Filter Pack Interval (ft bgs)	Bentonite Seal Interval (ft bgs)	Surface Seal Interval[3] (ft bgs)
Shallow Wells													
MW-1	5-Mar-02	8	8	2	40.8661595	124.1521395	10.12	9.69	2.0 – 8.0	0.01	1.5 – 8.0	1.0 – 1.5	0 – 1.0
MW-2	5-Mar-02	9	8	2	40.8661024	124.1525276	10.41	9.61	2.0 – 8.0	0.01	1.5 – 9.0	1.0 – 1.5	0 – 1.0
MW-3	5-Mar-02	8.5	8	2	40.8662689	124.1530739	11.67	11.22	2.0 – 8.0	0.01	1.5 – 8.5	1.0 – 1.5	0 – 1.0
MW-4	5-Mar-02	8	8	2	40.8662303	124.1533599	11.17	10.74	2.0 – 8.0	0.01	1.5 – 8.0	1.0 – 1.5	0 – 1.0
MW-5	7-Mar-02	8	8	2	40.8660945	124.1536734	11.26	10.74	2.0 – 8.0	0.01	1.5 – 8.0	1.0 – 1.5	0 – 1.0
MW-6	7-Mar-02	8	8	2	40.8660710	124.1531061	10.13	9.83	2.0 – 8.0	0.01	1.5 – 8.0	1.0 – 1.5	0 – 1.0
MW-7	7-Mar-02	8	8	2	40.8659980	124.1531187	10.09	9.74	2.0 – 8.0	0.01	1.5 – 8.0	1.0 – 1.5	0 – 1.0
MW-8	8-Mar-02	8	8	2	40.8657492	124.1535343	10.55	10.33	2.0 – 8.0	0.01	1.5 – 8.0	1.0 – 1.5	0 – 1.0
MW-9	8-Mar-02	8	8	2	40.8657520	124.1532218	10.36	9.91	2.0 – 8.0	0.01	1.5 – 8.0	1.0 – 1.5	0 – 1.0
MW-10	11-Nov-02	9.5	8	2	40.8656910	124.1530670	10.08	9.85	2.0 – 8.0	0.01	1.5 – 9.5	1.0 – 1.5	0 – 1.0
MW-11	12-Nov-02	8.5	8	2	40.8655740	124.1533817	10.51	10.28	2.0 – 8.0	0.01	1.5 – 8.5	1.0 – 1.5	0 – 1.0
MW-12	12-Nov-02	9.5	8	2	40.8656625	124.1537231	11.01	10.76	2.0 – 8.0	0.01	1.5 – 9.5	1.0 – 1.5	0 – 1.0
MW-14	13-Nov-02	8	8	2	40.8657622	124.1523580	9.60	9.15	2.0 – 8.0	0.01	1.5 – 8.0	1.0 – 1.5	0 – 1.0
MW-17	14-Nov-02	9	8	2	40.8656690	124.1526420	9.46	9.16	2.0 – 8.0	0.01	1.5 – 9.0	1.0 – 1.5	0 – 1.0
MW-18	13-Nov-02	9.5	8	4	40.8657448	124.1531649	10.12	9.92	2.0 – 8.0	0.01	1.5 – 9.5	1.0 – 1.5	0 – 1.0
MW-20[4]	23-Jan-04	8	7	4	40.8658416	124.1532563	10.92	11.87	3.2 – 6.8	0.01	2.0 – 7.0	1.0 – 2.0	0 – 1.0
MW-21	12-Feb-04	8.3	8.3	0.75	40.8660161	124.1530089	10.11	12.89	2.1 – 8.1	0.01	1.5 – 8.3	1.0 – 1.5	0 – 1.0
Deep Wells													
MW-13D	12-Nov-02	21	20	2	40.8660809	124.1525231	10.26	9.96	15.0 – 20.0	0.01	13.5 – 21.0	12.0 – 13.5	0 – 12.0
MW-15D	13-Nov-02	21	20	2	40.8662658	124.1528255	11.59	11.19	15.0 – 20.0	0.01	14.0 – 21.0	12.0 – 14.0	0 – 12.0
MW-16D	14-Nov-02	21.5	20	2	40.8655571	124.1530363	10.13	9.83	15.0 – 20.0	0.01	14.0 – 21.5	12.0 – 14.0	0 – 12.0
MW-19D	14-Nov-02	21.5	20	2	40.8662419	124.1532744	11.21	11.06	15.0 – 20.0	0.01	14.0 – 21.0	12.0 – 14.0	0 – 12.0

Notes:
1. Construction details for wells MW-1 through MW-9 were obtained from Report on Recent Hydrogeologic Investigations at Sierra-Pacific Industries, Arcata Division Sawmill, dated April 19, 2002 prepared by Environet Consulting. Construction details for wells MW-10 through MW-19D were obtained from Results of the Remedial Investigation for Sierra Pacific Industries – Arcata Division Sawmills, Arcata, California, dated January 30, 2003, prepared by EnviroNet Consulting. Installation of wells MW-20 and MW-21 documented in this report.
2. Monitoring wells were resurveyed by Omsberg Suveyors and Company of Eureka California on February 13, 2004; latitude and longitude were surveyed relative to North American Datum (NAD) of 1983 and elevations were surveyed relative to National Geodetic Vertical Datum (NGVD) of 1929. Elevations shown have been adjusted by 3.35 feet and presented as North American Vertical Datum (NAVD) of 1988 elevations.
3. Surface seal interval consists of the concrete surface completion and a neat cement sanitary seal, if applicable.
4. Well installed on a raised concrete pad of the former green chain. Depth measurements (ft bgs) are relative to the local ground surface of the concrete pad, which is approximately 1 foot above the grade of the surrounding ground surface.

Abbreviations:
ft bgs = feet below ground surface
ft msl = feet mean sea level

TABLE 2

SUMMARY OF WATER LEVEL MEASUREMENTS

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Well No.	Measurement [1] Date	MP Elevation [2] (ft NAVD 88)	Depth to Water (ft bMP)	Water Level Elevation (ft NAVD 88)
Shallow Wells				
MW-1	14-Mar-02	9.56	5.31	4.25
	18-Jul-02	9.56	4.52	5.04
	16-Sep-02	9.56	4.37	5.19
	02-Dec-02	9.56	4.18	5.38
	18-Mar-03	9.56	4.09	5.47
	31-Mar-03	9.56	4.48	5.08
	21-May-03	9.56	4.66	4.90
	27-Aug-03	9.56	4.55	5.01
	03-Nov-03	9.56	4.20	5.36
	23-Mar-04	9.69	4.47	5.22
	17-May-04	9.69	4.57	5.12
	30-Aug-04	9.69	4.55	5.14
	14-Dec-04	9.69	4.30	5.39
	09-Mar-05	9.69	4.13	5.56
MW-2	14-Mar-02	9.49	4.52	4.97
	18-Jul-02	9.49	5.43	4.06
	16-Sep-02	9.49	5.28	4.21
	02-Dec-02	9.49	5.17	4.32
	18-Mar-03	9.49	5.16	4.33
	31-Mar-03	9.49	5.43	4.06
	21-May-03	9.49	5.45	4.04
	27-Aug-03	9.49	5.09	4.40
	03-Nov-03	9.49	5.17	4.32
	23-Mar-04	9.61	5.31	4.30
	17-May-04	9.61	5.43	4.18
	30-Aug-04	9.61	5.07	4.54
	14-Dec-04	9.61	5.10	4.51
	09-Mar-05	9.61	5.22	4.39
MW-3	14-Mar-02	11.14	2.19	8.95
	18-Jul-02	11.14	2.79	8.35
	16-Sep-02	11.14	2.96	8.18
	02-Dec-02	11.14	2.75	8.39
	18-Mar-03	11.14	2.30	8.84
	31-Mar-03	11.14	1.96	9.18
	21-May-03	11.14	2.19	8.95
	27-Aug-03	11.14	2.08	9.06
	03-Nov-03	11.14	2.35	8.79
	23-Mar-04	11.22	2.24	8.98
	17-May-04	11.22	2.25	8.97
	30-Aug-04	11.22	2.42	8.80
	14-Dec-04	11.22	2.79	8.43
	09-Mar-05	11.22	2.77	8.45

TABLE 2

SUMMARY OF WATER LEVEL MEASUREMENTS

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Well No.	Measurement [1] Date	MP Elevation [2] (ft NAVD 88)	Depth to Water (ft bMP)	Water Level Elevation (ft NAVD 88)
MW-4	14-Mar-02	10.71	1.52	9.19
	18-Jul-02	10.71	1.84	8.87
	16-Sep-02	10.71	2.04	8.67
	02-Dec-02	10.71	1.80	8.91
	18-Mar-03	10.71	1.52	9.19
	31-Mar-03	10.71	0.93	9.78
	21-May-03	10.71	1.18	9.53
	27-Aug-03	10.71	1.36	9.35
	03-Nov-03	10.71	1.64	9.07
	23-Mar-04	10.74	1.17	9.57
	17-May-04	10.74	1.17	9.57
	30-Aug-04	10.74	1.37	9.37
	14-Dec-04	10.74	2.21	8.53
	09-Mar-05	10.74	1.95	8.79
MW-5	14-Mar-02	10.69	0.95	9.74
	18-Jul-02	10.69	1.26	9.43
	16-Sep-02	10.69	1.35	9.34
	02-Dec-02	10.69	1.23	9.46
	18-Mar-03	10.69	0.87	9.82
	31-Mar-03	10.69	0.63	10.06
	21-May-03	10.69	0.69	10.00
	27-Aug-03	10.69	0.84	9.85
	03-Nov-03	10.69	0.92	9.77
	23-Mar-04	10.74	0.62	10.12
	17-May-04	10.74	0.78	9.96
	30-Aug-04	10.74	0.71	10.03
	14-Dec-04	10.74	1.50	9.24
	09-Mar-05	10.74	1.40	9.34
MW-6	14-Mar-02	9.77	0.85	8.92
	18-Jul-02	9.77	1.27	8.50
	16-Sep-02	9.77	1.51	8.26
	02-Dec-02	9.77	1.30	8.47
	18-Mar-03	9.77	0.89	8.88
	31-Mar-03	9.77	0.37	9.40
	21-May-03	9.77	0.60	9.17
	27-Aug-03	9.77	0.70	9.07
	03-Nov-03	9.77	1.21	8.56
	23-Mar-04	9.83	0.69	9.14
	17-May-04	9.83	0.78	9.05
	30-Aug-04	9.83	0.99	8.84
	14-Dec-04	9.83	1.25	8.58
	09-Mar-05	9.83	1.17	8.66

TABLE 2

GEOMATRIX

SUMMARY OF WATER LEVEL MEASUREMENTS

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Well No.	Measurement [1] Date	MP Elevation [2] (ft NAVD 88)	Depth to Water (ft bMP)	Water Level Elevation (ft NAVD 88)
MW-7	14-Mar-02	9.68	0.73	8.95
	18-Jul-02	9.68	1.15	8.53
	16-Sep-02	9.68	1.37	8.31
	02-Dec-02	9.68	1.19	8.49
	18-Mar-03	9.68	0.75	8.93
	31-Mar-03	9.68	0.26	9.42
	21-May-03	9.68	0.45	9.23
	27-Aug-03	9.68	0.61	9.07
	03-Nov-03	9.68	1.13	8.55
	23-Mar-04	9.74	0.44	9.30
	17-May-04	9.74	0.50	9.24
	30-Aug-04	9.74	0.84	8.90
	14-Dec-04	9.74	1.04	8.70
	09-Mar-05	9.74	0.96	8.78
MW-8	14-Mar-02	10.30	0.92	9.38
	18-Jul-02	10.30	1.24	9.06
	16-Sep-02	10.30	1.52	8.78
	02-Dec-02	10.30	1.34	8.96
	18-Mar-03	10.30	0.95	9.35
	31-Mar-03	10.30	0.29	10.01
	21-May-03	10.30	0.49	9.81
	27-Aug-03	10.30	0.91	9.39
	03-Nov-03	10.30	1.36	8.94
	23-Mar-04	10.33	0.57	9.76
	17-May-04	10.33	0.54	9.79
	30-Aug-04	10.33	0.94	9.39
	14-Dec-04	10.33	1.29	9.04
	09-Mar-05	10.33	1.07	9.26
MW-9	14-Mar-02	9.86	0.71	9.15
	18-Jul-02	9.86	1.13	8.73
	16-Sep-02	9.86	1.40	8.46
	02-Dec-02	9.86	1.18	8.68
	18-Mar-03	9.86	0.79	9.07
	31-Mar-03	9.86	0.11	9.75
	21-May-03	9.86	0.30	9.56
	27-Aug-03	9.86	0.81	9.05
	03-Nov-03	9.86	1.19	8.67
	23-Mar-04	9.91	0.40	9.51
	17-May-04	9.91	0.38	9.53
	30-Aug-04	9.91	0.89	9.02
	14-Dec-04	9.91	1.05	8.86
	09-Mar-05	9.91	0.85	9.06

TABLE 2

SUMMARY OF WATER LEVEL MEASUREMENTS

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Well No.	Measurement [1] Date	MP Elevation [2] (ft NAVD 88)	Depth to Water (ft bMP)	Water Level Elevation (ft NAVD 88)
MW-10	02-Dec-02	9.80	1.35	8.45
	18-Mar-03	9.80	0.95	8.85
	31-Mar-03	9.80	0.30	9.50
	21-May-03	9.80	0.52	9.28
	27-Aug-03	9.80	1.02	8.78
	03-Nov-03	9.80	1.43	8.37
	23-Mar-04	9.85	0.70	9.15
	17-May-04	9.85	0.61	9.24
	30-Aug-04	9.85	1.13	8.72
	14-Dec-04	9.85	1.24	8.61
	09-Mar-05	9.85	1.05	8.80
MW-11	02-Dec-02	10.26	1.55	8.71
	18-Mar-03	10.26	1.12	9.14
	31-Mar-03	10.26	0.40	9.86
	21-May-03	10.26	0.64	9.62
	27-Aug-03	10.26	1.19	9.07
	03-Nov-03	10.26	1.56	8.70
	23-Mar-04	10.28	0.75	9.53
	17-May-04	10.28	0.69	9.59
	30-Aug-04	10.28	1.20	9.08
	14-Dec-04	10.28	1.44	8.84
	09-Mar-05	10.28	1.14	9.14
MW-12	02-Dec-02	10.73	1.56	9.17
	18-Mar-03	10.73	1.15	9.58
	31-Mar-03	10.73	0.55	10.18
	21-May-03	10.73	0.70	10.03
	27-Aug-03	10.73	1.12	9.61
	03-Nov-03	10.73	1.68	9.05
	23-Mar-04	10.76	0.87	9.89
	17-May-04	10.76	0.76	10.00
	30-Aug-04	10.76	1.13	9.63
	14-Dec-04	10.76	1.55	9.21
	09-Mar-05	10.76	1.27	9.49
MW-14	02-Dec-02	9.02	2.40	6.62
	18-Mar-03	9.02	2.21	6.81
	31-Mar-03	9.02	1.77	7.25
	21-May-03	9.02	1.69	7.33
	27-Aug-03	9.02	2.27	6.75
	03-Nov-03	9.02	2.52	6.50
	23-Mar-04	9.15	2.08	7.07
	17-May-04	9.15	2.15	7.00
	30-Aug-04	9.15	2.48	6.67
	14-Dec-04	9.15	2.30	6.85
	09-Mar-05	9.15	2.10	7.05

TABLE 2

SUMMARY OF WATER LEVEL MEASUREMENTS

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Well No.	Measurement [1] Date	MP Elevation [2] (ft NAVD 88)	Depth to Water (ft bMP)	Water Level Elevation (ft NAVD 88)
MW-17	02-Dec-02	8.98	1.27	7.71
	18-Mar-03	8.98	0.94	8.04
	31-Mar-03	8.98	0.32	8.66
	21-May-03	8.98	0.58	8.40
	27-Aug-03	8.98	1.06	7.92
	03-Nov-03	8.98	1.30	7.68
	23-Mar-04	9.16	0.83	8.33
	17-May-04	9.16	0.74	8.42
	30-Aug-04	9.16	1.21	7.95
	14-Dec-04	9.16	1.17	7.99
	09-Mar-05	9.16	1.00	8.16
MW-18	02-Dec-02	9.53	0.94	8.59
	18-Mar-03	9.53	0.52	9.01
	31-Mar-03	9.53	--[3]	NC
	21-May-03	9.53	0.05	9.48
	27-Aug-03	9.53	0.55	8.98
	03-Nov-03	9.53	0.95	8.58
	23-Mar-04	9.92	0.52	9.40
	17-May-04	9.92	0.47	9.45
	30-Aug-04	9.92	0.98	8.94
	14-Dec-04	9.92	1.13	8.79
	09-Mar-05	9.92	0.94	8.98
MW-20	23-Mar-04	11.87	2.36	9.51
	17-May-04	11.87	2.35	9.52
	30-Aug-04	11.87	2.70	9.17
	14-Dec-04	11.87	2.80	9.07
	09-Mar-05	11.87	2.72	9.15
MW-21	23-Mar-04	12.89	3.97	8.92
	17-May-04	12.89	3.99	8.90
	30-Aug-04	12.89	4.23	8.66
	14-Dec-04	12.89	4.36	8.53
	09-Mar-05	12.89	4.35	8.54
Deep Wells				
MW-13D	02-Dec-02	9.84	4.18	5.66
	18-Mar-03	9.84	4.21	5.63
	31-Mar-03	9.84	4.26	5.58
	21-May-03	9.84	4.52	5.32
	27-Aug-03	9.84	4.45	5.39
	03-Nov-03	9.84	4.30	5.54
	23-Mar-04	9.96	4.42	5.54
	17-May-04	9.96	4.54	5.42
	30-Aug-04	9.96	4.57	5.39
	14-Dec-04	9.96	4.56	5.40
	09-Mar-05	9.96	4.26	5.70

TABLE 2

GEOMATRIX

SUMMARY OF WATER LEVEL MEASUREMENTS

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Well No.	Measurement [1] Date	MP Elevation [2] (ft NAVD 88)	Depth to Water (ft bMP)	Water Level Elevation (ft NAVD 88)
MW-15D	02-Dec-02	11.08	5.31	5.77
	18-Mar-03	11.08	5.44	5.64
	31-Mar-03	11.08	5.46	5.62
	21-May-03	11.08	5.74	5.34
	27-Aug-03	11.08	5.71	5.37
	03-Nov-03	11.08	5.51	5.57
	23-Mar-04	11.19	5.66	5.53
	17-May-04	11.19	5.77	5.42
	30-Aug-04	11.19	5.83	5.36
	14-Dec-04	11.19	5.75	5.44
	09-Mar-05	11.19	5.48	5.71
MW-16D	02-Dec-02	9.80	3.99	5.81
	18-Mar-03	9.80	4.17	5.63
	31-Mar-03	9.80	3.91	5.89
	21-May-03	9.80	4.11	5.69
	27-Aug-03	9.80	3.95	5.85
	03-Nov-03	9.80	4.26	5.54
	23-Mar-04	9.83	4.01	5.82
	17-May-04	9.83	4.13	5.70
	30-Aug-04	9.83	4.13	5.70
	14-Dec-04	9.83	4.38	5.45
	09-Mar-05	9.83	4.22	5.61
MW-19D	02-Dec-02	11.00	4.31	6.69
	18-Mar-03	11.00	4.23	6.77
	31-Mar-03	11.00	4.02	6.98
	21-May-03	11.00	4.22	6.78
	27-Aug-03	11.00	4.26	6.74
	03-Nov-03	11.00	4.61	6.39
	23-Mar-04	11.06	4.13	6.93
	17-May-04	11.06	4.63	6.43
	30-Aug-04	11.06	4.60	6.46
	14-Dec-04	11.06	4.82	6.24
	09-Mar-05	11.06	4.46	6.60

TABLE 2

SUMMARY OF WATER LEVEL MEASUREMENTS

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Well No.	Measurement [1] Date	MP Elevation [2] (ft NAVD 88)	Depth to Water (ft bMP)	Water Level Elevation (ft NAVD 88)
Mad River Slough[4]	31-Mar-03	15.70	15.15	0.55
	31-Mar-03	15.70	15.84	-0.14
	21-May-03	15.70	17.23	-1.53
	21-May-03	15.70	16.75	-1.05
	27-Aug-03	15.70	16.20	-0.50
	27-Aug-03	15.70	12.60	3.10
	03-Nov-03	15.70	9.63	6.07
	03-Nov-03	15.70	10.53	5.17
	23-Mar-04	15.70	15.00	0.70
	23-Mar-04	15.70	12.16	3.54
	17-May-04	15.70	14.48	1.22
	17-May-04	15.70	12.50	3.20
	30-Aug-04	15.70	15.17	0.53
	30-Aug-04	15.70	12.20	3.50
	14-Dec-04	15.70	12.05	3.65
	14-Dec-04	15.70	9.90	5.80
	09-Mar-05	15.70	9.31	6.39
	09-Mar-05	15.70	8.43	7.27

Notes:

1. Data prior to March 18, 2003 were obtained from Results of the Remedial Investigation for Sierra Pacific Industries - Arcata Division Sawmill, Arcata, California, dated January 30, 2003, prepared by Environet Consulting.
2. Monitoring wells surveyed by Omsberg & Company of Eureka, California. Wells were resurveyed on February 13, 2004; elevations shown are relative to the Northern American Vertical Datum of 1988.
3. Water level was above the top of casing measuring point.
4. Mad River Slough measuring point on railroad bridge. Water level measurements are obtained before and after the water level measurements in the monitoring wells.

Abbreviations:
ft NAVD 88 = feet above North American Vertical Datum of 1988
ft bMP = feet below measuring point
-- = not measured or sample not collected for analysis
NC = not calcuated

TABLE 3
SUMMARY OF WATER QUALITY PARAMETERS
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Well No.	Date Sampled	Field Measurements[1] Temperature (ºC)	Specific Conductance (µmohs/cm)	pH (pH Units)	TDS (mg/L)	Laboratory Measurement[2] TDS (mg/L)
Shallow Wells						
MW-1	20-Mar-03	14	2,600	6.5	--	--
	22-May-03	14	2,700	6.7	--	1,400
	27-Aug-03	18	2,500	6.7	1,800	1,400
	04-Nov-03	17	2,400	6.6	1,800	1,300
	17-May-04	15	2,600	6.3	1,900	1,400
	15-Dec-04	15	3,800	6.6	2,500	--
	11-Mar-05	14	2,100	6.5	1,400	--
MW-2	20-Mar-03	13	2,100	6.2	--	--
	22-May-03	14	1,700	6.4	1,100	860
	27-Aug-03	18	1,500	6.6	1,100	760
	03-Nov-03	16	1,590	6.3	1,100	760
	24-Mar-04	13	1,390	6.3	970	740
	17-May-04	15	1,400	6.2	980	730
	30-Aug-04	19	1,200	-- [3]	850	680
	15-Dec-04	14	1,100	6.4	740	--
	11-Mar-05	13	1,200	6.2	790	--
MW-3	20-Mar-03	13	1,100	6.4	--	--
	22-May-03	15	1,000	6.4	630	510
	27-Aug-03	20	1,000	6.5	720	470
	03-Nov-03	16	980	6.6	--	410
	17-May-04	16	1,100	6.2	750	510
	15-Dec-04	13	700	6.4	460	--
	10-Mar-05	13	600	6.4	390	--
MW-4	20-Mar-03	14	830	6.5	--	--
	22-May-03	16	730	6.4	440	420
	27-Aug-03	21	730	6.5	500	340
	03-Nov-03	18	760	6.6	520	310
	17-May-04	18	880	6.2	590	360
	15-Dec-04	14	640	6.4	410	--
MW-5	20-Mar-03	14	670	6.6	--	--
	22-May-03	14	690	6.6	410	360
	27-Aug-03	18	670	6.7	450	360
	03-Nov-03	17	660	6.6	450	380
	17-May-04	15	660	6.3	440	360
	15-Dec-04	15	470	6.4	310	--
	10-Mar-05	14	570	6.3	390	--

TABLE 3
SUMMARY OF WATER QUALITY PARAMETERS
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Well No.	Date Sampled	Field Measurements[1]				Laboratory Measurement[2]
		Temperature (ºC)	Specific Conductance (µmohs/cm)	pH (pH Units)	TDS (mg/L)	TDS (mg/L)
MW-6	20-Mar-03	11	950	6.6	--	--
	22-May-03	14	1,000	6.3	620	430
	27-Aug-03	17	890	6.4	620	410
	04-Nov-03	13	920	6.6	630	430
	24-Mar-04	11	920	6.5	640	410
	17-May-04	14	930	6.3	640	420
	30-Aug-04	17	880	-- [3]	610	430
	15-Dec-04	11	700	6.4	460	--
	11-Mar-05	11	900	6.7	620	--
MW-7	20-Mar-03	11	910	6.6	--	--
	22-May-03	11	960	6.5	--	460
	27-Aug-03	14	840	6.6	580	400
	03-Nov-03	12	870	6.6	600	460
	24-Mar-04	11	960	6.4	--	440
	18-May-04	12	730	6.6	490	370
	30-Aug-04	14	840	-- [3]	580	410
	15-Dec-04	11	700	6.4	460	--
	09-Mar-05	11	850	6.3	580	--
MW-8	18-Mar-03	14	730	6.4	--	--
	21-May-03	16	740	6.3	460	390
	27-Aug-03	21	730	6.2	500	370
	04-Nov-03	17	740	6.4	510	380
	24-Mar-04	14	780	6.2	530	400
	17-May-04	18	800	6.1	530	390
	30-Aug-04	21	760	-- [3]	520	390
	14-Dec-04	14	650	6.3	420	--
	11-Mar-05	13	800	6.5	550	--
MW-9	18-Mar-03	14	820	6.4	--	--
	23-May-03	16	870	6.6	550	400
	27-Aug-03	20	830	6.2	570	350
	04-Nov-03	17	820	6.6	560	350
	24-Mar-04	14	880	6.4	600	380
	17-May-04	16	930	6.1	620	380
	30-Aug-04	20	860	-- [3]	550	440
	14-Dec-04	13	800	6.4	520	--
	11-Mar-05	13	900	6.7	620	--
MW-10	18-Mar-03	14	920	6.4	--	--
	23-May-03	17	970	6.7	--	460
	27-Aug-03	22	860	6.3	600	400
	04-Nov-03	18	880	6.6	600	430
	17-May-04	19	920	6.2	610	420
	14-Dec-04	14	700	6.4	450	--

TABLE 3
SUMMARY OF WATER QUALITY PARAMETERS
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Well No.	Date Sampled	Field Measurements[1]				Laboratory Measurement[2]
		Temperature (ºC)	Specific Conductance (µmohs/cm)	pH (pH Units)	TDS (mg/L)	TDS (mg/L)
MW-11	20-Mar-03	14	870	6.4	--	--
	21-May-03	17	890	6.4	560	460
	27-Aug-03	23	870	6.2	600	440
	04-Nov-03	19	880	6.6	600	450
	17-May-04	18	880	6.2	590	430
	14-Dec-04	15	740	6.4	480	--
MW-12	18-Mar-03	15	830	6.3	--	--
	21-May-03	18	840	6.1	--	460
	27-Aug-03	23	870	6.2	600	480
	04-Nov-03	18	920	6.5	630	480
	17-May-04	20	900	6.0	600	490
	14-Dec-04	14	710	6.4	460	--
MW-14	20-Mar-03	14	3,200	6.7	--	--
	22-May-03	15	3,400	6.6	--	2,100
	27-Aug-03	20	3,600	6.6	2,300	1,900
	04-Nov-03	16	3,300	6.6	2,500	2,100
	17-May-04	17	2,800	6.4	2,000	1,800
	15-Dec-04	14	2,500	6.6	1,300	--
	09-Mar-05	13	2,400	6.6	1,600	--
MW-17	20-Mar-03	13	980	6.4	--	--
	22-May-03	15	1,000	6.5	--	450
	27-Aug-03	19	860	7.0	600	420
	04-Nov-03	15	920	6.6	640	450
	17-May-04	15	940	6.5	620	440
	14-Dec-04	12	830	6.4	540	--
MW-18	18-Mar-03	14	1,000	6.5	--	--
	23-May-03	17	980	6.6	610	640
	27-Aug-03	23	1,100	6.3	780	520
	04-Nov-03	17	1,100	6.6	760	490
	17-May-04	19	1,000	6.3	670	430
	14-Dec-04	13	860	6.5	560	--
MW-20	24-Mar-04	14	420	6.9	280	250
	18-May-04	18	470	6.7	310	280
	30-Aug-04	21	500	-- [3]	330	300
	15-Dec-04	12	370	6.5	240	--
	09-Mar-05	13	320	6.6	220	--
MW-21	24-Mar-04	12	990	6.3	680	460
	18-May-04	14	1,000	6.3	660	420
	30-Aug-04	16	960	-- [3]	660	450
	15-Dec-04	11	760	6.2	500	--
	10-Mar-05	11	930	6.3	640	--

TABLE 3
SUMMARY OF WATER QUALITY PARAMETERS
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Well No.	Date Sampled	Field Measurements[1] Temperature (ºC)	Specific Conductance (µmohs/cm)	pH (pH Units)	TDS (mg/L)	Laboratory Measurement[2] TDS (mg/L)
Deep Wells						
MW-13D	20-Mar-03	14	1,200	6.2	--	--
	22-May-03	14	1,100	6.2	--	--
	27-Aug-03	15	1,100	6.1	750	690
	04-Nov-03	15	1,000	6.1	--	580
	17-May-04	14	1,000	5.8	700	610
	15-Dec-04	14	620	6.1	400	--
	11-Mar-05	14	900	6.2	620	--
MW-15D	20-Mar-03	13	1,300	6.8	--	--
	22-May-03	13	1,300	6.8	--	800
	27-Aug-03	14	1,300	6.3	900	810
	04-Nov-03	14	1,300	6.8	--	790
	17-May-04	13	1,400	6.3	930	800
	15-Dec-04	14	1,000	6.7	650	--
	11-Mar-05	13	1,300	6.8	880	--
MW-16D	18-Mar-03	14	5,200	7.7	--	--
	23-May-03	14	5,200	7.6	--	3,200
	27-Aug-03	16	5,000	7.4	3,400	3,000
	04-Nov-03	16	4,800	7.6	3,700	2,800
	17-May-04	15	4,600	7.3	3,500	2,800
	14-Dec-04	16	3,700	7.7	2,400	--
	11-Mar-05	15	4,400	7.8	3,400	--
MW-19D	20-Mar-03	16	810	6.7	--	--
	22-May-03	16	860	6.6	520	480
	27-Aug-03	17	810	6.5	560	410
	03-Nov-03	17	760	6.7	520	370
	17-May-04	16	840	6.5	560	430
	15-Dec-04	17	490	6.5	320	--

Notes:
1. Water quality parameters measured in the field using an Ultrameter instrument or a YSI Model 556 instrument; reported measurements recorded towards end of purge after parameters stabilized or from the last purge volume if a well was repeatedly purged dry.
2. Water quality parameter analyzed in the laboratory; EPA Method 160.1. Laboratory analysis of TDS was discontinued during the fourth quarter 2004.
3. pH meter inoperable.

