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July 22, 2005

Mr. Al Armstrong, Hydrogeologist
Washington Department of Ecology
15 W Yakima Avenue, Suite 200
Yakima, Washington 98902

Subject: *Summary Report of MTCA Remedial Investigations and Implementation of Corrective Measures*
Greater Wenatchee Regional Landfill (GWLF)
East Wenatchee, Washington

Dear Mr. Armstrong:

As you are aware, WM entered into an independent corrective action agreement with the Washington Department of Ecology (WDOE) under the State of Washington's Model Toxics Control Act (MTCA) in 2000. Since then, WM has been collaborating with WDOE and the Chelan-Douglas Health District (CDHD) in performing remedial investigations and corrective actions, including holding periodic meetings to discuss and formulate appropriate activities and to review data. As such, please find the above-referenced report of the remedial investigations and corrective action measures implemented to date. WM requests that WDOE provide a response to document concurrence with the activities performed to date.

We appreciate your help on this project over the past several years, and look forward to working with you through the completion of our corrective action measures. Please call either of the undersigned if you have any questions about the contents of the report.

Sincerely,
Waste Management, Inc.

Roger B. North
Engineering Manager, North West Region

James M. Obereiner, Senior Manager
Groundwater Protection Program

Attachment: *Summary Report of MTCA Remedial Investigations and Implementation of Corrective Measures*, Shaw Emcon/OWT, Inc., July 21, 2005.

Copy: David Prosch, CDHD (with attachment)
Ted Woodard, WM (with attachment)
Louis Caruso, Emcon (with attachment)



**SUMMARY REPORT OF MTCA REMEDIAL
INVESTIGATIONS AND IMPLEMENTATION OF
CORRECTIVE MEASURES**

**GREATER WENATCHEE REGIONAL LANDFILL
EAST WENATCHEE, WASHINGTON**

Prepared for

Waste Management of Washington, Inc.
191 South Webb Road
East Wenatchee, Washington 98802

July 21, 2005

Prepared by



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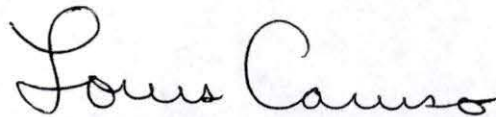
EMCON Project 842544.07002004



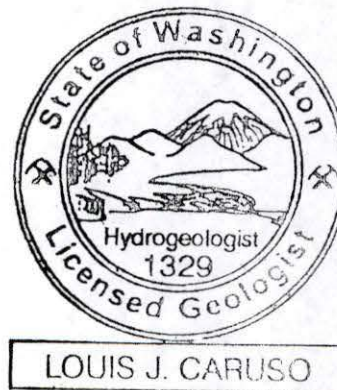
**Summary Report of MTCA Remedial Investigations and Implementation of
Corrective Measures
Greater Wenatchee Regional Landfill
East Wenatchee, Washington**

The material and data in this report were prepared under the supervision and direction of the undersigned.

Shaw EMCON/OWT, Inc.



Louis Caruso, L.P.G., WA No. 1329
Senior Project Manager



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ACRONYMS AND ABBREVIATIONS

btoc	below top of casing
CDCHD	Chelan-Douglas County Health District
<i>cis</i> -1,2-DCE	<i>cis</i> -1,2-dichloroethene
1,1-DCA	1,1-dichloroethane
DCDFM	dichlorodifluoromethane
1,1-DCE	1,1-dichloroethene
EMCON	EMCON/OWT, Inc.
GWPS	groundwater protection standard
GWLF	Greater Wenatchee Regional Landfill
LFG	landfill gas
MTCA	Model Toxics Control Act
µg/L	micrograms per liter
PCE	tetrachloroethene
TCE	trichloroethene
TCFM	trichlorofluoromethane
VOC	volatile organic compound
WAC	Washington Administrative Code
WDOE	Washington State Department of Ecology
WM	Waste Management, Inc.

1 INTRODUCTION

This report, prepared by EMCON/OWT Inc. (EMCON), a division of Shaw Environmental, Inc., on behalf of Waste Management Inc. (WM) summarizes remedial investigations performed at the Greater Wenatchee Regional Landfill (GWLF) in East Wenatchee, Washington. The investigations were conducted as part of WM's independent corrective action agreement with the Washington Department of Ecology (WDOE) under the State of Washington's Model Toxics Control Act (MTCA). The report (1) provides the technical basis supporting the finding that landfill gas (LFG) is the source of volatile organic compounds (VOCs) detected in groundwater collected from selected site monitoring wells and (2) summarizes the corrective action measures (LFG control and collection) implemented to mitigate the source of groundwater impacts.

This report was prepared as a follow-up to WM's meeting on May 18, 2005 with the Chelan-Douglas County Health District (CDCHD) and WDOE. The purpose of this report is to (1) document work performed under MTCA to assess the nature and extent of VOC impacts to groundwater and to mitigate impacts (i.e., LFG control measures) and (2) document regulatory approval of the findings of these investigations and the selection of LFG collection as the appropriate remedial alternative for the site.

1.1 Background

In February 2000, the WDOE placed the GWLF on its confirmed release list (WDOE, 2000a) after two VOCs (tetrachloroethene [PCE] and 1,1-dichloroethane [1,1-DCA]) were detected in groundwater above state of Washington Groundwater Protection Standard (GWPS) specified in Washington Administrative Code (WAC) 173-351-440(3)d)¹. In response to these detections, WM agreed to proceed with an independent corrective action, including assessment of the groundwater impact and selection and implementation of corrective measures (WM, 2000). As stated in a letter dated February 24, 2000, WDOE (1) approved WM's intent to proceed with an independent cleanup action, and (2) wanted WM to proceed with the installation of a final cover and gas collection system in the unlined portions of the landfill as an interim action, in accordance with WAC 173-340-430 (WDOE, 2000b). WDOE indicated in the letter dated February 3, 2000 (WDOE, 2000a) that the groundwater impacts did not appear to

¹ As specified in the WDOE's February 3, 2000 letter (WDOE, 2000b), the GWPS for PCE and 1,1-DCA were set at 0.8 and 1.0 µg/L, consistent with the Water Quality Standards for Groundwaters of the State of Washington established under WAC 173-200-050(3)(b).

pose an imminent threat to the public health, and that the interim action would likely comprise the vast majority of the required corrective action measures. Copies of the letters referenced in this section are provided in Appendix A.

1.2 Report Organization

The remainder of this report is organized as follows:

- Section 2 presents remedial investigation results, including nature and extent of VOCs in groundwater and source of VOCs impacting groundwater.
- Section 3 describes corrective measures that were implemented to mitigate the source of groundwater impacts.
- Section 4 summarizes the results and presents conclusions.

2 RESULTS OF REMEDIAL INVESTIGATIONS

This section summarizes findings of groundwater and LFG analytical investigations performed to assess the source and extent of VOCs detected in groundwater. These data were collected as part of (1) focused remedial investigations conducted in response to GWLF's independent action agreement with the WDOE under its MTCA program, and (2) GWLF's routine (quarterly) compliance monitoring program. All remedial investigations, quarterly compliance monitoring, and related activities were undertaken in consultation with WDOE.

2.1 Nature and Extent of VOCs in Groundwater

VOC analytical results for groundwater samples collected from the site monitoring wells are presented in Table 1. VOCs have historically been detected at low concentrations (micrograms per liter [$\mu\text{g/L}$]) in MW-01 groundwater samples since at least 1994 and in MW-02A samples since 1998. MW-01 and MW-02A are located hydraulically upgradient and downgradient, respectively, of the unlined portion of the landfill (see Figure 1). In addition, the depth to groundwater in MW-01 (approximately 141 feet below the top-of-casing [btoc] in March 2005) is significantly shallower than in MW-02A (approximately 316 feet btoc in March 2005). VOCs detected in groundwater collected from wells MW-01 and MW-02A include PCE, 1,1-DCA, *cis*-1,2-dichloroethene (*cis*-1,2-DCE), and DCDFM. Trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), and trichlorofluoromethane (TCFM) have also been detected in MW-02A groundwater. Concentrations of PCE and 1,1-DCA in groundwater collected from MW-02A have been above the state of Washington GWPS since 1999.

Low concentrations ($\mu\text{g/L}$) of dichlorodifluoromethane (DCDFM) have also been detected in samples from MW-04 and P-07 since March 2000 and March 2001, respectively. MW-04 and P-07 are located hydraulically cross-gradient (west) of the current landfill footprint (see Figure 1).

As a result of these findings, and consistent with GWLF's independent corrective action agreement under MTCA and consultations with WDOE, WM implemented the following actions to further characterize the nature and extent of VOCs in groundwater:

- In October 2003, MW-07 was installed downgradient of existing well MW-02A to assess the extent of VOCs.²
- In December 2003, January 2004, and subsequent monitoring events, groundwater samples were collected from MW-07 to identify similar types and concentrations of VOCs as those detected in monitoring well MW-02A (see Table 1).
- In June and July 2004, an additional monitoring well (MW-11) was drilled, installed, and developed downgradient of well MW-07. WDOE and CHCHD verbally approved the location (shown in Figure 1) and design of well MW-11 during a meeting on June 9, 2004. A report documenting the installation of well MW-11 was submitted to the WDOE on September 9, 2004 (provided in Appendix B). VOCs were not detected in the MW-11 samples collected in July and December 2004 (laboratory reports are provided in Appendix C).

Analytical results of samples collected from site monitoring wells, including wells installed as part of the MTCA remedial investigations, demonstrate the limit of the downgradient extent of VOCs (i.e., south and west) of the unlined portions of the landfill. These limits are defined by the absence of VOCs in groundwater samples collected from MW-11 and MW-03A.

2.2 Source of VOCs in Groundwater

Groundwater and leachate analytical results from GWLF's routine compliance monitoring program, along with analytical results from several groundwater investigations, suggested that LFG, was the source of VOCs detected in groundwater samples collected from site monitoring wells. Key results supporting this conclusion included the following:

- VOCs were detected in groundwater samples collected from upgradient monitoring well MW-01 and cross-gradient piezometer P-07 of the existing landfill footprint (see Figure 1). VOCs impacts to groundwater associated with a leachate release would be transport through the movement of groundwater downgradient of the landfill waste cells.
- VOCs were detected in MW-02A groundwater a short time after an impermeable membrane cap was emplaced over Trench 1 in January 1999, except for two low-level detections of 1,1-DCA in May and August 1998 (see Figure 2). This

² The location and proposed design of well MW-07 was presented in the hydrogeologic characterization and geotechnical investigation work plan (EMCON, 2003) that was approved by the WDOE. Information documenting the drilling and installation of MW-07, along with groundwater elevation data and laboratory analytical results for samples collected from this well in December 2003 and January 2004 were presented in the 2003 annual environmental monitoring report (EMCON, 2004a).

3 CORRECTIVE ACTION MEASURES

This section summarizes corrective action measures implemented by WM in a phased manner since 2000, to mitigate the source of groundwater impacts. These measures were selected based upon the remedial investigation findings, and in consultation with WDOE, and are consistent with interim corrective action measures approved by WDOE (WDOE, 2000b). These measures and subsequent results include the following:

- Installation of sixteen vertical LFG wells with passive well head flares in 2000 and 2001 as part of the closure activities in the North Berm and Trench 1.
- Conversion of the passive LFG system to an active system in February 2002 following the addition of a flare and blowers. After the active LFG collection system began operating, methane concentrations (1) decreased to below detectable levels in gas probes GP-3, GP-4, and GP-10 and (2) were significantly reduced in gas probes GP-8-1 and GP-8-2, and GP-9 (see HWA, 2002).
- Installation of seven additional vertical wells in Trenches 1 and 2 (for a total of 23 vertical wells), and three horizontal wells in Modules 3 and 4, and incorporation of LCRS risers into the LFG collection system in 2004. After the new LFG extraction wells became operational in October 2004, the following were observed: (1) methane concentrations decreased to below detectable levels in gas probe GP-9, and (2) the number of surface emission monitoring (SEM) locations where methane emissions were detected decreased from 49 (in March 2004) to 5 (in December 2004)³ (EMCON, 2005).

Since installing the additional extraction wells in 2004, available LFG from previously-installed extraction wells adjacent to new wells has decreased. This indicates that vapor-phase VOCs associated with LFG are being captured, thus preventing them from infiltrating into the vadose zone and impacting site groundwater. Laboratory analysis of groundwater samples collected from the site monitoring wells have identified improvements in the concentrations of VOCs that are likely attributed to implementation of LFG source control and collection. These include the following:

³ Only 5 of 81 SEM monitoring locations showed detectable levels of methane in December 2004. In comparison, methane was detected at 49 of 81 monitoring locations in March 2004, 25 of 81 monitoring locations in June 2004, and 16 of 81 monitoring locations in September 2004 (EMCON, 2005a).

- PCE and DCDFM concentrations in MW-01 groundwater have decreased since 1999 (see Figure 2). In addition, other VOCs previously detected in MW-01 groundwater (1,1-DCA, cis-1,2-DCE, and vinyl chloride) have not been detected since the second quarter 2003 (see Figure 2).
- The concentrations of VOCs detected in MW-02A groundwater (including 1,1-DCA, PCE, TCE, 1,1-DCE, cis-1,2-DCE, DCDFM, and TCFM) have been relatively stable since the third quarter of 2002 (see Figure 3).
- Between March 2001 and September 2004, DCDFM concentrations in P-07 samples remained relatively stable and at levels (0.5 to 2.7 µg/L) just above the method reporting limit (see Table 1). DCFM was not detected in the groundwater sample collected from P-07 in December 2004 for the first time since the beginning of 2001.
- The concentrations of DCDFM detected in groundwater samples collected from MW-04 (since March 2000) have remained relatively stable, and at levels (0.66 to 2.8 µg/L) just above the method reporting limit (see Table 1).

LIMITATIONS

This report was prepared consistent with generally accepted professional consulting principles and practices. No other warranty, expressed or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of separated portions of this report.

REFERENCES

- EMCON. 2003. Hydrogeologic Characterization and Geotechnical Investigation Work Plan, Greater Wenatchee Regional Landfill, East Wenatchee, Washington. Prepared for Waste Management, Inc., East Wenatchee, Washington. July 21.
- EMCON. 2004a. Annual and Fourth Quarter 2003 Environmental Monitoring Report, Greater Wenatchee Regional Landfill, East Wenatchee, Washington. Prepared for Waste Management, Inc., East Wenatchee, Washington. March 11.
- EMCON. 2004b. Letter (re: analytical results of gas and groundwater samples collected in first quarter 2004 for MTCA groundwater investigation, Greater Wenatchee Regional Landfill, East Wenatchee, Washington) to R. North, Waste Management, Inc., Portland, Oregon, from D. Higgins and L. Caruso, EMCON/OWT, Inc., Portland, Oregon. May 4.
- EMCON. 2004c. Second Quarter (June) 2004 Environmental Monitoring Report: Greater Wenatchee Regional Landfill, East Wenatchee, Washington. Prepared for Waste Management, Inc., East Wenatchee, Washington. September 2.
- EMCON. 2005. Fourth Quarter 2004 Surface Emissions Monitoring Results: Greater Wenatchee Regional Landfill, East Wenatchee, Washington. Prepared for Waste Management, Inc., East Wenatchee, Washington. January 6.
- HWA. 2002. Second Quarter 2002 Landfill Gas Migration and Subsurface Gas Monitoring Results: Greater Wenatchee Regional Landfill, East Wenatchee, Washington. Prepared for Waste Management, Inc., East Wenatchee, Washington. June 18.
- Washington Department of Ecology (WDOE). 2000a. Letter (re: groundwater protection standards, background values, and corrective action, Greater Wenatchee Regional Landfill) to R. Phillips, Chelan-Douglas Health District, Wenatchee, Washington, from J. Stormon, Washington Department of Ecology, Yakima, Washington. February 3.

- Washington Department of Ecology (WDOE). 2000b. Letter (re: groundwater protection standards and independent corrective action, Greater Wenatchee Regional Landfill) to R. Phillips, Chelan-Douglas Health District, Wenatchee, Washington, from J. Stormon, Washington Department of Ecology, Yakima, Washington. February 24.
- Waste Management (WM). 2000. Letter (re: independent corrective action, Greater Wenatchee Regional Landfill) to R. Phillips, Chelan-Douglas Health District, Wenatchee, Washington, from C. Thomas, Waste Management, East Wenatchee, Washington. February 14.
- Waste Management (WM). 1994. Evaluation of isotope and geochemical data for the Greater Wenatchee Landfill. Waste Management, Inc. March.

TABLE

1 1
Historical Detected VOCs in Groundwater Samples
(ug/L)
Greater Wenatchee Regional Landfill

Sample Location	Date Collected	Tetra-chloro-ethene	Tri-chloro-ethene	1,1-Dichloro-ethane	cis-1,2-Dichloro-ethene	1,1-Dichloro-ethene	1,1,1-Trichloro-ethane	Vinyl Chloride	Trichloro-fluoro-methane	Dichloro-difluoro-methane	Chloro-ethane	Methylene Chloride	2-Butanone (MEK)	Chloro-form
MW-01	4-Jun-91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	23
MW-01	24-Aug-94	1.0	ND	ND	ND	ND	ND	1.0	ND	ND	ND	ND	ND	ND
MW-01	6-Oct-94	ND	ND	ND	ND	ND	1.0	1.0	ND	ND	ND	ND	ND	ND
MW-01	9-Nov-94	1.0	ND	ND	1.0	ND	1.0	1.0	ND	ND	ND	ND	ND	ND
MW-01	1-Jun-95	ND	ND	ND	ND	ND	ND	1.0	ND	ND	ND	ND	ND	ND
MW-01	29-Aug-95	ND	ND	ND	1.0	ND	1.0	1.0	ND	ND	ND	ND	ND	ND
MW-01	30-Nov-95	ND	ND	ND	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-01	27-Feb-96	ND	ND	ND	1.0	ND	1.0	ND	ND	ND	ND	ND	ND	ND
MW-01	22-May-96	ND	ND	ND	1.0	ND	1.0	ND	ND	ND	ND	ND	ND	ND
MW-01	6-Nov-96	ND	ND	ND	ND	ND	2.0	ND	ND	ND	ND	ND	ND	ND
MW-01	12-May-99	ND	ND	0.5	1.2	ND	0.5	ND	ND	2.7	ND	ND	ND	ND
MW-01	29-Jul-99	ND	ND	0.5	1.2	ND	0.5	ND	ND	2.5	ND	ND	ND	ND
MW-01	27-Oct-99	1.0	ND	0.5	1.0	ND	0.5	ND	ND	2.1	ND	ND	ND	ND
MW-01	8-Mar-00	0.76	ND	0.37	1.2	ND	ND	0.89	ND	1.8	ND	ND	ND	ND
MW-01	11-Apr-00	0.79	ND	0.75	1.2	ND	0.75	0.74	ND	1.6	ND	ND	ND	ND
MW-01	30-Aug-00	0.64	ND	0.37	1.2	ND	ND	ND	ND	1.4	ND	ND	ND	ND
MW-01	5-Dec-00	0.65	ND	0.37	1.3	ND	ND	0.69	ND	1.7	ND	ND	ND	ND
MW-01	26-Feb-01	0.71	ND	0.63 J	1.3	ND	0.37 J	0.73	ND	1.5	ND	ND	ND	ND
MW-01	10-May-01	0.8	ND	0.67 J	1.4	ND	0.39 J	0.76	ND	1.3	ND	1.6 J	ND	ND
MW-01 (Dup)	10-May-01	0.76	ND	0.67 J	1.3	ND	0.37 J	0.73	ND	1.4	ND	1.6 J	ND	ND
MW-01	17-Aug-01	0.56	ND	0.55 J	1.2	ND	0.33 J	0.6 J	ND	1.3	ND	ND	ND	ND
MW-01	19-Oct-01	0.56	ND	0.63 J	1.2	ND	0.3 J	0.66	ND	0.92	ND	ND	ND	ND
MW-01	15-Feb-02	0.61	ND	0.64 J	1.4	ND	0.36 J	0.75	ND	1.7	ND	ND	ND	ND
MW-01	10-May-02	0.67	ND	0.63 J	1.3	ND	ND	0.8	ND	1.2	ND	ND	ND	ND
MW-01	8-Aug-02	0.63	ND	0.57 J	1.1	ND	ND	0.33 J	ND	1.3	ND	ND	ND	ND
MW-01	3-Dec-02	0.53	ND	0.46 J	0.59	ND	ND	ND	ND	0.98	ND	ND	ND	ND
MW-01 (Dup)	3-Dec-02	0.54	ND	0.47 J	0.6	ND	ND	ND	ND	0.93	ND	ND	ND	ND
MW-01	18-Mar-03	0.52	ND	0.4 J	0.37 J	ND	ND	ND	ND	0.97	ND	ND	ND	ND
MW-01 (Dup)	18-Mar-03	0.52	ND	0.41 J	0.35 J	ND	ND	ND	ND	1.0	ND	ND	ND	ND
MW-01	17-Jun-03	0.49	ND	ND	ND	ND	ND	ND	ND	0.65	ND	ND	ND	ND
MW-01	16-Sep-03	0.52	ND	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND
MW-01	16-Dec-03	0.38	ND	ND	ND	ND	ND	ND	ND	0.95	ND	ND	ND	ND
MW-01	9-Mar-04	0.46	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND

Table 1
Historical Detected VOCs in Groundwater Samples
(ug/L)
Greater Wenatchee Regional Landfill

Sample Location	Date Collected	Tetra-chloro-ethene	Tri-chloro-ethene	1,1-Dichloro-ethane	cis-1,2-Dichloro-ethene	1,1-Dichloro-ethene	1,1,1-Trichloro-ethane	Vinyl Chloride	Trichloro-fluoro-methane	Dichloro-difluoro-methane	Chloro-ethane	Methylene Chloride	2-Butanone (MEK)	Chloro-form
MW-01	8-Jun-04	0.46	ND	ND	ND	ND	ND	ND	ND	0.94	ND	ND	ND	ND
MW-01	8-Sep-04	0.47	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-01	14-Dec-04	0.41 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-01	9-Mar-05	0.48	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND
MW-02A	17-Feb-98	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND
MW-02A	20-May-98	ND	ND	2.0	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND
MW-02A	13-Aug-98	ND	ND	2.0	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND
MW-02A	2-Dec-98	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND
MW-02A	9-Dec-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-02A	24-Mar-99	1.3	ND	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-02A	12-May-99	1.9	ND	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-02A	29-Jul-99	2.7	ND	3.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-02A	28-Oct-99	2.9	ND	3.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-02A	8-Mar-00	3.2	0.8	3.8	ND	0.8	ND	ND	1.2	1.2	ND	ND	ND	ND
MW-02A	11-Apr-00	3.5	0.89	4.4	ND	ND	ND	ND	1.2	1.1	ND	ND	ND	ND
MW-02A	12-Sep-00	2.6	0.75	4.0	ND	ND	ND	ND	ND	0.68	ND	ND	ND	ND
MW-02A	5-Dec-00	4.1	1.0	5.9	0.91	0.89	ND	ND	1.7	1.9	ND	ND	ND	ND
MW-02A	26-Feb-01	4.9	1.3	5.7	1.1	1.1	0.39 J	ND	1.5	1.7	ND	ND	ND	ND
MW-02A	10-May-01	5.8	1.2	6.4	1.3	1.0	0.37 J	ND	1.4	1.4	ND	1.4 J	ND	ND
MW-02A	17-Aug-01	4.3	1.3	6.5	1.5	1.1	0.37 J	ND	1.6	1.5	ND	ND	ND	ND
MW-02A	19-Oct-01	5.4	1.2	7.6	1.5	0.89	0.36 J	ND	1.1	1.3	ND	ND	ND	ND
MW-02A	15-Feb-02	5.6	1.4	8.5	2.0	1.5	0.47 J	ND	2.4	2.0	ND	ND	ND	ND
MW-02A	10-May-02	6.7	1.6	8.3	2.2	0.92	0.41 J	ND	1.7	1.9	ND	ND	ND	ND
MW-02A (Dup)	10-May-02	6.8	1.6	8.5	2.0	0.42 J	0.39 J	ND	1.6	1.9	ND	ND	ND	ND
MW-02A	8-Aug-02	8.0	1.9	9.8	2.4	1.7	0.53 J	ND	2.2	3.2	ND	ND	ND	ND
MW-02A	4-Dec-02	7.4	1.7	10	2.5	1.6	0.47	ND	2.3	3.0	ND	0.84 J	ND	0.32 J
MW-02A	18-Mar-03	7.7	1.7	11	2.4	1.6	0.48 J	ND	2.3	3.1	ND	ND	ND	0.35 J
MW-02A	17-Jun-03	6.7	1.8	11	2.8	1.5	ND	ND	ND	2.1	ND	ND	ND	0.4 J
MW-02A	16-Sep-03	7.8	1.5	11	2.4	1.6	0.52 J	ND	2.5	3.4	ND	0.86 J	ND	0.36 J
MW-02A	16-Dec-03	5.9	1.3	12	2.4	1.6	0.45 J	ND	2.4	2.8	ND	0.8 J	ND	0.37 J
MW-02A	9-Mar-04	7.3	1.7	14	2.5	1.9	0.42 J	ND	3.0	3.6	ND	1.0 J	ND	0.38 J
MW-02A (Dup)	9-Mar-04	7.2	1.6	14	2.5	1.9	0.43 J	ND	3.0	3.5	ND	1.2 J	ND	0.39 J
MW-02A	8-Jun-04	8.6	1.7	13	2.6	2.1	0.53 J	ND	3.2	3.6	ND	1.0 J	ND	0.44 J

T 1
Historical Detected VOCs in Groundwater Samples
(ug/L)
Greater Wenatchee Regional Landfill

Sample Location	Date Collected	Tetra-chloro-ethene	Tri-chloro-ethene	1,1-Dichloro-ethane	cis-1,2-Dichloro-ethene	1,1-Dichloro-ethene	1,1,1-Trichloro-ethane	Vinyl Chloride	Trichloro-fluoro-methane	Dichloro-difluoro-methane	Chloro-ethane	Methylene Chloride	2-Butanone (MEK)	Chloro-form
MW-02A	8-Sep-04	9.4	1.9	13	2.7	2.9	ND	ND	4.2	ND	ND	0.94 J	ND	0.44 J
MW-02A (Dup)	8-Sep-04	6.5	1.3	9.6	2.1	1.7	ND	ND	2.6	ND	ND	1.2 J	ND	0.37 J
MW-02A	14-Dec-04	8.7	1.6	12	2.5	2.5	0.52 J	ND	3.6	5.1	ND	0.97 J	ND	0.49 J
MW-02A	8-Mar-05	8.3	1.6	13	2.2	2.7	0.54 J	ND	3.1	3.9	ND	ND	ND	0.48 J
MW-02A (Dup)	8-Mar-05	8.6	1.5	13	2.2	2.7	0.55 J	ND	2.9	4.2	ND	ND	ND	0.49 J
MW-03A	14-Dec-04	ND	ND	ND	ND	ND	ND	ND	ND	0.28 J	ND	ND	ND	ND
MW-04	30-Mar-99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	19	ND	ND
MW-04	7-Mar-00	ND	ND	ND	ND	ND	ND	ND	ND	2.8	ND	ND	ND	ND
MW-04	12-Apr-00	ND	ND	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND
MW-04	29-Aug-00	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND
MW-04	19-Dec-00	ND	ND	ND	ND	ND	ND	ND	ND	1.9	ND	ND	ND	ND
MW-04	1-Mar-01	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND
MW-04	10-May-01	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND
MW-04	17-Aug-01	ND	ND	ND	ND	ND	ND	ND	ND	1.0	ND	ND	ND	ND
MW-04	19-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	0.66	ND	ND	ND	ND
MW-04	18-Feb-02	ND	ND	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND
MW-04	13-May-02	ND	ND	ND	ND	ND	ND	ND	ND	0.93	ND	ND	ND	ND
MW-04	9-Aug-02	ND	ND	ND	ND	ND	ND	ND	ND	2.7	ND	ND	ND	ND
MW-04	3-Dec-02	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND
MW-04	18-Mar-03	ND	ND	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND
MW-04	17-Jun-03	ND	ND	ND	ND	ND	ND	ND	ND	0.8	ND	ND	ND	ND
MW-04	17-Sep-03	ND	ND	ND	ND	ND	ND	ND	ND	0.67	ND	ND	ND	ND
MW-04	17-Dec-03	ND	ND	ND	ND	ND	ND	ND	ND	1.0	ND	ND	ND	ND
MW-04	10-Mar-04	ND	ND	ND	ND	ND	ND	ND	ND	1.2	ND	0.77 J	ND	ND
MW-04	9-Jun-04	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND	ND	ND	ND
MW-04	8-Sep-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-04	15-Dec-04	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	6.0	ND
MW-04	9-Mar-05	ND	ND	ND	ND	ND	ND	ND	ND	0.69	ND	ND	ND	ND
MW-07	17-Dec-03	7.2	1.7	10	3.0	0.94	0.46 J	ND	1.8	3.3	ND	ND	ND	ND
MW-07 (Dup)	17-Dec-03	7.2	1.6	9.8	2.9	0.97	0.47 J	ND	1.8	3.3	ND	ND	ND	ND
MW-07 (Resample)	15-Jan-04	8.3	2.0	11	3.2	1.1	0.50 J	ND	2.4	4.2	ND	ND	ND	ND
MW-07	10-Mar-04	7.9	2.0	11	3.2	1.1	0.43 J	ND	2.1	3.7	ND	1.4 J	ND	ND
MW-07 (Dup)	10-Mar-04	7.4	2.0	11	3.0	0.98	0.43 J	ND	2.0	3.5	ND	1.3 J	ND	ND

Table 1
Historical Detected VOCs in Groundwater Samples
(ug/L)
Greater Wenatchee Regional Landfill

Sample Location	Date Collected	Tetra-chloro-ethene	Tri-chloro-ethene	1,1-Dichloro-ethane	cis-1,2-Dichloro-ethene	1,1-Dichloro-ethene	1,1,1-Trichloro-ethane	Vinyl Chloride	Trichloro-fluoro-methane	Dichloro-difluoro-methane	Chloro-ethane	Methylene Chloride	2-Butanone (MEK)	Chloro-form
MW-07	9-Jun-04	7.2	1.7	8.6	3.1	0.92	0.39 J	ND	1.4	2.9	ND	1.1 J	ND	ND
MW-07	8-Sep-04	8.9	1.7	9.5	2.9	0.81	0.43 J	ND	1.6	2.7	ND	1.0 J	ND	ND
MW-07	15-Dec-04	8.8	1.9	9.5	3.5	1.1	0.50 J	ND	2.0	3.9	ND	0.89 J	ND	ND
MW-07	9-Mar-05	8.4	1.9	9.7	3.6	1.2	0.50 J	ND	1.8	3.8	ND	0.79 B,J	ND	ND
MW-07 (Dup)	9-Mar-05	9.1	2.0	10	3.6	1.3	0.54 J	ND	2.1	4.5	ND	0.84 B,J	ND	0.29 J
MW-08A	15-Dec-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.2	ND
MW-08A	9-Mar-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.9 B,J	ND	ND
MW-10	10-Mar-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.79 J	ND	ND
MW-10 (Dup)	10-Mar-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.79 J	ND	ND
P-07	1-Mar-01	ND	ND	ND	ND	ND	ND	ND	ND	2.3	ND	ND	ND	ND
P-07	10-May-01	ND	ND	ND	ND	ND	ND	ND	ND	2.2	ND	1.0 J	ND	ND
P-07	16-Aug-01	ND	ND	ND	ND	ND	ND	ND	ND	2.1	ND	ND	ND	ND
P-07 (Dup)	16-Aug-01	ND	ND	ND	ND	ND	ND	ND	ND	1.9	ND	ND	ND	ND
P-07	18-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	1.7	ND	ND	ND	ND
P-07	15-Feb-02	ND	ND	ND	ND	ND	ND	ND	ND	1.8	ND	ND	ND	ND
P-07 (Dup)	15-Feb-02	ND	ND	ND	ND	ND	ND	ND	0.56 J	2.4	ND	ND	ND	ND
P-07	10-May-02	ND	ND	ND	ND	ND	ND	ND	ND	2.0	ND	ND	ND	ND
P-07	9-Aug-02	ND	ND	ND	ND	ND	ND	ND	ND	1.4	ND	ND	ND	ND
P-07 (Dup)	9-Aug-02	ND	ND	ND	ND	ND	ND	ND	ND	2.7	ND	ND	ND	ND
P-07	4-Dec-02	ND	ND	ND	ND	ND	ND	ND	ND	2.4	ND	ND	ND	ND
P-07	18-Mar-03	ND	ND	ND	ND	ND	ND	ND	ND	2.1	ND	ND	ND	ND
P-07	17-Jun-03	ND	ND	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND
P-07	16-Sep-03	ND	ND	ND	ND	ND	ND	ND	ND	2.4	ND	ND	ND	ND
P-07	16-Dec-03	ND	ND	ND	ND	ND	ND	ND	ND	1.8	ND	ND	ND	ND
P-07	9-Mar-04	ND	ND	ND	ND	ND	ND	ND	ND	2.0	ND	ND	ND	ND
P-07	9-Jun-04	ND	ND	ND	ND	ND	ND	ND	ND	2.1	ND	ND	ND	ND
P-07 (Dup)	9-Jun-04	ND	ND	ND	ND	ND	ND	ND	ND	2.1	ND	ND	ND	ND
P-07	9-Sep-04	ND	ND	ND	ND	ND	ND	ND	ND	2.3	ND	ND	ND	ND
P-07	9-Mar-05	ND	ND	ND	ND	ND	ND	ND	ND	1.9	ND	ND	ND	ND
P-08	11-Mar-04	2.7	0.42	7.2	0.94	1.0	1.7	1.0	2.9	9.1	0.63 J	3.0	ND	ND

NOTE:

ug/L = microgram per liter; NT = analyte not tested, ND = analyte not detected at or above the method reporting limit; J = estimate value below method reporting limit.

membrane cap increased LFG pressures within Trench 1, which resulted in increased migration of LFG in the subsurface. The cap placement also appears to have affected VOC detections in MW-01 groundwater, for the reasons (see Figure 3).

