Volume 2 of 2

Olalla Landfill Remedial Investigation/Feasibility Study

Prepared for

Kitsap County Department of Public Works,
Solid Waste Division

May 2014

Prepared by

Parametrix

Appendix A

Closure QA Documentation

APPENDIX D

LANDFILL CLOSURE FINAL COVER QUALITY ASSURANCE TESTING RESULTS FROM PARAMETRIX, 1989

OLALLA LANDFILL CLOSURE, Kitsap County, Washington
Final Cover Quality Assurance Testing Results

Soil Sample/ Core Number	Test Location	In-place Density (PCF)	Max. Dry Density (PCF)	Percent Compaction (%)	In-Place Moisture Content (%)	Optimum Moisture (%)	Atterberg Limits	Permeability (CM/SEC)	Comments
1ST BARRIER LIFT									
S-7 / CORE A	GRID #1	124.7	125.7	99.2	10.5	9.8	NP	1.2E-07	
S-8 / CORE J	GRID #2	122.7	124.1	98.9	9.4	11.0	NP	7.3E-08	
S-9	GRID #3	123.8	123.3	100+	10.4	10.2	NP		
S-10	GRID #4	122.7	122.7	100.0	10.0	12.7	NP		
S-11	GRID #5	125.0	117.0	100+	10.6	13.0	NP		
S-12 / CORE B	GRID #6	124.0	118.6	100+	10.6	11.8	NP	2.8E-07	
S-13	GRID #7	124.4	117.0	100+	10.9	14.5	NP		
S-14	GRID #8	123.5	118.9	100+	11.9	13.5	NP		
S-15 / CORE C	GRID #9	124.0	120.8	100+	10.4	12.9	NP	1.7E-06	
S-16	GRID #10	117.6	114.5	100+	14.9	16.6	NP		
S-17	GRID #11	120.3	121.7	98.8	14.1	14.2	NP		
S-18 / CORE I	GRID #12	116.0	120.6	96.2	14.8	13.3	NP	9.3E-08	
S-19	GRID #16	114.3	119.1	96.0	15.3	16.4	NP		
S-20	GRID #17	113.4	119.8	94.7	15.8	15.0	NP		
S-21 / CORE D	GRID #24	120.8	122.0	99.0	14.0	9.9	NP	4.0E-08	
S-22 / CORE F	GRID #25	114.9	119.6	96.1	14.9	13.9	NP	1.4E-07	

OLALLA LANDFILL CLOSURE, Kitsap County, Washington
Final Cover Quality Assurance Testing Results

Soil Sample/ Core Number	Test Location	In-place Density (PCF)	Max. Dry Density (PCF)	Percent Compaction (%)	In-Place Moisture Content (%)	Optimum Moisture (%)	Atterberg Limits	Permeability (CM/SEC)	Comments
S-23	GRID #23	115.9	123.1	94.2	10.9	12.4	NP		
S-24	GRID #18	118.3	125.8	94.0	13.6	12.8	NP		
S-25 / CORE E	GRID #15	118.3	121.8	97.1	13.4	13.1	NP	5.5E-07	
S-26	GRID #14	115.3	118.0	97.7	13.3	15.2	NP		
S-27	GRID #19	117.0	116.3	100+	14.6	13.7	NP		
S-28 / CORE G	GRID #22	114.2	118.3	96.5	14.9	13.7	NP	4.3E-08	
S-29	GRID #26	115.0	115.7	99.4	13.7	14.6	NP		
S-30	GRID #21	116.8	125.0	93.4	14.0	12.0	NP		
S-31 / CORE H	GRID #20	114.0	120.4	94.7	15.0	13.0	NP	4.1E-07	
S-32	GRID #13	114.1	123.1	92.7	14.8	10.2	NP		

OLALLA LANDFILL CLOSURE, Kitsap County, Washington
Final Cover Quality Assurance Testing Results

Soil Sample/ Core Number	Test Location	In-place Density (PCF)	Max. Dry Density (PCF)	Percent Compaction (%)	In-Place Moisture Content (%)	Optimum Moisture (%)	Atterberg Limits	Permeability (CM/SEC)	Comments
2ND BARRIER LIFT									
S-33 / CORE P	GRID #21	120.3	120.8	99.6	6.0	11.4	NP	6.6E-07	
S-34	GRID #20	119.0	127.6	93.3	7.8	9.8	NP		
S-35	GRID #13	116.6	119.3	97.7	7.9	11.6	NP		
S-36 / CORE T	GRID #12	117.7	128.0	92.0	8.3	9.5	NP	1.4E-06	
S-37	GRID #26	118.3	124.2	95.2	11.5	12.2	NP		
S-38	GRID #22	120.3	118.2	100+	10.5	14.3	NP		
S-39 / CORE M	GRID #19	110.7	121.0	91.5	8.4	10.4	NP	7.0E-07	
S-40	GRID #14	114.5	120.2	95.3	9.3	14.3	NP		
S-41 / CORE L	GRID #11	116.3	119.4	97.4	10.7	13.5	NP	7.8E-08	
S-42	GRID #5	116.5	122.0	95.5	10.9	11.7	NP		
S-43 / CORE K	GRID #4	114.6	119.0	96.3	11.6	12.0	NP	7.8E-07	
S-44 / CORE O	GRID #3	118.7	120.9	98.2	10.0	13.2	NP	2.8E-07	
S-45	GRID #6	118.9	120.6	98.6	11.6	13.2	NP		
S-46	GRID #10	123.7	119.8	100+	10.5	11.1	NP		
S-47	GRID #15	116.9	120.3	97.2	10.0	14.3	NP		

OLALLA LANDFILL CLOSURE, Kitsap County, Washington
Final Cover Quality Assurance Testing Results

Soil Sample/ Core Number	Test Location	In-place Density (PCF)	Max. Dry Density (PCF)	Percent Compaction (%)	In-Place Moisture Content (%)	Optimum Moisture (%)	Atterberg Limits	Permeability (CM/SEC)	Comments
S-48	GRID #18	114.5	121.8	94.0	11.5	15.4	NP		
S-49 / CORE N	GRID #23	112.9	121.5	92.9	13.6	14.1	NP	3.1E-07	
S-50	GRID #25	114.0	119.3	95.6	10.0	13.4	NP		
S-51 / CORE Q	GRID #8	113.5	123.5	91.9	11.4	10.6	NP	8.6E-07	
S-52	GRID #1	109.4	120.1	91.1	14.3	13.9	NP		
S-53	GRID #2	109.8	121.5	90.4	12.2	11.7	NP		
S-54	GRID #7	111.7	123.4	90.5	12.4	15.0	NP		
S-55 / CORE R	GRID #9	109.7	121.6	90.2	11.5	12.0	NP	3.0E-07	
S-56	GRID #16	110.8	123.0	90.1	11.7	12.4	NP		
S-57	GRID #17	109.7	122.0	89.9	11.7	11.1	NP		
S-58 / CORE S	GRID #24	110.3	119.8	92.1	13.0	14.6	NP	3.7E-07	

OLALLA LANDFILL CLOSURE, Kitsap County, Washington
Final Cover Quality Assurance Testing Results

Soil Sample/ Core Number	Test Location	In-place Density (PCF)	Max. Dry Density (PCF)	Percent Compaction (%)	In-Place Moisture Content (%)	Optimum Moisture (%)	Atterberg Limits	Permeability (CM/SEC)	Comments
3RD BARRIER LIFT									
S-59	GRID #8	117.1	119.3	98.2	15.6	11.7	NP		
S-60	GRID #1	116.4	121.0	96.2	16.3	14.5	NP		
S-61	GRID #2	114.8	123.9	92.7	16.7	14.2	NP		
S-62 / CORE U	GRID #7	116.5	123.7	94.2	16.4	12.4	NP	6.7E-08	
S-63	GRID #9	118.5	125.0	94.8	15.3	14.8	NP		
S-64 / CORE V	GRID #16	111.3	122.6	90.8	15.7	15.9	NP	1.9E-08	
S-65 / CORE d	GRID #17	112.7	124.3	90.7	15.1	14.7	NP	3.5E-07	
S-66	GRID #24	119.7	123.5	96.9	15.1	13.2	NP		
S-67	GRID #25	112.4	123.4	91.1	17.0	13.4	NP		
S-68	GRID #23	116.6	120.8	96.5	17.1	15.3	NP		
S-69 / CORE W	GRID #18	124.4	123.9	100+	15.9	12.1	NP	4.5E-07	
S-70	GRID #15	115.6	123.5	93.6	16.2	14.2	NP		
S-71 / CORE X	GRID #10	117.1	121.4	96.5	14.1	13.6	NP	1.6E-07	
S-72	GRID #6	115.8	122.3	94.7	15.4	13.2	NP		
S-73	GRID #3	114.7	120.3	95.3	13.8	14.0	NP		

OLALLA LANDFILL CLOSURE, Kitsap County, Washington
Final Cover Quality Assurance Testing Results

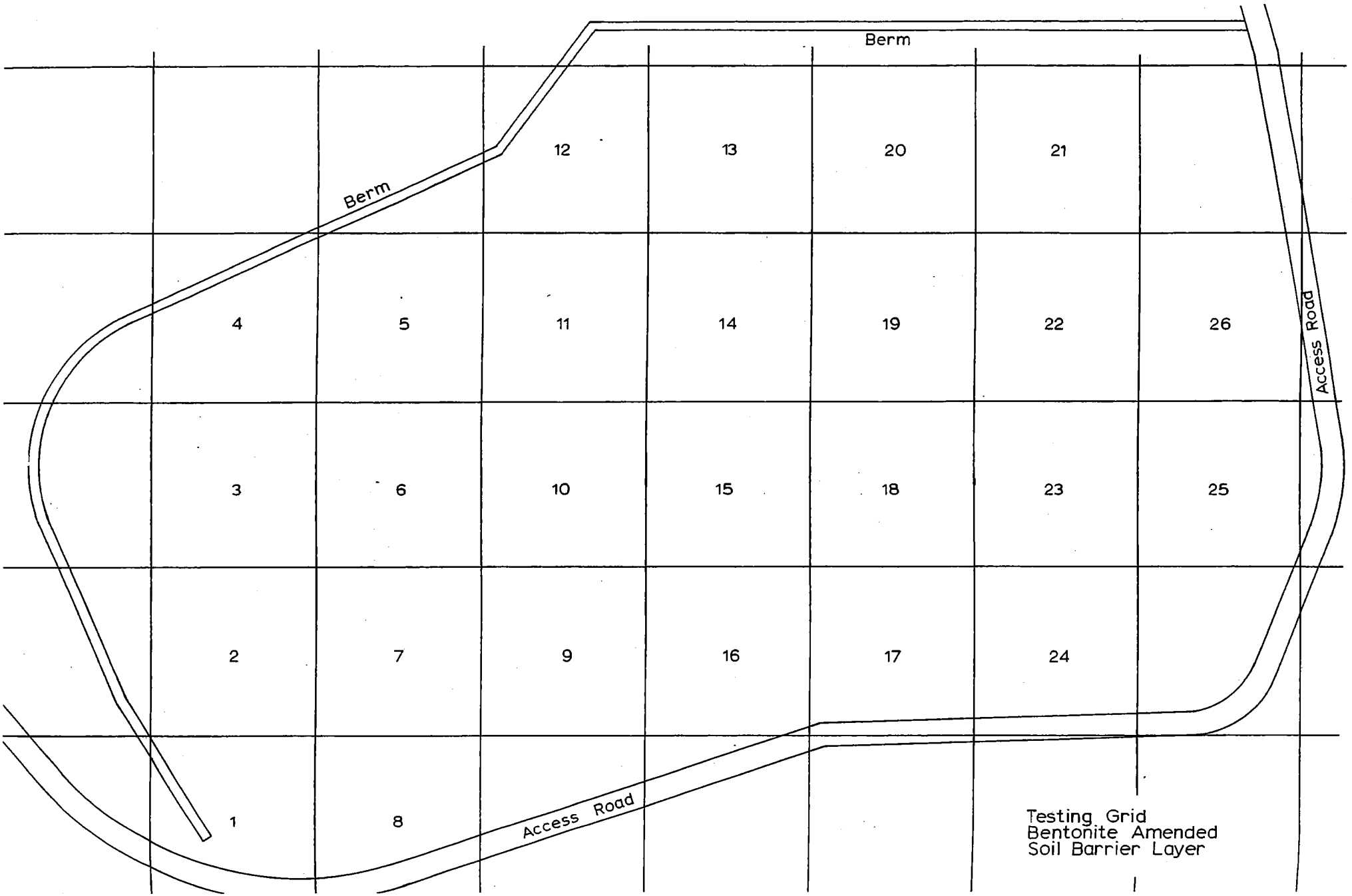
Soil Sample/ Core Number	Test Location	In-place Density (PCF)	Max. Dry Density (PCF)	Percent Compaction (%)	In-Place Moisture Content (%)	Optimum Moisture (%)	Atterberg Limits	Permeability (CM/SEC)	Comments
S-74	GRID #4	112.4	121.1	92.8	13.1	13.5	NP		
S-75 / CORE Y	GRID #5	111.1	123.5	90.0	15.1	15.1	NP	1.4E-07	
S-76	GRID #11	110.5	121.3	91.1	15.4	13.9	NP		
S-77 / CORE Z	GRID #14	114.1	125.1	91.2	14.9	12.1	NP	8.5E-08	
S-78	GRID #19	110.7	120.1	92.2	16.3	13.7	NP		
S-79	GRID #22	116.7	120.6	96.8	15.9	13.0	NP		
S-80 / CORE a	GRID #26	118.3	121.7	97.2	16.5	14.8	NP	5.0E-09	
S-81	GRID #21	114.3	125.1	91.4	13.3	15.1	NP		
S-82	GRID #20	114.0	123.1	92.6	13.3	14.1	NP		
S-83	GRID #13	113.9	121.2	94.0	12.7	13.7	NP		
S-84	GRID #12	119.0	121.8	97.7	15.3	13.4	NP		
CORE b	GRID #21/26							6.7E-07	
CORE c	GRID #24/25							1.8E-07	
				FINAL COVER PERMEABILITY:		MEAN DENSITY	===>	3.8E-07	

OLALLA LANDFILL CLOSURE, Kitsap County, Washington
Final Cover Quality Assurance Testing Results

Soil Sample/ Core Number	Test Location	In-place Density (PCF)	Max. Dry Density (PCF)	Percent Compaction (%)	In-Place Moisture Content (%)	Optimum Moisture (%)	Atterberg Limits	Permeability (CM/SEC)	Comments
BANK AND DRAINAGE CONSTRUCTION									
1ST BARRIER LIFT									
DRAINAGE DITCH, E. WEST BANK	GRID #3	117.9	120.5	97.8	5.1	13.1	NP		
DRAINAGE DITCH, S. SOUTH BANK	GRID #8	128.0	120.5	100+	4.2	13.1	NP		
DRAINAGE DITCH, S. NORTH BANK	GRID #24	121.7	120.5	100+	4.2	13.1	NP		
DRAINAGE DITCH, W. EAST BANK	GRID #21	118.4	120.5	98.3	4.4	13.1	NP		
DRAINAGE DITCH, N. NORTH BANK	GRID #13	119.3	120.5	99.0	4.6	13.3	NP		
DRAINAGE DITCH CORE DDI	GRID #5	N/A	N/A	N/A	N/A	N/A	N/A	2.2E-05	
2ND BARRIER LIFT									
DRAINAGE DITCH	GRID #12	117.3	121.5	96.5	14.6	12.6	NP		
DRAINAGE DITCH	GRID #4	115.8	121.5	95.3	12.2	12.6	NP		
DRAINAGE DITCH	GRID #1	118.3	121.5	97.4	11.9	12.6	NP		
DRAINAGE DITCH	GRID #16	116.9	121.5	96.2	13.4	12.6	NP		

OLALLA LANDFILL CLOSURE, Kitsap County, Washington
Final Cover Quality Assurance Testing Results

Soil Sample/ Core Number	Test Location	In-place Density (PCF)	Max. Dry Density (PCF)	Percent Compaction (%)	In-Place Moisture Content (%)	Optimum Moisture (%)	Atterberg Limits	Permeability (CM/SEC)	Comments
DRAINAGE DITCH	GRID #25	114.4	121.5	94.2	14.7	12.6	NP		
DRAINAGE DITCH CORE DDII	GRID #21	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-06	
3RD BARRIER LIFT									
DRAINAGE DITCH	GRID #12	114.8	122.4	93.8	15.6	13.9	NP		
DRAINAGE DITCH	GRID #4	117.0	122.4	95.6	16.0	13.9	NP		
DRAINAGE DITCH	GRID #2	115.4	122.4	94.3	14.7	13.9	NP		
DRAINAGE DITCH	GRID #9	119.3	122.4	97.5	15.1	13.9	NP		
DRAINAGE DITCH	GRID #24	117.2	122.4	95.8	15.3	13.9	NP		
DRAINAGE DITCH CORE DDIII	GRID #17	N/A	N/A	N/A	N/A	N/A	N/A	1.9E-07	


Berm
Berm
Access Road
Access Road
12
13
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23
25
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16
17
24
1
8
Testing Grid
Bentonite Amended
Soil Barrier Layer

Appendix B

Solid Waste Handling Permits

KITSAP PUBLIC HEALTH DISTRICT

2012
SOLID WASTE HANDLING PERMIT

Issued in accordance with the provisions of Chapter 173-304 of the Washington Administrative Code (WAC) and Kitsap County Board of Health Ordinance 2010-1 "Solid Waste Regulations."

PERMIT PERIOD: JANUARY 1, 2012- DECEMBER 31, 2012

SECTION I. PERMITTEE AND ADMINISTRATION INFORMATION

FACILITY TYPE:	Mixed Municipal Solid Waste Landfill (Closed Under Chapter 173-304 WAC in May 1989)
ANNUAL PERMIT FEE:	$109/hr, not to exceed $10,000/yr during MTCA
FACILITY NAME:	Olalla Landfill
FACILITY LOCATION:	Approximately 3/4 mile east of Hwy. 16 on Burley-Olalla Rd.
FACILITY OWNER:	Kitsap County Department of Public Works
CONTACT PERSON:	Ms. Keli McKay-Means
TITLE:	Landfill Specialist
OWNER ADDRESS:	614 Division Street, MS-27, Port Orchard, WA 98366
OWNER PHONE:	(360) 337-5665

This permit is the property of the Kitsap Public Health District and may be suspended or revoked, after opportunity for hearing, upon violation of any rules and regulations applicable hereto. This permit is not transferable and must be renewed annually. The terms of this permit remain in effect until the date the next permit is issued.

Janet Brower
Program Manager
Solid and Hazardous Waste Program

6/1/2012
Date

File Location: jb/swwqbcd/shw/common/permits/landfills/Olalla
Date Prepared: January 12, 2012
Date Issued: June 1, 2012

SECTION II. STANDARD PERMIT CONDITIONS

A. Terms pertaining to solid waste used in this permit shall be as defined per Kitsap County Board of Health (KCBH) Ordinance 2010-1, in Section 100, as amended.

B. All conditions of this permit shall be binding upon, and the permittee shall be responsible for, all acts and omissions of all contractors and agents of the permittee for the term of the permit and post-closure period.

C. The permittee shall notify the Kitsap Public Health District (Health District) in writing in advance of any alterations or changes planned in the post-closure plan, when these changes are different or absent from this permit. All alterations or additions to the maintenance and closure of the facility must be included in written plans approved by the Health District before implementation.

D. Facility maintenance during post-closure shall be conducted in strict compliance with KCBH Ordinance 2010-1, Solid Waste Regulations, (Chapter 173-304 WAC adopted by reference) as amended, and the specific conditions of this permit. In the event of conflict between state and local regulations, the more stringent requirement shall apply.

E. The Health Officer or his/her duly authorized inspector, or any duly authorized representative of the Washington State Department of Ecology, may, upon giving a minimum 3-day notice prior to entry, enter and inspect any building, structure, property, or portion thereof, at any reasonable time for the purpose of determining compliance with the provisions of this permit, or the provisions of other applicable rules and regulations, or whenever the Health Officer has reason to believe that a violation of this permit has been or is being committed. Entry shall not be unreasonably denied by the permittee, or his/her agent, but may be conditioned on the permittee or an agent of the permittee escorting the inspector, with said escort to be provided immediately upon request. Wet weather inspections conducted during significant rain events will be conducted with prior notice, but not necessarily providing a minimum 3-day notice depending upon conditions.

F. The permittee shall report all instances of non-compliance (except regulatory exceedances which are outlined in Section IV.E.2.b) in writing within seven (7) days from time of discovery. Instances of non-compliance which may result in potential public health risk and/or environmental damage shall be reported immediately.

G. This permit or copy thereof shall be located where it can be readily referred to by oversight personnel.

H. This permit may be amended by the Health District. Amendments shall be made in writing and become specific conditions of the permit. Proposed amendments will be forwarded to the permittee for a fifteen (15) day review and comment period, unless otherwise waived in writing by the Health District. Upon consideration of the permittee's comments, the final

amendment will be issued and become effective. The permittee review and comment period may be waived by the Health District in emergencies where there is an imminent threat to human health or the environment.

SECTION III. FEES

A. The permittee shall pay an annual permit fee as a condition of permit issuance. As provided for in WAC 173-304-600(2)(e), the Health District may establish reasonable fees for permits and permit renewals. The current annual fee for this permit is shown in Section I. This fee is an estimate of both routine and non-routine activities. The annual permit fee covers the following Health District activities and is based on the time expended by the Health District billed at the approved billing rate in the current fee schedule as provided for in Health District's current Fee Schedule.

1. Reviewing/commenting on three Quarterly Monitoring Reports.
2. Reviewing/commenting on one Annual Report.
3. Meet with permit holder annually to discuss the status of the facility and, ***to the extent possible, identify proposed Health District activities or requirements related to the facility that would require fees in addition to the Annual Permit Fee.***
4. Permit drafting/issuance.
5. Plan and/or design review.
6. Four site inspections and associated inspection reports.
7. Administrative costs including routine communications, supervisor review of documents, and billing invoices.
8. Health District oversight and review required as a result of the Health District's determination that the operation is in non-compliance with this permit and/or applicable regulations;
9. Health District participation in MTCA review, comment, and meetings through 2012;
10. Amendments to the existing permit;
11. Report, plan, or design review associated with any corrective action or to correct non-compliance at the facility; or
12. Other permit related work beyond those items listed in Section III.A. above.

B. The annual permit fee will be invoiced semi-annually. Whenever a fee is assessed a Health District billing invoice will be sent to the permittee at the address provided by the permittee. Each invoice will be accompanied by a Detail Report that shows each entry by each staff member and a description of the activity being billed. A copy of the billing invoice with a check or money order for the assessed amount shall be sent by the permittee to the Health District and within thirty (30) days of receipt. Payment and a copy of the invoice shall be sent to:

Kitsap Public Health District
Accounting Office

345 6th Street, Suite 300
Bremerton, WA 98337-1866

C. The total annual fee for 2012 shall not exceed $10,000.00, billed at the established Health District hourly rate.

SECTION IV. SPECIFIC PERMIT CONDITIONS

A. Plan of Maintenance and Post-Closure

1. The permittee shall provide post-closure activities to allow for continued facility maintenance and monitoring of air, land, and ground and surface waters, as long as necessary for the facility to stabilize, to protect human health and the environment as determined by the Health District. These post-closure activities shall be conducted in strict compliance with Chapter 173-304 WAC, KCBH Ordinance 2010-1, and the conditions of this permit.

2. Post-closure activities include, but are not limited to, the following: ground water monitoring; surface water monitoring; landfill gas monitoring; and proper operation and maintenance of the facility, facility structures, and facility monitoring systems for their intended use for a period of no less than twenty years from the date of final closure (May 1989).

3. The permittee shall close and maintain the landfill in accordance with the regulations stipulated in Section II.D. of this permit and in conformance with the Health District approved post-closure plan "Olalla Landfill Final Closure Plan," June 1988, as amended, which includes, but is not limited to the actions specified in Section IV.2. above. Closure activities not in conformance with these regulations and this plan shall be considered in violation of this permit.

4. The Health District may determine that the facility post-closure plan is invalid and require the permittee to amend the facility post-closure plan for approval by the Health District.

5. When the Health District determines that a facility post-closure plan amendment is required, the Health District shall, after consultation with the permittee, designate a compliance schedule for submittal of the amendment and its review and approval.

6. The Health District may direct facility post-closure activities to cease, in part or whole, until the post-closure plan amendment has received written approval by the Health District.

7. When post-closure activities are complete, the permittee shall certify to the Health District that the facility is stabilized and state why post-closure activities are no longer necessary. The certification shall be signed by the permittee and a professional engineer registered in the state of Washington.

B. Minimum Functional Standards for Maintenance. The permittee shall provide all activities necessary to allow for continued facility maintenance. These activities include, but are not limited to:
   1. Stormwater quantity and quality control;
   2. Slope stability, erosion and dust control;
   3. Maintenance of access roads and ditches;
   4. Maintenance of facility structures and systems (i.e., stormwater, landfill cover, gas control, surface and ground water monitoring, etc.);
   5. Control and minimization, or elimination, of threats to human health and environment; and
   6. Unauthorized entry at the facility shall be controlled, at minimum, by means of a lockable gate, barrier, fence, etc., at the property boundary.

C. Minimum Standards for Performance. The permittee shall provide all activities necessary to allow for the continued monitoring of air, land, and water as long as is necessary for the facility to stabilize and to protect human health and environment.

   1. Ground Water. The facility shall not contaminate the ground water underlying the landfill, beyond the point of compliance. The facility shall also not cause exceedances of standards contained in Chapter 173-200 WAC (Water Quality Standards for Ground Waters of the State of Washington) or Chapter 246-290 WAC (Drinking Water Regulations.)

   2. Air Quality.

      a. The facility shall not allow explosive gases to exceed:

         1) Twenty-five percent of the lower explosive limit for the gases in facility structures (excluding gas control or recovery system components).

         2) The lower explosive limit for the gases at the property boundary or beyond.

         3) One hundred parts per million by volume of hydrocarbons (expressed as methane) in off-site structures.

      b. The facility shall not cause a violation of any ambient air quality standard at the property boundary or emission standard from any emission of landfill gases, combustion, or any other emission associated with a landfill.

      c. The permittee shall not allow non-burning flares to vent openly to the atmosphere unless it can be shown that little or no landfill gases will be produced or that landfill gases will not support combustion. In such cases installation of vents shall be required as stipulated in Chapter 173-304-460(3)(f)(ii).

3. Surface Water. The facility shall not cause exceedances of standards contained in Chapter 173-201A WAC (Water Quality Standards for Surface Waters of the State of Washington) or violate Chapter 90.48 RCW through the discharges of surface runoff, leachate, or any other liquid associated with a landfill.

D. Minimum Environmental Monitoring Requirements.

1. The minimum environmental monitoring requirements specified herein are subject to revision by the Health District based on the Health District's review of reports and plans required through this permit. All environmental monitoring shall be performed in accordance with the approved Sampling and Analysis Plan for the facility, as amended.

2. Ground Water Monitoring.

   a. Quarterly Monitoring. Minimum quarterly monitoring required from monitoring wells MW-1, MW-3, MW-6, MW-8, and MW-10. Each individual monitoring well shall be analyzed for:

Water Level	Temperature
Specific Conductance	pH
Total Coliform	Sulfate
Potassium	Bicarbonate
Carbonate	Sodium
Chloride	Calcium
Total Organic Carbon	Nitrite, Nitrate, & Ammonia (N)
Dissolved Arsenic	Chemical Oxygen Demand
Dissolved Iron	Dissolved Barium
Dissolved Zinc	Dissolved Manganese

Volatile Organic Compounds (EPA Method 8260C)

Annual Monitoring. A reduced frequency of monitoring for MW-5A and MW-7. A reduced frequency of monitoring consisting of an annual sample collected during the fourth Quarter Sampling event shall be analyzed for:

Water Level
Specific Conductance
Dissolved Arsenic
Dissolved Iron
Dissolved Manganese
Vinyl Chloride
Temperature
pH

b. Ground water analyses shall be performed by a laboratory accredited by the Washington State Department of Ecology. The methods of analysis shall be in accordance with EPA Publication Number SW-846, "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods". For each test method, the lowest achievable detection limit shall be obtained sufficient to verify compliance with the regulatory standards in Section IV.C.1. of this permit.

3. Surface Water Monitoring.

a. Annual Monitoring. Minimum annual monitoring required from surface water station SW-2. The annual event shall occur either between January and March or November and December, and shall be analyzed for:

Temperature	pH	Nitrate-Nitrogen
Specific Conductance	Fecal Coliform	

b. Surface water analysis shall be performed by a laboratory accredited by the Washington State Department of Ecology. The methods of analysis shall be in accordance with 40 CFR Part 136. For each test method, the lowest achievable detection limit shall be obtained sufficient to verify compliance with the standards in Section IV.C.3. of this permit.

4. Landfill Gas Monitoring. Minimum quarterly monitoring of landfill gas is required from gas flares GF-1, GF-2, and GF-3. Individual samples shall be monitored for the following:

Methane (%LEL)	Gas Pressure
Oxygen (%VOL)	Carbon Dioxide (%VOL)

E. Reporting Requirements. All reports specified herein must be forwarded to the Health District representative responsible for this permit, and to the Solid Waste Supervisor, Department of Ecology Northwest Regional Office, Waste 2 Resources, 3190 160th Avenue S.E., Bellevue, WA 98008-5452.

1. Annual Report.

a. Annual report due April 1, following each calendar year.

b. The permittee shall prepare and submit one copy and one CD of the annual report to the Health District, and one copy and one CD to Ecology. The annual report will serve as the permit application for the next year's permit. The annual report shall cover facility activities during the previous calendar year and must include, at a minimum, the following information:

1) Name and address of the facility.

2) Calendar year covered by the report.

3) A summary of all ground water, surface water, and landfill gas Monitoring will be provided in accordance with the Revised Statistical Approach for Olalla Landfill (June 2008) . The summary shall contain the results of applicable statistical analyses, explanations for increasing/decreasing contaminant level trends, confidence intervals and if outliers were discarded, a justification for this action. In addition time series plots for each assessment monitoring well for each parameter that exceeded groundwater quality standards at any time since well installation. All statistically significant increasing/decreasing contaminant level trends and exceedances of ground water, surface water, or air quality standards as described in Section IV shall be reported and explained to the extent possible, and if deemed necessary, a summary of actions taken to verify results. Additionally, if the trends shows either no improvement or increasing contaminate levels or exceedances are detected at or beyond the point of compliance, a plan of action shall be included which describes what activities will be taken to correct the statically significantly elevated contaminants or exceedances, and the expected time frame required to do so. The summary shall also contain a description of the ground water flow rate and direction in the uppermost aquifer. Any changes in the number or location of monitoring systems shall also be noted and explained.

4) A description of the next year's proposed environmental monitoring program, operations, and maintenance activities.

5) A summary of all activities related to the inspection, maintenance, and engineering of the facility and its systems. All field data sheets, inspection and log forms shall be made available to the Health District upon request.

6) An explanation of causes and effects of all instances of non-compliance with the provisions of this permit and a summary of how these issues were or are being corrected.

2. Quarterly Environmental Monitoring Reports.

a. The permittee shall prepare and submit written quarterly environmental monitoring reports to report the information gathered under the "Minimum Environmental Monitoring Requirements" section of this permit. Gas, surface and ground water monitoring data shall be summarized, evaluated, and compared with all applicable standards, and shall also be submitted in hard copy form. All monitoring data shall be reported in detail on a quarterly basis. Results and

summary of the fourth quarter sampling event shall be combined with the annual report.

b. Environmental monitoring reports shall be submitted to the Health District and Ecology within sixty (60) days of the date of sample collection. If the report cannot be submitted within sixty (60) days, the Health District will be notified prior to the end of sixty (60) days as to the status of the report and when it will be submitted. In no event shall monitoring reports be submitted more than seventy (70) days after the date of sample collection. All instances of regulatory standard exceedances shall be faxed to the Health District within ten (10) days of the time of discovery.

SECTION V. CORRECTIVE ACTION PLAN

TASKS	Submittal Date
2. MTCA PROCESS (see attached schedule)	Ongoing

KITSAP COUNTY HEALTH DISTRICT

2010-2011
SOLID WASTE HANDLING PERMIT

Issued in accordance with the provisions of Chapter 173-304 of the Washington Administrative Code (WAC) and Kitsap County Board of Health Ordinance 2004-2 "Solid Waste Regulations."

PERMIT PERIOD: JANUARY 1, 2010 - DECEMBER 31, 2011

SECTION I. PERMITTEE AND ADMINISTRATION INFORMATION

FACILITY TYPE:	Mixed Municipal Solid Waste Landfill (Closed Under Chapter 173-304 WAC in May 1989)
ANNUAL PERMIT FEE:	$109/hr, not to exceed $10,000 with MTCA
FACILITY NAME:	Olalla Landfill
FACILITY LOCATION:	Approximately 3/4 mile east of Hwy. 16 on Burley-Olalla Rd.
FACILITY OWNER:	Kitsap County Department of Public Works
CONTACT PERSON:	Ms. Keli McKay-Means
TITLE:	Landfill Specialist
OWNER ADDRESS:	614 Division Street, MS-27, Port Orchard, WA 98366
OWNER PHONE:	(360) 337-5665

This permit is the property of the Kitsap County Health District and may be suspended or revoked, after opportunity for hearing, upon violation of any rules and regulations applicable hereto. This permit is not transferable and must be renewed at the end of the permit period.

Janet Brower

Janet Brower
Program Manager
Solid and Hazardous Waste Program

4/19/2010
Date

File Location: jb/swwqbcd/shw/common/permits/landfills/Olalla
Date Prepared: April 19, 2009

SECTION II. STANDARD PERMIT CONDITIONS

A. Terms pertaining to solid waste used in this permit shall be as defined per Kitsap County Board of Health (KCBH) Ordinance 2004-2, in Section 100, as amended.

B. All conditions of this permit shall be binding upon, and the permittee shall be responsible for, all acts and omissions of all contractors and agents of the permittee for the term of the permit and post-closure period.

C. The permittee shall notify the Kitsap County Health District (Health District) in writing in advance of any alterations or changes planned in the post-closure plan, when these changes are different or absent from this permit. All alterations or additions to the maintenance and closure of the facility must be included in written plans approved by the Health District before implementation.

D. Facility maintenance during post-closure shall be conducted in strict compliance with KCBH Ordinance 2004-2, Solid Waste Regulations, (Chapter 173-304 WAC adopted by reference) as amended, and the specific conditions of this permit. In the event of conflict between state and local regulations, the more stringent requirement shall apply.

E. The Health Officer or his/her duly authorized inspector, or any duly authorized representative of the Washington State Department of Ecology, may, upon giving a minimum 3-day notice prior to entry, enter and inspect any building, structure, property, or portion thereof, at any reasonable time for the purpose of determining compliance with the provisions of this permit, or the provisions of other applicable rules and regulations, or whenever the Health Officer has reason to believe that a violation of this permit has been or is being committed. Entry shall not be unreasonably denied by the permittee, or his/her agent, but may be conditioned on the permittee or an agent of the permittee escorting the inspector, with said escort to be provided immediately upon request. Wet weather inspections conducted during significant rain events will be conducted with prior notice, but not necessarily providing a minimum 3-day notice depending upon conditions.

F. The permittee shall report all instances of non-compliance (except regulatory exceedances which are outlined in Section IV.E.2.b) in writing within seven (7) days from time of discovery. Instances of non-compliance which may result in potential public health risk and/or environmental damage shall be reported immediately.

G. This permit or copy thereof shall be located where it can be readily referred to by oversight personnel.

H. This permit may be amended by the Health District. Amendments shall be made in writing and become specific conditions of the permit. Proposed amendments will be forwarded to the permittee for a fifteen (15) day review and comment period, unless otherwise waived in writing by the Health District. Upon consideration of the permittee's comments, the final

amendment will be issued and become effective. The permittee review and comment period may be waived by the Health District in emergencies where there is an imminent threat to human health or the environment.

SECTION III. FEES

A. The permittee shall pay an annual permit fee as a condition of permit issuance. As provided for in WAC 173-304-600(2)(e), the Health District may establish reasonable fees for permits and permit renewals. The current annual fee for this permit is shown in Section I. This fee is an estimate of both routine and non-routine activities. The annual permit fee covers the following Health District activities and is based on the time expended by the Health District billed at the approved billing rate in the current fee schedule as provided for in Health District's current Fee Schedule.