Abbreviations:
ºC = degrees Celsius
µmhos/cm = micromhos per centimeter at 25 ºC
mg/L = milligrams per liter
-- = not measured or sample not collected for analysis
TDS = total dissolved solids
EPA = U.S. Environmental Protection Agency

GEOMATRIX

TABLE 4
LABORATORY ANALYTICAL RESULTS FOR CHLORINATED PHENOLS (CANADIAN PULP METHOD)

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Concentrations in micrograms per liter (µg/L)

Monitoring Well Number	Date Sampled [1]	Penta-chlorophenol	2,4,6-trichloro-phenol	2,3,5,6-tetrachloro-phenol	2,3,4,6-tetrachloro-phenol	2,3,4,5-tetrachloro-phenol	Comments
Shallow Wells							
MW-1	14-Mar-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Jul-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	16-Sep-02	1.8	< 1.0	< 1.0	< 1.0	< 1.0	
	03-Oct-02 [2]	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	02-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	22-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	04-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	15-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	11-Mar-05	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	low flow sample
MW-2	14-Mar-02	7.4	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Jul-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	16-Sep-02	2.5	< 1.0	< 1.0	< 1.0	< 1.0	
	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	22-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	24-Mar-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	30-Aug-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	15-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	11-Mar-05	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	low flow sample
MW-3	14-Mar-02	1.2	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Jul-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	16-Sep-02	5.0	< 1.0	< 1.0	< 1.0	< 1.0	
	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	22-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	15-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	

TABLE 4
LABORATORY ANALYTICAL RESULTS FOR CHLORINATED PHENOLS (CANADIAN PULP METHOD)
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Concentrations in micrograms per liter (µg/L)

Monitoring Well Number	Date Sampled [1]	Penta-chlorophenol	2,4,6-trichloro-phenol	2,3,5,6-tetrachloro-phenol	2,3,4,6-tetrachloro-phenol	2,3,4,5-tetrachloro-phenol	Comments
MW-4	14-Mar-02	8.6	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Jul-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	16-Sep-02	5.7	< 1.0	< 1.0	< 1.0	< 1.0	
	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	22-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	15-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
MW-5	14-Mar-02	4.3	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Jul-02	9.1	< 1.0	< 1.0	< 1.0	< 1.0	
	16-Sep-02	25	< 1.0	< 1.0	< 1.0	< 1.0	
	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	duplicate sample
	22-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	15-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
MW-6	14-Mar-02	4.5	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Jul-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	16-Sep-02	6.3	< 1.0	< 1.0	< 1.0	< 1.0	
	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	22-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	24-Mar-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	30-Aug-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	15-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	11-Mar-05	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	

TABLE 4
LABORATORY ANALYTICAL RESULTS FOR CHLORINATED PHENOLS (CANADIAN PULP METHOD)
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Concentrations in micrograms per liter (µg/L)

Monitoring Well Number	Date Sampled [1]	Penta-chlorophenol	2,4,6-trichloro-phenol	2,3,5,6-tetrachloro-phenol	2,3,4,6-tetrachloro-phenol	2,3,4,5-tetrachloro-phenol	Comments
MW-7	14-Mar-02	31,000	< 1.0	41	650	24	
	18-Jul-02	33,000	< 1.0	< 1.0	990	56	
	16-Sep-02	44,000	< 1.0	< 1.0	920	64	
	03-Dec-02	46,000	< 1.3	76	1,300	52	
	14-Jan-03 [3]	51,000	2.4	< 1.0	970	52	
	20-Mar-03	19,000	< 1.0	36	460	22	
	22-May-03	19,000	< 1.0	< 1.0	470	< 100	
	22-May-03	16,000	< 1.0	< 1.0	400	< 100	duplicate sample
	22-May-03	14,000	< 1.0	< 1.0	400	< 100	filtered
	27-Aug-03	31,000	< 1.5	41	710	39	
	27-Aug-03	18,000	< 1.0	28	450	26	duplicate sample
	3-Nov-03	28,000	< 5.0	36	580	35	bailer sample / unfiltered
	3-Nov-03	31,000	< 5.0	47	740	43	bailer sample / filtered
	3-Nov-03	20,000	< 5.0	28	450	24	low flow sample / unfiltered
	3-Nov-03	14,000	< 5.0	19	300	17	low flow sample / filtered
	24-Mar-04	19,000	< 1.5	19	450	19	
	24-Mar-04	7,400	< 1.0	8.7	150	9.9	duplicate sample
	18-May-04	25,000	< 2.5	86	480	41	
	30-Aug-04	13,000	< 1.0	54	200	17	
	15-Dec-04	22,000	1.7	57	310	42	
	09-Mar-05	24,000	< 1.0	39	420	32	low flow sample
MW-8	14-Mar-02	22	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Jul-02	31	< 1.0	< 1.0	< 1.0	< 1.0	
	16-Sep-02	4.8	< 1.0	< 1.0	< 1.0	< 1.0	
	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	21-May-03	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	24-Mar-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	30-Aug-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	14-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	11-Mar-05	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	

TABLE 4
LABORATORY ANALYTICAL RESULTS FOR CHLORINATED PHENOLS (CANADIAN PULP METHOD)
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Concentrations in micrograms per liter (µg/L)

Monitoring Well Number	Date Sampled [1]	Penta-chlorophenol	2,4,6-trichloro-phenol	2,3,5,6-tetrachloro-phenol	2,3,4,6-tetrachloro-phenol	2,3,4,5-tetrachloro-phenol	Comments
MW-9	14-Mar-02	94	3.1	21	130	5.5	
	18-Jul-02	2.1	< 1.0	< 1.0	< 1.0	< 1.0	
	16-Sep-02	3.1	< 1.0	< 1.0	< 1.0	< 1.0	
	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	23-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	04-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	24-Mar-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	30-Aug-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	14-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	11-Mar-05	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
MW-10	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	23-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	14-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
MW-11	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	21-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	14-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
MW-12	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	21-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	14-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	

TABLE 4
LABORATORY ANALYTICAL RESULTS FOR CHLORINATED PHENOLS (CANADIAN PULP METHOD)
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Concentrations in micrograms per liter (µg/L)

Monitoring Well Number	Date Sampled [1]	Penta-chlorophenol	2,4,6-trichloro-phenol	2,3,5,6-tetrachloro-phenol	2,3,4,6-tetrachloro-phenol	2,3,4,5-tetrachloro-phenol	Comments
MW-14	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	22-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	15-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	09-Mar-05	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	low flow sample
MW-17	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	22-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	14-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
MW-18	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	23-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	14-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
MW-20	24-Mar-04	35	< 1.0	< 1.0	5.1	3.8	
	18-May-04	3.6	< 1.0	< 1.0	1.1	< 1.0	
	30-Aug-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	15-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	09-Mar-05	71	3.4	27	< 1.0	4.6	low flow sample
MW-21	24-Mar-04	800	< 1.0	6.3	17	12	
	18-May-04	1,900	< 1.0	11	36	11	
	18-May-04	670	< 1.0	3.5	16	4.4	duplicate sample
	30-Aug-04	2,700	< 1.0	6.4	66	5.4	
	30-Aug-04	2,800	< 1.0	6.9	68	5.5	duplicate sample
	15-Dec-04	3,200	< 1.0	34	50	5.5	
	15-Dec-04	8,100	2.1	64	120	8.3	duplicate sample
	10-Mar-05	4,700	< 1.0	8.1	31	< 1.5	low flow sample
	10-Mar-05	4,600	2.7	26	86	6.5	low flow sample / duplicate

TABLE 4
LABORATORY ANALYTICAL RESULTS FOR CHLORINATED PHENOLS (CANADIAN PULP METHOD)

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Concentrations in micrograms per liter (µg/L)

Monitoring Well Number	Date Sampled [1]	Penta-chlorophenol	2,4,6-trichloro-phenol	2,3,5,6-tetrachloro-phenol	2,3,4,6-tetrachloro-phenol	2,3,4,5-tetrachloro-phenol	Comments
Deep Wells							
MW-13D	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	22-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	15-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	11-Mar-05	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
MW-15D	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	22-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	15-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	11-Mar-05	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
MW-16D	03-Dec-02	1.3	< 1.0	< 1.0	< 1.0	< 1.0	
	18-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	23-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	14-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	11-Mar-05	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
MW-19D	03-Dec-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	20-Mar-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	22-May-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	27-Aug-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	4-Nov-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	17-May-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
	15-Dec-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	

Notes:

1. Data prior to March 18, 2003 were obtained from Results of the Remedial Investigation for Sierra Pacific Industries, Arcata Division Sawmill, Arcata, California, dated January 30, 2003, prepared by EnviroNet Consulting.
2. Confirmation sample collected due to detection of pentachlorophenol on September 16, 2002.
3. Sample also contained 280 mg/L of 2,3,4-trichlorophenol and 190 mg/L of 2,4,5-trichlorophenol.

Abbreviation:

< = target analyte was not detected at or above the laboratory reporting limit shown.
-- = not measured or sample not collected for analysis.

TABLE 5

FIELD MEASUREMENTS AND LABORATORY ANALYTICAL RESULTS FOR NATURAL ATTENUATION PARAMETERS

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Monitoring Well Number	Sample Date	Field Measurements[1]					Laboratory Analysis[2]										
		Eh[3]	DO	Specific Conductance	Temperature	pH	Nitrate (N)	Manganese	Iron	Sulfate (SO_4)	Carbon Dioxide	Methane	TOC	Chloride	Total Alkalinity as $CaCO_3$	Calcium	Magnesium
		(mV)	(mg/L)	(µS/cm)	(°C)	(pH Units)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Shallow Wells																	
MW-1	11/04/03	222	0.2	2,400	17	6.4	--	--	--	--	--	--	--	--	--	--	--
	03/24/04	173	0.1	2,400	15	6.5	0.42	1.8	42	0.71	255	6.9	36.6	320	830	41	63
	03/11/05	138	0.1	2,100	14	6.5	<0.20	1.6	50	<0.50	258	8.0	14.1	260	860	36	57
MW-2	11/03/03	226	0.4	1,600	16	6.2	2.8	6	30	<0.50	314	3.8	33.9	240	520	66	40
	03/24/04	219	0.2	1,400	13	6.2	<0.20	4	61	<0.50	232	4.5	35.7	160	550	65	39
	03/11/05	182	0.1	1,200	13	6.2	<0.20	4.6	53	<0.50	289	5.3	15.8	100	520	62	37
MW-3	11/03/03	201	0.3	920	17	6.3	4.6	3.9	9.1	<0.50	174	5.4	18	37	460	55	36
	03/24/04	183	0.1	1,000	13	6.4	<0.20	5.3	66	<0.50	179	9.1	36.3	35	450	62	46
	03/10/05	169	0.1	600	13	6.4	<0.20	2.5	33	<0.50	116	5.7	16.5	33	280	31	28
MW-4	11/03/03	207	0.1	670	18	6.3	--	--	--	--	--	--	--	--	--	--	--
MW-5	11/03/03	255	0.3	660	17	6.3	<1.0	0.42	0.97	<0.50	125	9.2	9.36	25	350	28	45
	03/24/04	293	0.2	650	14	6.3	<0.20	0.48	4	<0.50	122	6.3	11.4	21	310	29	50
	03/10/05	232	0.1	570	14	6.3	<0.20	0.67	4.7	<0.50	136	6.4	7.34	18	320	29	48
MW-6	11/04/03	236	0.2	890	13	6.3	--	--	--	--	--	--	--	--	--	--	--
MW-7	11/03/03	197	0.1	860	13	6.4	<1.0	13	2.3	<0.50	152	8.8	28.1	45	420	26	42
	03/24/04	189	0.2	880	11	6.4	<0.20	3	55	<0.50	147	10.6	20.8	46	410	31	47
	03/09/05	130	0.1	850	11	6.3	<0.20	3.5	56	<0.50	157	10.5	18.2	60	400	35	52
MW-8	11/04/03	237	0.3	740	17	6.2	--	--	--	--	--	--	--	--	--	--	--
MW-9	11/04/03	211	0.2	810	17	6.4	--	--	--	--	--	--	--	--	--	--	--
MW-10	11/04/03	215	0.1	880	18	6.4	--	--	--	--	--	--	--	--	--	--	--
MW-11	11/04/03	196	0.2	870	19	6.4	--	--	--	--	--	--	--	--	--	--	--
MW-12	11/04/03	251	0.4	810	18	6.2	--	--	--	--	--	--	--	--	--	--	--
MW-14	11/04/03	234	0.2	2,700	16	6.3	--	--	--	--	--	--	--	--	--	--	--
	03/24/04	212	0.1	2,400	14	6.4	<0.20	1.5	41	<0.50	290	5.2	106	460	1,100	23	50
	03/09/05	109	0.1	2,400	13	6.6	<0.20	0.73	18	<0.50	270	0.16	60.9	390	1,100	25	55
MW-17	11/04/03	240	0.2	970	15	6.4	--	--	--	--	--	--	--	--	--	--	--
MW-18	11/04/03	198	0.2	950	17	6.4	--	--	--	--	--	--	--	--	--	--	--
MW-20	03/24/04	252	0.1	440	13	6.8	<0.20	1	0.2	1.6	30.5	<0.00158	9.48	21	210	32	32
	03/09/05	182	0.2	320	13	6.6	<0.20	1.5	2.2	1.2	41.4	0.015	7.25	17	180	23	23
MW-21	03/24/04	162	0.3	990	11	6.4	<0.20	2.7	67	<0.50	135	0.0043	21.4	54	380	30	50
	03/10/05	146	0.1	930	11	6.3	<0.20	2.7	69	<0.50	179	7.4	18.6	62	430	29	50
	03/10/05 [4]						<0.20	2.7	69	<0.50	165	7.8	16.4	62	420	29	49
Deep Wells																	
MW-13D	11/04/03	253	0.1	670	16	5.9	--	--	--	--	--	--	--	--	--	--	--
MW-15D	11/04/03	255	0.3	1,200	14	6.5	--	--	--	--	--	--	--	--	--	--	--
MW-16D	11/04/03	246	0.1	4,600	16	7.5	--	--	--	--	--	--	--	--	--	--	--
MW-19D	11/03/03	197	0.3	730	18	6.5	--	--	--	--	--	--	--	--	--	--	--

Notes:

1. Water quality parameters measured in the field with a YSI model 556 in a flow-through cell.
2. Samples collected by Geomatrix and analyzed by EPA Method 415.1 (total organic carbon), EPA Method 200.7 (calcium and magnesium), EPA Method 300 (chloride, nitrate and sulfate), EPA Method 6010B (Iron (II) and Manganese (II)), Standard Methods 2320B (total alkalinity), RSK 175 (carbon dioxide and methane).
3. Reduction-oxidation potential standardized to hydrogen electrode for silver/silver-chloride electrode (199 millivolts was added to the field measurement).
3. Duplicate sample.

Abbreviations:

Eh = reduction-oxidation potential
DO = dissolved oxygen
TOC = total organic carbon
$CaCO_3$ = calcium carbonate
mV = millivolts
mg/L = milligrams per liter
µS/cm = microSiemens per centimeter
ºC = degrees Celsius
< = target analyte was not detected at or above the laboratory reporting limit shown.
-- = not measured or sample not collected for analysis

TABLE 6
LABORATORY ANALYTICAL RESULTS FOR CHLORINATED PHENOLS AND PHENOL (8270 SIM METHOD)
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Concentrations in micrograms per liter (µg/L)

Monitoring Well	Date Sampled	PCP	3,4,5-TCP	2,3,5,6-TeCP	2,3,4,5-TeCP	2,3,4,6-TeCP	3,4-DCP	2,3,6-TCP	3,5-DCP	2,3,4-TCP	2,4,5-TCP	2,4,6-TCP	2,3,5-TCP	2,5-DCP	3-CP + 4-CP[2]	2,6-DCP	2,3-DCP	2,4-DCP	2-CP	Phenol
MW-1	24-Mar-04	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	<1
	11-Mar-05	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
MW-2	24-Mar-04	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	11-Mar-05	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
MW-3	24-Mar-04	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	10-Mar-05	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
MW-5	24-Mar-04	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	10-Mar-05	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
MW-7	24-Mar-04	15,000	92	320	17	23	390	<1	18	1	56	<1	2	<1	460	<1	<1	4	<1	2
	09-Mar-05	12,000	290	490	37	17	610	1	28	2	75	1	2	<1	890	<1	1	5	<1	3
MW-14	24-Mar-04	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	09-Mar-05	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
MW-20	24-Mar-04	9	2	2	2	<1	8	<1	<1	<1	1	<1	<1	<1	2	<1	<1	<1	<1	<1
	09-Mar-05	100	4	2	4	12	15	<1	9	<1	<1	4	5	<1	9	<1	<1	1	<1	<1
MW-21	24-Mar-04	520	52 ve	16	16	7	130	<1	9	<1	3	<1	<1	<1	200	<1	<1	<1	<1	<1
	24-Mar-04 [3]	570	50 ve	17	14	6	120	<1	9	<1	3	<1	<1	<1	200	<1	<1	<1	<1	<1
	10-Mar-05	5,500	250	109	4	27	310	<1	19	<1	5	<1	<1	<1	270	<1	<1	2	<1	<1
	10-Mar-05 [3]	5,500	250	110	4	27	310	<1	20	<1	5	<1	<1	<1	270	<1	<1	2	<1	<1

Notes:
1. EPA Method 8270 SIM analysis of groundwater samples.
2. Results shown are for both 3-CP and 4-CP (the sum of) since these compounds could not be separated for individual analysis in the laboratory.
3. Duplicate sample.

Abbreviations:
PCP = pentachlorophenol
TeCP = tetrachlorophenol
TCP = trichlorophenol
DCP = dichlorophenol
CP = chlorophenol
EPA = U.S. Environmental Protection Agency
SIM = select ion monitoring
-- = not measured or sample not collected for analysis
< = target analyte was not detected at or above the laboratory reporting limit shown.
ve = value exceeded the calibration range established for the instrument and is therefore considered an estimate; result upon dilution and re-analysis was not detected at or above a laboratory reporting limit of 50.

TABLE 7

LABORATORY ANALYTICAL RESULTS FOR DIOXINS AND FURANS
PILOT STUDY
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

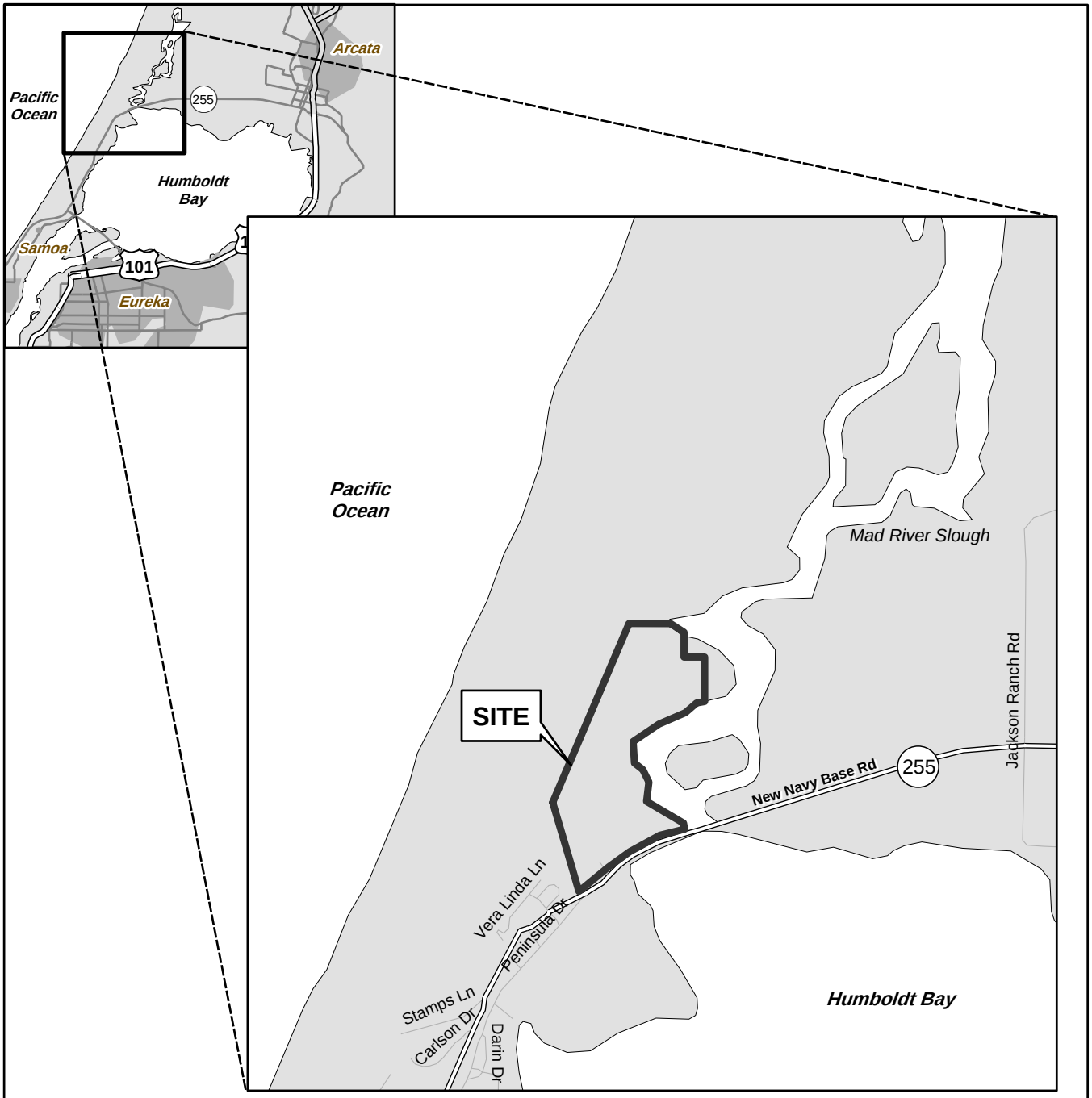
Concentrations in picograms per liter (pg/L).

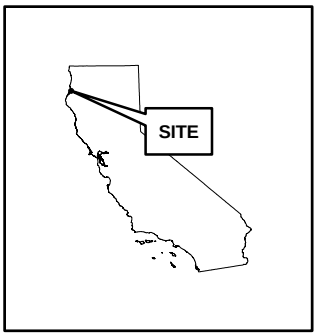
Monitoring Well Number	Date Sampled	2, 3, 7, 8-TCDD	1, 2, 3, 7, 8-PeCDD	1, 2, 3, 4, 7, 8-HxCDD	1, 2, 3, 6, 7, 8-HxCDD	1, 2, 3, 7, 8, 9-HxCDD	1, 2, 3, 4, 6, 7, 8-HpCDD	OCDD	Total Dioxins	2, 3, 7, 8-TCDF	1, 2, 3, 7, 8-PeCDF	2, 3, 4, 7, 8-PeCDF	1, 2, 3, 4, 7, 8-HxCDF	1, 2, 3, 6, 7, 8-HxCDF	2, 3, 4, 6, 7, 8-HxCDF	1, 2, 3, 7, 8, 9-HxCDF	1, 2, 3, 4, 6, 7, 8-HpCDF	1, 2, 3, 4, 7, 8, 9-HpCDF	OCDF	Total Furans	TOTAL TEQ [2, 3]	PERCENT 2,3,7,8-TCDD[4]	Comments
Shallow Wells																							
MW-1	24-Mar-04	<1.69	<2.85	<5.19	<6.00	<5.29	<4.87	87.0	13.5	<1.10	<3.21	<2.84	<1.20	<1.61	<1.47	<1.91	<2.21	<2.57	<7.41	<8.79	0.00870	0	
	11-Mar-05	<1.77	<2.88	<3.27	<4.25	<3.70	6.39 J	136	21.3 J	<1.33	<3.57	<3.70	<1.42	<1.26	<1.13	<1.73	<1.74	<2.36	<4.44	<9.18	0.0775	0	
MW-2	24-Mar-04	<1.63	<2.60	<4.86	<5.67	<4.89	<7.48	61.1	<21.16	<1.37	<3.65	<3.00	<1.30	<1.79	<1.73	<2.42	<3.01	<3.67	<7.05	9.62	0.00611	0	
	11-Mar-05	<1.61	<2.85	<2.75	<3.59	<3.03	<4.61	18.8 J	<12.66	<1.39	<3.37	<3.02	<1.46	<1.30	<1.29	<1.88	<1.71	<2.32	<3.16	<8.96	0.00188	0	
MW-3	24-Mar-04	<1.90	<2.46	<4.74	<6.23	<4.81	74.6	976	219.14 J	<1.46	<3.76	<2.88	<1.15	<1.53	<1.44	<1.99	21.6 J	<2.22	33.9 J	109.03 J	1.06	0	
	10-Mar-05	<1.85	<4.50	<4.51	<5.56	<4.59	<5.31	31.6 J	<17.22	<1.72	<2.91	<2.77	<1.65	<1.51	<1.52	<1.92	<1.88	<2.40	<6.19	<8.95	0.00316	0	
MW-5	24-Mar-04	<1.45	<2.24	<3.67	<4.31	<3.72	19.5 J	121	36.9	<1.29	<3.17	<2.80	<0.747	<1.02	<1.05	<1.38	7.60 J	<2.45	20.2 J	28.76	0.286	0	
	10-Mar-05	<1.65	<4.20	<3.50	<4.31	<3.47	<6.54	59.7	<16.7	<1.48	<3.04	<3.01	<1.92	<1.80	<1.74	<2.36	<2.26	<2.60	<6.19	8.02 J	0.00597	0	
MW-7	16-Sep-02	<3.12	<3.45	<5.82	<6.31	<5.32	32.4	144	50.0	<3.36	<4.21	<4.59	<2.38	<2.81	<2.86	<2.99	6.59	<6.67	22.2	81.43 J	0.407	0	
	22-May-03	<1.62	<4.05	22.6 J	<3.83	<3.10	30.2	449	101.50	<1.26	<2.04	<2.02	<1.02	<1.17	<1.19	<1.15	4.97 J	<0.807	20.7 J	48.44	2.66	0	
	22-May-03	<1.27	<2.00	7.89 J	<2.47	<1.97	16.3	231	50.0	<1.01	<1.66	<1.64	<1.09	<1.28	<1.4	<1.67	2.09 J	<1.19	7.05 J	32.63	0.997	0	filtered
	03-Nov-03	<2.22	<4.82	<9.48	<10.4	<9.25	<9.54	41.1 J	<26.98	<2.29	<7.96	<5.93	<2.11	<2.51	<2.63	<3.12	<3.03	<4.42	<10.6	<23.04	0.00411	0	filtered
	24-Mar-04	<1.76	46.5	56.4	<5.29	<4.61	71.4	1370	289.3 M	<1.41	<3.57	<2.67	<1.13	<1.57	<1.28	<1.95	8.00 J	<3.17	31.3 J	157.3 J	53.0	0	
	09-Mar-05	<3.21	<4.66	<11.7	<9.57	<7.78	42.4	1,600	88.6	<4.83	<4.92	<4.87	<5.41	<4.70	<5.00	<4.88	<5.91	<6.93	32.1 J	81.5	0.587	0	
MW-14	24-Mar-04	<1.74	<3.36	<5.32	<5.84	<5.15	10.2 J	70.4	19.9 J	<1.31	<3.96	<3.01	<1.13	<1.64	<1.33	<1.97	<2.42	<2.97	<8.53	<10.21	0.109	0	
	09-Mar-05	<2.18	<4.31	<4.54	<5.51	<4.31	<7.26	46.2 J	<19.26	<2.05	<2.89	<2.59	<2.29	<2.12	<2.09	<2.78	<2.57	<3.13	<8.18	<10.85	0.00462	0	
MW-20	24-Mar-04	4.05 J	22.7 J	60.2	2,060	466	93,600	1,240,000	210,367.2	6.50 F	19.5 J	15.3 J	52.6	226 D,M	57.6	11.4 J	3,220 D,M	251	13,600	26,240 D,M	1430	0.00283	
	09-Mar-05	<2.05	<4.69	<8.75	111	17.8 J	3,850	50,500	9,227	<4.81	<7.00	<6.29	14.8 J	22.2 J	16.5 J	4.42	832	57.9	3,000	6,192 D,M	71.0	0	
MW-21	24-Mar-04	<1.82	<2.92	8.76 J	56.1	9.46 J	1,050	12,800	2,542.8	<1.39	<7.15	<3.28	6.89 J	20.9 J	10.3 J	<2.55	605	32.6	1,960	3,477.1 D,M	29.6	0	
	10-Mar-05	<3.78	<14.7	64.6	<9.98	<9.90	79.4	223	274.5 M	<6.15 F	<6.27	<7.06	1,640	<9.63	<8.08	26.0 J	<8.57	177	<24.7	2,687.4	176	0	
	10-Mar-05	<1.19	<4.39	<4.13	<5.51	<4.29	20.4 J	522	38.0	<1.15	<2.10	<2.20	<1.40	<1.27	<1.25	<1.58	9.20 J	<1.72	23.4 J	35.01	0.351	0	duplicate
	TEF [5]:	1	1	0.1	0.1	0.1	0.01	0.0001	--	0.1	0.05	0.5	0.1	0.1	0.1	0.1	0.01	0.01	0.0001	--	--	--	

Notes:
1. EPA Method 1613 analysis of groundwater samples.
2. Calculated as the sum of congener concentrations after each has been multiplied by its TEF.
3. Concentrations not detected above the laboratory reporting limit were assigned a concentration of 0 pg/g to calculate TEQ.
4. Calculated by dividing the concentration of 2,3,7,8-TCDD by the Total TEQ (multiplied by 100). When the concentration of 2,3,7,8-TCDD was not detected, it was assigned a concentration of 0 pg/g for this calculation.
5. Toxicity equivalency factor (unitless) from the World Health Organization, 1997 (WHO-97), adopted from F.X.R. van Leeuwen, 1997.

Abbreviations:
TCDD = tetrachlorodibenzo-p-dioxin
PeCDD = pentachlorodibenzo-p-dioxin
HxCDD = hexachlorodibenzo-p-dioxin
HpCDD = heptachlorodibenzo-p-dioxin
OCDD = octachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
PeCDF = pentachlorodibenzofuran
HxCDF = hexachlorodibenzofuran
HpCDF = heptachlorodibenzofuran
OCDF = octachlorodibenzofuran
TEQ = toxicity equivalence
TEF = toxicity equivalency factor (unitless)
EPA = U.S. Environmental Protection Agency
-- = not measured or sample not collected for analysis
< = target analyte was not detected at or above the laboratory reporting limit shown (in gray color).
J = concentration detected was below the calibration range, as flagged by the laboratory
M = maximum possible concentration, as flagged by the laboratory
F = analyte confirmation on secondary column, as flagged by laboratory
D = presence of diphenyl ethers detected, as flagged by laboratory

FIGURES





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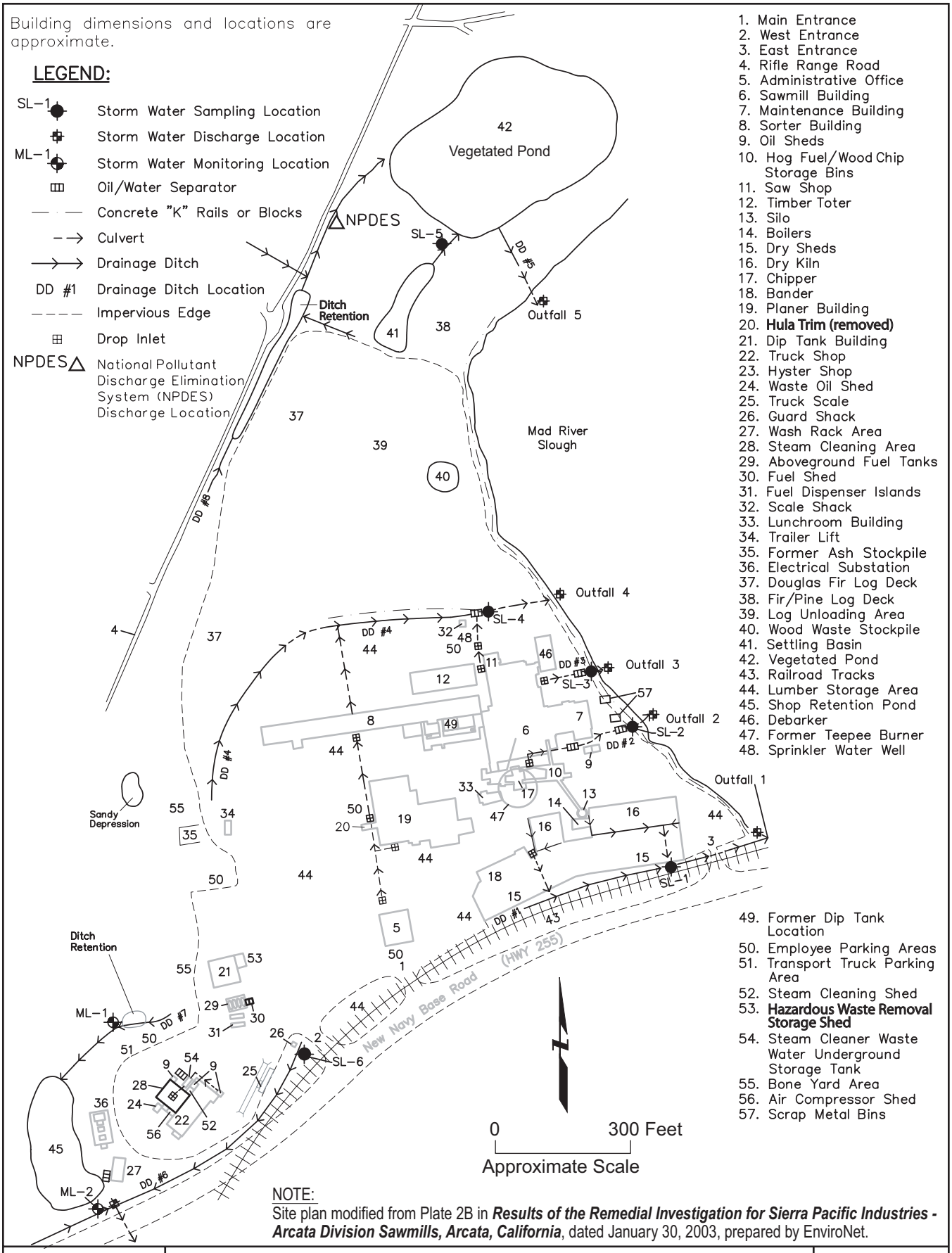
GEOMATRIX

SITE LOCATION MAP
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Project No.
9329

Figure No.
1



NOTE:
Site plan modified from Plate 2B in ***Results of the Remedial Investigation for Sierra Pacific Industries - Arcata Division Sawmills, Arcata, California***, dated January 30, 2003, prepared by EnviroNet.

GEOMATRIX

SITE PLAN
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Project No.
9329

Figure
2

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SETTLING BASIN

STORMWATER DISCHARGE - OUTFALL 4

SD

SCALE SHACK

WELL HOUSE

MAD RIVER SLOUGH BOUNDARY

MAD RIVER SLOUGH

MW-3

MW-15D

MW-4

MW-19D

SETTLING BASIN

STORMWATER DISCHARGE - OUTFALL 3

MW-1

MW-5

MW-2

MW-13D

MW-6

SAW MILL BUILDING

MW-21

MW-7

MAINTENANCE BUILDING

FORMER GREEN CHAIN AREA

SORTER

MW-20

STORMWATER DISCHARGE - OUTFALL 2

MW-8

MW-9

MW-18

SETTLING BASIN

MW-14

MW-10

MW-12

OIL SHED

MW-17

MW-11

MW-16D

CHIPPER

PLANER BUILDING

EXPLANATION

MW-1 MONITORING WELL (D = DEEP)

SITE BEST MANAGEMENT PRACTICES

APPROXIMATE LIMIT OF INTERIM REMEDIAL MEASURES SOURCE AREA REMOVAL (June - November 2003)

STORM DRAIN

N

0 50

SCALE IN FEET

BASEMAP SOURCE:
"SITE PLAN, SPI Arcata Mill" Sheet C-3 by Carlton Engineering, dated 5/6/02.

SAMPLE LOCATION DATA SOURCES:
Monitoring wells MW-20 and MW-21 surveyed and monitoring wells MW-1 through MW-19 re-surveyed on February 13, 2004 by Omsberg & Company Surveyors of Eureka, California. Horizontal and vertical control surveyed to North American Datum (NAD) of 1983 and National Geodetic Vertical Datum (NGVD) of 1929, respectively.