- Results of stable and radiogenic isotope analysis of MW-01 groundwater and site leachate samples performed in 1994 did not show evidence of groundwater impacts from landfill leachate (WM, 1994).
- Inorganic chemistry data derived from regular sampling events and remedial investigations suggests that leachate is not affecting groundwater, and therefore is not the source of the VOCs.

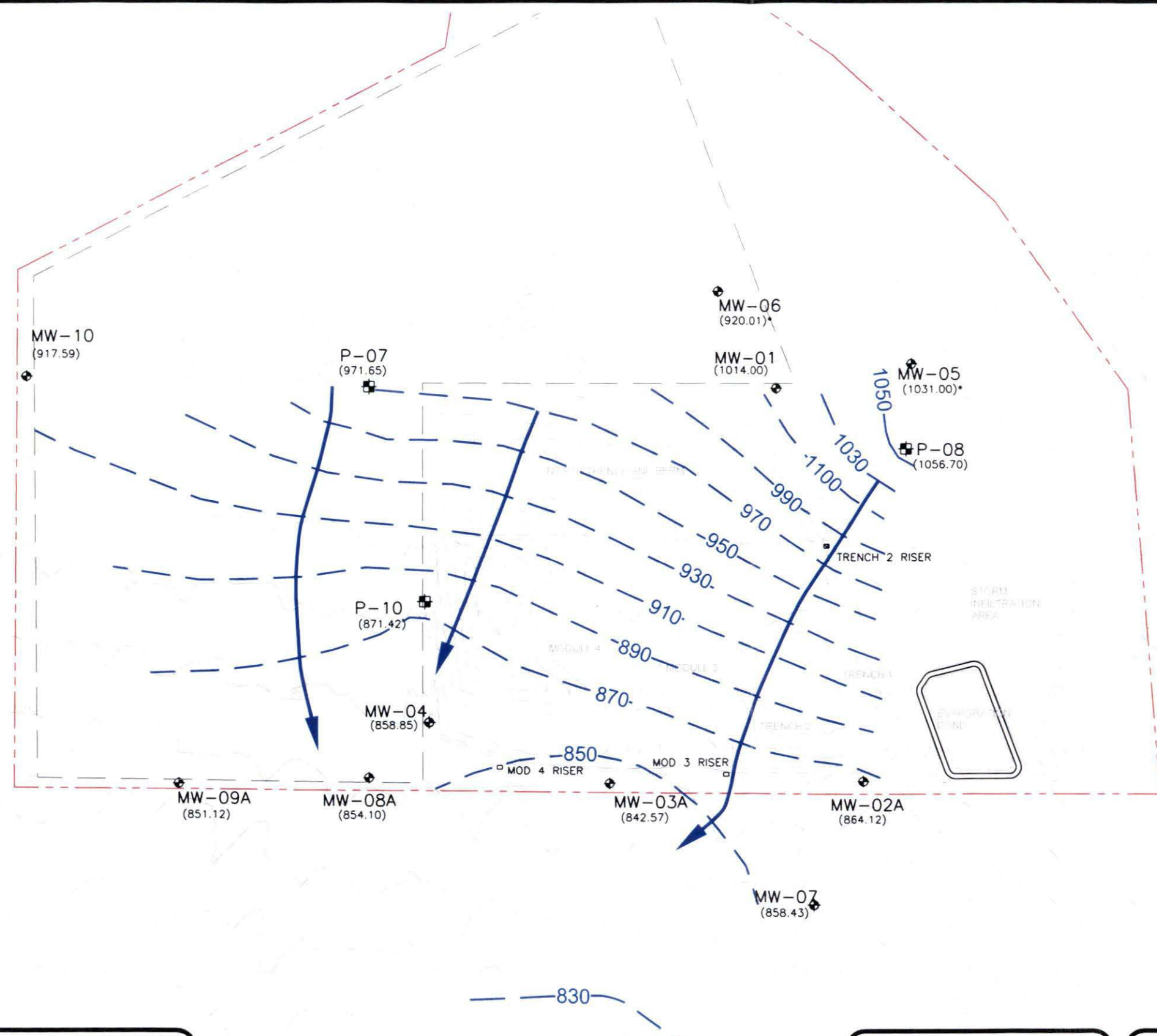
In order to test the hypothesis that LFG is the source of VOCs detected in groundwater samples, WM conducted several investigations as part of its independent action agreement with WDOE under MTCA. The investigations focused on characterizing the type, concentration, and distribution of vapor phase VOCs associated with LFG and evaluating the ionic composition of samples collected from VOC-impacted monitoring wells and composite leachate samples. Field and laboratory methods conducted as part of these investigations included installing depth-discrete LFG monitoring probes adjacent to monitoring wells MW-02A and MW-03A (probes GP-11 and GP-08, respectively), and collecting gas samples for VOC analysis from LFG probes, LFG extraction wells, and direct push probes (see EMCON 2004b provided in Appendix D).

Laboratory analytical results of gas samples collected as part of these investigations, along with groundwater analytical results, indicated that (1) an interaction between vapor-phase VOCs present in LFG and groundwater is occurring under the unlined Trench 1 area, and (2) LFG is the source of VOCs detected in MW-01, MW-02A, MW-04, MW-07, and P-07. Key results supporting these conclusions, as presented in previous routine compliance monitoring reports and groundwater investigations (EMCON, 2004b; see Appendix D), are as follows:

- The same suite of chlorinated VOCs detected in groundwater samples collected from MW-02A and MW-07 were also detected at elevated concentrations in gas samples collected from LFG probes GP-08, GP-09, GP-11-2, and GP-11-3 and extraction wells GE-11, GE-12, GE-13, GE-14, GE-15, and GE-16. Furthermore, VOCs detected at the highest concentrations in leachate samples were not detected in groundwater samples.
- Extraction well GE-14 and selected LFG probes, where the highest chlorinated VOCs concentrations were detected in LFG, are located in and adjacent to the southern perimeter of the Trench 1 area (see EMCON, 2004b, Figure 2 provided in Appendix D).

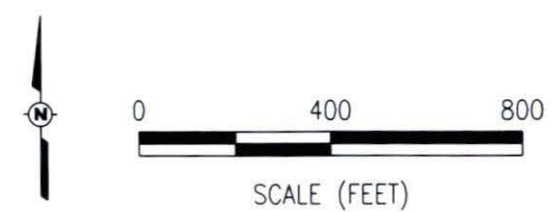
- Geochemical analysis using Piper diagrams provided in Appendix E indicated that (1) groundwater samples collected from wells impacted with VOCs have a distinctly different ionic chemistry than that of site leachate and (2) mixing between groundwater and leachate has not occurred because the ionic chemistry of groundwater collected from MW-02A has remained relatively stable. Leachate impacts to groundwater would be expected to affect the ionic chemistry compared with samples collected from upgradient and cross-gradient wells.

FIGURES



EXPLANATION

- EXPANSION BOUNDARY
- PERMIT BOUNDARY
- P-07 PIEZOMETER
- ◆ MW-04 MONITORING WELL
- 900 --- POTENTIOMETRIC SURFACE CONTOUR (FEET MSL) CONTOUR INTERVAL=20 FEET
- (1053.03)* ASTERISK DENOTES ELEVATIONS NOT USED TO CALCULATE POTENTIOMETRIC SURFACE CONTOURS.
- (860.03) GROUND WATER ELEVATION IN FEET MSL MEASURED ON MARCH 7, 2005
- ➡ GENERAL GROUNDWATER FLOW DIRECTION



Shaw

EMCON/OWT, Inc.

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WASTE MANAGEMENT

DATE	06/30/05
DWN	JDT
APP	LJC
REV	
PROJECT NO.	842544

FIGURE 1
 GREATER WENATCHEE REGIONAL LANDFILL
 EAST WENATCHEE, WASHINGTON
 GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS
 FIRST QUARTER, (MARCH) 2005
 ENVIRONMENTAL MONITORING REPORT

K:\EEF Files\GWRL Surface Image Files
 File N:\Cad\Drawings\Waste Management\Landfills\Greater Wenatchee\Hydrogeology\2005 GWRL EMRs\GWRL 1005 Fig-1.dwg Layout Figure 2 User Jeremy Taitler Jun 18, 2005 1:10pm

Figure 2
Volatile Organic Compounds in MW-01 Groundwater Samples
Greater Wenatchee Regional Landfill

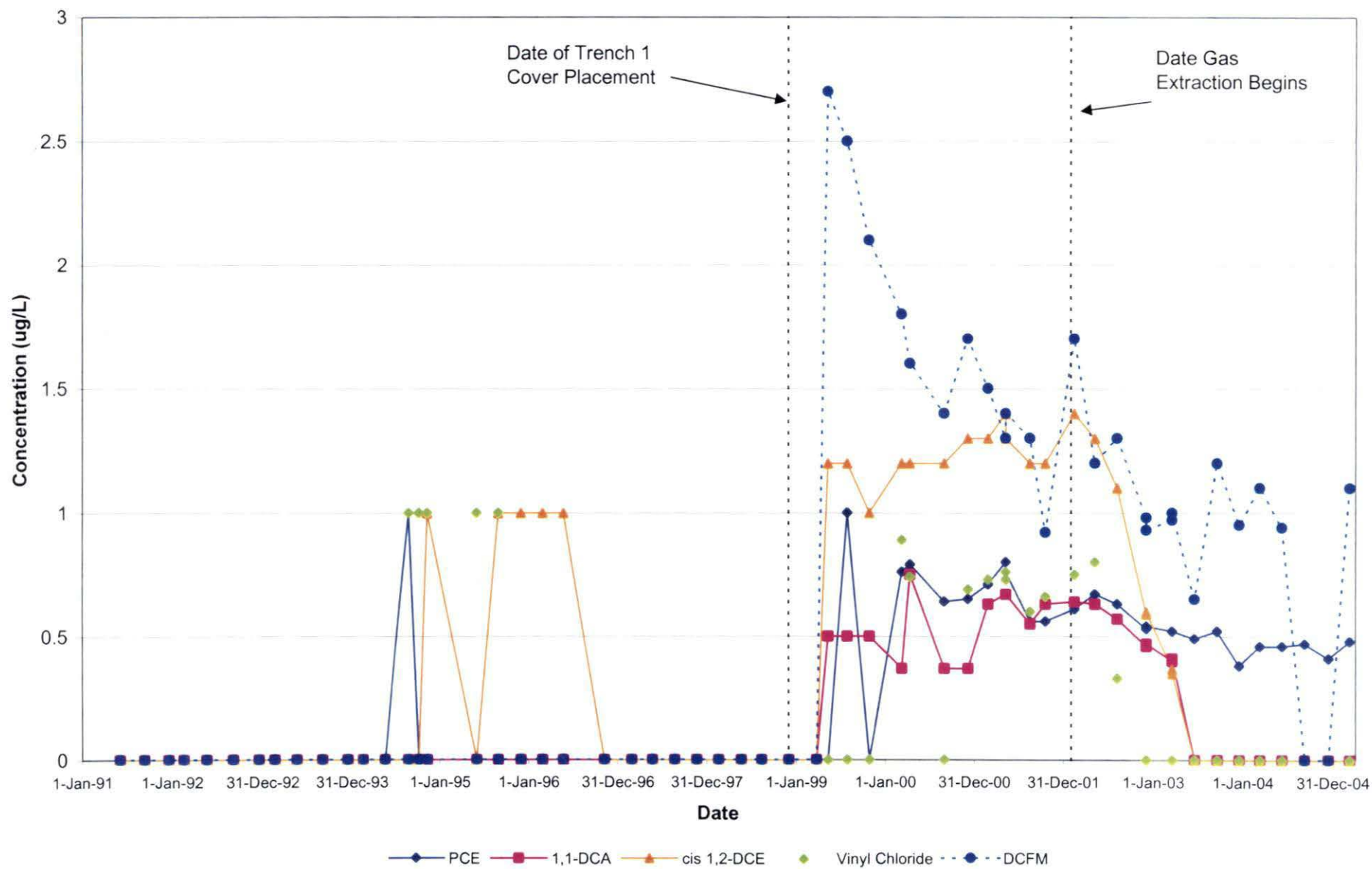
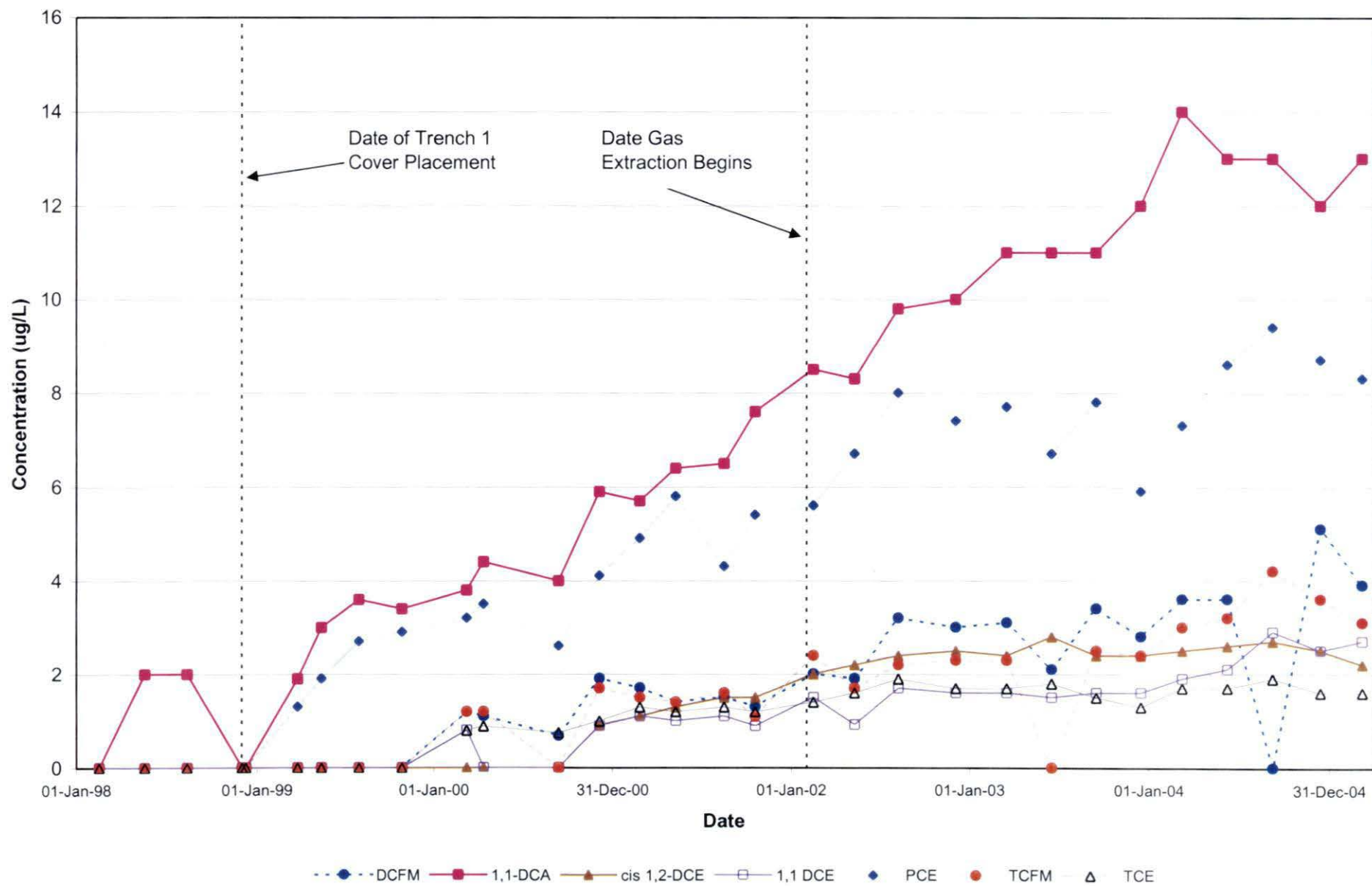


Figure 3
Volatile Organic Compounds in MW-02A in Groundwater Samples
Greater Wenatchee Regional Landfill



APPENDIX A

**FEBRUARY 2000 CORRESPONDENCES
BETWEEN WDOE, CHCHD, AND WM**



COPY

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

15 West Yakima, Suite 200 • Yakima, Washington 98902-3452 • (509) 575-2490

February 3, 2000

Mr. Randy Phillips
Chelan-Douglas Health District
P.O. Box 429
Wenatchee, WA 98807

Re: Greater Wenatchee Landfill: Groundwater Protection Standard, Background Values and Corrective Action.

Dear Mr. Phillips:

I have reviewed Waste Management's, January 31, 2000, letter with proposed background concentrations and groundwater protection standards. Although I don't agree with every aspect of the letter, on the most important points it appears that we do agree. **Levels of the contaminants: 1,1-Dichloroethane and Tetrachloroethane, observed in the groundwater at MW-2A exceed the background concentration of WAC 173-351-440(3)(c) and the groundwater protection standard of WAC 173-351-440(3)(d). The Greater Wenatchee Landfill must complete the steps of WAC 173-351-440(6), including the assessment, selection and implementation of corrective measures under Ch 173-340 WAC, the Model Toxics Control Act. (MTCA)** I am listing the Greater Wenatchee Landfill as a site with confirmed groundwater contamination on Ecology's contaminated sites register. Attached I have provided a technical memorandum that details the points on which we agree and disagree as well as my process for determining that corrective action is required.

My January 28, 2000 letter incorrectly asserts that Chapter 173-200 WAC lists a groundwater quality criterion for cis-1,2-Dichloroethene. No criterion has been established for the detected constituents: cis-1,2-Dichloroethene or Dichlorodifluoromethane.

We currently have enough information to confirm that there is a groundwater problem at the Greater Wenatchee Landfill that will require corrective action. The information available suggests that at this time the problem does not pose an imminent threat to the public health. A characterization of the extent of the problem, known as a remedial investigation and feasibility study or RI/FS, will follow. The RI/FS, among other things, will determine if there are public health issues that need to be addressed.

Mr. Randy Phillips
February 3, 2000
Page 2

In corrective action the role and authority of Ecology and the Health District will change somewhat. Under WAC 173-351-460, Role of jurisdictional health department in corrective action, the Health District may participate in all parts of the corrective action, may comment upon and participate in all decisions involving the corrective action, and shall continue to regulate all MSWLF units during construction, operation, closure and post-closure. Under WAC 173-351-465, Role of the Department of Ecology in corrective action, Ecology shall carry out all the responsibilities assigned to it under the Model Toxics Control Act, chapter 70.105D RCW, during the corrective action process. Assessment groundwater monitoring as described in WAC 173-351-440 shall continue, unless an alternate groundwater monitoring program is approved under WAC 173-351-450 or Ch 173-340 WAC.

I hope MTCA will help to ensure that the Greater Wenatchee Landfill implements the appropriate measures to characterize and resolve these groundwater issues. Waste Management may proceed with an independent corrective action consistent with MTCA or may enter into a formal action with Ecology under a Consent Decree or Order. If Waste Management chooses to proceed with independent corrective action, I encourage them to work closely with the Department of Ecology and the Health District.

Work already planned, such as the installation of a final cover and gas collection system on the unlined portions of the landfill, (i.e. North Berm and Trench 1) may proceed as part of an independent corrective action. Moving forward quickly with appropriate independent actions could remove the necessity for Ecology to require any formal action in the future. The Department of Ecology will continue to be available for review, to provide written comments, and hopefully concurrence, with any submitted plans. It is likely that this final cover and gas collection system will comprise the vast majority of the corrective actions that will be required. The specific extent of the corrective actions will be determined based upon the findings of the RI/FS.

Ecology intends to work closely with the Chelan-Douglas Health District throughout this process. Please call me at 509-454-7293 if you have any questions or if I may be of additional assistance.

Sincerely,



John Stormon
Hydrogeologist
Solid Waste & Financial Assistance Program

cc: David Prosch, CDHD
Chris Thomas, WMI
Mark Verwiell, WMI
Roger North, WMI

TECHNICAL MEMORANDUM:
CORRECTIVE ACTION DETERMINATION
FOR THE GREATER WENATCHEE LANDFILL

This technical memorandum makes the determination of the Groundwater Protection Standards and Background Concentration, as addressed in WAC 173-351-440(3). The determination uses the submitted sampling results from Greater Wenatchee Landfill, the "Statistical Methods for Groundwater Monitoring at the WMX Greater Wenatchee Landfill," (February 29, 1996), the Implementation Guidance for the Groundwater Quality Standards and, where possible, the January 31, 2000, proposed methods submitted by Waste Management. Waste Management's proposed methods do not meet the regulatory standard in some areas. These will be discussed below.

Corrective Action Is Required

Analytical results indicate that the background concentration, the statistical limit and the groundwater protection standard have been exceeded during assessment monitoring. The Greater Wenatchee Landfill must complete the steps of WAC 173-351-440(6), including the assessment, selection and implementation of corrective measures under Ch 173-340 WAC, the Model Toxics Control Act.

Groundwater Protection Standard

Chapter 173-200 WAC, the Water Quality Standards for Ground Waters of the State of Washington, requires that the enforcement limit (i.e. groundwater protection standard) may not exceed the groundwater quality criteria. [WAC 173-200-050(3)(b)] Waste Management's proposal incorrectly interprets my past comments as indicating that the groundwater quality criteria shall be the same as the enforcement limit. Chapter 173-200 WAC requires that the concept of AKART be used to determine how far below the criterion to set the enforcement limit/groundwater protection standard. In the following determination, I have listed the groundwater protection standard as less than or equal to a maximum value. This is sufficient to determine that the levels at the Greater Wenatchee Landfill require corrective action under Ch 173-340 WAC, the Model Toxics Control Act. (MTCA)

Background Wells

Waste Management's proposed method indicates that they wish to include analyses from P-7 in the background data. It appears that they have results from one grab sample at this well taken on 12/01/1994. I have not been able to locate a record of this sample in our files, so I can not assess its validity but one grab sample taken at least four years before assessment monitoring began will not be accepted as representative of the background chemical character of the groundwater at this facility. I would like to receive a copy of all of the information related to this sample, including field notes, so that we are working from the same information. No Volatile Organic Chemical (VOC) results from P-7 were provided.

WAC 173-351-430(2), Background data development, requires a minimum of eight independent samples collected within the first year for background data development. This requirement has been discussed with Mr. Michael Peterson, formerly of Waste Management, in relation to

beginning to use P-7 as a background well. The Greater Wenatchee Landfill has been in assessment monitoring for more than one year. If Waste Management wanted to use P-7, they had ample opportunity. It is too late for the current determination. The background wells are MW-5 and MW-6. If Waste Management wishes to use P-7 for future background discussions, I suggest that they immediately begin collecting sufficient background data to be representative. (i.e. Eight samples for the Appendix I constituents collected within the first year, no less than one month apart. [WAC 173-351-430(2)])

Establishing Groundwater Protection Standards for cis-1,2-Dichloroethene and Dichlorofluoromethane

WAC 173-200-050(4) requires that for constituents that do not have an established criterion, the enforcement limit (i.e. groundwater protection standard) shall not exceed the PQL, unless clear and convincing evidence can be provided that a higher level will provide protection to human health and the environment. Waste Management indicates that they will work with Ecology and the Washington Department of Health to establish an enforcement limit/groundwater protection standard that meets this requirement.

Nitrate

Nitrate is a difficult constituent to reasonably assess using inter-well comparisons at this facility due to groundwater chemistry differences between wells that may be natural or may have resulted from waste management practices. Intra-well comparisons have shown a rising trend and a statistically significant increase in Nitrate levels at MW-4. This result is not likely to be due to natural variations and has indicated a statistically significant increase over background.

The statistical method to be used at this facility in assessment monitoring is defined in, "Statistical Methods for Groundwater Monitoring at the WMX Greater Wenatchee Landfill", February 29, 1996. This document, as amended, defines the method to be used in assessment monitoring as "prediction limits as described in the inter-well comparison section."

The background levels of Nitrate at MW-5 and MW-6 have ranged from below the PQL of 0.05 mg/l to 1.37 mg/l. Using the statistical methods described in Ecology's "Implementation Guidance for the Groundwater Quality Standards", April 1996, publication #96-02, and the landfill's statistical methods, the assessment monitoring statistical limit for Nitrate in the downgradient wells will be 1.37 mg/l. **At the Greater Wenatchee Landfill the background value for Nitrate is 1.37 mg/l.**

The Water Quality Standards for Groundwaters of the State of Washington, Chapter 173-200 WAC, sets the criterion for Nitrate in groundwater at 10 mg/l. The enforcement limit (i.e. groundwater protection standard) may not exceed this level. [WAC 173-200-050(3)(b)] The concept of AKART would be used to determine how far below this criterion to set the enforcement limit/groundwater protection standard. Waste Management's proposed methods state that the groundwater protection standard is 10 mg/l, but do not address AKART. **At the Greater Wenatchee Landfill, the groundwater protection standard for Nitrate is less than, or equal to, 10 mg/l.**

Nitrate levels have exceeded 1.37 mg/l at all other monitoring wells at this facility during the assessment monitoring event. Nitrate levels at MW-1 have exceeded the groundwater protection standard. Due to the possible unresolved natural variation problems in this statistical comparison, I suggest that the corrective action determination be based on the VOC's. Natural variations in groundwater chemistry should not be an issue for VOC's. The fact that intra-well comparisons have shown a statistically significant increase in Nitrate at MW-4, indicates that some groundwater effects have occurred. Nitrate levels at MW-4 have remained below 10 mg/l. Nitrate levels at MW-1 have not shown an intra-well statistically significant increase.

VOLATILE ORGANIC COMPOUNDS (VOC)

Constituent	Back-ground	Statistical Limit	Groundwater Protection Standard (GWPS)	MW-2A Above Background	MW-2A Above GWPS
1,1-Dichloroethene	1.0 ug/l	1.0 ug/l	< or = 1.0 ug/l	YES	YES
Tetrachloroethene	1.0 ug/l	1.0 ug/l	< or = 0.8 ug/l	YES	YES

1,1-Dichloroethane

The background level of 1,1-Dichloroethane at MW-5 and MW-6 has remained below the PQL of 1 ug/l during each of the assessment monitoring events. **At the Greater Wenatchee Landfill, the background value for 1,1-Dichloroethane is 1 ug/l.** (See section 6.3.3.2 of "Implementation Guidance for the Groundwater Quality Standards", April 1996, publication #96-02.) Waste Management's proposed methods indicate that the PQL should be used as the background concentration for all VOC's. Using the statistical methods described in the above Ecology Implementation Guidance and the "Statistical Methods for Groundwater Monitoring at the WMX Greater Wenatchee Landfill", February 29, 1996, the assessment monitoring statistical limit for 1,1-Dichloroethane in the downgradient wells will also be 1 ug/l.

The Water Quality Standards for Groundwaters of the State of Washington, Chapter 173-200 WAC, sets the criterion for 1,1-Dichloroethane in groundwater at 1 ug/l. The enforcement limit (i.e. groundwater protection standard) may not exceed this level. [WAC 173-200-050(3)(b)] The concept of AKART would be used to determine how far below this criterion to set the enforcement limit/groundwater protection standard. Waste Management's proposed methods state that the groundwater protection standard is 1.0 ug/l but do not address AKART. **At the Greater Wenatchee Landfill, the groundwater protection standard for 1,1-Dichloroethane is less than or equal to 1 ug/l.**

At MW-2A, the constituent 1,1-Dichloroethane has been detected during assessment monitoring at levels ranging from 1.5 ug/l to 3.6 ug/l, or at an average level of 2.7 ug/l. **The analytical results for 1,1-Dichloroethane at MW-2A have exceeded the background level, the statistical limit and the groundwater protection standard.**

Tetrachloroethene

The background level of Tetrachloroethene at MW-5 and MW-6 has remained below the PQL of 1 ug/l during each of the assessment monitoring events. **At the Greater Wenatchee Landfill, the background value for Tetrachloroethene is 1 ug/l.** (See section 6.3.3.2 of "Implementation Guidance for the Groundwater Quality Standards", April 1996, publication #96-02.) Waste Management's proposed methods indicate that the PQL should be used as the background concentration for all VOC's. Using the statistical methods described in the above Ecology Implementation Guidance and the "Statistical Methods for Groundwater Monitoring at the WMX Greater Wenatchee Landfill", February 29, 1996, the assessment monitoring statistical limit for Tetrachloroethene in the downgradient wells will also be 1 ug/l.

The Water Quality Standards for Groundwaters of the State of Washington, Chapter 173-200 WAC, sets the criterion for Tetrachloroethene in groundwater at 0.8 ug/l. The enforcement limit (i.e. groundwater protection standard) may not exceed this level. [WAC 173-200-050(3)(b)] The concept of AKART would be used to determine how far below this criterion to set the enforcement limit/groundwater protection standard. Waste Management's proposed methods state that the groundwater protection standard is 0.8 ug/l. **At the Greater Wenatchee Landfill, the groundwater protection standard for Tetrachloroethene is less than or equal to 0.8 ug/l.**

At MW-2A, the constituent Tetrachloroethene has been detected during assessment monitoring at levels ranging from 1.1 ug/l to 2.9 ug/l, or at an average level of 2.0 ug/l. **The analytical results for Tetrachloroethene at MW-2A have exceeded the background level, the statistical limit and the groundwater protection standard.**



COPY

**GREATER WENATCHEE REGIONAL LANDFILL
AND RECYCLING FACILITY**
A WASTE MANAGEMENT COMPANY

P.O. Box 2963
Wenatchee, WA 98807-2963
(509) 884-2802
(509) 884-3724 Fax

February 14, 2000

Mr. Randy Phillips
Chelan-Douglas Health District
P.O. BOX 429
Wenatchee, WA 98807-0429

Subject: Independent Corrective Action - Greater Wenatchee Regional Landfill, East
Wenatchee, Washington

Dear Mr. Phillips:

Waste Management, Inc. (WMI), as owners and operators of the Greater Wenatchee Regional Landfill, is proceeding with an "Independent Corrective Action" program in accordance with WAC 173-340-120(8)(b). WMI will continue to work closely with the State of Washington Department of Ecology (DOE) and Chelan-Douglas Health District (CDHD) throughout this process to promote the effective and timely outcome of this matter.

WMI is in the process of developing a schedule for completing the tasks outlined in WAC-351-440(6), including the assessment, selection, and implementation of corrective measures as required by WAC 173-340, the Model Toxics Control Act. WMI will provide DOE and CDHD with the schedule of upcoming tasks within the next few weeks.

If you have any questions, or if I can be of further assistance, please call me at (509) 884-2802.

Sincerely,



Chris Thomas
Site Manager

CC: John Storman



COPY

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

15 West Yakima, Suite 200 • Yakima, Washington 98902-3452 • (509) 575-2490

February 24, 2000

Mr. Randy Phillips
Chelan-Douglas Health District
P. O. Box 429
Wenatchee, WA 98807

Re: Greater Wenatchee Landfill Groundwater Protection Standards and Independent Corrective Action.

Dear Mr. Phillips:

This letter responds to two documents sent by Chris Thomas of Waste Management; each is dated February 14, 2000 but each was received by fax on February 17, 2000. First, I will respond to the proposed groundwater protection standards for dichlorodifluoromethane and cis-1,2-dichloroethene. This is followed by some comments on Waste Management's statement of intent to proceed with an Independent Corrective Action under Chapter 173-340 WAC, the Model Toxics Control Act Cleanup Regulations (MTCA).

Groundwater Protection Standards

I have reviewed the proposed groundwater protection standards using the risk based "Method B" groundwater cleanup levels prescribed under MTCA and in consultation with Mr. Chris McChord of the Washington Department of Health. My review verifies that the proposed groundwater protection standards meet the requirements of the State of Washington. I recommend that the Chelan-Douglas Health District approve the following groundwater protection standards as proposed by Waste Management.

Constituent	Groundwater Protection Standard
Dichlorodifluoromethane	390 ug/l
cis-1,2-Dichloroethene	61 ug/l

To date, the levels of Dichlorodifluoromethane and cis-1,2-Dichloroethene detected in laboratory analyses from groundwater samples collected at the Greater Wenatchee Landfill have remained below these groundwater protection standards.

Mr. Randy Phillips

February 24, 2000

Page 2

Even though I have recommended their approval, I must point out that the proposed groundwater protection standards were not derived using the methods prescribed by the State of Washington or those described in Mark Verwiel's January 31, 2000 letter. That letter stated, "In accordance with WAC 173-200-050(4)(b), WMI is proposing to develop alternative GWPS for these compounds which will provide protection to human health and the environment. These alternative concentrations will be determined in consultation with DOE and the State of Washington Department of Health, and WMI is requesting guidance on development of these criteria."

It does not appear that the preparation of this proposal included any inquiries to the Departments of Health or Ecology. The proposal appears to be based solely upon documents published by the federal Environmental Protection Agency (EPA). The standards of the State of Washington should be used for all risk based determinations at this facility. The risk based standards prescribed in the State of Washington are in many cases more protective of human health and the environment than those prescribed by the EPA.

Independent Cleanup Action

I am very pleased that Waste Management's February 14, 2000 letter verified their intent to move forward with an independent cleanup action. I believe that this will allow for the most rapid and cost effective implementation of remedial measures. The Department of Ecology will continue to be available to review, provide comments and recommendations on any submitted plans. I encourage Waste Management to continue to work closely with Ecology and the Health District throughout this process.