1. Reviewing/commenting on three Quarterly Monitoring Reports.
2. Reviewing/commenting on one Annual Report.
3. Meet with permit holder annually to discuss the status of the facility and, ***to the extent possible, identify proposed Health District activities or requirements related to the facility that would require fees in addition to the Annual Permit Fee.***.
4. Permit drafting/issuance.
5. Plan and/or design review.
6. Four site inspections and associated inspection reports.
7. Administrative costs including routine communications, supervisor review of documents, and billing invoices.
8. Health District oversight and review required as a result of the Health District's determination that the operation is in non-compliance with this permit and/or applicable regulations;
9. Health District participation in MTCA review, comment, and meetings through 2011;
10. Amendments to the existing permit;
11. Report, plan, or design review associated with any corrective action or to correct non-compliance at the facility; or
12. Other permit related work beyond those items listed in Section III.A. above.

B. The annual permit fee will be invoiced semi-annually. Whenever a fee is assessed a Health District billing invoice will be sent to the permittee at the address provided by the permittee. Each invoice will be accompanied by a Detail Report that shows each entry by each staff member and a description of the activity being billed. A copy of the billing invoice with a check or money order for the assessed amount shall be sent by the permittee to the Health District and within thirty (30) days of receipt. Payment and a copy of the invoice shall be sent to:

Kitsap County Health District
Accounting Office
345 6th Street, Suite 300
Bremerton, WA 98337-1866

SECTION IV. SPECIFIC PERMIT CONDITIONS

A. Plan of Maintenance and Post-Closure

1. The permittee shall provide post-closure activities to allow for continued facility maintenance and monitoring of air, land, and ground and surface waters, as long as necessary for the facility to stabilize, to protect human health and the environment as determined by the Health District. These post-closure activities shall be conducted in strict compliance with Chapter 173-304 WAC, KCBH Ordinance 2004-2, and the conditions of this permit.

2. Post-closure activities include, but are not limited to, the following: ground water monitoring; surface water monitoring; landfill gas monitoring; and proper operation and maintenance of the facility, facility structures, and facility monitoring systems for their intended use for a period of no less than twenty years from the date of final closure (May 1989).

3. The permittee shall close and maintain the landfill in accordance with the regulations stipulated in Section II.D. of this permit and in conformance with the Health District approved post-closure plan "Olalla Landfill Final Closure Plan," June 1988, as amended, which includes, but is not limited to the actions specified in Section IV.2. above. Closure activities not in conformance with these regulations and this plan shall be considered in violation of this permit.

4. The Health District may determine that the facility post-closure plan is invalid and require the permittee to amend the facility post-closure plan for approval by the Health District.

5. When the Health District determines that a facility post-closure plan amendment is required, the Health District shall, after consultation with the permittee, designate a compliance schedule for submittal of the amendment and its review and approval.

6. The Health District may direct facility post-closure activities to cease, in part or whole, until the post-closure plan amendment has received written approval by the Health District.

7. When post-closure activities are complete, the permittee shall certify to the Health District that the facility is stabilized and state why post-closure activities are no longer necessary. The certification shall be signed by the permittee and a professional engineer registered in the state of Washington.

B. Minimum Functional Standards for Maintenance. The permittee shall provide all activities necessary to allow for continued facility maintenance. These activities include, but are not limited to:
   1. Stormwater quantity and quality control;
   2. Slope stability, erosion and dust control;
   3. Maintenance of access roads and ditches;
   4. Maintenance of facility structures and systems (i.e., stormwater, landfill cover, gas control, surface and ground water monitoring, etc.);
   5. Control and minimization, or elimination, of threats to human health and environment; and
   6. Unauthorized entry at the facility shall be controlled, at minimum, by means of a lockable gate, barrier, fence, etc., at the property boundary.

C. Minimum Standards for Performance. The permittee shall provide all activities necessary to allow for the continued monitoring of air, land, and water as long as is necessary for the facility to stabilize and to protect human health and environment.

   1. Ground Water. The facility shall not contaminate the ground water underlying the landfill, beyond the point of compliance. The facility shall also not cause exceedances of standards contained in Chapter 173-200 WAC (Water Quality Standards for Ground Waters of the State of Washington) or Chapter 246-290 WAC (Drinking Water Regulations.)

   2. Air Quality.

      a. The facility shall not allow explosive gases to exceed:

         1) Twenty-five percent of the lower explosive limit for the gases in facility structures (excluding gas control or recovery system components).

         2) The lower explosive limit for the gases at the property boundary or beyond.

         3) One hundred parts per million by volume of hydrocarbons (expressed as methane) in off-site structures.

      b. The facility shall not cause a violation of any ambient air quality standard at the property boundary or emission standard from any emission of landfill gases, combustion, or any other emission associated with a landfill.

      c. The permittee shall not allow non-burning flares to vent openly to the atmosphere unless it can be shown that little or no landfill gases will be produced or that landfill gases will not support combustion. In such cases installation of vents shall be required as stipulated in Chapter 173-304-460(3)(f)(ii).

   3. Surface Water. The facility shall not cause exceedances of standards contained in

Chapter 173-201A WAC (Water Quality Standards for Surface Waters of the State of Washington) or violate Chapter 90.48 RCW through the discharges of surface runoff, leachate, or any other liquid associated with a landfill.

D. Minimum Environmental Monitoring Requirements.

1. The minimum environmental monitoring requirements specified herein are subject to revision by the Health District based on the Health District's review of reports and plans required through this permit. All environmental monitoring shall be performed in accordance with the approved Sampling and Analysis Plan for the facility, as amended.

2. Ground Water Monitoring.

   a. Quarterly Monitoring. Minimum quarterly monitoring required from monitoring wells MW-1, MW-3, MW-5A, MW-6, and MW-7. Each individual monitoring well shall be analyzed for:

Water Level	Temperature
Specific Conductance	pH
Total Coliform	Sulfate
Potassium	Bicarbonate
Carbonate	Sodium
Chloride	Calcium
Total Organic Carbon	Nitrite, Nitrate, & Ammonia (N)
Dissolved Arsenic	Chemical Oxygen Demand
Dissolved Iron	Dissolved Barium
Dissolved Zinc	Dissolved Manganese

   Volatile Organic Compounds (EPA Method 8260B)

   b. Ground water analyses shall be performed by a laboratory accredited by the Washington State Department of Ecology. The methods of analysis shall be in accordance with EPA Publication Number SW-846, "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods". For each test method, the lowest achievable detection limit shall be obtained sufficient to verify compliance with the regulatory standards in Section IV.C.1. of this permit.

3. Surface Water Monitoring.

   a. Annual Monitoring. Minimum annual monitoring required from surface water station SW-2. The annual event shall occur either between January and March or November and December, and shall be analyzed for:

Temperature	pH	Nitrate-Nitrogen

Specific Conductance Fecal Coliform

b. Surface water analysis shall be performed by a laboratory accredited by the Washington State Department of Ecology. The methods of analysis shall be in accordance with 40 CFR Part 136. For each test method, the lowest achievable detection limit shall be obtained sufficient to verify compliance with the standards in Section IV.C.3. of this permit.

4. Landfill Gas Monitoring. Minimum quarterly monitoring of landfill gas is required from gas flares GF-1, GF-2, and GF-3. Individual samples shall be monitored for the following:

Methane (%LEL)	Gas Pressure
Oxygen (%VOL)	Carbon Dioxide (%VOL)

E. Reporting Requirements. All reports specified herein must be forwarded to the Health District representative responsible for this permit, and to the Solid Waste Supervisor, Department of Ecology Northwest Regional Office, Solid Waste & Financial Assistance Program, 3190 160th Avenue S.E., Bellevue, WA 98008-5452.

1. Annual Report.

a. Annual report due April 1, 2011 (for 2010 calendar year), and April 1, 2012 (for 2011 calendar year).

b. The permittee shall prepare and submit one copy and one CD of the annual report to the Health District, and one copy and one CD to Ecology. The annual report will serve as the permit application for the next year's permit. The annual report shall cover facility activities during the previous calendar year and must include, at a minimum, the following information:

1) Name and address of the facility.

2) Calendar year covered by the report.

3) A summary of all ground water, surface water, and landfill gas monitoring will be provided in accordance with the Revised Statistical Approach for Olalla Landfill (June 2008). The summary shall contain the results of applicable statistical analyses, explanations for increasing/decreasing contaminant level trends, confidence intervals and if outliers were discarded, a justification for this action. In addition time series plots for each assessment monitoring well for each parameter that exceeded groundwater quality standards at any time since well installation. All statistically significant increasing/decreasing contaminant level trends and exceedances of ground

water, surface water, or air quality standards as described in Section IV shall be reported and explained to the extent possible, and if deemed necessary, a summary of actions taken to verify results. Additionally, if the trends shows either no improvement or increasing contaminate levels or exceedances are detected at or beyond the point of compliance, a plan of action shall be included which describes what activities will be taken to correct the statiscally significant elevated contaminants or exceedances, and the expected time frame required to do so. The summary shall also contain a description of the ground water flow rate and direction in the uppermost aquifer. Any changes in the number or location of monitoring systems shall also be noted and explained.

4) A description of the next year's proposed environmental monitoring program, operations, and maintenance activities.

5) A summary of all activities related to the inspection, maintenance, and engineering of the facility and its systems. All field data sheets, and inspection and log forms shall be made available to the Health District upon request.

6) An explanation of causes and effects of all instances of non-compliance with the provisions of this permit and a summary of how these issues were or are being corrected.

2. Quarterly Environmental Monitoring Reports.

a. The permittee shall prepare and submit written quarterly environmental monitoring reports to report the information gathered under the "Minimum Environmental Monitoring Requirements" section of this permit. Gas, surface and ground water monitoring data shall be summarized, evaluated, and compared with all applicable standards, and shall also be submitted in hard copy form. All monitoring data shall be reported in detail on a quarterly basis. Results and summary of the fourth quarter sampling event shall be combined with the annual report.

b. Environmental monitoring reports shall be submitted to the Health District and Ecology within sixty (60) days of the date of sample collection. If the report cannot be submitted within sixty (60) days, the Health District will be notified prior to the end of sixty (60) days as to the status of the report and when it will be submitted. In no event shall monitoring reports be submitted more than seventy (70) days after the date of sample collection. All instances of regulatory standard exceedances shall be faxed to the Health District within ten (10) days of the time of discovery.

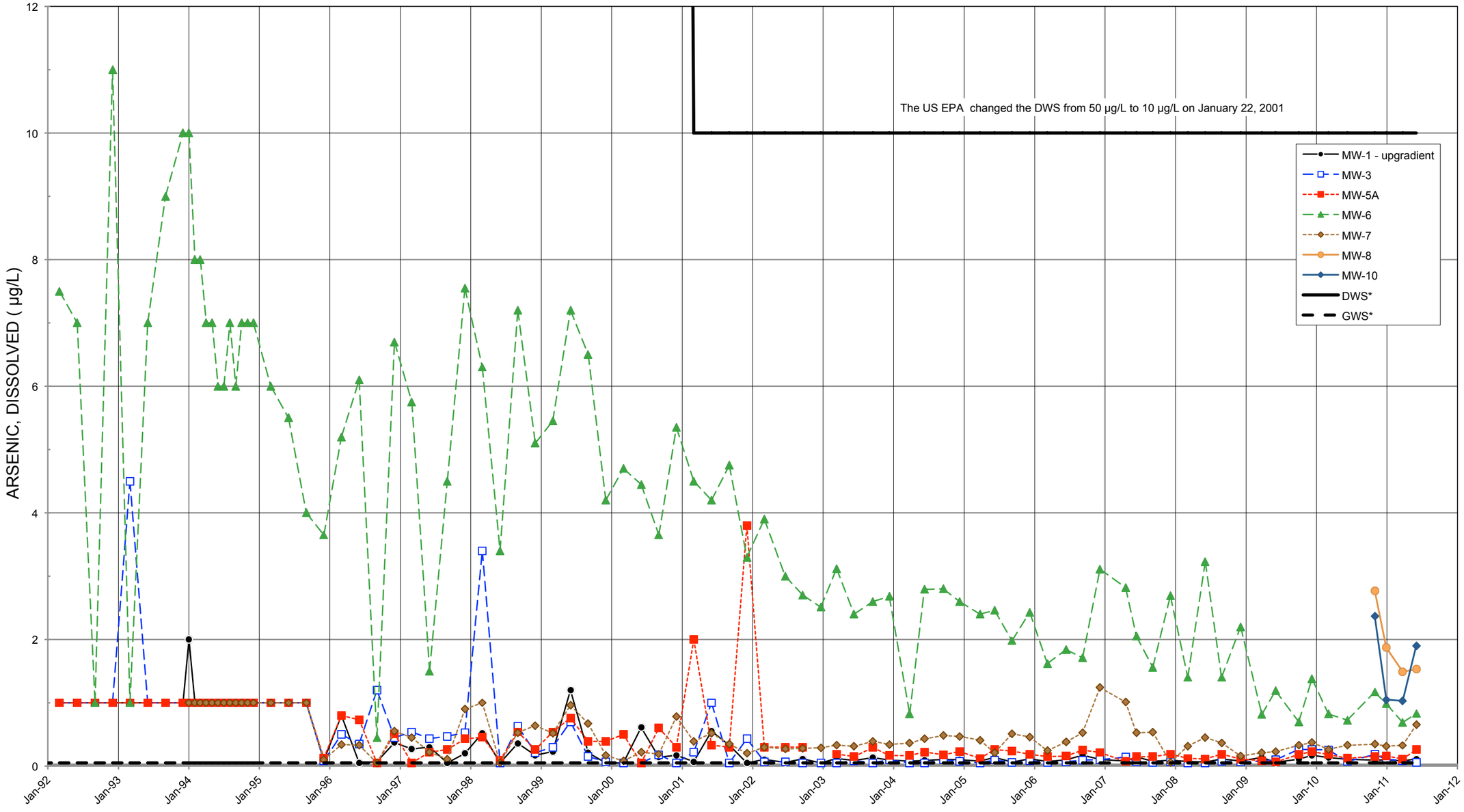
SECTION V. CORRECTIVE ACTION PLAN

TASKS	Submittal Date
1. Prepare and submit a work plan for a RI/FS under MTCA which will address water quality violations at the point of compliance under WAC 173-304.	6/30/2010
2. MTCA PROCESS SCHEDULE: Prepare and submit a schedule outlining activities to be completed in the RI/FS and anticipated completion dates. Upon approval of schedule by Health District and Department of Ecology, project milestones will be incorporated into this permit.	6/30/2010

Appendix C

Constituents of Concern – Full and Recent (5-Year) Time Series Graphs

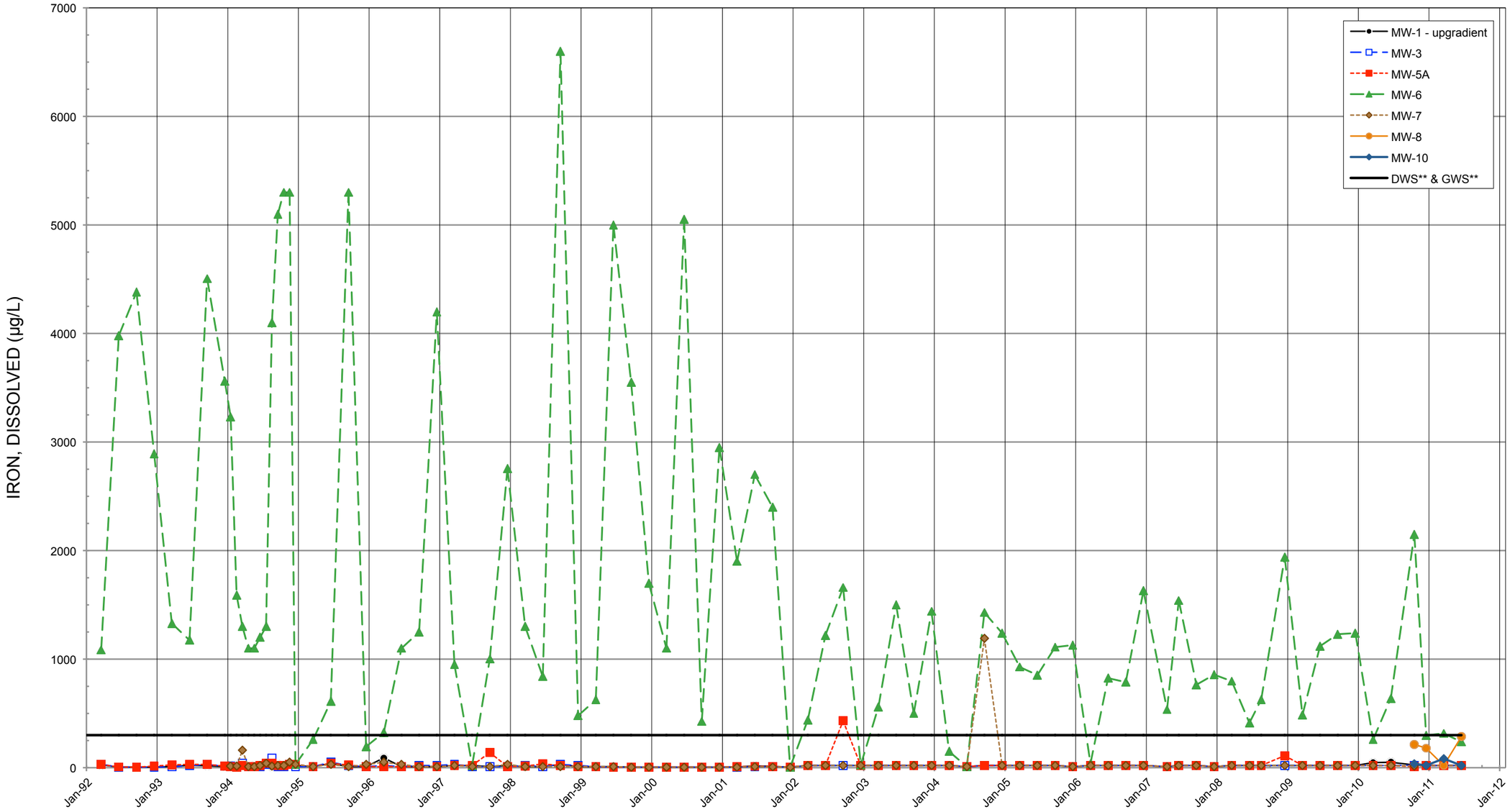
OLALLA LANDFILL
Quarterly Monitoring Data



Primary Drinking Water Standard (DWS) = 10 µg/L
Primary Groundwater Standard (GWS) = 0.05 µg/L

DISSOLVED ARSENIC
(FULL)

OLALLA LANDFILL
Quarterly Monitoring Data

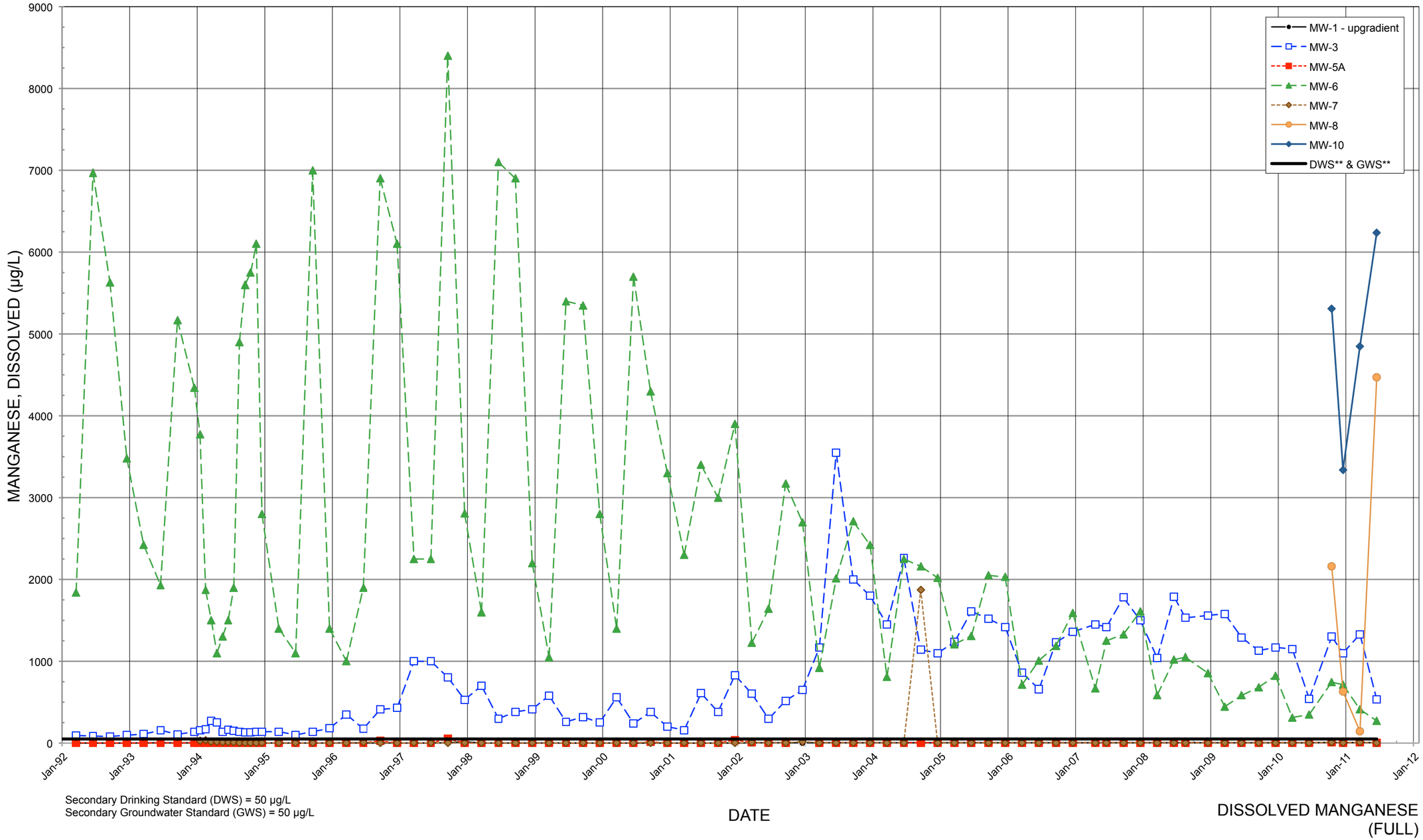


Secondary Drinking Water Standard (DWS) = 300 µg/L
Secondary Groundwater Standard (GWS) = 300 µg/L

DATE

DISSOLVED IRON
(FULL)

OLALLA LANDFILL
Quarterly Monitoring Data

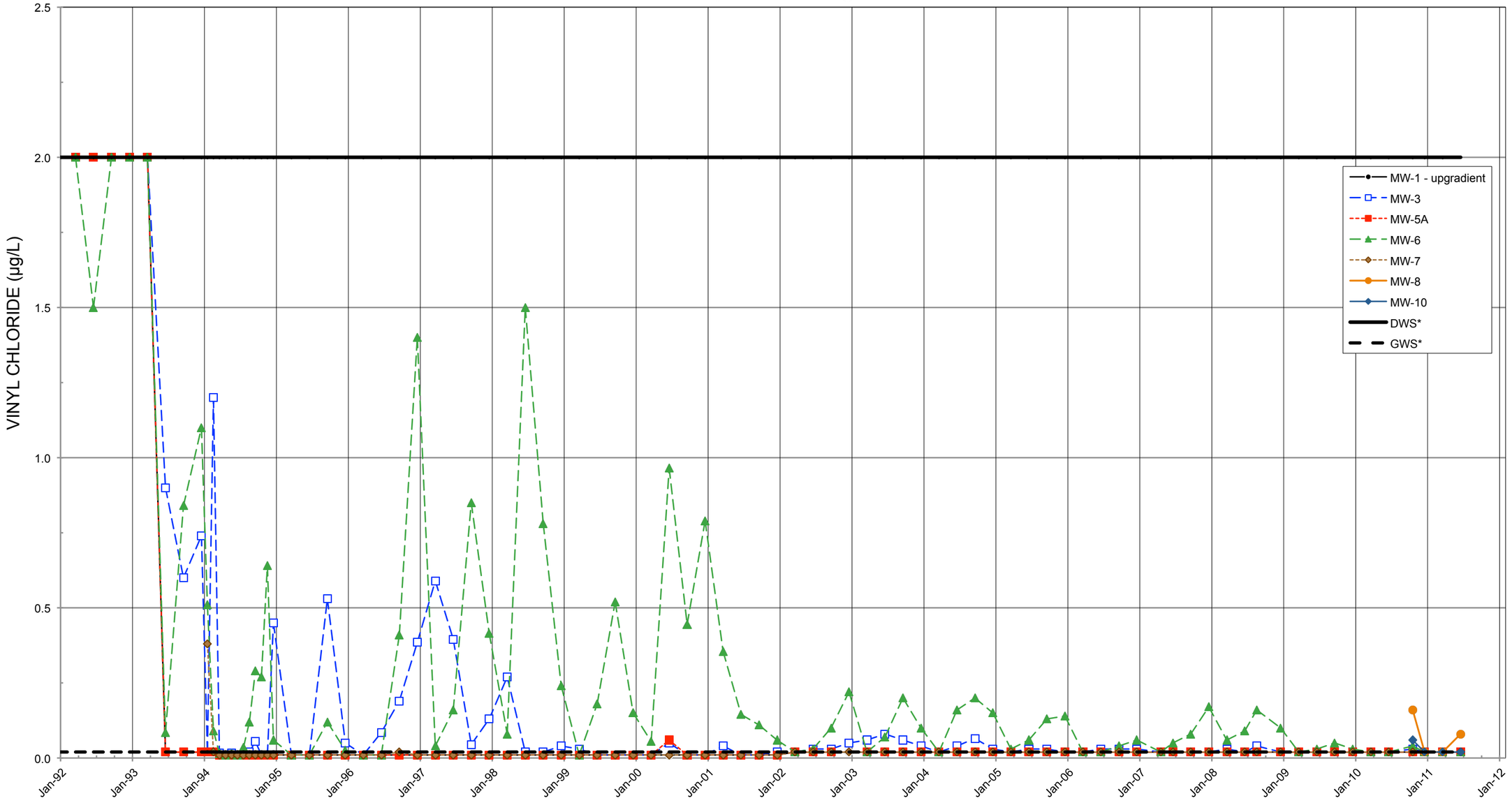


Secondary Drinking Standard (DWS) = 50 µg/L
Secondary Groundwater Standard (GWS) = 50 µg/L

DATE

DISSOLVED MANGANESE (FULL)

OLALLA LANDFILL
Quarterly Monitoring Data

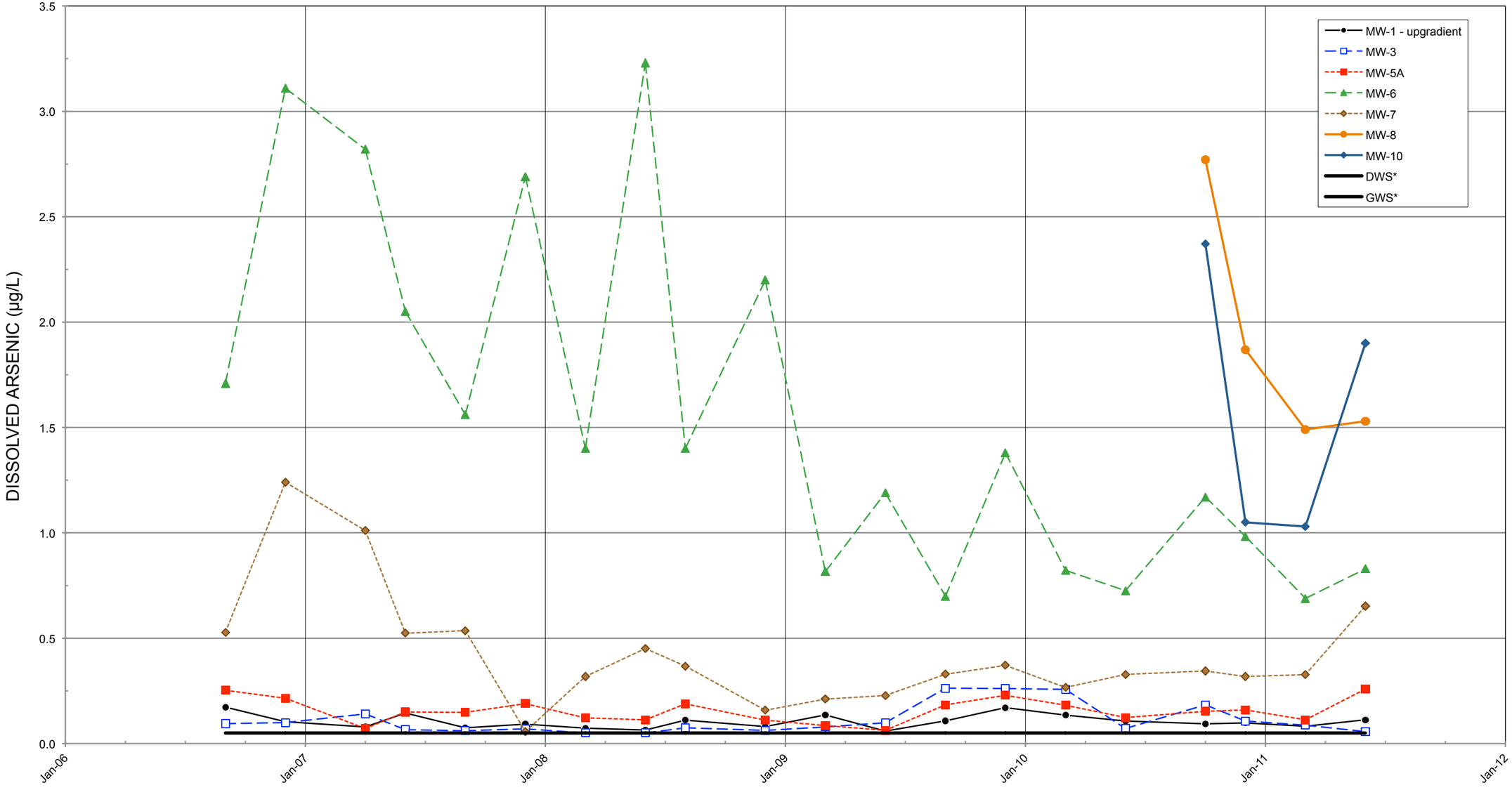


Primary Drinking Water Standard (DWS) = 2 µg/L
Primary Groundwater Standard (GWS) = 0.02 µg/L

DATE

VINYL CHLORIDE
(FULL)

OLALLA LANDFILL
Quarterly Monitoring Data (recent five years)

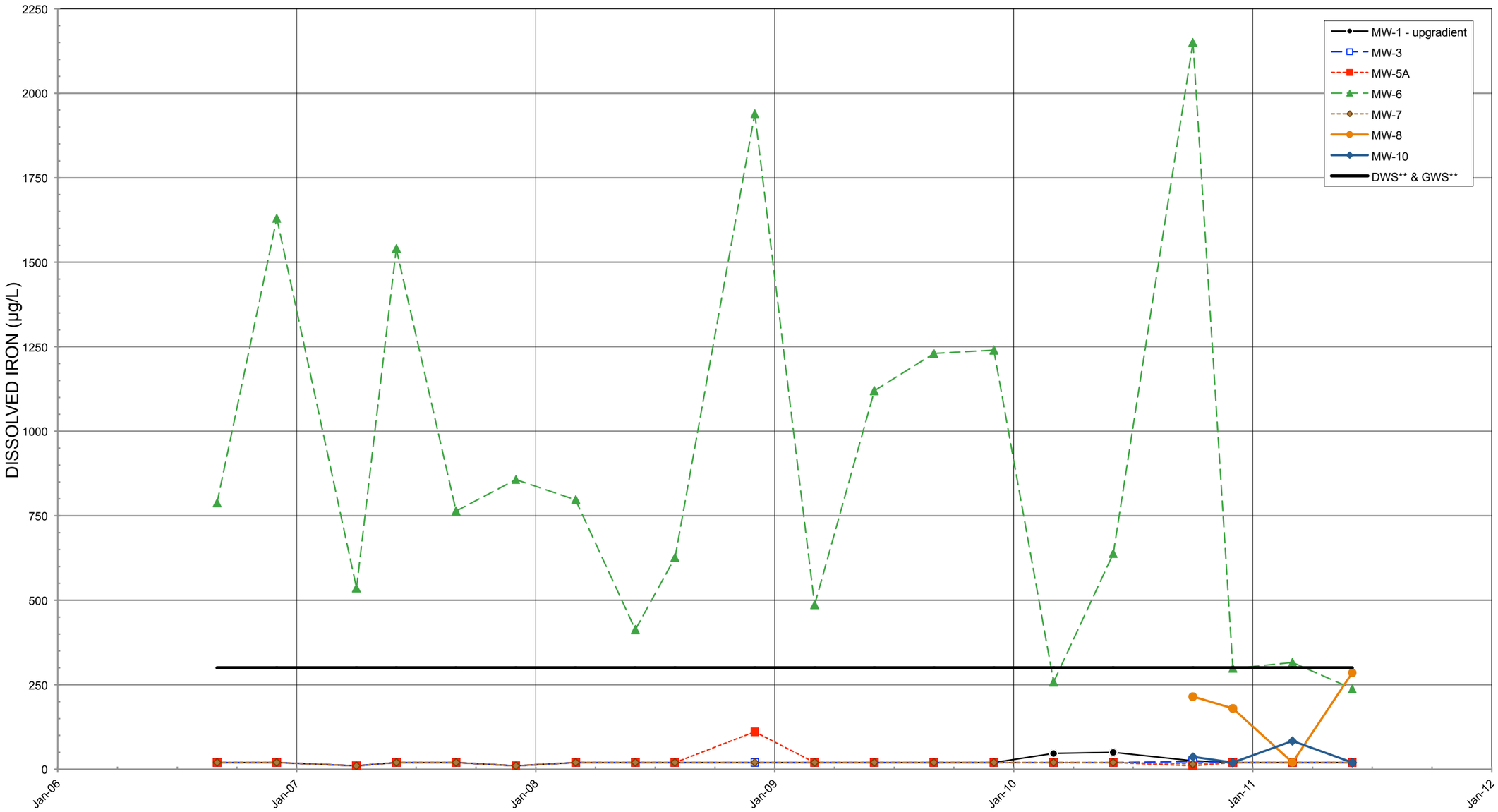


Primary Drinking Water Standard (DWS) = 10 µg/L (not shown)
Primary Groundwater Standard (GWS) = 0.05 µg/L

DATE

DISSOLVED ARSENIC
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data (recent five years)

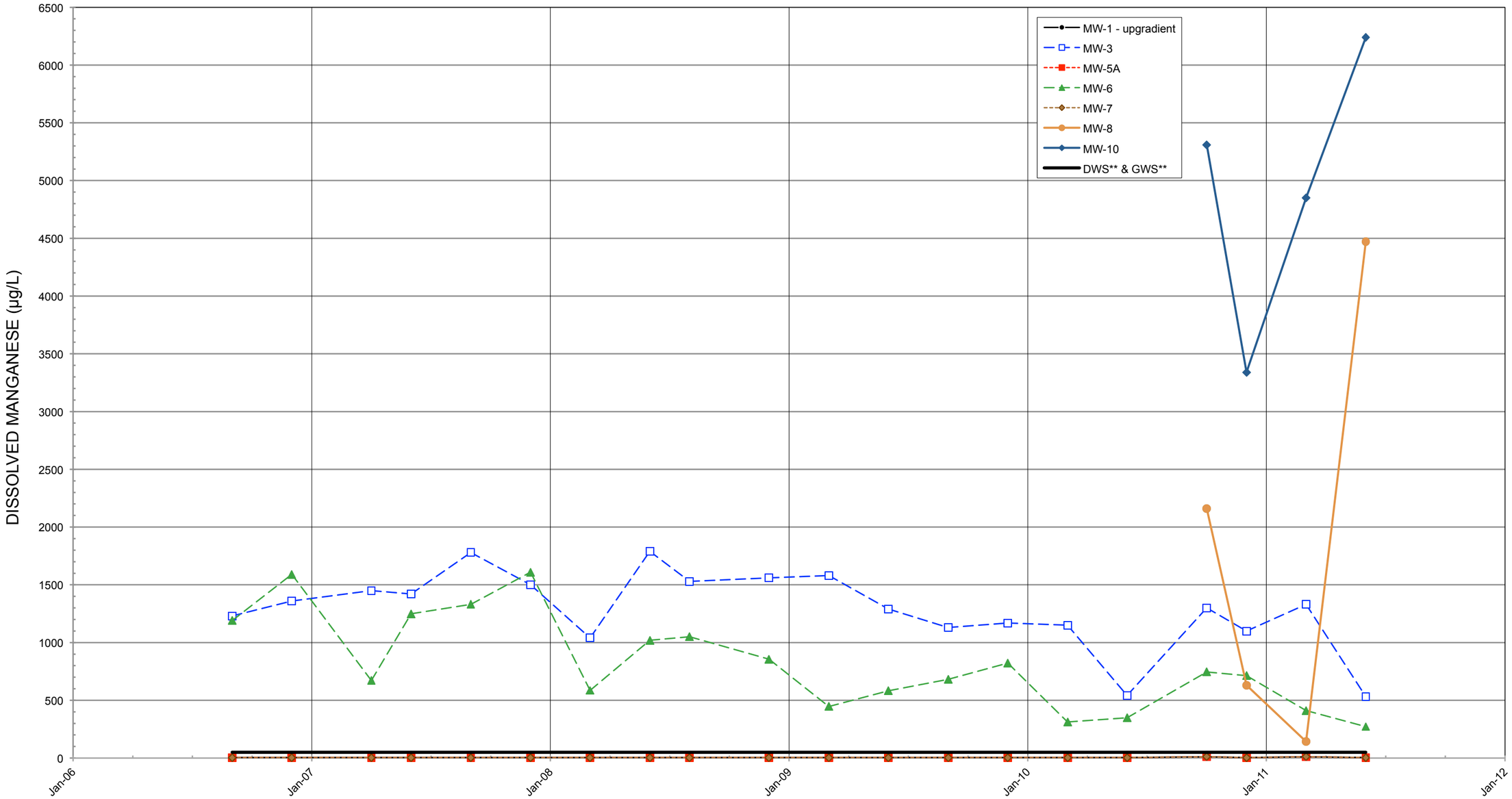


Secondary Drinking Water Standard (DWS) = 300 µg/L
Secondary Groundwater Standard (GWS) = 300 µg/L