FORMER GREEN CHAIN AREA PLAN
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

GEOMATRIX

Project No. 9329

Figure 3

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SCALE IN FEET

SETTLING BASIN

STORMWATER DISCHARGE - OUTFALL 4

SCALE SHACK

WELL HOUSE

MAD RIVER SLOUGH BOUNDARY

MAD RIVER SLOUGH

MW-3 8.45

MW-19D

MW-4 8.79

MW-15D

MW-5 9.34

8.66 MW-6

MW-21 8.54

MW-7 8.78

SAW MILL BUILDING

SETTLING BASIN

STORMWATER DISCHARGE - OUTFALL 3

5.56 MW-1*

4.39 MW-2

MW-13D

FORMER GREEN CHAIN AREA

SORTER

MAINTENANCE BUILDING

MW-20 9.07

MW-8 9.26

MW-9 9.06

8.98 MW-18

MW-10 8.80

7.05 MW-14

STORMWATER DISCHARGE - OUTFALL 2

SETTLING BASIN

SETTLING BASIN

OIL SHED

MW-12 9.49

8.16 MW-17

MW-11 9.14

MW-16D

CHIPPER

PLANER BUILDING

9.0

8.0

7.0

6.0

5.0

EXPLANATION

MW-1 "SHALLOW" MONITORING WELL

MW-13D "DEEP" MONITORING WELL

APPROXIMATE GROUNDWATER FLOW DIRECTION

SITE BEST MANAGEMENT PRACTICES

APPROXIMATE LIMIT OF INTERIM REMEDIAL MEASURES SOURCE AREA REMOVAL (June - November 2003)

STORM DRAIN

4.39 GROUNDWATER ELEVATION IN FEET ABOVE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

5.0 GROUNDWATER ELEVATION CONTOUR DRAWN TO APPROXIMATE THE GROUNDWATER POTENTIOMETRIC SURFACE. LINES OF EQUAL ELEVATION ARE SHOWN FOR CLARITY AND NOT MEANT TO IMPLY CERTAINTY; CONTOUR INTERVAL OF 1.0 FEET

* MW-1 WATER-LEVEL DATA NOT USED FOR CONTOURING BECAUSE IT IS LOCATED WITHIN THE 100-foot TIDAL INFLUENCE ZONE (EnviroNet, 2003)

BASEMAP SOURCE:
"SITE PLAN, SPI Arcata Mill" Sheet C-3 by Carlton Engineering, dated 5/6/02.

SAMPLE LOCATION DATA SOURCES:
Monitoring wells MW-20 and MW-21 surveyed and monitoring wells MW-1 through MW-19 re-surveyed on February 13, 2004 by Omsberg & Company Surveyors of Eureka, California. Horizontal and vertical control surveyed to North American Datum (NAD) of 1983 and National Geodetic Vertical Datum (NGVD) of 1929, respectively. Elevations shown are based on the NAVD of 1988 coordinate system and are 3.35 feet higher than the NGVD of 1929 elevations.

POTENTIOMETRIC SURFACE MAP OF SHALLOW GROUNDWATER MARCH 9, 2005

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

GEOMATRIX

Project No. 9329

Figure 4

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SCALE IN FEET

SETTLING BASIN

STORMWATER DISCHARGE - OUTFALL 4

MAD RIVER SLOUGH BOUNDARY

MAD RIVER SLOUGH

SCALE SHACK

WELL HOUSE

SD

MW-1

MW-3

MW-4

MW-19D 6.66

MW-15D 5.71

MW-5

MW-6

MW-21

MW-7

SAW MILL BUILDING

SETTLING BASIN

STORMWATER DISCHARGE - OUTFALL 3

MW-2

MW-13D 5.70

MAINTENANCE BUILDING

FORMER GREEN CHAIN AREA

SORTER

MW-20

MW-8

MW-9

MW-18

MW-10

MW-12

MW-11

MW-16D 5.61

MW-17

MW-14

SETTLING BASIN

OIL SHED

STORMWATER DISCHARGE - OUTFALL 2

SETTLING BASIN

PLANER BUILDING

CHIPPER

6.5

6.0

EXPLANATION

MW-1 "SHALLOW" MONITORING WELL

MW-13D "DEEP" MONITORING WELL

APPROXIMATE GROUNDWATER FLOW DIRECTION

SITE BEST MANAGEMENT PRACTICES

APPROXIMATE LIMIT OF INTERIM REMEDIAL MEASURES SOURCE AREA REMOVAL (June - November 2003)

STORM DRAIN

5.70 GROUNDWATER ELEVATION IN FEET ABOVE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

6.0 GROUNDWATER ELEVATION CONTOUR DRAWN TO APPROXIMATE THE GROUNDWATER POTENTIOMETRIC SURFACE. LINES OF EQUAL ELEVATION ARE SHOWN FOR CLARITY AND NOT MEANT TO IMPLY CERTAINTY; CONTOUR INTERVAL OF 0.5 FEET

BASEMAP SOURCE:
"SITE PLAN, SPI Arcata Mill" Sheet C-3 by Carlton Engineering, dated 5/6/02.

SAMPLE LOCATION DATA SOURCES:
Monitoring wells MW-20 and MW-21 surveyed and monitoring wells MW-1 through MW-19 re-surveyed on February 13, 2004 by Omsberg & Company Surveyors of Eureka, California. Horizontal and vertical control surveyed to North American Datum (NAD) of 1983 and National Geodetic Vertical Datum (NGVD) of 1929, respectively. Elevations shown are based on the NAVD of 1988 coordinate system and are 3.35 feet higher than the NGVD of 1929 elevations.

POTENTIOMETRIC SURFACE MAP OF DEEP GROUNDWATER MARCH 9, 2005

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

GEOMATRIX

Project No. 9329

Figure 5

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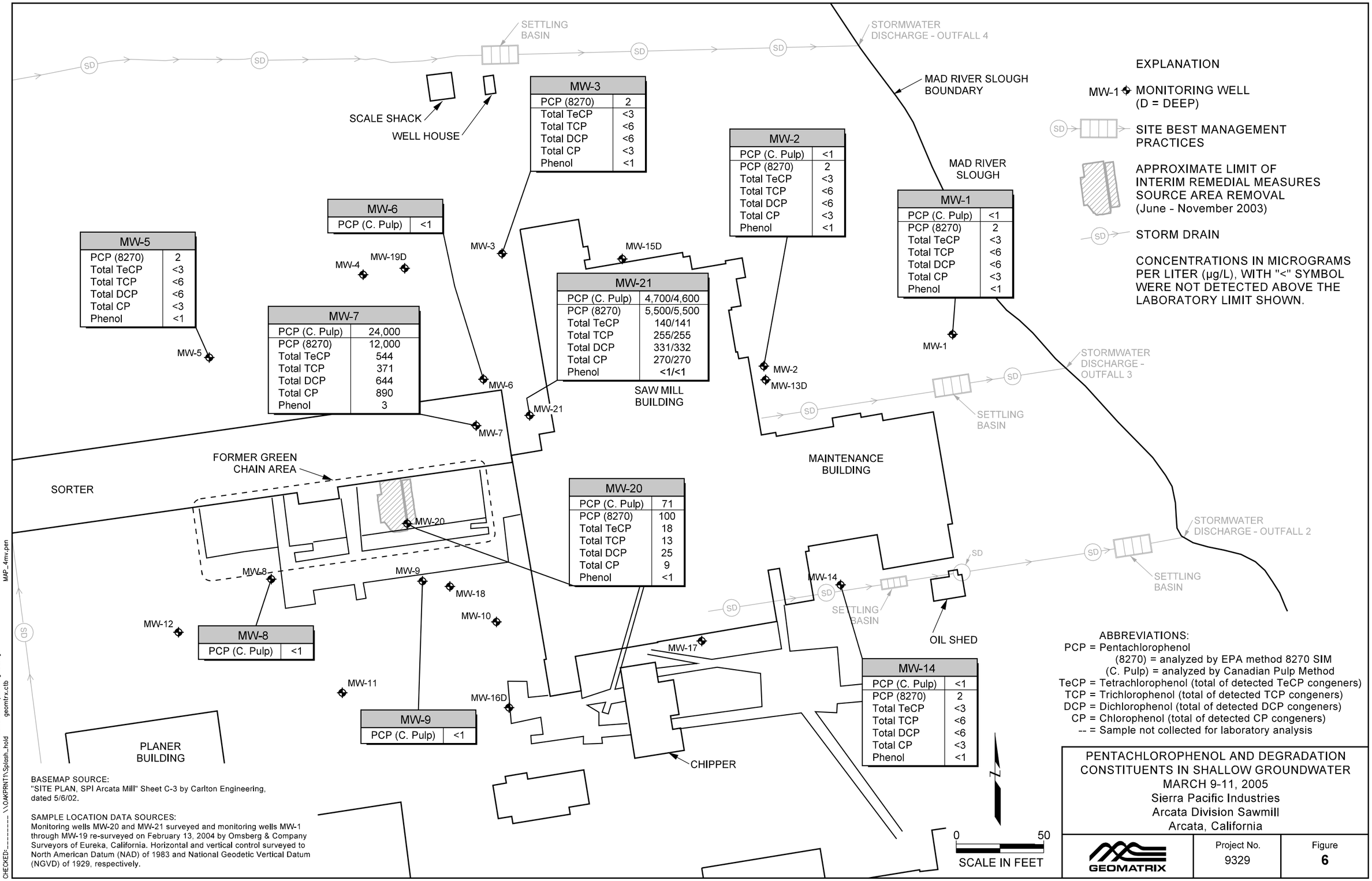

PENTACHLOROPHENOL AND DEGRADATION CONSTITUENTS IN SHALLOW GROUNDWATER
MARCH 9-11, 2005
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

GEOMATRIX

Project No. 9329

Figure 6

APPENDIX A

Field Documentation

Quarterly Groundwater Monitoring and Sampling Records
Pilot Study Groundwater Sampling Records

DAILY FIELD RECORD

GEOMATRIX

Project and Task Number: 9329.000.0 28/23	Date: 3/9/05
Project Name: SPI Arcata	Field Activity: GW Monitoring
Location: Arcata	Weather: foggy

PERSONNEL: Name	Company	Time In	Time Out
Matt Hillyard	Geomatrix	8:45	1700
Ross Steenson	Geomatrix	8:45	1700

PERSONAL SAFETY CHECKLIST

X	Steel-toed Boots	X	Hard Hat		Tyvek Coveralls
X	Rubber Gloves	X	Safety Goggles		1/2-Face Respirator

DRUM I.D.	DESCRIPTION OF CONTENTS AND QUANTITY	LOCATION

TIME	DESCRIPTION OF WORK PERFORMED
8:45	Arrive @ Site check in
8:50	begin to open all MW's
9:50	Begin WL measurements @ Slough
10:50	Finish WL @ Slough
11:00	Lunch
11:45	Back @ mill begin pilot study sampling
	Using a YSI 556 MPS Flow-Through Cell
	rented from Equipco. Unit was calibrated
	by Equipco - copy of Calibration attached.
	Pilot Study bottles: 1x1L Plastic NO_3, SO_4, Cl, Alkalinity — Alpha
	1x1pt Plastic (HNO3) Ca, Mg
	Efield filter, HNO3 preservative 1x1pt plastic Fe^{2+}, total Mn
	0.45-micron 3x40ml VOAs Methane, CO_2
	2x40ml Amber Vial (HNO3) TOC
	2x1L Amber Dioxins — Frontier
	4x1L Amber Penta + chl. phenols — FDB

DAILY FIELD RECORD (continued)

GEOMATRIX

Project and Task Number: 9329.000.0 28 | Date: 3/9/05

TIME	DESCRIPTION OF WORK PERFORMED
	General sampling procedure for pilot study wells:
	Use YSI-rented flow through cell and perform with a peristaltic pump low-flow purging and monitoring of parameters
	until they stabilize. Directly fill the sample
	bottles. For the Fe2+ and Mn sample bottle,
	the sample is first passed through a 0.45-micron
	~~disp~~ filter then into the sample bottle.
	See previous page for listing of bottles filled.
	Note: equipment calibration form for YSI flow-
	through cell meter is included
	on separate page.
	Issue with bottles and preservative notes for
	metals Fe2+ and Mn and also
	methane & CO_2. Will have to re-purge
	and sample these wells on 3/10/05.
1700	Offsite to office.

DAILY FIELD RECORD

GEOMATRIX

Project and Task Number: 9329.000.0 28	Date: 3/10/05
Project Name: SPI Arcata	Field Activity: GW Monitoring
Location: Arcata	Weather: mostly clear

PERSONNEL: Name	Company	Time In	Time Out
Matt Hillyard	Geomatrix	0700	1445
~~Charlie Rome~~ Ross Steenson	Geomatrix	0700	1445

PERSONAL SAFETY CHECKLIST

X	Steel-toed Boots	X	Hard Hat		Tyvek Coveralls
X	Rubber Gloves	X	Safety Goggles		1/2-Face Respirator

DRUM I.D.	DESCRIPTION OF CONTENTS AND QUANTITY	LOCATION

TIME	DESCRIPTION OF WORK PERFORMED
0700	Arrive on-site. Go back to wells MW-20, -14 & -7 to collect samples for Fe 2+ & total Mn plus other parameters (Pilot Study)
1000	Courier from Alpha onsite to pickup samples that are ready
1020	Continue Sampling (MW-21)
1445	Finish Sampling for the day. Leave the site to obtain additional coolers, ice & then make ready to ship Samples to Frontier Via Federal Express
1600	Finish shipping. Finish work for day.

DAILY FIELD RECORD

GEOMATRIX

Project and Task Number: 9329.000/23 & 28	Date: 3/11/05
Project Name: SPI Arcata	Field Activity: Pilot Study & GW Sampling
Location: Arcata, CA	Weather:

PERSONNEL: Name	Company	Time In	Time Out
MATT HILLYARD (MAH)	GEOMATRIX (GMX)	0700	1145
ROSS STEENSON (RAS)	GMX	0700	1145

PERSONAL SAFETY CHECKLIST

X	Steel-toed Boots	X	Hard Hat		Tyvek Coveralls
X	Rubber Gloves	X	Safety Goggles		1/2-Face Respirator

DRUM I.D.	DESCRIPTION OF CONTENTS AND QUANTITY	LOCATION

TIME	DESCRIPTION OF WORK PERFORMED
0700	On-site. Continue pilot study sampling (MW-02) then will finish GW Monitoring
0840	Calibrated the Myron L Company Ultrameter pH 4, 7, 10 conductivity 447 and 2070 µS/cm TDS 300 and 1500 mg/L
0930	Finished up pilot study sampling and switch over to routine groundwater well sampling
1145	Finish up sampling. Put remaining purge water into drums. Offsite

WATER LEVEL MONITORING RECORD

GEOMATRIX

Project Name: SPI Arcata Project and Task Number: 9329.000.0 28

Date: 3/9/05 Measured by: MAH/RAS Instrument Used: Slope Indicator #10

Note: For you convenience, the following abbreviations may be used.

P = Pumping I = Inaccessible D = Dedicated Pump

ST = Steel Tape ES = Electric Sounder MP = Measuring Point WL = Water Level

Well No.	Time	MP Elevation (feet)	Water Level Below MP (feet)	Water Level Elevation (feet)	Previous Water Level Below MP	Remarks
RR	0952	15.70	9.31			~~Slope~~
MW-12	1001	10.76	1.27			
MW-8	1004	10.33	1.07			
MW-11	1007	10.28	1.14			
MW-9	1009	9.91	0.85			
MW-18	1010	9.92	0.94			
MW-10	1012	9.85	1.05			
MW-16D	1015	9.83	4.22			
MW-17	1017	9.16	1.00			
MW-14	1019	9.15	2.10			
MW-1	1023	9.69	4.13			
MW-2	1025	9.61	5.22			
MW-13D	1026	9.96	4.26			
MW-15D	1028	11.19	5.48			
MW-3	1030	11.22	2.77			
MW-19D	1032	11.06	4.46			
MW-4	1033	10.74	1.95			
MW-5	1035	10.74	1.40			
MW-6	1038	9.83	1.17			
MW-20	1043	11.87	2.72			
MW-21	1041	12.89	4.35			
MW-7	1042	9.74	0.96			
RR	1051	15.70	8.43			

GEOMATRIX

WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW-01-R

Sample ID: MW-01-20050311 Duplicate ID: _____

Sample Depth: MID SCREEN

Project and Task No: 9329.000.0 23

Project Name: SPI Arcata

Date: 3/11/05

Sampled By: MAH/RAS

Method of Purging: Low Flow

Method of Sampling: Low Flow

Initial Depth to Water: _____

Depth to Water after Sampling: _____

Total Depth to Well: _____

Well Diameter: 2"

Total Volume Removed: 7

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Dissolved Oxygen (mg/l)	Redox Potential (mV; SSCE)	Remarks (color, turbidity, and sediment)
0828			(L)	13.20	6.47	2086	4.04	177.5	light yellow, clear
0831			1	13.35	6.46	2129	0.49	27.4	" " "
0834			2	13.46	6.46	~~2154~~ ~~1404~~	0.32	-10.6	" " "
0837			3	13.48	6.46	~~1400~~ 2134	0.18	-34.6	" " "
0840			4	13.51	6.64	2145	0.14	-43.6	" " "
0843			5	13.52	6.46	2140	0.11	-53.7	" " "
0846			6	13.54	6.46	2141	0.08	-59.0	" " "
0848			7	13.54	6.46	2141	0.07	-60.9	" " "
0850			SAMPLE						
				TDS =		1392 mg/L			

pH CALIBRATION (choose two)					Model or Unit No.:
Buffer Solution	pH 4.0	pH 7.0	pH 10.0		
Field Temperature °C					
Instrument Reading					

SPECIFIC ELECTRICAL CONDUCTANCE – CALIBRATION				Model or Unit No.:
KCL Solution (µS/cm=µmhos/cm)	1413 at 25°C	12880 at 25°C		
Field Temperature °C				
Instrument Reading				

REDOX CALIBRATION		DISSOLVED OXYGEN CALIBRATION		Notes:
Standard Solution	468 mV	Salinity %		
Field Temperature °C		Altitude		
Instrument Reading		Instrument Reading		
Model or Unit No.: Ag/AgCl Electrode (SSCE)		Model or Unit No.:		

GEOMATRIX

WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW-02
Sample ID: MW-02-200503 Duplicate ID: _____
Sample Depth: MID SCREEN
Project and Task No: 9329.000.0 23
Project Name: SPI Arcata
Date: 3/11/05
Sampled By: MAH/RAS
Method of Purging: Low Flow
Method of Sampling: Low Flow

Initial Depth to Water: _____
Depth to Water after Sampling: _____
Total Depth to Well: _____
Well Diameter: 2"
Total Volume Removed: 8 L

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Dissolved Oxygen (mg/l)	Redox Potential (mV; SSCE)	Remarks (color, turbidity, and sediment)
0715			(L)	12.64	6.18	1194	1.6	157	light yellow, clear
0720			1	12.64	6.21	1226	0.38	23	" " "
0723			2	12.66	6.20	1227	0.23	~~6.23~~	" " "
0726			3	12.67	6.19	1226	0.16	-0.5	" " "
0729			4	12.68	6.19	1224	0.13	-6.1	" " "
0732			5	12.68	6.19	1223	0.12	-11.1	" " "
0734			6	12.68	6.19	1220	0.11	-13.3	" " "
0736			7	12.68	6.19	1219	0.11	-15.2	" " "
0738			8	12.68	6.19	1219	0.11	-16.8	" " "
					TDS	792 mg/L			
0740			SAMPLE						

pH CALIBRATION (choose two)				
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Field Temperature °C				
Instrument Reading				

Model or Unit No.:

SPECIFIC ELECTRICAL CONDUCTANCE – CALIBRATION			
KCL Solution (µS/cm=µmhos/cm)	1413 at 25°C	12880 at 25°C	
Field Temperature °C			
Instrument Reading			

Model or Unit No.:

REDOX CALIBRATION		DISSOLVED OXYGEN CALIBRATION	
Standard Solution	468 mV	Salinity %	
Field Temperature °C		Altitude	
Instrument Reading		Instrument Reading	
Model or Unit No.: Ag/AgCl Electrode (SSCE)		Model or Unit No.:	

Notes:

GEOMATRIX

WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW-3
Sample ID: MW-03-200503 **Duplicate ID:**
Sample Depth: MID SCREEN
Project and Task No: 9329.000.0 23
Project Name: SPI Arcata
Date: 3/10/05
Sampled By: MAH/RAS
Method of Purging: Low Flow
Method of Sampling: Low Flow

Initial Depth to Water:
Depth to Water after Sampling:
Total Depth to Well:
Well Diameter: 2"
Total Volume Removed: 6 L

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Dissolved Oxygen (mg/l)	Redox Potential (mV; SSCE)	Remarks (color, turbidity, and sediment)
1350			L	13.61	6.58	775	0.64	84.1	clear
1354			1	13.20	6.53	677	0.19	15.6	clear, light yellow
1356			2	13.17	6.50	628	0.12	-9.4	" " "
1358			3	13.09	6.50	620	0.13	-18.6	" " "
1403			5	12.98	6.46	598	0.10	-29.3	" " "
1405			6	12.98	6.45	602	0.09	-29.9	" " "
1407		SAMPLE							
						TDS = 393 mg/L			

pH CALIBRATION (choose two)				
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Field Temperature °C				
Instrument Reading				

Model or Unit No.:

SPECIFIC ELECTRICAL CONDUCTANCE – CALIBRATION			
KCL Solution (µS/cm=µmhos/cm)	1413 at 25°C	12880 at 25°C	
Field Temperature °C			
Instrument Reading			

Model or Unit No.:

REDOX CALIBRATION		DISSOLVED OXYGEN CALIBRATION	
Standard Solution	468 mV	Salinity %	
Field Temperature °C		Altitude	
Instrument Reading		Instrument Reading	
Model or Unit No.: Ag/AgCl Electrode (SSCE)		Model or Unit No.:	

Notes:

GEOMATRIX

WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW-05
Sample ID: MW-05-200507 **Duplicate ID:** _____
Sample Depth: MID SCREEN
Project and Task No: 9329.000.0 23
Project Name: SPI Arcata
Date: 3/10/05
Sampled By: MAH/RAS
Method of Purging: Low Flow
Method of Sampling: Low Flow

Initial Depth to Water: _____
Depth to Water after Sampling: _____
Total Depth to Well: _____
Well Diameter: 2"
Total Volume Removed: 5 L

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Dissolved Oxygen (mg/l)	Redox Potential (mV; SSCE)	Remarks (color, turbidity, and sediment)
1300			(L)	14.67	6.64	581	1.89	158	clear
1304			1	14.00	6.42	574	0.13	47.8	"
1307			3	13.79	6.34	570	0.14	36.0	"
1309			5	13.71	6.33	570	0.11	33.2	"
1310			SAMPLE						
						TDS = 390 mg/L			

pH CALIBRATION (choose two)				
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Field Temperature °C				
Instrument Reading				

Model or Unit No.:

SPECIFIC ELECTRICAL CONDUCTANCE – CALIBRATION			
KCL Solution (µS/cm=µmhos/cm)	1413 at 25°C	12880 at 25°C	
Field Temperature °C			
Instrument Reading			

Model or Unit No.:

REDOX CALIBRATION		DISSOLVED OXYGEN CALIBRATION	
Standard Solution	468 mV	Salinity %	
Field Temperature °C		Altitude	
Instrument Reading		Instrument Reading	
Model or Unit No.: Ag/AgCl Electrode (SSCE)		Model or Unit No.:	

Notes:

GEOMATRIX

WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW-6
Sample ID: MW-06-200503 Duplicate ID: _____
Sample Depth: TOC
Project and Task No.: 9329.000.0 28
Project Name: SPI ARCATA
Date: 03/11/05
Sampled By: MAH/RAS
Method of Purging: DISPOSABLE TEFLON BAILER
Method of Sampling: DISPOSABLE TEFLON BAILER

Initial Depth to Water: 1.17'
Depth to Water after Sampling: _____
Total Depth to Well: 7.80'
Well Diameter: 2"
1 Casing/Borehole Volume: 1.1 g (Circle one)
3 Casing/Borehole Volumes: 3.3 g (Circle one)
Total Casing/Borehole Volumes Removed: 3.5 g

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)
1012				11.4	6.68	858	590 mg/L TDS; clear
1013			1	10.9	6.74	905	624 " ; 14. yellow, sl. cloudy
1014			2	10.8	6.74	917	633 " " "
1015			3	10.7	6.74	919	635 " " "
1016			3.5	10.6	6.73	900	621 " " "
1020			SAMPLE				

pH CALIBRATION (choose two)					Model or Unit No.:
Buffer Solution	pH 4.0	pH 7.0	pH 10.0		
Temperature C					
Instrument Reading					

SPECIFIC ELECTRICAL CONDUCTANCE – CALIBRATION				Model or Unit No.:
KCL Solution (µS/cm=µmhos/cm)				
Temperature C				
Instrument Reading				

Notes:

GEOMATRIX

WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW-7
Sample ID: MW-7-200503 Duplicate ID: _____
Sample Depth: MID SCREEN 5'
Project and Task No: 9329.000.0 23
Project Name: SPI Arcata
Date: 3/9/05
Sampled By: MAH/RAS
Method of Purging: Low Flow
Method of Sampling: Low Flow

Initial Depth to Water: _____
Depth to Water after Sampling: _____
Total Depth to Well: _____
Well Diameter: 2"
Total Volume Removed: 9 L

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Dissolved Oxygen (mg/l)	Redox Potential (mV; SSCE)	Remarks (color, turbidity, and sediment)
1605		ml/min	(L)	11.42	6.49	933	1.23	0	light yellow, clear, trace sed.
1609			2	11.34	6.40	866	0.20	-49.1	light yellow, clear
1613			4	11.05	6.36	855	0.15	-63.4	" " "
1619			7	11.0	6.32	850	0.09	-67.4	" " "
1621			9	11.0	6.34	852	0.08	-68.9	" " "
1623			SAMPLE						
						TDS = 584 mg/L			
			3/10/05	Sample for	Fe 2+ and	total Mn, after			
			0850	parameters	stabilized.	Field filtered.			

pH CALIBRATION (choose two)				
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Field Temperature °C				
Instrument Reading				

Model or Unit No.:

SPECIFIC ELECTRICAL CONDUCTANCE – CALIBRATION			
KCL Solution (µS/cm=µmhos/cm)	1413 at 25°C	12880 at 25°C	
Field Temperature °C			
Instrument Reading			

Model or Unit No.:

REDOX CALIBRATION		DISSOLVED OXYGEN CALIBRATION	
Standard Solution	468 mV	Salinity %	
Field Temperature °C		Altitude	
Instrument Reading		Instrument Reading	
Model or Unit No.: Ag/AgCl Electrode (SSCE)		Model or Unit No.:	

Notes:

GEOMATRIX

WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW-8
Sample ID: MW-08-200503 Duplicate ID: _____
Sample Depth: TOC
Project and Task No.: 9329.000.0 28
Project Name: SPI ARCATA
Date: 03/11/05
Sampled By: MAH/RAS
Method of Purging: DISPOSABLE TEFLON BAILER
Method of Sampling: DISPOSABLE TEFLON BAILER

Initial Depth to Water: 1.07'
Depth to Water after Sampling: _____
Total Depth to Well: 7.80'
Well Diameter: 2"
1 Casing/Borehole Volume: 1.1 g (Circle one)
3 Casing/Borehole Volumes: 3.3 g (Circle one)
Total Casing/Borehole Volumes Removed: 3.5 g

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)
1050				14.4	6.52	783	533 mg/L TDS; light yellow SL cloudy
1052			1	13.7	6.48	794	540 " " " " "
1054			2	13.5	6.48	798	545 " " " " "
1056			3	13.5	6.50	800	545 " " " " "
1059			3.5	13.4	6.47	800	546 " " " " "
1100			SAMPLE				

pH CALIBRATION (choose two)				
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Temperature C				
Instrument Reading				

Model or Unit No.:

SPECIFIC ELECTRICAL CONDUCTANCE – CALIBRATION			
KCL Solution (µS/cm=µmhos/cm)			
Temperature C			
Instrument Reading			

Model or Unit No.:

Notes:

GEOMATRIX

WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW-9
Sample ID: MW-09-200503 Duplicate ID: _____
Sample Depth: TOC
Project and Task No.: 9329.000.0 28
Project Name: SPI ARCATA
Date: 03/11/05
Sampled By: MAH/RAS
Method of Purging: DISPOSABLE TEFLON BAILER
Method of Sampling: DISPOSABLE TEFLON BAILER

Initial Depth to Water: 0.85'
Depth to Water after Sampling: _____
Total Depth to Well: 7.80'
Well Diameter: 2"
1 Casing/Borehole Volume: 1.2 g (Circle one)
3 Casing/Borehole Volumes: 3.6 g (Circle one)
Total Casing/Borehole Volumes Removed: 4 g

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)
1103				14.5	6.74	850	580 mg/L TDS; yellow brown, sl. cloudy
1105			1	13.3	6.71	895	620 " " " "
1106			2	13.2	6.73	900	620 " " " "
1107			3	13.2	6.73	900	620 " " " "
1108			4	13.2	6.74	900	620 " " " "
1110			SAMPLE				

pH CALIBRATION (choose two)					Model or Unit No.:
Buffer Solution	pH 4.0	pH 7.0	pH 10.0		
Temperature C					
Instrument Reading					

SPECIFIC ELECTRICAL CONDUCTANCE – CALIBRATION				Model or Unit No.:
KCL Solution (µS/cm=µmhos/cm)				
Temperature C				
Instrument Reading				

Notes:

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GEOMATRIX

WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW-13D
Sample ID: MW-13D-200503 Duplicate ID: _____
Sample Depth: TOC
Project and Task No.: 9329.000.0 28
Project Name: SPI ARCATA
Date: 03/11/05
Sampled By: MAH/RAS
Method of Purging: DISPOSABLE TEFLON BAILER
Method of Sampling: DISPOSABLE TEFLON BAILER

Initial Depth to Water: 4.26'
Depth to Water after Sampling: ~~4.96~~
Total Depth to Well: 19.10'
Well Diameter: 2"
1 Casing/Borehole Volume: 2.4 gallons (Circle one)
3 Casing/Borehole Volumes: 7.3 gallons (Circle one)
Total Casing/Borehole Volumes Removed: 7.5g

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)
0945		START		12.8	6.12	680	462 mg/L TDS ~~START~~ greenish brown, cloudy
0949			2	12.9	6.14	677	459 " " lt yellow, cloudy
0951			4	13.4	6.12	690	469 " " " "
0955			6	13.5	6.15	766	522 " " " "
0957			7	13.5	6.20	828	566 " " " "
0958			7.5	13.5	6.24	897	615 " " " "
1000		SAMPLE					

pH CALIBRATION (choose two)				
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Temperature C				
Instrument Reading				

Model or Unit No.: Hydrometer, calibrated

SPECIFIC ELECTRICAL CONDUCTANCE – CALIBRATION			
KCL Solution (µS/cm=µmhos/cm)			
Temperature C			
Instrument Reading			

Model or Unit No.: Same

Notes:

GEOMATRIX

WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW-14
Sample ID: MW-14-200503 Duplicate ID: _____
Sample Depth: MID SCREEN
Project and Task No: 9329.000.0 23
Project Name: SPI Arcata
Date: 3/9/05 1440
Sampled By: MAH/RAS
Method of Purging: Low Flow
Method of Sampling: Low Flow

Initial Depth to Water: _____
Depth to Water after Sampling: _____
Total Depth to Well: _____
Well Diameter: 2"
Total Volume Removed: 7 Liters

Time	Intake Depth	Rate ~~(gpm)~~	Cum. Vol. ~~(gal.)~~	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Dissolved Oxygen (mg/l)	Redox Potential (mV; SSCE)	Remarks (color, turbidity, and sediment)
1423				14.67	6.94	2494	0.48	-18	yellow, clear
1427			3L	14.18	6.81	2306	0.22	-80.1	" "
1429			4L	13.77	6.54	2217	0.17	-84.6	" "
1433			5L	13.54	6.48	2236	0.10	-87.1	" "
1436			6L	13.47	6.49	2308	0.09	-86.7	" "
1438			7L	13.48	6.56	2376	0.08	-90.0	" "
1440		SAMPLE							

Note: well purged dry, briefly TDS = 1,648 mg/L
3/10/05 Sample for Fe2+ and total Mn, after parameters stabilized. Field filtered.
0841
Note: Had difficulty in getting no bubbles in the sample bottles (VOAs) for TOC analysis. Small bubbles ~~remain~~ are present. ~~Same for methane, enough 2 bottles have no bubbles.~~

pH CALIBRATION (choose two)				
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Field Temperature °C				
Instrument Reading				

Model or Unit No.:

SPECIFIC ELECTRICAL CONDUCTANCE – CALIBRATION			
KCL Solution (µS/cm=µmhos/cm)	1413 at 25°C	12880 at 25°C	
Field Temperature °C			
Instrument Reading			

Model or Unit No.:

REDOX CALIBRATION		DISSOLVED OXYGEN CALIBRATION	
Standard Solution	468 mV	Salinity %	
Field Temperature °C		Altitude	
Instrument Reading		Instrument Reading	
Model or Unit No.: Ag/AgCl Electrode (SSCE)		Model or Unit No.:	

Notes:

GEOMATRIX

WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW-15D
Sample ID: MW-15D-200503 Duplicate ID: _____
Sample Depth: TOC
Project and Task No.: 9329.000.0 28
Project Name: SPI ARCATA
Date: 03/11/05
Sampled By: MAH/RAS
Method of Purging: DISPOSABLE TEFLON BAILER
Method of Sampling: DISPOSABLE TEFLON BAILER

Initial Depth to Water: 5.48'
Depth to Water after Sampling: _____
Total Depth to Well: 19.90'
Well Diameter: 2"
1 Casing/Borehole Volume: 2.4 gallons (Circle one)
3 Casing/Borehole Volumes: 7.1 gallons (Circle one)
Total Casing/Borehole Volumes Removed: 7.5 g

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)
1027				12.5	6.71	764	521 mg/L TDS ; clear
1031			2g	13.1	6.76	1080	747 " " ; light yellow, slightly cloudy
1034			4	13.3	6.85	1215	845 " " " " "
1037			6	13.2	6.87	1250	870 " " " " "
1039			7.5	13.4	6.85	1257	875 " " " " "
1040		SAMPLE					

pH CALIBRATION (choose two)				
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Temperature C				
Instrument Reading				

Model or Unit No.:

SPECIFIC ELECTRICAL CONDUCTANCE – CALIBRATION			
KCL Solution (µS/cm=µmhos/cm)			
Temperature C			
Instrument Reading			

Model or Unit No.:

Notes:

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GEOMATRIX

WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW-16D
Sample ID: MW-16D-200503 Duplicate ID: _____
Sample Depth: TOC
Project and Task No.: 9329.000.0 28
Project Name: SPI ARCATA
Date: 03/11/05
Sampled By: MAH/RAS
Method of Purging: DISPOSABLE TEFLON BAILER
Method of Sampling: DISPOSABLE TEFLON BAILER