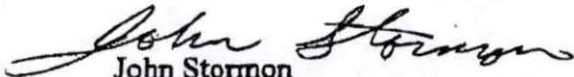
I believe that we all agree that the installation of a final cover and gas collection system on the unlined portions of the landfill will help to reduce or prevent additional groundwater contamination. I suggest that this work proceed as an "Interim Action" as described in WAC 173-340-430. An interim action may occur anytime during the cleanup process [WAC 173-340-430(3)(a)]. The installation of an adequate final cover and gas collection system will reduce the threat to human health and the environment by eliminating or substantially reducing the potential pathways for exposure. It will be consistent with the final cleanup action and will not foreclose reasonable alternatives for the final cleanup action. The facility's current permit requires the closure of these unlined portions by November 1, 2000. Nothing in MTCA will prevent Waste Management from meeting this requirement.

Although I am very pleased about Waste Management's intent to proceed with an independent cleanup, I must point out that if necessary the Department of Ecology will step in and require remedial action under an Agreed Order, Consent Decree or Enforcement Order. I cannot set required goals or deadlines for an independent cleanup beyond those included in the regulation, but failure to meet the facility's permit requirements or to move forward in the coming months with the necessary groundwater investigative work will make it very likely that Ecology will step in and require an order or decree. I hope not to proceed down this path.

Mr. Randy Phillips
February 24, 2000
Page 3

I recommend that we all attempt to maintain and improve our level of communication. A clear understanding of each of our goals, intentions and needs will only help to move the cleanup forward as quickly as possible. I will be happy to continue to provide assistance, verbal and/or in writing, as the need arises. Please call me at 509-454-7293 if you have any questions.

Sincerely,



John Stormon
Hydrogeologist
Solid Waste & Financial Assistance Program

cc: David Prosch, CDHD
Chris Thomas, WMI
Mark Verwiell, WMI
~~James Oberholser~~, LFR

APPENDIX B

**MONITORING WELL MW-11 INSTALLATION REPORT (EMCON,
SEPTEMBER 2004)**



EMCON/OWT, Inc.

10300 SW Nimbus Avenue
Suite B, Building P
Portland, OR 97223-4345
503.603.1000
Fax: 503.603.1001

September 9, 2004
Project # 842544-08002004

Mr. Roger B. North, P.E.
Waste Management, Inc.
5200 SW Macadam Ave., Suite 270
Portland, OR 97201-3834

Re: Monitoring Well MW-11 Installation Report, Greater Wenatchee Regional Landfill,
East Wenatchee, Washington

Dear Roger:

This report, prepared by EMCON-OWT, Inc. (EMCON: Portland, Oregon), on behalf of Waste Management, Inc. (WM), documents the drilling, installation, development, and surveying of monitoring well MW-11 at the Greater Wenatchee Regional Landfill (GWRL), in East Wenatchee, Washington. MW-11 was installed to further assess the extent of volatile organic compounds (VOCs) in groundwater downgradient of MW-07 (see Figure 1). Monitoring well MW-11 was sampled in July 2004. As discussed in the second quarter 2004 monitoring report (EMCON, 2004a¹) previously submitted to the Washington Department of Ecology (WDOE) and Chelan-Douglas Health District (CDHD), no VOCs were detected in MW-11. The analytical results for the groundwater sample collected from MW-11 are contained in the previous submittal, and are not included here.

The installation of the monitoring well MW-11 and its proposed location was recommended in a report submitted to the WDOE and CDHD on May 4, 2004 (EMCON, 2004a). The May 2004 report presented analytical results of gas and groundwater samples collected in the first quarter 2004 as part of WM's agreement with the WDOE under the State of Washington's Model Toxics Control Act (MTCA) to investigate the source and extent of VOC impacts to site groundwater. The WDOE and CDHD verbally approved the location and installation at meeting on June 9, 2004.

Monitoring well MW-11 was drilled and installed consistent with the methods used for installing monitoring well MW-07 (EMCON, 2004b²), as well as for the other monitoring

¹ EMCON. 2004a. Letter (re: Second quarter 2004 environmental monitoring report: Greater Wenatchee Regional Landfill, East Wenatchee, Washington) to R. North, Waste Management, Inc., Portland, Oregon, from J. Davendonis and L. Caruso, EMCON/OWT, Inc., Portland, Oregon. September 2.

² EMCON. 2004b. Letter (re: Analytical results of gas and groundwater samples collected in first quarter 2004 for MTCA groundwater investigation: Greater Wenatchee Regional Landfill, East Wenatchee,

wells (MW-08, MW-09, and MW-10) installed during the additional hydrogeologic characterization investigation performed in 2003, as describe in subsequent sections. MW-11 was designed, constructed, and developed, consistent with WAC 173-160 "Minimum Standards for Construction and Maintenance of Wells" and standards specified in WAC 173-405-5.

DRILLING AND INSTALLTION OF MONITORING WELL MW-11

Monitoring well MW-11 was drilled and installed from June 14 to 24, 2004, by Tacoma Pump Drilling Company, Inc. (TPDC) of Graham, Washington. Before drilling was initiated, utility locates were conducted by the public utility locators, and TPDC filed a notice of intent to construct a monitoring well (notification number 62679) with the WDOE.

The exploratory boring for MW-11 was advanced and the monitoring well installed using a Foremost (Barber) DR-24HD dual-rotary drill rig operated by TPDC. The Barber air-rotary drilling method used a temporary 8-inch-inside-diameter welded steel casing with a 9.5-inch outside diameter cutting shoe that spins as the casing is advanced. Drilling was accomplished using a 6¾-inch tri-cone drill bit and by the cutting action of shoe welded to the casing.

Subsurface stratigraphy was interpreted from cuttings collected during the drilling of the borehole. Discharged cuttings were monitored nearly continuously during borehole advancement. A grab sample was collected and bagged at 10-foot intervals. A Washington-registered hydrogeologist logged materials encountered during drilling, using standard logging procedures. Data on soil and rock types, such as bedding, structure, moisture content, grain size, color, consistency, hardness and weathering were recorded on geologic logging forms. The exploratory boring log for MW-11 is attached.

To prevent downhole contamination, soil boring and sampling equipment, including casings, drill rods, and samplers, were cleaned with potable, high-pressure hot water before use. Air was filtered after it has moved through the compressor and before being forced into the borehole.

The monitoring well was constructed with 4-inch diameter schedule 80 polyvinyl chloride (PVC) flush thread casing and screen connected with O-rings-fitted joints. The monitoring well was constructed inside the temporary steel casing used to advance the borehole. The steel casing was incrementally withdrawn as the annular materials for the well were added. The screen is approximately 19.5-feet long with 0.010-inch factory machine-cut slots. One centralizer was installed at the top and bottom of the screen within the sand pack interval and

Washington) to R. North, Waste Management, Inc., Portland, Oregon, from D. Higgins and L. Caruso, EMCON/OWT, Inc., Portland, Oregon. May 4.

every 40 feet above the screen to the ground surface. Casings, screens, couplings, caps, and centralizers used to construct the monitoring wells were new. The annular space around the screen and approximately 2 feet above the top of the screen was filled with clean, 10-20 graded silica sand.

A filter pack seal constructed immediately above the filter pack consisted of a layer of 20-40 gradation silica sand approximately 2-feet thick, overlain by a 6-foot-thick seal of bentonite chips. The bentonite-chip seal was allowed to hydrate for approximately two hours before the annular grout seal was placed. The remaining annular space was filled with a high-solids (30-percent) bentonite slurry (grout seal). The grout seal was mixed to a weight equal to or greater than 9.5 pounds per gallon in a portable grout plant. The grout seal was pumped into the annular space through a tremie pipe constructed of new schedule 80 PVC, lowered to just above the bentonite-chip seal. The tremie pipe and temporary steel casing was withdrawn as the hole was grouted.

The grout batches were weighed with a Baroid, Inc. mud scale. The theoretical volume of grout required was calculated as 2.85 gallons per foot (approximately 1,211 gallons total) and approximately 2,306 gallons were actually used. Within the landslide deposits, the volume of grout used was close to the theoretical volume. However, the volume of grout used within the sand deposits was much greater than theoretical volume and is likely due to the relatively high permeability of the sand deposits. Overall, the volume of grout used to fill the borehole annular space was close to twice the theoretical amount required based on volumes calculated from the borehole and well casing diameters, which is consistent with the volumes of grout used for the installation of monitoring wells MW-07, MW-08A, MW-09A, and MW-10.

An above ground lockable steel protective casing was installed over the PVC well casing and secured in a concrete pad. Three steel protective posts were installed around the well pad. The well construction diagram for MW-11 is attached.

SURVEYING

Landline Surveyors, of Leavenworth, Washington (a Washington registered professional land surveyor) surveyed the new monitoring well. The ground surface at the wellhead and the top-of-casing elevations (at an inscribed mark) were surveyed to an accuracy of 0.01 foot based on the North American vertical datum of 1988. Horizontal coordinates were surveyed to an accuracy of 0.5 foot relative to state plane coordinates consistent with the current site practices. Survey results are shown on the attached monitoring well construction diagram.

Mr. Roger North
September 8, 2004
Page 4

DEVELOPMENT

The new monitoring well was developed on July 12 and 13, 2004 by pumping and surging. TPDC installed an electric submersible pump and pumped the well for approximately 2 hours at a rate of approximately 6 gallons per minute on July 12. TPDC pumped the well for an additional hour on July 13 before removing the pump. A total of 960 gallons of water were purged from the well during the development process. Field parameters, including specific conductance, pH, temperature, and sediment content were measured during development and recorded on a well development field sheet (attached). The well was considered developed when the discharge water was visibly free of sediment and when the field parameters had stabilized to within 10 percent of the previous measurement.

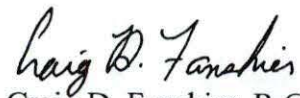
PUMP INSTALLATION

A new dedicated QED™ bladder pump was installed in the well on July 16, 2004 to accommodate routine groundwater quality monitoring using the low-flow purging method, consistent with the method used for sampling the other site monitoring wells as approved by the WDOE and CDHD.

Please contact EMCON if you have questions or require additional information.

Sincerely,

EMCON/OWT, INC.


Craig D. Fanshier, R.G.
Senior Hydrogeologist


Louis Caruso, R.G.
Hydrogeology Program Manager

Attachments: Figure 1, Monitoring Well Locations
Exploratory Boring Log for MW-11
Monitoring Well MW-11 Well Construction Diagram
Notice of Intent to Construct a Monitoring/Resource Protection Well
Washington State Resource Protection Well Report
Well Development Form

cc/att: Jim Obereiner, WM
Ted Woodard, WM
Martin Anthis, WM

ATTACHMENTS

LOG OF EXPLORATORY BORING

PROJECT NAME
LOCATION
DRILLED BY
DRILL METHOD
LOGGED BY

Waste Management, Inc.
Greater Wenatchee Regional Landfill
Tacoma Pump & Drilling Company, Inc.
Air Rotary
Craig Fanshier, R.G.

BORING NO.
PAGE
APPROX. GROUND ELEV.
TOTAL DEPTH
DATE COMPLETED

MW-11
1 of 23
1230.50
456.0'
6/16/04

SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				5				0 to 20.0 feet: SILTY SAND (SM) ; brown (10YR 4/3); 15 to 20 percent nonplastic fines; 80 to 85 percent fine to medium (5:1 F:M) subrounded sand; moist (irrigation from apple tree orchard).
								@ approximately 4.0 to 8.0 feet: 1 to 3 percent fine gravel (4.75 mm to 1/2-inch).
								@ 7.0 feet: moist; brown as above.
				10				@ 10.0 feet: sand is rounded to subrounded, 0.4 to 1 mm, approximately 10 to 15 percent fines.
								@ 12.0 to 315.0 feet: drilling dry.
				15				
				20				

REMARKS

Boring advanced with temporary 8-inch I.D. (1 1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



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LOG OF EXPLORATORY BORING

PROJECT NAME
LOCATION
DRILLED BY
DRILL METHOD
LOGGED BY

Waste Management, Inc.
Greater Wenatchee Regional Landfill
Tacoma Pump & Drilling Company, Inc.
Air Rotary
Craig Fanshier, R.G.

BORING NO.
PAGE
APPROX. GROUND ELEV.
TOTAL DEPTH
DATE COMPLETED

MW-11
2 of 23
1230.50
456.0'
6/16/04

SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				20.0				20.0 to 86.0 feet: SAND (SP); light olive brown to olive brown (2.5Y 5/3 to 4/3); 10 to 15 percent fines; 85 to 90 percent fine to medium sand (0.4 to 1 mm, 30 percent of sand >0.7 mm); slightly coarser sand than above; trace mica; damp.
				25				
				30				
				35				
				40				

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).

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LOG OF EXPLORATORY BORING

PROJECT NAME Waste Management, Inc.
 LOCATION Greater Wenatchee Regional Landfill
 DRILLED BY Tacoma Pump & Drilling Company, Inc.
 DRILL METHOD Air Rotary
 LOGGED BY Craig Fanshier, R.G.

BORING NO. MW-11
 PAGE 3 of 23
 APPROX. GROUND ELEV. 1230.50
 TOTAL DEPTH 456.0'
 DATE COMPLETED 6/16/04

SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				45				20.0 to 86.0 feet: SAND (SP); continued.
								@ 42.0 feet: trace coarse sand.
				50				@ 48.0 to 50.0 feet: 5 to 10 percent 1/2- to 1-inch rounded flat gravel.
				55				@ 56.0 feet: trace coarse sand 3 to 4.75 mm.
				60				

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



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LOG OF EXPLORATORY BORING

PROJECT NAME **Waste Management, Inc.**
 LOCATION **Greater Wenatchee Regional Landfill**
 DRILLED BY **Tacoma Pump & Drilling Company, Inc.**
 DRILL METHOD **Air Rotary**
 LOGGED BY **Craig Fanshier, R.G.**

BORING NO. **MW-11**
 PAGE **4 of 23**
 APPROX. GROUND ELEV. **1230.50**
 TOTAL DEPTH **456.0'**
 DATE COMPLETED **6/16/04**

SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				65				20.0 to 86.0 feet: SAND (SP); continued.
				70				@ 62.0 feet: 2 to 3 percent 3/4-inch fine rounded gravel.
				75				@ 70.0 feet: mostly 0.5 to 1.0 mm subangular to subrounded sand.
				80				

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



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WASTEM.gds:3 8/31/04.WASTEM...842544.0800-2004

LOG OF EXPLORATORY BORING

PROJECT NAME **Waste Management, Inc.**
LOCATION **Greater Wenatchee Regional Landfill**
DRILLED BY **Tacoma Pump & Drilling Company, Inc.**
DRILL METHOD **Air Rotary**
LOGGED BY **Craig Fanshier, R.G.**

BORING NO.	MW-11
PAGE	5 of 23
APPROX. GROUND ELEV.	1230.50
TOTAL DEPTH	456.0'
DATE COMPLETED	6/16/04

SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				85				20.0 to 86.0 feet: SAND (SP) ; continued. @ 80.0 feet: 3 percent fine gravels.
				90				86.0 to 89.0 feet: SILTY SAND (SM) ; olive brown; 15 to 20 percent silt; 80 to 85 percent fine to medium sand (mostly finer than above); damp. @ 89.0 feet: 3 percent fine gravel.
				95				89.0 to 111.0 feet: SAND (SP) ; olive brown (2.5Y 4/3); 5 to 10 percent nonplastic fines; 90 to 95 percent fine to medium sand; damp.
				100				@ 98.0 to 110.0 feet: coarser sand.

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



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LOG OF EXPLORATORY BORING

PROJECT NAME **Waste Management, Inc.**
 LOCATION **Greater Wenatchee Regional Landfill**
 DRILLED BY **Tacoma Pump & Drilling Company, Inc.**
 DRILL METHOD **Air Rotary**
 LOGGED BY **Craig Fanshier, R.G.**

BORING NO. **MW-11**
 PAGE **6 of 23**
 APPROX. GROUND ELEV. **1230.50**
 TOTAL DEPTH **456.0'**
 DATE COMPLETED **6/16/04**

SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				105				89.0 to 111.0 feet: SAND (SP) ; continued. @ 100.0 feet: trace 3/8- to 1/2-inch gravels.
								@ 104.0 feet: trace fine gravel; 5 percent coarse sand (3 to 5 mm).
								@ 108.0 feet: trace angular gravel (1/2-inch by 3/4-inch).
				110				111.0 to 113.0 feet: SILTY SAND (SM) ; light olive brown (2.5Y 5/3); 20 to 30 percent nonplastic fines; 70 to 80 percent fine to medium sand; damp.
								113.0 to 138.0 feet: SAND (SP) ; olive brown; 10 to 15 percent nonplastic fines; 85 to 90 percent fine to medium sand; damp.
				115				
				120				

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



Shaw™ EMCON/OWT, INC.

WASTEM.gds:3.8/31/04.WASTEM...842544.0800-2004

LOG OF EXPLORATORY BORING

PROJECT NAME **Waste Management, Inc.**
 LOCATION **Greater Wenatchee Regional Landfill**
 DRILLED BY **Tacoma Pump & Drilling Company, Inc.**
 DRILL METHOD **Air Rotary**
 LOGGED BY **Craig Fanshier, R.G.**

BORING NO. **MW-11**
 PAGE **7 of 23**
 APPROX. GROUND ELEV. **1230.50**
 TOTAL DEPTH **456.0'**
 DATE COMPLETED **6/16/04**

SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				125				113.0 to 138.0 feet: SAND (SP) ; continued.
								@ 123.0 feet: medium sand.
								@ 125.0 feet: trace fine gravel.
								@ 128.0 feet: mostly fine to medium sand with 15 percent nonplastic fines.
				130				@ 130.0 feet: trace gravel.
								@ 134.0 feet: trace (5 to 8 percent) gravel with fine to coarse sand.
				135				@ 136.0 feet: gravels have a SILTY SAND coating with 20 to 35 percent low plasticity fines with mica. Gravels are mostly angular with some rounded corners (not from drill bit); some staining or weathering on some surfaces.
								138.0 to 142.0 feet: SILTY SAND (SM) ; light olive brown (2.5Y 5/3); 20 to 30 percent nonplastic fines; 70 to 80 percent fine to medium sand; damp.
				140				

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



Shaw™ EMCON/OWT, INC.

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LOG OF EXPLORATORY BORING

PROJECT NAME **Waste Management, Inc.**
 LOCATION **Greater Wenatchee Regional Landfill**
 DRILLED BY **Tacoma Pump & Drilling Company, Inc.**
 DRILL METHOD **Air Rotary**
 LOGGED BY **Craig Fanshier, R.G.**

BORING NO. **MW-11**
 PAGE **8 of 23**
 APPROX. GROUND ELEV. **1230.50**
 TOTAL DEPTH **456.0'**
 DATE COMPLETED **6/16/04**

SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				138.0				138.0 to 142.0 feet: SILTY SAND (SM) ; continued.
				142.0				142.0 to 171.0 feet: SAND (SP) ; olive brown; 10 to 15 percent nonplastic fines; 85 to 90 percent fine to medium sand; damp.
				145.0				@ 145.0 feet: trace gravels.
				148.0				@ 148.0 feet: fine to medium sand (0.2 to 1 mm, mostly 0.4 to 0.6 mm).
				150.0				
				154.0				@ 154.0 feet: medium sand.
				155.0				
				159.0				@ 159.0 feet: fine to medium sand.
				160.0				

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



Shaw™ EMCON/OWT, INC.

WASTEM.gds:3.8/31/04.WASTEM...842544.0800-2004

LOG OF EXPLORATORY BORING

PROJECT NAME Waste Management, Inc.
LOCATION Greater Wenatchee Regional Landfill
DRILLED BY Tacoma Pump & Drilling Company, Inc.
DRILL METHOD Air Rotary
LOGGED BY Craig Fanshier, R.G.

BORING NO. MW-11
PAGE 9 of 23
APPROX. GROUND ELEV. 1230.50
TOTAL DEPTH 456.0'
DATE COMPLETED 6/16/04

SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				165				142.0 to 171.0 feet: SAND (SP) ; continued. @ 160.0 feet: fine to coarse sand, trace gravel.
								@ 165.0 feet: trace gravels.
								@ 168.0 feet: trace gravels.
								@ 169.0 to 171.0 feet: slightly coarser sand, up to 2 mm.
				170				@ 171.0 feet: cobble in medium to coarse sand.
								171.0 to 180.0 feet: SAND WITH SILT (SP-SM) ; olive brown; 15 percent non to low plasticity fines; 75 to 80 percent poorly sorted, subangular to rounded, fine to coarse sand; 5 to 10 percent fine to medium subangular gravel (basalt); damp.
				175				
								@ 178.0 feet: 5 to 10 percent fine to medium subangular gravel (basalt).
				180				

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



Shaw™ EMCON/OWT, INC.

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LOG OF EXPLORATORY BORING

PROJECT NAME **Waste Management, Inc.**
 LOCATION **Greater Wenatchee Regional Landfill**
 DRILLED BY **Tacoma Pump & Drilling Company, Inc.**
 DRILL METHOD **Air Rotary**
 LOGGED BY **Craig Fanshier, R.G.**

BORING NO. **MW-11**
 PAGE **10 of 23**
 APPROX. GROUND ELEV. **1230.50**
 TOTAL DEPTH **456.0'**
 DATE COMPLETED **6/16/04**

SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				185				
				190				
				195				
				200				

180.0 to 261.0 feet: SAND (SP); olive brown (2.5Y 4/30); 10 percent non to low plasticity fines; 90 percent poorly sorted fine to medium (0.1 to 1 mm), subrounded to rounded sand; damp.

@ 189.0 feet: trace 1/2- to 3/4-inch angular gravel.

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).

Shaw™ EMCON/OWT, INC.
 WASTEM.gds:3.8/31/04.WASTEM...842644.0800-2004

LOG OF EXPLORATORY BORING

PROJECT NAME
LOCATION
DRILLED BY
DRILL METHOD
LOGGED BY

Waste Management, Inc.
Greater Wenatchee Regional Landfill
Tacoma Pump & Drilling Company, Inc.
Air Rotary
Craig Fanshier, R.G.

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SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				205				180.0 to 261.0 feet: SAND (SP); continued.
				210				@ 201.0 feet: fine to medium sand, trace (<1 to 3 percent fine gravel, approximately 6 mm).
				215				@ 210.0 feet: trace 1/2- to 2-inch gravel, fine to medium sand (mostly quartz, feldspar, and granitic rock fragments).
				220				@ 215.0 feet: 10 to 15 percent nonplastic fines; fine to medium sand (mostly <1 mm).

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



Shaw™ EMCON/OWT, INC.

WASTEM.gds:3.8/31/04.WASTEM...842644.0800-2004

LOG OF EXPLORATORY BORING

PROJECT NAME **Waste Management, Inc.**
 LOCATION **Greater Wenatchee Regional Landfill**
 DRILLED BY **Tacoma Pump & Drilling Company, Inc.**
 DRILL METHOD **Air Rotary**
 LOGGED BY **Craig Fanshier, R.G.**

BORING NO. **MW-11**
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 APPROX. GROUND ELEV. **1230.50**
 TOTAL DEPTH **456.0'**
 DATE COMPLETED **6/16/04**

SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				225				180.0 to 261.0 feet: SAND (SP); continued.
				230				@ 225.0 to 226.0 feet: 10 to 15 percent nonplastic fines.
				235				@ 234.0 feet: changes to 5 percent nonplastic fines, 95 percent fine to medium, angular to rounded, poorly sorted sand with more dark colored rock fragments (shale, gneissic); damp.
				240				@ 238.0 feet: trace gravel.

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



Shaw™ EMCON/OWT, INC.

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LOG OF EXPLORATORY BORING

PROJECT NAME Waste Management, Inc.
 LOCATION Greater Wenatchee Regional Landfill
 DRILLED BY Tacoma Pump & Drilling Company, Inc.
 DRILL METHOD Air Rotary
 LOGGED BY Craig Fanshier, R.G.

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 APPROX. GROUND ELEV. 1230.50
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SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				245				180.0 to 261.0 feet: SAND (SP); continued. @ 240.0 feet: fine to medium sand with silt.
				250				@ 245.0 to 246.0 feet: 5 percent nonplastic fines; slightly coarser fine to medium sand.
				255				@ 252.0 to 255.0 feet: 5 percent fine gravel.
				260				@ 257.0 feet: slightly coarser fine to medium sand with 5 percent gravel.

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).

LOG OF EXPLORATORY BORING

PROJECT NAME **Waste Management, Inc.**
 LOCATION **Greater Wenatchee Regional Landfill**
 DRILLED BY **Tacoma Pump & Drilling Company, Inc.**
 DRILL METHOD **Air Rotary**
 LOGGED BY **Craig Fanshier, R.G.**

BORING NO. **MW-11**
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 APPROX. GROUND ELEV. **1230.50**
 TOTAL DEPTH **456.0'**
 DATE COMPLETED **6/16/04**

SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				265				180.0 to 261.0 feet: SAND (SP) ; continued.
				270				261.0 to 302.0 feet: SANDY SILT (ML) ; light olive brown (2.5Y 5/4); 50 to 60 percent nonplastic fines to low; 40 to 50 percent fine sand; damp.
				275				
				280				

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).

LOG OF EXPLORATORY BORING

PROJECT NAME Waste Management, Inc.
 LOCATION Greater Wenatchee Regional Landfill
 DRILLED BY Tacoma Pump & Drilling Company, Inc.
 DRILL METHOD Air Rotary
 LOGGED BY Craig Fanshier, R.G.

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 APPROX. GROUND ELEV. 1230.50
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SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				285				261.0 to 302.0 feet: SANDY SILT (ML); continued.
				290				@ 290.0 feet: 5 percent fine gravel, rounded.
				295				@ 294.0 feet: 10 to 25 percent rounded fine gravel.
				300				@ 295.0 feet: 25 percent fine to medium gravel.

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



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LOG OF EXPLORATORY BORING

PROJECT NAME
LOCATION
DRILLED BY
DRILL METHOD
LOGGED BY

Waste Management, Inc.
Greater Wenatchee Regional Landfill
Tacoma Pump & Drilling Company, Inc.
Air Rotary
Craig Fanshier, R.G.

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SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				305				261.0 to 302.0 feet: SANDY SILT (ML) ; continued.
				310				302.0 to 341.0 feet: SILTY GRAVEL (GM) ; olive brown (2.5Y 4/4); 20 to 25 percent non to low plasticity fines; 20 to 25 percent fine sand; 50 to 60 percent 1/2- to 3-inch gravels, angular, basalt, silty coating on gravel faces. @ 304.0 feet: color changes to light yellowish brown (2.5Y 6/3), drilling rate decreases significantly.
				315				@ 315.0 feet: hard drilling, SILTY GRAVEL with cobbles and boulders approximately 1- to 2-feet in diameter, inferred from drill action (jerky, biting into rock), and smooth (drilling through rock), jerky (drilling past rock). @ 315.5 to 320.0 feet: fast drilling, add water to clean cuttings out.
				320				

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



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LOG OF EXPLORATORY BORING

PROJECT NAME
LOCATION
DRILLED BY
DRILL METHOD
LOGGED BY

Waste Management, Inc.
Greater Wenatchee Regional Landfill
Tacoma Pump & Drilling Company, Inc.
Air Rotary
Craig Fanshier, R.G.

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SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				325				302.0 to 341.0 feet: SILTY GRAVEL (GM) ; continued. @ 320.0 feet: all cuttings are dark gray to black, basalt boulder, angular.
				330				@ 325.0 feet: SILTY GRAVEL (GM) ; olive gray (5Y 4/2).
				335				@ 327.0 to 329.0 feet: basalt cobbles/boulder, damp.
				340				

REMARKS

Boring advanced with temporary 8-inch I.D. (1 1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



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LOG OF EXPLORATORY BORING

PROJECT NAME
LOCATION
DRILLED BY
DRILL METHOD
LOGGED BY

Waste Management, Inc.
Greater Wenatchee Regional Landfill
Tacoma Pump & Drilling Company, Inc.
Air Rotary
Craig Fanshier, R.G.

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SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				345				302.0 to 341.0 feet: SILTY GRAVEL (GM); continued.
								341.0 to 345.0 feet: SILT (ML); light olive brown (2.5Y 5/4); 50 to 70 percent nonplastic fines to low; 40 to 50 percent fine sand; damp.
				350				345.0 to 456.0 feet: SILTY GRAVEL (GM); olive brown (2.5Y 4/3); 20 to 25 percent non to low plasticity fines; 20 to 25 percent fine sand; 50 to 60 percent gravel and cobbles (approximately 6- to 12-inch) with SILTY SAND matrix; angular gravel, moderate drilling rate, broken rock (Talus?) or very broken basalt with vesicular basalt.
								@ 349.0 to 352.0 feet: basalt boulder.
				355				
				360				

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



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LOG OF EXPLORATORY BORING

PROJECT NAME Waste Management, Inc.
 LOCATION Greater Wenatchee Regional Landfill
 DRILLED BY Tacoma Pump & Drilling Company, Inc.
 DRILL METHOD Air Rotary
 LOGGED BY Craig Fanshier, R.G.

BORING NO. MW-11
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 APPROX. GROUND ELEV. 1230.50
 TOTAL DEPTH 456.0'
 DATE COMPLETED 6/16/04

SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				365				
				370				
				375				
				380				

345.0 to 456.0 feet: SILTY GRAVEL (GM); continued.

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



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LOG OF EXPLORATORY BORING

PROJECT NAME
LOCATION
DRILLED BY
DRILL METHOD
LOGGED BY

Waste Management, Inc.
Greater Wenatchee Regional Landfill
Tacoma Pump & Drilling Company, Inc.
Air Rotary
Craig Fanshier, R.G.

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SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				385				345.0 to 456.0 feet: SILTY GRAVEL (GM); continued. @ 380.0 feet: damp SILTY GRAVEL, drilling rate increases some. @ 382.0 feet: lose air circulation.
				390				@ 389.0 to 394.0 feet: not a lot of cuttings return. Driller speculates voids between basalt gravels and small cobble. Sandy silt matrix on gravel cutting.
				395				@ 394.0 feet: trace white rock chips and red rock chips.
				400				@ 398.0 feet: mostly small basalt cuttings with sandy silt matrix.

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



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LOG OF EXPLORATORY BORING

PROJECT NAME Waste Management, Inc.
 LOCATION Greater Wenatchee Regional Landfill
 DRILLED BY Tacoma Pump & Drilling Company, Inc.
 DRILL METHOD Air Rotary
 LOGGED BY Craig Fanshier, R.G.

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 APPROX. GROUND ELEV. 1230.50
 TOTAL DEPTH 456.0'
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SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				405				345.0 to 456.0 feet: SILTY GRAVEL (GM); continued. @ 400.0 feet: trace moisture, cuttings damp to moist.
				410				@ 409.0 feet: SILTY GRAVEL (GM); olive brown (2.5Y 4/3); 30 percent non to low plasticity fines; 20 percent fine sand; 60 percent fine to coarse gravel with cobbles approximately <8-inches.
				415				@ 410.0 to 413.0 feet: 3-foot boulder in silty gravel matrix, damp to moist.
				420				

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).

 **Shaw**™ EMCON/OWT, INC.
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LOG OF EXPLORATORY BORING

PROJECT NAME **Waste Management, Inc.**
 LOCATION **Greater Wenatchee Regional Landfill**
 DRILLED BY **Tacoma Pump & Drilling Company, Inc.**
 DRILL METHOD **Air Rotary**
 LOGGED BY **Craig Fanshier, R.G.**

BORING NO. **MW-11**
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 APPROX. GROUND ELEV. **1230.50**
 TOTAL DEPTH **456.0'**
 DATE COMPLETED **6/16/04**

SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				425				345.0 to 456.0 feet: SILTY GRAVEL (GM); continued. @ 420.0 feet: trace water.
				430				
				435				
				440				

REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).

Shaw™ EMCON/OWT, INC.
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LOG OF EXPLORATORY BORING

PROJECT NAME
LOCATION
DRILLED BY
DRILL METHOD
LOGGED BY

Waste Management, Inc.
Greater Wenatchee Regional Landfill
Tacoma Pump & Drilling Company, Inc.
Air Rotary
Craig Fanshier, R.G.