DATE

DISSOLVED IRON
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data (recent five years)

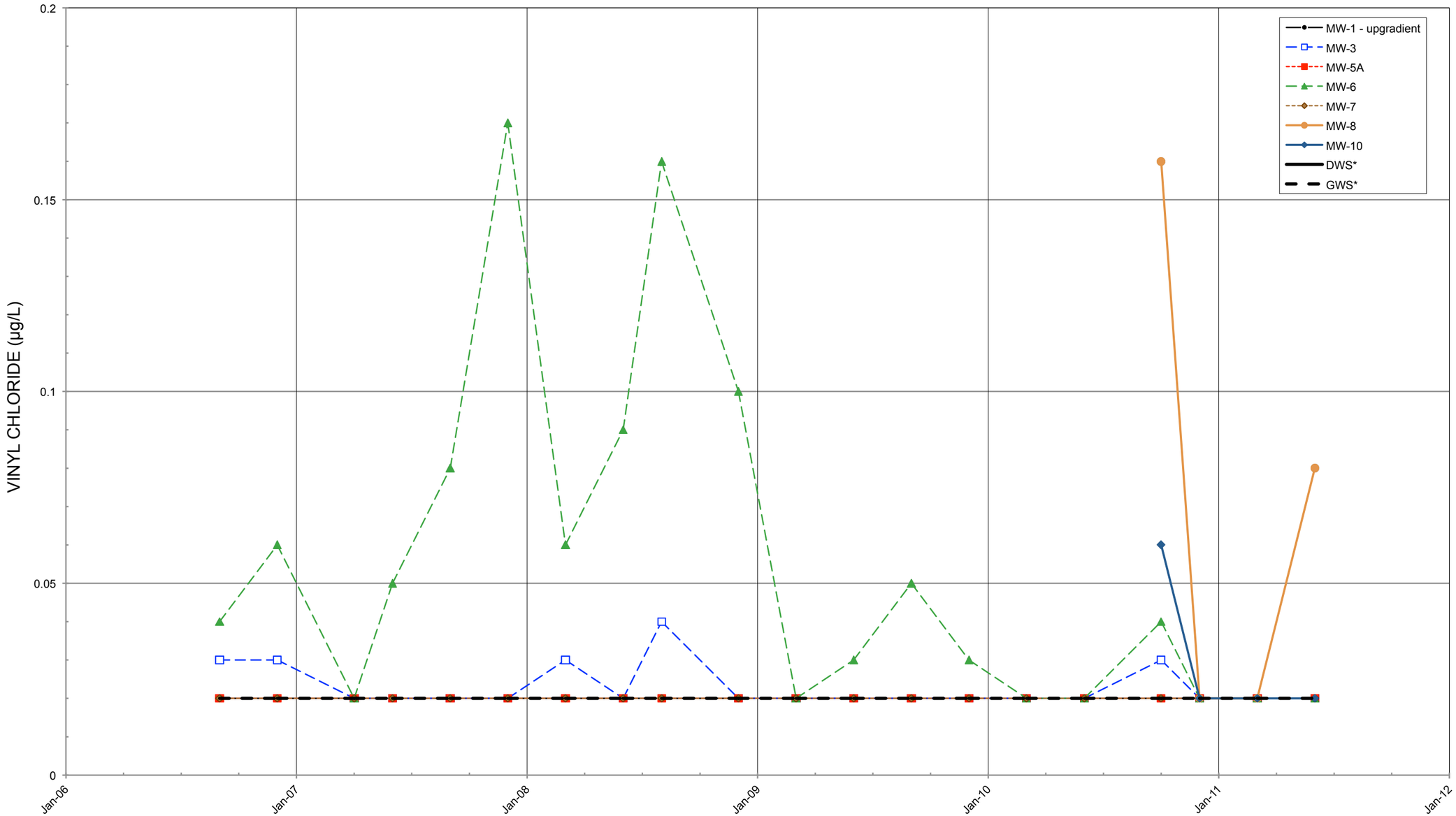


Secondary Drinking Standard (DWS) = 50 µg/L
Secondary Groundwater Standard (GWS) = 50 µg/L

DATE

DISSOLVED MANGANESE
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data (recent five years)



Primary Drinking Water Standard (DWS) = 2 µg/L (not shown)
Primary Groundwater Standard (GWS) = 0.02 µg/L

DATE

VINYL CHLORIDE
(RECENT)

Appendix D

Geologic Logs and As-Built Diagrams for MW-8 and MW-10, Split-Spoon Sampler Photos, Well Development Field Data Sheets, and Sieve Analysis Curves

MW-8: Sample from 20-21.5 ft. bgs – Poorly-Graded Sand (SP) Gray-Brown, moist to wet, mostly medium sand with trace gravel and trace silt. Photo by EPI.

MW-8: Sample from 20-21.5 bgs – Poorly-Graded Sand (SP) Gray-Brown, moist to wet, mostly medium sand with trace gravel and trace silt. Photo by EPI.

MW-8: Sample from 25-26.5 ft. bgs – Poorly Graded Sand (SP) Gray-Brown, moist to wet, mostly medium sand with trace gravel and trace silt. Photo by EPI.

MW-8: Sample from 37-38.5 ft. bgs – Poorly-Graded Sand (SP) Wet, Grades to well-rounded medium sand with black, gray, and white grains. Photo by EPI.

MW-10: Sample from 45-46.5 ft. bgs – Poorly Graded Sand (SP) Gray-Brown, Wet, mostly medium sand with trace gravel and trace silt. Photo by EPI.

MW-10: Sample from 45-46.5 ft. bgs – Poorly Graded Sand (SP) Gray-Brown, Wet, mostly medium sand with trace gravel and trace silt. Photo by EPI.

ENVIRONMENTAL PARTNERS INC

Monitoring Well Development Field Measurements Record

Job Name/Location: Olalla Landfill RI/FS

Job Number: 60101.0 Task 3

Date: 13-Oct-10

Well #: MW-2

Page Numb 1 of 1

Time	Depth to Water (ft.)	Total Depth of Well (ft.)	Volume Purged (gal.)	pH	Cond. (µmhos/cm)	Turbidity (NTU)	Temp. (oC)	Visual Observations
10:25	66.64	78.7	start					Geliton-like material on bailer, abundent fine sand.
12:00	66.65		10	7.85	85	225	12.6	cloudy, some fine sand
12.35	66.64	78.7	15	7.77	89	191	12.2	cloudy, some fine sand, bailing stopped

Note: Development started by hand-bailing with stainless steel bailer, then switched to a Waterra inertial pump at 11:00, pump clogged by fine sand, switched back to bailer.

ENVIRONMENTAL PARTNERS INC

Monitoring Well Development Field Measurements Record

Job Name/Location: Olalla Landfill RI/FS

Job Number: 60101.0 Task 3

Date: 13-Oct-10

Well #: MW-4

Page Numb 1 of 1

Time	Depth to Water (ft.)	Total Depth of Well (ft.)	Volume Purged (gal.)	pH	Cond. (µmhos/cm)	Turbidity (NTU)	Temp. (oC)	Visual Observations
8:24	63.98	73.9	start					Geliton-like material on bailer, abundent fine sand.
9:17			5					Cloudy, some silt and sand
9:50			8	7.41	62	229	12.1	Cloudy, some sand
10:00			10	7.31	58	35	12.2	Cloudy, some sand
10:10	63.98		15	7.31	57	205	12.2	Cloudy, trace sand, stop pumping

Note: Development started by hand-bailing with stainless steel bailer until clarity improved, then switched to a Waterra intertial pump.

ENVIRONMENTAL PARTNERS INC

Monitoring Well Development Field Measurements Record

Job Name/Location: Olalla Landfill RI/FS

Job Number: 60101.0 Task 3

Date: 8-Oct-10

Well #: MW-8

Page Numbe 1 of 1

Time	Depth to Water (ft.)	Total Depth of Well (ft.)	Volume Purged (gal.)	pH	Cond. (µmhos/cm)	Turbidity (NTU)	Temp. (oC)	Visual Observations
8:00	22.81	37.85	start pump					
8:08			10					Cloudy with fines
8:17			15					same
8:45			55					same
9:05			75	6.67	115	39.4	10.8	Cloudy, some fines after surging
9:25	22.84		85	6.5	134	19.6	10.2	Clear, stop pumping

Notes: Development performed using submersible pump

ENVIRONMENTAL PARTNERS INC

Monitoring Well Development Field Measurements Record

Job Name/Location: Olalla Landfill RI/FS

Job Number: 60101.0 Task 3

Date: 8-Oct-10

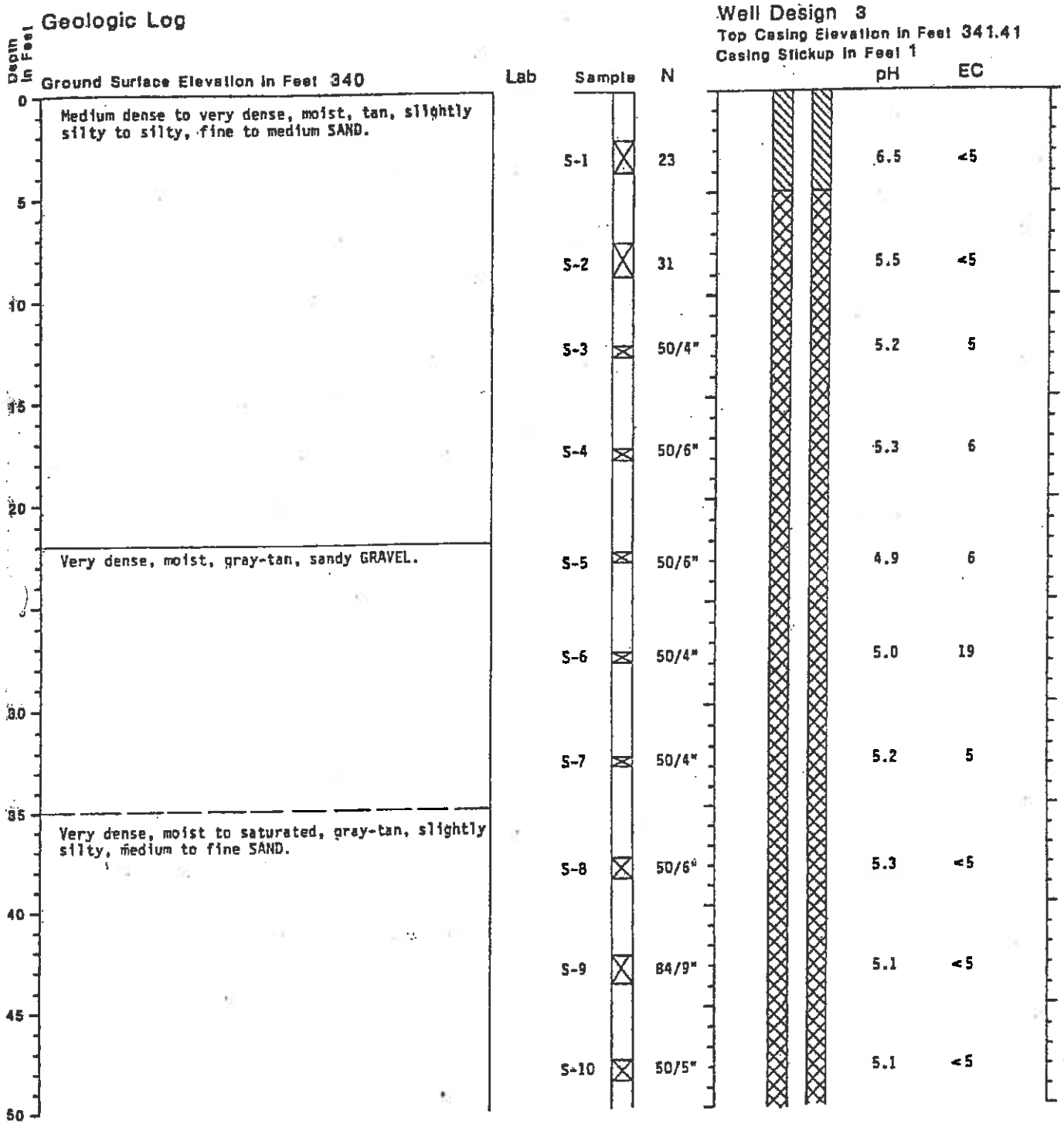
Well #: MW-10

Page Number:

Time	Depth to Water (ft.)	Total Depth of Well (ft.)	Volume Purged (gal.)	pH	Cond. (µmhos/cm)	Turbidity (NTU)	Temp. (oC)	Visual Observations
8:12	32.10	49.92						start pump
8:22			15					Cloudy
8:38			22					Cloudy after surging
8:55			35	7.82	276	1.76		clear
9:06	32.10		50	7.62	285	1.91	12.2	clear, stop pumping

Notes: Development performed using submersible pump

Boring Log and Construction Data for Well MW-1



J-1513 April 1985
HART-CROWSER & associates, inc.
Sheet 1 of 2 Figure A-2

Boring Log and Construction Data for Well MW-1

Geologic Log

Depth in Feet

Ground Surface Elevation in Feet

50

Very dense, moist to saturated, gray-tan, slightly silty, medium to fine SAND.

55

60

65

70

Grading wet below 73 feet.

75

80

85

Grading fine below 85 feet.

Bottom of Boring at 88.4 Feet.
Completed 4/11/85.

90

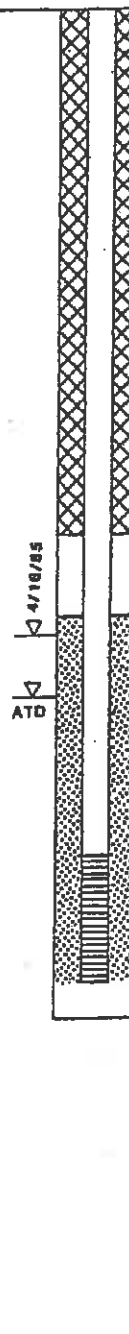
95

100

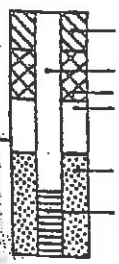
Lab	Sample	N
	S-11	50/6"
	S-12	50/6"
	S-13	50/6"
	S-14	50/6"
	S-15	50/5"
GS	S-16	84/10"
	S-17	50/4"
	S-18	50/5"

Well Design 3

Top Casing Elevation in Feet 341.41
Casing Stickup in Feet 1



pH	EC
5.3	<5
5.1	5
5.1	5
5.5	<5
5.5	<5
5.5	<5
5.5	<5
5.6	<5



- 2-inch O.D. Split Spoon Sample
- * No Sample Recovery
- N Standard Penetration Resistance, Blows per foot
- GS Grain Size Analysis
- K Permeability Test

NOTES:

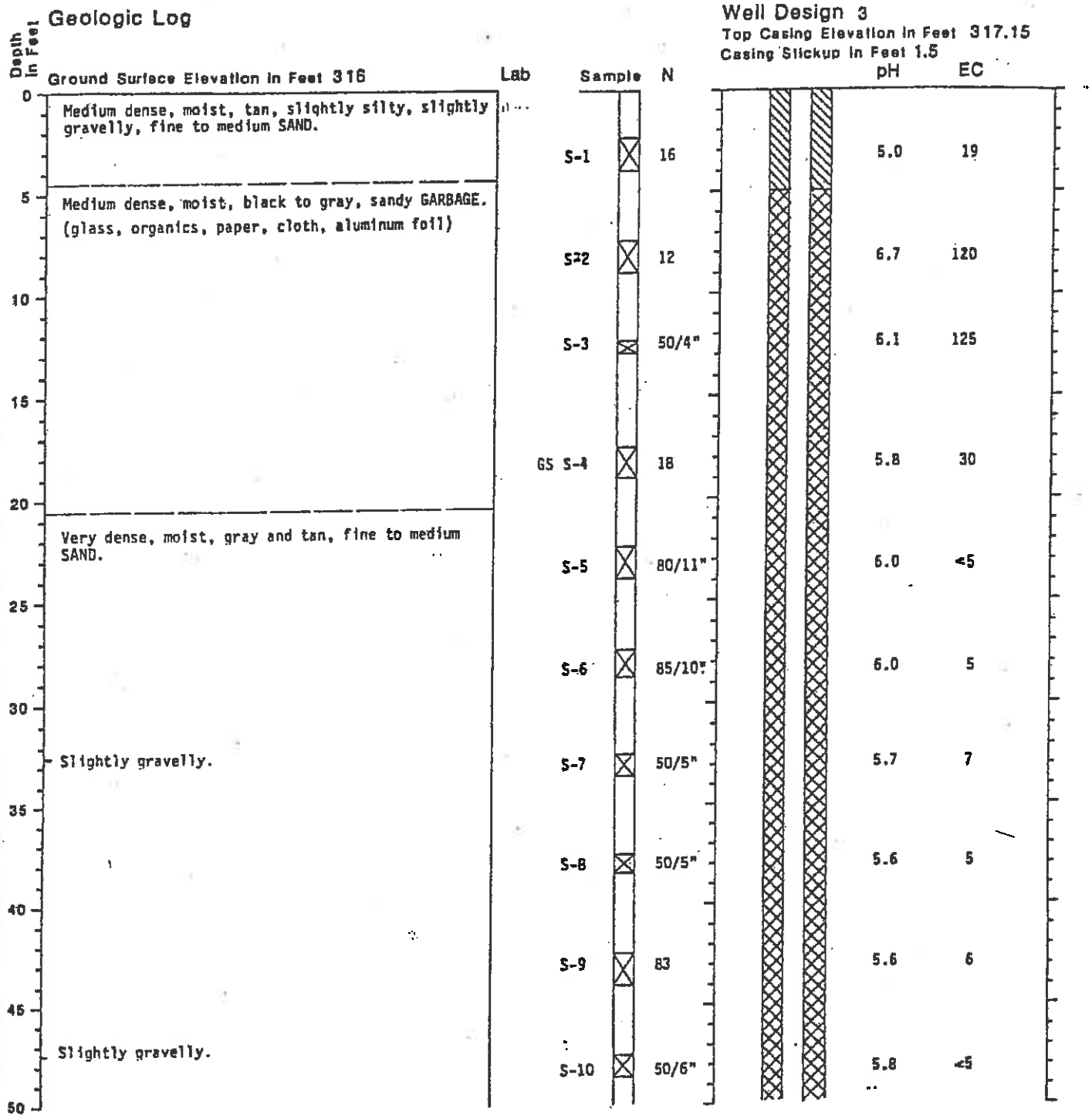
1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year. ATD: At Time of Drilling
3. Top of PVC casing surveyed by Parametrix to estimate mean sea level datum.

J-1513 April 1985

HART-CROWSER & associates, inc.

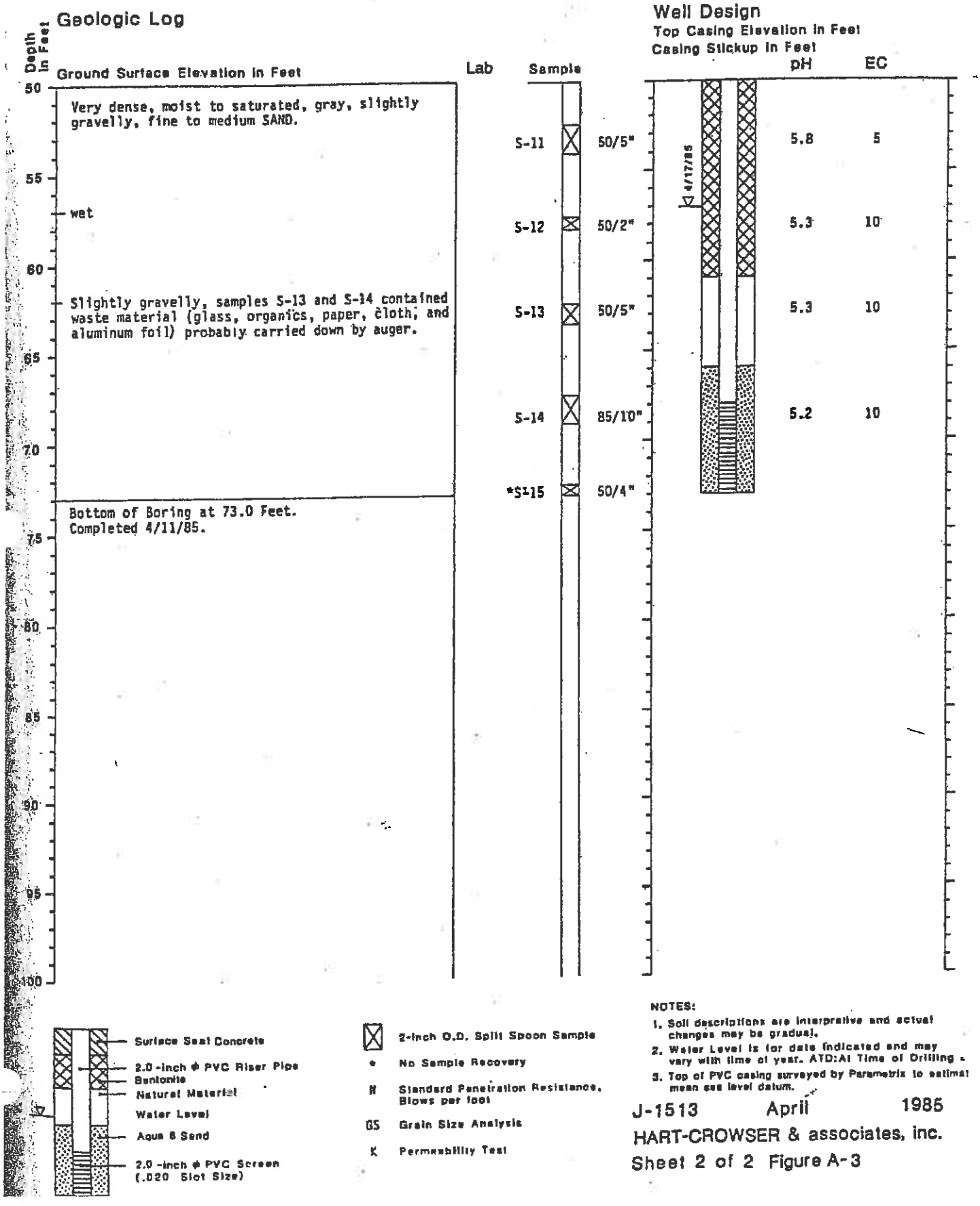
Sheet 2 of 2 Figure A-2

Boring Log and Construction Data for Well MW-2



J-1513 April 1985
HART-CROWSER & associates, inc.
Sheet 1 of 2 Figure A-3

Boring Log and Construction Data for Well MW-2



NOTES:

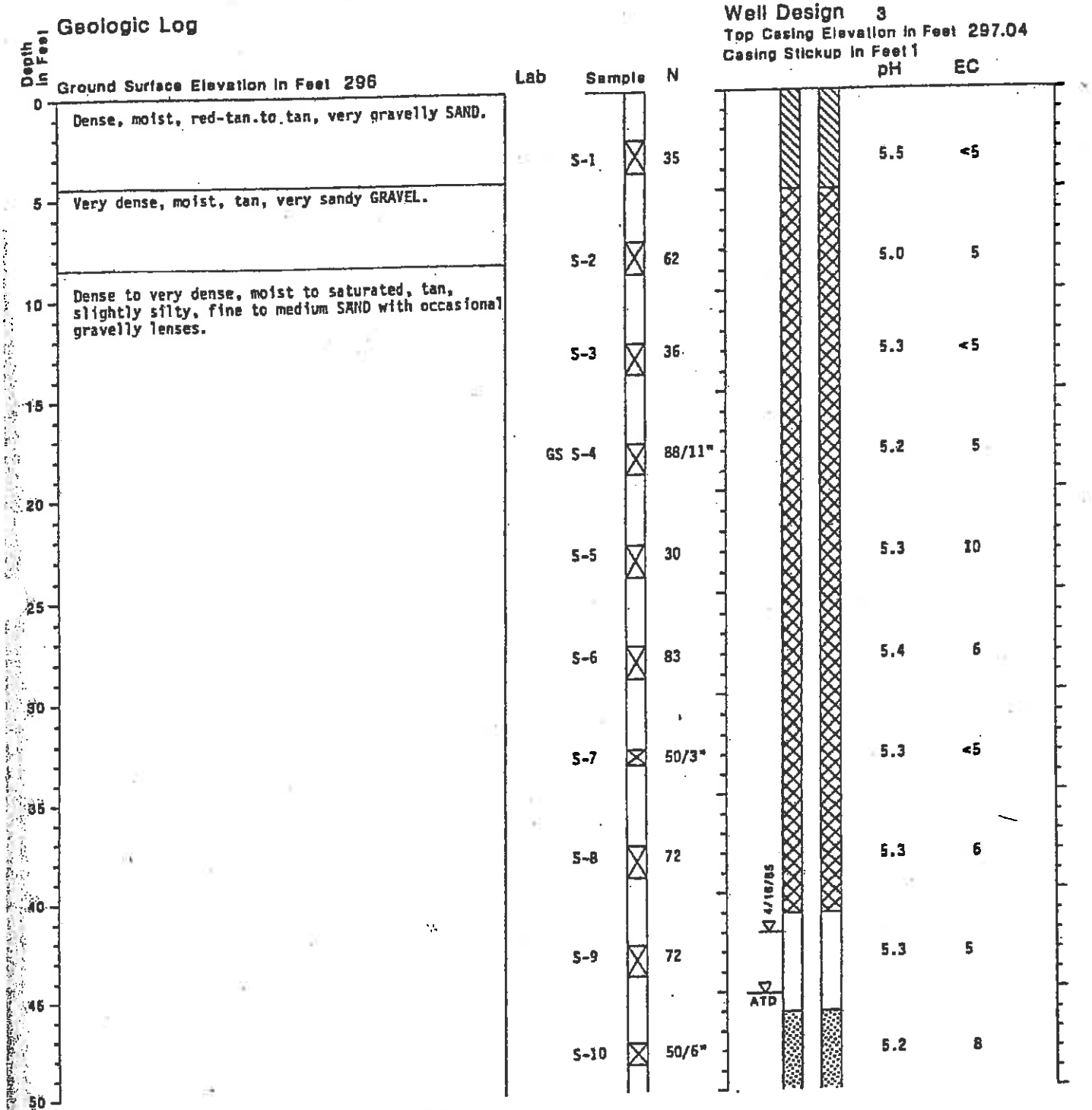
1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year. ATD:At Time of Drilling.
3. Top of PVC casing surveyed by Parametrix to estimated mean sea level datum.

J-1513 April 1985

HART-CROWSER & associates, inc.

Sheet 2 of 2 Figure A-3

Boring Log and Construction Data for Well MW-3



J-1513 April 1985

HART-CROWSER & associates, inc.

Sheet 1 of 2 Figure A-4

Boring Log and Construction Data for Well MW-3

Geologic Log

Depth In Feet

Ground Surface Elevation In Feet

50 — Very dense, saturated, tan, fine to medium SAND.

55 — Grading to very dense, saturated, tan, very sandy GRAVEL.

60 — Bottom of Boring at 58.3 Feet.
Completed 4/12/85.

65

70

75

80

85

90

95

100

Lab Sample N

◇ S-11 25

S-12 50/4"

Well Design

Top Casing Elevation in Feet

Casing Stickup in Feet

	pH	EC
	5.2	5
	5.2	<5

Surface Seal Concrete

2.0-inch ϕ PVC Riser Pipe

Bentonite

Natural Material

Water Level

Aqua 8 Sand

2.0-inch ϕ PVC Screen (.020 Slot Size)

2-inch O.D. Split Spoon Sample

* No Sample Recovery

N Standard Penetration Resistance, Blows per foot

GS Grain Size Analysis

K Permeability Test

◇ Low blow count due to disturbed material.

NOTES:

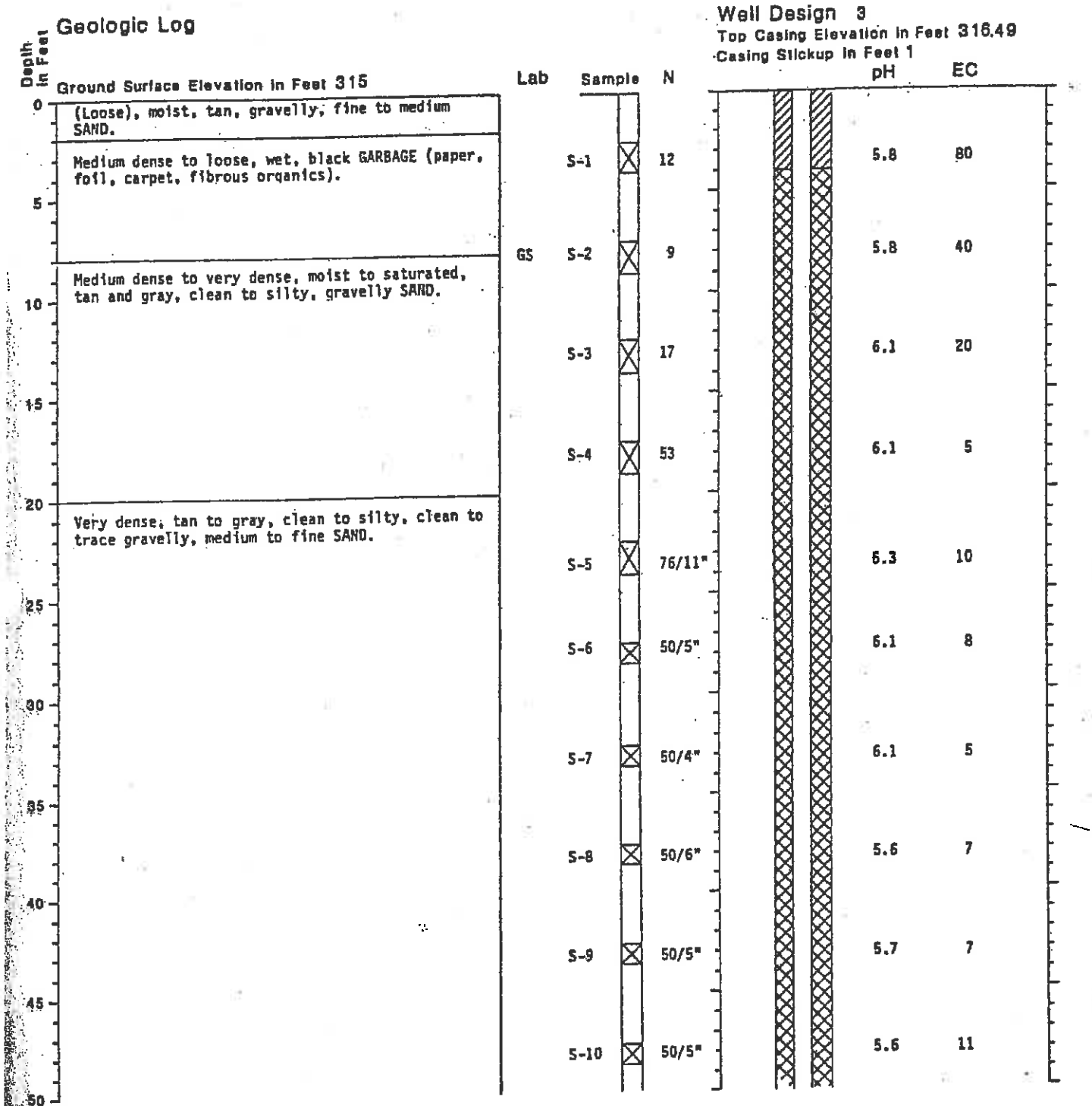
1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year. ATD:At Time of Drilling
3. Top of PVC casing surveyed by Parametrix to estimated mean sea level datum.

J-1513 April 1985

HART-CROWSER & associates, inc.

Sheet 2 of 2 Figure A-4

Boring Log and Construction Data for Well MW-4

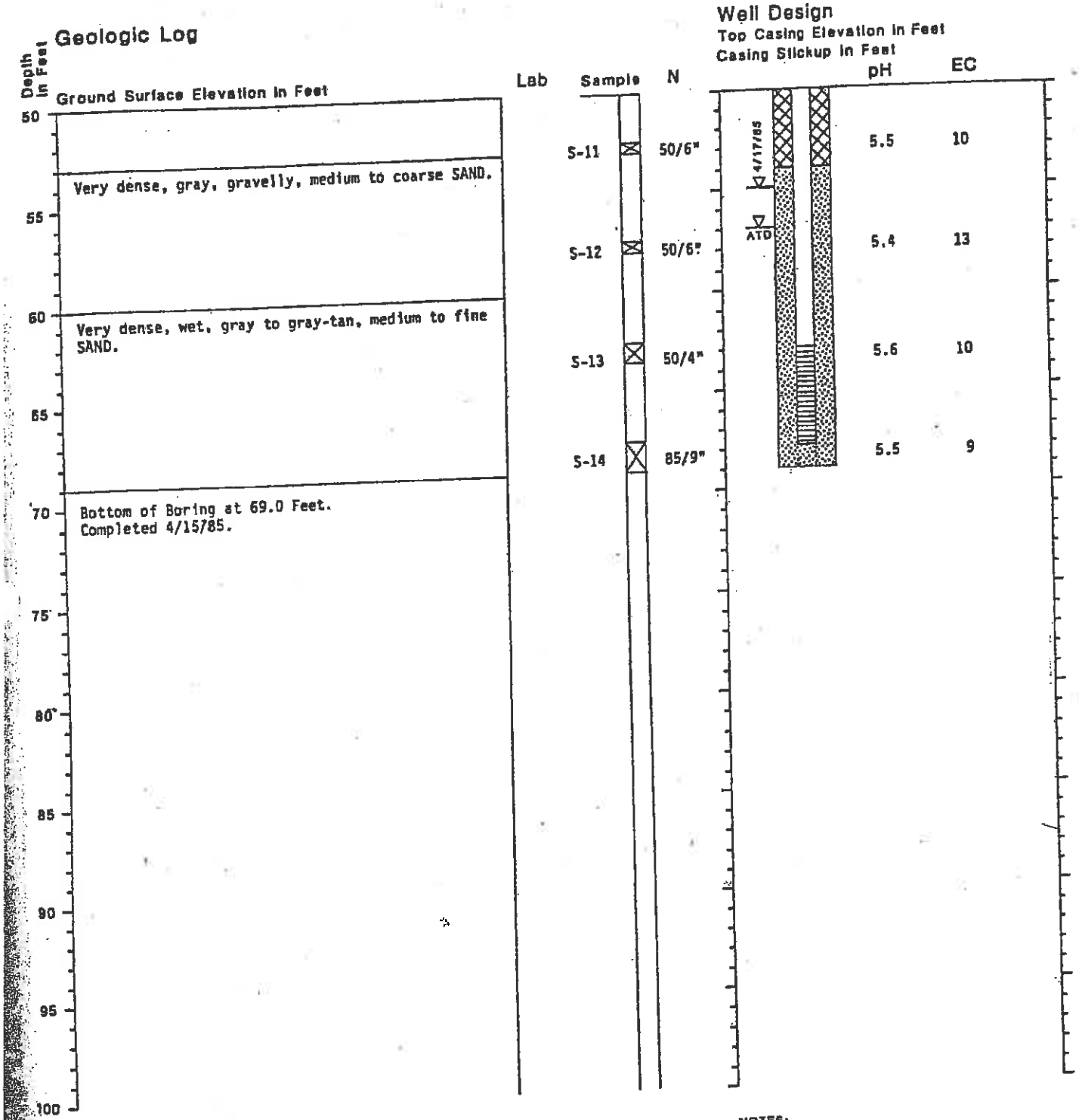


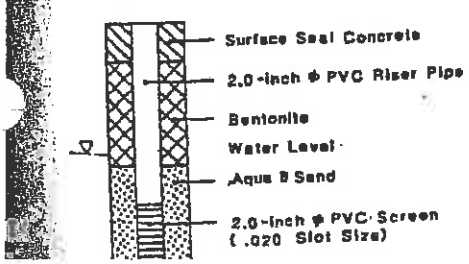
J-1513 April 1985

HART-CROWSER & associates, inc.