Initial Depth to Water: 4.22'
Depth to Water after Sampling: _____
Total Depth to Well: 19.65'
Well Diameter: 2"
1 Casing/Borehole Volume: 2.5g (Circle one)
3,4 Casing/Borehole Volumes: 7.5g (Circle one)
Total Casing/Borehole Volumes Removed: 8.0g

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)
1118			13.5 ~~5.1~~		7.84	4058	3110 mg/L TDS ; tea brown, clear
1121			2	13.7	7.83	4104	3140 " " " " "
1124			4	14.6	7.74	4614	3574 " " " " "
1126			6	14.7	7.77	4487	3469 " " " " "
1128			8	14.7	7.78	4390	3381 " " " " "
1130			SAMPLE				

pH CALIBRATION (choose two)					Model or Unit No.:
Buffer Solution	pH 4.0	pH 7.0	pH 10.0		
Temperature C					
Instrument Reading					

SPECIFIC ELECTRICAL CONDUCTANCE – CALIBRATION				Model or Unit No.:
KCL Solution (µS/cm=µmhos/cm)				
Temperature C				
Instrument Reading				

Notes:

GEOMATRIX

WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW-20
Sample ID: MW-20-200503 Duplicate ID: _____
Sample Depth: MID SCREEN (5')
Project and Task No: 9329.000.0 23
Project Name: SPI Arcata
Date: 3/9/05 1239
Sampled By: MAH/RAS
Method of Purging: Low Flow
Method of Sampling: Low Flow

Initial Depth to Water: _____
Depth to Water after Sampling: _____
Total Depth to Well: 7'
Well Diameter: 4"
Total Volume Removed: 11 liters

Time	Intake Depth	Rate ~~(gpm)~~ mL/min	Cum. Vol. ~~(gal.)~~ L	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Dissolved Oxygen (mg/l)	Redox Potential (mV; SSCE)	Remarks (color, turbidity, and sediment)
1215	5'	200	-(L)	13.25	6.74	320	0.18	-62.8	clear
1223		250	4	13.09	6.73	323	0.20	-54.8	clear, slight yellow color
1225		↓	5	12.91	6.70	324	0.20	-45.0	" " " "
1227			6	12.86	6.68	322	0.20	-37.2	" " " "
1229			7	12.75	6.66	322	0.18	-28.1	" " " "
1231			8	12.65	6.64	323	0.18	-24.5	" " " "
1233			9	12.59	6.62	322	0.18	-20.3	" " " "
1236			10	12.61	6.62	321	0.20	-16.8	" " " "
1238		↓	11	12.67	6.63	321	0.19	-17.2	" " " "
1239		SAMPLE				TDS = 220 mg/L			
		3/10/05 0800	Sample collection for parameters			Fe 2+ and Mn total, coffee Stabilized. Field filtered.			

pH CALIBRATION (choose two)				
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Field Temperature °C				
Instrument Reading				

Model or Unit No.: YSI 556 used Flow Through Cell. Calibrated by Equipco

SPECIFIC ELECTRICAL CONDUCTANCE – CALIBRATION			
KCL Solution (µS/cm=µmhos/cm)	1413 at 25°C	12880 at 25°C	
Field Temperature °C			
Instrument Reading			

Model or Unit No.:

REDOX CALIBRATION		DISSOLVED OXYGEN CALIBRATION	
Standard Solution	468 mV	Salinity %	
Field Temperature °C		Altitude	
Instrument Reading		Instrument Reading	
Model or Unit No.: Ag/AgCl Electrode (SSCE)		Model or Unit No.:	

Notes:

GEOMATRIX

WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW-21
Sample ID: MW-21-200503 Duplicate ID: ~~MW-22-200503~~ BD-01-200503
Sample Depth: MID SCREEN
Project and Task No: 9329.000.0 23
Project Name: SPI Arcata
Date: 3/10/05
Sampled By: MAH/RAS
Method of Purging: Low Flow
Method of Sampling: Low Flow

Initial Depth to Water: _____
Depth to Water after Sampling: _____
Total Depth to Well: _____
Well Diameter: 3/4"
Total Volume Removed: 18 L

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Dissolved Oxygen (mg/l)	Redox Potential (mV; SSCE)	Remarks (color, turbidity, and sediment)
0912		mL/min	(L)	11.38	6.51	854	3.89	76.1	light yellow, sl. cloudy
0918			2	11.09	6.35	898	2.36	-32.0	" " " "
0924			4	11.18	6.41	914	2.29	-51.2	" " " "
0928			6	11.21	6.37	911	1.99	-49.7	note: bubbles in flow cell
0933			8	11.25	6.39	917	1.75	-53.8	bubbles algorithmically reduced
0937			10	11.29	6.34	923	0.62	-52.4	yellow, slightly cloudy
0940			12	11.31	6.34	924	0.28	-50.2	" " "
0942			14	11.32	6.31	927	0.19	-53.7	" " "
0945			16	11.36	6.33	928	0.15	-55.7	" " "
0947			18	11.39	6.34	929	0.13	-52.9	" " "
0950			SAMPLE						
						TDS = 638 mg/L			

pH CALIBRATION (choose two)				
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Field Temperature °C				
Instrument Reading				

Model or Unit No.:

SPECIFIC ELECTRICAL CONDUCTANCE – CALIBRATION			
KCL Solution (µS/cm=µmhos/cm)	1413 at 25°C	12880 at 25°C	
Field Temperature °C			
Instrument Reading			

Model or Unit No.:

REDOX CALIBRATION		DISSOLVED OXYGEN CALIBRATION	
Standard Solution	468 mV	Salinity %	
Field Temperature °C		Altitude	
Instrument Reading		Instrument Reading	
Model or Unit No.: Ag/AgCl Electrode (SSCE)		Model or Unit No.:	

Notes:

EQUIPCO RENTALS

YSI 556MPS RENTAL
CALIBRATION CERTIFICATE

SERVICE TECHNICIAN: NPR DATE: 3/4/05

INSTRUMENT INFORMATION

RENTAL I.D. NUMBER: YSI-556. 21
SERIAL#: 02D0577AA1
CUSTOMER.

CALIBRATION INFORMATION

PARAMETERS:	STANDARDS:	PASS ( )	LOT#
1. CONDUCTIVITY	1000 µMhos	✓	4615
2. pH ZERO	pH 7	✓	4200
3. pH SLOPE	pH 4	✓	4240
pH SLOPE	pH 10	✓	4095
4. DISSOLVED OXYGEN	Air Calibration Barometric pressure = 760mmHg	✓	N/A
5. REDOX (ORP)	231 mV (YSI Zobell solution)	✓	110400

2100 Meridian Park Boulevard, Concord, CA. 94520 Phone (925) 609-1088 Fax (925) 609-1080

APPENDIX B

Laboratory Reports and Chain-of-Custody Records for Groundwater Samples

Laboratory reports in order of appearance:

Alpha Analytical Work Order: A503423
Alpha Analytical Work Order: A503384
Friedman & Bruya Project: 503149
Alpha Analytical Work Order: A503386
STL Submission: 2005-03-0458
Alpha Analytical Work Order: A503419
Frontier Analytical Project ID: 3151
Frontier Analytical Project ID: 3154

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

RECEIVED 4/13/2005

07 April 2005

Geomatrix Consultants
Attn: Ross Steenson
2101 Webster Street, 12th Floor
Oakland, CA 94612
RE: SPI - (GeoMatrix)
Work Order: A503423

TASK 28 GW MONITORING
MW-01, 02, 06, 08, 09, 13D, 15D, 16D, -21

Enclosed are the results of analyses for samples received by the laboratory on 03/11/05 16:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nena M. Burgess For Sheri L. Speaks
Project Manager

This represents an amended copy
of the original report

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 04/07/05 15:46
Project No: 9329/28
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503423	03/11/2005 16:10	GEOMAT	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-21-200503	A503423-01	Water	03/10/05 09:50	03/11/05 16:10
BD-01-200503 BLIND DUPLICATE OF MW-21	A503423-02	Water	03/10/05 09:50	03/11/05 16:10
MW-02-200503	A503423-03	Water	03/11/05 07:40	03/11/05 16:10
MW-01-200503	A503423-04	Water	03/11/05 08:50	03/11/05 16:10
MW-13D-200503	A503423-05	Water	03/11/05 10:00	03/11/05 16:10
MW-06-200503	A503423-06	Water	03/11/05 10:20	03/11/05 16:10
MW-15D-200503	A503423-07	Water	03/11/05 10:40	03/11/05 16:10
MW-08-200503	A503423-08	Water	03/11/05 11:00	03/11/05 16:10
MW-09-200503	A503423-09	Water	03/11/05 11:10	03/11/05 16:10
MW-16D-200503	A503423-10	Water	03/11/05 11:30	03/11/05 16:10

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Nena M. Burgess For Sheri L. Speaks
Project Manager

4/7/2005

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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 04/07/05 15:46
Project No: 9329/28
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503423	03/11/2005 16:10	GEOMAT	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT		PQL	NOTE
MW-21-200503 (A503423-01)			**Sample Type: Water**			**Sampled: 03/10/05 09:50**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AC51804	03/15/05	03/18/05	1	ND ug/l		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	**8.1 "**		**1.0**	
2,3,4,6-Tetrachlorophenol	"	"	"	"	10	**31 "**		**10**	
2,3,4,5-Tetrachlorophenol	"	"	"	"	1	ND "		1.5	R-01
Pentachlorophenol	"	"	"	"	1000	**4700 "**		**1000**	
Surrogate: Tribromophenol	"	"	"	"		*74.0 %*	*70-124*		
BD-01-200503 (A503423-02)			**Sample Type: Water**			**Sampled: 03/10/05 09:50**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AC51804	03/15/05	03/18/05	1	**2.7 ug/l**		**1.0**	
2,3,5,6-Tetrachlorophenol	"	"	"	"	10	**26 "**		**10**	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	**86 "**		**10**	
2,3,4,5-Tetrachlorophenol	"	"	"	"	1	**6.5 "**		**1.0**	
Pentachlorophenol	"	"	"	"	1000	**4600 "**		**1000**	
Surrogate: Tribromophenol	"	"	"	"		*105 %*	*70-124*		
MW-02-200503 (A503423-03)			**Sample Type: Water**			**Sampled: 03/11/05 07:40**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AC51804	03/15/05	03/18/05	1	ND ug/l		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*86.4 %*	*70-124*		
MW-01-200503 (A503423-04)			**Sample Type: Water**			**Sampled: 03/11/05 08:50**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AC51804	03/15/05	03/18/05	1	ND ug/l		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	

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Nena M. Burgess For Sheri L. Speaks
Project Manager

4/7/2005

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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 04/07/05 15:46
Project No: 9329/28
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503423	03/11/2005 16:10	GEOMAT	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT		PQL	NOTE
MW-01-200503 (A503423-04)			**Sample Type: Water**			**Sampled: 03/11/05 08:50**			
Chlorinated Phenols by Canadian Pulp Method (cont'd)									
Pentachlorophenol	EnvCan	"	"	03/18/05	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*91.2 %*	*70-124*		
MW-13D-200503 (A503423-05)			**Sample Type: Water**			**Sampled: 03/11/05 10:00**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AC51804	03/15/05	03/18/05	1	ND ug/l		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*115 %*	*70-124*		
MW-06-200503 (A503423-06)			**Sample Type: Water**			**Sampled: 03/11/05 10:20**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AC51804	03/15/05	03/18/05	1	ND ug/l		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*82.4 %*	*70-124*		
MW-15D-200503 (A503423-07)			**Sample Type: Water**			**Sampled: 03/11/05 10:40**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AC51804	03/15/05	03/18/05	1	ND ug/l		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		%	*70-124*		*S-03*
MW-08-200503 (A503423-08)			**Sample Type: Water**			**Sampled: 03/11/05 11:00**			

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Nena M. Burgess For Sheri L. Speaks
Project Manager

4/7/2005

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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 04/07/05 15:46
Project No: 9329/28
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503423	03/11/2005 16:10	GEOMAT	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT		PQL	NOTE
MW-08-200503 (A503423-08)			**Sample Type: Water**			**Sampled: 03/11/05 11:00**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AC51804	03/15/05	03/19/05	1	ND ug/l		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*74.8 %*	*70-124*		
MW-09-200503 (A503423-09)			**Sample Type: Water**			**Sampled: 03/11/05 11:10**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AC51804	03/15/05	03/19/05	1	ND ug/l		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*76.4 %*	*70-124*		
MW-16D-200503 (A503423-10)			**Sample Type: Water**			**Sampled: 03/11/05 11:30**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AC51804	03/15/05	03/19/05	1	ND ug/l		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*74.4 %*	*70-124*		

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Nena M. Burgess For Sheri L. Speaks
Project Manager

4/7/2005

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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 04/07/05 15:46
Project No: 9329/28
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503423	03/11/2005 16:10	GEOMAT	

Chlorinated Phenols by Canadian Pulp Method - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AC51804 - Solvent Extraction										
Blank (AC51804-BLK1)				Prepared: 03/15/05 Analyzed: 03/18/05						
2,4,6-Trichlorophenol	ND	1.0	ug/l							
2,3,5,6-Tetrachlorophenol	ND	1.0	"							
2,3,4,6-Tetrachlorophenol	ND	1.0	"							
2,3,4,5-Tetrachlorophenol	ND	1.0	"							
Pentachlorophenol	ND	1.0	"							
Surrogate: Tribromophenol	*22.3*		"	*25.0*		*89.2*	*70-124*			
LCS (AC51804-BS1)				Prepared: 03/15/05 Analyzed: 03/18/05						
2,4,6-Trichlorophenol	4.98	1.0	ug/l	5.00		99.6	81-120			
2,3,5,6-Tetrachlorophenol	5.00	1.0	"	5.00		100	78-108			
2,3,4,6-Tetrachlorophenol	4.84	1.0	"	5.00		96.8	76-108			
2,3,4,5-Tetrachlorophenol	4.64	1.0	"	5.00		92.8	80-116			
Pentachlorophenol	4.46	1.0	"	5.00		89.2	86-109			
Surrogate: Tribromophenol	*24.4*		"	*25.0*		*97.6*	*70-124*			
Matrix Spike (AC51804-MS1)	**Source: A503423-05**			Prepared: 03/15/05 Analyzed: 03/18/05						
2,4,6-Trichlorophenol	5.41	1.0	ug/l	5.00	ND	108	75-125			
2,3,5,6-Tetrachlorophenol	5.77	1.0	"	5.00	ND	115	69-115			
2,3,4,6-Tetrachlorophenol	5.06	1.0	"	5.00	ND	101	66-117			
2,3,4,5-Tetrachlorophenol	4.79	1.0	"	5.00	ND	95.8	70-115			
Pentachlorophenol	4.66	1.0	"	5.00	ND	93.2	55-124			
Surrogate: Tribromophenol	*27.3*		"	*25.0*		*109*	*70-124*			
Matrix Spike Dup (AC51804-MSD1)	**Source: A503423-05**			Prepared: 03/15/05 Analyzed: 03/18/05						
2,4,6-Trichlorophenol	5.57	1.0	ug/l	5.00	ND	111	75-125	2.91	20	
2,3,5,6-Tetrachlorophenol	5.65	1.0	"	5.00	ND	113	69-115	2.10	20	

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Nena M. Burgess For Sheri L. Speaks
Project Manager

4/7/2005

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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 04/07/05 15:46
Project No: 9329/28
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503423	03/11/2005 16:10	GEOMAT	

Chlorinated Phenols by Canadian Pulp Method - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AC51804 - Solvent Extraction										
Matrix Spike Dup (AC51804-MSD1)	**Source: A503423-05**			Prepared: 03/15/05 Analyzed: 03/18/05						
2,3,4,6-Tetrachlorophenol	4.92	1.0	"	5.00	ND	98.4	66-117	2.81	20	
2,3,4,5-Tetrachlorophenol	5.59	1.0	"	5.00	ND	112	70-115	15.4	20	
Pentachlorophenol	4.96	1.0	"	5.00	ND	99.2	55-124	6.24	20	
Surrogate: Tribromophenol	*28.3*		"	25.0		113	*70-124*			

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Nena M. Burgess For Sheri L. Speaks
Project Manager

4/7/2005

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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 04/07/05 15:46
Project No: 9329/28
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503423	03/11/2005 16:10	GEOMAT	

Notes and Definitions

S-03	Surrogate was not added to this sample.
R-01	The Reporting Limit for this analyte has been raised to account for matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
PQL	Practical Quantitation Limit

18827 3.6

Chain-of Custody Record

Date: MARCH 10, 2005 | Page 1 of 1

Project No.: 9329/28

Samplers (Signature:)

Date	Time	Sample Number	EPA Method 8021 (Full Scan)	EPA Method 8021 (Hal. VOCs only)	EPA Method 8021 (BETX only)	EPA Method 8260	EPA Method 8270 (Full Scan)	EPA Method 8270 SIM (PAHS only)	Method 8015m (Gasoline)	Method 8015m (Diesel)	Method 8015m (Motor Oil)	Silica Gel Cleanup	CANADIAN PULP	Soil (S), Water (W) Vapor (V), or Other (o)	Filtered	Preserved	Cooled	No. of Containers	Additional Comments
3/10/05	0950	MW-21-200503											X	W			X	2	1
↓	0950	BD-01-200503											X	W			X	2	2
3/11/05	0740	MW-02-200503											X	W			X	2	3
	0850	MW-01-200503											X	W			X	2	4
	1000	MW-~~BD~~13D-200503											X	W			X	4	Please perform MS/MSD on MW-13D-200503 sample 5
	1020	MW-06-200503											X	W			X	2	6
	1040	MW-15D-200503											X	W			X	2	7
	1100	MW-08-200503											X	W			X	2	8
	1110	MW-09-200503											X	W			X	2	9
↓	1130	MW-16D-200503											X	W			X	2	10

ANALYSES

REMARKS

Laboratory: ALPHA ANALYTICAL LABORATORIES

Turnaround Time: STANDARD

Results to: ROSS STEENSON

Total No. of Containers: 22

Relinquished by (Signature):	Date: 3/11	Relinquished by (Signature):	Date: 3-11
Printed Name: Matt H. Ilyard	Time: 1200	Printed Name: John Taylor	Time: 1610
Company: Geomatrix		Company: Alpha	
Received by:	Date:	Received by:	Date: 3/11/05
Printed Name: John Taylor	Time:	Printed Name: Doug Burgess	Time: 16:10
Company: Alpha		Company: Alpha	

Relinquished by (Signature):	Date:	Method of Shipment: LAB COURIER	
Printed Name:	Time:	Laboratory Comments and Log No.: A503423	
Company:			
Received by:	Date:		
Printed Name:	Time:		
Company:			

Geomatrix Consultants
2101 Webster Street, 12th Floor • Oakland, CA 94612
Phone: 510-663-4100 Fax: 510-663-4141

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RECEIVED 3/31/05

25 March 2005

GW MONITORING
MW-07, 14, 20

Geomatrix Consultants
Attn: Ross Steenson
2101 Webster Street, 12th Floor
Oakland, CA 94612
RE: SPI - (GeoMatrix)
Work Order: A503384

Enclosed are the results of analyses for samples received by the laboratory on 03/10/05 14:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lisa Jansen

Lisa E. Jansen For Sheri L. Speaks
Project Manager

Alpha Analytical Laboratories Inc.
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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/25/05 07:39
Project No: 9329/28
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503384	03/10/2005 14:00	GEOMAT	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-20-200503	A503384-01	Water	03/09/05 12:39	03/10/05 14:00
MW-14-200503	A503384-02	Water	03/09/05 14:40	03/10/05 14:00
MW-07-200503	A503384-03	Water	03/09/05 16:23	03/10/05 14:00

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Lisa Jansen

Lisa E. Jansen For Sheri L. Speaks
Project Manager

3/25/05

Alpha Analytical Laboratories Inc.
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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/25/05 07:39
Project No: 9329/28
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503384	03/10/2005 14:00	GEOMAT	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT		PQL	NOTE
MW-20-200503 (A503384-01)			**Sample Type: Water**			**Sampled: 03/09/05 12:39**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AC51804	03/15/05	03/18/05	1	**3.4 ug/l**		**1.0**	
2,3,5,6-Tetrachlorophenol	"	"	"	"	10	**27 "**		**10**	
2,3,4,6-Tetrachlorophenol	"	"	"	"	1	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	**4.6 "**		**1.0**	
Pentachlorophenol	"	"	"	"	10	**71 "**		**10**	
Surrogate: Tribromophenol	"	"	"	"		*108 %*	*79-119*		
MW-14-200503 (A503384-02)			**Sample Type: Water**			**Sampled: 03/09/05 14:40**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AC51804	03/15/05	03/18/05	1	ND ug/l		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*84.4 %*	*79-119*		
MW-07-200503 (A503384-03)			**Sample Type: Water**			**Sampled: 03/09/05 16:23**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AC51804	03/15/05	03/18/05	1	ND ug/l		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	10	**39 "**		**10**	
2,3,4,6-Tetrachlorophenol	"	"	"	"	50	**420 "**		**50**	
2,3,4,5-Tetrachlorophenol	"	"	"	"	10	**32 "**		**10**	
Pentachlorophenol	"	"	"	"	2000	**24000 "**		**2000**	
Surrogate: Tribromophenol	"	"	"	"		*94.4 %*	*79-119*		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Jansen

Lisa E. Jansen For Sheri L. Speaks
Project Manager

3/25/05

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/25/05 07:39
Project No: 9329/28
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503384	03/10/2005 14:00	GEOMAT	

Chlorinated Phenols by Canadian Pulp Method - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AC51804 - Solvent Extraction										
Blank (AC51804-BLK1)				Prepared: 03/15/05 Analyzed: 03/18/05						
2,4,6-Trichlorophenol	ND	1.0	ug/l							
2,3,5,6-Tetrachlorophenol	ND	1.0	"							
2,3,4,6-Tetrachlorophenol	ND	1.0	"							
2,3,4,5-Tetrachlorophenol	ND	1.0	"							
Pentachlorophenol	ND	1.0	"							
Surrogate: Tribromophenol	*22.3*		"	*25.0*		*89.2*	*79-119*			
LCS (AC51804-BS1)				Prepared: 03/15/05 Analyzed: 03/18/05						
2,4,6-Trichlorophenol	4.98	1.0	ug/l	5.00		99.6	81-120			
2,3,5,6-Tetrachlorophenol	5.00	1.0	"	5.00		100	78-108			
2,3,4,6-Tetrachlorophenol	4.84	1.0	"	5.00		96.8	76-108			
2,3,4,5-Tetrachlorophenol	4.64	1.0	"	5.00		92.8	80-116			
Pentachlorophenol	4.46	1.0	"	5.00		89.2	86-109			
Surrogate: Tribromophenol	*24.4*		"	*25.0*		*97.6*	*79-119*			
Matrix Spike (AC51804-MS1)	**Source: A503423-05**			Prepared: 03/15/05 Analyzed: 03/18/05						
2,4,6-Trichlorophenol	5.41	1.0	ug/l	5.00	ND	108	75-125			
2,3,5,6-Tetrachlorophenol	5.77	1.0	"	5.00	ND	115	69-115			
2,3,4,6-Tetrachlorophenol	5.06	1.0	"	5.00	ND	101	66-117			
2,3,4,5-Tetrachlorophenol	4.79	1.0	"	5.00	ND	95.8	70-115			
Pentachlorophenol	4.66	1.0	"	5.00	ND	93.2	55-124			
Surrogate: Tribromophenol	*27.3*		"	*25.0*		*109*	*79-119*			
Matrix Spike Dup (AC51804-MSD1)	**Source: A503423-05**			Prepared: 03/15/05 Analyzed: 03/18/05						
2,4,6-Trichlorophenol	5.57	1.0	ug/l	5.00	ND	111	75-125	2.91	20	
2,3,5,6-Tetrachlorophenol	5.65	1.0	"	5.00	ND	113	69-115	2.10	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Jansen

Lisa E. Jansen For Sheri L. Speaks
Project Manager

3/25/05

Alpha Analytical Laboratories Inc.
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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/25/05 07:39
Project No: 9329/28
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503384	03/10/2005 14:00	GEOMAT	

Chlorinated Phenols by Canadian Pulp Method - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AC51804 - Solvent Extraction										
Matrix Spike Dup (AC51804-MSD1)	**Source: A503423-05**			Prepared: 03/15/05		Analyzed: 03/18/05				
2,3,4,6-Tetrachlorophenol	4.92	1.0	"	5.00	ND	98.4	66-117	2.81	20	
2,3,4,5-Tetrachlorophenol	5.59	1.0	"	5.00	ND	112	70-115	15.4	20	
Pentachlorophenol	4.96	1.0	"	5.00	ND	99.2	55-124	6.24	20	
Surrogate: Tribromophenol	*28.3*		"	*25.0*		*113*	*79-119*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Jansen

Lisa E. Jansen For Sheri L. Speaks
Project Manager

3/25/05

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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/25/05 07:39
Project No: 9329/28
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503384	03/10/2005 14:00	GEOMAT	

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
PQL	Practical Quantitation Limit

18821 5-2

Chain-of Custody Record

Date: MARCH 9, 2005 | Page 1 of 1

Project No.: 9329/28

Samplers (Signature): Matt Hillyard, Ron Goodrich

Date	Time	Sample Number
3/9/05	1239	MW-20-200503
	1440	MW-14-200503
	1623	MW-07-200503

ANALYSES

Sample Number	EPA Method 8021 (Full Scan)	EPA Method 8021 (Hal. VOCs only)	EPA Method 8021 (BETX only)	EPA Method 8260	EPA Method 8270 (Full Scan)	EPA Method 8270 SIM (PAHS only)	Method 8015m (Gasoline)	Method 8015m (Diesel)	Method 8015m (Motor Oil)	Silica Gel Cleanup	CANADIAN PULP
MW-20-200503											X
MW-14-200503											X
MW-07-200503											X

REMARKS

Sample Number	Soil (S), Water (W) Vapor (V), or Other (o)	Filtered	Preserved	Cooled	No. of Containers	Additional Comments
MW-20-200503	W			X	2	1
MW-14-200503	W			X	2	2
MW-07-200503	W			X	2	3

Laboratory: ALPHA ANALYTICAL LABORATORIES

Turnaround Time: STANDARD

Results to: ROSS STEENSON

Total No. of Containers: 6

Relinquished by (Signature)	Date	Time	Received by	Date	Time
Matt Hillyard	3/10	10:00	[illegible]	3/10	1400
Printed Name: Matt Hillyard			Printed Name: ALPHA JOHN TAYLOR		
Company: Geomatrix					
Received by: [illegible]	Date: 3/10		Received by: S. SPEARS	Date: 3/10/05	
Printed Name: JOHN TAYLOR	Time: 1000 AM		Printed Name: S. SPEARS	Time: 14:00	
Company: ALPHA			Company: ALPHA		
Relinquished by (Signature):	Date:		Relinquished by (Signature):	Date:	
Printed Name:	Time:		Printed Name:	Time:	
Company:			Company:		
Received by:	Date:		Received by:	Date:	
Printed Name:	Time:		Printed Name:	Time:	
Company:			Company:		

Method of Shipment: LAB COURIER

Laboratory Comments and Log No.: A503384

Geomatrix Consultants
2101 Webster Street, 12th Floor • Oakland, CA 94612
Phone: 510-663-4100 Fax: 510-663-4141

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
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3012 16th Avenue West
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March 25, 2005

RECEIVED 3/31/2005

PILOT STUDY
GW Samples
MW-01, 02, 03, 05, 07, 14, 20, 21

Ross Steenson, Project Manager
Geomatrix Consultants, Inc.
2101 Webster Street, 12th Floor
Oakland, CA 94612

Dear Mr. Steenson:

Included are the results from the testing of material submitted on March 14, 2005 from the 9329/23, F&BI 503149 project. There are 19 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Morrow

Charlene Morrow
Chemist

Enclosures
GMC0325R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 14, 2005 by Friedman & Bruya, Inc. from the Geomatrix Consultants, Inc. 9329/23, F&BI 503149 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Geomatrix Consultants, Inc.
503149-01	MW-20-200503
503149-02	MW-14-200503
503149-03	MW-07-200503
503149-04	MW-21-200503
503149-05	BD-01-200503 → BLIND DUPLICATE OF MW-21
503149-06	MW-05-200503
503149-07	MW-03-200503
503149-08	MW-02-200503
503149-09	MW-01-200503

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	MW-20-200503	Client:	Geomatrix Consultants, Inc.
Date Received:	03/14/05	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	503149-01
Date Analyzed:	03/18/05	Data File:	031731.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	56	23	74
Phenol-d6	37	12	51
2,4,6-Tribromophenol	105	33	134

Compounds:	Concentration ug/L (ppb)
Phenol	<1
2-Chlorophenol	<1
2,4-Dichlorophenol	1
2,3-Dichlorophenol	<1
2,6-Dichlorophenol	<1
3-Chlorophenol+4-Chlorophenol	9
2,5-Dichlorophenol	<1
2,3,5-Trichlorophenol	5
2,4,6-Trichlorophenol	4
2,4,5-Trichlorophenol	<1
2,3,4-Trichlorophenol	<1
3,5-Dichlorophenol	9
2,3,6-Trichlorophenol	<1
3,4-Dichlorophenol	15
2,3,4,6-Tetrachlorophenol	12
2,3,4,5-Tetrachlorophenol	4
2,3,5,6-Tetrachlorophenol	2
3,4,5-Trichlorophenol	4
Pentachlorophenol	89 ve

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration is an estimate.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	MW-20-200503	Client:	Geomatrix Consultants, Inc.
Date Received:	03/14/05	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	503149-01 1/5
Date Analyzed:	03/18/05	Data File:	031804.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	57	13	89
Phenol-d6	35	12	85
2,4,6-Tribromophenol	101	40	129

Compounds:	Concentration ug/L (ppb)
Phenol	<5
2-Chlorophenol	<5
2,4-Dichlorophenol	<5
2,3-Dichlorophenol	<5
2,6-Dichlorophenol	<5
3-Chlorophenol+4-Chlorophenol	<10
2,5-Dichlorophenol	<5
2,3,5-Trichlorophenol	<5
2,4,6-Trichlorophenol	<5
2,4,5-Trichlorophenol	<5
2,3,4-Trichlorophenol	<5
3,5-Dichlorophenol	9
2,3,6-Trichlorophenol	<5
3,4-Dichlorophenol	15
2,3,4,6-Tetrachlorophenol	12
2,3,4,5-Tetrachlorophenol	<5
2,3,5,6-Tetrachlorophenol	<5
3,4,5-Trichlorophenol	<5
Pentachlorophenol	100

Note: The sample was diluted due to the presence of high levels of material. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	MW-14-200503	Client:	Geomatrix Consultants, Inc.
Date Received:	03/14/05	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	503149-02
Date Analyzed:	03/18/05	Data File:	031724.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	54	13	89
Phenol-d6	38	12	85
2,4,6-Tribromophenol	96	40	129

Compounds:	Concentration ug/L (ppb)
Phenol	<1
2-Chlorophenol	<1
2,4-Dichlorophenol	<1
2,3-Dichlorophenol	<1
2,6-Dichlorophenol	<1
3-Chlorophenol+4-Chlorophenol	<2
2,5-Dichlorophenol	<1
2,3,5-Trichlorophenol	<1
2,4,6-Trichlorophenol	<1
2,4,5-Trichlorophenol	<1
2,3,4-Trichlorophenol	<1
3,5-Dichlorophenol	<1
2,3,6-Trichlorophenol	<1
3,4-Dichlorophenol	<1
2,3,4,6-Tetrachlorophenol	<1
2,3,4,5-Tetrachlorophenol	<1
2,3,5,6-Tetrachlorophenol	<1
3,4,5-Trichlorophenol	<1
Pentachlorophenol	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	MW-07-200503	Client:	Geomatrix Consultants, Inc.
Date Received:	03/14/05	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	503149-03
Date Analyzed:	03/18/05	Data File:	031807.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	51	13	89
Phenol-d6	36	12	85
2,4,6-Tribromophenol	121	40	129

Compounds:	Concentration ug/L (ppb)
Phenol	3
2-Chlorophenol	<1
2,4-Dichlorophenol	5
2,3-Dichlorophenol	1
2,6-Dichlorophenol	<1
3-Chlorophenol+4-Chlorophenol	620 ve
2,5-Dichlorophenol	<1
2,3,5-Trichlorophenol	2
2,4,6-Trichlorophenol	1
2,4,5-Trichlorophenol	83 ve
2,3,4-Trichlorophenol	2
3,5-Dichlorophenol	28
2,3,6-Trichlorophenol	1
3,4-Dichlorophenol	480 ve
2,3,4,6-Tetrachlorophenol	17
2,3,4,5-Tetrachlorophenol	37
2,3,5,6-Tetrachlorophenol	510 ve
3,4,5-Trichlorophenol	270 ve
Pentachlorophenol	11,000 J

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration is an estimate.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	MW-07-200503	Client:	Geomatrix Consultants, Inc.
Date Received:	03/14/05	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	503149-03 1/50
Date Analyzed:	03/18/05	Data File:	031732.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	56	13	89
Phenol-d6	30	12	85
2,4,6-Tribromophenol	155 vo	40	129

Compounds:	Concentration ug/L (ppb)
Phenol	<50
2-Chlorophenol	<50
2,4-Dichlorophenol	<50
2,3-Dichlorophenol	<50
2,6-Dichlorophenol	<50
3-Chlorophenol+4-Chlorophenol	890
2,5-Dichlorophenol	<50
2,3,5-Trichlorophenol	<50
2,4,6-Trichlorophenol	<50
2,4,5-Trichlorophenol	75
2,3,4-Trichlorophenol	<50
3,5-Dichlorophenol	<50
2,3,6-Trichlorophenol	<50
3,4-Dichlorophenol	610
2,3,4,6-Tetrachlorophenol	<50
2,3,4,5-Tetrachlorophenol	<50
2,3,5,6-Tetrachlorophenol	490
3,4,5-Trichlorophenol	290
Pentachlorophenol	18,000 ve

Note: The sample was diluted due to the presence of high levels of material. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	MW-07-200503	Client:	Geomatrix Consultants, Inc.
Date Received:	03/14/05	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	503149-03 1/1000
Date Analyzed:	03/18/05	Data File:	031727.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	0 vo	13	89
Phenol-d6	0 vo	12	85
2,4,6-Tribromophenol	0 vo	40	129