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456.0'
6/16/04

SAMPLE METHOD	RECOVERY (feet)	BLOWS PER 6-INCHES (N-COMP)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				445				345.0 to 456.0 feet: SILTY GRAVEL (GM); continued. @ 440.0 to 450.0 feet: easier drilling.
								@ 446.0 feet: produces approximately 5 gpm.
				450				@ 448.0 feet: angular basalt cuttings, trace siltstone/sandstone rock fragments.
				455				
								Total depth borehole = 456.0 feet.
				460				

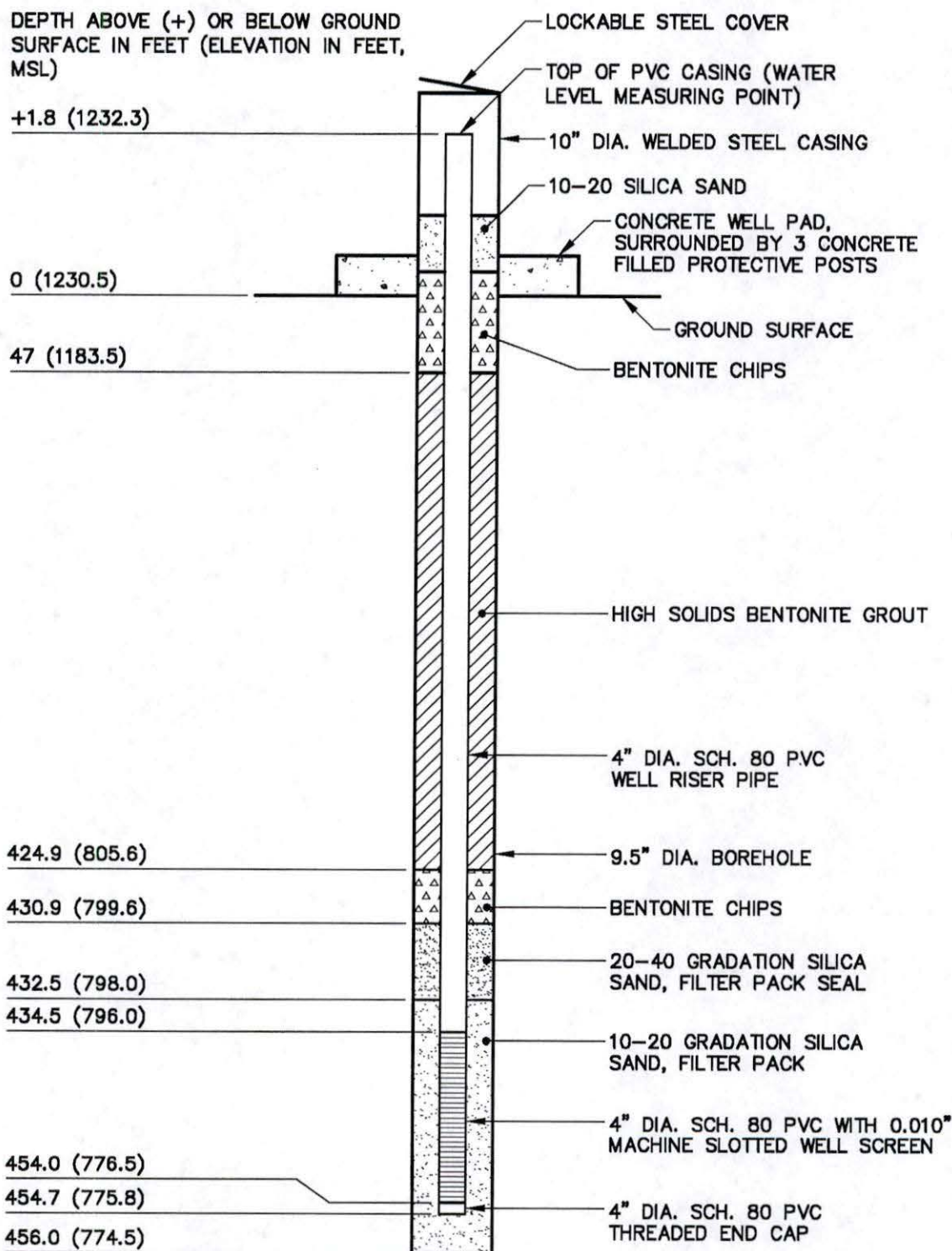
REMARKS

Boring advanced with temporary 8-inch I.D. (1/2-inch well) welded steel casing with a 9.5-inch O.D. shoe and a 6 3/4-inch tri-cone bit using a Foremost DR-24 HD dual-rotary drill rig and auxiliary air compressor. Samples for description collected from air-rotary discharge at surface nearly continuously and an archived bagged sample collected every 10 feet. A 4-inch PVC monitoring well was constructed in the boring (see well construction diagram for details).



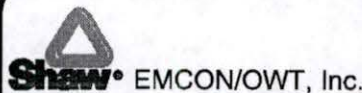
Shaw™ EMCON/OWT, INC.

WASTEM.gds:3.8/31/04.WASTEM...842644.0800-2004



NOTE:
CENTRALIZERS INSTALLED AT TOP AND BOTTOM OF SCREEN
AND EVERY 40 FEET TO THE SURFACE.

NOT TO SCALE



This drawing represents intellectual property of EMCON/OWT, Inc. Any modification to the original by other than EMCON/OWT, Inc. personnel violates the original purpose and as such is rendered void. EMCON/OWT, Inc. will not be held liable for any changes made to this document without express written consent of the originator.

DATE 08/31/04
DWN JDT
APP CDF
REV
PROJECT NO. 842544

FIGURE
GREATER WENATCHEE REGIONAL LANDFILL
EAST WENATCHEE, WASHINGTON

CONSTRUCTION DETAIL
OF MONITORING WELL MW-11



NOTICE OF INTENT TO CONSTRUCT A MONITORING/RESOURCE PROTECTION WELL

Notification Number

R 62679

This form and required fees **MUST BE RECEIVED** by the Department of Ecology 72
HOURS BEFORE you construct a well.

Submit one form and required fee (check or money order ONLY) for each job site. Instructions for filling out this form are printed on the back. Mail this form to the Department of Ecology, P.O. Box 5128, Lacey, WA 98509-5128.

NOTE: PLEASE PRINT ALL ANSWERS. PROCESSING YOUR NOTICE OF INTENT MAY BE DELAYED IF ALL FIELDS OUTLINED IN THE (BOXES) ARE NOT FILLED IN COMPLETELY.

1. Property Owner Waste Management Inc. Phone No. _____

Address (include city, state and zip) 10300 SW

2. Consulting Firm (if different from #1) Shaw-Emmon/OWT Phone No. 503-603-1000

Address (include city, state and zip) 10300 SW Nimbus Ave, Suite B Portland, Or. 97223

01-Adams, 02-Asotin, 03-Benton, 04-Chelan, 05-Cllallam, 06-Clark, 07-Columbia, 08-Cowlitz, 09-Douglas, 10-Ferry, 11-Franklin, 12-Garfield, 13-Grant, 14-Grays Harbor, 15-Island, 16-Jefferson, 17-King, 18-Kitsap, 19-Kittitas, 20-Klickitat, 21-Lewis, 22-Lincoln, 23-Mason, 24-Okanogan, 25-Pacific, 26-Pend Oreille, 27-Pierce, 28-San Juan, 29-Skagit, 30-Skamania, 31-Snohomish, 32-Spokane, 33-Stevens, 34-Thurston, 35-Wahkiakum, 36-Walla Walla, 37-Whatcom, 38-Whitman, 39-Yakima

3. Print CODE NUMBER and COUNTY NAME

(e.g. 01-Adams) of well location from list above (DO NOT ABBREVIATE) 09 Douglas

4. Well Location: SE 1/4 of the SW 1/4 Section 11 Township 22 Range 21 EWM or (circle one) WWM

5. Approx construction start date 6-7-04

Latitude and Longitude (if available) NOTE: 1/4, 1/4, section, township and range are REQUIRED.

Lat Degrees _____

Lat Time _____

Long Degrees _____

Long Time _____

Horizontal collection
method _____

6. Well Site Street Address 191 So Webb Rd East Wenatchee

7. Tax parcel number _____

8. Contractor L & I Registration No. Tacompp203PF

9. Well Drilling Company Name Tacoma Pump & Drilling Phone No. 253-847-9350

10. Well Driller Name Mark Wiene License No. 2432

11. SEND THE ENTIRE FORM. The bottom portion of this notice will be validated in our office and sent back to the name and address contained on the address label. This is the proof of notification. Please fill out the portion below CAREFULLY.

NOTE: Please copy the Notification Number (located in the upper and lower right corner) and keep in a safe place. Please reference this number when communicating with the Department of Ecology.

Amt of payment: \$40 per well

x 1 Number of wells to be constructed on this job site

\$ 40.00 Total Due and Amt Enclosed

This notification number must be
provided to your well driller:

R 62679

RETURN NAME AND MAILING ADDRESS

Name Tacoma Pump & Drilling
Address 30316 Mt Hwy
City Graham State Wa Zip 98338

Client Name _____

Agency Validation

CJ No. _____

Date _____

Washington State Resource Protection Well Report

Project Name: Waste Management Inc.

Well Identification: MW-11

Drilling Method:

Rotary ☒ Cable tool ☐ Auger ☐ Other ☐

Type of work:

New Construction ☒ Conversion ☐ Abandonment ☐

Driller: Mark Wiese #2432

Start Card No.: R62679 Unique No.: AKT 696

Location T 22 R 21E Sec 11

SE	1/4	SW	1/4
----	-----	----	-----

County: Douglas

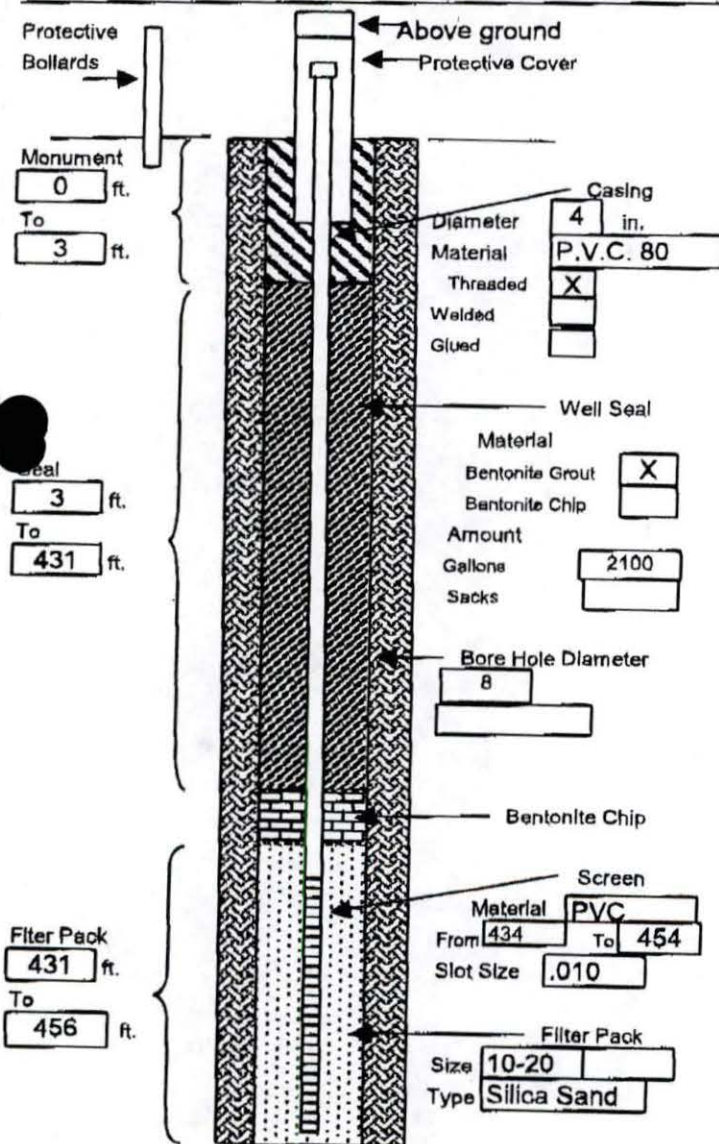
Address: Greater Wenatchee Regional Landfill

Signature:

Date:

Drilling Contractor: **Taçoma Pump and Drilling**

Geologist: Craig Fanshier, Shaw / Emcon, Inc.



Well Log:

From	To
------	----

[illegible]

Finished Depth 456 ft.

Static Level 420 ft.

Date Started 6/15/04

Date Finished 7/23/04

WELL DEVELOPMENT FOI



EMCON/OWT, Inc.

10300 SW Nimbus Ave., Suite B
Portland, OR 97223
Ph: (503) 603-1000
Fax: (503) 603-1001

Client: Waste Management Date: 7/12/04
Project #: 842544 Well ID: MW-11
Site Name: GWRB Initial DTW: 418.68 419.90 Final DTW: NR
Site Location: GWRB - Wenatchee, WA Initial DTB: 456.22 455.20 Final DTB: NR
Development Method: Submersible pump Casing Diameter: (4") (0.653) 20
Total Water Removed: ~600 gallons Casing Volume: 37.54 24.51
Water Contained? 0.1 mb / 1000 ml WL Meter #: Solinst model 101 650'
Estimate of specific capacity or recharge to well:

Time	Cumulative Gallons Removed	pH S.U.	Temperature °F (°C)	Specific Conductance uS mS	Dissolved Oxygen mg/L	DTW (TOC) ft-bgs	Silt/Sand mL/1000mL	Comments
18:10	0	7.60	20.2	511	NR		8.6 ml/1000ml	6 gallons / minute turbid
18:15	30	7.57	20.1	433	NR			turbid light
18:20	90	7.43	20.4	402	NR			legal / minute turbid
18:40	160	7.41	20.3	400	NR		0.87 ml/1000ml	" "
18:52	210	7.38	20.1	376	NR			" "
18:57	240	7.39	20.3	395	NR			" "
19:02	270	7.39	20.1	392	NR			" "
19:07	300	7.39	20.3	392	NR		0.25 ml/1000ml	turbid light
19:25	330	7.40	20.0	389	—			5L " clear colorless
19:41	420	7.37	20.0	390	—			5L turbid " clear
19:47	450	7.36	20.1	391	—			" "
19:55	480	7.39	20.1	390	—		0.05 ml/1000ml	6 gal / min
20:00	510	7.39	20.0	389	—			" "
20:10	570	7.41	20.0	390	—			" "
20:15	600	7.41	19.9	389	—		0.1 ml/1000ml	" "
7/13/04								
8:30	960	—	—	—	—	—	—	Pumped for 1 more hour.

Signed:

[Signature]

APPENDIX C

**MW-11 GROUNDWATER ANALYTICAL RESULTS
FOR SAMPLES COLLECTED ON JULY 16 AND DECEMBER 15,
2004**



STL

STL Denver
4955 Yarrow Street
Arvada, CO 80002

Tel: 303 736 0100 Fax: 303 431 7171
www.stl-inc.com

ANALYTICAL REPORT

Project No. Site 904

Greater Wenatchee

Lot #: D4G170191

Final Report
MW-11

Reported to:

Steve Wulf

Waste Management, Inc.
Greater Wenatchee
191 South Webb Road
East Wenatchee WA 98802

Cc: Jason Davendonis

STL DENVER

A handwritten signature in black ink, appearing to read "Betsy Farnaus".

Betsy Farnaus
Project Manager

August 6, 2004

Case Narrative

Enclosed is the report for four samples received at STL Denver laboratory on July 17, 2004. The results included in this report have been reviewed for compliance with STL's Laboratory Quality Manual. The test results shown in this report meet all requirements of NELAC and any exceptions are noted below.

This report includes data with reporting limits (RLs) less than STL Denver's standard reporting limit. These data and reporting limits are being used specifically to meet the needs of this project. Note that, data are not customarily reported to these levels because they are inherently less reliable and potentially less defensible than the latest industry standards require.

Dilution factors and footnotes have been provided to assist in the interpretation of the results. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interferences or analytes present at concentrations above the linear calibration curve, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

STL Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the analytical methods summary page in accordance with the methods indicated. A summary of quality control parameters is provided below.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Quality Control Summary for Lot D4G170191

Sample Receiving

- The cooler temperature upon receipt at the Denver laboratory was 3.3°C.
- All sample bottles were received in acceptable condition.

Holding Times

- All holding times were within established control limits.

Method Blanks

- Dissolved Barium and Dissolved Silver Method 6010B were detected in the Method Blanks below the project established reporting limits. No corrective action is taken for any values in Method Blanks that are below the requested reporting limits.
- Chloride Method 300.0A was detected in the Method Blank above the project established reporting limit, however, the requested reporting limit for Chloride is below STL's standard reporting limit and, therefore, no corrective action has been taken for this anomaly. It must be noted that results reported below STL's standard reporting limits may result in false positive/false negative results, less accurate quantitation and potential misidentification at the lower concentrations.
- All other Method Blanks were within established control limits.

Lot #: D4G170191

Laboratory Control Samples

- All Laboratory Control Samples were within established control limits.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

- Due to the result concentration exceeding the calibration range the MS/MSD results for Chloride and Sulfate Method 300.0A are estimated.
- All other Matrix Spike and Matrix Spike Duplicate samples were within established control limits.

ION BALANCE REPORT
Lab Sample ID: D4G170191-001
Client Sample ID: MW-11

SAMPLE SUMMARY

Percent Difference	0.28
Total Ions (meq/L)	8.13
TDS Ratio (measured/calculated)	1.00
Calculated TDS (cations+anions, mg/L)	269.31

CATION ANALYSES

Analyte	mg/L	meq/L
Calcium	35.00	1.75
Magnesium	18.00	1.48
Potassium	5.80	0.15
Sodium	16.00	0.70
Ammonia as N	0.03	0.00
Iron	0.03	0.00
Aluminum	NA	NA
Total Cations	74.86	4.08

ANION ANALYSES

Analyte	mg/L	meq/L
Chloride	4.10	0.12
Sulfate	17.00	0.35
Nitrate+Nitrite	3.35	0.24
Carbonate Alkalinity	ND	ND
Bicarbonate Alkalinity	170.00	3.34
Hydroxide Alkalinity	NA	NA
Total Alkalinity	NC	NC
Total Anions	194.45	4.05

OTHER ANALYSES

Analyte	mg/L
Total Dissolved Solids	270.00

ND - Not Detected
NA - Not Analyzed
NC - Not Calculated

Note: Calculations are most accurate under standard conditions. Extremes of pH or conductivity may lead to inaccuracy, as will high levels of cations or anions not analyzed.

EXECUTIVE SUMMARY - Detection Highlights

D4G170191

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
MW-11 07/16/04 11:20 001				
Antimony - DISSOLVED	0.75	0.60	ug/L	SW846 6020
Arsenic - DISSOLVED	1.2	1.0	ug/L	SW846 6020
Cadmium - DISSOLVED	0.038 B	0.50	ug/L	SW846 6020
Lead - DISSOLVED	0.23 B	1.5	ug/L	SW846 6020
Nickel - DISSOLVED	1.2 B	10	ug/L	SW846 6020
Selenium - DISSOLVED	1.2	1.0	ug/L	SW846 6020
Iron - DISSOLVED	25 B	30	ug/L	SW846 6010B
Magnesium - DISSOLVED	18000	5000	ug/L	SW846 6010B
Sodium - DISSOLVED	16000	5000	ug/L	SW846 6010B
Barium - DISSOLVED	37 B,J	100	ug/L	SW846 6010B
Calcium - DISSOLVED	35000	5000	ug/L	SW846 6010B
Chromium - DISSOLVED	3.6 B	5.0	ug/L	SW846 6010B
Manganese - DISSOLVED	150	5.0	ug/L	SW846 6010B
Vanadium - DISSOLVED	13 B	50	ug/L	SW846 6010B
Zinc - DISSOLVED	25	20	ug/L	SW846 6010B
Potassium - DISSOLVED	5800	5000	ug/L	SW846 6010B
Copper - DISSOLVED	1.3 B	25	ug/L	SW846 6010B
Specific Conductance	410	2.0	umhos/cm	MCAWW 120.1
pH	7.9	0.10	No Units	MCAWW 150.1
Total Dissolved Solids	270	5.4	mg/L	MCAWW 160.1
Chloride	4.1 J	0.50	mg/L	MCAWW 300.0A
Sulfate	17	5.0	mg/L	MCAWW 300.0A
Nitrate	3.2	0.050	mg/L	MCAWW 300.0A
Hardness, as CaCO3	150	5.0	mg/L	SM18 2340B
Nitrite	0.15	0.060	mg/L	MCAWW 300.0A
Ion Balance Difference	1.8	--	%	SM18 1030F & API
Total Anions	4.0	0.30	meq/L	SM17 1030F & API
Total Cations	3.9	0.10	meq/L	SM17 1030F & API
Bicarbonate Alkalinity	170	10	mg/L	MCAWW 310.1
Total Alkalinity	170	5.0	mg/L	MCAWW 310.1
Ammonia as N	0.030 B	0.040	mg/L	MCAWW 350.1
Ionized Ammonia	0.029 B	0.040	mg/L	SM18 8010F
FB1 07/16/04 10:45 002				
Lead - DISSOLVED	0.11 B	1.5	ug/L	SW846 6020
Silver - DISSOLVED	0.83 B,J	5.0	ug/L	SW846 6010B
Magnesium - DISSOLVED	31 B	5000	ug/L	SW846 6010B
Barium - DISSOLVED	1.6 B,J	100	ug/L	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

D4G170191

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
FB1 07/16/04 10:45 002				
Calcium - DISSOLVED	240 B	5000	ug/L	SW846 6010B
Zinc - DISSOLVED	7.3 B	20	ug/L	SW846 6010B
Copper - DISSOLVED	1.3 B	25	ug/L	SW846 6010B
Specific Conductance	2.3	2.0	umhos/cm	MCAWW 120.1
pH	7.4	0.10	No Units	MCAWW 150.1
Total Suspended Solids	45	3.0	mg/L	MCAWW 160.2
Chloride	1.1 J	0.50	mg/L	MCAWW 300.0A
Hardness, as CaCO3	0.86 B	5.0	mg/L	SM18 2340B
Total Anions	0.050 B	0.30	meq/L	SM17 1030F & API
Total Cations	0.020 B	0.10	meq/L	SM17 1030F & API
Bicarbonate Alkalinity	1.2 B	10	mg/L	MCAWW 310.1
Total Alkalinity	1.2 B	5.0	mg/L	MCAWW 310.1
Chemical Oxygen Demand (COD)	8.2 B	10	mg/L	MCAWW 410.4

PREPARATION METHODS SUMMARY

D4G170191

PREPARATION DESCRIPTION	PREPARATION METHOD	ANALYTICAL METHOD
pH	MCAWW 150.1	MCAWW 150.1
Acid Digestion for Total Metals by ICPMS	SW846 3020A	SW846 6020
Acid Digestion for Total Recoverable Metals	SW846 3005A	SW846 6010B
Ammonia preparation	MCAWW 350.1	MCAWW 350.1
Bicarbonate Alkalinity	MCAWW 310.1	MCAWW 310.1
Carbonate Alkalinity	MCAWW 310.1	MCAWW 310.1
Chemical Oxygen Demand	MCAWW 410.4	MCAWW 410.4
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Ion Balance Difference	SM18 1030F & AP	SM18 1030F & AP
Ionized Ammonia	MCAWW 350.1	SM18 8010F
Nitrate	MCAWW 300.0A	MCAWW 300.0A
Nitrite	MCAWW 300.0A	MCAWW 300.0A
Non-Filterable Residue (TSS)	MCAWW 160.2	MCAWW 160.2
Potentiometric titration to preselected pH	MCAWW 310.1	MCAWW 310.1
Result obtained by calculation	SM18 2340B	SM18 2340B
Specific Conductance	MCAWW 120.1	MCAWW 120.1
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Total Anions	SM17 1030F & AP	SM17 1030F & AP
Total Cations	SM17 1030F & AP	SM17 1030F & AP
Total Organic Carbon	MCAWW 415.1	MCAWW 415.1
Un-ionized Ammonia	MCAWW 350.1	SM18 8010F
25 mL Purge-and-Trap	SW846 5030B/826	SW846 8260B

References:

- MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.
- SM17 "Standard Methods for the Examination of Water and Wastewater", 17th Edition, 1989.
- SM18 "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

ANALYTICAL METHODS SUMMARY

D4G170191

PARAMETER	ANALYTICAL METHOD
pH (Electrometric)	MCAWW 150.1
Alkalinity	MCAWW 310.1
Ammonia (Ionized)	SM18 8010F
Bicarbonate Alkalinity	MCAWW 310.1
Carbonate Alkalinity	MCAWW 310.1
Chemical Oxygen Demand	MCAWW 410.4
Chloride	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Ion Balance (%Difference)	SM18 1030F & API
Ion Balance (Tot. Anions)	SM17 1030F & API
Ion Balance (Tot.Cations)	SM17 1030F & API
ICP-MS (6020)	SW846 6020
Nitrate as N	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A
Nitrogen, Ammonia	MCAWW 350.1
Non-Filterable Residue (TSS)	MCAWW 160.2
Specific Conductance	MCAWW 120.1
Sulfate	MCAWW 300.0A
Total Hardness 6010B	SM18 2340B
Total Organic Carbon	MCAWW 415.1
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Un-Ionized Ammonia	SM18 8010F
Volatile Organics by GC/MS	SW846 8260B

References:

- MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.
- SM17 "Standard Methods for the Examination of Water and Wastewater", 17th Edition, 1989.
- SM18 "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

D4G170191

ANALYTICAL METHOD	ANALYST	ANALYST ID
MCAWW 120.1	Maria Fayard	002596
MCAWW 150.1	Lowell Coon	016091
MCAWW 160.1	David Kendall	002164
MCAWW 160.2	Claire Likar	004382
MCAWW 300.0A	Andrita Scofield	004409
MCAWW 310.1	Maria Fayard	002596
MCAWW 350.1	Claire Likar	004382
MCAWW 410.4	Dave Elkin	000901
MCAWW 415.1	Dave Elkin	000901
SM17 1030F & API	Roxanne K. Sullivan	001200
SM18 1030F & API	Roxanne K. Sullivan	001200
SM18 2340B	Roxanne K. Sullivan	001200
SM18 8010F	Claire Likar	004382
SW846 6010B	Lynn-Anne Trudell	6645
SW846 6010B	Wendell Fischer	2255
SW846 6020	Doug Gomer	1796
SW846 8260B	Mike G. Hoffman	001880

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes",
EPA-600/4-79-020, March 1983 and subsequent revisions.

SM17 "Standard Methods for the Examination of Water and
Wastewater", 17th Edition, 1989.

SM18 "Standard Methods for the Examination of Water and
Wastewater", 18th Edition, 1992.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

D4G170191

WO #	SAMPLE#	CLIENT	SAMPLE ID	SAMPLED DATE	SAMP TIME
GLAXJ	001	MW-11		07/16/04	11:20
GLAXN	002	FB1		07/16/04	10:45
GLAXV	004	TRIP BLANK		07/16/04	

NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

WASTE MANAGEMENT INC

Client Sample ID: MW-11

GC/MS Volatiles

Lot-Sample #....: D4G170191-001 Work Order #....: GLAXJ1A9 Matrix.....: WATER
Date Sampled....: 07/16/04 11:20 Date Received...: 07/17/04
Prep Date.....: 07/29/04 Analysis Date...: 07/29/04
Prep Batch #....: 4215389 Analysis Time...: 14:18
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Acetone	ND	13	ug/L
Acrylonitrile	ND	9.0	ug/L
Benzene	ND	0.69	ug/L
Bromochloromethane	ND	0.62	ug/L
Bromodichloromethane	ND	0.66	ug/L
Bromoform	ND	0.61	ug/L
Bromomethane	ND	1.3	ug/L
2-Butanone (MEK)	ND	5.5	ug/L
Carbon disulfide	ND	1.4	ug/L
Carbon tetrachloride	ND	0.62	ug/L
Chlorobenzene	ND	0.70	ug/L
Dibromochloromethane	ND	0.38	ug/L
Chloroethane	ND	1.1	ug/L
Chloroform	ND	0.62	ug/L
Chloromethane	ND	1.2	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.82	ug/L
1,2-Dibromoethane (EDB)	ND	0.36	ug/L
Dibromomethane	ND	0.77	ug/L
1,2-Dichlorobenzene	ND	0.71	ug/L
1,4-Dichlorobenzene	ND	0.57	ug/L
trans-1,4-Dichloro-2-butene	ND	2.8	ug/L
Dichlorodifluoromethane	ND	0.57	ug/L
1,1-Dichloroethane	ND	0.74	ug/L
1,2-Dichloroethane	ND	0.68	ug/L
cis-1,2-Dichloroethene	ND	0.59	ug/L
trans-1,2-Dichloroethene	ND	0.63	ug/L
1,1-Dichloroethene	ND	0.59	ug/L
1,2-Dichloropropane	ND	0.66	ug/L
cis-1,3-Dichloropropene	ND	0.35	ug/L
trans-1,3-Dichloropropene	ND	0.83	ug/L
Ethylbenzene	ND	0.67	ug/L
2-Hexanone	ND	1.8	ug/L
Iodomethane	ND	0.68	ug/L
Methylene chloride	ND	1.7	ug/L
4-Methyl-2-pentanone	ND	1.4	ug/L
Styrene	ND	0.39	ug/L

(Continued on next page)

WASTE MANAGEMENT INC

Client Sample ID: MW-11

GC/MS Volatiles

Lot-Sample #....: D4G170191-001

Work Order #....: GLAXJ1A9

Matrix.....: WATER

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
1,1,1,2-Tetrachloroethane	ND	0.53	ug/L
1,1,2,2-Tetrachloroethane	ND	0.83	ug/L
Tetrachloroethene	ND	0.45	ug/L
Toluene	ND	0.71	ug/L
1,1,1-Trichloroethane	ND	0.65	ug/L
1,1,2-Trichloroethane	ND	0.72	ug/L
Trichloroethene	ND	0.54	ug/L
Trichlorofluoromethane	ND	1.1	ug/L
1,2,3-Trichloropropane	ND	1.1	ug/L
Vinyl acetate	ND	0.67	ug/L
Vinyl chloride	ND	0.65	ug/L
Xylenes (total)	ND	3.9	ug/L

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Dibromofluoromethane	107	(76 - 116)
1,2-Dichloroethane-d4	110	(59 - 129)
4-Bromofluorobenzene	100	(74 - 114)
Toluene-d8	102	(76 - 116)

WASTE MANAGEMENT INC

Client Sample ID: FB1

GC/MS Volatiles

Lot-Sample #...: D4G170191-002 Work Order #...: GLAXN1AL Matrix.....: WATER
 Date Sampled...: 07/16/04 10:45 Date Received...: 07/17/04
 Prep Date.....: 07/29/04 Analysis Date...: 07/29/04
 Prep Batch #...: 4215389 Analysis Time...: 15:19
 Dilution Factor: 1
 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Acetone	ND	13	ug/L
Acrylonitrile	ND	9.0	ug/L
Benzene	ND	0.69	ug/L
Bromochloromethane	ND	0.62	ug/L
Bromodichloromethane	ND	0.66	ug/L
Bromoform	ND	0.61	ug/L
Bromomethane	ND	1.3	ug/L
2-Butanone (MEK)	ND	5.5	ug/L
Carbon disulfide	ND	1.4	ug/L
Carbon tetrachloride	ND	0.62	ug/L
Chlorobenzene	ND	0.70	ug/L
Dibromochloromethane	ND	0.38	ug/L
Chloroethane	ND	1.1	ug/L
Chloroform	ND	0.62	ug/L
Chloromethane	ND	1.2	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.82	ug/L
1,2-Dibromoethane (EDB)	ND	0.36	ug/L
Dibromomethane	ND	0.77	ug/L
1,2-Dichlorobenzene	ND	0.71	ug/L
1,4-Dichlorobenzene	ND	0.57	ug/L
trans-1,4-Dichloro-2-butene	ND	2.8	ug/L
Dichlorodifluoromethane	ND	0.57	ug/L
1,1-Dichloroethane	ND	0.74	ug/L
1,2-Dichloroethane	ND	0.68	ug/L
cis-1,2-Dichloroethene	ND	0.59	ug/L
trans-1,2-Dichloroethene	ND	0.63	ug/L
1,1-Dichloroethene	ND	0.59	ug/L
1,2-Dichloropropane	ND	0.66	ug/L
cis-1,3-Dichloropropene	ND	0.35	ug/L
trans-1,3-Dichloropropene	ND	0.83	ug/L
Ethylbenzene	ND	0.67	ug/L
2-Hexanone	ND	1.8	ug/L
Iodomethane	ND	0.68	ug/L
Methylene chloride	ND	1.7	ug/L
4-Methyl-2-pentanone	ND	1.4	ug/L
Styrene	ND	0.39	ug/L

(Continued on next page)

WASTE MANAGEMENT INC

Client Sample ID: FB1

GC/MS Volatiles

Lot-Sample #...: D4G170191-002 Work Order #...: GLAXN1AL Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
1,1,1,2-Tetrachloroethane	ND	0.53	ug/L
1,1,2,2-Tetrachloroethane	ND	0.83	ug/L
Tetrachloroethene	ND	0.45	ug/L
Toluene	ND	0.71	ug/L
1,1,1-Trichloroethane	ND	0.65	ug/L
1,1,2-Trichloroethane	ND	0.72	ug/L
Trichloroethene	ND	0.54	ug/L
Trichlorofluoromethane	ND	1.1	ug/L
1,2,3-Trichloropropane	ND	1.1	ug/L
Vinyl acetate	ND	0.67	ug/L
Vinyl chloride	ND	0.65	ug/L
Xylenes (total)	ND	3.9	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Dibromofluoromethane	106	(76 - 116)
1,2-Dichloroethane-d4	107	(59 - 129)
4-Bromofluorobenzene	99	(74 - 114)
Toluene-d8	102	(76 - 116)

WASTE MANAGEMENT INC

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #....: D4G170191-004 Work Order #....: GLAXV1AA Matrix.....: WATER
 Date Sampled....: 07/16/04 Date Received...: 07/17/04
 Prep Date.....: 07/29/04 Analysis Date...: 07/29/04
 Prep Batch #....: 4215389 Analysis Time...: 15:59
 Dilution Factor: 1
 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	13	ug/L
Acrylonitrile	ND	9.0	ug/L
Benzene	ND	0.69	ug/L
Bromochloromethane	ND	0.62	ug/L
Bromodichloromethane	ND	0.66	ug/L
Bromoform	ND	0.61	ug/L
Bromomethane	ND	1.3	ug/L
2-Butanone (MEK)	ND	5.5	ug/L
Carbon disulfide	ND	1.4	ug/L
Carbon tetrachloride	ND	0.62	ug/L
Chlorobenzene	ND	0.70	ug/L
Dibromochloromethane	ND	0.38	ug/L
Chloroethane	ND	1.1	ug/L
Chloroform	ND	0.62	ug/L
Chloromethane	ND	1.2	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.82	ug/L
1,2-Dibromoethane (EDB)	ND	0.36	ug/L
Dibromomethane	ND	0.77	ug/L
1,2-Dichlorobenzene	ND	0.71	ug/L
1,4-Dichlorobenzene	ND	0.57	ug/L
trans-1,4-Dichloro-2-butene	ND	2.8	ug/L
Dichlorodifluoromethane	ND	0.57	ug/L
1,1-Dichloroethane	ND	0.74	ug/L
1,2-Dichloroethane	ND	0.68	ug/L
cis-1,2-Dichloroethene	ND	0.59	ug/L
trans-1,2-Dichloroethene	ND	0.63	ug/L
1,1-Dichloroethene	ND	0.59	ug/L
1,2-Dichloropropane	ND	0.66	ug/L
cis-1,3-Dichloropropene	ND	0.35	ug/L
trans-1,3-Dichloropropene	ND	0.83	ug/L
Ethylbenzene	ND	0.67	ug/L
2-Hexanone	ND	1.8	ug/L
Iodomethane	ND	0.68	ug/L
Methylene chloride	ND	1.7	ug/L
4-Methyl-2-pentanone	ND	1.4	ug/L
Styrene	ND	0.39	ug/L