Sheet 1 of 2 Figure A-5

Boring Log and Construction Data for Well MW-4





2-inch O.D. Split Spoon Sample

* No Sample Recovery

N Standard Penetration Resistance, Blows per foot

GS Grain Size Analysis

K Permeability Test.

NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year. ATD:At Time of Drilling
3. Top of PVC casing surveyed by Parametrix to estimate mean sea level datum.

J-1513 April 1985

HART-CROWSER & associates, inc.

Sheet 2 of 2 Figure A-5

Well Installation Log

Job No. 31-1578-25 Client Kitsap County Location Ollala Landfill

CASING TYPE	2-inch schedule 80 PVC	10 ft lengths	
LENGTH	Casing 0-87 ft	Screen 87-97 ft	Sump 97-99½
JOINT TYPE	flush thread		
SCREEN TYPE	PVC continuous wind		
SLOT SIZE	0.020 inch		
SEAL TYPE	bentonite slurry and pellets		
INSTALL. METHOD	tremie pipe		
FILTER	washed silica sand #10/20		
INSTALL	tremie pipe		
GROUT	bentonit slurry (and pellets above sand)		

DRILLING METHOD	Air rotary			
SAMPLING METHOD	sediment catch basin			
HAMMER WT.	—	DROP	—	
DATE	March 1, 1989			
BY	James Braddock			
DRILLING CONTR.	Soil Samplins Service			
WATER LEVEL	89.7	89.2		
TIME	0940	1010		
DATE	Feb/28/89	Feb/28/89		
	not static			

WELL NO. MW-EX 54

SHEET 1 OF 2

START	FINISH
Feb 22 1989	Feb/28/89 drilling
	Mar/1/89 completed

WELL DETAILS		DEPTH	USCS/ GRAPHIC LOG	LOG DESCRIPTION	NOTES
fill	casing			GROUND ELEVATION:	
0-79'2" bentonite slurry	Above ground to 86'2" 2" schedule 80 PVC casing	0		0≥2 Organic material	
				2-6½ GRAVEL with sand & silt	Gravel - Sray, reddish brown, white, brown. Sand - same. Silt-bro
				6½-7½ BOULDER or COBBLES	Granitic material
				7½-16 GRAVEL with sand & silt	Similar to that between 2-6½
		10			
				16-28 GRAVELLY SAND	Moist, light brown or tan. Wate
					In hole (~2-3 ft) at 16 ft
					in mornings, before drillings.
		30		28-36½ SILTY GRAVEL	Gravel - dark to medium grey
					Silt - Sreyish brown. Some clay
				36½-48½ CLAY with gravel	Clay - brown. Gravel - blue-sry
		40			
					gradual transition.
		50		48½-61 CLAY or SILT with some gravel.	Clay or silt - brown. Gravel - blue Srey, less (amount) than above.
					60½-61 - silt layer
		60		61-108+ SAND	Sand - mostly medium-grained. Clea white, lt & dk brown, dark grey - overall brown color. Occasional zones of up to 10-15% gravel - may be bedded
		70			

Parametrix, Inc. 6/87

Well Installation Log

Job No. 31-1578-25 Client Kitsap County Location Ollala Landfill

CASING TYPE		DRILLING METHOD			WELL NO.
LENGTH		SAMPLING METHOD			
JOINT TYPE		HAMMER WT.	DROP		SHEET 2 OF 2
SCREEN TYPE		DATE			
SLOT SIZE		BY			START / FINISH
SEAL TYPE		DRILLING CONTR.			
INSTALL. METHOD		WATER LEVEL			
FILTER		TIME			
INSTALL		DATE			
GROUT					

WELL DETAILS		DEPTH	USCS/ GRAPHIC LOG	LOG DESCRIPTION	NOTES
fill	casing			GROUND ELEVATION:	
	Above ground to 86'2" 2" Schedule 80 PVC casing		Bent. pellets; Bentonite slurry; 2" sched. 80 PVC casing		SAND – continued
79'2" to 82'10" bentonite pellets		80			
82'10" to 98'7" sand filter pack, #10/20	86'2" to 96'2" PVC Screen 2" OD, 0.020" continuous wound screen	90	Sand pack; 0.020" slot screen		Sand becomes a bit coarser, but very gradually (recessional outwash indicated)
98'7" to 108' caved-in sediments	96'2" to 98'2" 2" sch. 80 PVC Sump 98'2" to 98'7" - endcap	100	Caved-in sediments; endcap		(Sand heaves while constructing well, up to 95 foot mark)
		110		108' bottom of ~~well~~ boring	

SOIL SAMPLING SERVICE, INC.

DATE 11-15-18

LOG OF BORING NO. 6 WELL ID # 6 START CARD # 01L2C

CLIENT Scuccolo Const CLIENT JOB # S.S.S. JOB # 11-5521

LOCATION 1/4 NE 1/4 SEC. 1 TOWNSHIP 22 N RANGE 1 E

CITY OLALLA STATE WASH COUNTY KITSAP

DRILLING METHOD AUGER DATUM WATER ELEVATION

RIG # 21 TRUCK # 16 OTHER STEAM CLEANER DATE INSTALLED 11-15-18

TIME & CHARGE DISTRIBUTION	TOTAL TIME
DRILLING	2.5
CREWED STANDBY	
NON-CREWED STANDBY	
MOVING	
INSTALLATION	4.5
WATER	1.5
CLEAN + PATCH	
REDRILL	
TRAVEL	
DEMOB	
SAMPLE METHOD	ATTEMPTS
DRIVE SAMPLES	8
OSTERBURG	

DRILLER TERRY "SKEPPY" HOURS 8.5

HELPER JOE Bishop

HELPER

DRILLER'S SIGNATURE Terry Lohrum

The figures hereon agree with my records.

BY Terry Pentney Scuccolo Const

Inspector or Client's Representative

TOTAL FOOTAGE 35'

SCALE 1"= 5 FEET

PAGE OF

PVC BLANK 3 X 2 inch X 10 FT

PVC SCREEN 1 X 2 inch X 10 FT

MONUMENT TYPE 1 stand up

2 gal @ 8 #

6 Portland Cement

1/2 BKT 3/8 Pellets

1/2 bg WYO Bentonite

1 bg enviro sel.

1 X 2 inch TE Cap

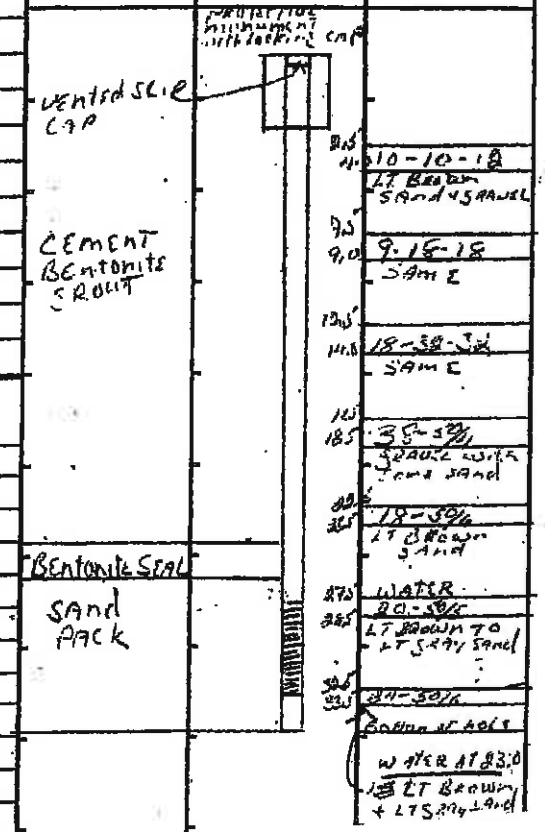
1 X 2 inch SLIP CAP, VENTED

4, Monument Protectors

ANNULUS MATERIAL

AS BUILT

FORMATION DESCRIPTION



COMMENTS

10 FT hard drilling

7:30 - 9:30, installing #5

9:30 - 11:00, WATER

11:00 - 1:30, drilling #6 From 0' to 35'

1:30 - 4:00, installing #6

MONITORING WELL GEOLOGIC & CONSTRUCTION LOG

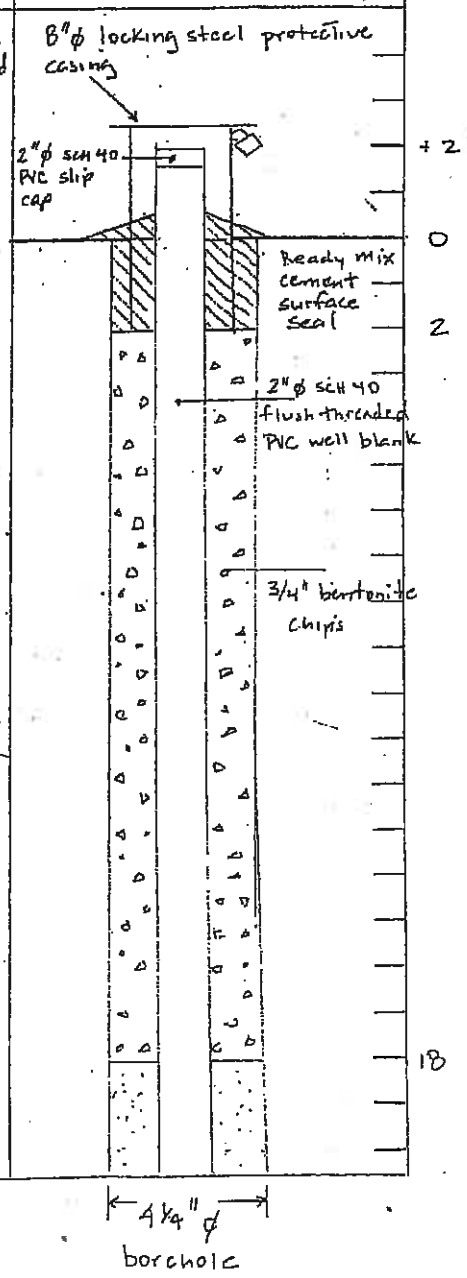
PROJECT NUMBER	WELL NUMBER	SHEET 1 OF 2
SEA35781.B2	MW-7	

PROJECT: Olalla Landfill
ELEVATION (TOP OF WELL CASING):
WATER LEVEL ELEVATION: 26.09 ft. from top of PVC casing
DRILLING CONTRACTOR: Tacoma Pump and Drill
DRILLING METHOD: Hollow stem auger

LOCATION: Olalla - Burley Road
SURFACE ELEVATION:
START DATE: 12-21-93
FINISH DATE: 12-21-93
HYDROGEOLOGIST: K. Gehweiler

DEPTH (FT)	INTERVAL	BLOWCOUNT AND RECOVERY	GEOLOGIC LOG & FIELD OBSERVATIONS	HNu READING
+2				Back-ground 0.1 ppm
0			surface: coarse gravel to large cobble road fill overlaying Brown sand (SP), loose, moist, fine to medium-grained, trace silt.	
5		30 50/4"	Brown gravelly sand (SP-SM), dense, moist, fine to medium-grained sand with some medium to large, sub-rounded to subangular gravel.	
10		40 50/3"	Brown gravelly sand (SP-SM), dense, moist, medium to coarse-grained sand with some medium-sized, sub-rounded to subangular gravel and some silt.	0.1 ppm
15		70/6"	Brown sand (SP-SM), very dense, moist, fine to medium-grained with some silt. Note: a few dried chips of something. Paint?	
20		75/5"	Brown sand (SP-SM), very dense, wet,	0.1 ppm

WELL CONSTRUCTION



MONITORING WELL GEOLOGIC & CONSTRUCTION LOG

PROJECT NUMBER	WELL NUMBER	SHEET 2 OF 2
SEA 35781.82	MW-7	

PROJECT Olalla Landfill
LOCATION Olalla - Burley Road
ELEVATION (TOP OF WELL CASING)
SURFACE ELEVATION
WATER LEVEL ELEVATION 26.09 ft. from top of PVC casing
START DATE 12-21-93
DRILLING CONTRACTOR Tacoma Pump and Drill
FINISH DATE 12-21-93
DRILLING METHOD Hollow stem auger
HYDROGEOLOGIST K. Gehweiler

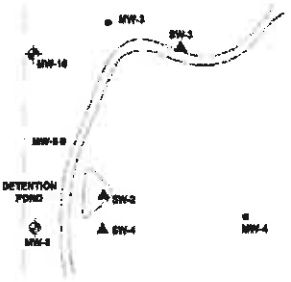
DEPTH (Ft)	INTERVAL	BLOWCOUNT AND RECOVERY	GEOLOGIC LOG & FIELD OBSERVATIONS	HNu READING	WELL CONSTRUCTION
			fine to medium-grained with some silt. No gravel. Sand becomes saturated at approx. 22 ft. bgs.		21
25		75/5"	Brown sand (SP-SM), very dense, saturated, fine to medium-grained with some silt. No gravel.		10-20 sand pack
30		75/4.5"	Brown sand (SP-SM), very dense, saturated, fine to medium-grained with some silt. No gravel.	0.2 ppm	2" ϕ sch 40 flush threaded PVC well screen (0.020" slot) 31; 2" ϕ sch 40 flush threaded PVC sump 33
			stopped drilling at 33.1 ft. bgs. Water level measured at 30.3 ft bgs at 1100, at 26.09 ft bgs at 1345.		
35					

ENVIRONMENTAL PARTNERS INC

Boring/Well Designation: MW-8

Client: Kitsap County Public Works
Logged By: E. Caddey, L.G.
Date of Drilling: 10/7/10
Location: Olalla Landfill
Drilling Contractor: Cascade Drilling
Drill Rig: CME-75
Method: Hollow-Stem Auger
Borehole: 8" diameter

Site Representation:



Depth	Log	USCS Code	Description	Interval	Recovery	Blows per 6"	Sample	PID (ppm)	Well Data	Comments
0			Ground Surface							
			Gravel							Above-ground monument with bollards
		SW	***Well-Graded Sand with Gravel*** Tan; moist; mostly fine to coarse sand with little gravel			5-6-6		0.0		
5						9-12-15		0.0		
						50-5"				
10		SP-SM	***Poorly-Graded Sand with Silt and Gravel*** Brown; slightly moist; mostly medium sand with little silt and little gravel			16-50-4"		0.0		
						50-4"				
15		SP	***Poorly-Graded Sand with Gravel*** Gray-Brown; moist to wet; mostly medium sand with little gravel at 21'			50-6"		0.0		2" Sch 40 PVC blank
						10-17-23		0.0		Hydrated bentonite chips
20		SP	***Poorly-Graded Sand*** Gray-brown; moist to wet; medium sand with trace gravel and trace silt			6-8-25		0.0		Water at 22' bgs ATD
25			Becomes gray at 27'			12-50-6"		0.0		Stainless steel centralizer
			Becomes brown at 29'							#2/12 silica sand pack
30						8-21-23		0.0		0.010" slot sch 40 PVC
			Grades to well-rounded medium sand, black, gray and white grains							Stainless steel centralizer
35						12-16-20		0.0		
						2-4-4		0.0		
40			End of Borehole							
45										

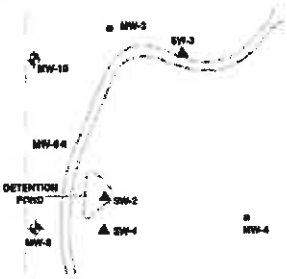
Project No. 60101.0

ENVIRONMENTAL PARTNERS INC

Boring/Well Designation: MW-10

Client: Kitsap County Public Works
Logged By: E. Caddey, L.G.
Date of Drilling: 10/7/10
Location: Olalla Landfill
Drilling Contractor: Cascade Drilling
Drill Rig: CME-75
Method: Hollow-Stem Auger
Borehole: 8" diameter

Site Representation:



Depth	Log	USCS Code	Description	Interval	Recovery	Blows per 6"	Sample	PID (ppm)	Well Data	Comments
			Ground Surface							
0			***Organic Soil***							Above-ground monument with bollards
		SW	***Well-Graded Sand with Gravel*** Tan; moist; mostly fine to coarse sand with little gravel			8-18-27		1.2		
5						12-14-16		4.4		
						9-16-19		5.5		2" Sch 40 PVC blank
10		GP	***Poorly-Graded Gravel*** Gray; moist; mostly fine gravel with little medium sand			9-16-18		0.0		
						50-6"		0.0		
		SW	***Well-Graded Sand with Gravel*** Tan; moist; mostly fine to coarse sand with little gravel			50-6"		0.0		Hydrated bentonite chips
15		SP	***Poorly-Graded Sand with Gravel*** Tan; moist; mostly medium sand with little gravel			50-6"		0.0		
20		SP	***Poorly-Graded Sand*** Gray-Brown; moist to wet; mostly medium sand with trace gravel and trace silt			50-5"		0.0		
						50-6"		0.0		
25										
						50-6"		0.0		Water at 32' bgs
30			Becomes saturated at 32.4'							
						8-19-20		0.0		Stainless steel centralizer
35										#2/12 silica sand pack
						22-50-5"		0.0		
40										0.010" slot Sch 40 PVC
						50-6"		0.0		Stainless steel centralizer
45						12-20-22		0.0		

Project No. 60101.0

OW-1

22/01-1A

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No. .....

Permit No. .....

(1) OWNER: Name South County Transfer Station Address Olalla-Burley Landfill

(2) LOCATION OF WELL: County Kitsap NE ¼ NE ¼ Sec. 1 T. 22 N., R. 1 W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☑ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) .....
New well ☑ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☑ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 180 ft. Depth of completed well 159 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from 0 ft. to 143 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☑ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☑
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☑ No ☐
Manufacturer's Name Johnson
Type Stainless Steel Model No.
Diam. 6 Slot size .012 from 144 ft. to 154 ft.
Diam. 6 Slot size .010 from 154 ft. to 158 ft.

Gravel packed: Yes ☐ No ☑ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☑ No ☐ To what depth? 18 ft.
Material used in seal Bentomite
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name Berkeley
Type: Submersible H.P. 3

(8) WATER LEVELS: Land-surface elevation above mean sea level ... ft.
Static level 86 ft. below top of well Date 10-15-84
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test 30 gal./min. with 21 ft. drawdown after 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG: 22-01-1A

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Fill	0	3
Top soil and logs	3	6
Brown clay some gravels sand	6	20
Brown sand water	20	32
Brown clay	32	36
Blue clay	36	42
Brown gravel	42	43
Brown sandy clay	43	59
Brown sand gravel	59	61
Brown sand layered	61	87
Brown sand med. with water	87	115
Brown sand water	115	159
Blue sand water fine layers clay	159	180
Well total 159 ft. 6 1/8 in.		
To top of packer 142 ft. 7/8 in.		
Riser pipe 1 ft. 6 in.		
#.012 slot screen 5 ft. 3 in.		
#.012 slot screen 5 ft. 2 3/4 in.		
#.010 slot screen 5 ft. 2 1/2 in.		
Tailpipe 3 in.		
Screen overall 17 ft. 5 1/4 in.		
Six in. casing 143 ft. 8 1/4 in.		
Static head 86 ft.		
20 G.P.M. 99 ft. 6 in.		
30 G.P.M. 107 ft. 6 in.		

DEPARTMENT OF ECOLOGY
NORTHWEST REGION

Work started 10-11 19 84 Completed 10-15- 19 84

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Nicholson Drilling Company (Person, firm, or corporation) (Type or print)

Address P.O. Box 123 Port Orchard, WA 98366

[Signed] (Well Driller)

License No. 0520 Date 10-23 19 83

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20

22/01-018

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT OW-3

STATE OF WASHINGTON

Application No. .....

Permit No. .....

(1) OWNER: Name LEO PIERSON Address 13603 Bandix Rd SE Olalla Wa

(2) LOCATION OF WELL: County KITSAP NW ¼ NE ¼ Sec. 1 T. 22 N., R. 1E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) .....
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 274 ft. Depth of completed well 274 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from +1 ft. to 269 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☒ No ☐ JOHNSON
Manufacturer's Name
Type Stainless Steel Model No.
Diam. 5" Slot size 50 from 269 ft. to 274 ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 19 ft.
Material used in seal BENTONITE & CLAY
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level 225 ft.
Static level 150 ft. below top of well Date 19 Feb
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☒ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test 12 gal./min. with 4 ft. drawdown after 3 hrs.
Artesian flow g.p.m. Date 19 Feb 1987
Temperature of water Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
BROWN SAND, FEW STONES	0	65
BROWN SAND WB	65	72
BROWN SAND & CLAY WB	72	104
BLUE SAND FINE WB	104	125
BLUE CLAY, STRATIFIED LAY-ERS BD FINE SAND WB	125	175
BLUE CLAY	175	245
BLUE CLAY & STONES WEEPS	245	253
GREY GRAVEL & CLAY BALLS WB	253	

2/27/87

Work started 22 Dec, 19 86 Completed 20 Feb, 1987

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME HICKS WELL DRILLING (Person, firm, or corporation) (Type or print)

Address 15800 Willow Rd SE Port Orchard Wa

[Signed] (Well Driller)

License No. 0182 Date AUG 7, 19 73

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20

The Department of Ecology does NOT Warrant the Data and/or the Information on this Well Report

297695 OW-5 20-1E-1B

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

XX Construction

O Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

CURRENT

Notice of Intent No. W216878

Unique Ecology Well ID Tag No. APR627

Water Right Permit No. _____

Property Owner Name Gene Ryker

Well Street Address 13041 Olympic Dr. SE

City Olalla County Kitsap

Location NW 1/4-1/4 NE 1/4 Sec 1 Twn 22N R 1E EWM or WWM (circle one)

Lat/Long (s, t, r Still **REQUIRED**) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. 012201103220008

PROPOSED USE: ☒ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other _____

TYPE OF WORK: Owner's number of well (if more than one) _____

☒ New well ☐ Reconditioned ☐ Deepened *Method:* ☐ Dug ☐ Bored ☐ Driven ☒ Cable ☐ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 6 inches, drilled 279 ft. Depth of completed well 279 ft.

CONSTRUCTION DETAILS

Casing Installed: ☒ Welded 6 " Diam. from +1 ft. to 279 ft.; ☐ Liner installed " Diam. from ft. to ft.; ☐ Threaded " Diam. from ft. to ft.

Perforations: ☐ Yes ☒ No

Type of perforator used _____

SIZE of perfs _____ in. by _____ in. and no. of perfs _____ from _____ ft. to _____ ft.

Screens: ☒ Yes ☐ No ☒ K-Pac Location 274

Manufacturer's Name Johnson

Type Stainless steel Model No. _____

Diam. 5 Slot size 18 from 274 ft. to 279 ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☒ No ☐ Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft.

Surface Seal: ☒ Yes ☐ No To what depth? 18 ft.

Material used in seal Bentonite

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name Flint Walling

Type: Submersible H.P. 1½

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 100 ft. below top of well Date 5/28/08

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☒ Yes ☐ No If yes, by whom? _____

Yield: 22 gal./min. with 6 ft. drawdown after 1 hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
0	106'	3 m	101'	10 m	100
1 m	102'	4 m	101'		
2 m	101'	5 m	101		

Date of test 5/28/08

Bailer test 12 gal./min. with 3 ft. drawdown after 2 hrs.

Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? ☒ Yes ☐ No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Brown top	0	2
Brown sand/clay	2	57
Grey clay/sand	57	82
Grey silt	82	110
Grey clay/fine sand	110	226
Brown clay	226	227
Grey clay/fine sand	227	273
Grey sand w/b	273	275
Grey sand & gravel w/b	275	279
Grey till	279	____

RECEIVED
JUN 11 2008
DEPT. OF ECOLOGY

Start Date 5/6/08 Completed Date 5/28/08

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Matt Olsen

Driller/Engineer/Trainee Signature Matt Olsen

Driller or trainee License No. 2337

Drilling Company Olsen Drilling

Address PO Box 1554

City, State, Zip Port Orchard, WA 98366

Contractor's Registration No. OLSEND101LJ Date 6/10/08

If TRAINEE, Driller's Licensed No. _____

Driller's Signature _____

Ecology is an Equal Opportunity Employer.

ECY 050-1-20 (Rev 3/05) **The Department of Ecology does NOT warranty the Data and/or Information on this Well Report.**

The Department of Ecology does NOT warranty the Data and/or the Information on this Well Report.

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

OW-9

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 29474

Water Right Permit No. 22·1E·1F

(1) OWNER: Name Stoermacher Address

(2) LOCATION OF WELL: County Kitsap SE ¼ NW ¼ Sec 1 T 22 N., R 1E W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) 13320 Olympic Port Orchard

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one)
Abandoned [ ] New well [X] Method: Dug [ ] Bored [ ] Deepened [ ] Cable [ ] Driven [ ] Reconditioned [ ] Rotary [ ] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6 inches. Drilled feet. Depth of completed well 61 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from 0 ft. to 56 ft.
Welded [ ] Liner installed [ ] Threaded [ ] " Diam. from ft. to ft.
" Diam. from ft. to ft.

Perforations: Yes [ ] No [X]
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes [X] No [ ]
Manufacturer's Name Howard Smith
Type 55 Model No.
Diam. 5 Slot size 16 from 56 ft. to 61 ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes [ ] No [X] Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes [X] No [ ] To what depth? 18 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes [ ] No [X]
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 32 ft. below top of well Date 5/4
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [ ] No [ ] If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test 12 gal./min. with 6' ft. drawdown after 2 hrs.
Airtest gal./min. with stem set at ft. for hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes [ ] No [ ]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Brown Top	0	3
Br Sand	3	8
Br Till	8	18
Br Sand Clay	18	40
Br Sand Clay Seep	40	51
Br Sand W/B	51	61

RECEIVED
MAY 08 1992
DEPT. OF ECOLOGY

Work started 4/30, 19. Completed 5/4, 1992

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this and its compliance with all Washington well construction stan Materials used and the information reported above are true to knowledge and belief.

NAME Olsen Drilling (PERSON, FIRM, OR CORPORATION)
Address 1598 SE Oregon Por
(Signed) Kayne Howie (WELL DRILLER)
Contractor's Registration No. OLSENDI011J Date

(USE ADDITIONAL SH

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

ASTM D422 PARTICLE SIZE

ANALYSIS DATE: 11/2/2010

LAB SAMPLE ID: BKS00142A1

ANALYST: S. NIELSON

CLIENT SAMPLE ID: OL-MW-08-5

TOTAL WET WEIGHT (g)	117.28
TOTAL DRY WEIGHT (g)	93.64

PERCENT SOLIDS @ 105C 79.84%

SIEVE FRACTION - SAND GRAVEL

BEAKER # 1

SIEVE FRACTION

BEAKER TARE:	112.6400
TOTAL DRY WT (g)	203.7400
SAMPLE WT (g)	91.1000

SIEVE SIZE	(mm)	(g)	(%)	% FINER
0.375	9.50	0.0000	0.00%	100.00%
0.25	6.30	0.0000	0.00%	100.00%
4	4.75	0.0000	0.00%	100.00%
10	2.00	0.2700	0.29%	99.71%
20	0.850	0.4300	0.46%	99.25%
40	0.425	2.9600	3.16%	96.09%
60	0.250	37.7630	40.33%	55.76%
140	0.106	44.7900	47.83%	7.93%
200	0.075	2.9600	3.16%	4.77%
<200	<0.075	2.1900		
TOTAL WT		91.3630		
RECOVERY (%)		100.29%		

COMMENTS

HYDROMETER FRACTION - SILT CLAY

SAMPLE TIME (20C) BLANK 1.0

TIME MIN	HYDROMETER	TEMP C	K	DIAM (mm)	Δ wt (g)	(%)	% FINER
2	6.0	21.0	0.0137	**0.0378**	5.0000	5.34%	5.34%
5	5.0		0.0137	**0.0240**	4.0000	1.07%	4.27%
15	4.0		0.0137	**0.0139**	3.0000	1.07%	3.20%
30	3.5		0.0137	**0.0099**	2.5000	0.53%	2.67%
60	3.0		0.0137	**0.0070**	2.0000	0.53%	2.14%
250	2.0	21.0	0.0137	**0.0035**	1.0000	1.07%	1.07%
1440	2.0	21.0	0.0137	**0.0014**	1.0000	0.00%	1.07%

PHYSICAL PROPERTIES

DISTRIBUTION **% GRAVEL 0.29%** **% SAND 94.94%** **% CLAY/SILT 4.77%** **MEAN (mm) 0.1796**

% SOLIDS **79.84%** % WATER 20.16%

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3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CLIENT SAMPLE ID: OL-MW-08-5

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LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

ASTM D422 PARTICLE SIZE

ANALYSIS DATE: 11/2/2010

LAB SAMPLE ID: BKS00142A2

ANALYST: S. NIELSON

CLIENT SAMPLE ID: OL-MW-10-5

TOTAL WET WEIGHT (g)	119.78
TOTAL DRY WEIGHT (g)	97.68

PERCENT SOLIDS @ 105C: 81.55%

SIEVE FRACTION - SAND GRAVEL

BEAKER # 2

SIEVE FRACTION

BEAKER TARE:	117.4700
TOTAL DRY WT (g	212.5600
SAMPLE WT (g)	95.0900

SIEVE SIZE	(mm)	(g)	(%)	% FINER
0.375	9.50	0.0000	0.00%	100.00%
0.25	6.30	0.0000	0.00%	100.00%
4	4.75	0.0000	0.00%	100.00%
10	2.00	0.4800	0.49%	99.51%
20	0.850	1.1300	1.16%	98.35%
40	0.425	11.5600	11.83%	86.52%
60	0.250	40.1000	41.05%	45.47%
140	0.106	37.8300	38.73%	6.74%
200	0.075	2.3500	2.41%	4.33%
<200	<0.075	1.6200		
TOTAL WT		95.0700		
RECOVERY (%)		99.98%		

COMMENTS

HYDROMETER FRACTION - SILT CLAY

SAMPLE TIME (20C) BLANK 1.0

TIME MIN	HYDROMETER	TEMP C	K	DIAM (mm)	Δ wt (g)	(%)	% FINER
2	6.0	21.0	0.0137	**0.0378**	5.0000	5.12%	5.12%
5	5.0		0.0137	**0.0240**	4.0000	1.02%	4.09%
15	5.0		0.0137	**0.0139**	4.0000	0.00%	4.09%
30	4.0		0.0137	**0.0099**	3.0000	1.02%	3.07%
60	3.5		0.0137	**0.0070**	2.5000	0.51%	2.56%
250	3.0	21.0	0.0137	**0.0034**	2.0000	0.51%	2.05%
1440	3.0	21.0	0.0137	**0.0014**	2.0000	0.00%	2.05%

PHYSICAL PROPERTIES

DISTRIBUTION **% GRAVEL 0.49%** **% SAND 95.18%** **% CLAY/SILT 4.33%** **MEAN (mm) 0.2178**

% SOLIDS **81.55%** % WATER 18.45%

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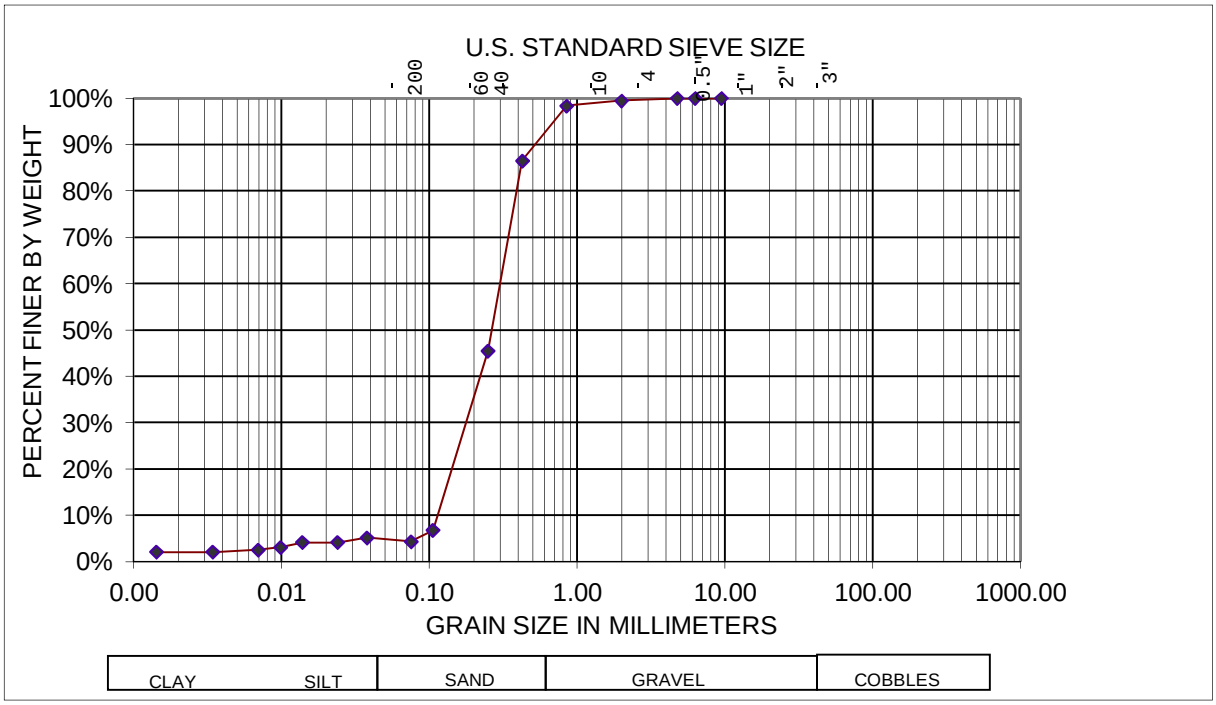
LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CLIENT SAMPLE ID: **OL-MW-10-5**



AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

ASTM D422 PARTICLE SIZE

ANALYSIS DATE: 11/2/2010

LAB SAMPLE ID: BKS00142A2-dup

ANALYST: S. NIELSON

CLIENT SAMPLE ID: OL-MW-10-5-dup

TOTAL WET WEIGHT (g) 117.47

TOTAL DRY WEIGHT (g) 96.51

PERCENT SOLIDS @ 105C 82.16%

SIEVE FRACTION - SAND GRAVEL

BEAKER # 2

SIEVE FRACTION

BEAKER TARE: #######

TOTAL DRY WT (#######

SAMPLE WT (g) 92.9700

SIEVE SIZE	(mm)	(g)	(%)	% FINER
0.375	9.50	0.0000	0.00%	100.00%
0.25	6.30	0.0000	0.00%	100.00%
4	4.75	0.3400	0.35%	99.65%
10	2.00	0.7700	0.80%	98.85%
20	0.850	1.2200	1.26%	97.59%
40	0.425	15.4300	15.99%	81.60%
60	0.250	41.3500	42.84%	38.75%
140	0.106	29.8300	30.91%	7.85%
200	0.075	2.0700	2.14%	5.70%
<200	<0.075	1.9800		
TOTAL WT		92.9900		
RECOVERY (%)		100.02%		

COMMENTS

HYDROMETER FRACTION - SILT CLAY

SAMPLE TIME (20C) BLANK 1.0

TIME MIN	HYDROMETER	TEMP C	K	DIAM (mm)	Δ wt (g)	(%)	% FINER
2	6.0	21.0	0.0137	**0.0378**	5.0000	5.18%	5.18%
5	5.0		0.0137	**0.0240**	4.0000	1.04%	4.14%
15	5.0		0.0137	**0.0139**	4.0000	0.00%	4.14%
30	4.0		0.0137	**0.0099**	3.0000	1.04%	3.11%
60	3.5		0.0137	**0.0070**	2.5000	0.52%	2.59%
250	3.0	21.0	0.0137	**0.0034**	2.0000	0.52%	2.07%
1440	3.0	21.0	0.0137	**0.0014**	2.0000	0.00%	2.07%

PHYSICAL PROPERTIES

DISTRIBUTION **% GRAVEL 1.15%** **% SAND 93.15%** **% CLAY/SILT 5.70%** **MEAN (mm) 0.2552**

% SOLIDS **82.16%** % WATER 17.84%

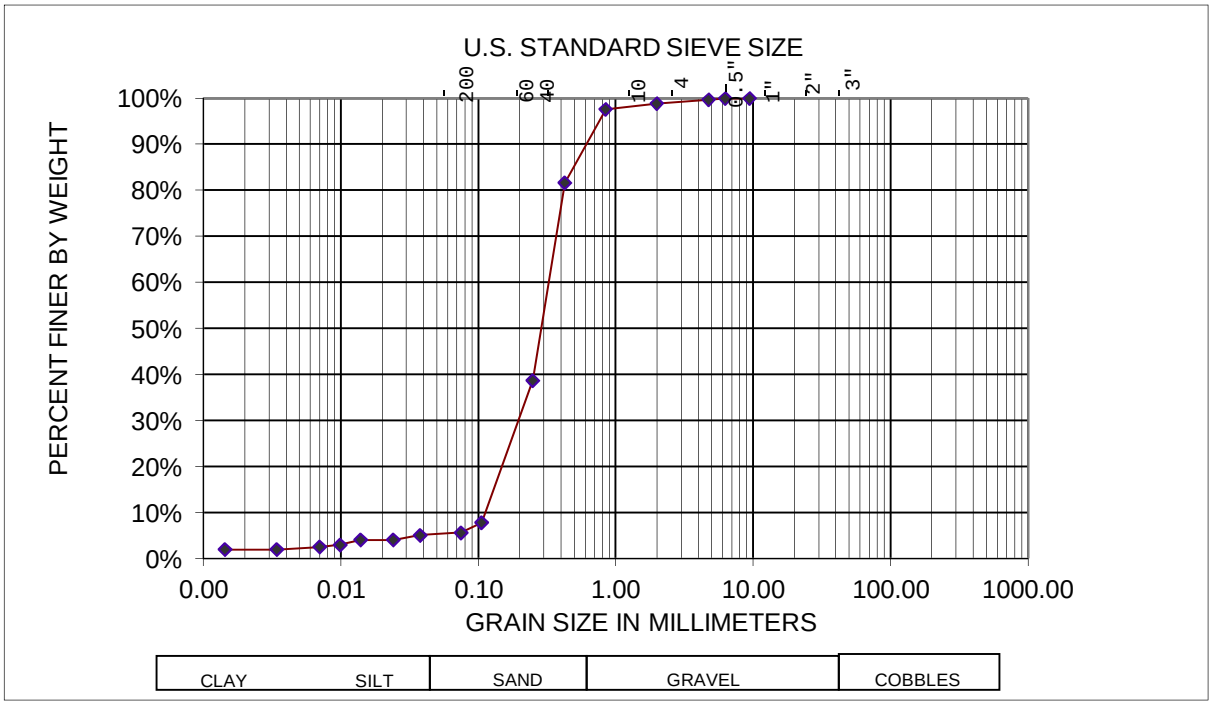
AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CLIENT SAMPLE ID: **OL-MW-10-5-dup**



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10/7/10

Clear, 65-70° F Today.