Compounds:	Concentration ug/L (ppb)
Phenol	<1,000
2-Chlorophenol	<1,000
2,4-Dichlorophenol	<1,000
2,3-Dichlorophenol	<1,000
2,6-Dichlorophenol	<1,000
3-Chlorophenol+4-Chlorophenol	<2,000
2,5-Dichlorophenol	<1,000
2,3,5-Trichlorophenol	<1,000
2,4,6-Trichlorophenol	<1,000
2,4,5-Trichlorophenol	<1,000
2,3,4-Trichlorophenol	<1,000
3,5-Dichlorophenol	<1,000
2,3,6-Trichlorophenol	<1,000
3,4-Dichlorophenol	<1,000
2,3,4,6-Tetrachlorophenol	<1,000
2,3,4,5-Tetrachlorophenol	<1,000
2,3,5,6-Tetrachlorophenol	<1,000
3,4,5-Trichlorophenol	<1,000
Pentachlorophenol	12,000

Note: The sample was diluted due to the presence of high levels of material. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

vo - The value reported fell outside the control limits established for this analyte.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	MW-21-200503	Client:	Geomatrix Consultants, Inc.
Date Received:	03/14/05	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	503149-04
Date Analyzed:	03/18/05	Data File:	031733.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	53	13	89
Phenol-d6	35	12	85
2,4,6-Tribromophenol	113	40	129

Compounds:	Concentration ug/L (ppb)
Phenol	<1
2-Chlorophenol	<1
2,4-Dichlorophenol	2
2,3-Dichlorophenol	<1
2,6-Dichlorophenol	<1
3-Chlorophenol+4-Chlorophenol	250 ve
2,5-Dichlorophenol	<1
2,3,5-Trichlorophenol	<1
2,4,6-Trichlorophenol	<1
2,4,5-Trichlorophenol	5
2,3,4-Trichlorophenol	<1
3,5-Dichlorophenol	19
2,3,6-Trichlorophenol	<1
3,4-Dichlorophenol	250 ve
2,3,4,6-Tetrachlorophenol	27
2,3,4,5-Tetrachlorophenol	4
2,3,5,6-Tetrachlorophenol	130 ve
3,4,5-Trichlorophenol	230 ve
Pentachlorophenol	3,100 ve

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration is an estimate.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	MW-21-200503	Client:	Geomatrix Consultants, Inc.
Date Received:	03/14/05	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	503149-04 1/50
Date Analyzed:	03/18/05	Data File:	031729.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	53	13	89
Phenol-d6	26	12	85
2,4,6-Tribromophenol	118	40	129

Compounds:	Concentration ug/L (ppb)
Phenol	<50
2-Chlorophenol	<50
2,4-Dichlorophenol	<50
2,3-Dichlorophenol	<50
2,6-Dichlorophenol	<50
3-Chlorophenol+4-Chlorophenol	270
2,5-Dichlorophenol	<50
2,3,5-Trichlorophenol	<50
2,4,6-Trichlorophenol	<50
2,4,5-Trichlorophenol	<50
2,3,4-Trichlorophenol	<50
3,5-Dichlorophenol	<50
2,3,6-Trichlorophenol	<50
3,4-Dichlorophenol	310
2,3,4,6-Tetrachlorophenol	<50
2,3,4,5-Tetrachlorophenol	<50
2,3,5,6-Tetrachlorophenol	109
3,4,5-Trichlorophenol	250
Pentachlorophenol	5,500 ve

Note: The sample was diluted due to the presence of high levels of material. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration is an estimate.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	MW-21-200503	Client:	Geomatrix Consultants, Inc.
Date Received:	03/14/05	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	503149-04 1/250
Date Analyzed:	03/18/05	Data File:	031805.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	0 vo	13	89
Phenol-d6	0 vo	12	85
2,4,6-Tribromophenol	0 vo	40	129

Compounds:	Concentration ug/L (ppb)
Phenol	<250
2-Chlorophenol	<250
2,4-Dichlorophenol	<250
2,3-Dichlorophenol	<250
2,6-Dichlorophenol	<250
3-Chlorophenol+4-Chlorophenol	<500
2,5-Dichlorophenol	<250
2,3,5-Trichlorophenol	<250
2,4,6-Trichlorophenol	<250
2,4,5-Trichlorophenol	<250
2,3,4-Trichlorophenol	<250
3,5-Dichlorophenol	<250
2,3,6-Trichlorophenol	<250
3,4-Dichlorophenol	260
2,3,4,6-Tetrachlorophenol	<250
2,3,4,5-Tetrachlorophenol	<250
2,3,5,6-Tetrachlorophenol	<250
3,4,5-Trichlorophenol	<250
Pentachlorophenol	5,500

Note: The sample was diluted due to the presence of high levels of material. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

vo - The value reported fell outside the control limits established for this analyte.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	BD-01-200503	Client:	Geomatrix Consultants, Inc.
Date Received:	03/14/05	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	503149-05
Date Analyzed:	03/18/05	Data File:	031734.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	50	13	89
Phenol-d6	35	12	85
2,4,6-Tribromophenol	111	40	129

Compounds:	Concentration ug/L (ppb)
Phenol	<1
2-Chlorophenol	<1
2,4-Dichlorophenol	2
2,3-Dichlorophenol	<1
2,6-Dichlorophenol	<1
3-Chlorophenol+4-Chlorophenol	250 ve
2,5-Dichlorophenol	<1
2,3,5-Trichlorophenol	<1
2,4,6-Trichlorophenol	<1
2,4,5-Trichlorophenol	5
2,3,4-Trichlorophenol	<1
3,5-Dichlorophenol	20
2,3,6-Trichlorophenol	<1
3,4-Dichlorophenol	260 ve
2,3,4,6-Tetrachlorophenol	27
2,3,4,5-Tetrachlorophenol	4
2,3,5,6-Tetrachlorophenol	130 ve
3,4,5-Trichlorophenol	230 ve
Pentachlorophenol	3,100 ve

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration is an estimate.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	BD-01-200503	Client:	Geomatrix Consultants, Inc.
Date Received:	03/14/05	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	503149-05 1/50
Date Analyzed:	03/18/05	Data File:	031730.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	50	13	89
Phenol-d6	28	12	85
2,4,6-Tribromophenol	133 vo	40	129

Compounds:	Concentration ug/L (ppb)
Phenol	<50
2-Chlorophenol	<50
2,4-Dichlorophenol	<50
2,3-Dichlorophenol	<50
2,6-Dichlorophenol	<50
3-Chlorophenol+4-Chlorophenol	270
2,5-Dichlorophenol	<50
2,3,5-Trichlorophenol	<50
2,4,6-Trichlorophenol	<50
2,4,5-Trichlorophenol	<50
2,3,4-Trichlorophenol	<50
3,5-Dichlorophenol	<50
2,3,6-Trichlorophenol	<50
3,4-Dichlorophenol	310
2,3,4,6-Tetrachlorophenol	<50
2,3,4,5-Tetrachlorophenol	<50
2,3,5,6-Tetrachlorophenol	110
3,4,5-Trichlorophenol	250
Pentachlorophenol	5,700 ve

Note: The sample was diluted due to the presence of high levels of material. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	BD-01-200503	Client:	Geomatrix Consultants, Inc.
Date Received:	03/14/05	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	503149-05 1/250
Date Analyzed:	03/18/05	Data File:	031806.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	0 vo	13	89
Phenol-d6	0 vo	12	85
2,4,6-Tribromophenol	0 vo	40	129

Compounds:	Concentration ug/L (ppb)
Phenol	<250
2-Chlorophenol	<250
2,4-Dichlorophenol	<250
2,3-Dichlorophenol	<250
2,6-Dichlorophenol	<250
3-Chlorophenol+4-Chlorophenol	<500
2,5-Dichlorophenol	<250
2,3,5-Trichlorophenol	<250
2,4,6-Trichlorophenol	<250
2,4,5-Trichlorophenol	<250
2,3,4-Trichlorophenol	<250
3,5-Dichlorophenol	<250
2,3,6-Trichlorophenol	<250
3,4-Dichlorophenol	252
2,3,4,6-Tetrachlorophenol	<250
2,3,4,5-Tetrachlorophenol	<250
2,3,5,6-Tetrachlorophenol	<250
3,4,5-Trichlorophenol	<250
Pentachlorophenol	5,500

Note: The sample was diluted due to the presence of high levels of material. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

vo - The value reported fell outside the control limits established for this analyte.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	MW-05-200503	Client:	Geomatrix Consultants, Inc.
Date Received:	03/14/05	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	503149-06
Date Analyzed:	03/18/05	Data File:	031723.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	50	13	89
Phenol-d6	34	12	85
2,4,6-Tribromophenol	112	40	129

Compounds:	Concentration ug/L (ppb)
Phenol	<1
2-Chlorophenol	<1
2,4-Dichlorophenol	<1
2,3-Dichlorophenol	<1
2,6-Dichlorophenol	<1
3-Chlorophenol+4-Chlorophenol	<2
2,5-Dichlorophenol	<1
2,3,5-Trichlorophenol	<1
2,4,6-Trichlorophenol	<1
2,4,5-Trichlorophenol	<1
2,3,4-Trichlorophenol	<1
3,5-Dichlorophenol	<1
2,3,6-Trichlorophenol	<1
3,4-Dichlorophenol	<1
2,3,4,6-Tetrachlorophenol	<1
2,3,4,5-Tetrachlorophenol	<1
2,3,5,6-Tetrachlorophenol	<1
3,4,5-Trichlorophenol	<1
Pentachlorophenol	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	MW-03-200503	Client:	Geomatrix Consultants, Inc.
Date Received:	03/14/05	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	503149-07
Date Analyzed:	03/18/05	Data File:	031722.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	57	13	89
Phenol-d6	38	12	85
2,4,6-Tribromophenol	111	40	129

Compounds:	Concentration ug/L (ppb)
Phenol	<1
2-Chlorophenol	<1
2,4-Dichlorophenol	<1
2,3-Dichlorophenol	<1
2,6-Dichlorophenol	<1
3-Chlorophenol+4-Chlorophenol	<2
2,5-Dichlorophenol	<1
2,3,5-Trichlorophenol	<1
2,4,6-Trichlorophenol	<1
2,4,5-Trichlorophenol	<1
2,3,4-Trichlorophenol	<1
3,5-Dichlorophenol	<1
2,3,6-Trichlorophenol	<1
3,4-Dichlorophenol	<1
2,3,4,6-Tetrachlorophenol	<1
2,3,4,5-Tetrachlorophenol	<1
2,3,5,6-Tetrachlorophenol	<1
3,4,5-Trichlorophenol	<1
Pentachlorophenol	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	MW-02-200503	Client:	Geomatrix Consultants, Inc.
Date Received:	03/14/05	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	503149-08
Date Analyzed:	03/18/05	Data File:	031721.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	55	13	89
Phenol-d6	39	12	85
2,4,6-Tribromophenol	105	40	129

Compounds:	Concentration ug/L (ppb)
Phenol	<1
2-Chlorophenol	<1
2,4-Dichlorophenol	<1
2,3-Dichlorophenol	<1
2,6-Dichlorophenol	<1
3-Chlorophenol+4-Chlorophenol	<2
2,5-Dichlorophenol	<1
2,3,5-Trichlorophenol	<1
2,4,6-Trichlorophenol	<1
2,4,5-Trichlorophenol	<1
2,3,4-Trichlorophenol	<1
3,5-Dichlorophenol	<1
2,3,6-Trichlorophenol	<1
3,4-Dichlorophenol	<1
2,3,4,6-Tetrachlorophenol	<1
2,3,4,5-Tetrachlorophenol	<1
2,3,5,6-Tetrachlorophenol	<1
3,4,5-Trichlorophenol	<1
Pentachlorophenol	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	MW-01-200503	Client:	Geomatrix Consultants, Inc.
Date Received:	03/14/05	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	503149-09
Date Analyzed:	03/18/05	Data File:	031720.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	63	13	89
Phenol-d6	43	12	85
2,4,6-Tribromophenol	96	40	129

Compounds:	Concentration ug/L (ppb)
Phenol	<1
2-Chlorophenol	<1
2,4-Dichlorophenol	<1
2,3-Dichlorophenol	<1
2,6-Dichlorophenol	<1
3-Chlorophenol+4-Chlorophenol	<2
2,5-Dichlorophenol	<1
2,3,5-Trichlorophenol	<1
2,4,6-Trichlorophenol	<1
2,4,5-Trichlorophenol	<1
2,3,4-Trichlorophenol	<1
3,5-Dichlorophenol	<1
2,3,6-Trichlorophenol	<1
3,4-Dichlorophenol	<1
2,3,4,6-Tetrachlorophenol	<1
2,3,4,5-Tetrachlorophenol	<1
2,3,5,6-Tetrachlorophenol	<1
3,4,5-Trichlorophenol	<1
Pentachlorophenol	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	Method Blank	Client:	Geomatrix Consultants, Inc.
Date Received:	Not Applicable	Project:	9329/23, F&BI 503149
Date Extracted:	03/15/05	Lab ID:	05-261mb
Date Analyzed:	03/17/05	Data File:	031719.D
Matrix:	Water	Instrument:	GCMS3
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
2-Fluorophenol	59	13	89
Phenol-d6	35	12	85
2,4,6-Tribromophenol	85	40	129

Compounds:	Concentration ug/L (ppb)
Phenol	<1
2-Chlorophenol	<1
2,4-Dichlorophenol	<1
2,3-Dichlorophenol	<1
2,6-Dichlorophenol	<1
3-Chlorophenol+4-Chlorophenol	<2
2,5-Dichlorophenol	<1
2,3,5-Trichlorophenol	<1
2,4,6-Trichlorophenol	<1
2,4,5-Trichlorophenol	<1
2,3,4-Trichlorophenol	<1
3,5-Dichlorophenol	<1
2,3,6-Trichlorophenol	<1
3,4-Dichlorophenol	<1
2,3,4,6-Tetrachlorophenol	<1
2,3,4,5-Tetrachlorophenol	<1
2,3,5,6-Tetrachlorophenol	<1
3,4,5-Trichlorophenol	<1
Pentachlorophenol	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/25/05
Date Received: 03/14/05
Project: 9329/23, F&BI 503149

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270C SIM

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	µg/L (ppb)	10	30	30	15-52	0
2-Chlorophenol	µg/L (ppb)	20	77	77	63-101	0
2,3-Dichlorophenol	µg/L (ppb)	10	89	89	70-130	0
2,6-Dichlorophenol	µg/L (ppb)	10	82	80	70-130	2
3-+-4-Chlorophenol	µg/L (ppb)	20	71	72	70-130	2
2,5-Dichlorophenol	µg/L (ppb)	10	80	83	70-130	4
2,3,5-Trichlorophenol	µg/L (ppb)	10	90	91	70-130	2
2,4,5-Trichlorophenol	µg/L (ppb)	10	83	85	75-113	2
2,3,4-Trichlorophenol	µg/L (ppb)	10	82	83	70-130	1
3,5-Dichlorophenol	µg/L (ppb)	10	84	87	70-130	4
2,3,6-Trichlorophenol	µg/L (ppb)	10	83	85	70-130	2
3,4-Dichlorophenol	µg/L (ppb)	10	84	87	70-130	4
2,3,4,6-Tetrachlorophenol	µg/L (ppb)	10	81	83	70-130	3
2,3,4,5-Tetrachlorophenol	µg/L (ppb)	10	86	79	70-130	9
2,3,5,6-Tetrachlorophenol	µg/L (ppb)	10	87	91	70-130	4
3,4,5-Trichlorophenol	µg/L (ppb)	10	94	96	70-130	2
Pentachlorophenol	µg/L (ppb)	10	69	71	69-111	3

503149 CM 03/14/05 18826 A05

Chain-of Custody Record

Date: MARCH 9, 2005 Page 1 of 1

Project No.: 9329/23

Samplers (Signature):

Lab ID	Date	Time	Sample Number	Soil (S), Water (W), Vapor (V), or Other (o)	Filtered	Preserved	Cooled	No. of Containers	Additional Comments
01 A-D	3/9/05	1239	MW-20-200503	W			X	4	Full
02 A-D	↓	1440	MW-14-200503	W			X	4	Full
03 A-D	↓	1623	MW-07-200503	W			X	4	Full, 1:50, 1:1000
04 A-D	3/10/05	0950	MW-21-200503	W			X	4	↓ ↓
05 A-D	↓	0950	BD-01-200503	W			X	4	↓ ↓
06 A-D	↓	1310	MW-05-200503	W			X	4	Full ST
07 A-D	↓	1409	MW-03-200503	W			X	4	↓
08 A-D	3/11/05	0740	MW-02-200503	W			X	4	
09 A-D	↓	0850	MW-01-200503	W			X	4	

ANALYSES

- EPA Method 8021 (Full Scan)
- EPA Method 8021 (Hal. VOCs only)
- EPA Method 8021 (BETX only)
- EPA Method 8260
- EPA Method 8270 (Full Scan)
- EPA Method 8270 SIM (PAHS only)
- Method 8015m (Gasoline)
- Method 8015m (Diesel)
- Method 8018m (Motor Oil)
- Silica Gel Cleanup
- Chlorinated Phenol Breakdown Products

REMARKS

Laboratory: FRIEDMAN & BRUYA

Turnaround Time: STANDARD

Results to: ROSS STEENSON

Total No. of Containers: 36

Tracking #: 849738220415

Relinquished by (Signature):	Date: 3/11	Relinquished by (Signature):	Date:	Relinquished by (Signature):	Date:
Printed Name: Matt H. Tyaret	Time: 1300	Printed Name:	Time:	Printed Name:	Time:
Company: Geomatrix		Company:		Company:	
Received by:	Date: 3/14/05	Received by:	Date:	Received by:	Date:
Printed Name: Nhan Phan	Time: 08:30	Printed Name:	Time:	Printed Name:	Time:
Company: Friedman & Bruya		Company:		Company:	

Method of Shipment: FEDERAL EXPRESS

Laboratory Comments and Log No.:

Geomatrix Consultants
2101 Webster Street, 12th Floor • Oakland, CA 94612
Phone: 510-663-4100 Fax: 510-663-4141

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

RECEIVED 4/4/05

25 March 2005

Geomatrix Consultants
Attn: Ross Steenson
2101 Webster Street, 12th Floor
Oakland, CA 94612
RE: SPI - (GeoMatrix)
Work Order: A503386

TASK 23 PILOT STUDY
MW-07, 14, 20

Enclosed are the results of analyses for samples received by the laboratory on 03/10/05 14:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nena M. Burgess For Sheri L. Speaks
Project Manager

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/25/05 16:21
Project No: 9329/23
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503386	03/10/2005 14:00	GEOMAT	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-20-200503	A503386-01	Water	03/09/05 12:39	03/10/05 14:00
MW-14-200503	A503386-02	Water	03/09/05 14:40	03/10/05 14:00
MW-07-200503	A503386-03	Water	03/09/05 16:23	03/10/05 14:00

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Nena M. Burgess For Sheri L. Speaks
Project Manager

3/25/2005

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/25/05 16:21
Project No: 9329/23
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503386	03/10/2005 14:00	GEOMAT	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
MW-20-200503 (A503386-01)			**Sample Type: Water**			**Sampled: 03/09/05 12:39**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AC51404	03/14/05	03/21/05	1	**23 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**23 "**	**1.0**	
Conventional Chemistry Parameters by APHA/EPA Methods								
Total Alkalinity as CaCO3	SM2320B	AC51022	03/10/05	03/10/05	1	**180 mg/l**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Organic Carbon	EPA 415.1	AC51616	03/16/05	03/17/05	"	**7.25 "**	**1.00**	
Bicarbonate Alkalinity as CaCO3	SM2320B	AC51022	03/10/05	03/10/05	"	**180 "**	**5.0**	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Anions by EPA Method 300.0								
Chloride	EPA 300.0	AC51011	03/10/05	03/10/05	5	**17 mg/l**	**2.5**	
Nitrate as N	"	"	"	03/10/05	1	ND "	0.20	
Sulfate as SO4	"	"	"	"	"	**1.2 "**	**0.50**	
MW-14-200503 (A503386-02)			**Sample Type: Water**			**Sampled: 03/09/05 14:40**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AC51404	03/14/05	03/25/05	1	**25 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**55 "**	**1.0**	
Conventional Chemistry Parameters by APHA/EPA Methods								
Total Alkalinity as CaCO3	SM2320B	AC51022	03/10/05	03/10/05	1	**1100 mg/l**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Organic Carbon	EPA 415.1	AC51616	03/16/05	03/18/05	5	**60.9 "**	**5.00**	
Bicarbonate Alkalinity as CaCO3	SM2320B	AC51022	03/10/05	03/10/05	1	**1100 "**	**5.0**	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Nena M. Burgess For Sheri L. Speaks
Project Manager

3/25/2005

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/25/05 16:21
Project No: 9329/23
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503386	03/10/2005 14:00	GEOMAT	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
MW-14-200503 (A503386-02)			**Sample Type: Water**			**Sampled: 03/09/05 14:40**		
Anions by EPA Method 300.0								
Chloride	EPA 300.0	AC51011	03/10/05	03/10/05	50	**390 mg/l**	**25**	
Nitrate as N	"	"	"	03/10/05	1	ND "	0.20	
Sulfate as SO4	"	"	"	"	"	ND "	0.50	
MW-07-200503 (A503386-03)			**Sample Type: Water**			**Sampled: 03/09/05 16:23**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AC51404	03/14/05	03/25/05	1	**35 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**52 "**	**1.0**	
Conventional Chemistry Parameters by APHA/EPA Methods								
Total Alkalinity as CaCO3	SM2320B	AC51022	03/10/05	03/10/05	1	**400 mg/l**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Organic Carbon	EPA 415.1	AC51616	03/16/05	03/18/05	2	**18.2 "**	**2.00**	
Bicarbonate Alkalinity as CaCO3	SM2320B	AC51022	03/10/05	03/10/05	1	**400 "**	**5.0**	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Anions by EPA Method 300.0								
Chloride	EPA 300.0	AC51011	03/10/05	03/10/05	10	**60 mg/l**	**5.0**	
Nitrate as N	"	"	"	03/10/05	1	ND "	0.20	
Sulfate as SO4	"	"	"	"	"	ND "	0.50	

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Project Manager

3/25/2005

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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/25/05 16:21
Project No: 9329/23
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503386	03/10/2005 14:00	GEOMAT	

Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AC51404 - EPA 3005A										
Blank (AC51404-BLK1)				Prepared: 03/14/05 Analyzed: 03/21/05						
Calcium	ND	1.0	mg/l							
Magnesium	ND	1.0	"							
LCS (AC51404-BS1)				Prepared: 03/14/05 Analyzed: 03/21/05						
Calcium	10.0	1.0	mg/l	10.0		100	85-115			
Magnesium	9.77	1.0	"	10.0		97.7	85-115			
LCS Dup (AC51404-BSD1)				Prepared: 03/14/05 Analyzed: 03/21/05						
Calcium	9.97	1.0	mg/l	10.0		99.7	85-115	0.300	20	
Magnesium	9.90	1.0	"	10.0		99.0	85-115	1.32	20	
Duplicate (AC51404-DUP1)	Source: A503255-01			Prepared: 03/14/05 Analyzed: 03/21/05						
Calcium	52.5	1.0	mg/l		53			0.948	20	
Magnesium	30.5	1.0	"		32			4.80	20	
Matrix Spike (AC51404-MS1)	Source: A503255-01			Prepared: 03/14/05 Analyzed: 03/21/05						
Calcium	64.1	1.0	mg/l	10.0	53	111	70-130			
Magnesium	41.5	1.0	"	10.0	32	95.0	70-130			
Matrix Spike Dup (AC51404-MSD1)	Source: A503255-01			Prepared: 03/14/05 Analyzed: 03/21/05						
Calcium	61.0	1.0	mg/l	10.0	53	80.0	70-130	4.96	20	
Magnesium	39.9	1.0	"	10.0	32	79.0	70-130	3.93	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Nena M. Burgess For Sheri L. Speaks
Project Manager

3/25/2005

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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/25/05 16:21
Project No: 9329/23
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503386	03/10/2005 14:00	GEOMAT	

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AC51616 - General Prep										
Blank (AC51616-BLK1)				Prepared: 03/16/05 Analyzed: 03/17/05						
Total Organic Carbon	ND	1.00	mg/l							
LCS (AC51616-BS1)				Prepared: 03/16/05 Analyzed: 03/17/05						
Total Organic Carbon	18.1	2.00	mg/l	20.0		90.5	85-115			
LCS Dup (AC51616-BSD1)				Prepared: 03/16/05 Analyzed: 03/17/05						
Total Organic Carbon	18.2	2.00	mg/l	20.0		91.0	85-115	0.551	20	
Duplicate (AC51616-DUP1)		Source: A503456-01		Prepared: 03/16/05 Analyzed: 03/17/05						
Total Organic Carbon	ND	1.00	mg/l		ND				20	
Matrix Spike (AC51616-MS1)		Source: A503456-01		Prepared: 03/16/05 Analyzed: 03/17/05						
Total Organic Carbon	18.6	2.00	mg/l	20.0	ND	90.2	70-130			
Matrix Spike Dup (AC51616-MSD1)		Source: A503456-01		Prepared: 03/16/05 Analyzed: 03/17/05						
Total Organic Carbon	18.6	2.00	mg/l	20.0	ND	90.2	70-130	0.00	20	

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Project Manager

3/25/2005

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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/25/05 16:21
Project No: 9329/23
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503386	03/10/2005 14:00	GEOMAT	

Anions by EPA Method 300.0 - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AC51011 - General Preparation										
Blank (AC51011-BLK1)				Prepared & Analyzed: 03/10/05						
Sulfate as SO4	ND	0.50	mg/l							
Nitrate as N	ND	0.20	"							
Chloride	ND	0.50	"							
LCS (AC51011-BS1)				Prepared & Analyzed: 03/10/05						
Chloride	3.06	0.50	mg/l	3.00		102	90-110			
Nitrate as N	1.0	0.20	"	1.00		100	90-110			
Sulfate as SO4	8.10	0.50	"	8.00		101	90-110			
LCS Dup (AC51011-BSD1)				Prepared & Analyzed: 03/10/05						
Sulfate as SO4	8.15	0.50	mg/l	8.00		102	90-110	0.615	10	
Chloride	3.06	0.50	"	3.00		102	90-110	0.00	20	
Nitrate as N	1.0	0.20	"	1.00		100	90-110	0.00	20	
Duplicate (AC51011-DUP1)		Source: A503362-02		Prepared & Analyzed: 03/10/05						
Nitrate as N	0.61	0.40	mg/l		0.61			0.00	20	
Sulfate as SO4	16.9	1.0	"		17			0.590	20	
Chloride	5.98	1.0	"		5.8			3.06	20	
Matrix Spike (AC51011-MS1)		Source: A503362-02		Prepared & Analyzed: 03/10/05						
Chloride	10.7	1.0	mg/l	5.00	5.8	98.0	80-120			
Nitrate as N	5.3	0.40	"	5.00	0.61	93.8	80-120			
Sulfate as SO4	36.1	1.0	"	20.0	17	95.5	80-120			
Matrix Spike Dup (AC51011-MSD1)		Source: A503362-02		Prepared & Analyzed: 03/10/05						
Sulfate as SO4	36.3	1.0	mg/l	20.0	17	96.5	80-120	0.552	10	
Chloride	10.7	1.0	"	5.00	5.8	98.0	80-120	0.00	20	
Nitrate as N	5.4	0.40	"	5.00	0.61	95.8	80-120	1.87	20	

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Nena M. Burgess For Sheri L. Speaks
Project Manager

3/25/2005

Alpha Analytical Laboratories Inc.
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e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/25/05 16:21
Project No: 9329/23
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503386	03/10/2005 14:00	GEOMAT	

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
PQL	Practical Quantitation Limit

K PRIME, Inc.
CONSULTING ANALYTICAL CHEMISTS
3621 Westwind Blvd.
Santa Rosa CA 95403
Phone: 707 527 7574
FAX: 707 527 7879

TRANSMITTAL

DATE: 04/12/05

TO: MS. SHERI L. SPEAKS
ALPHA ANALYTICAL LABORATORIES, INC.
208 MASON STREET
UKIAH, CA 95482

Phone: 707-468-0401
Fax: 707-468-5267

ACCT: 9984
PROJ: A503386

FROM: Richard A. Kagel, Ph.D.
Laboratory Director RAK mwk 4/12/05

SUBJECT: LABORATORY RESULTS FOR YOUR PROJECT A503386

Enclosed please find K Prime's laboratory reports for the following samples:

SAMPLE ID	TYPE	DATE	KPI LAB #
MW-20-200503	WATER	03/09/05	50040
MW-14-200503	WATER	03/09/05	50041
MW-07-200503	WATER	03/09/05	50042

The above listed sample group was received on 03/15/05 and tested as requested on the chain of custody document.

Please call me if you have any questions or need further information.
Thank you for this opportunity to be of service.

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJEC 9984
CLIENT PROJECT A503386

METHOD: DISSOLVED GASES
REFFERENCE: RSK175

SAMPLE ID: MW-20-200503
LAB NO: 50040
BATCH ID: 032305W01
SAMPLE TYPE: WATER
DATE SAMPLED: 03/09/05
TIME SAMPLED: 12:39
DATE RECEIVED: 03/15/05
DATE ANALYZED: 03/23/05
UNITS: µg/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	1.58	14.8

APPROVED BY: ch
DATE: 4/12/05

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJEC 9984
CLIENT PROJECT A503386

METHOD: DISSOLVED GASES
REFFERENCE: RSK175

SAMPLE ID:	MW-14-200503
LAB NO:	50041
BATCH ID:	032305W01
SAMPLE TYPE:	WATER
DATE SAMPLED:	03/09/05
TIME SAMPLED:	14:40
DATE RECEIVED:	03/15/05
DATE ANALYZED:	03/23/05
UNITS:	µg/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	1.58	162

APPROVED BY: _____
DATE: 4/12/05

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJEC 9984
CLIENT PROJECT A503386

METHOD: DISSOLVED GASES
REFFERENCE: RSK175

SAMPLE ID: MW-07-200503
LAB NO: 50042
BATCH ID: 032305W01
SAMPLE TYPE: WATER
DATE SAMPLED: 03/09/05
TIME SAMPLED: 16:23
DATE RECEIVED: 03/15/05
DATE ANALYZED: 03/23/05
UNITS: µg/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	1.58	10540

APPROVED BY: _____
DATE: 4/12/05

K PRIME, INC.
LABORATORY QC REPORT

METHOD: DISSOLVED GASSES
REFFERENCE: RSK175

SAMPLE ID:	L032305W01
DUPLICATE ID:	D032305W01
BLANK ID:	B032305W01
BATCH ID:	032305W01
ANALYZED DATE:	3/23/05
SAMPLE TYPE:	WATER
UNITS:	µg/L

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
METHANE	72.9	ND	55.0	75	60-140
ETHENE	128	ND	115	90	60-140
ETHANE	136	ND	103	75	60-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
METHANE	1.58	55.0	46.0	17.9	±30
ETHENE	2.38	114.7	84.8	29.9	±30
ETHANE	1.63	102.6	86.6	16.9	±30

METHOD BLANK

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	7.89	ND
ETHENE	74-85-1	2.38	ND
ETHANE	74-84-0	1.63	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
MRL - METHOD REPORTING LIMIT
MDL - STATISTICAL METHOD DETECTION LIMIT
"J" - INDICATES REPORTED VALUE AS AN ESTIMATED CONCENTRATION ABOVE THE MDL AND BELOW THE METHOD REPORTING LIMIT.
"B" - INDICATES COMPOUND COMMONLY FOUND IN METHOD BLANK ABOVE THE MDL BUT BELOW THE METHOD REPORTING LIMIT.

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9984
CLIENT PROJECT: A503386

SAMPLE ID:	MW-20-200503
LAB NO:	50040
SAMPLE TYPE:	WATER
DATE SAMPLED:	03/09/05
TIME SAMPLED:	12:39
BATCH ID:	032305W01
DATE ANALYZED:	3/23/05
UNITS:	µg/L

METHOD: DISSOLVED GASES
REFERENCE: RSK 175

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
CARBON DIOXIDE	124-38-9	165	41411

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT, NA - NOT APPLICABLE OR AVAILABLE.

APPROVED BY: _____
DATE: 4/12/05

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9984
CLIENT PROJECT: A503386

SAMPLE ID:	MW-14-200503
LAB NO:	50041
SAMPLE TYPE:	WATER
DATE SAMPLED:	03/09/05
TIME SAMPLED:	14:40
BATCH ID:	032305W01

METHOD: DISSOLVED GASES
REFERENCE: RSK 175

DATE ANALYZED:	3/23/05
UNITS:	µg/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
CARBON DIOXIDE	124-38-9	165	270281

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT, NA - NOT APPLICABLE OR AVAILABLE.

APPROVED BY: _____
DATE: 4/12/05

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9984
CLIENT PROJECT: A503386

SAMPLE ID:	MW-07-200503
LAB NO:	50042
SAMPLE TYPE:	WATER
DATE SAMPLED:	03/09/05
TIME SAMPLED:	16:23
BATCH ID:	032305W01
DATE ANALYZED:	3/23/05
UNITS:	µg/L

METHOD: DISSOLVED GASES
REFERENCE: RSK 175

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
CARBON DIOXIDE	124-38-9	165	157432

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT, NA - NOT APPLICABLE OR AVAILABLE.

APPROVED BY: _____
DATE: 4/12/05

K PRIME, INC.
LABORATORY QC REPORT

METHOD: DISSOLVED GASSES
REFFERENCE: RSK175

SAMPLE ID:	D032305W01
DUPLICATE ID:	L032305W01
BLANK ID:	B032305W01
BATCH ID:	032305W01
ANALYZED DATE:	3/23/05
SAMPLE TYPE:	WATER
UNITS:	µg/L

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
CARBON DIOXIDE	2000	ND	1330	66	50-150

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
CARBON DIOXIDE	165	1330	1137	15.6	±40

METHOD BLANK

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
CARBON DIOXIDE	124-38-9	165	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
MRL - METHOD REPORTING LIMIT
MDL - STATISTICAL METHOD DETECTION LIMIT
"J" - INDICATES REPORTED VALUE AS AN ESTIMATED CONCENTRATION ABOVE THE MDL AND BELOW THE METHOD REPORTING LIMIT.
"B" - INDICATES COMPOUND COMMONLY FOUND IN METHOD BLANK ABOVE THE MDL BUT BELOW THE METHOD REPORTING LIMIT.