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WASTE MANAGEMENT INC

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #....: D4G170191-004 Work Order #....: GLAXV1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,1,2-Tetrachloroethane	ND	0.53	ug/L
1,1,2,2-Tetrachloroethane	ND	0.83	ug/L
Tetrachloroethene	ND	0.45	ug/L
Toluene	ND	0.71	ug/L
1,1,1-Trichloroethane	ND	0.65	ug/L
1,1,2-Trichloroethane	ND	0.72	ug/L
Trichloroethene	ND	0.54	ug/L
Trichlorofluoromethane	ND	1.1	ug/L
1,2,3-Trichloropropane	ND	1.1	ug/L
Vinyl acetate	ND	0.67	ug/L
Vinyl chloride	ND	0.65	ug/L
Xylenes (total)	ND	3.9	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(76 - 116)
1,2-Dichloroethane-d4	111	(59 - 129)
4-Bromofluorobenzene	99	(74 - 114)
Toluene-d8	100	(76 - 116)

WASTE MANAGEMENT INC

Client Sample ID: MW-11

DISSOLVED Metals

Lot-Sample #...: D4G170191-001

Matrix.....: WATER

Date Sampled...: 07/16/04 11:20 Date Received...: 07/17/04

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 4202510						
Antimony	0.75	0.60	ug/L	SW846 6020	07/22-07/23/04	GLAXJ1CG
		Dilution Factor: 1		Analysis Time...: 14:33		
Arsenic	1.2	1.0	ug/L	SW846 6020	07/22-07/23/04	GLAXJ1CH
		Dilution Factor: 1		Analysis Time...: 14:33		
Cadmium	0.038 B	0.50	ug/L	SW846 6020	07/22-07/23/04	GLAXJ1CJ
		Dilution Factor: 1		Analysis Time...: 14:33		
Lead	0.23 B	1.5	ug/L	SW846 6020	07/22-07/23/04	GLAXJ1CK
		Dilution Factor: 1		Analysis Time...: 14:33		
Nickel	1.2 B	10	ug/L	SW846 6020	07/22-07/23/04	GLAXJ1CL
		Dilution Factor: 1		Analysis Time...: 14:33		
Selenium	1.2	1.0	ug/L	SW846 6020	07/22-07/23/04	GLAXJ1CM
		Dilution Factor: 1		Analysis Time...: 14:33		
Thallium	ND	0.20	ug/L	SW846 6020	07/22-07/23/04	GLAXJ1CN
		Dilution Factor: 1		Analysis Time...: 14:33		
Prep Batch #...: 4202546						
Iron	25 B	30	ug/L	SW846 6010B	07/22-07/27/04	GLAXJ1AV
		Dilution Factor: 1		Analysis Time...: 12:35		
Magnesium	18000	5000	ug/L	SW846 6010B	07/22-07/31/04	GLAXJ1AW
		Dilution Factor: 1		Analysis Time...: 19:12		
Sodium	16000	5000	ug/L	SW846 6010B	07/22-07/31/04	GLAXJ1AX
		Dilution Factor: 1		Analysis Time...: 19:12		
Barium	37 B,J	100	ug/L	SW846 6010B	07/22-07/27/04	GLAXJ1A0
		Dilution Factor: 1		Analysis Time...: 12:35		
Calcium	35000	5000	ug/L	SW846 6010B	07/22-07/31/04	GLAXJ1A1
		Dilution Factor: 1		Analysis Time...: 19:12		
Chromium	3.6 B	5.0	ug/L	SW846 6010B	07/22-07/27/04	GLAXJ1A2
		Dilution Factor: 1		Analysis Time...: 12:35		

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WASTE MANAGEMENT INC

Client Sample ID: MW-11

DISSOLVED Metals

Lot-Sample #...: D4G170191-001

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Manganese	150	5.0	ug/L	SW846 6010B	07/22-07/27/04	GLAXJ1A3
		Dilution Factor: 1		Analysis Time...: 12:35		
Vanadium	13 B	50	ug/L	SW846 6010B	07/22-07/27/04	GLAXJ1A4
		Dilution Factor: 1		Analysis Time...: 12:35		
Zinc	25	20	ug/L	SW846 6010B	07/22-07/27/04	GLAXJ1A5
		Dilution Factor: 1		Analysis Time...: 12:35		
Potassium	5800	5000	ug/L	SW846 6010B	07/22-07/31/04	GLAXJ1A6
		Dilution Factor: 1		Analysis Time...: 19:12		
Copper	1.3 B	25	ug/L	SW846 6010B	07/22-07/27/04	GLAXJ1A7
		Dilution Factor: 1		Analysis Time...: 12:35		
Silver	ND	5.0	ug/L	SW846 6010B	07/22-07/27/04	GLAXJ1CA
		Dilution Factor: 1		Analysis Time...: 12:35		
Cobalt	ND	50	ug/L	SW846 6010B	07/22-07/27/04	GLAXJ1C
		Dilution Factor: 1		Analysis Time...: 12:35		
Beryllium	ND	0.50	ug/L	SW846 6010B	07/22-07/27/04	GLAXJ1CP
		Dilution Factor: 1		Analysis Time...: 12:35		

NOTE(S) :

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

WASTE MANAGEMENT INC

Client Sample ID: FB1

DISSOLVED Metals

Lot-Sample #...: D4G170191-002

Matrix.....: WATER

Date Sampled...: 07/16/04 10:45 Date Received...: 07/17/04

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 4202510						
Antimony	ND	0.60	ug/L	SW846 6020	07/22-07/23/04	GLAXN1CG
		Dilution Factor: 1		Analysis Time...: 14:44		
Arsenic	ND	1.0	ug/L	SW846 6020	07/22-07/23/04	GLAXN1CH
		Dilution Factor: 1		Analysis Time...: 14:44		
Cadmium	ND	0.50	ug/L	SW846 6020	07/22-07/23/04	GLAXN1CJ
		Dilution Factor: 1		Analysis Time...: 14:44		
Lead	0.11 B	1.5	ug/L	SW846 6020	07/22-07/23/04	GLAXN1CK
		Dilution Factor: 1		Analysis Time...: 14:44		
Nickel	ND	10	ug/L	SW846 6020	07/22-07/23/04	GLAXN1CL
		Dilution Factor: 1		Analysis Time...: 14:44		
Selenium	ND	1.0	ug/L	SW846 6020	07/22-07/23/04	GLAXN1CM
		Dilution Factor: 1		Analysis Time...: 14:44		
Thallium	ND	0.20	ug/L	SW846 6020	07/22-07/23/04	GLAXN1CN
		Dilution Factor: 1		Analysis Time...: 14:44		
Prep Batch #...: 4202546						
Iron	ND	30	ug/L	SW846 6010B	07/22-07/27/04	GLAXN1A7
		Dilution Factor: 1		Analysis Time...: 13:05		
Magnesium	31 B	5000	ug/L	SW846 6010B	07/22-07/31/04	GLAXN1A8
		Dilution Factor: 1		Analysis Time...: 19:48		
Sodium	ND	5000	ug/L	SW846 6010B	07/22-07/31/04	GLAXN1A9
		Dilution Factor: 1		Analysis Time...: 19:48		
Barium	1.6 B,J	100	ug/L	SW846 6010B	07/22-07/27/04	GLAXN1AA
		Dilution Factor: 1		Analysis Time...: 13:05		
Calcium	240 B	5000	ug/L	SW846 6010B	07/22-07/31/04	GLAXN1AC
		Dilution Factor: 1		Analysis Time...: 19:48		
Chromium	ND	5.0	ug/L	SW846 6010B	07/22-07/27/04	GLAXN1AD
		Dilution Factor: 1		Analysis Time...: 13:05		

(Continued on next page)

WASTE MANAGEMENT INC

Client Sample ID: FB1

DISSOLVED Metals

Lot-Sample #...: D4G170191-002

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Manganese	ND	5.0	ug/L	SW846 6010B	07/22-07/27/04	GLAXN1AE
		Dilution Factor: 1		Analysis Time...: 13:05		
Vanadium	ND	50	ug/L	SW846 6010B	07/22-07/27/04	GLAXN1AF
		Dilution Factor: 1		Analysis Time...: 13:05		
Zinc	7.3 B	20	ug/L	SW846 6010B	07/22-07/27/04	GLAXN1AG
		Dilution Factor: 1		Analysis Time...: 13:05		
Potassium	ND	5000	ug/L	SW846 6010B	07/22-07/31/04	GLAXN1AH
		Dilution Factor: 1		Analysis Time...: 19:48		
Copper	1.3 B	25	ug/L	SW846 6010B	07/22-07/27/04	GLAXN1AJ
		Dilution Factor: 1		Analysis Time...: 13:05		
Silver	0.83 B,J	5.0	ug/L	SW846 6010B	07/22-07/27/04	GLAXN1CA
		Dilution Factor: 1		Analysis Time...: 13:05		
Cobalt	ND	50	ug/L	SW846 6010B	07/22-07/27/04	GLAXN1C
		Dilution Factor: 1		Analysis Time...: 13:05		
Beryllium	ND	0.50	ug/L	SW846 6010B	07/22-07/27/04	GLAXN1CP
		Dilution Factor: 1		Analysis Time...: 13:05		

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

WASTE MANAGEMENT INC

Client Sample ID: MW-11

General Chemistry

Lot-Sample #...: D4G170191-001

Work Order #...: GLAXJ

Matrix.....: WATER

Date Sampled...: 07/16/04 11:20

Date Received...: 07/17/04

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
pH	7.9	0.10	No Units	MCAWW 150.1	07/17/04	4199121
		Dilution Factor: 1		Analysis Time...: 17:29		
Ammonia as N	0.030 B	0.040	mg/L	MCAWW 350.1	07/27/04	4210346
		Dilution Factor: 1		Analysis Time...: 21:00		
Bicarbonate Alkalinity	170	10	mg/L	MCAWW 310.1	07/24/04	4208121
		Dilution Factor: 1		Analysis Time...: 19:16		
Carbonate Alkalinity	ND	10	mg/L	MCAWW 310.1	07/24/04	4208122
		Dilution Factor: 1		Analysis Time...: 19:16		
Chemical Oxygen Demand (COD)	ND	10	mg/L	MCAWW 410.4	07/26/04	4209240
		Dilution Factor: 1		Analysis Time...: 10:30		
Chloride	4.1 J	0.50	mg/L	MCAWW 300.0A	07/17/04	4201497
		Dilution Factor: 1		Analysis Time...: 16:41		
Hardness, as CaCO3	150	5.0	mg/L	SM18 2340B	08/03/04	4216246
		Dilution Factor: 1		Analysis Time...: 09:00		
Ion Balance Difference	1.8	--	%	SM18 1030F & API	08/03/04	4216281
		Dilution Factor: 1		Analysis Time...: 09:00		
Ionized Ammonia	0.029 B	0.040	mg/L	SM18 8010F	08/01/04	4214030
		Dilution Factor: 1		Analysis Time...: 16:00		
Nitrate	3.2	0.050	mg/L	MCAWW 300.0A	07/17/04	4201500
		Dilution Factor: 1		Analysis Time...: 16:41		
Nitrite	0.15	0.060	mg/L	MCAWW 300.0A	07/17/04	4201501
		Dilution Factor: 1		Analysis Time...: 16:41		
Specific Conductance	410	2.0	umhos/cm	MCAWW 120.1	07/26/04	4208366
		Dilution Factor: 1		Analysis Time...: 12:24		
Sulfate	17	5.0	mg/L	MCAWW 300.0A	07/17/04	4201499
		Dilution Factor: 1		Analysis Time...: 16:41		

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WASTE MANAGEMENT INC

Client Sample ID: MW-11

General Chemistry

Lot-Sample #...: D4G170191-001

Work Order #...: GLAXJ

Matrix.....: WATER

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Total Alkalinity	170	5.0	mg/L	MCAWW 310.1	07/24/04	4208120
				Dilution Factor: 1	Analysis Time...: 19:16	
Total Anions	4.0	0.30	meq/L	SM17 1030F & API	08/03/04	4216282
				Dilution Factor: 1	Analysis Time...: 09:00	
Total Cations	3.9	0.10	meq/L	SM17 1030F & API	08/03/04	4216283
				Dilution Factor: 1	Analysis Time...: 09:00	
Total Dissolved Solids	270	5.4	mg/L	MCAWW 160.1	07/22/04	4204511
				Dilution Factor: 1	Analysis Time...: 16:50	
Total Organic Carbon	ND	1.0	mg/L	MCAWW 415.1	08/02/04	4216180
				Dilution Factor: 1	Analysis Time...: 10:56	
Total Suspended Solids	ND	3.0	mg/L	MCAWW 160.2	07/22/04	4207031
				Dilution Factor: 1	Analysis Time...: 20:00	
Un-Ionized Ammonia	ND	0.040	mg/L	SM18 8010F	08/01/04	4214031
				Dilution Factor: 1	Analysis Time...: 16:00	

NOTE(S) :

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

WASTE MANAGEMENT INC

Client Sample ID: FB1

General Chemistry

Lot-Sample #...: D4G170191-002

Work Order #...: GLAXN

Matrix.....: WATER

Date Sampled...: 07/16/04 10:45

Date Received...: 07/17/04

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
pH	7.4	0.10	No Units	MCAWW 150.1	07/17/04	4199121
		Dilution Factor: 1		Analysis Time...: 17:37		
Ammonia as N	ND	0.040	mg/L	MCAWW 350.1	07/27/04	4210346
		Dilution Factor: 1		Analysis Time...: 21:00		
Bicarbonate Alkalinity	1.2 B	10	mg/L	MCAWW 310.1	07/24/04	4208121
		Dilution Factor: 1		Analysis Time...: 19:16		
Carbonate Alkalinity	ND	10	mg/L	MCAWW 310.1	07/24/04	4208122
		Dilution Factor: 1		Analysis Time...: 19:16		
Chemical Oxygen Demand (COD)	8.2 B	10	mg/L	MCAWW 410.4	07/26/04	4209240
		Dilution Factor: 1		Analysis Time...: 10:30		
Chloride	1.1 J	0.50	mg/L	MCAWW 300.0A	07/17/04	4201497
		Dilution Factor: 1		Analysis Time...: 18:28		
Hardness, as CaCO ₃	0.86 B	5.0	mg/L	SM18 2340B	08/03/04	4216246
		Dilution Factor: 1		Analysis Time...: 09:00		
Ion Balance Difference	ND	--	%	SM18 1030F & API	08/03/04	4216281
		Dilution Factor: 1		Analysis Time...: 09:00		
Ionized Ammonia	ND	0.040	mg/L	SM18 8010F	08/01/04	4214030
		Dilution Factor: 1		Analysis Time...: 16:00		
Nitrate	ND	0.050	mg/L	MCAWW 300.0A	07/17/04	4201500
		Dilution Factor: 1		Analysis Time...: 18:28		
Nitrite	ND	0.060	mg/L	MCAWW 300.0A	07/17/04	4201501
		Dilution Factor: 1		Analysis Time...: 18:28		
Specific Conductance	2.3	2.0	umhos/cm	MCAWW 120.1	07/26/04	4208366
		Dilution Factor: 1		Analysis Time...: 12:24		

(Continued on next page)

WASTE MANAGEMENT INC

Client Sample ID: FB1

General Chemistry

Lot-Sample #...: D4G170191-002

Work Order #...: GLAXN

Matrix.....: WATER

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Sulfate	ND	5.0	mg/L	MCAWW 300.0A	07/17/04	4201499
		Dilution Factor: 1		Analysis Time...: 18:28		
Total Alkalinity	1.2 B	5.0	mg/L	MCAWW 310.1	07/24/04	4208120
		Dilution Factor: 1		Analysis Time...: 19:16		
Total Anions	0.050 B	0.30	meq/L	SM17 1030F & API	08/03/04	4216282
		Dilution Factor: 1		Analysis Time...: 09:00		
Total Cations	0.020 B	0.10	meq/L	SM17 1030F & API	08/03/04	4216283
		Dilution Factor: 1		Analysis Time...: 09:00		
Total Dissolved Solids	ND	5.4	mg/L	MCAWW 160.1	07/22/04	4204511
		Dilution Factor: 1		Analysis Time...: 16:50		
Total Organic Carbon	ND	1.0	mg/L	MCAWW 415.1	08/02/04	4216181
		Dilution Factor: 1		Analysis Time...: 10:56		
Total Suspended Solids	45	3.0	mg/L	MCAWW 160.2	07/22/04	4207039
		Dilution Factor: 1		Analysis Time...: 20:00		
Un-Ionized Ammonia	ND	0.040	mg/L	SM18 8010F	08/01/04	4214031
		Dilution Factor: 1		Analysis Time...: 16:00		

NOTE(S) :

RL Reporting Limit

B Estimated result. Result is less than RL.

I Method blank contamination. The associated method blank contains the target analyte at a reportable level.

QC DATA ASSOCIATION SUMMARY

D4G170191

Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
001	WATER	MCAWW 120.1		4208366	4208227
	WATER	MCAWW 150.1		4199121	4199054
	WATER	MCAWW 160.1		4204511	4209275
	WATER	MCAWW 160.2		4207039	4211276
	WATER	MCAWW 310.1		4208122	
	WATER	MCAWW 300.0A		4201497	4208313
	WATER	MCAWW 300.0A		4201499	4208319
	WATER	MCAWW 300.0A		4201500	4208317
	WATER	MCAWW 415.1		4216180	4216126
	WATER	SM18 2340B		4216246	
	WATER	MCAWW 300.0A		4201501	4208315
	WATER	SW846 6020		4202510	4202307
	WATER	SW846 8260B		4215389	4215248
	WATER	SW846 6010B		4202546	4202342
	WATER	SM18 1030F & API		4216281	
	WATER	SM17 1030F & API		4216282	
	WATER	SM17 1030F & API		4216283	
	WATER	MCAWW 310.1		4208121	
	WATER	SM18 8010F		4214031	
	WATER	MCAWW 310.1		4208120	4208234
	WATER	MCAWW 350.1		4210346	4210211
	WATER	MCAWW 410.4		4209240	4209133
	WATER	SM18 8010F		4214030	
002	WATER	MCAWW 120.1		4208366	4208227
	WATER	MCAWW 150.1		4199121	4199054
	WATER	MCAWW 160.1		4204511	4209275
	WATER	MCAWW 160.2		4207039	4211276
	WATER	MCAWW 310.1		4208122	
	WATER	MCAWW 300.0A		4201497	4208313
	WATER	MCAWW 300.0A		4201499	4208319
	WATER	MCAWW 300.0A		4201500	4208317
	WATER	MCAWW 415.1		4216180	4216126
	WATER	SM18 2340B		4216246	
	WATER	MCAWW 300.0A		4201501	4208315
	WATER	SW846 6020		4202510	4202307
	WATER	SW846 8260B		4215389	4215248
	WATER	SW846 6010B		4202546	4202342
	WATER	SM18 1030F & API		4216281	
	WATER	SM17 1030F & API		4216282	
	WATER	SM17 1030F & API		4216283	
	WATER	MCAWW 310.1		4208121	
	WATER	SM18 8010F		4214031	

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QC DATA ASSOCIATION SUMMARY

D4G170191

Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
002	WATER	MCAWW 310.1		4208120	4208234
	WATER	MCAWW 350.1		4210346	4210211
	WATER	MCAWW 410.4		4209240	4209133
	WATER	SM18 8010F		4214030	
003	WATER	SW846 8260B		4215389	4215248
004	WATER	SW846 8260B		4215389	4215248

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D4G170191
MB Lot-Sample #: D4H020000-389

Work Order #...: GMA6J1AA

Matrix.....: WATER

Analysis Date...: 07/29/04
Dilution Factor: 1

Prep Date.....: 07/29/04

Analysis Time...: 09:54

Prep Batch #...: 4215389

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	13	ug/L	SW846 8260B
Acrylonitrile	ND	9.0	ug/L	SW846 8260B
Benzene	ND	0.69	ug/L	SW846 8260B
Bromochloromethane	ND	0.62	ug/L	SW846 8260B
Bromodichloromethane	ND	0.66	ug/L	SW846 8260B
Bromoform	ND	0.61	ug/L	SW846 8260B
Bromomethane	ND	1.3	ug/L	SW846 8260B
2-Butanone (MEK)	ND	5.5	ug/L	SW846 8260B
Carbon disulfide	ND	1.4	ug/L	SW846 8260B
Carbon tetrachloride	ND	0.62	ug/L	SW846 8260B
Chlorobenzene	ND	0.70	ug/L	SW846 8260B
Dibromochloromethane	ND	0.38	ug/L	SW846 8260B
Chloroethane	ND	1.1	ug/L	SW846 8260B
Chloroform	ND	0.62	ug/L	SW846 8260B
Chloromethane	ND	1.2	ug/L	SW846 8260B
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.82	ug/L	SW846 8260B
1,2-Dibromoethane (EDB)	ND	0.36	ug/L	SW846 8260B
Dibromomethane	ND	0.77	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	0.71	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	0.57	ug/L	SW846 8260B
trans-1,4-Dichloro-2-butene	ND	2.8	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	0.57	ug/L	SW846 8260B
1,1-Dichloroethane	ND	0.74	ug/L	SW846 8260B
1,2-Dichloroethane	ND	0.68	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	0.59	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	0.63	ug/L	SW846 8260B
1,1-Dichloroethene	ND	0.59	ug/L	SW846 8260B
1,2-Dichloropropane	ND	0.66	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	0.35	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	0.83	ug/L	SW846 8260B
Ethylbenzene	ND	0.67	ug/L	SW846 8260B
2-Hexanone	ND	1.8	ug/L	SW846 8260B
Iodomethane	ND	0.68	ug/L	SW846 8260B
Methylene chloride	ND	1.7	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	1.4	ug/L	SW846 8260B
Styrene	ND	0.39	ug/L	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	0.53	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	0.83	ug/L	SW846 8260B
Tetrachloroethene	ND	0.45	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D4G170191

Work Order #...: GMA6J1AA

Matrix.....: WATER

PARAMETER	RESULT	REPORTING		METHOD
		LIMIT	UNITS	
Toluene	ND	0.71	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.65	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.72	ug/L	SW846 8260B
Trichloroethene	ND	0.54	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.1	ug/L	SW846 8260B
1,2,3-Trichloropropane	ND	1.1	ug/L	SW846 8260B
Vinyl acetate	ND	0.67	ug/L	SW846 8260B
Vinyl chloride	ND	0.65	ug/L	SW846 8260B
Xylenes (total)	ND	3.9	ug/L	SW846 8260B

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Dibromofluoromethane	100	(73 - 118)
1,2-Dichloroethane-d4	100	(62 - 128)
4-Bromofluorobenzene	97	(78 - 118)
Toluene-d8	103	(77 - 117)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D4G170191 Work Order #...: GMA6J1AC Matrix.....: WATER
 LCS Lot-Sample#: D4H020000-389
 Prep Date.....: 07/29/04 Analysis Date...: 07/29/04
 Prep Batch #...: 4215389 Analysis Time...: 09:24
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
Benzene	97	(75 - 120)	SW846 8260B
Chlorobenzene	92	(78 - 118)	SW846 8260B
1,1-Dichloroethene	88	(66 - 132)	SW846 8260B
Toluene	92	(78 - 118)	SW846 8260B
Trichloroethene	99	(79 - 122)	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Dibromofluoromethane	98	(73 - 118)
1,2-Dichloroethane-d4	98	(62 - 128)
4-Bromofluorobenzene	97	(78 - 118)
Toluene-d8	103	(77 - 117)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D4G170191

Work Order #...: GMA6J1AC

Matrix.....: WATER

LCS Lot-Sample#: D4H020000-389

Prep Date.....: 07/29/04

Analysis Date...: 07/29/04

Prep Batch #...: 4215389

Analysis Time...: 09:24

Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	10.0	9.66	ug/L	97	SW846 8260B
Chlorobenzene	10.0	9.25	ug/L	92	SW846 8260B
1,1-Dichloroethene	10.0	8.84	ug/L	88	SW846 8260B
Toluene	10.0	9.25	ug/L	92	SW846 8260B
Trichloroethene	10.0	9.86	ug/L	99	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(73 - 118)
1,2-Dichloroethane-d4	98	(62 - 128)
4-Bromofluorobenzene	97	(78 - 118)
Toluene-d8	103	(77 - 117)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D4G170191 Work Order #...: GLAXJ1D3-MS Matrix.....: WATER
 MS Lot-Sample #: D4G170191-001 GLAXJ1D4-MSD
 Date Sampled...: 07/16/04 11:20 Date Received...: 07/17/04
 Prep Date.....: 07/29/04 Analysis Date...: 07/29/04
 Prep Batch #...: 4215389 Analysis Time...: 14:38
 Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	100	(75 - 120)			SW846 8260B
	100	(75 - 120)	0.25	(0-21)	SW846 8260B
Chlorobenzene	96	(78 - 118)			SW846 8260B
	96	(78 - 118)	0.54	(0-20)	SW846 8260B
1,1-Dichloroethene	82	(66 - 132)			SW846 8260B
	81	(66 - 132)	1.2	(0-26)	SW846 8260B
Toluene	96	(78 - 118)			SW846 8260B
	97	(78 - 118)	0.72	(0-22)	SW846 8260B
Trichloroethene	104	(79 - 122)			SW846 8260B
	104	(79 - 122)	0.24	(0-23)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(73 - 118)
	106	(73 - 118)
1,2-Dichloroethane-d4	111	(62 - 128)
	108	(62 - 128)
4-Bromofluorobenzene	99	(78 - 118)
	101	(78 - 118)
Toluene-d8	101	(77 - 117)
	101	(77 - 117)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D4G170191 Work Order #...: GLAXJ1D3-MS Matrix.....: WATER
 MS Lot-Sample #: D4G170191-001 GLAXJ1D4-MSD
 Date Sampled...: 07/16/04 11:20 Date Received...: 07/17/04
 Prep Date.....: 07/29/04 Analysis Date...: 07/29/04
 Prep Batch #...: 4215389 Analysis Time...: 14:38
 Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	ND	10.0	9.98	ug/L	100		SW846 8260B
	ND	10.0	10.0	ug/L	100	0.25	SW846 8260B
Chlorobenzene	ND	10.0	9.57	ug/L	96		SW846 8260B
	ND	10.0	9.62	ug/L	96	0.54	SW846 8260B
1,1-Dichloroethene	ND	10.0	8.16	ug/L	82		SW846 8260B
	ND	10.0	8.07	ug/L	81	1.2	SW846 8260B
Toluene	ND	10.0	9.64	ug/L	96		SW846 8260B
	ND	10.0	9.71	ug/L	97	0.72	SW846 8260B
Trichloroethene	ND	10.0	10.4	ug/L	104		SW846 8260B
	ND	10.0	10.4	ug/L	104	0.24	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(73 - 118)
	106	(73 - 118)
1,2-Dichloroethane-d4	111	(62 - 128)
	108	(62 - 128)
4-Bromofluorobenzene	99	(78 - 118)
	101	(78 - 118)
Toluene-d8	101	(77 - 117)
	101	(77 - 117)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

METHOD BLANK REPORT

DISSOLVED Metals

Client Lot #...: D4G170191

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: D4G200000-510 Prep Batch #....: 4202510						
Antimony	ND	0.60	ug/L	SW846 6020	07/22-07/23/04	GLGG91AA
		Dilution Factor: 1				
		Analysis Time...: 14:03				
Arsenic	ND	1.0	ug/L	SW846 6020	07/22-07/23/04	GLGG91AC
		Dilution Factor: 1				
		Analysis Time...: 14:03				
Cadmium	ND	0.50	ug/L	SW846 6020	07/22-07/23/04	GLGG91AD
		Dilution Factor: 1				
		Analysis Time...: 14:03				
Lead	ND	1.5	ug/L	SW846 6020	07/22-07/23/04	GLGG91AE
		Dilution Factor: 1				
		Analysis Time...: 14:03				
Nickel	ND	10	ug/L	SW846 6020	07/22-07/23/04	GLGG91AF
		Dilution Factor: 1				
		Analysis Time...: 14:03				
Selenium	ND	1.0	ug/L	SW846 6020	07/22-07/23/04	GLGG91AG
		Dilution Factor: 1				
		Analysis Time...: 14:03				
Thallium	ND	0.20	ug/L	SW846 6020	07/22-07/23/04	GLGG91AH
		Dilution Factor: 1				
		Analysis Time...: 14:03				
MB Lot-Sample #: D4G200000-546 Prep Batch #....: 4202546						
Iron	ND	30	ug/L	SW846 6010B	07/22-07/27/04	GLGJ71AA
		Dilution Factor: 1				
		Analysis Time...: 12:01				
Magnesium	ND	5000	ug/L	SW846 6010B	07/22-07/31/04	GLGJ71AC
		Dilution Factor: 1				
		Analysis Time...: 18:32				
Sodium	ND	5000	ug/L	SW846 6010B	07/22-07/31/04	GLGJ71AD
		Dilution Factor: 1				
		Analysis Time...: 18:32				

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METHOD BLANK REPORT

DISSOLVED Metals

Client Lot #...: D4G170191

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Barium	0.48 B	100	ug/L	SW846 6010B	07/22-07/27/04	GLGJ71AE
		Dilution Factor: 1 Analysis Time...: 12:01				
Calcium	ND	5000	ug/L	SW846 6010B	07/22-07/31/04	GLGJ71AF
		Dilution Factor: 1 Analysis Time...: 18:32				
Chromium	ND	5.0	ug/L	SW846 6010B	07/22-07/27/04	GLGJ71AG
		Dilution Factor: 1 Analysis Time...: 12:01				
Manganese	ND	5.0	ug/L	SW846 6010B	07/22-07/27/04	GLGJ71AH
		Dilution Factor: 1 Analysis Time...: 12:01				
Vanadium	ND	50	ug/L	SW846 6010B	07/22-07/27/04	GLGJ71AJ
		Dilution Factor: 1 Analysis Time...: 12:01				
Zinc	ND	20	ug/L	SW846 6010B	07/22-07/27/04	GLGJ71AK
		Dilution Factor: 1 Analysis Time...: 12:01				
Potassium	ND	5000	ug/L	SW846 6010B	07/22-07/31/04	GLGJ71AL
		Dilution Factor: 1 Analysis Time...: 18:32				
Copper	ND	25	ug/L	SW846 6010B	07/22-07/27/04	GLGJ71AM
		Dilution Factor: 1 Analysis Time...: 12:01				
Silver	0.91 B	5.0	ug/L	SW846 6010B	07/22-07/27/04	GLGJ71AN
		Dilution Factor: 1 Analysis Time...: 12:01				
Cobalt	ND	50	ug/L	SW846 6010B	07/22-07/27/04	GLGJ71AP
		Dilution Factor: 1 Analysis Time...: 12:01				
Beryllium	ND	0.50	ug/L	SW846 6010B	07/22-07/27/04	GLGJ71AQ
		Dilution Factor: 1 Analysis Time...: 12:01				

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

DISSOLVED Metals

Client Lot #....: D4G170191

Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: D4G200000-510 Prep Batch #....: 4202510					
Antimony	101	(89 - 109)	SW846 6020	07/22-07/23/04	GLGG91AJ
		Dilution Factor: 1		Analysis Time...: 14:07	
Arsenic	98	(87 - 109)	SW846 6020	07/22-07/23/04	GLGG91AK
		Dilution Factor: 1		Analysis Time...: 14:07	
Cadmium	101	(89 - 110)	SW846 6020	07/22-07/23/04	GLGG91AL
		Dilution Factor: 1		Analysis Time...: 14:07	
Lead	107	(89 - 114)	SW846 6020	07/22-07/23/04	GLGG91AM
		Dilution Factor: 1		Analysis Time...: 14:07	
Nickel	108	(91 - 111)	SW846 6020	07/22-07/23/04	GLGG91AN
		Dilution Factor: 1		Analysis Time...: 14:07	
Selenium	93	(82 - 112)	SW846 6020	07/22-07/23/04	GLGG91AP
		Dilution Factor: 1		Analysis Time...: 14:07	
Thallium	108	(84 - 120)	SW846 6020	07/22-07/23/04	GLGG91AQ
		Dilution Factor: 1		Analysis Time...: 14:07	
LCS Lot-Sample#: D4G200000-546 Prep Batch #....: 4202546					
Iron	96	(88 - 110)	SW846 6010B	07/22-07/27/04	GLGJ71AR
		Dilution Factor: 1		Analysis Time...: 12:05	
Magnesium	103	(91 - 111)	SW846 6010B	07/22-07/31/04	GLGJ71AT
		Dilution Factor: 1		Analysis Time...: 18:36	
Sodium	98	(91 - 112)	SW846 6010B	07/22-07/31/04	GLGJ71AU
		Dilution Factor: 1		Analysis Time...: 18:36	
Barium	101	(93 - 113)	SW846 6010B	07/22-07/27/04	GLGJ71AV
		Dilution Factor: 1		Analysis Time...: 12:05	
Calcium	98	(89 - 110)	SW846 6010B	07/22-07/31/04	GLGJ71AW
		Dilution Factor: 1		Analysis Time...: 18:36	
Chromium	96	(89 - 112)	SW846 6010B	07/22-07/27/04	GLGJ71AX
		Dilution Factor: 1		Analysis Time...: 12:05	