E. Caddy w/ EPI

Olalla Landfill, SWC of Burley Olalla Rd & Bandix Rd

07:00 - E. Caddy arrives at site, Glacier operator onsite, no equipment yet.

07:10 - Mike Urschel w/ Parametrix onsite, open gate on Bandix Rd side.

07:30 - John w/ UDS onsite to check ~~address~~ for buried utilities. Checked drill water for MW-10 and MW-8, no utilities found. Mike W. had UDS check perimeter of area to be trenched, no utilities found.

07:50 - Mike & Glacier operator go down to MW-10 location and start cutting trees w/ chainsaw.

08:15 - Kolf w/ Kitsap Co. Public Works onsite.

08:25 - John w/ UDS offsite.

08:50 - Truck & pup w/ gravel onsite, no machinery yet.

09:00 - Randles sand & gravel TNT offsite, - flatbed onsite w/ excavator

09:15 - Jan w/ Health Dept onsite, Noel w/ Ecology onsite.

09:30 - Mary Holtz EPI onsite

Mike & Kol made decision w/ Noel's approval to start drilling MW-8 first while MW-10 road & pad being constructed
10:00 - Tailgate Health & Safety meeting.
10:27 - Start drilling MW-8. Mike took Mary up to sample MW-2 & MW-4.
12:00 - Almost done w/ MW-8, hydrated chips, well specs: screen 27-37' OLO slot, 2/12 silica sand 26-37', hydrated chips 26-5' grout to surface.
- Glacier finished w/ drill road to MW-10, needs Cascade to look at and approve.
- Noel w/ Ecology offsite at ≈ 11:30, he stated he will be back ≈ 1:00
- No PID readings above 0.0
- Cascade decon auger in high pressure wash steam clean Trailer.
12:45 - Noel back on site
13:00 - Mike & Mary took Trackhoe up TO start digging Trenches.
- Mike & Mary finished sampling both MW-2 & MW-4, Mike will take samples to lab.
- Crew installing bollards around MW-8
13:45 - Move rig onto MW-10 pad.
14:00 - start drilling

14:48 - DTW at 32.4 in MW-10, Noel offsite. will drill to 47' & set well.
- Noel back, locked in
15:00 Noel returned Ecology offsite
15:10 - TD MW-10 at 47'
15:45 - Mike offsite w/ samples, taking to lab.
16:00 - Kol offsite, will be back in the morning for the keys.
- Glacier Tech still backfilling excavations, Mary H. supervising.
17:10 - Cascade offsite, Mary Holder offsite Ben w/ Glacier filling in pit - have 1 pit to go. EC to stay and lock gate.
17:45 - Ben w/ Glacier offsite, last excavator unit, TO, not sure who is calling in the pickup.
17:47: - EC lock gate, offsite.

60101.0

10/8/10

E. Caddey w/ EPI

07:30 - onsite To develop ground water wells, Cascade crew onsite, will set pump in MW-8 & MW-10 each.
DTW - 28.82 from TOC MW-8
MW-10 - 32.12 from TOC

08:05 - Toolgate H&S meeting
- decon pump for use in MW-8, new pump in MW-10

collect DTW measurements prior to develop., decon water level meter prior to each use.
- see Monitor Well Development sheets for field measurements.
- In general, set pump in middle of screen & moved down to remove sed in bottom. Set clear, then surge up & down. Set clear, move pump Towards Top, surge, set clear. move pump in Middle, surge & set clear.
MW-8 removed ≈ 80 gallons until it cleared & no sediment - fines.
MW-10 - removed about 50 gallons, was very clear.
- EC measured Total depth of each well, MW-8 was at ≈ 35' bgs, not 37 ft.
David w/ Cascade stated he knows it was

60101.0

10/8/10

at 37' bgs.
≈ 10:00 - Done with MW-8 & 10
Drum Count - MW-8 - 2 develop water
- Roll w/ IDW onsite 2 soils
1 decon.
MW-10 - 2 soils
1 Develop water
- Crew moved to develop MW-2 & MW-4, started w/ MW-4, Total depth of well 78', DTW 68' bgs. David said the electrical wires on pump don't go that deep - we measured them - 62' long, won't make it to water
- I called D. Krukal, we will have to develop wells next week ourselves. Tell Cascade To leave 2 drums.
10:20 - crew cleaning up, loading equip.
EC Check Around Trench by MW-3 for sample locations.
11:00 - Cascade offsite
- EC offsite, return PID to rental business in Lakewood.

T. Eddy

60101.0

10/13/10

Sunny, 60°F today.
E. Caddey w/ EP±
08:00 - E. Caddey onsite to develop MW-2 and MW-4. Met Kelly, she opened gate + provided keys to wells.
- Set up on MW-4 first. Start w/ stainless steel bailer, remove sand from bottom of well, after 5 gallons, switch to using the Waterra inertial pump. Remove an additional 5 gallons, clean, check NTU and parameters w/ Horiba multi-meter. (See field log table)
- Surged w/ the SS bailer, surge block for the Waterra was too tight fitting in well - I did not want to stick it.
Develop water placed into 55-gallon drum along road.
10:00 - Set up on MW-2, ~~[illegible]~~ used step ladder to reach top of stick up monument that is 5' above the ground. Again, started w/ SS bailer (decon'd first) to remove sand in bottom. Removed ≈ 8 gallons, put in Waterra, it would not work - filled up w/ sand. Removed and continued w/ bailer.
12:00 - Up to 10 gallons removed, still sandy, some of the "brown goliath" stuff on side of bailer. Check parameters,

Then continue develop w/ bailer.
12:35 - 15 gallons removed, still cloudy w/ some sand. Arms exhausted. May need to come back w/ a submersible pump to clean out well completely.
- Measured stick up monument - this is between well casing and monument - it is open to 5' below ground surface. ~~[illegible]~~
Both wells have the grey PVC on top.
- Develop. water from both wells placed into one 55 gallon drum, labeled, and placed along gravel perimeter road.
- 13:00 - EC offsite, "dummy" lock gate as requested by Kelly so rental truck can get in to pick up excavator.

Environmental Partners, Inc.

Tail Gate Health and Safety Meeting

Olalla Landfill Drilling

Site Personnel

Printed Name and Company	Approvals Signature	Date
Eric Caddey EPI		10/7/10
Mike Wurtel Parametrix		10/7/2010
Jan Brower		10/7/2010
Mary Holden		10/7/10
Keli McKay-Means		10/7/10
Nicole Philip		10/07/2010
Race Lauer CDP		10/07/10
David Gose		10/7/10
Daryl Dietrich		10/7/10

ENVIRONMENTAL PARTNERS INC

Monitoring Well Development Field Measurements Record

Job Name/Location: Olalla Landfill RI/FS

Job Number: 60101.0 Task 3

Date: 6/13/10

Well #: MW-B2 (EQ 10/13/10)

Page Number:

Time	Depth to Water (ft.) TOC	Total Depth of Well (ft.)	Volume Purged (gal.)	pH	Cond.	Turbidity (NTU)	Temp. (oC)	Visual Observations
10:25	66.64	78.7						- gelatin material on top of gw, lot of sand
12:00	66.65		10 gallon	7.85	85 ppm	225	12.6	cloudy, some sand
12:35	66.64	78.7	15	7.77	89	191	12.2	cloudy, some sand

ENVIRONMENTAL PARTNERS INC

Monitoring Well Development Field Measurements Record

Job Name/Location: Olalla Landfill RI/FS

Job Number: 60101.0 Task 3

Date: 6/13/10

Well #: MW-4

Page Number: 1

Time	Depth to Water (ft.)	Total Depth of Well (ft.)	Volume Purged (gal.)	pH	~~#3~~ Cond. ~~ppm~~ (E)	Turbidity (NTU)	Temp. (oC)	Visual Observations
08:14	63.98 from TOC	~73.9						- started developing using SS bailer, removed sand then used a Waterra equipped w/ surge block.
09:17			5 gallons					Cloudy, some silt & sand, 1" gallon, strong
09:50			8 gallons	7.41	62	229	12.1	cloudy, some sand
10:00			10 gallons	7.35	58	237	12.4	" "
10:10	63.98	~73.9	~15 gallons total	7.31	57	205	12.2	cloudy, Tr. sand

ENVIRONMENTAL PARTNERS INC

Monitoring Well Development Field Measurements Record

Job Name/Location: Olalla Landfill RI/FS

Job Number: 60101.0 Task 3

Date: 10/8/10

Well #: MW-8

Page Number: 1

Time	Depth to Water (ft.)	Total Depth of Well (ft.)	Volume Purged (gal.)	pH	~~pH~~ Cond. (EC 10/19/10)	Turbidity (NTU)	Temp. (oC)	Visual Observations
08:00	22.81	37.85 Sqs	—	—	—	—	—	—
08:08		37.85 from TOC	10					
08:17			15					
08:45			55					cloudy, some fines
09:05			75	6.67	115	39.4	10.8	cloudy, some fines after surge
09:25	22.84		85	6.50	134	19.6	10.2	clear

1 well volume = 2.41 gallons

10 well volume = 24.10 gallons

EPI ENVIRONMENTAL PARTNERS INC

Monitoring Well Development Field Measurements Record

Job Name/Location: Olalla Landfill RI/FS

Job Number: 60101.0 Task 3

Date: 10/8/10

Well #: MW-10

Page Number: 1

Time	Depth to Water (ft.)	Total Depth of Well (ft.)	Volume Purged (gal.)	pH	Cond.	Turbidity (NTU)	Temp. (oC)	Visual Observations
08:12	32.10	49.92 from TOC	—	—	~~APM~~ EC 10/9/10	—	—	
08:22			15					cloudy
08:38			25					cloudy after surging
08:55			35	7.80	276	1.76	—	clear
09:06	32.10		50	7.62	285	1.91	12.2	clear

1 well volume = 2.53 gallons

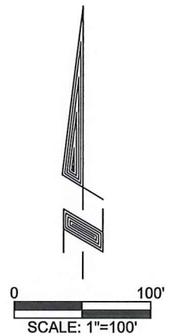
10 well volumes = 25.3 gallons.

Appendix E

Survey Data

10003
342.53
TOP

10030
334.17
PVC TOP
10031
332.78
GS
10032
332.78
MON WELL 5
10027
332.53
10028
331.44
GS
10029 LANDING_PLATE
331.43
MON WELL 5A



DATUM:
HORIZONTAL: PROJECT
(PER 1997 SURVEY BY PMX)

VERTICAL: PROJECT
CONTROL POINT #1578-25
ELEV. 333.43

10024
296.95
LANDING_PLATE
10025
294.95
GS
10026
294.95
MON WELL 3

10017
321.87
TEST PIT TP-1
10016
322.39
TEST PIT TP-1

10043
279.21
LANDING_PLATE
10044
276.84
GS
10045
276.84
MON WELL 10

10021
314.31
TEST PIT TP-5
10020
314.43
TEST PIT TP-5

10018
319.53
TEST PIT TP-3
10019
319.26
TEST PIT TP-3

10015
325.20
TEST PIT TP-2
10014
324.72
TEST PIT TP-2

10040
271.17
LANDING_PLATE
10041
269.14
GS
10042
269.14
MON WELL 6

10022
310.22
TEST PIT TP-4
10023
309.76
TEST PIT TP-4

10038
261.88
10039 INV ADS 18"
261.99
INV ADS 18"
10037
266.54
INV ADS 18"

10034
272.85
LANDING_PLATE
10035
270.73
GS
10036
270.73
MON WELL 8
10033
270.37
INV PVC 8"

10007
320.93
PVC TOP
10005
317.35
GS
10006
317.30
MON WELL 4

10012
330.27
GS
10013
330.27
F/L 2

10057
342.53
GS
10056
343.79
LANDING_PLATE
10058
342.53
MON WELL 1

10049
280.43
LANDING_PLATE
10050
278.20
GS
10051
278.21
MON WELL 7

10053
323.25
PVC TOP
10054
318.95
GS
10055
318.95
MON WELL 2

10008
323.76
GS
10009
323.76
F/L 3

10011
332.40
GS
10010
332.40
F/L 1

ID #	PMX #	NORTHING	EASTING	ELEVATION	DESCRIPTION	ELEV.	GROUND	ELEV.	DESC.
F-1	10010	161775.469	560218.662	332.40	FLARE 1	332.40	GS FLARE 1		
F-2	10013	161922.669	560207.322	330.27	FLARE 2	330.27	GS FLARE 2		
F-3	10009	161707.727	559732.444	323.76	FLARE 3	323.76	GS FLARE 3		
MW-01	10058	161858.133	560525.840	342.53	MONITORING WELL 1	342.53	GS MW 1	343.79	LANDING PLATE MW 1
MW-02	10055	161704.534	559572.839	318.95	MONITORING WELL 2	318.95	GS MW 2	323.25	PVC TOP MW 2
MW-03	10026	162333.903	559463.060	294.95	MONITORING WELL 3	294.95	GS MW 3	296.95	LANDING PLATE MW 3
MW-04	10006	161911.192	559787.735	317.30	MONITORING WELL 4	317.35	GS MW 4	320.93	PVC TOP MW 4
MW-05	10032	162510.115	559878.901	332.78	MONITORING WELL 5	332.78	GS MW 5	334.17	PVC TOP MW 5
MW-05A	10029	162487.878	559875.742	331.43	MONITORING WELL 5A	331.44	GS MW 5A	332.53	LANDING PLATE MW 5A
MW-06	10042	162077.699	559358.970	269.14	MONITORING WELL 6	269.14	GS MW 6	271.17	LANDING PLATE MW 6
MW-07	10051	161723.016	559398.979	278.21	MONITORING WELL 7	278.20	GS MW 7	280.43	LANDING PLATE MW 7
MW-08	10036	161897.813	559350.147	270.73	MONITORING WELL 8	270.73	GS MW 8	272.85	LANDING PLATE MW 8
MW-10	10045	162218.490	559340.899	276.84	MONITORING WELL 10	276.84	GS MW 10	279.21	LANDING PLATE MW 10
STM-C1	10037	161964.884	559475.019	266.54	INVERT 18" ADS - POND INLET				
STM-C2	10038	162010.704	559336.808	261.88	INVERT 18" ADS - OUTFALL FROM POND				
STM-C3	10039	162006.004	559336.340	261.99	INVERT 18" ADS - OUTFALL FROM POND				
STM-C4	10033	161836.404	559411.172	270.37	INVERT 8" PVC CULVERT - 90' SE. OF MW-7				
TP-1	10017	162289.111	559988.875	321.87	TEST PIT #1 - NORTH PIN FLAG				
TP-1	10016	162259.235	559993.205	322.39	TEST PIT #1 - SOUTH PIN FLAG				
TP-2	10015	162135.942	560120.834	325.20	TEST PIT #2 - NORTH PIN FLAG				
TP-2	10014	162107.804	560128.212	324.72	TEST PIT #2 - SOUTH PIN FLAG				
TP-3	10018	162123.185	559944.476	319.53	TEST PIT #3 - NORTH PIN FLAG				
TP-3	10019	162090.903	559947.172	319.26	TEST PIT #3 - SOUTH PIN FLAG				
TP-4	10022	162118.139	559675.923	310.22	TEST PIT #4 - NORTH PIN FLAG				
TP-4	10023	162065.499	559677.316	309.76	TEST PIT #4 - SOUTH PIN FLAG				
TP-5	10021	162201.740	559810.304	314.31	TEST PIT #5 - NORTH PIN FLAG				
TP-5	10020	162173.560	559815.981	314.43	TEST PIT #5 - SOUTH PIN FLAG				
WELL	10003	162761.407	559934.278	342.53	TOP CENTER OF WELL CASING - 260' N. OF MW-5			341.34	SCRIBE 'X' CONC. FOUNDATION OF WELL
								342.31	SCRIBED 'X' NE. COR. OF POWER J-BOX AT WELL

Appendix F

Field Data Sheets

Parametrix, Inc.

Well #: MW-1
Sample #: OL-MW-1

Groundwater Sampling Field Data Sheet

Project Number	215-1578-119	Date	6/1/2011
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	~~L. Linde~~ M Baxter / J Bennett
Client Name	KC SWD	Purged By	~~L. Linde~~ Same

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	75.90	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)	N/A	Date Purged	6/1/2011
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1520 - 1602
Date/Time Sampled	6/1/2011 1555	Flow = 460 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) 4

TIME (2400 hr)	WATER LEVEL (feet) *	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV)	CUM. VOL. (gal)
1525	76.71	6.55	16.3	9.31	10.02	8.4	201	
1532	76.71	6.10	16.9	9.77	10.55	15.7	197	
1536	76.75	5.95	16.9	9.94	12.20	4.6	190	
1540	76.75	6.16	16.8	10.01	12.80	3.0	177	
1544	76.57	6.33	16.8	9.93	12.92	5.9	170	
1548	76.69	6.37	16.8	9.83	12.72	6.6	169	
1552	76.53	6.39	16.7	9.67	12.58	8.4	162	

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	6/2/2011
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity: locked, clear of debris
Remarks: Kink in tubing about 1.5' from top of casing.
Signature: _____ Page 1 of 1

* convenience depth

Parametrix, Inc.

Well #: MW-2
Sample #: 9-MW-2

Groundwater Sampling Field Data Sheet

Project Number	215-1578-119	Date	6/1/2011
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	~~L. Linde/~~ M Baxter/J Bennett
Client Name	KC SWD	Purged By	~~L. Linde/~~

Casing Diameter: 2" ___ X 4" ___ 6" ___ Other ___

Depth to Water (feet)	63.20'	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)	N/A	Date Purged	6/1/2011
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	0935 - 1015
Date/Time Sampled	6/1/2011 1010	Flow = 400 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) ___ Actual Purge Volume (gallons) 5

TIME (2400 hr)	WATER LEVEL (feet)	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV)	CUM. VOL. (gal)
0940	63.35	5.69	14.2	8.51	11.41	1.4	213	
0944	~~63.33~~ 63.33	6.09	13.7	8.53	13.96	1.2	182	
0948	63.34	6.35	13.6	8.61	14.13	3.3	169	
0952	63.35	6.52	13.5	8.61	14.05	5.6	166	
0956	—	6.55	13.4	8.50	14.04	8.7	164	
1000	—	6.67	13.4	8.56	14.01	13.9	163	

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	6/6/2011
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity: locked, clear of debris
Remarks: Set pump at 71'. Water level indicator stopped working correctly after 0952 reading.
Signature: [signature]

Parametrix, Inc.

Well #: MW-3
Sample #: OL-MW-3

Groundwater Sampling Field Data Sheet

Project Number	215-1578-119	Date	6/2/2011
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	~~L. Linde~~/ M. Baxter / C. Britnaya
Client Name	KC SWD	Purged By	~~L. Linde~~/ Same

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	43.19	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)	N/A	Date Purged	6/2/2011
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1133 - 1217
Date/Time Sampled	6/2/2011 1200	Flow = 320 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) 3.5

TIME (2400 hr)	WATER LEVEL (feet) ★	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV)	CUM. VOL. (gal)
1136	43.84	6.78	24.3	0.22	10.51	0.0	154	
1140	43.80	6.25	23.2	0.00	11.20	0.3	195	
1144	43.80	6.22	23.3	0.00	12.15	0.0	191	
1148	43.80	6.22	23.4	0.00	12.69	0.0	187	
1152	—	6.21	23.4	0.00	12.89	0.0	186	

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	6/3/2011
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	OL-MW-9
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity: locked, clear of debris.
Remarks: Collected field duplicate, OL-MW-9. (Set time @ 1245)
Signature: _____ Page 1 of 1

★ Convenience depth

Parametrix, Inc.

Well #: MW-4
Sample #: 01-MW-4

Groundwater Sampling Field Data Sheet

Project Number	215-1578-119	Date	6/1/2011
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	~~L. Linde/~~ M Baxter / J Bennett
Client Name	KC SWD	Purged By	~~L. Linde/~~ Same

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	60.25	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)	N/A	Date Purged	6/1/2011
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1110-1157
Date/Time Sampled	6/1/2011 1157	Flow = 320 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48 \text{ gal/ft}^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) 4

TIME (2400 hr)	WATER LEVEL (feet)	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV)	CUM. VOL. (gal)
1115	60.31	6.87	15.1	8.99	11.48	2.9	159	
1119	60.30	6.86	15.1	8.88	13.24	3.8	165	
1123	60.31	6.93	15.0	8.84	13.98	3.3	165	
1127	60.32	7.01	15.2	8.77	14.91	9.6	144	
1131	60.32	7.09	14.9	9.09	15.50	6.1	136	
1135	-	7.07	15.0	9.04	14.50	11.9	147	
1139	-	7.06	15.0	8.92	14.16	10.5	147	

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	6/2/2011
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity: Cap locked, lots of little black ants!
Remarks: Took pump at 6ft
Signature: [signature]

Parametrix, Inc.

Well #: 5A
Sample #: OA-MW-5A

Groundwater Sampling Field Data Sheet

Project Number	215-1578-119	Date	6/2/2011
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	~~L. Linde/~~ M Baxter/ C Buitrago
Client Name	KC SWD	Purged By	~~L. Linde/~~ Same

Casing Diameter: 2" ___ X 4" ___ 6" ___ Other ___

Depth to Water (feet)	74.10	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)	N/A	Date Purged	6/2/2011
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	0900 - 1005
Date/Time Sampled	6/2/2011 0940	Flow = 360 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) ___ Actual Purge Volume (gallons) 5

TIME (2400 hr)	WATER LEVEL (feet) *	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV)	CUM. VOL. (gal)
0905	76.87	5.67	15.7	9.22	11.58	4.1	204	
0909	76.87	5.81	15.2	9.12	11.65	1.2	181	
0913	76.10	6.00	14.9	9.01	12.57	0.0	159	
0917	76.76	6.32	14.7	8.84	13.96	0.0	148	
0921	75.90	6.49	14.6	9.12	14.00	0.0	140	
0925	76.90	6.51	14.6	9.00	14.32	0.0	140	
0929	76.85	6.58	14.7	9.23	14.59	1.5	140	

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	6/3/2011
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity: locked, clear of debris. lots of small bugs!
Remarks: Now.
Signature: [signature]
Page 1 of 1

* Convenience depth

Parametrix, Inc.

Well #: MW-6
Sample #: ol-MW-6

Groundwater Sampling Field Data Sheet

Project Number	215-1578-119	Date	6/2/2011
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	~~L. Linde/~~ M Buxton/ C Britting
Client Name	KC SWD	Purged By	~~L. Linde/~~ SWMC

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	19.15	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)	N/A	Date Purged	6/2/2011
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1310 - 1355
Date/Time Sampled	6/2/2011 1355	Flow = 350 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) 5

TIME (2400 hr)	WATER LEVEL (feet) ★	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV)	CUM. VOL. (gal)
1315	19.50	6.21	12.0	2.35	11.72	103.0	51	
1319	19.76	5.48	12.5	0.86	12.70	26.1	48	
1323	—	6.01	12.9	0.43	12.94	26.4	46	
1327	19.60	6.15	13.4	0.25	13.00	32.7	38	
1331	19.60	6.37	13.7	0.10	13.00	34.3	24	
1335	19.64	6.53	13.8	0.03	13.04	16.0	16	
1339	19.58	6.61	15.9	0.00	13.10	29.0	10	
1343	19.58	6.61	14.0	0.00	13.00	41.7	7	
1347	19.58	6.67	14.1	0.00	12.96	54.8	6	

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	6/3/2011
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity: Locked, clear of debris.
Remarks: Small visible in outlet tube causing turbidity to jump around.
Signature: _____ Page 1 of 1

★ Convenience depth.

Parametrix, Inc.

Well #: MW-7
Sample #: OL-MW-7

Groundwater Sampling Field Data Sheet

Project Number	215-1578-119	Date	6/1/2011
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	~~L. Linde~~/ M Baxter/J Bennett
Client Name	KC SWD	Purged By	~~L. Linde~~/ M Baxter/J Bennett

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	23.65	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)	N/A	Date Purged	6/1/2011
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1343 - 1427
Date/Time Sampled	6/1/2011 1420	Flow = 320 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) 3.5

TIME (2400 hr)	WATER LEVEL (feet)	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV)	CUM. VOL. (gal)
1345	23.64	7.06	17.0	4.58	10.49	9.1	147	
1349	23.72	6.41	16.9	4.13	11.44	4.5	153	
1353	—	6.45	17.0	4.10	11.55	4.4	148	
1357	23.71	6.61	17.0	4.01	12.12	5.2	141	
1401	23.69	6.78	16.9	3.97	12.37	8.0	134	
1405	23.70	6.87	16.9	3.87	12.64	13.1	132	
1409	23.70	6.88	16.5	3.94	12.45	19.0	118	
1413	23.70	6.90	16.8	3.83	12.70	22.3	119	
1417	—	6.92	16.8	3.86	12.81	26.3	122	

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	6/2/2011
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity	Locked, clear of debris.
Remarks	None.
Signature	

Page 1 of 1

Parametrix, Inc.

Well #: MW-8
Sample #: 01-MW-8

Groundwater Sampling Field Data Sheet

Project Number	215-1578-119	Date	6/2/2011
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	~~L. Linde/~~ M Baxter / C Britton
Client Name	KC SWD	Purged By	~~L. Linde/~~ Same

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	19.65	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)	N/A	Date Purged	6/2/2011
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1413 - 1510
Date/Time Sampled	6/2/2011 1500	Flow = 400 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) 5

TIME (2400 hr)	WATER LEVEL (feet) *	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV)	CUM. VOL. (gal)
1417	20.60	6.37	60.5	1.58	10.06	96.9	20	
1422	20.58	6.13	59.1	0.00	10.82	60.3	28	
1426	20.59	6.19	58.2	0.00	11.11	57.1	31	
1430	20.58	6.31	50.4	0.00	11.24	60.3	31	
1434	20.59	6.49	46.4	0.00	11.35	48.9	26	
1438	20.59	6.61	44.5	0.05	11.34	45.5	24	
1442	—	6.66	42.2	0.13	11.42	42.8	24	
1446	20.59	6.68	41.7	0.19	11.39	41.1	23	
1450	20.59	6.68	40.6	0.24	11.41	41.6	25	
1454	20.59	6.68	39.1	0.29	11.42	42.2	26	

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	6/3/2011
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity: locked, clear of debris.
Remarks: None
Signature: _____ Page 1 of 1

* Convenience depth.

MW-10

Parametrix, Inc.

Well #: ~~MW-3~~ MW-10 6/7/11
Sample #: ~~OL-MW-3~~ OL-MW-10 6/7/11

Groundwater Sampling Field Data Sheet

Project Number	215-1578-119	Date	6/2/2011
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	~~L. Linde/~~ M. Baxter / C. Buitrago
Client Name	KC SWD	Purged By	~~L. Linde/~~ Same

Casing Diameter: 2" ___ X 4" ___ 6" ___ Other ___

Depth to Water (feet)	20.18	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)	N/A	Date Purged	6/2/2011
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1029 - 1110
Date/Time Sampled	6/2/2011 1105	Flow = 400 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) ___ Actual Purge Volume (gallons) 5

TIME (2400 hr)	WATER LEVEL (feet)	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV)	CUM. VOL. (gal)
1032	29.02 *	6.30	76.6	0.00	10.40	19.9	205	
1036	29.04	6.95	75.5	0.00	11.40	0.0	206	
1040	29.04	6.04	75.4	0.00	11.84	0.0	194	
1044	29.06	6.23	75.9	0.00	11.94	0.0	179	
1048	29.05	6.39	76.0	0.00	11.97	0.0	168	
1052	29.05	6.47	76.0	0.00	11.93	0.0	162	
1056	—	6.49	75.9	0.00	11.94	0.0	159	

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	6/3/2011
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity: locked, clear of debris.
Remarks: None
Signature: [signature] Page 1 of 1

* Convenience depth.

Landfill Gas Sampling Field Data

Olalla Landfill Gas Sampling

Flare:

Date: 6/1/2011

Field Team: M Baxter / J. Bennett

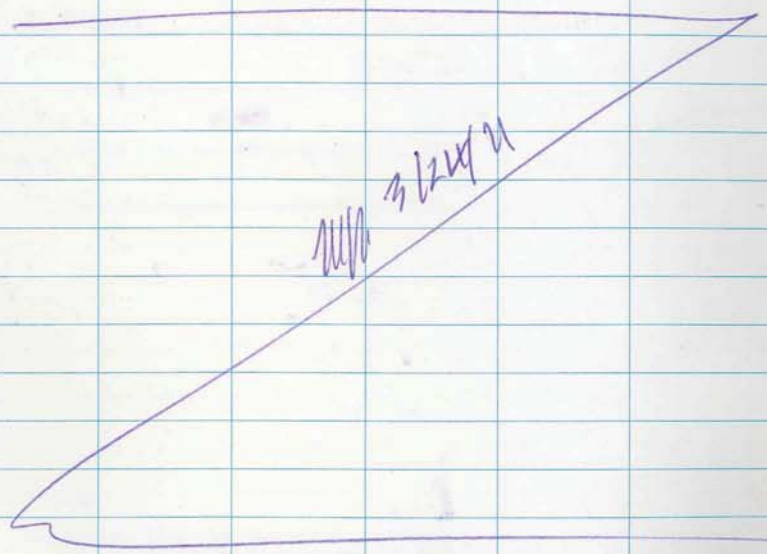
Field Conditions: Overcast w/ sprinkles, 58° and light breeze

Ambient Temperature:

Vent	Time	CH_4	O_2	CO_2	Temp °C	Pressure	Balance
Flare 3	1445	32.6	1.5	8.6	~	0.0	57.2
1	1455	30.4	1.6	8.8	~	0.1	59.3
2	1506	39.1	1.0	8.6 ~~8.6~~	~	.0.0	51.3

Thursday, March 24, 2011

1335 Collect MW-10, plus MS/MSD
1420 End purge
1435 Depart MW-10
1440 Arrive at MW-3
1441 Start purge
1530 Collect MW-3 sample
1540 End purge
1545 Depart MW-3
1600 Transfer samples and equipment to Jesse's truck, complete COC
600 Depart project site, lock gate behind us.



Wednesday - June 1, 2011

Samplers - Jesse Bennett + Mike Baxter
Forecast - Hi 58° Lo 45° Rain showers
Current - 52° Overcast + sprinkles

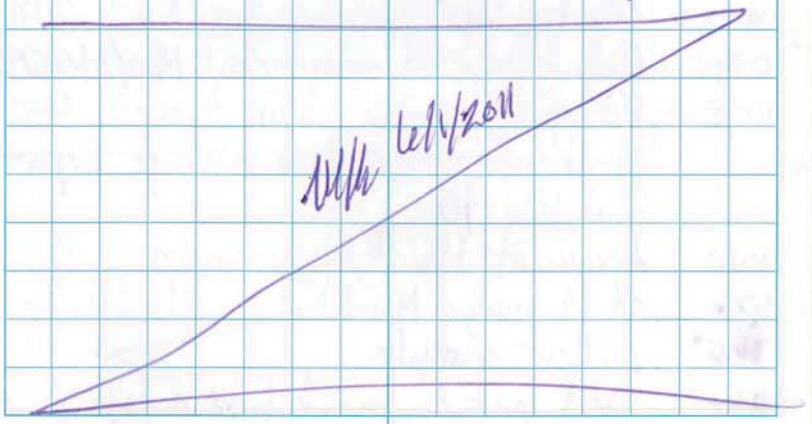
0800 Meet with J Bennett and L Hinde at Bandix Rd gate. Receive field journal and tubing for MW-2 + MW-4 from Kara. Review operation of gas meter.
0815 L Hinde departs. Unlock gate and Jesse and Mike enter. Close gate behind us (but not locked).
0825 Plan for day and health + safety meeting.
0840 Depart for MW-2.
0845 Arrive at staging area or road to get to MW-2 and MW-4. Pre-label sample containers for wells and calibrate Horiba.
0905 Begin walking equipment out and setting up at MW-2
0930 Measure MW-2 BTW (63.20')
0935 Begin purging MW-2

(over)

Wednesday, June 1, 2011

0955 Water level indicator stopped working correctly. Would work when test button was pressed, but would not buzz to indicate water level.
1010 Collect MW-2 sample.
1015 End purge. Breakdown setup and begin decon. Also start moving equipment to MW-4.
1035 Finish decon. Depart MW-2 for MW-4.
1045 Arrive at MW-4 and begin setup.
1050 Measure MW-4 DTW (60.25)
1105 Visit from Charlie (2) from HCSW
1110 Begin purging MW-4
1145 Collect MW-4
1157 End purge. Breakdown setup. Move pumping equipment off cap to where we can pull vehicles around to pick up
1125 Decon pump. Put away MW-2 and MW-4 samples.
1235 Break for lunch.
1315 Arrive at MW-7 Start set up.
1320 Measure MW-7 DTW (25.65)

1343 Start purging MW-7
1420 Collect MW-7 sample
1427 End purge. Breakdown setup.
1435 Depart MW-7 for gas monitoring.
1448 Measure Flare 3
1458 Measure Flare 1
1506 Measure Flare 2, Depart for MW-1
1510 Arrive at MW-1, begin setup.
1515 Measure DTW (75.90
1525 Begin purge
1555 Collect MW-1 sample
1602 End purge, breakdown setup.
1615 Collect rinse blank (OA-ER)
1635 Secure gate on Bandix Rd, Depart site.