Chain-of Custody Record

015149

Date: MARCH 9, 2005 | Page 1 of 1

Project No.: 9329/23

Samplers (Signature):

Date	Time	Sample Number
3/9/05	1239	MW-20-200503
↓	1440	MW-14-200503
↓	1623	MW-87-200503

ANALYSES

Date	Time	Sample Number	EPA Method 8021 (Full Scan)	EPA Method 8021 (Hal. VOCs only)	EPA Method 8021 (BETX only)	EPA Method 8260	EPA Method 8270 (Full Scan)	EPA Method 8270 SIM (PAHS only)	Method 8015m (Gasoline)	Method 8015m (Diesel)	Method 8015m (Motor Oil)	Silica Gel Cleanup	①	②	③	④	Soil (S), Water (W) Vapor (V), or Other (o)	Filtered	Preserved	Cooled	No. of Containers
3/9/05	1239	MW-20-200503											X	X	X	X	W		X	X	7
↓	1440	MW-14-200503											X	X	X	X	W		X	X	7
↓	1623	MW-87-200503											X	X	X	X	W		X	X	6
																					20

REMARKS

Additional Comments

① = NO_3, SO_4, Cl, and alkalinity (container 2 unpreserved) 3

② = Ca, Mg (container unpreserved)

③ = TOC (HNO_3 preservative)

④ = methane and CO_2 (unpreserved)

Laboratory: ALPHA ANALYTICAL LABORATORIES

Turnaround Time: STANDARD

Results to: ROSS STEENSON

Total No. of Containers: 20

Relinquished by (Signature):	Date: 3/10	Relinquished by (Signature):	Date:	Relinquished by (Signature):	Date:
Printed Name: Matt Millyard	Time: 1000	Printed Name: John Taylor	Time:	Printed Name:	Time:
Company: Geomatrix		Company: Alpha		Company:	
Received by:	Date: 3/10	Received by: SSpeaks	Date: 3/10/05	Received by:	Date:
Printed Name: John Taylor	Time: 10:00	Printed Name: SSpeaks	Time: 14:00	Printed Name:	Time:
Company: Alpha		Company: Alpha		Company:	

Method of Shipment: Lab Courier

Laboratory Comments and Log No.: A503386

Geomatrix Consultants
2101 Webster Street, 12th Floor • Oakland, CA 94612
Phone: 510-663-4100 Fax: 510-663-4141

SEVERN TRENT STL

Submission: 2005-03-0458

Dissolved Metals

Alpha Analytical, Inc. - Ukiah
Attn.: Sheri L. Speaks

208 Mason Street
Ukiah, CA 95482
Phone: (707) 468-0401 Fax: (707) 468-5267

RECEIVED 4/8/2005

PILOT STUDY

Project:

Received: 03/11/2005 10:35

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
A503379-01 MW-20-200503	03/10/2005 08:00	Water	1
A503379-02 MW-14-200503	03/10/2005 08:15	Water	2
A503379-03 MW-07-200503	03/10/2005 08:50	Water	3
A503379-04 MW-21-200503	03/10/2005 09:50	Water	4
A503379-05 BD-01-022503 BLIND DUPLICATE OF MW-21	03/10/2005 09:50	Water	5

Dissolved Metals

Alpha Analytical, Inc. - Ukiah
Attn.: Sheri L. Speaks

208 Mason Street
Ukiah, CA 95482
Phone: (707) 468-0401 Fax: (707) 468-5267

Project:

Received: 03/11/2005 10:35

Prep(s): 3005A
Test(s): 6010B

Sample ID: **A503379-01 MW-20-200503**
Lab ID: 2005-03-0458 - 1

Sampled: 03/10/2005 08:00
Extracted: 3/16/2005 14:52

Matrix: Water
QC Batch#: 2005/03/16-03.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Iron	2.2	0.20	mg/L	1.00	03/17/2005 08:41	
Manganese	1.5	0.0050	mg/L	1.00	03/17/2005 08:41	

Dissolved Metals

Alpha Analytical, Inc. - Ukiah
Attn.: Sheri L. Speaks

208 Mason Street
Ukiah, CA 95482
Phone: (707) 468-0401 Fax: (707) 468-5267

Project:

Received: 03/11/2005 10:35

Prep(s): 3005A
Test(s): 6010B
Sample ID: **A503379-02 MW-14-200503**
Lab ID: 2005-03-0458 - 2
Sampled: 03/10/2005 08:15
Extracted: 3/16/2005 14:52
Matrix: Water
QC Batch#: 2005/03/16-03.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Iron	18	0.20	mg/L	1.00	03/17/2005 08:44	
Manganese	0.73	0.0050	mg/L	1.00	03/17/2005 08:44	

Dissolved Metals

Alpha Analytical, Inc. - Ukiah
Attn.: Sheri L. Speaks

208 Mason Street
Ukiah, CA 95482
Phone: (707) 468-0401 Fax: (707) 468-5267

Project:

Received: 03/11/2005 10:35

Prep(s):	3005A	Test(s):	6010B
Sample ID:	**A503379-03 MW-07-200503**	Lab ID:	2005-03-0458 - 3
Sampled:	03/10/2005 08:50	Extracted:	3/16/2005 14:52
Matrix:	Water	QC Batch#:	2005/03/16-03.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Iron	56	0.20	mg/L	1.00	03/17/2005 08:47	
Manganese	3.5	0.0050	mg/L	1.00	03/17/2005 08:47	

Dissolved Metals

Alpha Analytical, Inc. - Ukiah
Attn.: Sheri L. Speaks

208 Mason Street
Ukiah, CA 95482
Phone: (707) 468-0401 Fax: (707) 468-5267

Project:

Received: 03/11/2005 10:35

Prep(s):	3005A	Test(s):	6010B
Sample ID:	**A503379-04 MW-21-200503**	Lab ID:	2005-03-0458 - 4
Sampled:	03/10/2005 09:50	Extracted:	3/16/2005 14:52
Matrix:	Water	QC Batch#:	2005/03/16-03.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Iron	69	0.20	mg/L	1.00	03/17/2005 08:51	
Manganese	2.7	0.0050	mg/L	1.00	03/17/2005 08:51	

Dissolved Metals

Alpha Analytical, Inc. - Ukiah
Attn.: Sheri L. Speaks

208 Mason Street
Ukiah, CA 95482
Phone: (707) 468-0401 Fax: (707) 468-5267

Project:

Received: 03/11/2005 10:35

Prep(s): 3005A
Test(s): 6010B
Sample ID: **A503379-05 BD-01-022503**
Lab ID: 2005-03-0458 - 5
Sampled: 03/10/2005 09:50
Extracted: 3/16/2005 14:52
Matrix: Water
QC Batch#: 2005/03/16-03.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Iron	69	0.20	mg/L	1.00	03/17/2005 09:00	
Manganese	2.7	0.0050	mg/L	1.00	03/17/2005 09:00	

Dissolved Metals

Alpha Analytical, Inc. - Ukiah
Attn.: Sheri L. Speaks

208 Mason Street
Ukiah, CA 95482
Phone: (707) 468-0401 Fax: (707) 468-5267

Project:

Received: 03/11/2005 10:35

Batch QC Report

Prep(s): 3005A
Method Blank

Water

Test(s): 601CB
QC Batch # 2005/03/16-03.15

MB: 2005/03/16-03.15-018

Date Extracted: 03/16/2005 14:52

Compound	Conc.	RL	Unit	Analyzed	Flag
Iron	ND	0.20	mg/L	03/17/2005 08:05	
Manganese	ND	0.0050	mg/L	03/17/2005 08:05	

SEVERN TRENT STL

Submission: 2005-03-0458

Dissolved Metals

Alpha Analytical, Inc. - Ukiah
Attn.: Sheri L. Speaks

208 Mason Street
Ukiah, CA 95482
Phone: (707) 468-0401 Fax: (707) 468-5267

Project:

Received: 03/11/2005 10:35

Batch QC Report

Prep(s): 3005A

Test(s): 6010B

Laboratory Control Spike **Water** **QC Batch # 2005/03/16-03.15**

LCS 2005/03/16-03.15-019 Extracted: 03/16/2005 Analyzed: 03/17/2005 08:08
LCSD 2005/03/16-03.15-020 Extracted: 03/16/2005 Analyzed: 03/17/2005 08:11

Compound	Conc.	mg/L	Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Iron	5.21	5.33	5.00	104.2	106.6	2.3	80-120	20		
Manganese	0.518	0.528	0.500	103.6	105.6	1.9	80-120	20		

10 PLASTIC PINTS (CUTTATE) 27 VOAS

18820 5.2

Chain-of Custody Record

Date: MARCH 10, 2005 Page 1 of 1

Project No.: 9329/23

Samplers (Signature:) Matt Hillyard, Ron G

Date	Time	Sample Number
3/10/05	0800	MW-20-200503
	0815	MW-14-200503
	0850	MW-07-200503
	0950	MW-21-200503
	0950	BD-01-200503

ANALYSES

Sample Number	EPA Method 8021 (Full Scan)	EPA Method 8021 (Hal. VOCs only)	EPA Method 8021 (BETX only)	EPA Method 8260	EPA Method 8270 (Full Scan)	EPA Method 8270 SIM (PAHS only)	Method 8015m (Gasoline)	Method 8015m (Diesel)	Method 8015m (Motor Oil)	Silica Gel Cleanup	Fe 2+ & Mn total
MW-20-200503											X
MW-14-200503											X
MW-07-200503											X
MW-21-200503											X
BD-01-200503											X

REMARKS

Sample Number	Soil (S), Water (W) Vapor (V), or Other (o)	Filtered	Preserved	Cooled	No. of Containers	Additional Comments
MW-20-200503	W	X	X	X	1	1
MW-14-200503	W	X	X	X	1	2
MW-07-200503	W	X	X	X	1	3
MW-21-200503	W	X	X	X	1	4
BD-01-200503	W	X	X	X	1	5

Laboratory: ALPHA ANALYTICAL LABORATORIES

Turnaround Time: STANDARD

Results to: ROSS STEENSON

Total No. of Containers: 5

Relinquished by (Signature):	Date:	Time:	Received by:	Date:	Time:
Matt Hillyard	3/10	1000	Signature		
Printed Name: Matt Hillyard			Printed Name: John Taylor		
Company: Geomatrix			Company: Alpha		
Received by: Signature	Date: 3/10		Relinquished by: S Specks	Date: 3/10/05	
Printed Name: John Taylor	Time: 1000		Printed Name: Specks	Time: 14.00	
Company: Alpha			Company: Alpha		
Relinquished by (Signature):	Date:		Received by:	Date:	
Printed Name:	Time:		Printed Name:	Time:	
Company:			Company:		

Method of Shipment: Lab Courier

Laboratory Comments and Log No.: A503379

Geomatrix Consultants
2101 Webster Street, 12th Floor • Oakland, CA 94612
Phone: 510-663-4100 Fax: 510-663-4141

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

28 March 2005

RECEIVED 4/14/05

TASK 23 - PILOT STUDY
MW-01, 02, 03, 05, 21

Geomatrix Consultants
Attn: Ross Steenson
2101 Webster Street, 12th Floor
Oakland, CA 94612
RE: SPI - (GeoMatrix)
Work Order: A503419

Enclosed are the results of analyses for samples received by the laboratory on 03/11/05 16:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nena M. Burgess For Sheri L. Speaks
Project Manager

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/28/05 08:03
Project No: 9329/23
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503419	03/11/2005 16:10	GEOMAT	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-21-200503	A503419-01	Water	03/10/05 09:50	03/11/05 16:10
BD-01-200503 (BLIND DUPLICATE OF MW-21)	A503419-02	Water	03/10/05 09:50	03/11/05 16:10
MW-05-200503	A503419-03	Water	03/10/05 13:10	03/11/05 16:10
MW-03-200503	A503419-04	Water	03/10/05 14:07	03/11/05 16:10
MW-02-200503	A503419-05	Water	03/11/05 07:40	03/11/05 16:10
MW-01-200503	A503419-06	Water	03/11/05 08:50	03/11/05 16:10

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Nena M. Burgess For Sheri L. Speaks
Project Manager

3/28/2005

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/28/05 08:03
Project No: 9329/23
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503419	03/11/2005 16:10	GEOMAT	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
MW-21-200503 (A503419-01)			**Sample Type: Water**			**Sampled: 03/10/05 09:50**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AC51602	03/16/05	03/25/05	1	**29 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**50 "**	**1.0**	
Conventional Chemistry Parameters by APHA/EPA Methods								
Total Alkalinity as CaCO3	SM2320B	AC51106	03/11/05	03/11/05	1	**430 mg/l**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Organic Carbon	EPA 415.1	AC51616	03/16/05	03/18/05	"	**18.6 "**	**1.00**	
Bicarbonate Alkalinity as CaCO3	SM2320B	AC51106	03/11/05	03/11/05	"	**430 "**	**5.0**	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Anions by EPA Method 300.0								
Chloride	EPA 300.0	AC51115	03/11/05	03/11/05	10	**62 mg/l**	**5.0**	
Nitrate as N	"	"	"	03/11/05	1	ND "	0.20	
Sulfate as SO4	"	"	"	"	"	ND "	0.50	
BD-01-200503 (A503419-02)			**Sample Type: Water**			**Sampled: 03/10/05 09:50**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AC51602	03/16/05	03/25/05	1	**29 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**49 "**	**1.0**	
Conventional Chemistry Parameters by APHA/EPA Methods								
Total Alkalinity as CaCO3	SM2320B	AC51106	03/11/05	03/11/05	1	**420 mg/l**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Organic Carbon	EPA 415.1	AC51616	03/16/05	03/18/05	"	**16.4 "**	**1.00**	
Bicarbonate Alkalinity as CaCO3	SM2320B	AC51106	03/11/05	03/11/05	"	**420 "**	**5.0**	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	

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Nena M. Burgess For Sheri L. Speaks
Project Manager

3/28/2005

Alpha Analytical Laboratories Inc.
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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/28/05 08:03
Project No: 9329/23
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503419	03/11/2005 16:10	GEOMAT	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
BD-01-200503 (A503419-02)			**Sample Type: Water**			**Sampled: 03/10/05 09:50**		
Anions by EPA Method 300.0								
Chloride	EPA 300.0	AC51115	03/11/05	03/11/05	10	**62 mg/l**	**5.0**	
Nitrate as N	"	"	"	03/11/05	1	ND "	0.20	
Sulfate as SO4	"	"	"	"	"	ND "	0.50	
MW-05-200503 (A503419-03)			**Sample Type: Water**			**Sampled: 03/10/05 13:10**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AC51602	03/16/05	03/25/05	1	**29 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**48 "**	**1.0**	
Conventional Chemistry Parameters by APHA/EPA Methods								
Total Alkalinity as CaCO3	SM2320B	AC51106	03/11/05	03/11/05	1	**320 mg/l**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Organic Carbon	EPA 415.1	AC51616	03/16/05	03/18/05	"	**7.34 "**	**1.00**	
Bicarbonate Alkalinity as CaCO3	SM2320B	AC51106	03/11/05	03/11/05	"	**320 "**	**5.0**	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Anions by EPA Method 300.0								
Chloride	EPA 300.0	AC51115	03/11/05	03/11/05	5	**18 mg/l**	**2.5**	
Nitrate as N	"	"	"	03/11/05	1	ND "	0.20	
Sulfate as SO4	"	"	"	"	"	ND "	0.50	
MW-03-200503 (A503419-04)			**Sample Type: Water**			**Sampled: 03/10/05 14:07**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AC51602	03/16/05	03/25/05	1	**31 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**28 "**	**1.0**	

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Nena M. Burgess For Sheri L. Speaks
Project Manager

3/28/2005

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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/28/05 08:03
Project No: 9329/23
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503419	03/11/2005 16:10	GEOMAT	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
MW-03-200503 (A503419-04)			**Sample Type: Water**			**Sampled: 03/10/05 14:07**		
Conventional Chemistry Parameters by APHA/EPA Methods								
Total Alkalinity as CaCO3	SM2320B	AC51106	03/11/05	03/11/05	1	**280 mg/l**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Organic Carbon	EPA 415.1	AC51616	03/16/05	03/18/05	"	**16.5 "**	**1.00**	
Bicarbonate Alkalinity as CaCO3	SM2320B	AC51106	03/11/05	03/11/05	"	**280 "**	**5.0**	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Anions by EPA Method 300.0								
Chloride	EPA 300.0	AC51115	03/11/05	03/11/05	5	**33 mg/l**	**2.5**	
Nitrate as N	"	"	"	03/11/05	1	ND "	0.20	
Sulfate as SO4	"	"	"	"	"	ND "	0.50	
MW-02-200503 (A503419-05)			**Sample Type: Water**			**Sampled: 03/11/05 07:40**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AC51602	03/16/05	03/25/05	1	**62 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**37 "**	**1.0**	
Conventional Chemistry Parameters by APHA/EPA Methods								
Total Alkalinity as CaCO3	SM2320B	AC51106	03/11/05	03/11/05	1	**520 mg/l**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Organic Carbon	EPA 415.1	AC51616	03/16/05	03/18/05	2	**15.8 "**	**2.00**	
Bicarbonate Alkalinity as CaCO3	SM2320B	AC51106	03/11/05	03/11/05	1	**520 "**	**5.0**	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	

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Nena M. Burgess For Sheri L. Speaks
Project Manager

3/28/2005

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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/28/05 08:03
Project No: 9329/23
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503419	03/11/2005 16:10	GEOMAT	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
MW-02-200503 (A503419-05)			**Sample Type: Water**			**Sampled: 03/11/05 07:40**		
Anions by EPA Method 300.0								
Chloride	EPA 300.0	AC51115	03/11/05	03/11/05	10	**100 mg/l**	**5.0**	
Nitrate as N	"	"	"	03/11/05	1	ND "	0.20	
Sulfate as SO4	"	"	"	"	"	ND "	0.50	
MW-01-200503 (A503419-06)			**Sample Type: Water**			**Sampled: 03/11/05 08:50**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AC51602	03/16/05	03/25/05	1	**36 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**57 "**	**1.0**	
Conventional Chemistry Parameters by APHA/EPA Methods								
Total Alkalinity as CaCO3	SM2320B	AC51106	03/11/05	03/11/05	1	**860 mg/l**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Organic Carbon	EPA 415.1	AC51616	03/16/05	03/18/05	2	**14.1 "**	**2.00**	
Bicarbonate Alkalinity as CaCO3	SM2320B	AC51106	03/11/05	03/11/05	1	**860 "**	**5.0**	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Anions by EPA Method 300.0								
Chloride	EPA 300.0	AC51115	03/11/05	03/11/05	20	**260 mg/l**	**10**	
Nitrate as N	"	"	"	03/11/05	1	ND "	0.20	
Sulfate as SO4	"	"	"	"	"	ND "	0.50	

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Nena M. Burgess For Sheri L. Speaks
Project Manager

3/28/2005

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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/28/05 08:03
Project No: 9329/23
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503419	03/11/2005 16:10	GEOMAT	

Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AC51602 - EPA 3005A										
Blank (AC51602-BLK1)				Prepared: 03/16/05 Analyzed: 03/21/05						
Calcium	ND	1.0	mg/l							
Magnesium	ND	1.0	"							
LCS (AC51602-BS1)				Prepared: 03/16/05 Analyzed: 03/21/05						
Calcium	10.1	1.0	mg/l	10.0		101	85-115			
Magnesium	10.3	1.0	"	10.0		103	85-115			
LCS Dup (AC51602-BSD1)				Prepared: 03/16/05 Analyzed: 03/21/05						
Calcium	9.79	1.0	mg/l	10.0		97.9	85-115	3.12	20	
Magnesium	10.0	1.0	"	10.0		100	85-115	2.96	20	
Duplicate (AC51602-DUP1)	Source: A503271-01			Prepared: 03/16/05 Analyzed: 03/21/05						
Calcium	39.6	1.0	mg/l		38			4.12	20	
Magnesium	8.18	1.0	"		7.9			3.48	20	
Matrix Spike (AC51602-MS1)	Source: A503271-01			Prepared: 03/16/05 Analyzed: 03/21/05						
Calcium	49.4	1.0	mg/l	10.0	38	114	70-130			
Magnesium	18.5	1.0	"	10.0	7.9	106	70-130			
Matrix Spike Dup (AC51602-MSD1)	Source: A503271-01			Prepared: 03/16/05 Analyzed: 03/21/05						
Calcium	52.5	1.0	mg/l	10.0	38	145	70-130	6.08	20	QM-01
Magnesium	19.3	1.0	"	10.0	7.9	114	70-130	4.23	20	

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Nena M. Burgess For Sheri L. Speaks
Project Manager

3/28/2005

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CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/28/05 08:03
Project No: 9329/23
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503419	03/11/2005 16:10	GEOMAT	

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AC51616 - General Prep										
Blank (AC51616-BLK1)				Prepared: 03/16/05 Analyzed: 03/17/05						
Total Organic Carbon	ND	1.00	mg/l							
LCS (AC51616-BS1)				Prepared: 03/16/05 Analyzed: 03/17/05						
Total Organic Carbon	18.1	2.00	mg/l	20.0		90.5	85-115			
LCS Dup (AC51616-BSD1)				Prepared: 03/16/05 Analyzed: 03/17/05						
Total Organic Carbon	18.2	2.00	mg/l	20.0		91.0	85-115	0.551	20	
Duplicate (AC51616-DUP1)		Source: A503456-01		Prepared: 03/16/05 Analyzed: 03/17/05						
Total Organic Carbon	ND	1.00	mg/l		ND				20	
Matrix Spike (AC51616-MS1)		Source: A503456-01		Prepared: 03/16/05 Analyzed: 03/17/05						
Total Organic Carbon	18.6	2.00	mg/l	20.0	ND	90.2	70-130			
Matrix Spike Dup (AC51616-MSD1)		Source: A503456-01		Prepared: 03/16/05 Analyzed: 03/17/05						
Total Organic Carbon	18.6	2.00	mg/l	20.0	ND	90.2	70-130	0.00	20	

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Nena M. Burgess For Sheri L. Speaks
Project Manager

3/28/2005

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CHEMICAL EXAMINATION REPORT

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Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/28/05 08:03
Project No: 9329/23
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503419	03/11/2005 16:10	GEOMAT	

Anions by EPA Method 300.0 - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AC51115 - General Preparation										
Blank (AC51115-BLK1)				Prepared & Analyzed: 03/11/05						
Nitrate as N	ND	0.20	mg/l							
Sulfate as SO4	ND	0.50	"							
Chloride	ND	0.50	"							
LCS (AC51115-BS1)				Prepared & Analyzed: 03/11/05						
Chloride	3.04	0.50	mg/l	3.00		101	90-110			
Nitrate as N	1.0	0.20	"	1.00		100	90-110			
Sulfate as SO4	8.12	0.50	"	8.00		102	90-110			
LCS Dup (AC51115-BSD1)				Prepared & Analyzed: 03/11/05						
Chloride	3.03	0.50	mg/l	3.00		101	90-110	0.329	20	
Nitrate as N	1.0	0.20	"	1.00		100	90-110	0.00	20	
Sulfate as SO4	8.08	0.50	"	8.00		101	90-110	0.494	10	
Duplicate (AC51115-DUP1)		Source: A503417-02		Prepared & Analyzed: 03/11/05						
Sulfate as SO4	3.46	1.0	mg/l		3.5			1.15	20	
Nitrate as N	1.1	0.40	"		1.1			0.00	20	
Chloride	6.66	1.0	"		6.6			0.905	20	
Matrix Spike (AC51115-MS1)		Source: A503417-02		Prepared & Analyzed: 03/11/05						
Chloride	11.4	1.0	mg/l	5.00	6.6	96.0	80-120			
Nitrate as N	5.9	0.40	"	5.00	1.1	96.0	80-120			
Sulfate as SO4	23.9	1.0	"	20.0	3.5	102	80-120			
Matrix Spike Dup (AC51115-MSD1)		Source: A503417-02		Prepared & Analyzed: 03/11/05						
Sulfate as SO4	24.0	1.0	mg/l	20.0	3.5	102	80-120	0.418	10	
Chloride	11.4	1.0	"	5.00	6.6	96.0	80-120	0.00	20	
Nitrate as N	5.9	0.40	"	5.00	1.1	96.0	80-120	0.00	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Nena M. Burgess For Sheri L. Speaks
Project Manager

3/28/2005

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attn: Ross Steenson

Report Date: 03/28/05 08:03
Project No: 9329/23
Project ID: SPI - (GeoMatrix)

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A503419	03/11/2005 16:10	GEOMAT	

Notes and Definitions

QM-01	The spike recovery for this QC sample is outside of established control limits possibly due to a sample matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
PQL	Practical Quantitation Limit

K PRIME, Inc.

CONSULTING ANALYTICAL CHEMISTS

3621 Westwind Blvd.
Santa Rosa CA 95403
Phone: 707 527 7574
FAX: 707 527 7879

TRANSMITTAL

DATE: 04/12/05

TO: MS. SHERI L. SPEAKS
ALPHA ANALYTICAL LABORATORIES, INC.
208 MASON STREET
UKIAH, CA 95482

Phone: 707-468-0401
Fax: 707-468-5267

ACCT: 9984
PROJ: A503419

FROM: Richard A. Kagel, Ph.D.
Laboratory Director RAK 4/12/05

SUBJECT: LABORATORY RESULTS FOR YOUR PROJECT A503419

Enclosed please find K Prime's laboratory reports for the following samples:

SAMPLE ID	TYPE	DATE	KPI LAB #
MW-21-200503	WATER	03/10/05	50034
BD-01-200503	WATER	03/10/05	50035
MW-05-200503	WATER	03/10/05	50036
MW-03-200503	WATER	03/10/05	50037
MW-02-200503	WATER	03/11/05	50038
MW-01-200503	WATER	03/11/05	50039

The above listed sample group was received on 03/15/05 and tested as requested on the chain of custody document.

Please call me if you have any questions or need further information.
Thank you for this opportunity to be of service.

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJEC 9984
CLIENT PROJECT A503419

METHOD: DISSOLVED GASES
REFFERENCE: RSK175

SAMPLE ID: MW-21-200503
LAB NO: 50034
BATCH ID: 032305W01
SAMPLE TYPE: WATER
DATE SAMPLED: 03/10/05
TIME SAMPLED: 9:50
DATE RECEIVED: 03/15/05
DATE ANALYZED: 03/23/05
UNITS: µg/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	1.58	7387

APPROVED BY: _____
DATE: 4/12/05

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJEC 9984
CLIENT PROJECT: A503419

METHOD: DISSOLVED GASES
REFFERENCE: RSK175

SAMPLE ID:	BD-01-200503
LAB NO:	50035
BATCH ID:	032305W01
SAMPLE TYPE:	WATER
DATE SAMPLED:	03/10/05
TIME SAMPLED:	9:50
DATE RECEIVED:	03/15/05
DATE ANALYZED:	03/23/05
UNITS:	µg/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	1.58	7762

APPROVED BY: _____
DATE: 4/12/05

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJEC 9984
CLIENT PROJECT A503419

METHOD: DISSOLVED GASES
REFFERENCE: RSK175

SAMPLE ID: MW-05-200503
LAB NO: 50036
BATCH ID: 032305W01
SAMPLE TYPE: WATER
DATE SAMPLED: 03/10/05
TIME SAMPLED: 13:10
DATE RECEIVED: 03/15/05
DATE ANALYZED: 03/23/05
UNITS: µg/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	1.58	6433

APPROVED BY: _____
DATE: 4/12/05

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJEC 9984
CLIENT PROJECT A503419

METHOD: DISSOLVED GASES
REFFERENCE: RSK175

SAMPLE ID:	MW-03-200503
LAB NO:	50037
BATCH ID:	032305W01
SAMPLE TYPE:	WATER
DATE SAMPLED:	03/10/05
TIME SAMPLED:	14:07
DATE RECEIVED:	03/15/05
DATE ANALYZED:	03/23/05
UNITS:	µg/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	1.56	5677

APPROVED BY: _____
DATE: 4/12/05

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJEC 9984
CLIENT PROJECT A503419

METHOD: DISSOLVED GASES
REFFERENCE: RSK175

SAMPLE ID: MW-02-200503
LAB NO: 50038
BATCH ID: 032305W01
SAMPLE TYPE: WATER
DATE SAMPLED: 03/11/05
TIME SAMPLED: 7:40
DATE RECEIVED: 03/15/05
DATE ANALYZED: 03/23/05
UNITS: µg/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	1.58	5269

APPROVED BY: _____
DATE: 4/12/05

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJEC 9984
CLIENT PROJECT A503419

METHOD: DISSOLVED GASES
REFFERENCE: RSK175

SAMPLE ID:	MW-01-200503
LAB NO:	50039
BATCH ID:	032305W01
SAMPLE TYPE:	WATER
DATE SAMPLED:	03/11/05
TIME SAMPLED:	8:50
DATE RECEIVED:	03/15/05
DATE ANALYZED:	03/23/05
UNITS:	µg/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	1.58	8034

APPROVED BY: _____
DATE: 4/12/05

K PRIME, INC.
LABORATORY QC REPORT

METHOD: DISSOLVED GASSES
REFFERENCE: RSK175

SAMPLE ID: L032305W01
DUPLICATE ID: D032305W01
BLANK ID: B032305W01
BATCH ID: 032305W01
ANALYZED DATE: 3/23/05
SAMPLE TYPE: WATER
UNITS: µg/L

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
METHANE	72.9	ND	55.0	75	60-140
ETHENE	128	ND	114659.0	89577	60-140
ETHANE	136	ND	102.6	75	60-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
METHANE	1.58	55.0	46.0	17.9	±20
ETHENE	2.38	114659.0	84.8	199.7	±20
ETHANE	1.63	102.6	86.6	16.9	±20

METHOD BLANK

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	7.89	ND
ETHENE	74-85-1	2.38	ND
ETHANE	74-84-0	1.63	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
MRL - METHOD REPORTING LIMIT
MDL - STATISTICAL METHOD DETECTION LIMIT
"J" - INDICATES REPORTED VALUE AS AN ESTIMATED CONCENTRATION ABOVE THE MDL AND BELOW THE METHOD REPORTING LIMIT.
"B" - INDICATES COMPOUND COMMONLY FOUND IN METHOD BLANK ABOVE THE MDL BUT BELOW THE METHOD REPORTING LIMIT.

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9984
CLIENT PROJECT: A503419

SAMPLE ID:	MW-21-200503
LAB NO:	50034
SAMPLE TYPE:	WATER
DATE SAMPLED:	03/10/05
TIME SAMPLED:	9:50
BATCH ID:	032305W01
DATE ANALYZED:	3/23/05
UNITS:	µg/L

METHOD: DISSOLVED GASES
REFERENCE: RSK 175

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
CARBON DIOXIDE	124-38-9	165	179097

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT, NA - NOT APPLICABLE OR AVAILABLE.

APPROVED BY: _____
DATE: 4/12/05

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9984
CLIENT PROJECT: A503419

SAMPLE ID:	BD-01-200503
LAB NO:	50035
SAMPLE TYPE:	WATER
DATE SAMPLED:	03/10/05
TIME SAMPLED:	9:50
BATCH ID:	032305W01
DATE ANALYZED:	3/23/05
UNITS:	µg/L

METHOD: DISSOLVED GASES
REFERENCE: RSK 175

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
CARBON DIOXIDE	124-38-9	165	164916

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT, NA - NOT APPLICABLE OR AVAILABLE.

APPROVED BY: _____
DATE: 4/12/05

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9984
CLIENT PROJECT: A503419

SAMPLE ID:	MW-05-200503
LAB NO:	50036
SAMPLE TYPE:	WATER
DATE SAMPLED:	03/10/05
TIME SAMPLED:	13:10
BATCH ID:	032305W01
DATE ANALYZED:	3/23/05
UNITS:	µg/L

METHOD: DISSOLVED GASES
REFERENCE: RSK 175

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
CARBON DIOXIDE	124-38-9	165	136320

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT, NA - NOT APPLICABLE OR AVAILABLE.

APPROVED BY: _____
DATE: 4/12/05

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9984
CLIENT PROJECT: A503419

SAMPLE ID:	MW-03-200503
LAB NO:	50037
SAMPLE TYPE:	WATER
DATE SAMPLED:	03/10/05
TIME SAMPLED:	14:07
BATCH ID:	032305W01

METHOD: DISSOLVED GASES
REFERENCE: RSK 175

DATE ANALYZED:	3/23/05
UNITS:	µg/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
CARBON DIOXIDE	124-38-9	165	115727

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT, NA - NOT APPLICABLE OR AVAILABLE.

APPROVED BY: _____
DATE: 4/12/05

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9984
CLIENT PROJECT: A503419

SAMPLE ID:	MW-02-200503
LAB NO:	50038
SAMPLE TYPE:	WATER
DATE SAMPLED:	03/11/05
TIME SAMPLED:	7:40
BATCH ID:	032305W01

METHOD: DISSOLVED GASES
REFERENCE: RSK 175

DATE ANALYZED:	3/23/05
UNITS:	µg/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
CARBON DIOXIDE	124-38-9	165	289106

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT, NA - NOT APPLICABLE OR AVAILABLE.

APPROVED BY: _____
DATE: 4/12/05

K PRIME, INC.
LABORATORY QC REPORT

METHOD: DISSOLVED GASSES
REFFERENCE: RSK175

SAMPLE ID:	D032305W01
DUPLICATE ID:	L032305W01
BLANK ID:	B032305W01
BATCH ID:	032305W01
ANALYZED DATE:	3/23/05
SAMPLE TYPE:	WATER
UNITS:	µg/L

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
CARBON DIOXIDE	2000	ND	1330	66	50-150

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
CARBON DIOXIDE	165	1330	1137	15.6	±40

METHOD BLANK

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
CARBON DIOXIDE	124-38-9	165	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
MRL - METHOD REPORTING LIMIT
MDL - STATISTICAL METHOD DETECTION LIMIT
"J" - INDICATES REPORTED VALUE AS AN ESTIMATED CONCENTRATION ABOVE THE MDL AND BELOW THE METHOD REPORTING LIMIT.
"B" - INDICATES COMPOUND COMMONLY FOUND IN METHOD BLANK ABOVE THE MDL BUT BELOW THE METHOD REPORTING LIMIT.