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

DISSOLVED Metals

Client Lot #...: D4G170191

Matrix.....: WATER

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Manganese	97	(90 - 110)	SW846 6010B	07/22-07/27/04	GLGJ71A0
		Dilution Factor: 1		Analysis Time...: 12:05	
Vanadium	98	(88 - 112)	SW846 6010B	07/22-07/27/04	GLGJ71A1
		Dilution Factor: 1		Analysis Time...: 12:05	
Zinc	93	(85 - 110)	SW846 6010B	07/22-07/27/04	GLGJ71A2
		Dilution Factor: 1		Analysis Time...: 12:05	
Potassium	100	(86 - 111)	SW846 6010B	07/22-07/31/04	GLGJ71A3
		Dilution Factor: 1		Analysis Time...: 18:36	
Copper	96	(86 - 110)	SW846 6010B	07/22-07/27/04	GLGJ71A4
		Dilution Factor: 1		Analysis Time...: 12:05	
Silver	97	(85 - 114)	SW846 6010B	07/22-07/27/04	GLGJ71A5
		Dilution Factor: 1		Analysis Time...: 12:05	
Cobalt	94	(86 - 107)	SW846 6010B	07/22-07/27/04	GLGJ71A6
		Dilution Factor: 1		Analysis Time...: 12:05	
Beryllium	97	(88 - 112)	SW846 6010B	07/22-07/27/04	GLGJ71A7
		Dilution Factor: 1		Analysis Time...: 12:05	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

DISSOLVED Metals

Client Lot #...: D4G170191

Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: D4G200000-510 Prep Batch #... : 4202510							
Antimony	40.0	40.4	ug/L	101	SW846 6020	07/22-07/23/04	GLGG91AJ
			Dilution Factor: 1		Analysis Time...: 14:07		
Arsenic	40.0	39.3	ug/L	98	SW846 6020	07/22-07/23/04	GLGG91AK
			Dilution Factor: 1		Analysis Time...: 14:07		
Cadmium	40.0	40.5	ug/L	101	SW846 6020	07/22-07/23/04	GLGG91AL
			Dilution Factor: 1		Analysis Time...: 14:07		
Lead	40.0	42.8	ug/L	107	SW846 6020	07/22-07/23/04	GLGG91AM
			Dilution Factor: 1		Analysis Time...: 14:07		
Nickel	40.0	43.4	ug/L	108	SW846 6020	07/22-07/23/04	GLGG91AN
			Dilution Factor: 1		Analysis Time...: 14:07		
Selenium	40.0	37.3	ug/L	93	SW846 6020	07/22-07/23/04	GLGG91AP
			Dilution Factor: 1		Analysis Time...: 14:07		
Thallium	40.0	43.0	ug/L	108	SW846 6020	07/22-07/23/04	GLGG91AQ
			Dilution Factor: 1		Analysis Time...: 14:07		
LCS Lot-Sample#: D4G200000-546 Prep Batch #... : 4202546							
Iron	1000	965	ug/L	96	SW846 6010B	07/22-07/27/04	GLGJ71AR
			Dilution Factor: 1		Analysis Time...: 12:05		
Magnesium	50000	51400	ug/L	103	SW846 6010B	07/22-07/31/04	GLGJ71AT
			Dilution Factor: 1		Analysis Time...: 18:36		
Sodium	50000	49200	ug/L	98	SW846 6010B	07/22-07/31/04	GLGJ71AU
			Dilution Factor: 1		Analysis Time...: 18:36		
Barium	2000	2030	ug/L	101	SW846 6010B	07/22-07/27/04	GLGJ71AV
			Dilution Factor: 1		Analysis Time...: 12:05		
Calcium	50000	49000	ug/L	98	SW846 6010B	07/22-07/31/04	GLGJ71AW
			Dilution Factor: 1		Analysis Time...: 18:36		
Chromium	200	192	ug/L	96	SW846 6010B	07/22-07/27/04	GLGJ71AX
			Dilution Factor: 1		Analysis Time...: 12:05		

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LABORATORY CONTROL SAMPLE DATA REPORT

DISSOLVED Metals

Client Lot #...: D4G170191

Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Manganese	500	483	ug/L	97	SW846 6010B	07/22-07/27/04	GLGJ71A0
			Dilution Factor: 1		Analysis Time...: 12:05		
Vanadium	500	488	ug/L	98	SW846 6010B	07/22-07/27/04	GLGJ71A1
			Dilution Factor: 1		Analysis Time...: 12:05		
Zinc	500	466	ug/L	93	SW846 6010B	07/22-07/27/04	GLGJ71A2
			Dilution Factor: 1		Analysis Time...: 12:05		
Potassium	50000	49800	ug/L	100	SW846 6010B	07/22-07/31/04	GLGJ71A3
			Dilution Factor: 1		Analysis Time...: 18:36		
Copper	250	239	ug/L	96	SW846 6010B	07/22-07/27/04	GLGJ71A4
			Dilution Factor: 1		Analysis Time...: 12:05		
Silver	50.0	48.3	ug/L	97	SW846 6010B	07/22-07/27/04	GLGJ71A5
			Dilution Factor: 1		Analysis Time...: 12:05		
Cobalt	500	472	ug/L	94	SW846 6010B	07/22-07/27/04	GLGJ71A6
			Dilution Factor: 1		Analysis Time...: 12:05		
Beryllium	50.0	48.6	ug/L	97	SW846 6010B	07/22-07/27/04	GLGJ71A7
			Dilution Factor: 1		Analysis Time...: 12:05		

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

DISSOLVED Metals

Client Lot #...: D4G170191

Matrix.....: WATER

Date Sampled...: 07/16/04 10:45 Date Received...: 07/17/04

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D4G170191-002 Prep Batch #...: 4202510						
Antimony	100	(80 - 117)		SW846 6020	07/22-07/23/04	GLAXN1CQ
	103	(80 - 117) 2.7	(0-30)	SW846 6020	07/22-07/23/04	GLAXN1CR
		Dilution Factor: 1				
		Analysis Time...: 14:55				
Arsenic	96	(79 - 120)		SW846 6020	07/22-07/23/04	GLAXN1CT
	98	(79 - 120) 1.1	(0-30)	SW846 6020	07/22-07/23/04	GLAXN1CU
		Dilution Factor: 1				
		Analysis Time...: 14:55				
Cadmium	98	(82 - 115)		SW846 6020	07/22-07/23/04	GLAXN1CV
	99	(82 - 115) 0.89	(0-30)	SW846 6020	07/22-07/23/04	GLAXN1CW
		Dilution Factor: 1				
		Analysis Time...: 14:55				
Lead	105	(79 - 119)		SW846 6020	07/22-07/23/04	GLAXN1CX
	106	(79 - 119) 0.85	(0-30)	SW846 6020	07/22-07/23/04	GLAXN1C0
		Dilution Factor: 1				
		Analysis Time...: 14:55				
Nickel	107	(76 - 119)		SW846 6020	07/22-07/23/04	GLAXN1C1
	109	(76 - 119) 1.4	(0-30)	SW846 6020	07/22-07/23/04	GLAXN1C2
		Dilution Factor: 1				
		Analysis Time...: 14:55				
Selenium	89	(64 - 134)		SW846 6020	07/22-07/23/04	GLAXN1C3
	92	(64 - 134) 2.4	(0-35)	SW846 6020	07/22-07/23/04	GLAXN1C4
		Dilution Factor: 1				
		Analysis Time...: 14:55				
Thallium	105	(77 - 124)		SW846 6020	07/22-07/23/04	GLAXN1C5
	105	(77 - 124) 0.87	(0-30)	SW846 6020	07/22-07/23/04	GLAXN1C6
		Dilution Factor: 1				
		Analysis Time...: 14:55				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

DISSOLVED Metals

Client Lot #...: D4G170191

Matrix.....: WATER

Date Sampled...: 07/16/04 10:45 Date Received...: 07/17/04

PARAMETER	AMOUNT	SAMPLE SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D4G170191-002 Prep Batch #...: 4202510									
Antimony									
ND	40.0		40.2	ug/L	100		SW846 6020	07/22-07/23/04	GLAXN1CQ
ND	40.0		41.3	ug/L	103	2.7	SW846 6020	07/22-07/23/04	GLAXN1CR
Dilution Factor: 1									
Analysis Time...: 14:55									
Arsenic									
ND	40.0		38.6	ug/L	96		SW846 6020	07/22-07/23/04	GLAXN1CT
ND	40.0		39.0	ug/L	98	1.1	SW846 6020	07/22-07/23/04	GLAXN1CU
Dilution Factor: 1									
Analysis Time...: 14:55									
Cadmium									
ND	40.0		39.2	ug/L	98		SW846 6020	07/22-07/23/04	GLAXN1CV
ND	40.0		39.6	ug/L	99	0.89	SW846 6020	07/22-07/23/04	GLAXN1CW
Dilution Factor: 1									
Analysis Time...: 14:55									
Lead									
0.11	40.0		42.0	ug/L	105		SW846 6020	07/22-07/23/04	GLAXN1CX
0.11	40.0		42.3	ug/L	106	0.85	SW846 6020	07/22-07/23/04	GLAXN1C0
Dilution Factor: 1									
Analysis Time...: 14:55									
Nickel									
ND	40.0		43.0	ug/L	107		SW846 6020	07/22-07/23/04	GLAXN1C1
ND	40.0		43.6	ug/L	109	1.4	SW846 6020	07/22-07/23/04	GLAXN1C2
Dilution Factor: 1									
Analysis Time...: 14:55									
Selenium									
ND	40.0		35.8	ug/L	89		SW846 6020	07/22-07/23/04	GLAXN1C3
ND	40.0		36.6	ug/L	92	2.4	SW846 6020	07/22-07/23/04	GLAXN1C4
Dilution Factor: 1									
Analysis Time...: 14:55									
Thallium									
ND	40.0		41.8	ug/L	105		SW846 6020	07/22-07/23/04	GLAXN1C5
ND	40.0		42.2	ug/L	105	0.87	SW846 6020	07/22-07/23/04	GLAXN1C6
Dilution Factor: 1									
Analysis Time...: 14:55									

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

DISSOLVED Metals

Client Lot #....: D4G170191

Matrix.....: WATER

Date Sampled...: 07/16/04 11:20 Date Received...: 07/17/04

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D4G170191-001 Prep Batch #....: 4202546						
Iron	97	(52 - 155)		SW846 6010B	07/22-07/27/04	GLAXJ1CQ
	102	(52 - 155) 4.6	(0-25)	SW846 6010B	07/22-07/27/04	GLAXJ1CR
		Dilution Factor: 1				
		Analysis Time...: 12:56				
Magnesium	104	(62 - 146)		SW846 6010B	07/22-07/31/04	GLAXJ1CT
	107	(62 - 146) 2.3	(0-25)	SW846 6010B	07/22-07/31/04	GLAXJ1CU
		Dilution Factor: 1				
		Analysis Time...: 19:39				
Sodium	99	(70 - 203)		SW846 6010B	07/22-07/31/04	GLAXJ1CV
	103	(70 - 203) 2.3	(0-40)	SW846 6010B	07/22-07/31/04	GLAXJ1CW
		Dilution Factor: 1				
		Analysis Time...: 19:39				
Barium	101	(85 - 120)		SW846 6010B	07/22-07/27/04	GLAXJ1CX
	103	(85 - 120) 1.5	(0-25)	SW846 6010B	07/22-07/27/04	GLAXJ1C0
		Dilution Factor: 1				
		Analysis Time...: 12:56				
Calcium	94	(48 - 153)		SW846 6010B	07/22-07/31/04	GLAXJ1C1
	96	(48 - 153) 1.1	(0-25)	SW846 6010B	07/22-07/31/04	GLAXJ1C2
		Dilution Factor: 1				
		Analysis Time...: 19:39				
Chromium	94	(73 - 135)		SW846 6010B	07/22-07/27/04	GLAXJ1C3
	96	(73 - 135) 2.2	(0-25)	SW846 6010B	07/22-07/27/04	GLAXJ1C4
		Dilution Factor: 1				
		Analysis Time...: 12:56				
Manganese	95	(79 - 121)		SW846 6010B	07/22-07/27/04	GLAXJ1C5
	98	(79 - 121) 1.9	(0-25)	SW846 6010B	07/22-07/27/04	GLAXJ1C6
		Dilution Factor: 1				
		Analysis Time...: 12:56				
Vanadium	96	(85 - 120)		SW846 6010B	07/22-07/27/04	GLAXJ1C7
	98	(85 - 120) 2.0	(0-25)	SW846 6010B	07/22-07/27/04	GLAXJ1C8
		Dilution Factor: 1				
		Analysis Time...: 12:56				

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MATRIX SPIKE SAMPLE EVALUATION REPORT

DISSOLVED Metals

Client Lot #...: D4G170191

Matrix.....: WATER

Date Sampled...: 07/16/04 11:20 Date Received...: 07/17/04

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Zinc	92	(60 - 137)		SW846 6010B	07/22-07/27/04	GLAXJ1C9
	94	(60 - 137)	2.5 (0-25)	SW846 6010B	07/22-07/27/04	GLAXJ1DA
		Dilution Factor: 1				
		Analysis Time...: 12:56				
Potassium	98	(76 - 132)		SW846 6010B	07/22-07/31/04	GLAXJ1DC
	101	(76 - 132)	2.3 (0-25)	SW846 6010B	07/22-07/31/04	GLAXJ1DD
		Dilution Factor: 1				
		Analysis Time...: 19:39				
Copper	96	(82 - 129)		SW846 6010B	07/22-07/27/04	GLAXJ1DE
	98	(82 - 129)	1.5 (0-25)	SW846 6010B	07/22-07/27/04	GLAXJ1DF
		Dilution Factor: 1				
		Analysis Time...: 12:56				
Silver	95	(75 - 141)		SW846 6010B	07/22-07/27/04	GLAXJ1DG
	98	(75 - 141)	2.8 (0-25)	SW846 6010B	07/22-07/27/04	GLAXJ1DH
		Dilution Factor: 1				
		Analysis Time...: 12:56				
Cobalt	92	(82 - 119)		SW846 6010B	07/22-07/27/04	GLAXJ1DJ
	94	(82 - 119)	2.1 (0-25)	SW846 6010B	07/22-07/27/04	GLAXJ1DK
		Dilution Factor: 1				
		Analysis Time...: 12:56				
Beryllium	95	(79 - 121)		SW846 6010B	07/22-07/27/04	GLAXJ1DL
	96	(79 - 121)	1.6 (0-25)	SW846 6010B	07/22-07/27/04	GLAXJ1DM
		Dilution Factor: 1				
		Analysis Time...: 12:56				

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

DISSOLVED Metals

Client Lot #...: D4G170191

Matrix.....: WATER

Date Sampled...: 07/16/04 11:20 Date Received...: 07/17/04

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D4G170191-001 Prep Batch #...: 4202546									
Iron									
	25	1000	1000	ug/L	97		SW846 6010B	07/22-07/27/04	GLAXJ1CQ
	25	1000	1050	ug/L	102	4.6	SW846 6010B	07/22-07/27/04	GLAXJ1CR
Dilution Factor: 1									
Analysis Time...: 12:56									
Magnesium									
	18000	50000	70300	ug/L	104		SW846 6010B	07/22-07/31/04	GLAXJ1CT
	18000	50000	71900	ug/L	107	2.3	SW846 6010B	07/22-07/31/04	GLAXJ1CU
Dilution Factor: 1									
Analysis Time...: 19:39									
Sodium									
	16000	50000	65600	ug/L	99		SW846 6010B	07/22-07/31/04	GLAXJ1CV
	16000	50000	67200	ug/L	103	2.3	SW846 6010B	07/22-07/31/04	GLAXJ1CW
Dilution Factor: 1									
Analysis Time...: 19:39									
Barium									
	37	2000	2060	ug/L	101		SW846 6010B	07/22-07/27/04	GLAXJ1CX
	37	2000	2090	ug/L	103	1.5	SW846 6010B	07/22-07/27/04	GLAXJ1C0
Dilution Factor: 1									
Analysis Time...: 12:56									
Calcium									
	35000	50000	82000	ug/L	94		SW846 6010B	07/22-07/31/04	GLAXJ1C1
	35000	50000	82900	ug/L	96	1.1	SW846 6010B	07/22-07/31/04	GLAXJ1C2
Dilution Factor: 1									
Analysis Time...: 19:39									
Chromium									
	3.6	200	192	ug/L	94		SW846 6010B	07/22-07/27/04	GLAXJ1C3
	3.6	200	196	ug/L	96	2.2	SW846 6010B	07/22-07/27/04	GLAXJ1C4
Dilution Factor: 1									
Analysis Time...: 12:56									
Manganese									
	150	500	623	ug/L	95		SW846 6010B	07/22-07/27/04	GLAXJ1C5
	150	500	635	ug/L	98	1.9	SW846 6010B	07/22-07/27/04	GLAXJ1C6
Dilution Factor: 1									
Analysis Time...: 12:56									

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MATRIX SPIKE SAMPLE DATA REPORT

DISSOLVED Metals

Client Lot #...: D4G170191

Matrix.....: WATER

Date Sampled...: 07/16/04 11:20 Date Received...: 07/17/04

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Vanadium									
	13	500	494	ug/L	96		SW846 6010B	07/22-07/27/04	GLAXJ1C7
	13	500	504	ug/L	98	2.0	SW846 6010B	07/22-07/27/04	GLAXJ1C8
	Dilution Factor: 1								
	Analysis Time...: 12:56								
Zinc									
	25	500	483	ug/L	92		SW846 6010B	07/22-07/27/04	GLAXJ1C9
	25	500	495	ug/L	94	2.5	SW846 6010B	07/22-07/27/04	GLAXJ1DA
	Dilution Factor: 1								
	Analysis Time...: 12:56								
Potassium									
	5800	50000	54800	ug/L	98		SW846 6010B	07/22-07/31/04	GLAXJ1DC
	5800	50000	56100	ug/L	101	2.3	SW846 6010B	07/22-07/31/04	GLAXJ1DD
	Dilution Factor: 1								
	Analysis Time...: 19:39								
Copper									
	1.3	250	242	ug/L	96		SW846 6010B	07/22-07/27/04	GLAXJ1E
	1.3	250	246	ug/L	98	1.5	SW846 6010B	07/22-07/27/04	GLAXJ1F
	Dilution Factor: 1								
	Analysis Time...: 12:56								
Silver									
	ND	50.0	48.1	ug/L	95		SW846 6010B	07/22-07/27/04	GLAXJ1DG
	ND	50.0	49.4	ug/L	98	2.8	SW846 6010B	07/22-07/27/04	GLAXJ1DH
	Dilution Factor: 1								
	Analysis Time...: 12:56								
Cobalt									
	ND	500	463	ug/L	92		SW846 6010B	07/22-07/27/04	GLAXJ1DJ
	ND	500	473	ug/L	94	2.1	SW846 6010B	07/22-07/27/04	GLAXJ1DK
	Dilution Factor: 1								
	Analysis Time...: 12:56								
Beryllium									
	ND	50.0	47.4	ug/L	95		SW846 6010B	07/22-07/27/04	GLAXJ1DL
	ND	50.0	48.1	ug/L	96	1.6	SW846 6010B	07/22-07/27/04	GLAXJ1DM
	Dilution Factor: 1								
	Analysis Time...: 12:56								

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: D4G170191

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Ammonia as N	ND	Work Order #: GL2AA1AA 0.040	mg/L	MB Lot-Sample #: D4G280000-346 MCAWW 350.1	07/27/04	4210346
		Dilution Factor: 1 Analysis Time...: 21:00				
Chemical Oxygen Demand (COD)	ND	Work Order #: GLXCC1AA 10	mg/L	MB Lot-Sample #: D4G270000-240 MCAWW 410.4	07/26/04	4209240
		Dilution Factor: 1 Analysis Time...: 10:30				
Chloride	1.1	Work Order #: GLVXM1AA 0.50	mg/L	MB Lot-Sample #: D4G190000-497 MCAWW 300.0A	07/17/04	4201497
		Dilution Factor: 1 Analysis Time...: 16:26				
Nitrate	ND	Work Order #: GLV0A1AA 0.050	mg/L	MB Lot-Sample #: D4G190000-500 MCAWW 300.0A	07/17/04	4201500
		Dilution Factor: 1 Analysis Time...: 16:26				
Nitrite	ND	Work Order #: GLVX61AA 0.060	mg/L	MB Lot-Sample #: D4G190000-501 MCAWW 300.0A	07/17/04	4201501
		Dilution Factor: 1 Analysis Time...: 16:26				
Specific Conductance	ND	Work Order #: GLVG41AA 2.0	umhos/cm	MB Lot-Sample #: D4G260000-366 MCAWW 120.1	07/26/04	4208366
		Dilution Factor: 1 Analysis Time...: 12:24				
Sulfate	ND	Work Order #: GLV0L1AA 5.0	mg/L	MB Lot-Sample #: D4G190000-499 MCAWW 300.0A	07/17/04	4201499
		Dilution Factor: 1 Analysis Time...: 16:26				
Total Alkalinity	ND	Work Order #: GLVJC1AA 5.0	mg/L	MB Lot-Sample #: D4G260000-120 MCAWW 310.1	07/24/04	4208120
		Dilution Factor: 1 Analysis Time...: 19:16				
Total Dissolved Solids	ND	Work Order #: GL0N21AA 5.4	mg/L	MB Lot-Sample #: D4G220000-511 MCAWW 160.1	07/22/04	4204511
		Dilution Factor: 1 Analysis Time...: 16:50				

(Continued on next page)

METHOD BLANK REPORT

General Chemistry

Client Lot #....: D4G170191

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Total Organic Carbon	ND	1.0	mg/L	MCAWW 415.1	08/02/04	4216180
Work Order #: GMDF1AA MB Lot-Sample #: D4H030000-180 Dilution Factor: 1 Analysis Time...: 10:56						
Total Suspended Solids	ND	3.0	mg/L	MCAWW 160.2	07/22/04	4207039
Work Order #: GL5P61AA MB Lot-Sample #: D4G250000-039 Dilution Factor: 1 Analysis Time...: 20:00						

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: D4G170191

Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
pH	101	Work Order #: GLCLX1AA (97 - 102)	LCS Lot-Sample#: D4G170000-121 MCAWW 150.1	07/17/04	4199121
		Dilution Factor: 1	Analysis Time...: 16:53		
Ammonia as N	98	Work Order #: GL2AA1AC (90 - 110)	LCS Lot-Sample#: D4G280000-346 MCAWW 350.1	07/27/04	4210346
		Dilution Factor: 1	Analysis Time...: 21:00		
Chemical Oxygen Demand (COD)	108	Work Order #: GLXCC1AC (86 - 114)	LCS Lot-Sample#: D4G270000-240 MCAWW 410.4	07/26/04	4209240
		Dilution Factor: 1	Analysis Time...: 10:30		
Chloride	92	Work Order #: GLVXM1AC (90 - 110)	LCS Lot-Sample#: D4G190000-497 MCAWW 300.0A	07/17/04	4201497
		Dilution Factor: 1	Analysis Time...: 15:56		
Nitrate	91	Work Order #: GLV0A1AC (90 - 110)	LCS Lot-Sample#: D4G190000-500 MCAWW 300.0A	07/17/04	4201500
		Dilution Factor: 1	Analysis Time...: 15:56		
Nitrite	94	Work Order #: GLVX61AC (90 - 110)	LCS Lot-Sample#: D4G190000-501 MCAWW 300.0A	07/17/04	4201501
		Dilution Factor: 1	Analysis Time...: 15:56		
Specific Conductance	98	Work Order #: GLVG41AC (89 - 109)	LCS Lot-Sample#: D4G260000-366 MCAWW 120.1	07/26/04	4208366
		Dilution Factor: 1	Analysis Time...: 12:24		
Sulfate	92	Work Order #: GLV0L1AC (90 - 110)	LCS Lot-Sample#: D4G190000-499 MCAWW 300.0A	07/17/04	4201499
		Dilution Factor: 1	Analysis Time...: 15:56		
Total Alkalinity	96	Work Order #: GLVJC1AC (95 - 110)	LCS Lot-Sample#: D4G260000-120 MCAWW 310.1	07/24/04	4208120
		Dilution Factor: 1	Analysis Time...: 19:16		
Total Dissolved Solids	101	Work Order #: GLON21AC (86 - 106)	LCS Lot-Sample#: D4G220000-511 MCAWW 160.1	07/22/04	4204511
		Dilution Factor: 1	Analysis Time...: 16:50		

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: D4G170191

Matrix.....: WATER

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	99	Work Order #: GMDF1AC LCS Lot-Sample#: D4H030000-180 (90 - 110)	MCAWW 415.1	08/02/04	4216180
		Dilution Factor: 1	Analysis Time...: 10:56		
Total Suspended Solids	107	Work Order #: GL5P61AC LCS Lot-Sample#: D4G250000-039 (86 - 114)	MCAWW 160.2	07/22/04	4207039
		Dilution Factor: 1	Analysis Time...: 20:00		

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D4G170191

Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
pH	7.00	7.04	No Units	101	MCAWW 150.1	07/17/04	4199121
Work Order #: GLCLX1AA LCS Lot-Sample#: D4G170000-121 Dilution Factor: 1 Analysis Time...: 16:53							
Ammonia as N	4.00	3.94	mg/L	98	MCAWW 350.1	07/27/04	4210346
Work Order #: GL2AA1AC LCS Lot-Sample#: D4G280000-346 Dilution Factor: 1 Analysis Time...: 21:00							
Chemical Oxygen Demand (COD)	100	108	mg/L	108	MCAWW 410.4	07/26/04	4209240
Work Order #: GLXCC1AC LCS Lot-Sample#: D4G270000-240 Dilution Factor: 1 Analysis Time...: 10:30							
Chloride	20.0	18.5	mg/L	92	MCAWW 300.0A	07/17/04	4201497
Work Order #: GLVXM1AC LCS Lot-Sample#: D4G190000-497 Dilution Factor: 1 Analysis Time...: 15:56							
Nitrate	4.00	3.64	mg/L	91	MCAWW 300.0A	07/17/04	4201500
Work Order #: GLV0A1AC LCS Lot-Sample#: D4G190000-500 Dilution Factor: 1 Analysis Time...: 15:56							
Nitrite	4.00	3.77	mg/L	94	MCAWW 300.0A	07/17/04	4201501
Work Order #: GLVX61AC LCS Lot-Sample#: D4G190000-501 Dilution Factor: 1 Analysis Time...: 15:56							
Specific Conductance	1410	1380	umhos/cm	98	MCAWW 120.1	07/26/04	4208366
Work Order #: GLVG41AC LCS Lot-Sample#: D4G260000-366 Dilution Factor: 1 Analysis Time...: 12:24							
Sulfate	20.0	18.4	mg/L	92	MCAWW 300.0A	07/17/04	4201499
Work Order #: GLV0L1AC LCS Lot-Sample#: D4G190000-499 Dilution Factor: 1 Analysis Time...: 15:56							
Total Alkalinity	200	191	mg/L	96	MCAWW 310.1	07/24/04	4208120
Work Order #: GLVJC1AC LCS Lot-Sample#: D4G260000-120 Dilution Factor: 1 Analysis Time...: 19:16							
Total Dissolved Solids	500	507	mg/L	101	MCAWW 160.1	07/22/04	4204511
Work Order #: GL0N21AC LCS Lot-Sample#: D4G220000-511 Dilution Factor: 1 Analysis Time...: 16:50							

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D4G170191

Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Total Organic Carbon	25.0	24.7	mg/L	99	MCAWW 415.1	08/02/04	4216180
				Dilution Factor: 1		Analysis Time...: 10:56	
Total Suspended Solids	94.2	101	mg/L	107	MCAWW 160.2	07/22/04	4207039
				Dilution Factor: 1		Analysis Time...: 20:00	

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: D4G170191

Matrix.....: WATER

Date Sampled...: 07/14/04 16:30 Date Received...: 07/15/04

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Ammonia as N			WO#:	GKQXL1AQ-MS/GKQXL1AR-MSD	MS Lot-Sample #:	D4G090195-001	
	92	(44 - 130)			MCAWW 350.1	07/27/04	4210346
	92	(44 - 130)	0.16	(0-30)	MCAWW 350.1	07/27/04	4210346
			Dilution Factor: 1				
			Analysis Time...: 21:00				
Chemical Oxygen Demand (COD)			WO#:	GK7D51AU-MS/GK7D51AV-MSD	MS Lot-Sample #:	D4G150389-003	
	83	(74 - 109)			MCAWW 410.4	07/26/04	4209240
	87	(74 - 109)	2.8	(0-11)	MCAWW 410.4	07/26/04	4209240
			Dilution Factor: 1				
			Analysis Time...: 10:30				
Chloride			WO#:	GLARK1E4-MS/GLARK1E5-MSD	MS Lot-Sample #:	D4G170164-008	
	107 I	(80 - 120)			MCAWW 300.0A	07/17-07/18/04	4201497
	107 I	(80 - 120)	0.11	(0-10)	MCAWW 300.0A	07/17-07/18/04	4201497
			Dilution Factor: 1				
			Analysis Time...: 01:18				
Chloride			WO#:	GLAXJ1DT-MS/GLAXJ1DU-MSD	MS Lot-Sample #:	D4G170191-001	
	93	(80 - 120)			MCAWW 300.0A	07/17/04	4201497
	94	(80 - 120)	0.69	(0-10)	MCAWW 300.0A	07/17/04	4201497
			Dilution Factor: 1				
			Analysis Time...: 16:56				
Nitrate			WO#:	GLAXJ1DX-MS/GLAXJ1D0-MSD	MS Lot-Sample #:	D4G170191-001	
	105	(80 - 120)			MCAWW 300.0A	07/17/04	4201500
	105	(80 - 120)	0.23	(0-10)	MCAWW 300.0A	07/17/04	4201500
			Dilution Factor: 1				
			Analysis Time...: 16:56				
Nitrite			WO#:	GLAXJ1DV-MS/GLAXJ1DW-MSD	MS Lot-Sample #:	D4G170191-001	
	93	(80 - 120)			MCAWW 300.0A	07/17/04	4201501
	94	(80 - 120)	0.83	(0-10)	MCAWW 300.0A	07/17/04	4201501
			Dilution Factor: 1				
			Analysis Time...: 16:56				
Sulfate			WO#:	GLARK1E8-MS/GLARK1E9-MSD	MS Lot-Sample #:	D4G170164-008	
	108 I	(80 - 120)			MCAWW 300.0A	07/17-07/18/04	4201499
	108 I	(80 - 120)	0.06	(0-10)	MCAWW 300.0A	07/17-07/18/04	4201499
			Dilution Factor: 1				
			Analysis Time...: 01:18				

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #....: D4G170191

Matrix.....: WATER

Date Sampled...: 07/14/04 16:30 Date Received...: 07/15/04

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Sulfate			WO#:	GLAXJ1D1-MS/GLAXJ1D2-MSD	MS Lot-Sample #:	D4G170191-001	
	106	(80 - 120)			MCAWW 300.0A	07/17/04	4201499
	106	(80 - 120)	0.27	(0-10)	MCAWW 300.0A	07/17/04	4201499
			Dilution Factor: 1				
			Analysis Time...: 16:56				

Total Organic Carbon			WO#:	GK5RN1FM-MS/GK5RN1FN-MSD	MS Lot-Sample #:	D4G150194-003	
	100	(85 - 117)			MCAWW 415.1	08/02/04	4216182
	100	(85 - 117)	0.35	(0-10)	MCAWW 415.1	08/02/04	4216182
			Dilution Factor: 1				
			Analysis Time...: 01:29				

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

I Estimated result. Result concentration exceeds the calibration range.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D4G170191

Matrix.....: WATER

Date Sampled...: 07/14/04 16:30 Date Received...: 07/15/04

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Ammonia as N									
WO#: GKQXL1AQ-MS/GKQXL1AR-MSD MS Lot-Sample #: D4G090195-001									
	0.041	4.00	3.73	mg/L	92		MCAWW 350.1	07/27/04	4210346
	0.041	4.00	3.72	mg/L	92	0.16	MCAWW 350.1	07/27/04	4210346
Dilution Factor: 1									
Analysis Time...: 21:00									
Chemical Oxygen Demand (COD)									
WO#: GK7D51AU-MS/GK7D51AV-MSD MS Lot-Sample #: D4G150389-003									
	27	50.0	68.9	mg/L	83		MCAWW 410.4	07/26/04	4209240
	27	50.0	70.9	mg/L	87	2.8	MCAWW 410.4	07/26/04	4209240
Dilution Factor: 1									
Analysis Time...: 10:30									
Chloride									
WO#: GLARK1E4-MS/GLARK1E5-MSD MS Lot-Sample #: D4G170164-008									
	760	500	1300	I mg/L	107		MCAWW 300.0A	07/17-07/18/04	4201497
	760	500	1300	I mg/L	107	0.11	MCAWW 300.0A	07/17-07/18/04	4201497
Dilution Factor: 1									
Analysis Time...: 01:18									
Chloride									
WO#: GLAXJ1DT-MS/GLAXJ1DU-MSD MS Lot-Sample #: D4G170191-001									
	4.1	25.0	27.4	mg/L	93		MCAWW 300.0A	07/17/04	4201497
	4.1	25.0	27.5	mg/L	94	0.69	MCAWW 300.0A	07/17/04	4201497
Dilution Factor: 1									
Analysis Time...: 16:56									
Nitrate									
WO#: GLAXJ1DX-MS/GLAXJ1D0-MSD MS Lot-Sample #: D4G170191-001									
	3.2	5.00	8.47	mg/L	105		MCAWW 300.0A	07/17/04	4201500
	3.2	5.00	8.49	mg/L	105	0.23	MCAWW 300.0A	07/17/04	4201500
Dilution Factor: 1									
Analysis Time...: 16:56									
Nitrite									
WO#: GLAXJ1DV-MS/GLAXJ1DW-MSD MS Lot-Sample #: D4G170191-001									
	0.15	5.00	4.79	mg/L	93		MCAWW 300.0A	07/17/04	4201501
	0.15	5.00	4.83	mg/L	94	0.83	MCAWW 300.0A	07/17/04	4201501
Dilution Factor: 1									
Analysis Time...: 16:56									
Sulfate									
WO#: GLARK1E8-MS/GLARK1E9-MSD MS Lot-Sample #: D4G170164-008									
	460	500	1000	I mg/L	108		MCAWW 300.0A	07/17-07/18/04	4201499
	460	500	1000	I mg/L	108	0.06	MCAWW 300.0A	07/17-07/18/04	4201499
Dilution Factor: 1									
Analysis Time...: 01:18									

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D4G170191

Matrix.....: WATER

Date Sampled...: 07/14/04 16:30 Date Received...: 07/15/04

PARAMETER	AMOUNT	SAMPLE SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Sulfate			WO#: GLAXJ1D1-MS/GLAXJ1D2-MSD MS Lot-Sample #: D4G170191-001						
	17	25.0	43.6	mg/L	106		MCAWW 300.0A	07/17/04	4201499
	17	25.0	43.7	mg/L	106	0.27	MCAWW 300.0A	07/17/04	4201499

Dilution Factor: 1

Analysis Time...: 16:56

Total Organic Carbon			WO#: GK5RN1FM-MS/GK5RN1FN-MSD MS Lot-Sample #: D4G150194-003						
	ND	25.0	25.5	mg/L	100		MCAWW 415.1	08/02/04	4216182
	ND	25.0	25.4	mg/L	100	0.35	MCAWW 415.1	08/02/04	4216182

Dilution Factor: 1

Analysis Time...: 01:29

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

I Estimated result. Result concentration exceeds the calibration range.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: D4G170191

Work Order #...: GLAW0-SMP
GLAW0-DUP

Matrix.....: WATER

Date Sampled...: 07/16/04

Date Received...: 07/17/04

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids	700	690	mg/L	1.0	(0-20)	MCAWW 160.1	07/22/04	4204511
Dilution Factor: 1						Analysis Time...: 16:50		
SD Lot-Sample #: D4G170182-017								

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: D4G170191

Work Order #...: GLAJV-SMP
GLAJV-DUP

Matrix.....: WATER

Date Sampled...: 07/16/04 09:10

Date Received...: 07/17/04

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Total Suspended Solids	82	84	mg/L	3.4	(0-20)	MCAWW 160.2	07/22/04	4207039
			Dilution Factor: 1			Analysis Time...: 20:00		
pH	8.2	8.3	No Units	0.49	(0-5.0)	MCAWW 150.1	07/17/04	4199121
			Dilution Factor: 1			Analysis Time...: 16:59		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: D4G170191

Work Order #...: GK9RE-SMP
GK9RE-DUP

Matrix.....: WATER

Date Sampled...: 07/15/04 09:39

Date Received...: 07/16/04

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Total Alkalinity	1200	1200	mg/L	0.25	(0-10)	SD Lot-Sample #: D4G160354-001 MCAWW 310.1	07/24/04	4208120
				Dilution Factor: 1		Analysis Time...: 19:16		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: D4G170191

Work Order #...: GLAXJ-SMP
GLAXJ-DUP

Matrix.....: WATER

Date Sampled...: 07/16/04 11:20 Date Received...: 07/17/04

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Specific Conductance	410	410	umhos/cm	0.98	(0-7.0)	MCAWW 120.1	07/26/04	4208366
				Dilution Factor: 1	Analysis Time...: 12:24			

SD Lot-Sample #: D4G170191-001

STL Denver

4955 Yarrow Street
Arvada, CO 80002

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ANALYTICAL REPORT

Project No. Site 904

Greater Wenatchee

Lot #: D4L170138

Final Report
MW07 and MW11

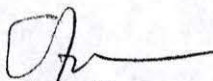
Reported to:

Steve Wulf

Waste Management, Inc.
Greater Wenatchee
191 South Webb Road
East Wenatchee, WA 98802

Cc: Jason Davendonis

STL DENVER



Betsy Farnaus
Project Manager

January 27, 2005

Lot #: D4L170138

Case Narrative

Enclosed is the report for three samples received at STL Denver laboratory on December 17, 2004. The results included in this report have been reviewed for compliance with STL's Laboratory Quality Manual. The test results shown in this report meet all requirements of NELAC and any exceptions are noted below.