Thursday - June 2, 2011

0803 Meet up with Craig Baitrago
0810 Unlock gate on Bendix Rd to access site, lock gate behind us.
0815 Transfer gear, etc, to Highlander. Depart for MW-5A.
0820 Arrive at MW-5A, Conduct H+S meeting. Label sample containers.

Samplers: Mike Burton and Craig Baitrago
Forecast: Hi 57° Lo 49° Rain Showers
Current: 54° Mostly Cloudy, Slight Breeze

0840 Calibrate Horiba WQ Meter
0850 Setup for purge.
0900 Start purge
0940 Collect MW-5A sample and MS/MSD
1005 End purge.
1010 Breakdown setup. Lock well cap. Depart for MW-10.
1020 Arrive at MW-10, begin setup.
1029 Start purge MW-10
1105 Collect sample
1110 End purge, breakdown setup

Thursday - June 2, 2011

1140 Depart MW-10 for MW-3
1154 Arrive at MW-3 and setup for purge
1133 Start purge.
1200 Collect MW-3 and field duplicate (MW-9)
1217 End purge, breakdown setup
1225 Break for lunch.
1300 Arrive at MW-6 and setup for purge
1310 Begin purge
1355 Collect MW-6 sample
1358 End purge, breakdown setup.
1405 Depart for MW-8
1408 Arrive at MW-8, set up for purge
1413 Start Purge
1500 Collect MW-8 sample
1510 End purge, breakdown setup
1520 Depart MW-8 for Bendix Rd gate.
1530 Depart site, lock gate behind us.

CHAIN OF CUSTODY RECORD

Kitsap County Public Works
Solid Waste Division
614 Division Street (MS-27)
Port Orchard, WA 98366
Phone: 360-337-5777
FAX: 360-337-4867

FOR LAB USE ONLY

LOGIN COMMENTS:	Sample(s) checked/logged by: _____
	Sample temp on receipt at lab: _____ COMPLIANCE 4 +/- 4° C
	Are custody seals intact? ☐YES ☐NO
	Sample receipt (day/time): _____ / _____
	Ice? ☐NONE ☐BLUE ☐WET

TO BE COMPLETED BY THE SAMPLER:

TAT REQUESTED: STANDARD: ✓ OTHER: _____ | PROJECT: Olalla LF | SAMPLER PRINTED NAME AND SIGNATURE: Mike Baxter / Jesse Bennett

SAMPLE DATE	SAMPLE TIME	SITE NAME OR LOCATION	SAMPLE IDENTIFIER	MATRIX *	GRAB	COMP	ANALYSES REQUIRED—MARK AN X IN ALL TESTS REQUIRED FOR EACH SAMPLE LINE: VOC Full list + SIM-VC	AIK-T,B,C	NH3	Cl, NO3, NO2, SO4	copTac	pH, TDS	T. Coliform	Diss. As, Ba, Cu, Fe, Mn, Ni, Zn	Na, Zn			
6/1	1010		OL-MW-2	GW	X													Diss. Metals sure
	1145		OL-MW-4															Field Filtered
	1420		OL-MW-7															
	1555		OL-MW-1															
	1615		OL-EB	DIW														Equip. Rinse
6/24	0000		OL-TB	DIW														VOC Trip Blanks

* MATRIX TYPES: **SW** = Surface Water **GW** = Ground Water **SO** = Soil

	SIGNATURE	PRINTED NAME	COMPANY AND TITLE	DATE	TIME
RELINQUISHED BY:		Mike Baxter	Parametrix / Env Tech I	6/1/2011	1900
RECEIVED BY:	Michael R. Warfel	Michael R. Warfel	Parametrix / Engineer	6/1/2011	1900
RELINQUISHED BY:					
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

DISTRIBUTION: WHITE–With lab report YELLOW–KCPW PINK–Lab

CHAIN OF CUSTODY RECORD

Kitsap County Public Works
Solid Waste Division
614 Division Street (MS-27)
Port Orchard, WA 98366
Phone: 360-337-5777
FAX: 360-337-4867

FOR LAB USE ONLY

LOGIN COMMENTS:	Sample(s) checked/logged by: _____
	Sample temp on receipt at lab: _____ COMPLIANCE 4 +/- 4° C
	Are custody seals intact? ☐YES ☐NO
	Sample receipt (day/time): _____ / _____
	Ice? ☐NONE ☐BLUE ☐WET

TO BE COMPLETED BY THE SAMPLER:

TAT REQUESTED: STANDARD: ✓ OTHER: _____ | PROJECT: Olalla LF | SAMPLER PRINTED NAME AND SIGNATURE: Mike Baxter / Craig Baitrago

SAMPLE DATE	SAMPLE TIME	SITE NAME OR LOCATION	SAMPLE IDENTIFIER	MATRIX *	GRAB	COMP	ANALYSES REQUIRED—MARK AN X IN ALL TESTS REQUIRED FOR EACH SAMPLE LINE										
							VOC Full list + SIM VC	Alk-T,B,C	NH3	Cl, NO3, NO2, SO4	COD/Toc	pH/TDS	T. Coliform	Diss. As, Ba, Ca, Fe, Mn, K, Na, Zn.			
6/2	0940		OL-MW-5A	GW	X		X	X	X	X	X	X	X	X	X	←	MS/MSD Set
	1105		OL-MW-10														
	1200		OL-MW-3														Diss. Metals
	1245		OL-MW-9														samples have
	1355		OL-MW-6														been field
↓	1500		OL-MW-8	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓			filtered.

* **MATRIX TYPES:** **SW** = Surface Water **GW** = Ground Water **SO** = Soil

	SIGNATURE	PRINTED NAME	COMPANY AND TITLE	DATE	TIME
RELINQUISHED BY:		Mike Baxter	Parametrix / ENV Tech I	6/2/2011	1530
RECEIVED BY:	Michael R. Wafel	Michael R. Wafel	Parametrix / Proj Mgr	6/2/2011	1830
RELINQUISHED BY:					
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

DISTRIBUTION: WHITE–With lab report YELLOW–KCPW PINK–Lab

KCPW 3053-REV 05/02

Parametrix, Inc.

Well #: MW-1
Sample #:

Groundwater Sampling Field Data Sheet

OL-MW-1

Project Number	215-1578-121	Date	3/23/11
Project Name	Olalla LF Qtrly GW/RIFSSampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde / M. Baxter
Client Name	KC SWD	Purged By	"

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	78.12	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)	—	Date Purged	3/23/11
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	0941-1010
Date/Time Sampled	3/23/11 1010	450 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
0941	78.38	5.44	0.236	10.36	9.94	<1	186	
0945	78.37	5.64	0.232	10.38	10.47	<1	179	
0949	78.37	5.70	0.233	10.55	12.20	<1	155	
0953	78.38	5.78	0.234	10.87	13.80	<1	140	
0957	78.38	5.86	0.234	10.95	13.31	<1	137	
1001	78.38	5.92	0.234	10.87	13.55	<1	137	
1005	78.38	5.95	0.234	10.99	13.66	<1	137	4.5 gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	3/24/11
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature Linde

Page 1 of 1

Parametrix, Inc.

Well #: MW-2
Sample #:

Groundwater Sampling Field Data Sheet

OL-MW-2

Project Number	215-1578-121	Date	3/23/11
Project Name	Olalla LF Qtrly GW/RIFSSampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde / M. Baxter
Client Name	KC SWD	Purged By	"

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	63.67	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)	-	Date Purged	3/23/11
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1326 - 1352
Date/Time Sampled	3/23/11 1400		420 ml/min

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1326	63.77	6.83	0.185	9.46	13.62	<1	229	
1340	63.79	6.73	0.193	9.80	13.61	<1	98	
1344	63.81	6.71	0.195	10.29	13.79	<1	72	
1348	63.80	6.72	0.196	10.46	13.58	<1	72	
1352	63.80	6.73	0.197	10.50	13.40	<1	72	4 gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	3/24/11
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature L. Linde

Parametrix, Inc.

Well #: MW-3
Sample #:

Groundwater Sampling Field Data Sheet

OL-MW-3

Project Number	215-1578-121	Date	3/24/2011
Project Name	Olalla LF Qtrly GW/RIFSSampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	J Bennett / M Baxter
Client Name	KC SWD	Purged By	same

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	41.79	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)		Date Purged	3/24/2011
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1448 - 1540
Date/Time Sampled	3/24/2011 1530	Flow = 420 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) 4.5

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1451	42.37*	6.34	0.682	1.63	11.39	70.8	154	
1455	42.35	6.04	0.689	0.75	11.27	68.5	159	
1459	42.38	5.96	0.690	0.59	12.29	66.9	160	
1503	42.37	5.93	0.706	0.33	12.41	61.8	161	
1507	42.37	5.94	0.708	0.12	12.46	55.2	161	
1511	42.37	5.92	0.708	0.00	12.49	54.9	161	
1515	—	5.93	0.709	0.00	12.49	61.1	161	

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	3/25/2011
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature _____ Page 1 of 1

* Convenience Depth

Parametrix, Inc.

Well #: MW-4
Sample #:

Groundwater Sampling Field Data Sheet

OL-MW-4

Project Number	215-1578-121	Date	3/23/11
Project Name	Olalla LF Qtrly GW/RIFSSampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Lundle / M. Baxter
Client Name	KC SWD	Purged By	"

Casing Diameter: 2" ___ X 4" ___ 6" ___ Other ___

Depth to Water (feet)	61.07	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)	-	Date Purged	3/23/11
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1443 - 1510
Date/Time Sampled	3/23/11 1510	300 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1443	61.11	6.92	0.217	9.75	15.77	<1	233	
1447	61.08	6.85	0.231	9.27	13.45	<1	172	
1451	61.10	6.80	0.240	9.30	14.65	<1	117	
1455	61.09	6.78	0.243	9.43	14.51	<1	89	
1459	61.09	6.80	0.245	9.41	14.46	<1	82	
1503	61.09	6.81	0.244	9.45	14.46	<1	79	

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	3/24/11
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature L Lundle

Parametrix, Inc.

Well #: MW-5A
Sample #:

Groundwater Sampling Field Data Sheet

OL-MW-5A

Project Number	215-1578-121	Date	3/23/11
Project Name	Olalla LF Qtrly GW/RIFSSampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde / M. Baxter
Client Name	KC SWD	Purged By	"

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	75.14	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)	-	Date Purged	3/23/11
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1047 - 1110
Date/Time Sampled	3/23/11 1110		300 ml/min

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1047	76.78	6.36	0.295	10.78	11.48	<1	138	
1051	76.80	6.31	0.305	11.00	11.56	<1	117	
1055	76.77	6.43	0.288	11.25	12.50	<1	98	
1100	76.78	6.47	0.280	11.44	13.37	<1	95	
1104	76.75	6.48	0.276	11.61	13.42	<1	92	3.5 gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	3/24/11
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature L. Linde Page 1 of 1

Parametrix, Inc.

Groundwater Sampling Field Data Sheet

Well #: MW-6
Sample #: OL-MW-6

Project Number	215-1578-121	Date	3/24/2011
Project Name	Olalla LF Qtrly GW/RIFSSampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	J Bennett / M Baxter
Client Name	KC SWD	Purged By	same

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	17.93	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)	-	Date Purged	3/24/2011
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1102 - 1157
Date/Time Sampled	3/24/2011 1130	Flow = 350 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) 4.5

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1105	18.00	6.49	0.294	0.19	12.93	52.0	-14	
1109	15.02	6.42	0.291	0.00	12.65	49.6	-23	
1113	18.01	6.42	0.289	0.00	12.76	43.4	-27	
1117	18.02	6.42	0.290	0.00	12.67	46.4	-31	
1121	15.01	6.44	0.291	0.00	12.67	37.1	-32	
~~1126~~								

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	3/25/2011
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature

Parametrix, Inc.

Well #: MW-7
Sample #:

Groundwater Sampling Field Data Sheet

DL-MW-7

Project Number	215-1578-121	Date	3/24/2011
Project Name	Olalla LF Qtrly GW/RIFSSampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	J Bennett / M. Baxter
Client Name	KC SWD	Purged By	Same

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	23.49	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)	—	Date Purged	3/24/2011
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	0810-0934
Date/Time Sampled	3/24/2011 0915	Flow = 390 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) 4

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
0842	24.49	5.71	0.272	3.70	13.43	0.0	141	
0846	24.47	5.92	0.294	3.92	12.12	>1.0	108	
0850	24.47	6.06	0.297	4.04	12.16	>1.0	94	
0854	24.50	6.14	0.289	6.28	12.76	>1.0	81	
0858	24.48	6.24	0.295	6.08	12.49	>1.0	94	
0902	24.48	6.29	0.297	5.85	12.07	>1.0	100	
0906	24.47	6.24	0.296	5.90	11.83	>1.0	104	

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	3/25/2011
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good.
Remarks Collected field dupe at this location (DL-MW-11)
Signature _____ Page 1 of 1

Parametrix, Inc.

Well #: MW-8
Sample #:

Groundwater Sampling Field Data Sheet

DL-MW-8

Project Number	215-1578-121	Date	3/24/2011
Project Name	Olalla LF Qtrly GW/RIFSSampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	J Barnett/M Baxter
Client Name	KC SWD	Purged By	same

Casing Diameter: 2" X 4" ____ 6" ____ Other ____

Depth to Water (feet)	18.75	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)	—	Date Purged	3/24/2011
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	0958 - 1040
Date/Time Sampled	3/24/11 1030	Flow = 410 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) ____ Actual Purge Volume (gallons) 4

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1003	19.67*	6.66	0.149	5.47	13.21	54.7	38	
1007	19.69	6.59	0.156	6.03	11.25	57.3	35	
1011	19.66	6.47	0.159	5.72	11.47	44.0	30	
1015	19.68	6.48	0.160	5.93	11.56	34.0	34	
1019	19.68	6.47	0.166	5.66	11.60	33.0	37	
1023	19.67	6.49	0.180	5.13	11.69	31.4	36	
1027	19.67	6.46	0.190	4.88	11.74	32.3	39	

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	3/24/2011
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature

* Convenience depth.

Parametrix, Inc.

Well #: MW-10
Sample #:

Groundwater Sampling Field Data Sheet

OL-MW-10

Project Number	215-1578-121	Date	3/24/2011
Project Name	Olalla LF Qtrly GW/RIFSSampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	J Bennett / M Baxter
Client Name	KC SWD	Purged By	same

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	26.79	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)	—	Date Purged	3/24/2011
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1302 - 1420
Date/Time Sampled	3/24/2011 1335	Flow = 340 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) 5

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1306	27.74*	6.51	0.910	0.16	13.41	61.9	38	
1310	27.75	6.29	0.990	0.00	11.70	66.3	67	
1314	27.73	6.24	0.997	0.00	12.08	57.8	74	
1318	27.72	6.26	0.999	0.00	12.18	55.3	83	
1322	27.73	6.27	0.999	0.00	12.40	~~52.8~~ 52.8	91	
1326	—	6.27	0.999	0.00	12.41	50.5	93	

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	3/25/2011
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks Collected MS/MSD at this location
Signature _____ Page 1 of 1

* Convenience Depth

PARAMETRIX

Form 02-EN-100/Rev. 10/02

Sampling Field Data Sheet

Station #: SW-2

Project Number:	215-1578-121	Date:	3/23/11
Project Name:	Olalla LF RI/FS	Client Name	Kitsap Cty SWD
Project Address:	Bandix Rd	Sampled By:	L. Linde / M. Baxter

TIME (2400 hr)	pH (units) (±0.1)	Ec (µmhos/cm 25°C) (±3%)	TEMPERATURE °C	DO (mg/L)	COLOR (visual)	TURBIDITY (visual)
No parameters collected						

Sampling Equipment: N/A

Laboratory:	N/A	Date Sent to Lab:	N/A
Chain-of-Custody (yes/no):	N/A	Field QC Sample Number:	N/A
Shipment Method:	N/A	Split With (names[s]/organization):	N/A

Remarks:

No flow observed @ this location therefor no sample was collected

Signature: L Linde

PARAMETRIX

Form 02-EN-100/Rev. 10/02

Sampling Field Data Sheet

Station #: SW-3

Project Number:	215-7578-121	Date:	3/23/11
Project Name:	Olalla LF RI/FS	Client Name	Kitsap City SWD
Project Address:	Barker Rd	Sampled By:	L. Linde/M. Baxter

TIME (2400 hr)	pH (units) (± 0.1)	Ec (µmhos/cm 25°C) (± 3%)	TEMPERATURE °C	DO (mg/L)	ORP ~~COLOR~~ (visual) (mV)	TURBIDITY (visual) (NTU)
1139	6.79	0.061	11.12	13.60	133	<1

Sampling Equipment: Grab

Laboratory:	ARI	Date Sent to Lab:	3/24/11
Chain-of-Custody (yes/no):	Yes	Field QC Sample Number:	N/A
Shipment Method:	Hand delivered	Split With (names[s]/organization):	N/A

Remarks:

Collected @ 1140

Flow rate: ~ 1 gal/min

Signature: L. Linde

PARAMETRIX

Form 02-EN-100/Rev. 10/02

Sampling Field Data Sheet

Station #: SW-4

Project Number:	215-1578-121	Date:	3/23/11
Project Name:	OlalLF SWD	Client Name	Kitsap Cty SWD
Project Address:	Bandix Rd	Sampled By:	L. Linde / M. Baxter

TIME (2400 hr)	pH (units) (±0.1)	Ec (µmhos/cm 25°C) (±3%)	TEMPERATURE °C	DO (mg/L)	COLOR (visual) ORP (mV)	TURBIDITY (visual) (NTU)
1147	6.83	0.077	9.41	13.23	129	41

Sampling Equipment: Grab

Laboratory:	ARI	Date Sent to Lab:	3/24/11
Chain-of-Custody (yes/no):	Yes	Field QC Sample Number:	N/A
Shipment Method:	Hand delivered	Split With (names[s]/organization):	N/A

Remarks:

Collected @ 1150, OL-SW-4

Flow rate ~300 ml/min

Steady flow, no pulsing exhibited

Signature: L. Linde

Landfill Gas Sampling Field Data

Olalla Landfill Gas Sampling

Flare:

Date: 3/23/11

Field Team: L. Linde / M. Butler

Field Conditions: Sunny ~50°F, clear w/ high clouds, wind ~5mph

Ambient Temperature:

Vent	Time	CH_4	O_2	CO_2	Temp °C	(SP) Pressure	Balance
Flare 3	1233	29.9	1.3	7.8	—	10.5	61.0
2	1241	33.4	1.7	7.9	—	10.2	57.0
1	1245	27.5	4.7	6.8	—	10.2	61.0

Note: surface holes dug in cap between flares 1 & 2

Olalla LF RI/FS 3/23/11
Activities: Collect gw samples
Weather: Sunny, ~45°F
Onsite: L. Linde, M. Baxter
Author: L. Linde

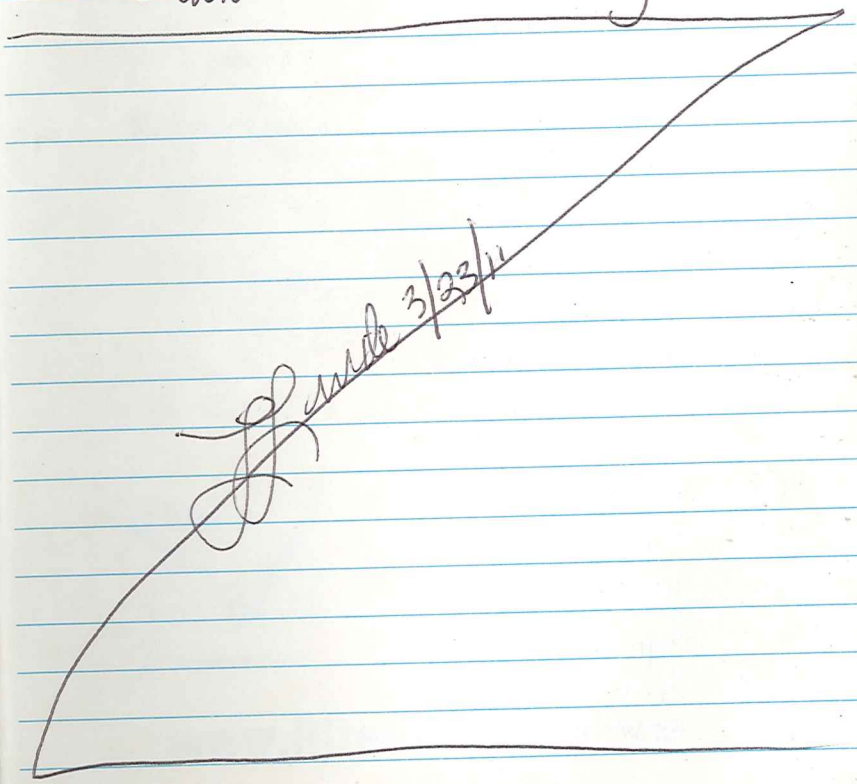
0715 Depart to get explodes
0730 Stop @ gas station to fill up generator & get ice
0755 Arrive @ P&R
0815 Mike B. arrives - load up rest of gear
0830 Depart for site
0900 Arrive @ site - set up
Calibrate Horiba - good
0941 Begin purging mw-1
Late Entry 0920 Call lab to clarify 1L amber bottle count - thought there were supposed to be 2 per well but lab said only 1
0950 Kelli Warren arrives to hand off tubing
1010 Collect sample @ mw-1, OL-mw-1
1020 Cleanup, move to mw-5A & set up
1047 Begin purging mw-5A

Olalla LF RI/FS 3/23/11

1110 Finish purging, collect sample @ MW-5A, OL-MW-5A
1120 Cleanup & move locations
1140 Collect sample @ SW-3 OL-SW-3
1150 Collect sample @ SW-4 OL-SW-4
1200 Break for lunch
1215 Call Jesse Bennett to bring extra coolers tomorrow & back up gear
1230 Decon pump & prep for landfill wells
1300 Cart gear to MW-2 & set up
1330 Begin purging MW-2
Late Entry 1245 leave coolers in office (Puyallup) & Mike W. will P/n in AM to deliver to lab
1400 Complete purge, collect sample @ MW-2, OL-MW-2
1415 Decon pump, move gear to next location
1443 Begin purging MW-4
1510 Collect sample @ MW-4, OL-MW-4
1520 Cleanup, cart everything to car

Olalla LF RI/FS 3/23/11

1530 Decon pump, cleanup
1600 Collect rinsate on pump, OL-ER Collect ~~FB~~ trip blank for tomorrow w/ time of 0000
1630 Depart site, secure gate
1700 Arrive @ P&R, Mike B will leave samples @ office for Mike W. to P/n & take to lab in the morning



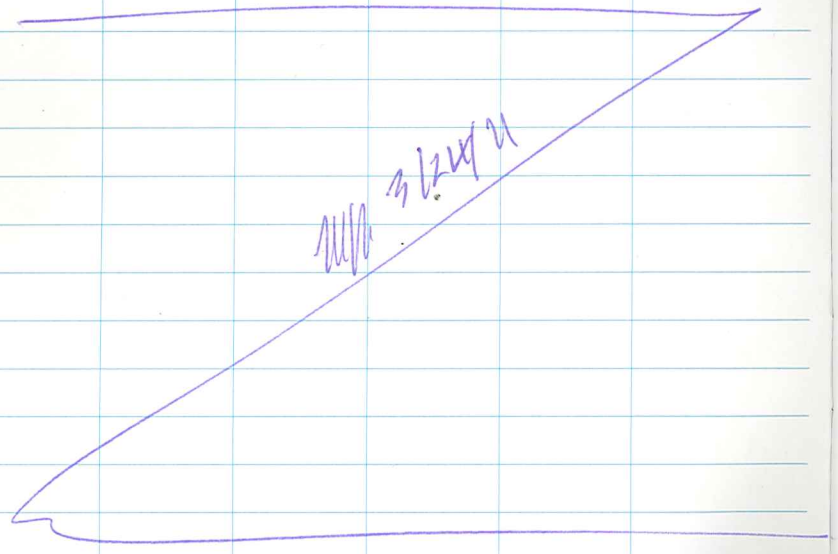
Thurs - March 24, 2011

Samplers: Jesse Bennett, Mike Baxter
Forecast: Hi 54 Lo 41 Chance of Shower
Current Cond.: Overcast, light showers, no breeze

0800 Met Jessee at transfer station
0815 Calibrate WQ Meter
0825 Arrive at MW-7
0840 Start purge.
0915 Collect MW-7
0925 Collect Duplicate
0940 Leave MW-7, return to Jesse's truck
0950 Arrive at MW-8
0958 Start purge
1030 Collect MW-8
1040 Stop Purge
1047 Depart MW-8
1052 Arrive at MW-6
1102 Start purge
1130 Collect MW-6
1137 End purge
1145 Depart MW-6 and site to get packing type in G.H.
1240 Arrive at MW-10
1302 Start purge

Thursday, March 24, 2011

1335	Collect MW-10, plus MS/MSD
1420	End purge
1435	Depart MW-10
1440	Arrive at MW-3
1447	Start purge
1530	Collect MW-3 sample
1540	End purge
1545	Depart MW-3
1550	Transfer samples and equipment to Jesse's truck, complete COC
1600	Depart project site, lock gate behind us.



CHAIN OF CUSTODY RECORD

Kitsap County Public Works
Solid Waste Division
614 Division Street (MS-27)
Port Orchard, WA 98366
Phone: 360-337-5777
FAX: 360-337-4867

FOR LAB USE ONLY

LOGIN COMMENTS:	Sample(s) checked/logged by: _____ Sample temp on receipt at lab: _____ COMPLIANCE 4 +/- 4° C Are custody seals intact? ☐YES ☐NO Sample receipt (day/time): _____ / _____ Ice? ☐NONE ☐BLUE ☐WET

TO BE COMPLETED BY THE SAMPLER:

TAT REQUESTED: STANDARD: X OTHER: _____ | PROJECT: Olalla LF | SAMPLER PRINTED NAME AND SIGNATURE: Laura Lindell / Mike Baxter (Individual)

SAMPLE DATE	SAMPLE TIME	SITE NAME OR LOCATION	SAMPLE IDENTIFIER	MATRIX *	GRAB	COMP	ANALYSES REQUIRED — MARK AN X IN ALL TESTS REQUIRED FOR EACH SAMPLE LINE: VOCs, VC	SVOCs, PCBs	T. Cyanide	TOC, COD	T. Coliform	F. Coliform	TDS	T. MHs ①	D. MHs ②	Invert. ③	Nitrate	
3/23	1010		OL-MW-1	W	X		X	X	X	X	X		X	X	X	X		① Hg, Ni
	1110		OL-MW-5A	↓	↓		↓	↓	↓	↓	↓		↓	↓	↓	↓		② Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, K, Se, Ag, Na, Thallium, Sn, V, Zn, field filtered
	1400		OL-MW-2															
	1510		OL-MW-4				↓	↓	↓	↓	↓		↓	↓	↓	↓		
	1140		OL-SW-3									X					X	
	1150		OL-SW-4									X					X	
↓	1600		OL-ER				X	X	X	X	X		X	X		X		
3/15	0000		OL-TB	↓	↓		X											

* MATRIX TYPES: SW = Surface Water GW = Ground Water SO = Soil

③ Alkalinity, ammonia, carbonate, bicarbonate, chloride, nitrate, nitrite, sulfate, pH

	SIGNATURE	PRINTED NAME	COMPANY AND TITLE	DATE	TIME
RELINQUISHED BY:		Mike Baxter	Parametrix / Env Tech I	3/25/2011	1800
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

DISTRIBUTION: WHITE–With lab report YELLOW–KCPW PINK–Lab

KCPW 3053-REV 05/02

CHAIN OF CUSTODY RECORD

Kitsap County Public Works
Solid Waste Division
614 Division Street (MS-27)
Port Orchard, WA 98366
Phone: 360-337-5777
FAX: 360-337-4867

FOR LAB USE ONLY

LOGIN COMMENTS:	Sample(s) checked/logged by: _____
	Sample temp on receipt at lab: _____ COMPLIANCE 4 +/- 4° C
	Are custody seals intact? ☐YES ☐NO
	Sample receipt (day/time): _____ / _____
	Ice? ☐NONE ☐BLUE ☐WET

TO BE COMPLETED BY THE SAMPLER:

TAT REQUESTED: STANDARD: √ OTHER: _____ | PROJECT: Olalla LF | SAMPLER PRINTED NAME AND SIGNATURE: Mike Baxter / Jesse Bennett

SAMPLE DATE	SAMPLE TIME	SITE NAME OR LOCATION	SAMPLE IDENTIFIER	MATRIX *	GRAB	COMP	ANALYSES REQUIRED—MARK AN X IN ALL TESTS REQUIRED FOR EACH SAMPLE LINE										
							VOC, VC	SVOC, 1,2,3	CN	TOC, COD	T.Coliforms	TDS	T. Metals	D. Metals	Conventionals		
3/24	0915		OL MW-7	GW	X		X	X	X	X	X	X	X	X	X		
/	1030		OL MW-8	/	/		/	/	/	/	/	/	/	/	/		
/	1130		OL MW-6	/	/		/	/	/	/	/	/	/	/	/		
/	1335		OL MW-10	/	/		/	/	/	/	/	/	/	/	/		MS/MSD
/	1430		OL MW-3	V	/		/	V	V	V	V	V	V	V	V		
V	0000		OL TB	DIW	V		V										Pres. Metals samples field filtered.

* **MATRIX TYPES:** **SW** = Surface Water **GW** = Ground Water **SO** = Soil

	SIGNATURE	PRINTED NAME	COMPANY AND TITLE	DATE	TIME
RELINQUISHED BY:	[signature]	H. Jesse Bennett	Project Site Tech	3/25/11	0843
RECEIVED BY:	[signature]	S. Hudson	KCPW	3/25/11	0843
RELINQUISHED BY:					
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

DISTRIBUTION: WHITE–With lab report YELLOW–KCPW PINK–Lab

KCPW 3053-REV 05/02

Olalla Landfill

OL-MW-##-W-0 primary
1 dup
2 trip
3 equip

0945 onsite
Met Keli (Means/McKay)
Jan Brower, KCHD
Eric Caddey, EPS
Mike Warfel, parametrix

Glacier Cascade
~~Paul~~ Noel Phillips
↓
Ecology well construction coordinator

10/7/10

MW-2 water level @ 11:12 am 66.89' toc
OL-MW-02-W-0 collected @ "11:00"
MW-4 water level @ 11:59 64.09' toc
OL-MW-04-W-0 collected @ "12:00"

Sampled by
Mike & Mary
Warfel Holder
with bailers
put on ice

Samples taken by Mike to Aquatic Research

Approximately 13:30 started digging Test Pit 1
~ 14:00 Test Pit 2
~ 14:15 Test Pit 3
~ 14:35 Test Pit 4
~ 14:50 dug out drum & additional area @ TP 4 (North end)
~ 1520 Test Pit 5
~ 1545 started backfilling
reburied all waste

N. Phillips offsite
M. Warfel & J. Brower offsite
K. McKay-Means offsite

16:15 M. Holder offsite only E. Caddey & Ben Bohren (Glacier) onsite – finishing the backfilling of TP2 & TP1.

Multi Rae (Oil and Safety) used to measure PID readings.

Parametrix, Inc.

Well #: MW-1
Sample #: OL-MW-1-0

Groundwater Sampling Field Data Sheet

Project Number	215-1578-121	Date	12/28/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	79.60	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)		Date Purged	12/28/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	10:55 - 1111
Date/Time Sampled	12/28/10 1115		500 ml/min

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/m) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1055	79.61	6.69	13.0	12.00	9.9	0.9	145	
1059	76.61	6.53	13.2	11.06	10.4	1.8	137	
1103	76.81	6.48	13.2	10.87	11.5	0.4	128	
1107	—	6.47	13.2	10.45	12.0	<0.1	128	
1111	76.89	6.41	13.0	10.45	12.6	0.4	129	5 gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	12/29/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature Linde

Page 1 of 1

Parametrix, Inc.

Well #: MW-2
Sample #:

Groundwater Sampling Field Data Sheet

OL-MW-2-0

Project Number	215-1578-121	Date	12/28/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	64.84	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)		Date Purged	12/28/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1352 - 1408
Date/Time Sampled	12/28/10 1410		420 mL/min

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1352	64.96	7.33	11.4	10.26	12.0	6.8	68	
1356	64.88	7.20	11.4	10.13	13.1	4.5	65	
1400	64.92	7.13	11.4	10.23	13.3	4.7	65	
1404	64.90	7.09	11.3	10.08	13.9	7.2	64	
1408	64.92	7.08	11.4	10.15	13.7	8.6	64	4gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	12/29/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature Page 1 of 1

Parametrix, Inc.

Well #: MW-3
Sample #: OL-MW-30

Groundwater Sampling Field Data Sheet

Project Number	215-1578-121	Date	12/29/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	42.32	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)		Date Purged	12/29/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	0842-0904
Date/Time Sampled	12/29/10 0910	490 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
0842	42.38	5.83	35.5	7.17	9.9	*	211	
0846	42.36	5.93	35.9	5.65	10.7	*	201	
0850	—	6.03	35.8	5.20	11.4	*	191	
0854	—	6.11	35.8	4.91	12.2	*	182	
0856	42.34	6.14	35.9	4.81	12.5	*	177	
0900	42.36	6.15	35.8	4.70	12.5	*	173	
0904	42.35	6.16	35.8	4.68	12.5	*	170	45gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	12/30/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature C. Linde

* turbidity sensor not reading

Parametrix, Inc.

Well #: MW-4
Sample #:

Groundwater Sampling Field Data Sheet

DL-MW-4-D

Project Number	215-1578-121	Date	12/28/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	62.14	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)		Date Purged	12/28/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1448 - 1504
Date/Time Sampled	12/28/10 1510		420 ml/min

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
12/28/10 LL 1418								
~~1448~~	-	7.10	12.7	9.97	10.5	18.2	85	
1452	62.23	7.09	12.7	9.29	12.2	6.0	66	
1456	62.23	7.12	12.7	9.14	13.8	2.2	56	
1500	62.23	7.13	12.7	9.29	13.9	2.0	55	
1504	62.23	7.11	12.7	9.36	13.9	0.3	55	4 gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	12/29/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Cavud
Remarks
Signature

Parametrix, Inc.

Well #: MW-5A
Sample #:

Groundwater Sampling Field Data Sheet

OL-MW-5A-D

Project Number	215-1578-121	Date	12/28/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	76.50	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)		Date Purged	12/28/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1146-1207
Date/Time Sampled	12/28/10 1205	480 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/m) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1146	76.57	6.75	20.7	11.46	11.1	1.8	136	
1150	76.57	6.63	20.7	9.72	11.9	<0.1	127	
1154	76.56	6.63	20.1	9.41	13.0	<0.1	122	
1158	76.56	6.63	19.8	9.43	13.4	<0.1	121	
1202	76.56	6.62	19.4	9.52	13.5	<0.1	121	4 Gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	12/29/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature L Linde Page 1 of 1

Parametrix, Inc.

Well #: MW-6
Sample #: OL-MW-6-0

Groundwater Sampling Field Data Sheet

Project Number	215-1578-121	Date	12/29/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	17.74	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)		Date Purged	12/29/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	0934 - 0959
Date/Time Sampled	12/29/10 1005	500 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
0934	17.83	6.49	35.1	8.11	10.0	+	33	
0938	17.84	6.53	21.5	5.23	11.0	*	7	
0943	—	6.64	23.9	9.08	11.4	*	-3	
0947	17.88	6.62	13.0	4.58	12.5	*	-11	
0951	17.91	6.62	16.7	4.35	12.7	*	-18	
0955	17.90	6.62	16.2	4.20	12.8	*	-22	
0959	17.90	6.63	16.3	4.28	12.7	*	-24	45 gal

lost power →

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	12/30/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	OL-MW-6-1
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature L. Linde Page 1 of 1

Duplicate collected @ 1015

Parametrix, Inc.