SEVERN TRENT STL

Submission: 2005-03-0514

Dissolved Metals

Alpha Analytical, Inc. - Ukiah
Attn.: Sheri L. Speaks

208 Mason Street
Ukiah, CA 95482
Phone: (707) 468-0401 Fax: (707) 468-5267

Project: A503419

Received: 03/15/2005 10:55

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
A503419-03 MW-05-200503	03/10/2005 13:10	Water	1
A503419-04 MW-03-200503	03/10/2005 14:07	Water	2
A503419-05 MW-02-200503	03/11/2005 07:40	Water	3
A503419-06 MW-01-200503	03/11/2005 08:50	Water	4

Dissolved Metals

Alpha Analytical, Inc. - Ukiah
Attn.: Sheri L. Speaks

208 Mason Street
Ukiah, CA 95482
Phone: (707) 468-0401 Fax: (707) 468-5267

Project: A503419

Received: 03/15/2005 10:55

Prep(s): 3005A
Test(s): 6010B
Sample ID: **A503419-03 MW-05-200503**
Lab ID: 2005-03-0514 - 1
Sampled: 03/10/2005 13:10
Extracted: 3/21/2005 13:24
Matrix: Water
QC Batch#: 2005/03/21-04.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Iron	4.7	0.20	mg/L	1.00	03/22/2005 10:28	
Manganese	0.67	0.0050	mg/L	1.00	03/22/2005 10:28	

SEVERN TRENT STL

Submission: 2005-03-0514

Dissolved Metals

Alpha Analytical, Inc. - Ukiah
Attn.: Sheri L. Speaks

208 Mason Street
Ukiah, CA 95482
Phone: (707) 468-0401 Fax: (707) 468-5267

Project: A503419

Received: 03/15/2005 10:55

Prep(s):	3005A	Test(s):	6010B
Sample ID:	**A503419-04 MW-03-200503**	Lab ID:	2005-03-0514 - 2
Sampled:	03/10/2005 14:07	Extracted:	3/21/2005 13:24
Matrix:	Water	QC Batch#:	2005/03/21-04.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Iron	33	0.20	mg/L	1.00	03/22/2005 10:31	
Manganese	2.5	0.0050	mg/L	1.00	03/22/2005 10:31	

Dissolved Metals

Alpha Analytical, Inc. - Ukiah
Attn.: Sheri L. Speaks

208 Mason Street
Ukiah, CA 95482
Phone: (707) 468-0401 Fax: (707) 468-5267

Project: A503419

Received: 03/15/2005 10:55

Prep(s): 3005A
Test(s): 6010B
Sample ID: **A503419-05 MW-02-200503**
Lab ID: 2005-03-0514 - 3
Sampled: 03/11/2005 07:40
Extracted: 3/21/2005 13:24
Matrix: Water
QC Batch#: 2005/03/21-04.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Iron	53	0.20	mg/L	1.00	03/22/2005 10:35	
Manganese	4.6	0.0050	mg/L	1.00	03/22/2005 10:35	

Dissolved Metals

Alpha Analytical, Inc. - Ukiah
Attn.: Sheri L. Speaks

208 Mason Street
Ukiah, CA 95482
Phone: (707) 468-0401 Fax: (707) 468-5267

Project: A503419

Received: 03/15/2005 10:55

Prep(s): 3005A
Test(s): 6010B
Sample ID: **A503419-06 MW-01-200503**
Lab ID: 2005-03-0514 - 4
Sampled: 03/11/2005 08:50
Extracted: 3/21/2005 13:24
Matrix: Water
QC Batch#: 2005/03/21-04.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Iron	50	0.20	mg/L	1.00	03/22/2005 10:39	
Manganese	1.6	0.0050	mg/L	1.00	03/22/2005 10:39	

SEVERN TRENT STL

Submission: 2005-03-0514

Dissolved Metals

Alpha Analytical, Inc. - Ukiah
Attn.: Sheri L. Speaks

208 Mason Street
Ukiah, CA 95482
Phone: (707) 468-0401 Fax: (707) 468-5267

Project: A503419

Received: 03/15/2005 10:55

Batch QC Report

Prep(s): 3005A
Method Blank

Water

Test(s): 6010B
QC Batch # 2005/03/21-04.15

MB: 2005/03/21-04.15-001

Date Extracted: 03/21/2005 13:24

Compound	Conc.	RL	Unit	Analyzed	Flag
Iron	ND	0.20	mg/L	03/22/2005 10:18	
Manganese	ND	0.0050	mg/L	03/22/2005 10:18	

Dissolved Metals

Alpha Analytical, Inc. - Ukiah
Attn.: Sheri L. Speaks

208 Mason Street
Ukiah, CA 95482
Phone: (707) 468-0401 Fax: (707) 468-5267

Project: A503419

Received: 03/15/2005 10:55

Batch QC Report

Prep(s): 3005A

Test(s): 6010B

Laboratory Control Spike **Water** **QC Batch # 2005/03/21-04.15**

LCS 2005/03/21-04.15-002 Extracted: 03/21/2005 Analyzed: 03/22/2005 10:21
LCSD 2005/03/21-04.15-003 Extracted: 03/21/2005 Analyzed: 03/22/2005 10:24

Compound	Conc.	mg/L	Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Iron	4.98	4.99	5.00	99.6	99.8	0.2	80-120	20		
Manganese	0.496	0.497	0.500	99.2	99.4	0.2	80-120	20		

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Chain-of Custody Record

Date: MARCH 10, 2005 Page 1 of 2

Project No.: 9329/23

Samplers (Signature:) Matt Hyland, Ron Scott

Date	Time	Sample Number	EPA Method 8021 (Full Scan)	EPA Method 8021 (Hal. VOCs only)	EPA Method 8021 (BETX only)	EPA Method 8260	EPA Method 8270 (Full Scan)	EPA Method 8270 SIM (PAHS only)	Method 8015m (Gasoline)	Method 8015m (Diesel)	Method 8015m (Motor Oil)	Silica Gel Cleanup	NO_3, SO_4, Cl, alkalinity	Ca, Mg	TOC	Methane + CO_2	Fe^{2+} + total Mn	Soil (S), Water (W) Vapor (V), or Other (o)	Filtered	Preserved	Cooled	No. of Containers	Additional Comments
3/10/05	0950	MW-21-200503	A	5034	19	-			01				X					W			X	1	OK to Run
														X				W			X	1	Fe^{2+} + mn OK
															X			W		X	X	2	OF Hold.
																X		W			X	3	3-11-05 SS
																	X	W	X	X	X	1	
	0950	BD-01-200503							2				X					W			X	1	No Container
														X				W			X	1	For Fe^{+} total MN
															X			W		X	X	2	on samples #1 & #2
																X		W			X	3	NB.
																	X	W	X	X	X	1	
	1310	MW-05-200503							3				X					W			X	1	
														X				W			X	1	
															X			W		X	X	2	
																X		W			X	3	
																	X	W	X	X	X	1	

Laboratory: ALPHA ANALYTICAL LABORATORIES

Turnaround Time: STANDARD

Results to: ROSS STEENSON

Total No. of Containers: 24

Relinquished by (Signature):	Date: 3/11	Relinquished by (Signature):	Date:	Relinquished by (Signature):	Date:
Printed Name: Matt Hyland	Time: 1200	Printed Name: John Taylor	Time:	Printed Name:	Time:
Company: Geomatrix		Company: Alpha		Company:	
Received by:	Date:	Received by:	Date: 3/11/05	Received by:	Date:
Printed Name: John Taylor	Time:	Printed Name: Nona Burgess	Time: 1620	Printed Name:	Time:
Company: Alpha		Company:		Company:	

Method of Shipment: LAB COURIER

Laboratory Comments and Log No.:

Geomatrix Consultants
2101 Webster Street, 12th Floor • Oakland, CA 94612
Phone: 510-663-4100 Fax: 510-663-4141

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Chain-of Custody Record

Date: MARCH 10, 2005 | Page 2 of 2

Project No.: 9329/23

Samplers (Signature): Matt Hillyard, Ross Steenson

Date	Time	Sample Number
3/10/05	1407	MW-03-200503
3/11/05	0740	MW-02-200503
	0850	MW-01-200503

ANALYSES

Sample Number	EPA Method 8021 (Full Scan)	EPA Method 8021 (Hal. VOCs only)	EPA Method 8021 (BETX only)	EPA Method 8260	EPA Method 8270 (Full Scan)	EPA Method 8270 SIM (PAHS only)	Method 8015m (Gasoline)	Method 8015m (Diesel)	Method 8015m (Motor Oil)	Silica Gel Cleanup	NO_3, Soy, Cl, alkalinity	Ca, Mg	TOC	Methane + CO_2	Fe^{2+} + total Mn
MW-03-200503							L				X				
												X			
													X		
														X	
															X
MW-02-200503							5				X				
												X			
													X		
														X	
															X
MW-01-200503							6				X				
												X			
													X		
														X	
															X

REMARKS

Sample Number	Soil (S), Water (W) Vapor (V), or Other (o)	Filtered	Preserved	Cooled	No. of Containers	Additional Comments
MW-03-200503	W			X	1	
	W			X	1	
	W		X	X	2	
	W			X	3	
	W	X	X	X	1	
MW-02-200503	W			X	1	
	W			X	1	
	W		X	X	2	
	W			X	3	
	W	X	X	X	1	
MW-01-200503	W			X	1	
	W			X	2	
	W		X	X	2	
	W			X	3	
	W	X	X	X	1	

Laboratory: ALPHA ANALYTICAL LABORATORIES

Turnaround Time: STANDARD

Results to: ROSS STEENSON

Total No. of Containers: 24

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Matt Hillyard	3/11	1200	[illegible]	3/11	1600
Printed Name: Matt Hillyard			Printed Name: John Taylor		
Company: Geomatrix			Company: Alpha		
Received by: [illegible]	Date:		Received by: [illegible]	Date: 3/11/05	
Printed Name: John Taylor	Time:		Printed Name: Noah Burgess	Time:	16:10
Company: Alpha			Company: Alpha		

Relinquished by (Signature)	Date	Time
Printed Name:		
Company:		
Received by:	Date:	
Printed Name:	Time:	
Company:		

Method of Shipment: LAB COURIER

Laboratory Comments and Log No.:

Geomatrix Consultants
2101 Webster Street, 12th Floor • Oakland, CA 94612
Phone: 510-663-4100 Fax: 510-663-4141

FRONTIER
ANALYTICAL LABORATORY

March 25, 2005

RECEIVED 3/28/2005

FAL Project ID: 3151

Mr. Ross Steenson
Geomatrix Consultants, Inc.
2101 Webster Street, 12th Floor
Oakland, CA 94612

PILOT STUDY
GW Samples
MW-03, 05, 07, 14, 20, 21

Dear Mr. Steenson,

Enclosed are the results for Frontier Analytical Laboratory project **3151**. This corresponds to your project number 9329/23. The seven aqueous samples received on 3/11/05 were extracted and analyzed by EPA Method 1613 for tetra through octa chlorinated dibenzo dioxins and furans. Geomatrix Consultants, Inc. requested a turnaround time of ten business days for project **3151**.

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains the project-sample tracking log, qualifier reference guide, ML/MDL form and the analytical results. The Sample Receipt section contains the chain of custody, sample login form and sample photo. The Electronic Data Deliverable (EDD) for this project will be e-mailed to you within the next couple days.

If you have any questions regarding project **3151**, please feel free to contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

Bradley B. Silverbush
Director of Operations

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Frontier Analytical Laboratory

Sample Tracking Log

FAL Project ID: 3151

Received on: **03/11/2005** Project Due: **03/28/2005** Storage: **R1**

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
3151-001-SA	1	9329.23	MW-20-200503	EPA 1613 D/F	Aqueous	03/09/2005	12:39 pm	03/09/2006
3151-002-SA	1	9329.23	MW-14-200503	EPA 1613 D/F	Aqueous	03/09/2005	02:40 pm	03/09/2006
3151-003-SA	1	9329.23	MW-07-200503	EPA 1613 D/F	Aqueous	03/09/2005	04:23 pm	03/09/2006
3151-004-SA	1	9329.23	MW-21-200503	EPA 1613 D/F	Aqueous	03/10/2005	09:50 am	03/10/2006
3151-005-SA	1	9329.23	BD-01-200503	EPA 1613 D/F	Aqueous	03/10/2005	09:50 am	03/10/2006
3151-006-SA	1	9329.23	MW-05-200503	EPA 1613 D/F	Aqueous	03/10/2005	01:10 pm	03/10/2006
3151-007-SA	1	9329.23	MW-03-200503	EPA 1613 D/F	Aqueous	03/10/2005	02:07 pm	03/10/2006

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FRONTIER
ANALYTICAL LABORATORY

Qualifier Reference Guide

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J‡	Analyte concentration is below calibration range
M	Maximum possible concentration
NP	Not Provided
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection
-	Analyte Not Detected
+	Spike levels were inappropriate versus the levels in the sample

‡ "J" values are equivalent to DNQ (detected but not quantified) for California Toxics Rule (CTR)/National Pollutant Discharge Elimination System (NPDES) samples

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EPA Method 1613/8290 Aqueous MDL
(SPE Extraction)

ANALYTICAL LABORATORY

Analyte	ML	MDL
2,3,7,8-TCDD	5.00	0.543
1,2,3,7,8-PeCDD	25.0	0.771
1,2,3,4,7,8-HxCDD	25.0	0.845
1,2,3,6,7,8-HxCDD	25.0	1.05
1,2,3,7,8,9-HxCDD	25.0	0.910
1,2,3,4,6,7,8-HpCDD	25.0	1.18
OCDD	50.0	2.26
2,3,7,8-TCDF	5.00	0.449
1,2,3,7,8-PeCDF	25.0	1.05
2,3,4,7,8-PeCDF	25.0	1.08
1,2,3,4,7,8-HxCDF	25.0	0.545
1,2,3,6,7,8-HxCDF	25.0	0.355
1,2,3,7,8,9-HxCDF	25.0	0.370
2,3,4,6,7,8-HxCDF	25.0	0.476
1,2,3,4,6,7,8-HpCDF	25.0	0.516
1,2,3,4,7,8,9-HpCDF	25.0	0.654
OCDF	50.0	1.22

Project **3015**, extracted 1/6/05; analyzed1/12/05. Based on a 1.0 Liter sample, pg/L.

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EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 3151-001-MB
Client ID: Method Blank
Matrix: Aqueous
Batch No: X0515

Date Extracted: 03-14-2005
Date Received: NA
Amount: 1.000 L

ICal: PCDDFAL1-12-14-04
GC Column: DB5
Units: pg/L

Acquired: 03-15-2005
WHO TEQ: 0.00

Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	-	1.71		-					
1,2,3,7,8-PeCDD	-	3.48		-					
1,2,3,4,7,8-HxCDD	-	4.50		-					
1,2,3,6,7,8-HxCDD	-	6.02		-	Total Tetra-Dioxins	-	1.71		0
1,2,3,7,8,9-HxCDD	-	5.07		-	Total Penta-Dioxins	-	3.48		0
1,2,3,4,6,7,8-HpCDD	-	4.03		-	Total Hexa-Dioxins	-	6.02		0
OCDD	-	5.46		-	Total Hepta-Dioxins	-	4.03		0
2,3,7,8-TCDF	-	1.38		-					
1,2,3,7,8-PeCDF	-	3.54		-					
2,3,4,7,8-PeCDF	-	3.47		-					
1,2,3,4,7,8-HxCDF	-	2.30		-					
1,2,3,6,7,8-HxCDF	-	2.11		-					
2,3,4,6,7,8-HxCDF	-	2.09		-					
1,2,3,7,8,9-HxCDF	-	2.71		-	Total Tetra-Furans	-	1.38		0
1,2,3,4,6,7,8-HpCDF	-	2.70		-	Total Penta-Furans	-	3.54		0
1,2,3,4,7,8,9-HpCDF	-	3.33		-	Total Hexa-Furans	-	2.71		0
OCDF	-	5.26		-	Total Hepta-Furans	-	3.33		0

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	77.9	25.0 - 164	
13C-1,2,3,7,8-PeCDD	73.1	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	81.1	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	78.4	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	85.7	23.0 - 140	
13C-OCDD	83.8	17.0 - 157	
13C-2,3,7,8-TCDF	83.6	24.0 - 169	
13C-1,2,3,7,8-PeCDF	83.4	24.0 - 185	
13C-2,3,4,7,8-PeCDF	84.0	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	75.5	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	74.5	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	75.7	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	76.4	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	76.5	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	77.0	26.0 - 138	
13C-OCDF	76.9	17.0 - 157	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	84.9	35.0 - 197	

Analyst: _____
Date: 3/16/05

Reviewed By: _____
Date: 3/19/05

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EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 3151-001-OPR
Client ID: OPR
Matrix: Aqueous
Batch No: X0515

Date Extracted: 03-14-2005
Date Received: NA
Amount: 1.000 L

ICal: PCDDFAL1-12-14-04
GC Column: DB5
Units: ng/ml

Acquired: 03-15-2005
WHO TEQ: NA

Compound	Conc	QC Limits
2,3,7,8-TCDD	8.72	6.70 - 15.8
1,2,3,7,8-PeCDD	51.6	35.0 - 71.0
1,2,3,4,7,8-HxCDD	49.9	35.0 - 82.0
1,2,3,6,7,8-HxCDD	54.9	38.0 - 67.0
1,2,3,7,8,9-HxCDD	52.2	32.0 - 81.0
1,2,3,4,6,7,8-HpCDD	50.0	35.0 - 70.0
OCDD	102	78.0 - 144
2,3,7,8-TCDF	9.63	7.50 - 15.8
1,2,3,7,8-PeCDF	49.1	40.0 - 67.0
2,3,4,7,8-PeCDF	48.7	34.0 - 80.0
1,2,3,4,7,8-HxCDF	51.2	36.0 - 67.0
1,2,3,6,7,8-HxCDF	51.5	42.0 - 65.0
2,3,4,6,7,8-HxCDF	51.3	35.0 - 78.0
1,2,3,7,8,9-HxCDF	52.1	39.0 - 65.0
1,2,3,4,6,7,8-HpCDF	52.7	41.0 - 61.0
1,2,3,4,7,8,9-HpCDF	52.9	39.0 - 69.0
OCDF	103	63.0 - 170

Internal Standards	% Rec	QC Limits
13C-2,3,7,8-TCDD	85.6	20.0 - 175
13C-1,2,3,7,8-PeCDD	78.7	21.0 - 227
13C-1,2,3,4,7,8-HxCDD	90.8	21.0 - 193
13C-1,2,3,6,7,8-HxCDD	76.8	25.0 - 163
13C-1,2,3,4,6,7,8-HpCDD	88.4	26.0 - 166
13C-OCDD	86.3	13.0 - 198
13C-2,3,7,8-TCDF	85.5	22.0 - 152
13C-1,2,3,7,8-PeCDF	86.6	21.0 - 192
13C-2,3,4,7,8-PeCDF	87.9	13.0 - 328
13C-1,2,3,4,7,8-HxCDF	77.1	19.0 - 202
13C-1,2,3,6,7,8-HxCDF	77.0	21.0 - 159
13C-2,3,4,6,7,8-HxCDF	76.7	22.0 - 176
13C-1,2,3,7,8,9-HxCDF	79.3	17.0 - 205
13C-1,2,3,4,6,7,8-HpCDF	78.0	21.0 - 158
13C-1,2,3,4,7,8,9-HpCDF	80.0	20.0 - 186
13C-OCDF	80.9	13.0 - 198

Cleanup Surrogate		
37Cl-2,3,7,8-TCDD	97.2	31.0 - 191

Analyst: _____
Date: 3/16/05

Reviewed By: _____
Date: 3/16/05

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EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 3151-001-SA
Client ID: MW-20-200503
Matrix: Aqueous
Batch No: X0515

Date Extracted: 03-14-2005
Date Received: 03-11-2005
Amount: 0.967 L

ICal: PCDDFAL1-12-14-04
GC Column: DB5
Units: pg/L

Acquired: 03-15-2005
WHO TEQ: 71.0

Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	-	2.05		-					
1,2,3,7,8-PeCDD	-	4.69		-					
1,2,3,4,7,8-HxCDD	-	8.75		-					
1,2,3,6,7,8-HxCDD	111	-		11.1	Total Tetra-Dioxins	86.0	-		4
1,2,3,7,8,9-HxCDD	17.8	-	J	1.78	Total Penta-Dioxins	323	-		2
1,2,3,4,6,7,8-HpCDD	3850	-		38.5	Total Hexa-Dioxins	928	-		5
OCDD	50500	-		5.05	Total Hepta-Dioxins	7890	-		2
2,3,7,8-TCDF	-	4.81		-					
1,2,3,7,8-PeCDF	-	7.00		-					
2,3,4,7,8-PeCDF	-	6.29		-					
1,2,3,4,7,8-HxCDF	14.8	-	J	1.48					
1,2,3,6,7,8-HxCDF	22.2	-	J	2.22					
2,3,4,6,7,8-HxCDF	16.5	-	J	1.65					
1,2,3,7,8,9-HxCDF	-	4.42		-	Total Tetra-Furans	245	-	D,M	9
1,2,3,4,6,7,8-HpCDF	832	-		8.32	Total Penta-Furans	337	-	D,M	5
1,2,3,4,7,8,9-HpCDF	57.9	-		0.579	Total Hexa-Furans	1680	-	D,M	7
OCDF	3000	-		0.300	Total Hepta-Furans	3930	-		4

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	45.6	25.0 - 164	
13C-1,2,3,7,8-PeCDD	39.2	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	42.1	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	41.7	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	43.0	23.0 - 140	
13C-OCDD	44.1	17.0 - 157	
13C-2,3,7,8-TCDF	50.5	24.0 - 169	
13C-1,2,3,7,8-PeCDF	42.2	24.0 - 185	
13C-2,3,4,7,8-PeCDF	48.8	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	38.8	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	38.1	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	43.1	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	40.2	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	37.4	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	37.9	26.0 - 138	
13C-OCDF	38.5	17.0 - 157	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	95.6	35.0 - 197	

Analyst: _____
Date: 3/16/05

Reviewed By: _____
Date: 3/16/05

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EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 3151-002-SA
Client ID: MW-14-200503
Matrix: Aqueous
Batch No: X0515

Date Extracted: 03-14-2005
Date Received: 03-11-2005
Amount: 0.919 L

ICal: PCDDFAL1-12-14-04
GC Column: DB5
Units: pg/L

Acquired: 03-15-2005
WHO TEQ: 0.00462

Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	-	2.18		-					
1,2,3,7,8-PeCDD	-	4.31		-					
1,2,3,4,7,8-HxCDD	-	4.54		-					
1,2,3,6,7,8-HxCDD	-	5.51		-	Total Tetra-Dioxins	-	2.18		0
1,2,3,7,8,9-HxCDD	-	4.31		-	Total Penta-Dioxins	-	4.31		0
1,2,3,4,6,7,8-HpCDD	-	7.26		-	Total Hexa-Dioxins	-	5.51		0
OCDD	46.2	-	J	0.00462	Total Hepta-Dioxins	-	7.26		0
2,3,7,8-TCDF	-	2.05		-					
1,2,3,7,8-PeCDF	-	2.89		-					
2,3,4,7,8-PeCDF	-	2.59		-					
1,2,3,4,7,8-HxCDF	-	2.29		-					
1,2,3,6,7,8-HxCDF	-	2.12		-					
2,3,4,6,7,8-HxCDF	-	2.09		-					
1,2,3,7,8,9-HxCDF	-	2.78		-	Total Tetra-Furans	-	2.05		0
1,2,3,4,6,7,8-HpCDF	-	2.57		-	Total Penta-Furans	-	2.89		0
1,2,3,4,7,8,9-HpCDF	-	3.13		-	Total Hexa-Furans	-	2.78		0
OCDF	-	8.18		-	Total Hepta-Furans	-	3.13		0

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	48.6	25.0 - 164	
13C-1,2,3,7,8-PeCDD	45.7	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	42.2	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	37.0	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	46.2	23.0 - 140	
13C-OCDD	41.3	17.0 - 157	
13C-2,3,7,8-TCDF	58.8	24.0 - 169	
13C-1,2,3,7,8-PeCDF	54.2	24.0 - 185	
13C-2,3,4,7,8-PeCDF	60.9	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	40.1	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	38.2	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	41.6	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	38.7	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	40.3	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	41.3	26.0 - 138	
13C-OCDF	37.5	17.0 - 157	

Cleanup Surrogate		
37Cl-2,3,7,8-TCDD	100	35.0 - 197

Analyst: _____
Date: 3/16/05

Reviewed By: _____
Date: 3/18/05

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EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 3151-003-SA
Client ID: MW-07-200503
Matrix: Aqueous
Batch No: X0515

Date Extracted: 03-14-2005
Date Received: 03-11-2005
Amount: 0.950 L

ICal: PCDDFAL1-12-14-04
GC Column: DB5
Units: pg/L

Acquired: 03-18-2005
WHO TEQ: 0.587

Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	-	3.21		-					
1,2,3,7,8-PeCDD	-	4.66		-					
1,2,3,4,7,8-HxCDD	-	11.7		-					
1,2,3,6,7,8-HxCDD	-	9.57		-	Total Tetra-Dioxins	-	3.21		0
1,2,3,7,8,9-HxCDD	-	7.78		-	Total Penta-Dioxins	-	8.63		0
1,2,3,4,6,7,8-HpCDD	42.4	-		0.424	Total Hexa-Dioxins	-	12.5		0
OCDD	1600	-		0.160	Total Hepta-Dioxins	88.6	-		2
2,3,7,8-TCDF	-	4.83		-					
1,2,3,7,8-PeCDF	-	4.92		-					
2,3,4,7,8-PeCDF	-	4.87		-					
1,2,3,4,7,8-HxCDF	-	5.41		-					
1,2,3,6,7,8-HxCDF	-	4.70		-					
2,3,4,6,7,8-HxCDF	-	5.00		-					
1,2,3,7,8,9-HxCDF	-	4.88		-	Total Tetra-Furans	50.6	-		5
1,2,3,4,6,7,8-HpCDF	-	5.91		-	Total Penta-Furans	-	9.73		0
1,2,3,4,7,8,9-HpCDF	-	6.93		-	Total Hexa-Furans	-	7.79		0
OCDF	32.1	-	J	0.00321	Total Hepta-Furans	30.9	-		1

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	60.8	25.0 - 164	
13C-1,2,3,7,8-PeCDD	57.7	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	61.7	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	60.8	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	49.0	23.0 - 140	
13C-OCDD	45.2	17.0 - 157	
13C-2,3,7,8-TCDF	62.2	24.0 - 169	
13C-1,2,3,7,8-PeCDF	49.8	24.0 - 185	
13C-2,3,4,7,8-PeCDF	51.0	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	58.4	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	57.3	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	60.0	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	60.7	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	48.3	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	45.3	26.0 - 138	
13C-OCDF	48.2	17.0 - 157	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	91.3	35.0 - 197	

Analyst: _____
Date: 3/18/05

Reviewed By: _____
Date: 3/18/05

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EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 3151-004-SA
Client ID: MW-21-200503
Matrix: Aqueous
Batch No: X0515

Date Extracted: 03-14-2005
Date Received: 03-11-2005
Amount: 0.914 L

ICal: PCDDFAL1-12-14-04
GC Column: DB5
Units: pg/L

Acquired: 03-18-2005
WHO TEQ: 176

Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	-	3.78		-					
1,2,3,7,8-PeCDD	-	14.7		-					
1,2,3,4,7,8-HxCDD	64.6	-		6.46					
1,2,3,6,7,8-HxCDD	-	9.98		-	Total Tetra-Dioxins	29.5	-	M	1
1,2,3,7,8,9-HxCDD	-	9.90		-	Total Penta-Dioxins	29.0	-		1
1,2,3,4,6,7,8-HpCDD	79.4	-		0.794	Total Hexa-Dioxins	109	-		2
OCDD	223	-		0.0223	Total Hepta-Dioxins	107	-		2
2,3,7,8-TCDF	-	6.15	F	-					
1,2,3,7,8-PeCDF	-	6.27		-					
2,3,4,7,8-PeCDF	-	7.06		-					
1,2,3,4,7,8-HxCDF	1640	-		164					
1,2,3,6,7,8-HxCDF	-	9.63		-					
2,3,4,6,7,8-HxCDF	-	8.08		-					
1,2,3,7,8,9-HxCDF	26.0	-	J	2.60	Total Tetra-Furans	610	-		8
1,2,3,4,6,7,8-HpCDF	-	8.57		-	Total Penta-Furans	91.4	-		1
1,2,3,4,7,8,9-HpCDF	177	-		1.77	Total Hexa-Furans	1780	-		3
OCDF	-	24.7		-	Total Hepta-Furans	206	-		2

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	67.3	25.0 - 164	
13C-1,2,3,7,8-PeCDD	69.3	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	59.2	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	56.3	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	49.5	23.0 - 140	
13C-OCDD	37.6	17.0 - 157	
13C-2,3,7,8-TCDF	75.9	24.0 - 169	
13C-1,2,3,7,8-PeCDF	78.8	24.0 - 185	
13C-2,3,4,7,8-PeCDF	70.8	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	67.4	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	47.0	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	67.5	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	65.3	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	46.3	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	30.5	26.0 - 138	
13C-OCDF	36.2	17.0 - 157	

Cleanup Surrogate		
37Cl-2,3,7,8-TCDD	98.8	35.0 - 197

Analyst: _____
Date: 3/18/05

Reviewed By: _____
Date: 3/18/05

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EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 3151-005-SA
Client ID: BD-01-200503
Matrix: Aqueous
Batch No: X0515

Date Extracted: 03-14-2005
Date Received: 03-11-2005
Amount: 0.916 L

ICal: PCDDFAL1-12-14-04
GC Column: DB5
Units: pg/L

Acquired: 03-15-2005
WHO TEQ: 0.351

Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	-	1.19		-					
1,2,3,7,8-PeCDD	-	4.39		-					
1,2,3,4,7,8-HxCDD	-	4.13		-					
1,2,3,6,7,8-HxCDD	-	5.51		-	Total Tetra-Dioxins	-	2.24		0
1,2,3,7,8,9-HxCDD	-	4.29		-	Total Penta-Dioxins	-	4.39		0
1,2,3,4,6,7,8-HpCDD	20.4	-	J	0.204	Total Hexa-Dioxins	-	5.51		0
OCDD	522	-		0.0522	Total Hepta-Dioxins	38.0	-		2
2,3,7,8-TCDF	-	1.15		-					
1,2,3,7,8-PeCDF	-	2.10		-					
2,3,4,7,8-PeCDF	-	2.20		-					
1,2,3,4,7,8-HxCDF	-	1.40		-					
1,2,3,6,7,8-HxCDF	-	1.27		-					
2,3,4,6,7,8-HxCDF	-	1.25		-					
1,2,3,7,8,9-HxCDF	-	1.58		-	Total Tetra-Furans	-	1.98		0
1,2,3,4,6,7,8-HpCDF	9.20	-	J	0.0920	Total Penta-Furans	-	2.22		0
1,2,3,4,7,8,9-HpCDF	-	1.72		-	Total Hexa-Furans	5.91	-	J	1
OCDF	23.4	-	J	0.00234	Total Hepta-Furans	29.1	-		2

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	67.4	25.0 - 164	
13C-1,2,3,7,8-PeCDD	62.2	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	66.6	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	57.8	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	63.3	23.0 - 140	
13C-OCDD	58.7	17.0 - 157	
13C-2,3,7,8-TCDF	71.2	24.0 - 169	
13C-1,2,3,7,8-PeCDF	69.5	24.0 - 185	
13C-2,3,4,7,8-PeCDF	70.6	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	58.8	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	55.9	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	60.2	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	61.5	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	54.3	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	57.9	26.0 - 138	
13C-OCDF	53.2	17.0 - 157	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	84.1	35.0 - 197	

Analyst: _____
Date: 3/16/05

Reviewed By: _____
Date: 3/16/05

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EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 3151-006-SA
Client ID: MW-05-200503
Matrix: Aqueous
Batch No: X0515

Date Extracted: 03-14-2005
Date Received: 03-11-2005
Amount: 0.920 L

ICal: PCDDFAL1-12-14-04
GC Column: DB5
Units: pg/L

Acquired: 03-16-2005
WHO TEQ: 0.00597

Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	-	1.65		-					
1,2,3,7,8-PeCDD	-	4.20		-					
1,2,3,4,7,8-HxCDD	-	3.50		-					
1,2,3,6,7,8-HxCDD	-	4.31		-	Total Tetra-Dioxins	-	1.65		0
1,2,3,7,8,9-HxCDD	-	3.47		-	Total Penta-Dioxins	-	4.20		0
1,2,3,4,6,7,8-HpCDD	-	6.54		-	Total Hexa-Dioxins	-	4.31		0
OCDD	59.7	-		0.00597	Total Hepta-Dioxins	-	6.54		0
2,3,7,8-TCDF	-	1.48		-					
1,2,3,7,8-PeCDF	-	3.04		-					
2,3,4,7,8-PeCDF	-	3.01		-					
1,2,3,4,7,8-HxCDF	-	1.92		-					
1,2,3,6,7,8-HxCDF	-	1.80		-					
2,3,4,6,7,8-HxCDF	-	1.74		-					
1,2,3,7,8,9-HxCDF	-	2.36		-	Total Tetra-Furans	-	1.48		0
1,2,3,4,6,7,8-HpCDF	-	2.26		-	Total Penta-Furans	-	3.12		0
1,2,3,4,7,8,9-HpCDF	-	2.60		-	Total Hexa-Furans	-	2.36		0
OCDF	-	6.19		-	Total Hepta-Furans	8.02	-	J	1

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	52.7	25.0 - 164	
13C-1,2,3,7,8-PeCDD	48.1	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	48.4	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	45.9	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	48.7	23.0 - 140	
13C-OCDD	42.4	17.0 - 157	
13C-2,3,7,8-TCDF	56.4	24.0 - 169	
13C-1,2,3,7,8-PeCDF	54.7	24.0 - 185	
13C-2,3,4,7,8-PeCDF	58.4	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	45.4	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	43.7	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	47.3	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	46.9	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	42.5	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	44.6	26.0 - 138	
13C-OCDF	38.3	17.0 - 157	