This report may include data with reporting limits (RLs) less than STL Denver's standard reporting limit. These data and reporting limits are being used specifically to meet the needs of this project. Note that, data are not customarily reported to these levels because they are inherently less reliable and potentially less defensible than the latest industry standards require.

Dilution factors and footnotes have been provided to assist in the interpretation of the results. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interferences or analytes present at concentrations above the linear calibration curve, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

STL Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the analytical methods summary page in accordance with the methods indicated. A summary of quality control parameters is provided below.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Quality Control Summary for Lot D4L170138

Sample Receiving

- The cooler temperature upon receipt at the Denver laboratory was 1.8°C.
- The sample bottles were received in acceptable condition.

Holding Times

- The holding times were met.

Method Blanks

- All Method Blanks were within established control limits.

Laboratory Control Samples

- The Laboratory Control Sample recoveries were within established control limits.

Matrix Spike Samples

- The percent recoveries of the MS/MSD and/or the relative percent difference were not calculated for Dissolved Sodium during Method 6010B analysis because the sample concentration was greater than four times the spike amount.
- Due to the result concentration exceeding the calibration range the MS/MSD results for Nitrate Method 300.0A are estimated.

Lot #: D4L170138

- All other Matrix Spike and Matrix Spike Duplicate recoveries were within established control limits.

EXECUTIVE SUMMARY - Detection Highlights

D4L170138

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
MW-07 12/15/04 15:15 001				
Iron - DISSOLVED	29 B	30	ug/L	SW846 6010B
Magnesium - DISSOLVED	22000	5000	ug/L	SW846 6010B
Sodium - DISSOLVED	19000	5000	ug/L	SW846 6010B
Calcium - DISSOLVED	46000	5000	ug/L	SW846 6010B
Potassium - DISSOLVED	6800	5000	ug/L	SW846 6010B
Dichlorodifluoromethane	3.9	0.57	ug/L	SW846 8260B
1,1-Dichloroethane	9.5	0.74	ug/L	SW846 8260B
cis-1,2-Dichloroethene	3.5	0.59	ug/L	SW846 8260B
1,1-Dichloroethene	1.1	0.59	ug/L	SW846 8260B
Methylene chloride	0.89 J	1.7	ug/L	SW846 8260B
Tetrachloroethene	8.8	0.45	ug/L	SW846 8260B
1,1,1-Trichloroethane	0.50 J	0.65	ug/L	SW846 8260B
Trichloroethene	1.9	0.54	ug/L	SW846 8260B
Trichlorofluoromethane	2.0	1.1	ug/L	SW846 8260B
Chloride	3.8	0.50	mg/L	MCAWW 300.0A
Sulfate	18	5.0	mg/L	MCAWW 300.0A
Nitrate	4.6	0.050	mg/L	MCAWW 300.0A
Ion Balance	1.7	--	%	SM18 1030F & AP
Difference				
Total Anions	4.9	0.30	meq/L	SM17 1030F & API
Total Cations	5.1	0.10	meq/L	SM17 1030F & API
Bicarbonate, as CaCO3	210	10	mg/L	MCAWW 310.1
Total Alkalinity	210	5.0	mg/L	MCAWW 310.1
Ammonia as N	0.030 B	0.040	mg/L	MCAWW 350.1
Ionized Ammonia	0.029 B	0.040	mg/L	SM18 8010F

MW-11 12/15/04 14:25 002

Magnesium - DISSOLVED	22000	5000	ug/L	SW846 6010B
Sodium - DISSOLVED	22000	5000	ug/L	SW846 6010B
Calcium - DISSOLVED	41000	5000	ug/L	SW846 6010B
Potassium - DISSOLVED	7000	5000	ug/L	SW846 6010B
Chloride	3.5	0.50	mg/L	MCAWW 300.0A
Sulfate	28	5.0	mg/L	MCAWW 300.0A
Nitrate	5.5	0.050	mg/L	MCAWW 300.0A
Ion Balance	1.8	--	%	SM18 1030F & API
Difference				
Total Anions	4.8	0.30	meq/L	SM17 1030F & API
Total Cations	5.0	0.10	meq/L	SM17 1030F & API
Bicarbonate, as CaCO3	190	10	mg/L	MCAWW 310.1
Total Alkalinity	190	5.0	mg/L	MCAWW 310.1

PREPARATION METHODS SUMMARY

D4L170138

PREPARATION DESCRIPTION	PREPARATION METHOD	ANALYTICAL METHOD
Acid Digestion for Total Recoverable Metals	SW846 3005A	SW846 6010B
Ammonia preparation	MCAWW 350.1	MCAWW 350.1
Bicarbonate Alkalinity	MCAWW 310.1	MCAWW 310.1
Carbonate Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Ion Balance Difference	SM18 1030F & AP	SM18 1030F & AP
Ionized Ammonia	MCAWW 350.1	SM18 8010F
Nitrate	MCAWW 300.0A	MCAWW 300.0A
Nitrite	MCAWW 300.0A	MCAWW 300.0A
Potentiometric titration to preselected pH	MCAWW 310.1	MCAWW 310.1
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Total Anions	SM17 1030F & AP	SM17 1030F & AP
Total Cations	SM17 1030F & AP	SM17 1030F & AP
Un-ionized Ammonia	MCAWW 350.1	SM18 8010F
25 mL Purge-and-Trap	SW846 5030B/826	SW846 8260B

References:

- MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.
- SM17 "Standard Methods for the Examination of Water and Wastewater", 17th Edition, 1989.
- SM18 "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

ANALYTICAL METHODS SUMMARY

D4L170138

PARAMETER	ANALYTICAL METHOD
Alkalinity	MCAWW 310.1
Ammonia (Ionized)	SM18 8010F
Bicarbonate Alkalinity	MCAWW 310.1
Carbonate Alkalinity	MCAWW 310.1
Chloride	MCAWW 300.0A
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Ion Balance (%Difference)	SM18 1030F & API
Ion Balance (Tot. Anions)	SM17 1030F & API
Ion Balance (Tot.Cations)	SM17 1030F & API
Nitrate as N	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A
Nitrogen, Ammonia	MCAWW 350.1
Sulfate	MCAWW 300.0A
Un-Ionized Ammonia	SM18 8010F
Volatile Organics by GC/MS	SW846 8260B

References:

- MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.
- SM17 "Standard Methods for the Examination of Water and Wastewater", 17th Edition, 1989.
- SM18 "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

D4L170138

<u>ANALYTICAL METHOD</u>	<u>ANALYST</u>	<u>ANALYST ID</u>
MCAWW 300.0A	Andrita Scofield	004409
MCAWW 310.1	Maria Fayard	002596
MCAWW 350.1	Claire Likar	004382
SM17 1030F & API	Sherry Scaggiari	002016
SM18 1030F & API	Sherry Scaggiari	002016
SM18 8010F	Claire Likar	004382
SW846 6010B	Janel Motichka	2862
SW846 8260B	Dan Appelhans	001008

References:

MCAWW	"Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.
SM17	"Standard Methods for the Examination of Water and Wastewater", 17th Edition, 1989.
SM18	"Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992.
SW846	"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

D4L170138

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
G1CDM	001	MW-07	12/15/04	15:15
G1CDP	002	MW-11	12/15/04	14:21
G1CDQ	003	TRIP BLANK	12/15/04	

NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Waste Management, Inc.

Client Sample ID: MW-07

GC/MS Volatiles

Lot-Sample #....: D4L170138-001 Work Order #....: G1CDM1AE Matrix.....: WATER
 Date Sampled...: 12/15/04 15:15 Date Received...: 12/17/04
 Prep Date.....: 12/28/04 Analysis Date...: 12/28/04
 Prep Batch #....: 4364500 Analysis Time...: 14:49
 Dilution Factor: 1
 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	13	ug/L
Acrylonitrile	ND	9.0	ug/L
Benzene	ND	0.69	ug/L
Bromochloromethane	ND	0.62	ug/L
Bromodichloromethane	ND	0.66	ug/L
Bromoform	ND	0.61	ug/L
Bromomethane	ND	1.3	ug/L
2-Butanone (MEK)	ND	5.5	ug/L
Carbon disulfide	ND	1.4	ug/L
Carbon tetrachloride	ND	0.62	ug/L
Chlorobenzene	ND	0.70	ug/L
Dibromochloromethane	ND	0.38	ug/L
Chloroethane	ND	1.1	ug/L
Chloroform	ND	0.62	ug/L
Chloromethane	ND	1.2	ug/L
1,2-Dibromo-3- chloropropane (DBCP)	ND	0.82	ug/L
1,2-Dibromoethane (EDB)	ND	0.36	ug/L
Dibromomethane	ND	0.77	ug/L
1,2-Dichlorobenzene	ND	0.71	ug/L
1,4-Dichlorobenzene	ND	0.57	ug/L
trans-1,4-Dichloro- 2-butene	ND	2.8	ug/L
Dichlorodifluoromethane	3.9	0.57	ug/L
1,1-Dichloroethane	9.5	0.74	ug/L
1,2-Dichloroethane	ND	0.68	ug/L
cis-1,2-Dichloroethene	3.5	0.59	ug/L
trans-1,2-Dichloroethene	ND	0.63	ug/L
1,1-Dichloroethene	1.1	0.59	ug/L
1,2-Dichloropropane	ND	0.66	ug/L
cis-1,3-Dichloropropene	ND	0.35	ug/L
trans-1,3-Dichloropropene	ND	0.83	ug/L
Ethylbenzene	ND	0.67	ug/L
2-Hexanone	ND	1.8	ug/L
Iodomethane	ND	0.68	ug/L
Methylene chloride	0.89 J	1.7	ug/L
4-Methyl-2-pentanone	ND	1.4	ug/L
Styrene	ND	0.39	ug/L

(Continued on next page)

Waste Management, Inc.

Client Sample ID: MW-07

GC/MS Volatiles

Lot-Sample #....: D4L170138-001 Work Order #....: G1CDM1AE Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,1,2-Tetrachloroethane	ND	0.53	ug/L
1,1,2,2-Tetrachloroethane	ND	0.83	ug/L
Tetrachloroethene	8.8	0.45	ug/L
Toluene	ND	0.71	ug/L
1,1,1-Trichloroethane	0.50 J	0.65	ug/L
1,1,2-Trichloroethane	ND	0.72	ug/L
Trichloroethene	1.9	0.54	ug/L
Trichlorofluoromethane	2.0	1.1	ug/L
1,2,3-Trichloropropane	ND	1.1	ug/L
Vinyl acetate	ND	0.67	ug/L
Vinyl chloride	ND	0.65	ug/L
Xylenes (total)	ND	3.9	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	109	(73 - 118)
1,2-Dichloroethane-d4	106	(62 - 128)
4-Bromofluorobenzene	100	(78 - 118)
Toluene-d8	110	(77 - 117)

NOTE(S) :

J Estimated result. Result is less than RL.

Waste Management, Inc.

Client Sample ID: MW-11

GC/MS Volatiles

Lot-Sample #....: D4L170138-002 Work Order #....: G1CDP1AE Matrix.....: WATER
 Date Sampled....: 12/15/04 14:25 Date Received...: 12/17/04
 Prep Date.....: 12/28/04 Analysis Date...: 12/28/04
 Prep Batch #....: 4364500 Analysis Time...: 15:11
 Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	13	ug/L
Acrylonitrile	ND	9.0	ug/L
Benzene	ND	0.69	ug/L
Bromochloromethane	ND	0.62	ug/L
Bromodichloromethane	ND	0.66	ug/L
Bromoform	ND	0.61	ug/L
Bromomethane	ND	1.3	ug/L
2-Butanone (MEK)	ND	5.5	ug/L
Carbon disulfide	ND	1.4	ug/L
Carbon tetrachloride	ND	0.62	ug/L
Chlorobenzene	ND	0.70	ug/L
Dibromochloromethane	ND	0.38	ug/L
Chloroethane	ND	1.1	ug/L
Chloroform	ND	0.62	ug/L
Chloromethane	ND	1.2	ug/L
1,2-Dibromo-3- chloropropane (DBCP)	ND	0.82	ug/L
1,2-Dibromoethane (EDB)	ND	0.36	ug/L
Dibromomethane	ND	0.77	ug/L
1,2-Dichlorobenzene	ND	0.71	ug/L
1,4-Dichlorobenzene	ND	0.57	ug/L
trans-1,4-Dichloro- 2-butene	ND	2.8	ug/L
Dichlorodifluoromethane	ND	0.57	ug/L
1,1-Dichloroethane	ND	0.74	ug/L
1,2-Dichloroethane	ND	0.68	ug/L
cis-1,2-Dichloroethene	ND	0.59	ug/L
trans-1,2-Dichloroethene	ND	0.63	ug/L
1,1-Dichloroethene	ND	0.59	ug/L
1,2-Dichloropropane	ND	0.66	ug/L
cis-1,3-Dichloropropene	ND	0.35	ug/L
trans-1,3-Dichloropropene	ND	0.83	ug/L
Ethylbenzene	ND	0.67	ug/L
2-Hexanone	ND	1.8	ug/L
Iodomethane	ND	0.68	ug/L
Methylene chloride	ND	1.7	ug/L
4-Methyl-2-pentanone	ND	1.4	ug/L
Styrene	ND	0.39	ug/L

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Waste Management, Inc.

Client Sample ID: MW-11

GC/MS Volatiles

Lot-Sample #....: D4L170138-002

Work Order #....: G1CDP1AE

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,1,2-Tetrachloroethane	ND	0.53	ug/L
1,1,2,2-Tetrachloroethane	ND	0.83	ug/L
Tetrachloroethene	ND	0.45	ug/L
Toluene	ND	0.71	ug/L
1,1,1-Trichloroethane	ND	0.65	ug/L
1,1,2-Trichloroethane	ND	0.72	ug/L
Trichloroethene	ND	0.54	ug/L
Trichlorofluoromethane	ND	1.1	ug/L
1,2,3-Trichloropropane	ND	1.1	ug/L
Vinyl acetate	ND	0.67	ug/L
Vinyl chloride	ND	0.65	ug/L
Xylenes (total)	ND	3.9	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	108	(73 - 118)
1,2-Dichloroethane-d4	103	(62 - 128)
4-Bromofluorobenzene	96	(78 - 118)
Toluene-d8	106	(77 - 117)

Waste Management, Inc.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #....: D4L170138-003 Work Order #....: G1CDQ1AA Matrix.....: WATER
 Date Sampled....: 12/15/04 Date Received...: 12/17/04
 Prep Date.....: 12/28/04 Analysis Date...: 12/28/04
 Prep Batch #....: 4364500 Analysis Time...: 15:34
 Dilution Factor: 1
 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	13	ug/L
Acrylonitrile	ND	9.0	ug/L
Benzene	ND	0.69	ug/L
Bromochloromethane	ND	0.62	ug/L
Bromodichloromethane	ND	0.66	ug/L
Bromoform	ND	0.61	ug/L
Bromomethane	ND	1.3	ug/L
2-Butanone (MEK)	ND	5.5	ug/L
Carbon disulfide	ND	1.4	ug/L
Carbon tetrachloride	ND	0.62	ug/L
Chlorobenzene	ND	0.70	ug/L
Dibromochloromethane	ND	0.38	ug/L
Chloroethane	ND	1.1	ug/L
Chloroform	ND	0.62	ug/L
Chloromethane	ND	1.2	ug/L
1,2-Dibromo-3- chloropropane (DBCP)	ND	0.82	ug/L
1,2-Dibromoethane (EDB)	ND	0.36	ug/L
Dibromomethane	ND	0.77	ug/L
1,2-Dichlorobenzene	ND	0.71	ug/L
1,4-Dichlorobenzene	ND	0.57	ug/L
trans-1,4-Dichloro- 2-butene	ND	2.8	ug/L
Dichlorodifluoromethane	ND	0.57	ug/L
1,1-Dichloroethane	ND	0.74	ug/L
1,2-Dichloroethane	ND	0.68	ug/L
cis-1,2-Dichloroethene	ND	0.59	ug/L
trans-1,2-Dichloroethene	ND	0.63	ug/L
1,1-Dichloroethene	ND	0.59	ug/L
1,2-Dichloropropane	ND	0.66	ug/L
cis-1,3-Dichloropropene	ND	0.35	ug/L
trans-1,3-Dichloropropene	ND	0.83	ug/L
Ethylbenzene	ND	0.67	ug/L
2-Hexanone	ND	1.8	ug/L
Iodomethane	ND	0.68	ug/L
Methylene chloride	ND	1.7	ug/L
4-Methyl-2-pentanone	ND	1.4	ug/L
Styrene	ND	0.39	ug/L

(Continued on next page)

Waste Management, Inc.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: D4L170138-003

Work Order #...: G1CDQ1AA

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,1,2-Tetrachloroethane	ND	0.53	ug/L
1,1,2,2-Tetrachloroethane	ND	0.83	ug/L
Tetrachloroethene	ND	0.45	ug/L
Toluene	ND	0.71	ug/L
1,1,1-Trichloroethane	ND	0.65	ug/L
1,1,2-Trichloroethane	ND	0.72	ug/L
Trichloroethene	ND	0.54	ug/L
Trichlorofluoromethane	ND	1.1	ug/L
1,2,3-Trichloropropane	ND	1.1	ug/L
Vinyl acetate	ND	0.67	ug/L
Vinyl chloride	ND	0.65	ug/L
Xylenes (total)	ND	3.9	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 118)
1,2-Dichloroethane-d4	99	(62 - 128)
4-Bromofluorobenzene	93	(78 - 118)
Toluene-d8	102	(77 - 117)

Waste Management, Inc.

Client Sample ID: MW-07

DISSOLVED Metals

Lot-Sample #...: D4L170138-001

Matrix.....: WATER

Date Sampled...: 12/15/04 15:15 Date Received...: 12/17/04

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 4352660						
Iron	29 B	30	ug/L	SW846 6010B	12/21/04	G1CDM1AM
		Dilution Factor: 1		Analysis Time...: 22:38		
Magnesium	22000	5000	ug/L	SW846 6010B	12/21/04	G1CDM1AN
		Dilution Factor: 1		Analysis Time...: 22:38		
Sodium	19000	5000	ug/L	SW846 6010B	12/21/04	G1CDM1AP
		Dilution Factor: 1		Analysis Time...: 22:38		
Calcium	46000	5000	ug/L	SW846 6010B	12/21/04	G1CDM1AQ
		Dilution Factor: 1		Analysis Time...: 22:38		
Manganese	ND	5.0	ug/L	SW846 6010B	12/21/04	G1CDM1AR
		Dilution Factor: 1		Analysis Time...: 22:38		
Potassium	6800	5000	ug/L	SW846 6010B	12/21/04	G1CDM1AT
		Dilution Factor: 1		Analysis Time...: 22:38		

NOTE(S) :

B Estimated result. Result is less than RL.

Waste Management, Inc.

Client Sample ID: MW-11

DISSOLVED Metals

Lot-Sample #...: D4L170138-002

Matrix.....: WATER

Date Sampled...: 12/15/04 14:25 Date Received...: 12/17/04

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 4352660						
Iron	ND	30	ug/L	SW846 6010B	12/21/04	G1CDP1AM
		Dilution Factor: 1		Analysis Time...: 22:42		
Magnesium	22000	5000	ug/L	SW846 6010B	12/21/04	G1CDP1AN
		Dilution Factor: 1		Analysis Time...: 22:42		
Sodium	22000	5000	ug/L	SW846 6010B	12/21/04	G1CDP1AP
		Dilution Factor: 1		Analysis Time...: 22:42		
Calcium	41000	5000	ug/L	SW846 6010B	12/21/04	G1CDP1AQ
		Dilution Factor: 1		Analysis Time...: 22:42		
Manganese	ND	5.0	ug/L	SW846 6010B	12/21/04	G1CDP1AR
		Dilution Factor: 1		Analysis Time...: 22:42		
Potassium	7000	5000	ug/L	SW846 6010B	12/21/04	G1CDE
		Dilution Factor: 1		Analysis Time...: 22:42		

Waste Management, Inc.

Client Sample ID: MW-07

General Chemistry

Lot-Sample #...: D4L170138-001 Work Order #...: G1CDM Matrix.....: WATER
Date Sampled...: 12/15/04 15:15 Date Received...: 12/17/04

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Ammonia as N	0.030 B	0.040	mg/L	MCAWW 350.1	12/22/04	4362416
		Dilution Factor: 1		Analysis Time...: 16:00		
Bicarbonate, as CaCO ₃ 210		10	mg/L	MCAWW 310.1	12/22/04	4362242
3				Dilution Factor: 1 Analysis Time...: 21:48		
Carbonate, as CaCO ₃ ND		10	mg/L	MCAWW 310.1	12/22/04	4362241
		Dilution Factor: 1		Analysis Time...: 21:48		
Chloride	3.8	0.50	mg/L	MCAWW 300.0A	12/17/04	4355611
		Dilution Factor: 1		Analysis Time...: 14:01		
Ion Balance Difference	1.7	--	%	SM18 1030F & API	12/29/04	4364424
		Dilution Factor: 1		Analysis Time...: 12:00		
Ionized Ammonia	0.029 B	0.040	mg/L	SM18 8010F	12/27/04	4362489
		Dilution Factor: 1		Analysis Time...: 16:00		
Nitrate	4.6	0.050	mg/L	MCAWW 300.0A	12/17/04	4355612
		Dilution Factor: 1		Analysis Time...: 14:01		
Nitrite	ND	0.50	mg/L	MCAWW 300.0A	12/17/04	4355613
		Dilution Factor: 1		Analysis Time...: 14:01		
Sulfate	18	5.0	mg/L	MCAWW 300.0A	12/17/04	4355610
		Dilution Factor: 1		Analysis Time...: 14:01		
Total Alkalinity	210	5.0	mg/L	MCAWW 310.1	12/22/04	4362239
		Dilution Factor: 1		Analysis Time...: 21:48		
Total Anions	4.9	0.30	meq/L	SM17 1030F & API	12/29/04	4364426
		Dilution Factor: 1		Analysis Time...: 12:00		
Total Cations	5.1	0.10	meq/L	SM17 1030F & API	12/29/04	4364425
		Dilution Factor: 1		Analysis Time...: 12:00		
Un-Ionized Ammonia	ND	0.040	mg/L	SM18 8010F	12/27/04	4362490
		Dilution Factor: 1		Analysis Time...: 16:00		

NOTE(S) :

RL Reporting Limit

B Estimated result. Result is less than RL.

Waste Management, Inc.

Client Sample ID: MW-11

General Chemistry

Lot-Sample #....: D4L170138-002 Work Order #....: G1CDP
Date Sampled....: 12/15/04 14:25 Date Received...: 12/17/04

Matrix.....: WATER

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Ammonia as N	ND	0.040	mg/L	MCAWW 350.1	12/22/04	4362416
		Dilution Factor: 1		Analysis Time...: 16:00		
Bicarbonate, as CaCO ₃	190	10	mg/L	MCAWW 310.1	12/22/04	4362242
		Dilution Factor: 1		Analysis Time...: 21:48		
Carbonate, as CaCO ₃	ND	10	mg/L	MCAWW 310.1	12/22/04	4362241
		Dilution Factor: 1		Analysis Time...: 21:48		
Chloride	3.5	0.50	mg/L	MCAWW 300.0A	12/17/04	4355611
		Dilution Factor: 1		Analysis Time...: 13:44		
Ion Balance Difference	1.8	--	%	SM18 1030F & API	12/29/04	4364424
		Dilution Factor: 1		Analysis Time...: 12:00		
Ionized Ammonia	ND	0.040	mg/L	SM18 8010F	12/27/04	4362489
		Dilution Factor: 1		Analysis Time...: 16:00		
Nitrate	5.5	0.050	mg/L	MCAWW 300.0A	12/17/04	4355612
		Dilution Factor: 1		Analysis Time...: 13:44		
Nitrite	ND	0.50	mg/L	MCAWW 300.0A	12/17/04	4355613
		Dilution Factor: 1		Analysis Time...: 13:44		
Sulfate	28	5.0	mg/L	MCAWW 300.0A	12/17/04	4355610
		Dilution Factor: 1		Analysis Time...: 13:44		
Total Alkalinity	190	5.0	mg/L	MCAWW 310.1	12/22/04	4362239
		Dilution Factor: 1		Analysis Time...: 21:48		
Total Anions	4.8	0.30	meq/L	SM17 1030F & API	12/29/04	4364426
		Dilution Factor: 1		Analysis Time...: 12:00		
Total Cations	5.0	0.10	meq/L	SM17 1030F & API	12/29/04	4364425
		Dilution Factor: 1		Analysis Time...: 12:00		
Un-Ionized Ammonia	ND	0.040	mg/L	SM18 8010F	12/27/04	4362490
		Dilution Factor: 1		Analysis Time...: 16:00		

QC DATA ASSOCIATION SUMMARY

D4L170138

Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
001	WATER	MCAWW 310.1		4362241	
	WATER	MCAWW 300.0A		4355611	4358116
	WATER	MCAWW 300.0A		4355610	4358125
	WATER	MCAWW 300.0A		4355612	4358121
	WATER	MCAWW 300.0A		4355613	4358117
	WATER	SW846 8260B		4364500	4364306
	WATER	SW846 6010B		4352660	4352361
	WATER	SM18 1030F & API		4364424	
	WATER	SM17 1030F & API		4364426	
	WATER	SM17 1030F & API		4364425	
	WATER	MCAWW 310.1		4362242	
	WATER	SM18 8010F		4362490	
	WATER	MCAWW 310.1		4362239	4363286
	WATER	MCAWW 350.1		4362416	4362240
	WATER	SM18 8010F		4362489	
002	WATER	MCAWW 310.1		4362241	
	WATER	MCAWW 300.0A		4355611	4358116
	WATER	MCAWW 300.0A		4355610	4358125
	WATER	MCAWW 300.0A		4355612	4358121
	WATER	MCAWW 300.0A		4355613	4358117
	WATER	SW846 8260B		4364500	4364306
	WATER	SW846 6010B		4352660	4352361
	WATER	SM18 1030F & API		4364424	
	WATER	SM17 1030F & API		4364426	
	WATER	SM17 1030F & API		4364425	
	WATER	MCAWW 310.1		4362242	
	WATER	SM18 8010F		4362490	
	WATER	MCAWW 310.1		4362239	4363286
	WATER	MCAWW 350.1		4362416	4362240
	WATER	SM18 8010F		4362489	
003	WATER	SW846 8260B		4364500	4364306

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D4L170138
 MB Lot-Sample #: D4L290000-500
 Analysis Date...: 12/28/04
 Dilution Factor: 1

Work Order #...: G10FA1AA
 Prep Date.....: 12/28/04
 Prep Batch #...: 4364500

Matrix.....: WATER
 Analysis Time...: 11:07

PARAMETER	RESULT	REPORTING			METHOD
		LIMIT	UNITS		
Acetone	ND	13	ug/L	SW846	8260B
Acrylonitrile	ND	9.0	ug/L	SW846	8260B
Benzene	ND	0.69	ug/L	SW846	8260B
Bromochloromethane	ND	0.62	ug/L	SW846	8260B
Bromodichloromethane	ND	0.66	ug/L	SW846	8260B
Bromoform	ND	0.61	ug/L	SW846	8260B
Bromomethane	ND	1.3	ug/L	SW846	8260B
2-Butanone (MEK)	ND	5.5	ug/L	SW846	8260B
Carbon disulfide	ND	1.4	ug/L	SW846	8260B
Carbon tetrachloride	ND	0.62	ug/L	SW846	8260B
Chlorobenzene	ND	0.70	ug/L	SW846	8260B
Dibromochloromethane	ND	0.38	ug/L	SW846	8260B
Chloroethane	ND	1.1	ug/L	SW846	8260B
Chloroform	ND	0.62	ug/L	SW846	8260B
Chloromethane	ND	1.2	ug/L	SW846	8260B
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.82	ug/L	SW846	8260B
1,2-Dibromoethane (EDB)	ND	0.36	ug/L	SW846	8260B
Dibromomethane	ND	0.77	ug/L	SW846	8260B
1,2-Dichlorobenzene	ND	0.71	ug/L	SW846	8260B
1,4-Dichlorobenzene	ND	0.57	ug/L	SW846	8260B
trans-1,4-Dichloro-2-butene	ND	2.8	ug/L	SW846	8260B
Dichlorodifluoromethane	ND	0.57	ug/L	SW846	8260B
1,1-Dichloroethane	ND	0.74	ug/L	SW846	8260B
1,2-Dichloroethane	ND	0.68	ug/L	SW846	8260B
cis-1,2-Dichloroethene	ND	0.59	ug/L	SW846	8260B
trans-1,2-Dichloroethene	ND	0.63	ug/L	SW846	8260B
1,1-Dichloroethene	ND	0.59	ug/L	SW846	8260B
1,2-Dichloropropane	ND	0.66	ug/L	SW846	8260B
cis-1,3-Dichloropropene	ND	0.35	ug/L	SW846	8260B
trans-1,3-Dichloropropene	ND	0.83	ug/L	SW846	8260B
Ethylbenzene	ND	0.67	ug/L	SW846	8260B
2-Hexanone	ND	1.8	ug/L	SW846	8260B
Iodomethane	ND	0.68	ug/L	SW846	8260B
Methylene chloride	ND	1.7	ug/L	SW846	8260B
4-Methyl-2-pentanone	ND	1.4	ug/L	SW846	8260B
Styrene	ND	0.39	ug/L	SW846	8260B
1,1,1,2-Tetrachloroethane	ND	0.53	ug/L	SW846	8260B
1,1,2,2-Tetrachloroethane	ND	0.83	ug/L	SW846	8260B
Tetrachloroethene	ND	0.45	ug/L	SW846	8260B