Well #: MW-7
Sample #:

Groundwater Sampling Field Data Sheet

OL-MW-7-0

Project Number	215-1578-121	Date	12/29/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	24.38	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)		Date Purged	12/29/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1120 - 1136
Date/Time Sampled	12/29/10 1140	500 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1120	24.44	6.77	13.0	11.41	10.3	<0.1	75	
1124	24.44	6.78	13.0	8.92	11.2	*	75	
1128	24.44	6.78	12.9	8.58	11.8	*	75	
1132	24.44	6.77	12.9	8.43	12.1	*	78	
1136	24.43	6.77	12.9	8.41	12.1	*	81	5gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	12/30/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature Linde Page 1 of 1

* turbidity sensor not working

Parametrix, Inc.

Well #: MW-8
Sample #: OL-MW-8-D

Groundwater Sampling Field Data Sheet

Project Number	215-1578-121	Date	12/29/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	18.79	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)		Date Purged	12/29/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1027 - 1043
Date/Time Sampled	12/29/10 1045	440 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1027	18.89	6.81	10.2	11.10	10.8	73.4	29	
1031	--	6.77	9.9	9.88	11.7	22.3	14	
1035	18.92	6.76	10.0	8.18	12.4	1.5	8	
1039	18.92	6.75	10.1	8.18	12.7	<0.1	6	
1043	18.92	6.75	10.1	8.10	12.8	<0.1	6	4 gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	12/30/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature

Parametrix, Inc.

Well #: MW-10
Sample #: OL-MW-10-0

Groundwater Sampling Field Data Sheet

Project Number	215-1578-121	Date	12/28/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	27.70	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)		Date Purged	12/28/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1006 - 1022
Date/Time Sampled	12/28/10 1025	300 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1006	27.43	6.44	36.1	5.43	11.2	25.1	141	
1010	27.43	6.51	35.5	4.22	12.1	2.19	141	
1014	27.42	6.52	35.4	4.14	12.3	0.9	138	
1018	27.40	6.54	35.5	4.12	12.4	0.6	136	
1022	27.40	6.54	35.2	4.11	12.4	0.3	135	4.5 gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	12/29/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks Pump repaired last qtr & working OK
Signature [signature] Page 1 of 1

PARAMETRIX

Form 02-EN-100/Rev. 10/02

Sampling Field Data Sheet

Station #: SW2

Project Number:	215-1578-121	Date:	12/28/10
Project Name:	Olalla LF RI/FS	Client Name	KCSWD
Project Address:	Bandix Rd	Sampled By:	L. Linde, C. Wiggins

TIME (2400 hr)	pH (units) (±0.1)	~~Ec (µmhos/cm 25°C)~~ mS/cm (±3%)	TEMPERATURE °C	DO (mg/L)	~~COLOR (visual)~~ Turbidity (NTU)	~~TURBIDITY (visual)~~ ORP (mV)
0855	5.73	5.3	6.6	13.24	115	196

Sampling Equipment: None required except Horiba U-22 for WR

Laboratory:	Aquatic Research	Date Sent to Lab:	12/29/10
Chain-of-Custody (yes/no):	Yes	Field QC Sample Number:	N/A
Shipment Method:	Hand delivered	Split With (names[s]/organization):	N/A

Remarks:

Flow rate: 1 gal/sec

OL-SW-2-D collected @ 0900

Signature: L Linde 12/28/10

PARAMETRIX

Form 02-EN-100/Rev. 10/02

Sampling Field Data Sheet

Station #: SW3

Project Number:	215-1578-121	Date:	12/28/10
Project Name:	Dialla LF RI/FS	Client Name	KCSWD
Project Address:	Bandix Rd	Sampled By:	L. Linde, C. Wiggins

TIME (2400 hr)	pH (units) (± 0.1)	Ec (µmhos/cm 25°C) (± 3%)	TEMPERATURE °C	DO (mg/L)	COLOR (visual)	TURBIDITY (visual)
		mS/m			Turbidity NTU	ORP (mV)
0934	6.05	3.1	6.7	11.43	127	168

Sampling Equipment: None Required except Horiba U-22 for WQ

Laboratory:	Aquatic Research	Date Sent to Lab:	12/29/10
Chain-of-Custody (yes/no):	Yes	Field QC Sample Number:	N/A
Shipment Method:	Hand delivered	Split With (names[s]/organization):	N/A

Remarks:

flow rate: 1 gal/sec

DL-SW-3-0 collected @ 0935

Signature: L. Linde 12/28/10

PARAMETRIX

Form 02-EN-100/Rev. 10/02

Sampling Field Data Sheet

Station #: SW4

Project Number:	215-1578-121	Date:	12/28/10
Project Name:	Olalla LF RI/FS	Client Name	KCSWD
Project Address:	Banclix Rd	Sampled By:	L. Linde, C. Wiggins

TIME (2400 hr)	pH (units) (± 0.1)	~~Ec (µmhos/cm 25°C)~~ mS/m (± 3%)	TEMPERATURE °C	DO (mg/L)	~~COLOR (visual)~~ Turbidity NTU	~~TURBIDITY (visual)~~ ORP (mV)
0917	5.97	4.9	16.7	12.64	20.0	178

Sampling Equipment: None required except Horiba U-22 for WQ

Laboratory: Aquatic Research Date Sent to Lab: 12/29/10

Chain-of-Custody (yes/no): Yes Field QC Sample Number: N/A

Shipment Method: Hand delivered Split With (names[s]/organization): N/A

Remarks:

discharge pulsing ~ 1 pulse/sec

flow rate: 500 ml/sec

DL-SW-4-0 collected @ 0920

Signature: L Linde 12/28/10

Landfill Gas Sampling Field Data

Olalla Landfill Gas Sampling

Flare: [ ]

Date: 12/28/10
Field Team: LL, CW

Field Conditions: Cloudy, 40°F, Wind n 5mph, snow in forecast
Ambient Temperature:

Vent	Time	CH_4 12/28/10 LL	O_2	CO_2	Temp °C	Pressure SP	Balance
Flare 3	1554	~~42.1~~	0.9	3.6		0.2	71.4
Flare 1	1601	19.0	0.5	9.3		10.3	71.2
~~Flare 2~~ 12/28/10 LL		0	20.1	0		10.6	
Flare 2	1608	20.9	0.4	9.6		0.3	169.1

Parametrix, Inc.

Well #: DW-1
Sample #:

Groundwater Sampling Field Data Sheet

OL-DW-1-0

Project Number	215-1578-121	Date	12/28/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Transfer Station
Project Address		Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD/KCHD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" ~~X~~ 4" ____ 6" ____ Other 8"

Depth to Water (feet)	—	Purge Vol. Meas.Method	Cannot measure ~~Meas. Cup/Stop Watch~~
Depth of Well (feet)	—	Date Purged	12/28/10
Reference Point (surveyors notch/etc)	—	Purge Time (from/to)	1234-1240
Date/Time Sampled	12/28/10 1245		

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1234	—	7.32	16.2	11.89	9.2	186.0	111	
1237	—	7.31	16.4	10.07	8.2	158.0	113	
1240	—	7.98	16.5	9.51	8.1	154.0	112	Unknown

Purge Equipment	Sampling Port/BR Sink	Sampling Equipment	Sampling Port
Laboratory	Aquatic Research	Date Sent to Lab	12/29/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature L. Linde Page 1 of 1

Attendants note rust in water
Sample collected @ bathroom sink

No way to capture purge water or flow rate due to sink configuration

Parametrix, Inc.

Well #: OW-3
Sample #:

Groundwater Sampling Field Data Sheet

~~OL - OW-3-D~~ LL 12/29/10

Project Number	215-1578-121	Date	12/29/10
Project Name	Olalla LF Qtrly GW Sampling	Location	2650 Burley-Olalla Rd
Project Address	2650 Burley-Olalla Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD/KCHD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" ~~X~~ 4" ____ 6" ____ Other 8"

Depth to Water (feet)	—	Purge Vol. Meas.Method	~~Meas. Cup/Stop Watch~~ LL 12/29/10
Depth of Well (feet)	—	Date Purged	12/29/10
Reference Point (surveyors notch/etc)	—	Purge Time (from/to)	—
Date/Time Sampled	No sample collected		No flow rate collected

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1347	—	6.32	16.7	7.56	5.3	57.5	-141	500 mL

tank water from unknown well source

Purge Equipment	Sampling Port	Sampling Equipment	Sampling Port
Laboratory	~~Aquatic Research~~	Date Sent to Lab	No sample collected
Chain-of-Custody (yes/no)	~~Yes~~	Field QC Sample Number	N/A
Shipment Method	~~Hand Delivered~~	Split with (name(s)/organization)	N/A

12/29/10 LL

Well Integrity: Tank's port good, well not pumping
Remarks:
Signature: L. Linde

Page 1 of 1

1350 Cannot confirm water source fr. pressure tank

Parametrix, Inc.

Well #: OW-4
Sample #:

Groundwater Sampling Field Data Sheet

OL-OW-4-0

Project Number	215-1578-121	Date	12/29/10
Project Name	Olalla LF Qtrly GW Sampling	Location	OW-4
Project Address	2590 Burley-Olalla Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD/KCHD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" ~~X~~ 4" 6" Other 8"

Depth to Water (feet)	—	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)	—	Date Purged	12/29/10
Reference Point (surveyors notch/etc)		Purge Time (from/to)	1407 - 1416
Date/Time Sampled	12/29/10 1420	2L/min	7.5 gal purged

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1407	—	7.42	12.2	5.45	10.2	*	-225	
1410	—	8.13	12.2	4.12	10.4	*	-248	
1413	—	8.27	12.2	3.97	10.6	*	-257	
1416	—	8.33	12.2	3.83	10.5	*	-244	7.5 gal

Purge Equipment	Sampling Port	Sampling Equipment	Sampling Port
Laboratory	Aquatic Research	Date Sent to Lab	12/30/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks Sulfur odor to purge water, 80 gal tank, pump turned on/off twice
Signature
Page 1 of 1

* turbidity sensor not working

Parametrix, Inc.

Well #: OW-9
Sample #:

Groundwater Sampling Field Data Sheet

D-OW-9-10

Project Number	215-1578-121	Date	12/29/10
Project Name	Olalla LF Qtrly GW Sampling	Location	OW-9
Project Address	13320 Ampitheater Dr SE	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD/KCHD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" ~~X~~ 4" 6" Other 8"

Depth to Water (feet)	—	Purge Vol. Meas.Method	Meas. Cup/Stop Watch
Depth of Well (feet)	—	Date Purged	12/29/10
Reference Point (surveyors notch/etc)	—	Purge Time (from/to)	1438 - 1447
Date/Time Sampled	12/29/10 1450	6L/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet) ± 0.1	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10% if >10NTU	ORP (mV) ±10mV	CUM. VOL. (gal)
1438	—	7.68	18.0	6.71	11.0	*	-35	
1441	—	7.27	18.0	4.78	11.2	*	-28	
1444	—	7.15	18.0	4.59	11.1	*	-24	
1447	—	7.05	18.0	4.50	11.1	*	-28	12 gal

Purge Equipment	Sampling Port	Sampling Equipment	Sampling Port
Laboratory	Aquatic Research	Date Sent to Lab	12/30/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks No odor
Signature [signature]

Olalla LF RI/FS 12/28/10
Activities: Collect gw & sw samples
Weather: Cloudy, ~40°F, 5-10mph wind
Onsite: L. Lindle, C. Wiggins
Author: L. Lindle

0710 Depart for TORO, P/n ice
0730 Meet w/ Mike W (PMx) to get containers for KCHD samples. He informs me to collect all MFS parameters for surface water samples instead of just f. coliform & nitrate
0740 Depart for landfill
0800 Arrive @ Landfill, meet Keli (RCSW) to get well & gate keys and Grundfos control box; she will be back w/ Lucas (KCHD) @ 1500 for landfill inspection
0805 Keli departs
0810 Chad W (PMx) arrives, dummy lock gate so Keli & Lucas can get in later
0820 Set up for sampling surface water first - all 3 locations have discharge
0830 Calibrate Horiba - good
0845 Unlock stormwater pond gate

Olalla LF RI/FS 12/28/
0900 Collect sample OL-SW-2-0
0910 Gather gear & move to next locations, secure stormwater pond gate
0920 Collect sample OL-SW-4-0
0925 Gather gear, in transit to next location note new SS cm installed @ access road to mw runoff flowing under access & not through culvert
0935 Collect sample OL-SW-3-0
0945 Go back to MW-10, Mike W requested it be sampled first since it went in for repairs last set up @ MW-10
1006 Begin purging MW-10
1025 Complete purge & collect samp OL-MW-10-0
1030 Cleanup, put purge water staged drum - completely no more water will fit.
1040 Go to MW-1, set up
1055 Begin purging MW-1
1115 ~~Collect~~ Complete purge & colle sample OL-MW-1-0

Olalla LF RI/FS 12/28/10

1120 Clean up, purge water not retained

1130 Go to MW-5A, setup, talk to transfer station attendant - he will remove wooden cover so we can inspect pressure tanks in the attendant station bathroom

1146 Begin purging MW-5A

1205 Complete purge, collect sample OL-MW-5A-0, purge water not retained

1210 Cleanup, park @ transfer station. inspect pressure tanks (2) (+) 1 sm. hot water heater, no access to sample from a part @ tanks, inspect well @ entrance to transfer station (bolted cover water supply) no ports for sampling, attendants tell us there's 2 exterior spigots but the one to the south is broken they are unsure if the spigots pull from the same source but gave us plans to look at, plans are unhelpful, only source that is confirmed is the bathroom sink, no way to capture flow

Olalla LF RI/FS 12/28/10

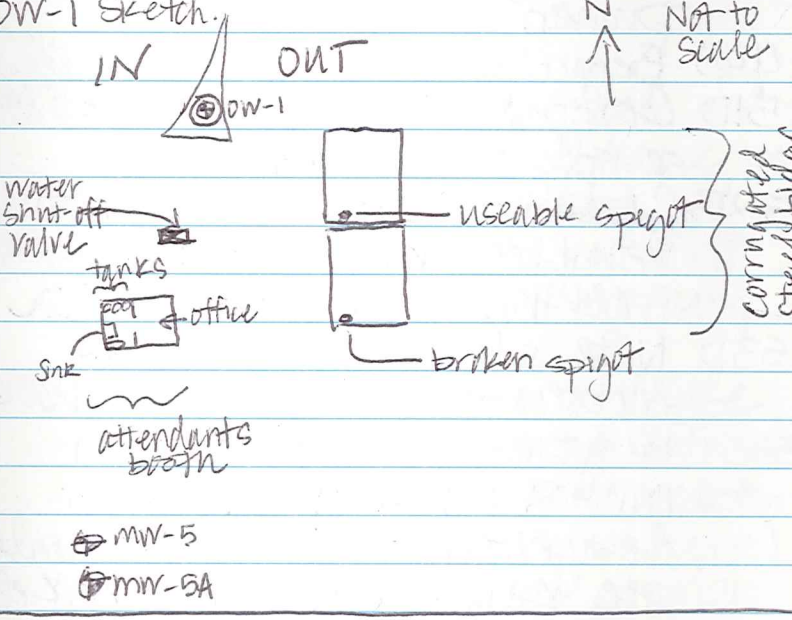
rate or total volume purged due to awkwardness of setup

1234 Begin purging OW-1

1245 Complete purge, collect sample ~~12/28/10 at~~ OL-OW-1-0, purge water down sink drain

Burley Olalla Rd

OW-1 Sketch.



1310 Cleanup, go to MW-2 & 4 access on south side of landfill, setup

1320 Decon portable Grundfos

1340 Move gear by hand out to MW-2 to setup

1352 Begin purging MW-2

Olalla LF RI/FS 12/28/10

1410 Complete purge, collect sample @ OL-mw-2-0, retain purge water
1420 Cleanup, note clear to tan gelatin-like globs adhering to pump & discharge hose (no odor)
1435 Move gear to mw-4, decon pump
1448 Begin purging mw-4, purge water odor like gasoline
1510 Complete purge, collect sample OL-mw-4-0
1520 Cleanup, carry gear back to vehicles, Keli & Lucas onsite walking fr. transfer station
1530 Note similar gelatin-like globs on pump & discharge hose
1535 Purge water retained from mw-2 & mw-4 placed in designated drum on roadside, see Keli & Lucas, inform Keli there is an area about the size of a grapefruit between mw-2 & drainage grate in which the liner is exposed
1540 Keli & Lucas continue inspection
1550 Finish cleaning up to start

Olalla LF RI/FS 12/28/10

landfill gas readings, calibrate (zero) Landtec, rain emminant
1554 Begin landfill gas readings @ flares (3), call Mike W. (PMV) to meet @ TORD @ 1700 to hand off sample, see field sheets for readings
1610 Complete readings
1620 Depart site, secure gate, meet w/ Chad in morning @ same time
1640 Arrive @ TORD, fill out COCs
1725 Mike arrives to hand off samples for tomorrow morning delivery
1730 Sign out samples to Mike, inform him of culvert & confirms its for overflow & about gelatin-globs (could be Fe bacteria), sampled all 3 SW stations, wants us to call 1 hr before we're done w/ landfill wells so he can be present for domestic well sample collection
1740 Depart

~~[illegible] 12/28/10~~

Olalla LF RI/FS 12/29/10

Activites: Collect gw & dom. well samples
Weather: Partly Cloudy, ~35°F
Onsite: L. Linde, C. Wiggins
Author: L. Linde

0730 Depart for site
0810 Arrive @ Landfill, Chad onsite
0815 Go to MW-3 & setup, calibrate Horiba - good
0842 Begin purging MW-3
0910 Complete purge, collect sample OL-MW-3, retain purge water
0915 Clean up, move to MW-6, setup
0934 Begin purging MW-6
0940 Receive call from Mike W. (PMX) NC Rentals will be coming by to p/u excavator, Horiba turbidity sensor still not working after rinsing off w/ DI water
1005 Complete purge, collect sample OL-MW-6-0
1015 Collect field duplicate OL-MW-6-1
1020 Clean up, move to MW-8, retain purge water, setup
1027 Begin purging MW-8

Olalla LF RI/FS 12/29/10

1045 Complete purge, collect sample at MW-8, OL-MW-8-0, retain wa
1100 Clean up, move to MW-7, setup
1120 Begin purging MW-7
1140 Complete purge, collect sample OL-MW-7-0
1145 Clean up, purge water from MW-3, MW-8, & MW-6 in MW-8 dev. water drum, MW-7 purge water in empty drum + 1/2 bucket from MW-8, all drums full except extra drum next to dev water drum for MW-2 & MW-4
1205 Meet w/ Mike, break for lunch depart & secure gate
1300 Arrive back @ transfer station, reorganize gear
1320 Go to MW-3 (in red barn-type shed, attempt to pump water but have trouble with pressure tank, turn on valve outside shed, water begins flowing but pump in wellhead not on ++ 12/29/10

Olalla LF RI/FS 12/29/10

1347 Purge ~500 mL & collect one set of field parameters, decide to stop purge since we can't confirm water source

1350 Check in w/ owner's wife — will be back a little later when husband gets home

1355 Depart & go to OW-4, owner not home, well house open set up, pump is running

1407 Begin purging OW-4, water has sulfer odor

1420 Finish purge ~7.5 gal purged @ 2L/min from spigot/ port inside well house, pump cycles twice while purging, well inside well house

collect OL-OW-4-0

1430 Depart & go to OW-5, well house locked & owner's not home, will return later

1435 Go to OW-9, gain access to well & pressure tank w/ spigot/ port, set up

1438 Begin purging OW-9, no odor observed

Olalla LF RI/FS 12/29/10

1450 Finish purge, ~12 gal purged @ 6L/min from spigot inside shop/ garage, pump running, well located in grass between shop/garage & house

collect OL-OW-9-0

1500 Go back to OW-3, owner back, control panel for pressure tank was borrowed by neighbor, he will run to neighbors house to retrieve

1510 Depart back to transfer station to wait for owner @ OW-3 to return, fill out COCs & redistribute gear

1520 OW-3 owner returns, neighbor is out of town on vacation

1530 Depart back to OW-5, owner still not back

1545 Sign out samples to Chad to drop off tomorrow, Chad departs

1550 Depart site w/ Mike & will return next week to finish

EJ Lindle 12/29/10

Aquatic Research Incorporated

3927 Aurora Ave. N / Seattle, WA 98103 / (206) 632-2715

CHAIN-OF-CUSTODY RECORD

CLIENT: Kitsap City Health District

SAMPLING DATE: 12/28/10

SAMPLERS: Lara Linde/Chad Wiggins, Parametrix

SHEET 1 OF 1

PROJECT ID: Olalla LF

CASE FILE NO.:

DATA RECORDED BY:

SAMPLE INFORMATION

SAMPLE ID	DATE/TIME COLLECTED	PARAMETERS: VOCs	PARAMETERS: Diss. 12 Metals*	BOTT #	NOTES
DL-OW-1-D	12/28/10 1245	X	X		
DL-OW-1-2	12/28/10	X	X		TB

	Relinquished By	Date/Time	Received By	Date/Time
Printed Name	Lara Linde	12/28/10 1730	Michael K. Wurfel	12/28/2010
Signature	Lara Linde		Michael K. Wurfel	1730
Affiliation	Parametrix		Parametrix	

	Relinquished By	Date/Time	Received By	Date/Time
Printed Name	Michael K. Wurfel	12/29/2010	S NIELSEN	12/29/10
Signature	Michael K. Wurfel	1038		1038
Affiliation	Parametrix			

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.): * field filtered, metals = As, Fe, Mn

Aquatic Research Incorporated
3927 Aurora Ave. N / Seattle, WA 98103 / (206) 632-2715

CHAIN-OF-CUSTODY RECORD

CLIENT: Kitsap County Health Dept.
SAMPLING DATE: 1/27/11
SAMPLERS: L. Linville (DPMX)

SHEET 1 OF 1
PROJECT ID:
CASE FILE NO.:
DATA RECORDED BY:

SAMPLE INFORMATION

PARAMETERS

SAMPLE ID	DATE/TIME COLLECTED	VOCs	VOCs	Diss. MTLs*	BOTT #	NOTES
OL-OW-2-0	1/27/1230	X	X	X		Diss MTLs - As, Fe, Mn
OL-OW-3-0	/1150					
OL-OW-5-0	/1055					* field filtered
OL-OW-2-2	/0930					

	Relinquished By	Date/Time	Received By	Date/Time
Printed Name	Laura Linville	1/28/11/0734	Tobin Cahill	7:34 1/28/2011
Signature	Linville			
Affiliation	DPMX			
Printed Name	Tobin Cahill	1/28/2011 7:43	Michael R. Wafel	1-28-2011 7:43 AM
Signature				
Affiliation				

Michael R. Wafel 1-28-20011 900AM

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.): S. NIELSON 1/28/11 0900

Parametrix, Inc.

Well #: MW-1
Sample #:

Groundwater Sampling Field Data Sheet

OL-MW-1

Project Number	215-1578-121	Date	10/28/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	79.59	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)		Date Purged	10/28/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	0850-0920
Date/Time Sampled	0930 10/28/10		450 ml/min

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet)	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV) ±10 mV	CUM. VOL. (gal)
0850	79.81	6.30	16.9	9.95	10.1	26.1	247	
0854	79.70	6.28	17.2	9.90	10.1	42.6	235	
0858	79.71	6.26	17.3	9.90	10.0	39.8	204	
0902	79.72	6.25	17.2	9.91	9.9	37.4	189	
0906	79.71	6.24	16.3	9.85	10.2	28.9	178	
~~0910~~								
0912	79.72	6.41	15.0	10.51	10.3	43.8	171	
0916	79.63	6.36	15.0	9.23	10.5	31.7	173	
0920	79.66	6.33	15.0	9.74	10.5	34.3	163	2.5 gal

LL 10/28/10

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	10/29/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks Having trouble maintaing flow
Signature [signature] Page 1 of 1

Parametrix, Inc.

Well #: MW-2
Sample #: OL-MW-2

Groundwater Sampling Field Data Sheet

Project Number	215-1578-121	Date	10/28/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	66.63	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)		Date Purged	10/28/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1102 - 1130
Date/Time Sampled	10/28/10 1145	300 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet)	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV) ±mV	CUM. VOL. (gal)
1102	—	6.98	13.8	9.40	11.5	65.8	162	
1110	66.76	7.08	13.3	9.16	13.0	89.1	109	
1114	66.78	7.03	13.1	8.86	13.9	66.3	97	
1118	66.75	7.02	13.1	8.86	14.2	54.4	106	
1122	66.80	7.02	13.1	8.79	14.2	45.9	114	
1126	66.81	7.01	13.1	8.76	14.1	45.1	123	
1130	—	7.00	13.2	8.75	14.1	22.1	128	55 gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	10/29/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks Difficulty maintaining flow
Signature _____ Page 1 of 1

Parametrix, Inc.

Well #: MW-3
Sample #:

Groundwater Sampling Field Data Sheet

OL-MW-3

Project Number	215-1578-121	Date	10/28/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	46.80	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)		Date Purged	10/28/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1533 - 1553
Date/Time Sampled	10/28/10 1600	440 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet)	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV) ± 10 mV	CUM. VOL. (gal)
1533	46.79	6.22	43.1	0.62	11.0	169.0	244	
1537	46.80	6.03	42.5	0.27	12.1	170.0	233	
1541	46.80	6.07	42.5	0.38	13.1	173.0	222	
1545	46.80	6.14	42.5	0.34	13.3	174.0	208	
1549	46.80	6.20	42.5	0.36	13.4	175.0	200	
1553	46.81	6.22	42.7	0.40	13.5	176.0	197	5 gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	10/29/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	OL-MW-9C 1615
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature L Linde Page 1 of 1

Field duplicate collected OL-MW-9C, 1615

Parametrix, Inc.

Well #: MW-4
Sample #:

Groundwater Sampling Field Data Sheet

OL-MW-4

Project Number	215-1578-121	Date	10/28/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	64.09	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)		Date Purged	10/28/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1245 - 1313
Date/Time Sampled	10/28/10 1325		300 ml/min

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet)	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV) ±10 mV	CUM. VOL. (gal)
1245	—	7.22	15.5	9.09	11.0	248	236	
1249	63.96	7.11	15.3	8.86	11.1	226	228	
1253	63.94	6.99	14.7	8.44	11.4	232	202	
1257	63.94	7.03	14.5	8.32	12.0	210	177	
1301	63.98	7.05	14.4	8.34	12.3	205	164	
1305	63.97	7.05	13.5	8.15	15.3	17.7	101	
1309	63.95	7.03	14.3	8.44	16.3	4.4	116	
1313	63.98	7.04	14.3	8.23	15.2	2.9	137	4 gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	10/29/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks Hard to maintain flow
Signature _____ Page 1 of 1

Parametrix, Inc.

Well #: MW-5A
Sample #: OL-MW-5A

Groundwater Sampling Field Data Sheet

Project Number	215-1578-121	Date	10/28/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	77.83	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)		Date Purged	10/28/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1432-1500
Date/Time Sampled	10/28/10 1510	500 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet)	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV) ± 10 mV	CUM. VOL. (gal)
1432	77.87	6.59	18.0	9.14	11.5	60.5	239	
1438	~~77.87~~	6.45	17.6	8.54	11.8	14.9	193	
1442	77.88	6.46	17.6	8.58	13.8	10.8	177	
1446	77.89	6.52	17.4	8.58	13.6	6.6	172	
1450	77.97	6.55	17.2	9.40	14.1	10.7	165	
1456	77.98	6.58	17.3	9.32	14.0	13.5	166	
1500	77.98	6.55	17.3	9.25	13.4	17.0	175	5.5 gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	10/29/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature L. Linde Page 1 of 1

Parametrix, Inc.

Well #: MW-6
Sample #: OL-MW-6

Groundwater Sampling Field Data Sheet

Project Number	215-1578-121	Date	10/29/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	21.17	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)		Date Purged	10/29/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	0915 - 0931
Date/Time Sampled	10/29/10 0940		500 mL/min

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet)	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV)	CUM. VOL. (gal)
0915	21.28	6.45	49.5	3.45	10.9	198	43	
0919	21.28	6.43	50.8	1.25	11.8	41.3	24	
0923	21.30	6.45	51.2	0.64	12.3	12.0	17	
0927	21.30	6.48	51.2	0.39	12.4	5.9	12	
0931	21.30	6.49	51.5	0.30	12.3	6.4	9	5gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	10/29/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature

Parametrix, Inc.

Well #: MW-7
Sample #:

Groundwater Sampling Field Data Sheet

OL-MW-7

Project Number	215-1578-121	Date	10/29/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	26.56	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)		Date Purged	10/29/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1121 - 1139
Date/Time Sampled	10/29/10 1145	480 ml/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet)	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV)	CUM. VOL. (gal)
1121	26.61	6.92	16.8	6.16	10.9	64.0	219	
1127	26.57	6.69	15.5	5.67	11.6	13.0	164	
1131	26.54	6.68	15.4	5.57	12.3	10.4	142	
1135	26.59	6.73	15.3	5.54	12.6	8.1	143	
1139	26.59	6.76	15.3	5.55	12.9	8.5	148	3 gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	10/29/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature

Page 1 of 1

Parametrix, Inc.

Groundwater Sampling Field Data Sheet

Well #: MW-8
Sample #: OL-MW-8

Project Number	215-1578-121	Date	10/29/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" ___ X 4" ___ 6" ___ Other ___

Depth to Water (feet)	21.42	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)		Date Purged	10/29/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1015 - 1035
Date/Time Sampled	10/29/10 1040		400 ml/min

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) ___ Actual Purge Volume (gallons) ___

TIME (2400 hr)	WATER LEVEL (feet)	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV)	CUM. VOL. (gal)
1015	21.53	6.54	25.0	2.36	11.0	137	106	
1019	21.53	6.44	25.7	0.73	11.3	81.4	84	
1023	21.53	6.42	33.6	0.30	12.1	74.7	77	
1027	21.53	6.46	35.7	0.22	12.5	48.3	69	
1031	21.53	6.48	37.0	0.15	12.7	31.4	65	
1035	21.53	6.48	37.4	0.15	12.7	22.3	63	4 gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	10/29/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks
Signature [signature] Page 1 of 1

Parametrix, Inc.

Well #: MW-1D
Sample #:

Groundwater Sampling Field Data Sheet

OL-MW-1D

Project Number	215-1578-121	Date	10/29/10
Project Name	Olalla LF Qtrly GW Sampling	Location	Olalla LF
Project Address	Bandix Rd	Sampled By	L. Linde/C. Wiggins
Client Name	KC SWD	Purged By	L. Linde/C. Wiggins

Casing Diameter: 2" X 4" 6" Other

Depth to Water (feet)	31.26	Purge Vol. Meas.Method	Grad Cyl/Stop Watch
Depth of Well (feet)		Date Purged	10/29/10
Reference Point (surveyors notch/etc)	TOC	Purge Time (from/to)	1326 - 1346
Date/Time Sampled	10/29/10 1355	450 mL/min	

Purge Volume Calculation: $(\pi r^2 h)(7.48\ gal/ft^3)$(# Casing volumes)
Purge Volume (gallons) for 2" = (0.16)(h)(#Cv); 4" = (0.653)(h)(#Cv); 6" = (1.48)(h)(#Cv)
Calculated Purge Volume (gallons) _____ Actual Purge Volume (gallons) _____

TIME (2400 hr)	WATER LEVEL (feet)	pH (units) ± 0.1	COND (mS/cm) ± 3%	DO (mg/L) ±10%	TEMP °C	TURB. ±10%	ORP (mV)	CUM. VOL. (gal)
1326	31.33	6.52	49.7	2.19	10.8	24.9	234	
1330	31.33	6.46	50.0	0.80	11.7	16.4	170	
1334	31.33	6.47	49.8	2.12	12.0	10.2	153	
1338	31.34	6.51	49.7	0.69	12.1	9.5	145	
1342	31.33	6.53	49.8	0.53	12.1	10.0	140	
1346	31.33	6.52	49.9	0.46	12.1	9.5	135	4.5 gal

Purge Equipment	Grundfos Ready-flo 2	Sampling Equipment	Grundfos Ready-flo 2
Laboratory	Aquatic Research	Date Sent to Lab	10/29/10
Chain-of-Custody (yes/no)	Yes	Field QC Sample Number	N/A
Shipment Method	Hand Delivered	Split with (name(s)/organization)	N/A

Well Integrity Good
Remarks Developed Grundfos not working, pull for repair
Signature

Page _____ of _____

10/15/10 52°F

Olaca — Overcast then P.C

Loc	P	CH_4/Or	CO_2	T	I/E
FL-1	ϕ	ϕ/20.1	0.8	58	-29/ϕ
FL-2	ϕ	12/0.8	13.6	55	>30"/ϕ
FL-3	ϕ	0.4/17.8	2.7	57	>30"/

- Verified canister vacuum
- Monitored static pressure until stable
- Pumped gas stream until gas concentrations stabilized
- Connected canister and opened until flow stopped
- rechecked canister pressure
- labeled canister + packaged
- Fed ex sample

Olallalf RI/FS 10/28/10
Activities: Collect gw samples
Weather: Rainy, 48°F
Onsite: L. Linde, C. Wiggins
Author: L. Linde

0705 Depart
0735 Stop to get ice & paper towels
0745 Back on the road
0800 Arrive @ drop box gate, wait
0810 Meet w/ Chad, go to back gate
0840 Calibrate Horiba - good
0850 Begin purging MW-1
0930 Collect sample @ MW-1, take 30 min to collect enough volume
1000 Pack up, go to MW-2, decon rental pump, carry gear to MW-2
1102 Begin purging MW-2
1145 Collect sample @ MW-2
1200 Decon pump
1215 Pack gear to MW-4, set up
1245 Begin purging MW-4
1325 Collect sample @ MW-4
1345 Pack gear out back to cars
1350 Decon pump
1415 Go to MW-3 & set up

Olalla LF RI/FS 10/28/10

1432 Begin purging MW-5A
1510 Collect sample @ MW-5A
1520 Pack up gear, move to MW-3
1530 Setup @ MW-3
1533 Begin purging MW-3
1600 Collect sample @ MW-5A
1615 Collect field duplicate @ MW-5A, labeled as MW-9
1630 Rearrange gear, will meet w/ Mike in the morning to hand off samples, container of purge water
1647 Finish collecting water levels @ remainder of wells for potentiometric surface

Water Level Table

Well ID	DTW
MW-1	79.59
MW-2	66.63
MW-3	46.80
MW-4	64.09
MW-5A	77.83
MW-6	21.07
MW-7	26.58
MW-8	21.37
MW-10	31.21

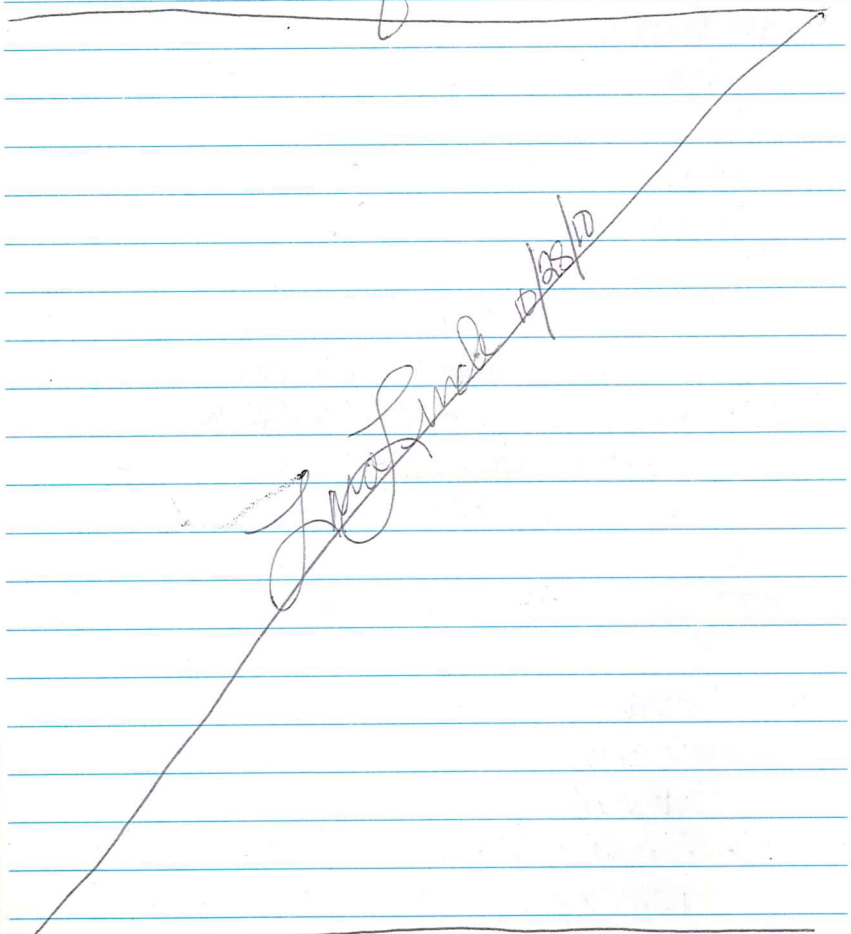
Olalla LF RI/FS 10/28/10

Late Entry 0800 Cannot maintain a constant flow
Late Entry 0915 Receive call from Damien @ Aquatic Research, confirm hold time, will call back tomorrow w/ estimated time to finish
Late Entry 0920 Call Mike W., Chad can take samples for delivery today but might not get enough wells done, will call back @ 1400 to discuss progress
Late Entry 1405 Call Mike W. back to update status - completed 3 wells, can do 2 more if Chad stays, Mike will meet w/ me in Ash to hand off samples, container of purge water in drum
1650 Put coolers w/ my gear, Chad to take portable Grundfos to Bremerton office for shipping & P/U an empty cooler
1715 Will meet @ site @ 0800 tomorrow morning w/ Chad

Olalla LF RI/FS 10/28/10

1717 Depart Site, secure gate

1905 Call Mike, will meet @ TORO @ 0730 tomorrow morning to hand off samples to satisfy conform holding time requirement



Olalla LF RI/FS 10/29/10

Activities: Finish gw sample collection

Weather: Sunny in 55°F

Onsite: L. Linde, C. Wiggins

Author: L. Linde

0700 Depart for TORO

0725 Arrive @ TORO, drop off samples w/ Mike to take up this morning

0740 Depart TORO

0750 CAO for ice

0755 Depart for site

0810 Arrive @ site, Chad (PMX) just arrived before me

0820 At MW-10, set up

0830 ~~Portable grundfos~~ 11 10/29/10 Dedicated Grundfos (new) not working, keeps giving "HW Ground Fault", trouble shoot

0845 Go to MW-6 to test control box, pump & box works, move gear to MW-6

0900 Call Scott (PMX), ask to bring portable Grundfos

Olalla LF RI/FS 10/29/10

0915 Calibrate Horiba - good, begin purging MW-6
0940 Collect sample @ MW-6
0945 Scott (PM x) onsite, deliver pump & extra tubing to sample MW-10 in case we still can't get control box to work
0955 Scott offsite
1000 Dump purge water from MW-6 in MW-8 develop. water drum
1005 Setup @ MW-8
1015 Begin purging MW-8
1040 Collect sample @ MW-8 Discard purge water in MW-8 development water drum
1100 Setup @ MW-7
~~1050~~ LL 10/29/10
Late Entry 1050 Ford Ranger battery dead, Highlander provides jump start
1121 Begin purging MW-7
1145 Collect sample @ MW-7

Olalla LF RI/FS 10/29/10

1150 Dump purge water from MW-7 in drainage ditch beside well, not required to containerize @ this location
1210 Back @ MW-10, setup again, attempt to reconnect control box to dedicated pump w/o "ground fault" message. Attempts failed
1215 Contact INW to field troubleshoot connections, talk to Tyler - will get his tech guy to call back right away, take quick break for lunch
1235 Call Tyler back, says tech guy is on lunch, will call back as soon as he gets back
1240 Receive vm from Shawn @ INW to call back, was on the phone w/ Tyler when he called
1250 Leave vm for Shawn to

Olalla LF RI/FS 10/29/10

call back ASAP, waiting in the field

1255 Receive call from Shawn @ INW field troubleshoot, appears that connection cannot be fixed in the field

1305 Pull dedicated pump in MW-10 & coil for repair/service

1310 Deploy rental pump in Well, was previously clean yesterday after last use

1326 Begin purging MW-10

1355 Collect sample @ MW-10

1410 Decon pump & clean up, dump purge water in develop. water drum for MW-10

1430 Redistribute gear

1445 Call Mike Dl (PM), inform him of completion & difficulty with MW-10, approves rental pump return & dedicated pump return to INW on Mon (11/1) w/ Chad.