Cleanup Surrogate		
37Cl-2,3,7,8-TCDD	86.8	35.0 - 197

Analyst: _____
Date: 3/16/05

Reviewed By: _____
Date: 3/16/05

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EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 3151-007-SA
Client ID: MW-03-200503
Matrix: Aqueous
Batch No: X0515

Date Extracted: 03-14-2005
Date Received: 03-11-2005
Amount: 0.903 L

ICal: PCDDFAL1-12-14-04
GC Column: DB5
Units: pg/L

Acquired: 03-16-2005
WHO TEQ: 0.00316

Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	-	1.85		-					
1,2,3,7,8-PeCDD	-	4.50		-					
1,2,3,4,7,8-HxCDD	-	4.51		-					
1,2,3,6,7,8-HxCDD	-	5.56		-	Total Tetra-Dioxins	-	1.85		0
1,2,3,7,8,9-HxCDD	-	4.59		-	Total Penta-Dioxins	-	4.50		0
1,2,3,4,6,7,8-HpCDD	-	5.31		-	Total Hexa-Dioxins	-	5.56		0
OCDD	31.6	-	J	0.00316	Total Hepta-Dioxins	-	5.31		0
2,3,7,8-TCDF	-	1.72		-					
1,2,3,7,8-PeCDF	-	2.91		-					
2,3,4,7,8-PeCDF	-	2.77		-					
1,2,3,4,7,8-HxCDF	-	1.65		-					
1,2,3,6,7,8-HxCDF	-	1.51		-					
2,3,4,6,7,8-HxCDF	-	1.52		-					
1,2,3,7,8,9-HxCDF	-	1.92		-	Total Tetra-Furans	-	1.72		0
1,2,3,4,6,7,8-HpCDF	-	1.88		-	Total Penta-Furans	-	2.91		0
1,2,3,4,7,8,9-HpCDF	-	2.40		-	Total Hexa-Furans	-	1.92		0
OCDF	-	6.19		-	Total Hepta-Furans	-	2.40		0

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	54.3	25.0 - 164	
13C-1,2,3,7,8-PeCDD	47.3	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	53.6	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	51.6	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	52.7	23.0 - 140	
13C-OCDD	47.0	17.0 - 157	
13C-2,3,7,8-TCDF	56.9	24.0 - 169	
13C-1,2,3,7,8-PeCDF	51.9	24.0 - 185	
13C-2,3,4,7,8-PeCDF	55.2	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	49.0	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	47.9	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	50.1	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	49.9	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	47.1	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	47.7	26.0 - 138	
13C-OCDF	42.4	17.0 - 157	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	71.8	35.0 - 197	

Analyst: _____
Date: 3/16/05

Reviewed By: _____
Date: 3/18/05

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315Y 0*

18822

Chain-of Custody Record

Date: MARCH 9, 2005 | Page 1 of 1

Project No.: 9329/23

Samplers (Signature:) Matt Hillyard, Ron Sta

Date	Time	Sample Number	EPA Method 8021 (Full Scan)	EPA Method 8021 (Hal. VOCs only)	EPA Method 8021 (BETX only)	EPA Method 8260	EPA Method 8270 (Full Scan)	EPA Method 8270 SIM (PAHS only)	Method 8015m (Gasoline)	Method 8015m (Diesel)	Method 8015m (Motor Oil)	Silica Gel Cleanup	EPA 1613	Soil (S), Water (W) Vapor (V), or Other (o)	Filtered	Preserved	Cooled	No. of Containers	Additional Comments
3/9/05	1239	MW-20-200503											X	W			X	2	
↓	1440	MW-14-200503											X	W			X	2	
↓	1623	MW-07-200503											X	W			X	2	
3/10/05	0950	MW-21-200503											X	W			X	2	
↓	0950	BD-01-200503											X	W			X	2	
↓	1310	MW-05-200503											X	W			X	2	
↓	1407	MW-03-200503											X	W			X	2	

REMARKS

Laboratory: Frontier Analytical

Turnaround Time: Standard

Results to: Ross Steenson

Total No. of Containers: 14

Relinquished by (Signature):	Date: 3/10	Relinquished by (Signature):	Date:	Relinquished by (Signature):	Date:
Printed Name: Matt H. Hillyard	Time: 1515	Printed Name:	Time:	Printed Name:	Time:
Company: Geomatrix		Company:		Company:	
Received by:	Date:	Received by:	Date:	Received by: Kathy Zipp	Date: 3/11/05
Printed Name:	Time:	Printed Name:	Time:	Printed Name: Kathy Zipp	Time: 10:20
Company:		Company:		Company: Frontier Analytical	

Method of Shipment: Federal Express

Laboratory Comments and Log No.:

Geomatrix Consultants
2101 Webster Street, 12th Floor • Oakland, CA 94612
Phone: 510-663-4100 Fax: 510-663-4141

Frontier Analytical Laboratory

Sample Login Form

FAL Project ID: **3151**

Client:	Geomatrix Consultants, Inc.
Client Project ID:	9329.23
Date Received:	03/11/2005
Time Received:	10:20 am
Received By:	KZ
Logged In By:	KZ
# of Samples Received:	7
Duplicates:	7
Storage Location:	R1

Method of Delivery:	Fed-Ex
Tracking Number:	849738220404
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	0
Cooling Method	Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test for residual Chlorine	Yes
Thiosulfate Added	No
Earliest Sample Hold Time Expiration	03/09/2006
Adequate Sample Volume	Yes
Anomalies or additional comments:	

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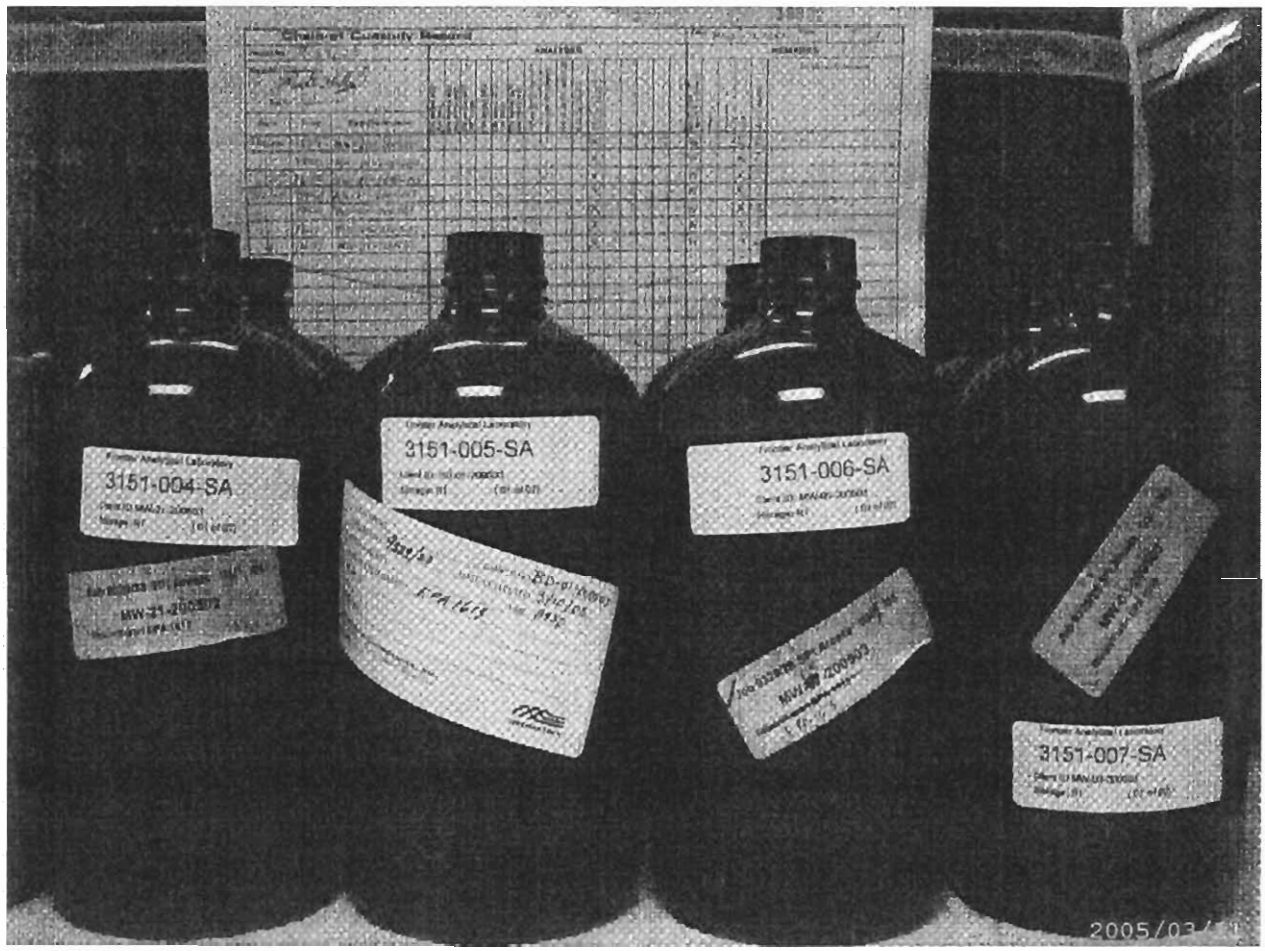

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FRONTIER
ANALYTICAL LABORATORY

March 30, 2005

RECEIVED 4/1/2005

FAL Project ID: 3154

TASK 23 PILOT STUDY
MW-01, 02

Ms. Sheri Speaks
Alpha Analytical Laboratories, Inc.
208 Mason Street
Ukiah, CA 95482

Dear Ms. Speaks,

Enclosed are the results for Frontier Analytical Laboratory project **3154**. This corresponds to your subcontract order # A503426. The two aqueous samples received on 3/15/05 were extracted and analyzed by EPA Method 1613 for tetra through octa chlorinated dibenzo dioxins and furans. Alpha Analytical Laboratories, Inc. requested a turnaround time of ten business days for project **3154**.

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains the project-sample tracking log, a qualifier reference guide, a ML/MDL form and the analytical results. The Sample Receipt section contains your original chain of custody, our sample login form and a sample photo. The EDD you requested has been sent to you via email.

If you have any questions regarding project **3154**, please feel free to contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

Bradley B. Silverbush

Bradley B. Silverbush
Director of Operations

FRONTIER ANALYTICAL LABORATORY
5172 Hillsdale Circle • El Dorado Hills, CA 95762
Tel (916) 934-0900 • Fax (916) 934-0999
dioxin@frontieranalytical.com

Frontier Analytical Laboratory

Sample Tracking Log

FAL Project ID: **3154**

Received on: **03/15/2005** Project Due: **03/30/2005** Storage: **R1**

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
3154-001-SA	1	A503426	A503426-01	EPA 1613 D/F	Aqueous	03/11/2005	07:40 am	03/13/2006
3154-002-SA	1	A503426	A503426-02	EPA 1613 D/F	Aqueous	03/11/2005	08:50 am	03/13/2006

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Qualifier Reference Guide

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J‡	Analyte concentration is below calibration range
M	Maximum possible concentration
NP	Not Provided
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection
-	Analyte Not Detected
+	Spike levels were inappropriate versus the levels in the sample

‡ "J" values are equivalent to DNQ (detected but not quantified) for California Toxics Rule (CTR)/National Pollutant Discharge Elimination System (NPDES) samples

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EPA Method 1613/8290 Aqueous MDL
(SPE Extraction)

FRONTIER ANALYTICAL LABORATORY

Analyte	ML	MDL
2,3,7,8-TCDD	5.00	0.543
1,2,3,7,8-PeCDD	25.0	0.771
1,2,3,4,7,8-HxCDD	25.0	0.845
1,2,3,6,7,8-HxCDD	25.0	1.05
1,2,3,7,8,9-HxCDD	25.0	0.910
1,2,3,4,6,7,8-HpCDD	25.0	1.18
OCDD	50.0	2.26
2,3,7,8-TCDF	5.00	0.449
1,2,3,7,8-PeCDF	25.0	1.05
2,3,4,7,8-PeCDF	25.0	1.08
1,2,3,4,7,8-HxCDF	25.0	0.545
1,2,3,6,7,8-HxCDF	25.0	0.355
1,2,3,7,8,9-HxCDF	25.0	0.370
2,3,4,6,7,8-HxCDF	25.0	0.476
1,2,3,4,6,7,8-HpCDF	25.0	0.516
1,2,3,4,7,8,9-HpCDF	25.0	0.654
OCDF	50.0	1.22

Project **3015**, extracted 1/6/05; analyzed1/12/05. Based on a 1.0 Liter sample, pg/L.

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EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 3154-001-MB
Client ID: Method Blank
Matrix: Aqueous
Batch No: X0523

Date Extracted: 03-22-2005
Date Received: NA
Amount: 1.000 L

ICal: pcddfal1-12-14-04
GC Column: DB5
Units: pg/L

Acquired: 03-23-2005
WHO TEQ: 0.00

Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	-	1.02		-					
1,2,3,7,8-PeCDD	-	2.50		-					
1,2,3,4,7,8-HxCDD	-	3.32		-					
1,2,3,6,7,8-HxCDD	-	4.18		-	Total Tetra-Dioxins	-	1.02		0
1,2,3,7,8,9-HxCDD	-	3.55		-	Total Penta-Dioxins	-	2.50		0
1,2,3,4,6,7,8-HpCDD	-	4.07		-	Total Hexa-Dioxins	-	4.18		0
OCDD	-	6.46		-	Total Hepta-Dioxins	-	4.07		0
2,3,7,8-TCDF	-	0.905		-					
1,2,3,7,8-PeCDF	-	1.15		-					
2,3,4,7,8-PeCDF	-	1.14		-					
1,2,3,4,7,8-HxCDF	-	1.21		-					
1,2,3,6,7,8-HxCDF	-	1.08		-					
2,3,4,6,7,8-HxCDF	-	1.19		-					
1,2,3,7,8,9-HxCDF	-	1.68		-	Total Tetra-Furans	-	0.905		0
1,2,3,4,6,7,8-HpCDF	-	1.44		-	Total Penta-Furans	-	2.59		0
1,2,3,4,7,8,9-HpCDF	-	2.06		-	Total Hexa-Furans	-	1.68		0
OCDF	-	4.43		-	Total Hepta-Furans	-	2.06		0

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	93.8	25.0 - 164	
13C-1,2,3,7,8-PeCDD	108	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	95.5	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	95.3	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	84.4	23.0 - 140	
13C-OCDD	77.0	17.0 - 157	
13C-2,3,7,8-TCDF	90.7	24.0 - 169	
13C-1,2,3,7,8-PeCDF	94.6	24.0 - 185	
13C-2,3,4,7,8-PeCDF	95.5	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	110	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	111	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	111	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	102	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	100	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	92.3	26.0 - 138	
13C-OCDF	88.3	17.0 - 157	

Cleanup Surrogate		
37Cl-2,3,7,8-TCDD	98.2	35.0 - 197

Analyst: _____
Date: 3/30/05

Reviewed By: _____
Date: 3/30/05

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EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 3154-001-OPR
Client ID: OPR
Matrix: Aqueous
Batch No: X0523

Date Extracted: 03-22-2005
Date Received: NA
Amount: 1.000 L

ICal: pcddfal1-12-14-04
GC Column: DB5
Units: ng/ml

Acquired: 03-23-2005
WHO TEQ: NA

Compound	Conc	QC Limits
2,3,7,8-TCDD	9.14	6.70 - 15.8
1,2,3,7,8-PeCDD	47.9	35.0 - 71.0
1,2,3,4,7,8-HxCDD	53.5	35.0 - 82.0
1,2,3,6,7,8-HxCDD	51.6	38.0 - 67.0
1,2,3,7,8,9-HxCDD	52.3	32.0 - 81.0
1,2,3,4,6,7,8-HpCDD	50.3	35.0 - 70.0
OCDD	103	78.0 - 144
2,3,7,8-TCDF	9.42	7.50 - 15.8
1,2,3,7,8-PeCDF	51.0	40.0 - 67.0
2,3,4,7,8-PeCDF	50.3	34.0 - 80.0
1,2,3,4,7,8-HxCDF	52.2	36.0 - 67.0
1,2,3,6,7,8-HxCDF	52.1	42.0 - 65.0
2,3,4,6,7,8-HxCDF	52.5	35.0 - 78.0
1,2,3,7,8,9-HxCDF	53.1	39.0 - 65.0
1,2,3,4,6,7,8-HpCDF	52.9	41.0 - 61.0
1,2,3,4,7,8,9-HpCDF	51.5	39.0 - 69.0
OCDF	104	63.0 - 170

Internal Standards	% Rec	QC Limits
13C-2,3,7,8-TCDD	93.7	20.0 - 175
13C-1,2,3,7,8-PeCDD	108	21.0 - 227
13C-1,2,3,4,7,8-HxCDD	89.5	21.0 - 193
13C-1,2,3,6,7,8-HxCDD	98.7	25.0 - 163
13C-1,2,3,4,6,7,8-HpCDD	82.7	26.0 - 166
13C-OCDD	78.4	13.0 - 198
13C-2,3,7,8-TCDF	95.7	22.0 - 152
13C-1,2,3,7,8-PeCDF	94.1	21.0 - 192
13C-2,3,4,7,8-PeCDF	96.9	13.0 - 328
13C-1,2,3,4,7,8-HxCDF	105	19.0 - 202
13C-1,2,3,6,7,8-HxCDF	111	21.0 - 159
13C-2,3,4,6,7,8-HxCDF	106	22.0 - 176
13C-1,2,3,7,8,9-HxCDF	96.1	17.0 - 205
13C-1,2,3,4,6,7,8-HpCDF	97.8	21.0 - 158
13C-1,2,3,4,7,8,9-HpCDF	89.7	20.0 - 186
13C-OCDF	89.1	13.0 - 198

Cleanup Surrogate		
37Cl-2,3,7,8-TCDD	104	31.0 - 191

Analyst: _____
Date: 3/30/05

Reviewed By: _____
Date: 3/30/05

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EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 3154-001-SA
Client ID: A503426-01
Matrix: Aqueous
Batch No: X0523 MW-02

Date Extracted: 03-22-2005
Date Received: 03-15-2005
Amount: 0.904 L

ICal: pcddfal1-12-14-04
GC Column: DB5
Units: pg/L

Acquired: 03-23-2005
WHO TEQ: 0.00188

Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	-	1.61		-					
1,2,3,7,8-PeCDD	-	2.85		-					
1,2,3,4,7,8-HxCDD	-	2.75		-					
1,2,3,6,7,8-HxCDD	-	3.59		-	Total Tetra-Dioxins	-	1.61		0
1,2,3,7,8,9-HxCDD	-	3.03		-	Total Penta-Dioxins	-	2.85		0
1,2,3,4,6,7,8-HpCDD	-	4.61		-	Total Hexa-Dioxins	-	3.59		0
OCDD	18.8	-	J	0.00188	Total Hepta-Dioxins	-	4.61		0
2,3,7,8-TCDF	-	1.39		-					
1,2,3,7,8-PeCDF	-	3.37		-					
2,3,4,7,8-PeCDF	-	3.02		-					
1,2,3,4,7,8-HxCDF	-	1.46		-					
1,2,3,6,7,8-HxCDF	-	1.30		-					
2,3,4,6,7,8-HxCDF	-	1.29		-					
1,2,3,7,8,9-HxCDF	-	1.88		-	Total Tetra-Furans	-	1.39		0
1,2,3,4,6,7,8-HpCDF	-	1.71		-	Total Penta-Furans	-	3.37		0
1,2,3,4,7,8,9-HpCDF	-	2.32		-	Total Hexa-Furans	-	1.88		0
OCDF	-	3.16		-	Total Hepta-Furans	-	2.32		0

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	78.3	25.0 - 164	
13C-1,2,3,7,8-PeCDD	86.2	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	79.8	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	79.5	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	65.8	23.0 - 140	
13C-OCDD	63.9	17.0 - 157	
13C-2,3,7,8-TCDF	81.0	24.0 - 169	
13C-1,2,3,7,8-PeCDF	77.7	24.0 - 185	
13C-2,3,4,7,8-PeCDF	90.6	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	75.3	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	75.4	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	83.3	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	74.3	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	72.8	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	69.8	26.0 - 138	
13C-OCDF	67.9	17.0 - 157	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	106	35.0 - 197	

Analyst: _____
Date: 3/30/05

Reviewed By: _____
Date: 3/30/05

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EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 3154-002-SA
Client ID: A503426-02
Matrix: Aqueous
Batch No: X0523

MW-01

Date Extracted: 03-22-2005
Date Received: 03-15-2005
Amount: 0.914 L

ICal: pcddfal1-12-14-04
GC Column: DB5
Units: pg/L

Acquired: 03-23-2005
WHO TEQ: 0.0775

Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	-	1.77		-					
1,2,3,7,8-PeCDD	-	2.88		-					
1,2,3,4,7,8-HxCDD	-	3.27		-					
1,2,3,6,7,8-HxCDD	-	4.25		-	Total Tetra-Dioxins	-	1.77		0
1,2,3,7,8,9-HxCDD	-	3.70		-	Total Penta-Dioxins	-	2.88		0
1,2,3,4,6,7,8-HpCDD	6.39	-	J	0.0639	Total Hexa-Dioxins	-	5.79		0
OCDD	136	-		0.0136	Total Hepta-Dioxins	21.3	-	J	2
2,3,7,8-TCDF	-	1.33		-					
1,2,3,7,8-PeCDF	-	3.57		-					
2,3,4,7,8-PeCDF	-	3.70		-					
1,2,3,4,7,8-HxCDF	-	1.42		-					
1,2,3,6,7,8-HxCDF	-	1.26		-					
2,3,4,6,7,8-HxCDF	-	1.13		-					
1,2,3,7,8,9-HxCDF	-	1.73		-	Total Tetra-Furans	-	1.33		0
1,2,3,4,6,7,8-HpCDF	-	1.74		-	Total Penta-Furans	-	3.76		0
1,2,3,4,7,8,9-HpCDF	-	2.36		-	Total Hexa-Furans	-	1.73		0
OCDF	-	4.44		-	Total Hepta-Furans	-	2.36		0

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	76.6	25.0 - 164	
13C-1,2,3,7,8-PeCDD	75.2	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	63.8	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	64.8	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	58.9	23.0 - 140	
13C-OCDD	51.1	17.0 - 157	
13C-2,3,7,8-TCDF	71.5	24.0 - 169	
13C-1,2,3,7,8-PeCDF	69.8	24.0 - 185	
13C-2,3,4,7,8-PeCDF	70.8	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	71.4	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	70.6	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	81.6	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	71.2	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	67.8	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	62.4	26.0 - 138	
13C-OCDF	57.1	17.0 - 157	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	113	35.0 - 197	

Analyst: _____
Date: 3/30/05

Reviewed By: _____
Date: 3/30/05

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SUBCONTRACT ORDER

Alpha Analytical Laboratories, Inc.

A503426

1°C / 3.5

SENDING LABORATORY:	**RECEIVING LABORATORY:**
Alpha Analytical Laboratories, Inc.	Frontier Analytical Laboratory
208 Mason St.	5172 Hillsdale Circle
Ukiah, CA 95482	El Dorado, CA 95762
Phone: (707)468-0401	Phone :916-934-0900
Fax: (707)468-5267	Fax: 916-934-0999
Project Manager: Sheri L. Speaks	**Terms: Net 30**

Analysis	Due	Expires	Comments
A503426-01 MW-02-200503 [Water] Sampled 03/11/05 07:40 Pacific			
Dioxins Full List	03/25/05 12:00	03/11/06 07:40	
Containers Supplied:			
1L Amber- Unpres. (A)	1L Amber- Unpres. (B)		
A503426-02 MW-01-200503 [Water] Sampled 03/11/05 08:50 Pacific			
Dioxins Full List	03/25/05 12:00	03/11/06 08:50	
Containers Supplied:			
1L Amber- Unpres. (A)	1L Amber- Unpres. (B)		

☐ *Report to State*

System Name: _____ **Employed by:** _____

User ID: _____ **Sampler:** _____

System Number: _____

Sheri Speaks 3.15.05			3/15/05 07:50
Released By	Date	Received By	Date
Released By	Date	Received By	Date

Frontier Analytical Laboratory

Sample Login Form

FAL Project ID: **3154**

Client:	Alpha Analytical Laboratories, Inc.
Client Project ID:	A503426
Date Received:	03/15/2005
Time Received:	07:50 am
Received By:	BS
Logged In By:	KZ
# of Samples Received:	2
Duplicates:	2
Storage Location:	R1

Method of Delivery:	California Overnight
Tracking Number:	C100219700001242
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	1
Cooling Method	Blue Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test for residual Chlorine	Yes
Thiosulfate Added	No
Earliest Sample Hold Time Expiration	03/13/2006
Adequate Sample Volume	Yes
Anomalies or additional comments:	

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Chain-of Custody Record

Date: MARCH 11, 2005 | Page 1 of 1

Project No.: 9329

Samplers (Signature:) Matt Hill, Don G

Date	Time	Sample Number	EPA Method 8021 (Full Scan)	EPA Method 8021 (Hal. VOCs only)	EPA Method 8021 (BETX only)	EPA Method 8260	EPA Method 8270 (Full Scan)	EPA Method 8270 SIM (PAHS only)	Method 8015m (Gasoline)	Method 8015m (Diesel)	Method 8015m (Motor Oil)	Silica Gel Cleanup	EPA 1613	Soil (S), Water (W) Vapor (V), or Other (o)	Filtered	Preserved	Cooled	No. of Containers	Additional Comments
3/11/05	0740	MW-02-200503											X	W			X	2	1
↓	0850	MW-01-200503											X	W			X	2	2

Laboratory: ALPHA ANALYTICAL LABORATORIES

Turnaround Time: STANDARD

Results to: ROSS STEENSON

Total No. of Containers: 4

Relinquished by (Signature):	Date: 3/11	Relinquished by (Signature):	Date:	Relinquished by (Signature):	Date:
Printed Name: Matt H. 11 7pm	Time: 1200	Printed Name: John TAYLOR	Time:	Printed Name:	Time:
Company: Geo		Company: ALPHA		Company:	
Received by:	Date:	Received by:	Date: 3/11/05	Received by:	Date:
Printed Name: John TAYLOR	Time:	Printed Name: Nina Burgess	Time: 16:10	Printed Name:	Time:
Company: ALPHA		Company: ALPHA		Company:	

Method of Shipment: LAB COURIER

Laboratory Comments and Log No.: A503426

Geomatrix Consultants
2101 Webster Street, 12th Floor • Oakland, CA 94612
Phone: 510-663-4100 Fax: 510-663-4141

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9984
CLIENT PROJECT: A503419

SAMPLE ID:	MW-01-200503
LAB NO:	50039
SAMPLE TYPE:	WATER
DATE SAMPLED:	03/11/05
TIME SAMPLED:	8:50
BATCH ID:	032305W01

METHOD: DISSOLVED GASES
REFERENCE: RSK 175

DATE ANALYZED:	3/23/05
UNITS:	µg/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
CARBON DIOXIDE	124-38-9	165	257924

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT, NA - NOT APPLICABLE OR AVAILABLE.

APPROVED BY: _____
DATE: 4/12/05

APPENDIX C

Laboratory Data Quality Review

APPENDIX C

LABORATORY DATA QUALITY REVIEW

Geomatrix reviewed quality assurance and quality control (QA/QC) procedures to assess quality of the analytical results by evaluating the precision, accuracy, and completeness of the data. Data quality was reviewed using U.S. Environmental Protection Agency *National Functional Guidelines for Organic Data Review* (U.S. EPA, 1999), *for Chlorinated Dioxin/Furan Data Review* (U.S. EPA, 2002), and *for Inorganic Data Review* (U.S. EPA, 2004).

PRECISION

Data precision is evaluated by comparing analytical results for the following:

- primary and (blind) duplicate field samples
- matrix spike (MS) and matrix spike duplicate (MSD) concentrations
- laboratory control sample (LCS) and laboratory control sample duplicate (LCSD)

Concentrations detected in the primary or spiked samples are compared with respective concentrations in duplicate or duplicate spiked samples. Relative percent differences (RPDs) are used to calculate results, using the following equation:

$$RPD = \frac{[S - D]}{(S + D)/2} \times 100$$

Where,

S = Sample concentration
D = Duplicate sample concentration

RPDs for primary and duplicate field samples are calculated in Table C-1. RPDs are only calculated when primary and duplicate sample concentrations are greater than or equal to two times the laboratory reporting limits. In cases where the detection in either the primary or duplicate sample, or both, are less than two times the reporting limit, the absolute difference between the primary and duplicate sample concentration is calculated. RPDs for MS/MSD and LCS/LCSD analyses are reported in laboratory analytical reports, included in Appendix B.

The RPDs between the primary (MW-21) and the duplicate (BD-01) field samples were extremely variable for selected constituents (tetrachlorophenols, hepta-chlorinated dioxin congeners, octa-chlorinated dioxin congeners, and total TEQ [as a consequence of the highest concentration congeners being variable], but were consistent for the primary chemical of concern (PCP) and other constituents (see Table C-1). This extreme variability has been observed previously with field duplicates collected at this and other locations.

ACCURACY

Data accuracy is assessed by evaluating holding times required by analytical methods, sample preservation, laboratory method blank results, recovery of laboratory surrogates, MS/MSD results, and LCS/LCSD results. We evaluated these criteria for samples collected for the groundwater monitoring program. Results of the review are summarized below.

- **Hold times.** Samples were analyzed within the holding time for each analytical method, except for the dissolved gases. Because these results are similar to the previous event, these data are considered satisfactory.
- **Preservation.** Samples were collected in laboratory-supplied containers with preservatives, if applicable. Samples were stored and transported to analytical laboratories in chilled coolers.
- **Method blanks.** No detections were observed in any of the method blanks analyzed by the laboratory.
- **Surrogate recoveries.** Laboratory surrogates were recovered at concentrations within acceptable ranges.
- **MS/MSD analysis.** RPDs were acceptable.
- **LCS/LCSD analysis.** RPDs were acceptable.

COMPLETENESS

Based on our laboratory data quality review, data contained in this report are considered complete and representative.

TABLE C-1
RELATIVE PERCENT DIFFERENCES
BETWEEN DUPLICATE SAMPLES
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Samples collected on March 10, 2005

Constituent	Reporting Limit [1]	Sample Concentration MW-21	Duplicate Sample Concentration BD-01	Relative Percent Difference [2]
Chlorinated Phenols by Canadian Pulp Method (reported in micrograms per liter [µg/L]) [3]				
PCP	1000	4,700	4,600	2.2%
2,3,4,5-TeCP	1.5/1.0	ND	6.5	--
2,3,4,6-TeCP	10	31	86	94.0%
2,3,5,6-TeCP	1.0/10	8.1	26	105.0%
2,4,6-TCP	1.0	ND	2.7	--
Chlorinated Phenols by EPA Method 8270 SIM (reported in µg/L) [4]				
PCP	1	5,500	5,500	0.0%
2,3,4,5-TeCP	1	4	4	0.0%
2,3,4,6-TeCP	1	27	27	0.0%
2,3,5,6-TeCP	1	109	110	0.9%
3,4,5-TCP	1	250	250	0.0%
3,4-DCP	1	310	310	0.0%
3,5-DCP	1	19	20	5.1%
2,4,5-TCP	1	5	5	0.0%
3 + 4-Chlorophenol	2	270	270	0.0%
2,4-DCP	1	2	2	0.0%
Dioxins & Furans by EPA Method 1613 (reported in picograms per liter [pg/L]) [5]				
1,2,3,4,7,8-HxCDD	4.13	64.6	ND	--
1,2,3,4,6,7,8-HpCDD	--	79.4	20.4	118.2%
OCDD	--	223	522	80.3%
1,2,3,4,7,8-HxCDF	1.40	1,640	ND	--
1,2,3,7,8,9-HxCDF	1.58	26.0	ND	--
1,2,3,4,6,7,8-HxCDF	8.57	ND	9.20	--
1,2,3,4,7,8,9-HpCDF	1.72	177	ND	--
TEQ	--	176	0.351	199.2%
Metals by EPA Method 200.7 (reported in milligrams per liter [mg/L]) [3]				
Calcium	1.0	29	29	0.0%
Magnesium	1.0	50	49	2.0%
Alkalinity by SM 2320B (reported in mg/L) [3]				
Total Alkalinity as $CaCO_3$	5.0	430	420	2.4%
Total Organic Carbon by EPA Method 415.1 (reported in mg/L) [3]				
Total Organic Carbon	1.00	18.6	16.4	12.6%
Anions by EPA Method 300.0 (reported in mg/L) [3]				
Chloride	5.0	62	62	0.0%

TABLE C-1
RELATIVE PERCENT DIFFERENCES
BETWEEN DUPLICATE SAMPLES

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Samples collected on March 10, 2005

Constituent	Reporting Limit [1]	Sample Concentration MW-21	Duplicate Sample Concentration BD-01	Relative Percent Difference [2]
Dissolved Gases by Method RSK175 (reported in mg/L) [6]				
Methane	0.00158	7.387	7.762	5.0%
Carbon Dioxide	0.165	179.097	164.916	8.2%
Dissolved Metals by EPA Method 6010B (reported in mg/L) [7]				
Manganese	0.0050	2.7	2.7	0.0%
Iron	0.20	69.0	69.0	0.0%

Notes:

1. The reporting limit is presented as the reporting limit for MW-21/BD-01 for the listed constituent when the laboratory chose to use different dilutions with which to analyze the respective samples.
2. RPD calculated as ([2(S-D)]/[S+D]) x 100 where S is the sample concentration and D is the blind duplicate sample concentration. For sample concentrations less than two times the reporting limit, the absolute difference between the sample concentration and the blind duplicate sample is calculated.
3. Analyzed by Alpha Analytical Laboratory, of Ukiah, California.
4. Analyzed by Friedman & Bruya, Inc. Environmental Chemists, of Seattle, Washington.
5. Analyzed by Frontier Analytical Laboratory, of El Dorado Hills, California.
6. Analyzed by K-Prime Inc., of Santa Rosa, California.
7. Analyzed by Severn Trent Laboratories, Inc., of Pleasanton, California.

Abbreviations:
PCP = pentachlorophenol
TeCP = tetrachlorophenol
TCP = trichlorophenol
TEQ = toxicity equivalence