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #....: D4L170138

Work Order #....: G10FA1AA

Matrix.....: WATER

PARAMETER	RESULT	REPORTING		METHOD
		LIMIT	UNITS	
Toluene	ND	0.71	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	0.65	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	0.72	ug/L	SW846 8260B
Trichloroethene	ND	0.54	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.1	ug/L	SW846 8260B
1,2,3-Trichloropropane	ND	1.1	ug/L	SW846 8260B
Vinyl acetate	ND	0.67	ug/L	SW846 8260B
Vinyl chloride	ND	0.65	ug/L	SW846 8260B
Xylenes (total)	ND	3.9	ug/L	SW846 8260B

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Dibromofluoromethane	103	(73 - 118)
1,2-Dichloroethane-d4	99	(62 - 128)
4-Bromofluorobenzene	93	(78 - 118)
Toluene-d8	102	(77 - 117)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #....: D4L170138 Work Order #....: G10FA1AC Matrix.....: WATER
 LCS Lot-Sample#: D4L290000-500
 Prep Date.....: 12/28/04 Analysis Date...: 12/28/04
 Prep Batch #....: 4364500 Analysis Time...: 10:44
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
Benzene	105	(75 - 120)	SW846 8260B
Chlorobenzene	97	(78 - 118)	SW846 8260B
1,1-Dichloroethene	100	(66 - 132)	SW846 8260B
Toluene	99	(78 - 118)	SW846 8260B
Trichloroethene	107	(79 - 122)	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Dibromofluoromethane	111	(73 - 118)
1,2-Dichloroethane-d4	107	(62 - 128)
4-Bromofluorobenzene	99	(78 - 118)
Toluene-d8	107	(77 - 117)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #....: D4L170138 Work Order #....: G10FA1AC Matrix.....: WATER
 LCS Lot-Sample#: D4L290000-500
 Prep Date.....: 12/28/04 Analysis Date...: 12/28/04
 Prep Batch #....: 4364500 Analysis Time...: 10:44
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>METHOD</u>
Benzene	10.0	10.5	ug/L	105	SW846 8260B
Chlorobenzene	10.0	9.70	ug/L	97	SW846 8260B
1,1-Dichloroethene	10.0	10.0	ug/L	100	SW846 8260B
Toluene	10.0	9.87	ug/L	99	SW846 8260B
Trichloroethene	10.0	10.7	ug/L	107	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Dibromofluoromethane	111	(73 - 118)
1,2-Dichloroethane-d4	107	(62 - 128)
4-Bromofluorobenzene	99	(78 - 118)
Toluene-d8	107	(77 - 117)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D4L170138 Work Order #...: G1X6Q1AC-MS Matrix.....: WATER
 MS Lot-Sample #: D4K020271-067 G1X6Q1AD-MSD
 Date Sampled...: 12/27/04 07:00 Date Received...: 12/27/04
 Prep Date.....: 12/28/04 Analysis Date...: 12/28/04
 Prep Batch #...: 4364500 Analysis Time...: 13:40
 Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	108	(75 - 120)			SW846 8260B
	99	(75 - 120)	5.5	(0-21)	SW846 8260B
Chlorobenzene	99	(78 - 118)			SW846 8260B
	97	(78 - 118)	2.1	(0-20)	SW846 8260B
1,1-Dichloroethene	99	(66 - 132)			SW846 8260B
	99	(66 - 132)	0.61	(0-26)	SW846 8260B
Toluene	98	(78 - 118)			SW846 8260B
	87	(78 - 118)	5.9	(0-22)	SW846 8260B
Trichloroethene	109	(79 - 122)			SW846 8260B
	103	(79 - 122)	6.1	(0-23)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	108	(73 - 118)
	106	(73 - 118)
1,2-Dichloroethane-d4	105	(62 - 128)
	101	(62 - 128)
4-Bromofluorobenzene	99	(78 - 118)
	99	(78 - 118)
Toluene-d8	108	(77 - 117)
	108	(77 - 117)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #....: D4L170138 Work Order #....: G1X6Q1AC-MS Matrix.....: WATER
 MS Lot-Sample #: D4K020271-067 G1X6Q1AD-MSD
 Date Sampled...: 12/27/04 07:00 Date Received...: 12/27/04
 Prep Date.....: 12/28/04 Analysis Date...: 12/28/04
 Prep Batch #....: 4364500 Analysis Time...: 13:40
 Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	5.6	10.0	16.4	ug/L	108		SW846 8260B
	5.6	10.0	15.5	ug/L	99	5.5	SW846 8260B
Chlorobenzene	ND	10.0	9.95	ug/L	99		SW846 8260B
	ND	10.0	9.74	ug/L	97	2.1	SW846 8260B
1,1-Dichloroethene	ND	10.0	9.93	ug/L	99		SW846 8260B
	ND	10.0	9.87	ug/L	99	0.61	SW846 8260B
Toluene	8.6	10.0	18.4	ug/L	98		SW846 8260B
	8.6	10.0	17.3	ug/L	87	5.9	SW846 8260B
Trichloroethene	ND	10.0	10.9	ug/L	109		SW846 8260B
	ND	10.0	10.3	ug/L	103	6.1	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	108	(73 - 118)
	106	(73 - 118)
1,2-Dichloroethane-d4	105	(62 - 128)
	101	(62 - 128)
4-Bromofluorobenzene	99	(78 - 118)
	99	(78 - 118)
Toluene-d8	108	(77 - 117)
	108	(77 - 117)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

METHOD BLANK REPORT

DISSOLVED Metals

Client Lot #...: D4L170138

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: D4L170000-660 Prep Batch #...: 4352660						
Iron	ND	30	ug/L	SW846 6010B	12/21/04	G1FA11AC
		Dilution Factor: 1				
		Analysis Time...: 22:16				
Magnesium	ND	5000	ug/L	SW846 6010B	12/21/04	G1FA11AE
		Dilution Factor: 1				
		Analysis Time...: 22:16				
Sodium	ND	5000	ug/L	SW846 6010B	12/21/04	G1FA11AG
		Dilution Factor: 1				
		Analysis Time...: 22:16				
Calcium	ND	5000	ug/L	SW846 6010B	12/21/04	G1FA11AD
		Dilution Factor: 1				
		Analysis Time...: 22:16				
Manganese	ND	5.0	ug/L	SW846 6010B	12/21/04	G1FA11AF
		Dilution Factor: 1				
		Analysis Time...: 22:16				
Potassium	ND	5000	ug/L	SW846 6010B	12/21/04	G1FA11AF
		Dilution Factor: 1				
		Analysis Time...: 22:16				

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

DISSOLVED Metals

Client Lot #...: D4L170138

Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: D4L170000-660 Prep Batch #... : 4352660					
Iron	104	(88 - 110)	SW846 6010B	12/21/04	G1FA11AK
		Dilution Factor: 1	Analysis Time...: 22:20		
Magnesium	102	(91 - 111)	SW846 6010B	12/21/04	G1FA11AM
		Dilution Factor: 1	Analysis Time...: 22:20		
Sodium	101	(91 - 112)	SW846 6010B	12/21/04	G1FA11AP
		Dilution Factor: 1	Analysis Time...: 22:20		
Calcium	104	(89 - 110)	SW846 6010B	12/21/04	G1FA11AL
		Dilution Factor: 1	Analysis Time...: 22:20		
Manganese	100	(90 - 110)	SW846 6010B	12/21/04	G1FA11AJ
		Dilution Factor: 1	Analysis Time...: 22:20		
Potassium	101	(86 - 111)	SW846 6010B	12/21/04	G1FA11AN
		Dilution Factor: 1	Analysis Time...: 22:20		

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

DISSOLVED Metals

Client Lot #...: D4L170138

Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample# : D4L170000-660 Prep Batch #... : 4352660							
Iron	1000	1040	ug/L	104	SW846 6010B	12/21/04	G1FA11AK
			Dilution Factor: 1		Analysis Time...: 22:20		
Magnesium	50000	51100	ug/L	102	SW846 6010B	12/21/04	G1FA11AM
			Dilution Factor: 1		Analysis Time...: 22:20		
Sodium	50000	50500	ug/L	101	SW846 6010B	12/21/04	G1FA11AP
			Dilution Factor: 1		Analysis Time...: 22:20		
Calcium	50000	51900	ug/L	104	SW846 6010B	12/21/04	G1FA11AL
			Dilution Factor: 1		Analysis Time...: 22:20		
Manganese	500	501	ug/L	100	SW846 6010B	12/21/04	G1FA11AJ
			Dilution Factor: 1		Analysis Time...: 22:20		
Potassium	50000	50400	ug/L	101	SW846 6010B	12/21/04	G1FA11AN
			Dilution Factor: 1		Analysis Time...: 22:20		

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

DISSOLVED Metals

Client Lot #...: D4L170138

Matrix.....: WATER

Date Sampled...: 12/16/04 09:30 Date Received...: 12/17/04

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD RPD	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D4L170210-001 Prep Batch #...: 4352660							
Iron	102	(52 - 155)			SW846 6010B	12/21/04	G1C1A1A0
	98	(52 - 155)	3.9	(0-25)	SW846 6010B	12/21/04	G1C1A1A1
			Dilution Factor: 1				
			Analysis Time...: 22:31				
Magnesium	104	(62 - 146)			SW846 6010B	12/21/04	G1C1A1A4
	94	(62 - 146)	4.5	(0-25)	SW846 6010B	12/21/04	G1C1A1A5
			Dilution Factor: 1				
			Analysis Time...: 22:31				
Sodium	NC,MSB	(70 - 203)			SW846 6010B	12/21/04	G1C1A1A8
	NC,MSB	(70 - 203)		(0-40)	SW846 6010B	12/21/04	G1C1A1A9
			Dilution Factor: 1				
			Analysis Time...: 22:31				
Calcium	104	(48 - 153)			SW846 6010B	12/21/04	G1C1A1A2
	97	(48 - 153)	4.0	(0-25)	SW846 6010B	12/21/04	G1C1A1A3
			Dilution Factor: 1				
			Analysis Time...: 22:31				
Manganese	100	(79 - 121)			SW846 6010B	12/21/04	G1C1A1AW
	96	(79 - 121)	3.7	(0-25)	SW846 6010B	12/21/04	G1C1A1AX
			Dilution Factor: 1				
			Analysis Time...: 22:31				
Potassium	102	(76 - 132)			SW846 6010B	12/21/04	G1C1A1A6
	95	(76 - 132)	4.7	(0-25)	SW846 6010B	12/21/04	G1C1A1A7
			Dilution Factor: 1				
			Analysis Time...: 22:31				

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

MATRIX SPIKE SAMPLE DATA REPORT

DISSOLVED Metals

Client Lot #...: D4L170138

Matrix.....: WATER

Date Sampled...: 12/16/04 09:30 Date Received...: 12/17/04

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D4L170210-001 Prep Batch #...: 4352660									
Iron									
	33	1000	1060	ug/L	102		SW846 6010B	12/21/04	G1C1A1A
	33	1000	1020	ug/L	98	3.9	SW846 6010B	12/21/04	G1C1A1A
Dilution Factor: 1									
Analysis Time...: 22:31									
Magnesium									
	65000	50000	117000	ug/L	104		SW846 6010B	12/21/04	G1C1A1A4
	65000	50000	112000	ug/L	94	4.5	SW846 6010B	12/21/04	G1C1A1A
Dilution Factor: 1									
Analysis Time...: 22:31									
Sodium									
	500000	50000	554000	ug/L			SW846 6010B	12/21/04	G1C1A1A
Qualifiers: NC,MSB									
	500000	50000	528000	ug/L			SW846 6010B	12/21/04	G1C1
Qualifiers: NC,MSB									
Dilution Factor: 1									
Analysis Time...: 22:31									
Calcium									
	26000	50000	78300	ug/L	104		SW846 6010B	12/21/04	G1C1A1A2
	26000	50000	75200	ug/L	97	4.0	SW846 6010B	12/21/04	G1C1A1A
Dilution Factor: 1									
Analysis Time...: 22:31									
Manganese									
	ND	500	500	ug/L	100		SW846 6010B	12/21/04	G1C1A1A
	ND	500	482	ug/L	96	3.7	SW846 6010B	12/21/04	G1C1A1A
Dilution Factor: 1									
Analysis Time...: 22:31									
Potassium									
	25000	50000	75500	ug/L	102		SW846 6010B	12/21/04	G1C1A1A
	25000	50000	72100	ug/L	95	4.7	SW846 6010B	12/21/04	G1C1A1A
Dilution Factor: 1									
Analysis Time...: 22:31									

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: D4L170138

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Ammonia as N	ND	Work Order #: G1TJX1AA 0.040 Dilution Factor: 1 Analysis Time...: 16:00	mg/L	MB Lot-Sample #: D4L270000-416 MCAWW 350.1	D4L270000-416 12/22/04	4362416
Chloride	ND	Work Order #: G1Q241AA 0.50 Dilution Factor: 1 Analysis Time...: 12:01	mg/L	MB Lot-Sample #: D4L200000-611 MCAWW 300.0A	D4L200000-611 12/17/04	4355611
Nitrate	ND	Work Order #: G1Q291AA 0.050 Dilution Factor: 1 Analysis Time...: 12:01	mg/L	MB Lot-Sample #: D4L200000-612 MCAWW 300.0A	D4L200000-612 12/17/04	4355612
Nitrite	ND	Work Order #: G1Q261AA 0.50 Dilution Factor: 1 Analysis Time...: 12:01	mg/L	MB Lot-Sample #: D4L200000-613 MCAWW 300.0A	D4L200000-613 12/17/04	4355613
Sulfate	ND	Work Order #: G1Q3H1AA 5.0 Dilution Factor: 1 Analysis Time...: 12:01	mg/L	MB Lot-Sample #: D4L200000-610 MCAWW 300.0A	D4L200000-610 12/17/04	4355610
Total Alkalinity	ND	Work Order #: G1WG41AA 5.0 Dilution Factor: 1 Analysis Time...: 21:48	mg/L	MB Lot-Sample #: D4L270000-239 MCAWW 310.1	D4L270000-239 12/22/04	4362239

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: D4L170138

Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Ammonia as N	102	Work Order #: G1TJX1AC (90 - 110)	LCS Lot-Sample#: D4L270000-416 MCAWW 350.1	12/22/04	4362416
		Dilution Factor: 1	Analysis Time...: 16:00		
Chloride	98	Work Order #: G1Q241AC (90 - 110)	LCS Lot-Sample#: D4L200000-611 MCAWW 300.0A	12/17/04	4355611
		Dilution Factor: 1	Analysis Time...: 11:27		
Nitrate	97	Work Order #: G1Q291AC (90 - 110)	LCS Lot-Sample#: D4L200000-612 MCAWW 300.0A	12/17/04	4355612
		Dilution Factor: 1	Analysis Time...: 11:27		
Nitrite	99	Work Order #: G1Q261AC (90 - 110)	LCS Lot-Sample#: D4L200000-613 MCAWW 300.0A	12/17/04	4355613
		Dilution Factor: 1	Analysis Time...: 11:27		
Sulfate	100	Work Order #: G1Q3H1AC (90 - 110)	LCS Lot-Sample#: D4L200000-610 MCAWW 300.0A	12/17/04	4355610
		Dilution Factor: 1	Analysis Time...: 11:27		
Total Alkalinity	99	Work Order #: G1WG41AC (95 - 110)	LCS Lot-Sample#: D4L270000-239 MCAWW 310.1	12/22/04	4362239
		Dilution Factor: 1	Analysis Time...: 21:48		

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D4L170138

Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Ammonia as N	4.00	4.08	mg/L	102	MCAWW 350.1	12/22/04	4362416
Work Order #: G1TJX1AC LCS Lot-Sample#: D4L270000-416 Dilution Factor: 1 Analysis Time...: 16:00							
Chloride	20.0	19.6	mg/L	98	MCAWW 300.0A	12/17/04	4355611
Work Order #: G1Q241AC LCS Lot-Sample#: D4L200000-611 Dilution Factor: 1 Analysis Time...: 11:27							
Nitrate	4.00	3.87	mg/L	97	MCAWW 300.0A	12/17/04	4355612
Work Order #: G1Q291AC LCS Lot-Sample#: D4L200000-612 Dilution Factor: 1 Analysis Time...: 11:27							
Nitrite	4.00	3.97	mg/L	99	MCAWW 300.0A	12/17/04	4355613
Work Order #: G1Q261AC LCS Lot-Sample#: D4L200000-613 Dilution Factor: 1 Analysis Time...: 11:27							
Sulfate	20.0	20.0	mg/L	100	MCAWW 300.0A	12/17/04	4355610
Work Order #: G1Q3H1AC LCS Lot-Sample#: D4L200000-610 Dilution Factor: 1 Analysis Time...: 11:27							
Total Alkalinity	200	197	mg/L	99	MCAWW 310.1	12/22/04	4362239
Work Order #: G1WG41AC LCS Lot-Sample#: D4L270000-239 Dilution Factor: 1 Analysis Time...: 21:48							

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: D4L170138

Matrix.....: WATER

Date Sampled...: 12/15/04 09:20 Date Received...: 12/17/04

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Ammonia as N			WO#: G1CDN1D7-MS/G1CDN1D8-MSD		MS Lot-Sample #: D4L170141-001		
	94	(44 - 130)			MCAWW 350.1	12/22/04	4362416
	92	(44 - 130)	1.4 (0-30)		MCAWW 350.1	12/22/04	4362416
			Dilution Factor: 1				
			Analysis Time...: 16:00				
Chloride			WO#: G1CDM1A0-MS/G1CDM1A1-MSD		MS Lot-Sample #: D4L170138-001		
	98	(80 - 120)			MCAWW 300.0A	12/17/04	4355611
	101	(80 - 120)	2.9 (0-20)		MCAWW 300.0A	12/17/04	4355611
			Dilution Factor: 1				
			Analysis Time...: 14:53				
Nitrate			WO#: G1CDM1A4-MS/G1CDM1A5-MSD		MS Lot-Sample #: D4L170138-001		
	109 I	(80 - 120)			MCAWW 300.0A	12/17/04	4355612
	111 I	(80 - 120)	1.2 (0-20)		MCAWW 300.0A	12/17/04	4355612
			Dilution Factor: 1				
			Analysis Time...: 14:53				
Nitrate			WO#: G1C1A1CF-MS/G1C1A1CG-MSD		MS Lot-Sample #: D4L170210-001		
	99	(80 - 120)			MCAWW 300.0A	12/17/04	4355612
	101	(80 - 120)	1.2 (0-20)		MCAWW 300.0A	12/17/04	4355612
			Dilution Factor: 1				
			Analysis Time...: 21:09				
Nitrite			WO#: G1CDM1A2-MS/G1CDM1A3-MSD		MS Lot-Sample #: D4L170138-001		
	99	(80 - 120)			MCAWW 300.0A	12/17/04	4355613
	101	(80 - 120)	1.8 (0-20)		MCAWW 300.0A	12/17/04	4355613
			Dilution Factor: 1				
			Analysis Time...: 14:53				
Sulfate			WO#: G1CDM1A6-MS/G1CDM1A7-MSD		MS Lot-Sample #: D4L170138-001		
	111	(80 - 120)			MCAWW 300.0A	12/17/04	4355610
	112	(80 - 120)	0.84 (0-20)		MCAWW 300.0A	12/17/04	4355610
			Dilution Factor: 1				
			Analysis Time...: 14:53				

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

I Estimated result. Result concentration exceeds the calibration range.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: D4L170138

Matrix.....: WATER

Date Sampled...: 12/15/04 09:20 Date Received...: 12/17/04

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Ammonia as N			WO#: G1CDN1D7-MS/G1CDN1D8-MSD				MS Lot-Sample #: D4L170141-001		
	ND	4.00	3.76	mg/L	94		MCAWW 350.1	12/22/04	4362416
	ND	4.00	3.71	mg/L	92	1.4	MCAWW 350.1	12/22/04	4362416
			Dilution Factor: 1						
			Analysis Time...: 16:00						
Chloride			WO#: G1CDM1A0-MS/G1CDM1A1-MSD				MS Lot-Sample #: D4L170138-001		
	3.8	25.0	28.3	mg/L	98		MCAWW 300.0A	12/17/04	4355611
	3.8	25.0	29.1	mg/L	101	2.9	MCAWW 300.0A	12/17/04	4355611
			Dilution Factor: 1						
			Analysis Time...: 14:53						
Nitrate			WO#: G1CDM1A4-MS/G1CDM1A5-MSD				MS Lot-Sample #: D4L170138-001		
	4.6	5.00	10.0 I	mg/L	109		MCAWW 300.0A	12/17/04	4355612
	4.6	5.00	10.1 I	mg/L	111	1.2	MCAWW 300.0A	12/17/04	4355612
			Dilution Factor: 1						
			Analysis Time...: 14:53						
Nitrate			WO#: G1C1A1CF-MS/G1C1A1CG-MSD				MS Lot-Sample #: D4L170210-001		
	0.97	5.00	5.93	mg/L	99		MCAWW 300.0A	12/17/04	4355612
	0.97	5.00	6.00	mg/L	101	1.2	MCAWW 300.0A	12/17/04	4355612
			Dilution Factor: 1						
			Analysis Time...: 21:09						
Nitrite			WO#: G1CDM1A2-MS/G1CDM1A3-MSD				MS Lot-Sample #: D4L170138-001		
	ND	5.00	4.95	mg/L	99		MCAWW 300.0A	12/17/04	4355613
	ND	5.00	5.04	mg/L	101	1.8	MCAWW 300.0A	12/17/04	4355613
			Dilution Factor: 1						
			Analysis Time...: 14:53						
Sulfate			WO#: G1CDM1A6-MS/G1CDM1A7-MSD				MS Lot-Sample #: D4L170138-001		
	18	25.0	45.8	mg/L	111		MCAWW 300.0A	12/17/04	4355610
	18	25.0	46.2	mg/L	112	0.84	MCAWW 300.0A	12/17/04	4355610
			Dilution Factor: 1						
			Analysis Time...: 14:53						

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

I Estimated result. Result concentration exceeds the calibration range.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #....: D4L170138

Work Order #....: G1AKR-SMP
G1AKR-DUP

Matrix.....: WATER

Date Sampled....: 12/14/04 14:08 Date Received...: 12/16/04

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH
Total Alkalinity	57	56	mg/L	1.1	(0-10)	MCAWW 310.1	SD Lot-Sample #: D4L160456-028 12/22/04	4362240
				Dilution Factor: 1	Analysis Time..: 21:48			

**Chair
Custody Record**

STL-4124 (0901)

12-11-04
M

**SEVERN
TRENT**

STL

Severn Trent Laboratories, Inc.

STL Denver
4955 Yarrow Street
Arvada, CO 80002

Client Wash Management		Project Manager Roger North		Date 12/15/04	Chain of Custody Number 310212
Address 191 S Webb Rd.		Telephone Number (Area Code)/Fax Number (504) 884-2402 / 509 662 4541		Lab Number	Page 1 of 1

City C. Winatchu	State LA	Zip Code 98807	Site Contact	Lab Contact Betsy Farnau	Analysis (Attach list if more space is needed)
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Project Name and Location (State) AWPL	Carrier/Waybill Number	Special Instructions/ Conditions of Receipt
Contract/Purchase Order/Quote No. 904 25609-B		

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix				Containers & Preservatives										Analysis (Attach list if more space is needed)									
			Air	Aqueous	Sed	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc	NaOH													
mw-07	12/15/04	1515		X				1	1	1	3						X	X	X	X	X	X	X	X	X	X
mw-11	12/15/04	1425		X				1	1	1	3						X	X	X	X	X	X	X	X	X	X
Tr. pBlm	12/15/04										1						X									

Possible Hazard Identification	Sample Disposal	(A fee may be assessed if samples are retained longer than 1 month)
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months	

Turn Around Time Required	QC Requirements (Specify)
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____	

1. Relinquished By [Signature]	Date 12/16/04	Time 1635	1. Received By [Signature]	Date 12/17/04	Time 0930
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

FIELD INFORMATION FORM



Site Name: GWRL

Site No.: 904 Sample Point: mw07 Sample ID: mw07

This Waste Management Field Information Form is Required

This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only Lab ID: D4470138-001

PURGE INFO: PURGE DATE (MM DD YY) 12/15/04 PURGE TIME (2400 Hr Clock) 14:45 ELAPSED HRS (hrs:min) 00:00 WATER VOL IN CASING (Gallons) 0 ACTUAL VOL PURGED (Gallons) 20 WELL VOLS PURGED 1

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

PURGE/SAMPLE EQUIPMENT: Purging and Sampling Equipment ... Dedicated: Y or N Filter Device: Y or N 0.45 µ (circle or fill in) Purging Device: C A-Submersible Pump D-Bailer Filter Type: A A-In-line Disposable C-Vacuum Sampling Device: C B-Peristaltic Pump E-Piston Pump B-Pressure X-Other: C-OED Bladder Pump F-Dipper/Bottle A-Teflon C-PVC X-Other: B-Stainless Steel D-Polypropylene Sample Tube Type: C

WELL DATA: Well Elevation (at TOC) (ft/msl) 342.63 Depth to Water (DTW) (from TOC) (ft) 342.63 Groundwater Elevation (site datum, from TOC) (ft/msl) 342.63 Total Well Depth (from TOC) (ft) 342.63 Stick Up (from ground elevation) (ft) 342.63 Casing ID (in) 2 Casing Material PVC

Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by State/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
14:47	1.00	7.95	462	12.5		8.03	450.0	342.63
14:50	0.25	7.80	462	13.4		7.82	448.2	342.63
14:53	0.50	7.80	462	13.4		7.66	449.5	342.63
14:56	0.75	7.89	464	14.2		7.46	446.1	342.63
14:59	1.00	7.89	464	14.3		7.42	452.6	342.63
15:02	1.25	7.92	465	14.3		7.43	453.6	342.6
15:05	1.50	7.92	465	14.3		7.36	452.9	342.63
15:08	1.75	7.92	465	14.3		7.34	451.7	342.63
15:11	2.0	7.92	465	14.5		7.31	448.5	342.63
								342.63

Suggested range for 3 consec. readings or note Permit/State requirements:

+/- 0.2

+/- 3%

--

--

+/- 10%

+/- 25 mV

Stabilize

Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
12/15/04	7.92	465	14.5		7.31	448.5	342.63

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: CLEAR Odor: NONE Color: COLORLESS Other:

Weather Conditions (required daily, or as conditions change): 40°Fs / OVERCAST

Direction/Speed: —

Outlook: Overcast ~ 70%

Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

low flow purge (MICROPURGE TECHNIQUE): FLOW RATE = 375 mL/min
SAMPLE TIME = 1515

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

12/15/04

BEN UHL

BEN UHL

EMCON

Date

Name

Signature

Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

FIELD INFORMATION FORM



Site
me: GWRL
te: 904
Sample Point: MW11

This Waste Management Field Information Form is Required

This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the Laboratory).

Laboratory Use Only/Lab ID:

DU L170138-02

PURGE INFO
PURGE DATE (MM DD YY) 12/15/04 PURGE TIME (2400 Hr Clock) 1352 ELAPSED HRS (hrs:min) 1 WATER VOL IN CASING (Gallons) 1 ACTUAL VOL PURGED (Gallons) 1 WELL VOLS PURGED 1

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below:

PURGE/SAMPLE EQUIPMENT
Purging and Sampling Equipment: ☒ Dedicated or ☐ N Filter Device: ☒ or ☐ N 0.45 µ or 1 µ (circle or fill in)
Purging Device: A A-Submersible Pump D-Bailer Filter Type: A A-In-line Disposable C-Vacuum
Sampling Device: C B-Peristaltic Pump E-Piston Pump B-Pressure X-Other
X-Other: Sample Tube Type: C A-Teflon C-PVC X-Other: B-Stainless Steel D-Polypropylene

WELL DATA
Well Elevation (at TOC) Depth to Water (DTW) (from TOC) 419.84 (ft) Groundwater Elevation (site datum, from TOC) Casing ID 2 (in) Casing Material PVC
Total Well Depth (from TOC) Stick Up (from ground elevation) Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by State/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

ATA (Optional)	STABILIZATION	Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		<u>13:55</u>	<u>0</u>	<u>7.99</u>	<u>388</u>	<u>9.7</u>	<u>—</u>	<u>10.04</u>	<u>467.2</u>	<u>419.84</u>
		<u>13:58</u>	<u>0.25</u>	<u>7.77</u>	<u>389</u>	<u>11.0</u>		<u>9.15</u>	<u>475.6</u>	<u>419.84</u>
		<u>14:01</u>	<u>0.50</u>	<u>7.77</u>	<u>391</u>	<u>11.0</u>		<u>8.75</u>	<u>476.2</u>	<u>419.84</u>
		<u>14:04</u>	<u>0.75</u>	<u>7.77</u>	<u>398</u>	<u>11.9</u>		<u>8.56</u>	<u>474.3</u>	<u>419.84</u>
		<u>14:07</u>	<u>1.00</u>	<u>7.82</u>	<u>436</u>	<u>12.5</u>		<u>8.58</u>	<u>459.2</u>	<u>419.84</u>
		<u>14:10</u>	<u>1.25</u>	<u>7.83</u>	<u>445</u>	<u>12.7</u>		<u>8.43</u>	<u>457.1</u>	<u>419.84</u>
		<u>14:13</u>	<u>1.50</u>	<u>7.83</u>	<u>445</u>	<u>12.7</u>		<u>8.41</u>	<u>450.2</u>	<u>419.84</u>
		<u>14:16</u>	<u>1.75</u>	<u>7.83</u>	<u>447</u>	<u>12.7</u>		<u>8.42</u>	<u>454.4</u>	<u>419.84</u>
		<u>14:19</u>	<u>2.00</u>							

Suggested range for 3 consec. readings or note Permit/State requirements:

Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/State. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

FIELD DATA
SAMPLE DATE (MM DD YY) pH (std) CONDUCTANCE (µmhos/cm @ 25°C) TEMP. (°C) TURBIDITY (ntu) DO (mg/L-ppm) eH/ORP (mV) Other: Units

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/State).

Sample Appearance: CLEAR Odor: NONE Color: COLORLESS Other:

Weather Conditions (required daily, or as conditions change): 40'S OF / OVERCAST Direction/Speed: Outlook: OVERCAST 30°F Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Low Flow ppg method. Ppg rate is ~ 370 ml/min
SAMPLE TIME = 1425

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

12.15.04 BEN UHL BEN UHL EMEON

Date

Name

Signature

Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

ION BALANCE REPORT
Lab Sample ID: D4L170138-001
Client Sample ID: MW-07

SAMPLE SUMMARY

Percent Difference	1.68
Total Ions (meq/L)	10.05
TDS Ratio (measured/calculated)	NC
Calculated TDS (cations+anions, mg/L)	330.26

CATION ANALYSES

Analyte	mg/L	meq/L
Calcium	46.00	2.30
Magnesium	22.00	1.81
Potassium	6.80	0.17
Sodium	19.00	0.83
Ammonia as N	0.03	0.00
Iron	0.03	0.00
Aluminum	NA	NA
Total Cations	93.86	5.11

ANION ANALYSES

Analyte	mg/L	meq/L
Chloride	3.80	0.11
Sulfate	18.00	0.37
Nitrate+Nitrite	4.60	0.33
Carbonate Alkalinity	NA	NA
Bicarbonate Alkalinity	NA	NA
Hydroxide Alkalinity	NA	NA
Total Alkalinity	210.00	4.13
Total Anions	236.40	4.94

OTHER ANALYSES

Analyte	mg/L
Total Dissolved Solids	NA

ND - Not Detected
NA - Not Analyzed
NC - Not Calculated

Note: Calculations are most accurate under standard conditions. Extremes of pH or conductivity may lead to inaccuracy, as will high levels of cations or anions not analyzed.

ION BALANCE REPORT

Lab Sample ID: D4L170138-002
Client Sample ID: MW-11

SAMPLE SUMMARY

Percent Difference	1.85
Total Ions (meq/L)	9.80
TDS Ratio (measured/calculated)	NC
Calculated TDS (cations+anions, mg/L)	319.00

CATION ANALYSES

Analyte	mg/L	meq/L
Calcium	41.00	2.05
Magnesium	22.00	1.81
Potassium	7.00	0.18
Sodium	22.00	0.96
Ammonia as N	ND	ND
Iron	ND	ND
Aluminum	NA	NA
Total Cations	92.00	4.99

ANION ANALYSES

Analyte	mg/L	meq/L
Chloride	3.50	0.10
Sulfate	28.00	0.58
Nitrate+Nitrite	5.50	0.39
Carbonate Alkalinity	NA	NA
Bicarbonate Alkalinity	NA	NA
Hydroxide Alkalinity	NA	NA
Total Alkalinity	190.00	3.74
Total Anions	227.00	4.81

OTHER ANALYSES

Analyte	mg/L
Total Dissolved Solids	NA

ND - Not Detected
NA - Not Analyzed
NC - Not Calculated

Note: Calculations are most accurate under standard conditions. Extremes of pH or conductivity may lead to inaccuracy, as will high levels of cations or anions not analyzed.