1450 Call Aquatic Research & inform them samples will be arriving a little before 1700 due to field difficulties. Give Chad their # to call in case he will be late

Olalla LF RI/FS 10/29/10

1500 Call Kelj (KC) to see if I can drop off pump controller, no answer, will go to office & return it on Mon (11/1)

1505 Secure gate, Chad & I depart from site.

1525 Arrive in Bremerton

1530 Unload gear

Chad 10/29/10

CHAIN OF CUSTODY RECORD

Kitsap County Public Works
Solid Waste Division
614 Division Street (MS-27)
Port Orchard, WA 98366
Phone: 360-337-5777
FAX: 360-337-4867

FOR LAB USE ONLY

LOGIN COMMENTS:	Sample(s) checked/logged by: _____ Sample temp on receipt at lab: _____ COMPLIANCE 4 +/- 4° C Are custody seals intact? ☐YES ☐NO Sample receipt (day/time): _____ / _____ Ice? ☐NONE ☐BLUE ☐WET

TO BE COMPLETED BY THE SAMPLER:

TAT REQUESTED: STANDARD: X OTHER: _____ | PROJECT: Olalla LF | SAMPLER PRINTED NAME AND SIGNATURE: Lara Linde Lara Linde

SAMPLE DATE	SAMPLE TIME	SITE NAME OR LOCATION	SAMPLE IDENTIFIER	MATRIX *	GRAB	COMP	ANALYSES REQUIRED—MARK AN X IN ALL TESTS REQUIRED FOR EACH SAMPLE LINE: VOCs, VC	PCBs	Cl-	Conventionals	COD, TOC	pH	T&F Coliform	T. Metals	D. Metals			
10/29	1355	MW-10	OL-MW-10	GW	X		X	X	X	X	X	X	X	X	X			
↓	0940	MW-6	OL-MW-6	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓			
	1145	MW-7	OL-MW-7															
	1040	MW-8	OL-MW-8															
↓	0900	Trip Blank	TB-2		↓		↓											

* MATRIX TYPES: SW = Surface Water GW = Ground Water SO = Soil * Field filtered

	SIGNATURE	PRINTED NAME	COMPANY AND TITLE	DATE	TIME
RELINQUISHED BY:	Lara Linde	Lara Linde	Parametrix	10/29/10	1450
RECEIVED BY:	Chad Wiggins	Chad Wiggins	Parametrix	10/29/10	1450
RELINQUISHED BY:	Chad Wiggins	Chad Wiggins	Parametrix	10/29/10	1640
RECEIVED BY:	S. Nielsen	S. Nielsen	ARI	10/29/10	1640
RELINQUISHED BY:					
RECEIVED BY:					

DISTRIBUTION: WHITE–With lab report YELLOW–KCPW PINK–Lab

KCPW 3053-REV 05/02

Conventionals = Alkalinity, Ammonia, Carbonate, Bicarbonate, Chloride, Nitrate, Nitrite, Sulfate

Appendix G

Appendix II and Appendix III List of Constituents from WAC 173-351-990

ested parties including the county or city having jurisdiction over the site and the department. Within thirty days after the hearing the health officer shall notify the applicant or the holder of the permit in writing of his determination thereof. Any party aggrieved by such determination may appeal to the pollution control hearings board by filing with the hearings board a notice of appeal within thirty days after receipt of notice of the determination of the health officer. The hearings board shall hold a hearing in accordance with the provisions of the Administrative Procedure Act, chapter 34.05 RCW, as now or hereafter amended.

[Statutory Authority: Chapter 70.95 RCW and 40 CFR 258. 93-22-016, § 173-351-760, filed 10/26/93, effective 11/26/93.]

WAC 173-351-990 Appendices.

APPENDIX I[1]

Appendix I - Constituents for Detection Monitoring

	COMMON NAME[2]	CAS RN[3]
Inorganic Constituents		
1)	Antimony	(Dissolved)
2)	Arsenic	(Dissolved)
3)	Barium	(Dissolved)
4)	Beryllium	(Dissolved)
5)	Cadmium	(Dissolved)
6)	Chromium	(Dissolved)
7)	Cobalt	(Dissolved)
8)	Copper	(Dissolved)
9)	Lead	(Dissolved)
10)	Nickel	(Dissolved)
11)	Selenium	(Dissolved)
12)	Silver	(Dissolved)
13)	Thallium	(Dissolved)
14)	Vanadium	(Dissolved)
15)	Zinc	(Dissolved)
16)	Nitrate	
Organic Constituents		
17)	Acetone	67-64-1
18)	Acrylonitrile	107-13-1
19)	Benzene	71-43-2
20)	Bromochloromethane	74-97-5
21)	Bromodichloromethane	75-27-4
22)	Bromoform; Tribromomethane	75-25-2
23)	Carbon disulfide	75-15-0
24)	Carbon tetrachloride	56-23-5
25)	Chlorobenzene	108-90-7
26)	Chloroethane; Ethyl chloride	75-00-3
27)	Chloroform; Trichloromethane	67-66-3
28)	Dibromochloromethane; Chlorodibromomethane	124-48-1
29)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8
30)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4
31)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1
32)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7
33)	trans-1,4-Dichloro-2-butene	110-57-6
34)	1,1-Dichloroethane; Ethylidene chloride	75-34-3
35)	1,2-Dichloroethane; Ethylene dichloride	107-06-2
36)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4
37)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2
38)	trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5
39)	1,2-Dichloropropane; Propylene dichloride	78-87-5
40)	cis-1,3-Dichloropropene	10061-01-5
41)	trans-1,3-Dichloropropene	10061-02-6
42)	Ethylbenzene	100-41-4
43)	2-Hexanone; Methyl butyl ketone	591-73-6
44)	Methyl bromide; Bromomethane	74-83-9
45)	Methyl chloride; Chloromethane	74-87-3
46)	Methylene bromide; Dibromomethane	74-95-3
47)	Methylene chloride; Dichloromethane	75-09-2
48)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3
49)	Methyl iodide; Iodomethane	74-88-4
50)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1
51)	Styrene	100-42-5
52)	1,1,1,2-Tetrachloroethane	630-20-6
53)	1,1,2,2-Tetrachloroethane	79-34-5
54)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4
55)	Toluene	108-88-3
56)	1,1,1-Trichloroethane; Methyl chloroform	71-55-6
57)	1,1,2-Trichloroethane	79-00-5
58)	Trichloroethylene; Trichloroethene	79-01-6
59)	Trichlorofluoromethane; CFC-11	75-69-4
60)	1,2,3-Trichloropropane	96-18-4
61)	Vinyl acetate	108-05-4
62)	vinyl chloride	75-01-4
63)	Xylenes	1330-20-7

[1]This list contains 47 volatile organics for which possible analytical procedures provided in EPA Report SW-846 "Test Methods for Evaluating Solid Waste," third edition, November 1986, as revised December 1987, includes Method 8260; and 15 metals for which SW-846 provides either Method 6010 or a method from the 7000 series of methods.

[2] Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

[3] Chemical Abstracts Service registry number.

APPENDIX II

GROUND WATER QUALITY PARAMETERS

Field Parameters

pH

specific conductance
temperature
static water level

Geochemical Indicator Parameters

Calcium (Ca)Sodium (Na)
Bicarbonate (HCO_3)Chloride (Cl)
Magnesium (Mg)Potassium (K)
Sulfate (SO_4)Alkalinity (as Ca CO_3)
Iron (Fe)
Manganese (Mn)

Leachate Indicators

Ammonia (NH_3-N)
Total Organic Carbon (TOC)
Total Dissolved Solids (TDS)

APPENDIX III

List of Hazardous Inorganic and Organic Constituents.[1]

Common Name[2] (mg/L)[6]	CAS RN[3]	Chemical abstracts service index name[4]	Suggested methods[5]	PQL
Acenaphthene	83-32-9	Acenaphthylene, 1,2-dihydro-	8100	200
			8270	10
Acenaphthylene	208-96-8	Acenaphthylene	8100	200
			8270	10
Acetone	67-64-1	2-Propanone	8260	100
Acetonitrile; Methyl cyanide	75-05-8	Acetonitrile	8015	100
Acetophenone	98-86-2	Ethanone, 1-phenyl-	8270	10
2-Acetylaminofluorene; 2-AAF	53-96-3	Acetamide, N-9H-fluoren-2-yl-	8270	20
Acrolein	107-02-8	2-Propenal	8030	5
			8260	100
Acrylonitrile	107-13-1	2-Propenenitrile	8030	5
			8260	200
Aldrin	309-00-2	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4, 4a,5,8,8a-hexahydro- (1α,4α, 4aβ,5α,8α,8aβ)-	8080	0.05
			8270	10
Allyl chloride	107-05-1	1-Propene, 3-chloro-	8010	5
			8260	10
4-Aminobiphenyl	92-67-1	[1,1 1 -Biphenyl]-4-amine	8270	20
Anthracene	120-12-7	Anthracene	8100	200
			8270	10
Antimony	(Dissolved)	Antimony	6010	300
			7040	2000
			7041	30
Arsenic	(Dissolved)	Arsenic	6010	500
			7060	10
			7061	20
Barium	(Dissolved)	Barium	6010	20
			7080	1000
Benzene	71-43-2	Benzene	8020	2
			8021	0.1
			8260	5
Benzo[a]anthracene; Benzanthracene	56-55-3	Benz[a]anthracene	8100	200
			8270	10

Common Name[2] (mg/L)[6]	CAS RN[3]	Chemical abstracts service index name[4]	Suggested methods[5]	PQL
Benzo[b]fluoranthene	205-99-2	Benz[e]acephenanthrylene	8100	200
			8270	10
Benzo[k]fluoranthene	207-08-9	Benzo[k]fluoranthene	8100	200
			8270	10
Benzo[ghi]perylene	191-24-2	Benzo[ghi]perylene	8100	200
			8270	10
Benzo[a]pyrene	50-32-8	Benzo[a]pyrene	8100	200
			8270	10
Benzyl alcohol	100-51-6	Benzenemethanol	8270	20
Beryllium	(Dissolved)	Beryllium	6010	3
			7090	50
			7091	2
alpha-BHC	319-84-6	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1α,2α,3β,4α,5β,6β)-	8080	0.05
			8270	10
beta-BHC	319-85-7	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1α,2β,3α,4β,5α,6β)-	8080	0.05
			8270	20
delta-BHC	319-86-8	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1α,2α,3α,4β,5α,6β)-	8080	0.1
			8270	20
gamma-BHC; Lindane	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1α,2α,3β,4α,5α,6β)-	8080	0.05
			8270	20
Bis(2-chloroethoxy)methane	111-91-1	Ethane, 1,1 1 -[methylenebis(oxy)]bis[2-chloro-	8110	5
			8270	10
Bis(2-chloroethyl) ether; Dichloroethyl ether	111-44-4	Ethane, 1,1 1 -oxybis[2-chloro-	8110	3
			8270	10
Bis-(2-chloro-1-methylethyl) ether; 2,2 1 -Dichlorodiisopropyl ether; DCIP, See note 7	108-60-1	Propane, 2,2 1 -oxybis[1-chloro-	8110	10
			8270	10
Bis(2-ethylhexyl) phthalate	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	8060	20
Bromochloromethane; Chlorobromomethane	74-97-5	Methane, bromochloro-	8021	0.1
			8260	5
Bromodichloromethane; Dibromochloromethane	75-27-4	Methane, bromodichloro-	8010	1
			8021	0.2
			8260	5
Bromoform; Tribromomethane	75-25-2	Methane, tribromo-	8010	2
			8021	15
			8260	5
4-Bromophenyl phenyl ether	101-55-3	Benzene, 1-bromo-4-phenoxy-	8110	25
			8270	10
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester	8060	5
			8270	10
Cadmium	(Dissolved)	Cadmium	6010	40
			7130	50
			7131	1
Carbon disulfide	75-15-0	Carbon disulfide	8260	100
Carbon tetrachloride	56-23-5	Methane, tetrachloro-	8010	1
			8021	0.1
			8260	10
Chlordane	See Note 8	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	8080	0.1
			8270	50
p-Chloroaniline	106-47-8	Benzenamine, 4-chloro-	8270	20

Common Name[2] (mg/L)[6]	CAS RN[3]	Chemical abstracts service index name[4]	Suggested methods[5]	PQL
Chlorobenzene	108-90-7	Benzene, chloro-	8010	2
			8020	2
			8021	0.1
			8260	5
Chlorobenzilate	510-15-6	Benzeneacetic acid, 4-chloro-α-(4-chlorophenyl)-α-hydroxy-, ethyl ester	8270	10
p-Chloro-m-cresol; 4-Chloro-3-methylphenol	59-50-7	Phenol, 4-chloro-3-methyl-	8040	5
			8270	20
Chloroethane; Ethyl chloride	75-00-3	Ethane, chloro-	8010	5
			8021	1
			8260	10
Chloroform; Trichloromethane	67-66-3	Methane, trichloro-	8010	0.5
			8021	0.2
			8260	5
2-Chloronaphthalene	91-58-7	Naphthalene, 2-chloro-	8120	10
			8270	10
2-Chlorophenol	95-57-8	Phenol, 2-chloro-	8040	5
			8270	10
4-Chlorophenyl phenyl ether	7005-72-3	Benzene, 1-chloro-4-phenoxy-	8110	40
			8270	10
Chloroprene	126-99-8	1,3-Butadiene, 2-chloro-	8010	50
			8260	20
Chromium	(Dissolved)	Chromium	6010	70
			7190	500
			7191	10
Chrysene	218-01-9	Chrysene	8100	200
			8270	10
Cobalt	(Dissolved)	Cobalt	6010	70
			7200	500
			7201	10
Copper	(Dissolved)	Copper	6010	60
			7210	200
			7211	10
m-Cresol; 3-methylphenol	108-39-4	Phenol, 3-methyl-	8270	10
o-Cresol; 2-methylphenol	95-48-7	Phenol, 2-methyl-	8270	10
p-Cresol; 4-methylphenol	106-44-5	Phenol, 4-methyl-	8270	10
Cyanide	57-12-5	Cyanide	9010	200
2,4-D; 2,4-Dichlorophenoxyacetic acid	94-75-7	Acetic acid, (2,4-dichlorophenoxy)-	8150	10
4,4 1 -DDD	72-54-8	Benzene 1,1 1 -(2,2-dichloroethylidene)bis[4-chloro-	8080	0.1
			8270	10
4,4 1 -DDE	72-55-9	Benzene, 1,1 1 -(dichloroethyenylidene)bis[4-chloro-	8080	0.05
			8270	10
4,4 1 -DDT	50-29-3	Benzene, 1,1 1 -(2,2,2-trichloroethylidene)bis[4-chloro-	8080	0.1
			8270	10
Diallate	2303-16-4	Carbamothioic acid, bis(1-methylethyl)-,S-(2,3-dichloro-2-propenyl) ester	8270	10
Dibenz[a,h]anthracene	53-70-3	Dibenz[a,h]anthracene	8100	200
			8270	10
Dibenzofuran	132-64-9	Dibenzofuran	8270	10

Common Name[2] (mg/L)[6]	CAS RN[3]	Chemical abstracts service index name[4]	Suggested methods[5]	PQL
Dibromochloromethane; Chlorodibromomethane	124-48-1	Methane, dibromochloro-	8010 8021 8260	1 0.3 5
1,2-Dibromo-3-chloropropane; DBCP	96-12-8	Propane, 1,2-dibrome-3-chloro-	8011 8021 8260	0.1 30 25
1,2-Dibromoethane; Ethylene dribromide; EDB	106-93-4	Ethane, 1,2-dibromo-	8011 8021 8260	0.1 10 5
Di-n-butyl phthalate	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester	8060 8270	5 10
o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	Benzene, 1,2-dichloro-	8010 8020 8021 8120 8260 8270	2 5 0.5 10 5 10
m-Dichlorobenzene; 1,3-Dichlorobenzene	541-73-1	Benzene, 1,3-Dichloro-	8010 8020 8021 8120 8260 8270	5 5 0.2 10 5 10
p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	Benzene, 1,4-dichloro-	8010 8020 8021 8120 8260 8270	2 5 0.1 15 5 10
3,3 1 -Dichlorobenzidine	91-94-1	[1,1 1 -Biphenyl]-4,4 1 -diamine, 3,3 1 -dichloro-	8270	20
trans-1,4-Dichloro-2-butene	110-57-6	2-Butene, 1,4-dichloro-, (E)-	8260	100
Dichlorodifluoromethane; CFC 12;	75-71-8	Methane, dichlorodifluoro-	8021 8260	0.5 5
1,1-Dichloroethane; Ethyldidene chloride	75-34-3	Ethane, 1,1-dichloro-	8010 8021 8260	1 0.5 5
1,2-Dichloroethane; Ethylene dichloride	107-06-2	Ethane, 1,1-dichloro-	8010 8021 8260	0.5 0.3 5
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	Ethene, 1,1-dichloro-	8010 8021 8260	1 0.5 5
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	Ethene, 1,2-dichloro-, (Z)-	8021 8260	0.2 5
trans-1,2-Dichloroethylene trans-1,2-Dichloroethene	156-60-5	Ethene, 1,2-dichloro-, (E)-	8010 8021 8260	1 0.5 5
2,4-Dichlorophenol	120-83-2	Phenol, 2,4-dichloro-	8040 8270	5 10
2,6-Dichlorophenol	87-65-0	Phenol, 2,6-dichloro-	8270	10
1,2-Dichloropropane; Propylene dichloride	78-87-5	Propane, 1,2-dichloro-	8010 8021 8260	0.5 0.05 5
1,3-Dichloropropane; Trimethylene dichloride	142-28-9	Propane, 1,3-dichloro-	8021 8260	0.3 5

Common Name[2] (mg/L)[6]	CAS RN[3]	Chemical abstracts service index name[4]	Suggested methods[5]	PQL
2,2-Dichloropropane; Isopropylidene chloride	594-20-7	Propane, 2,2-dichloro-	8021 8260	0.5 15
1,1-Dichloropropene	563-58-6	1-Propene, 1,1-dichloro-	8021 8260	0.2 5
cis-1,3-Dichloropropene	10061-01-5	1-Propene, 1,3-dichloro-, (Z)-	8010 8260	20 10
trans-1,3-Dichloropropene	10061-02-6	1-Propene, 1,3-dichloro-, (E)-	8010 8260	5 10
Dieldrin	60-57-1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexa, chloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aα,2β,2aα,3β,6β, 6aα,7β,7aα)-	8080 8270	0.05 10
Diethyl phthalate	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester	8060 8270	5 10
0,0-Diethyl 0-2-pyrazinyl phosphorothioate; Thionazin	297-97-2	Phosphorothioic acid, 0,0-diethyl 0-pyrazinyl ester	8141 8270	5 20
Dimethoate	60-51-5	Phosphorodithioic acid, 0,0-dimethyl S-[2-(methylamino)-2-oxoethyl] ester	8141 8270	3 20
p-(Dimethylamino)azobenzene	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-	8270	10
7,12-Dimethylbenz[a]anthracene	57-97-6	Benz[a]anthracene, 7,12-dimethyl-	8270	10
3,3 1 -Dimethylbenzidine	119-93-7	[1,1 1 -Biphenyl]-4,4 1 -diamine, 3,3 1 -dimethyl-	8270	10
2,4-Dimethylphenol; m-Xylenol	105-67-9	Phenol, 2,4-dimethyl-	8040 8270	5 10
Dimethyl phthalate	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester	8060 8270	5 10
m-Dinitrobenzene	99-65-0	Benzene, 1,3-dinitro-	8270	20
4,6-Dinitro-o-cresol 4,6-Dinitro-2-methylphenol	534-52-1	Phenol, 2-methyl-4,6-dinitro	8040 8270	150 50
2,4-Dinitrophenol;	51-28-5	Phenol, 2,4-dinitro-	8040 8270	150 50
2,4-Dinitrotoluene	121-14-2	Benzene, 1-methyl-2,4-dinitro-	8090 8270	0.2 10
2,6-Dinitrotoluene	606-20-2	Benzene, 2-methyl-1,3-dinitro-	8090 8270	0.1 10
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-	8150 8270	1 20
Di-n-octyl phthalate	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester	8060 8270	30 10
Diphenylamine	122-39-4	Benzenamine, N-phenyl-	8270	10
Disulfoton	298-04-4	Phosphorodithioic acid, 0,0-diethyl S-[2-(ethylthio)ethyl] ester	8140 8141 8270	2 0.5 10
Endosulfan I	959-98-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide,	8080 8270	0.1 20
Endosulfan II	33213-65-9	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10, 10-hexa- chloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3α,5aα, 6β,9β,9aα)-	8080 8270	0.05 20

Common Name[2] (mg/L)[6]	CAS RN[3]	Chemical abstracts service index name[4]	Suggested methods[5]	PQL
Endosulfan sulfate	1031-07-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexa- chloro-1,5,5a,6,9,9a-hexahydro-,3-3-dioxide	8080 8270	0.5 10
Endrin	72-20-8	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aα, 2β,2aβ,3α,6α, 6aβ,7β,7aα)-	8080 8270	0.1 20
Endrin aldehyde	7421-93-4	1,2,4-Methenocyclopenta[cd]pentalene-5-carboxaldehyde, 2,2a,3,3,4,7-hexachlorodecahydro-, (1α,2β, 2aβ,4β,4aβ,5β,6aβ,6bβ,7R*)-	8080 8270	0.2 10
Ethylbenzene	100-41-4	Benzene, ethyl-	8020 8221 8260	2 0.05 5
Ethyl methacrylate	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester	8015 8260 8270	5 10 10
Ethyl methanesulfonate	62-50-0	Methanesulfonic acid, ethyl ester	8270	20
Famphur	52-85-7	Phosphorothioic acid, 0-[4-[(dimethylamino)sulfonyl]phenyl] 0,0-dimethyl ester	8270	20
Fluoranthene	206-44-0	Fluoranthene	8100 8270	200 10
Fluorene	86-73-7	9H-Fluorene	8100 8270	200 10
Heptachlor	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	8080 8270	0.05 10
Heptachlor epoxide	1024-57-3	2,5-Methano-2H-indeno[1,2-b]oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a-hexahydro-, (1aα, 1bβ, 2α, 5α, 5aβ, 6β, 6aα)	8080 8270	1 10
Hexachlorobenzene	118-74-1	Benzene, hexachloro-	8120 8270	0.5 10
Hexachlorobutadiene	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	8021 8120 8260 8270	0.5 5 10 10
Hexachlorocyclopentadiene	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	8120 8270	5 10
Hexachloroethane	67-72-1	Ethane, hexachloro-	8120 8260 8270	0.5 10 10
Hexachloropropene	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-	8270	10
2-Hexanone; Methyl butyl ketone	591-78-6	2-Hexanone	8260	50
Indeno(1,2,3-cd)pyrene	193-39-5	Indeno(1,2,3-cd)pyrene	8100 8270	200 10
Isobutyl alcohol	78-83-1	1-Propanol, 2-methyl-	8015 8240	50 100

Common Name[2] (mg/L)[6]	CAS RN[3]	Chemical abstracts service index name[4]	Suggested methods[5]	PQL
Isodrin	465-73-6	1,4,5,8-Dimethanonaphthalene,1, 2,3,4,10,10- hexachloro-1,4,4a, 5,8,8a hexahydro- (1α,4α,4aβ, 5β,8β,8aβ)-	8270 8260	20 10
Isophorone	78-59-1	2-Cyclohexen-1-one, 3,5,5-trimethyl-	8090 8270	60 10
Isosafrole	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-	8270	10
Kepone	143-50-0	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1, 1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-	8270	20
Lead	(Dissolved)	Lead	6010 7420 7421	400 1000 10
Mercury	(Total)	Mercury	7470	2
Methacrylonitrile	126-98-7	2-Propenenitrile, 2-methyl-	8015 8260	5 100
Methapyrilene	91-80-5	1,2-Ethanediamine, N.N-dimethyl-N 1 -2-pyridinyl-N1/2-thienylmethyl)-	8270	100
Methoxychlor	72-43-5	Benzene,1,1 1 -(2,2,2, trichloroethylidene)bis[4-methoxy-	8080 8270	2 10
Methyl bromide; Bromomethane	74-83-9	Methane, bromo-	8010 8021	20 10
Methyl chloride; Chloromethane	74-87-3	Methane, chloro-	8010 8021	1 0.3
3-Methylcholanthrene	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	8270	10
Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	2-Butanone	8015 8260	10 100
Methyl iodide; Iodomethane	74-88-4	Methane, iodo-	8010 8260	40 10
Methyl methacrylate	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester	8015 8260	2 30
Methyl methanesulfonate	66-27-3	Methanesulfonic acid, methyl ester	8270	10
2-Methylnaphthalene	91-57-6	Naphthalene, 2-methyl-	8270	10
Methyl parathion; Parathion methyl	298-00-0	Phosphorothioic acid, 0,0-dimethyl	8140 8141 8270	0.5 1 10
4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	2-Pentanone, 4-methyl-	8015 8260	5 100
Methylene bromide; Dibromomethane	74-95-3	Methane, dibromo-	8010 8021 8260	15 20 10
Methylene chloride; Dichloromethane	75-09-2	Methane, dichloro-	8010 8021 8260	5 0.2 10
Naphthalene	91-20-3	Naphthalene	8021 8100 8260 8270	0.5 200 5 10
1,4-Naphthoquinone	130-15-4	1,4-Naphthalenedione	8270	10
1-Naphthylamine	134-32-7	1-Naphthalenamine	8270	10
2-Naphthylamine	91-59-8	2-Naphthalenamine	8270	10
Nickel	(Total)	Nickel	6010 7520	150 400

Common Name[2] (mg/L)[6]	CAS RN[3]	Chemical abstracts service index name[4]	Suggested methods[5]	PQL
o-Nitroaniline; 2-Nitroaniline	88-74-4	Benzenamine, 2-nitro-	8270	50
m-Nitroaniline; 3-Nitroanile	99-09-2	Benzenamine, 3-nitro-	8270	50
p-Nitroaniline; 4-Nitroaniline	100-01-6	Benzenamine, 4-nitro	8270	20
Nitrobenzene	98-95-3	Benzene, nitro-	8090	40
			8270	10
o-Nitrophenol; 2-Nitrophenol	88-75-5	Phenol, 2-nitro-	8040	5
			8270	10
p-Nitrophenol; 4-Nitrophenol	100-02-7	Phenol, 4-nitro-	8040	10
			8270	50
N-Nitrosodi-n-butylamine	924-16-3	1-Butanamine, N-butyl-N-nitroso-	8270	10
N-Nitrosodiethylamine	55-18-5	Ethanamine, N-ethyl-N-nitroso-	8270	20
N-Nitrosodimethylamine	62-75-9	Methanamine, N-methyl-N-nitroso-	8070	2
N-Nitrosodiphenylamine	86-30-6	Benzenamine, N-nitroso-N-phenyl-	8070	5
N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine	621-64-7	1-Propanamine, N-nitroso-N-propyl-	8070	10
N-Nitrosomethylethalamine	10595-95-6	Ethanamine, N-methyl-N-nitroso-	8270	10
N-Nitrosopiperidine	100-75-4	Piperidine, 1-nitroso-	8270	20
N-Nitrosopyrrolidine	930-55-2	Pyrrolidine, 1-nitroso-	8270	40
5-Nitro-o-toluidine	99-55-8	Benzenamine, 2-methyl-5-nitro-	8270	10
Parathion	56-38-2	Phosphorothioic acid, 0,0-diethyl 0-(4-nitrophenyl) ester	8141	0.5
			8270	10
Pentachlorobenzene	608-93-5	Benzene, pentachloro-	8270	10
Pentachloronitrobenzene	82-68-8	Benzene, pentachloronitro-	8270	20
Pentachlorophenol	87-86-5	Phenol, pentachloro-	8040	5
			8270	50
Phenacetin	62-44-2	Acetamide, N-(4-ethoxyphenl)	8270	20
Phenanthrene	85-01-8	Phenanthrene	8100	200
			8270	10
Phenol	108-95-2	Phenol	8040	1
p-Phenylenediamine	106-50-3	1,4-Benzenediamine	8270	10
Phorate	298-02-2	Phosphorodithioic acid, 0,0-diethyl S-[(ethylthio)methyl] ester	8140	2
			8141	0.5
			8270	10
Polychlorinated biphenyls; PCBs; Aroclors	See Note 9	1,1'-Biphenyl, chloro derivatives	8080	50
			8270	200
Pronamide	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-	8270	10
Propionitrile; Ethyl cyanide	107-12-0	Propanenitrile	8015	60
			8260	150
Pyrene	129-00-0	Pyrene	8100	200
			8270	10
Safrole	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-	8270	10
Selenium	(Dissolved)	Selenium	6010	750
			7740	20
			7741	20
Silver	(Dissolved)	Silver	6010	70
			7760	100
			7761	10
Silvex; 2,4,5-TP	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-	8150	2
Styrene	100-42-5	Benzene, ethenyl-	8020	1
			8021	0.1
			8260	10

Common Name[2] (mg/L)[6]	CAS RN[3]	Chemical abstracts service index name[4]	Suggested methods[5]	PQL
Sulfide	18496-25-8	Sulfide	9030	4000
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-	8150	2
1,2,4,5-Tetrachlorobenzene	95-94-3	Benzene, 1,2,4,5-tetrachloro-	8270	10
1,1,1,2-Tetrachloroethane	630-20-6	Ethane, 1,1,1,2-tetrachloro-	8010	5
			8021	0.05
			8260	5
1,1,2,2-Tetrachloroethane	79-34-5	Ethane, 1,1,2,2-tetrachloro-	8010	0.5
			8021	0.1
			8260	5
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	Ethene, tetrachloro-	8010	0.5
			8021	0.5
			8260	5
2,3,4,6-Tetrachlorophenol	58-90-2	Phenol, 2,3,4,6-tetrachloro-	8270	10
Thallium	(Dissolved)	Thallium	6010	400
			7840	1000
			7841	10
Tin	(Dissolved)	Tin	6010	40
Toluene	108-88-3	Benzene, methyl-	8020	2
			8021	0.1
			8260	5
o-Toluidine	95-53-4	Benzenamine, 2-methyl-	8270	10
Toxaphene	See Note 10	Toxaphene	8080	2
1,2,4-Trichlorobenzene	120-82-1	Benzene, 1,2,4-trichloro-	8021	0.3
			8120	0.5
			8260	10
			8270	10
1,1,1-Trichloroethane; Methylchloroform	71-55-6	Ethane, 1,1,1-trichloro-	8010	0.3
			8021	0.3
			8260	5
1,1,2-Trichloroethane	79-00-5	Ethane, 1,1,2-trichloro-	8010	0.2
			8260	5
Trichloroethylene; Trichloroethene	79-01-6	Ethene, trichloro-	8010	1
			8021	0.2
			8260	5
Trichlorofluoromethane; CFC-11	75-69-4	Methane, trichlorofluoro-	8010	10
			8021	0.3
			8260	5
2,4,5-Trichlorophenol	95-95-4	Phenol, 2,4,5-trichloro-	8270	10
2,4,6-Trichlorophenol	88-06-2	Phenol, 2,4,6-trichloro-	8040	5
			8270	10
1,2,3-Trichloropropane	96-18-4	Propane, 1,2,3-trichloro-	8010	10
			8021	5
			8260	15
0,0,0-Triethyl phosphorothioate	126-68-1	Phosphorothioic acid, 0,0,0-triethyl-ester	8270	10
sym-Trinitrobenzene	99-35-4	Benzene, 1,3,5-trinitro-	8270	10
Vanadium	(Dissolved)	Vanadium	6010	80
			7910	2000
			7911	40
Vinyl acetate	108-05-4	Acetic acid, ethenyl ester	8260	50
Vinyl chloride; Chloroethene	75-01-4	Ethene, chloro-	8010	2
			8021	0.4
			8260	10

Common Name[2] (mg/L)[6]	CAS RN[3]	Chemical abstracts service index name[4]	Suggested methods[5]	PQL
Xylene (total)	See Note 11	Benzene, dimethyl-	8020	5
			8021	0.2
			8260	5
Zinc	(Dissolved)	Zinc	6010	20
			7950	50
			7951	0.5

Notes:

1 The regulatory requirements pertain only to the list of substances; the right hand columns (Methods and PQL) are given for informational purposes only. See also footnotes 5 and 6. Also, note that the state ground water quality criteria, chapter 173-200 WAC, takes precedence over these recommended PQL's.

2 Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

3 Chemical Abstracts Service registry number. Where "Total" is entered, all species in the ground water that contain this element are included.

4 CAS index are those used in the 9th Collective Index.

5 Suggested Methods refer to analytical procedure numbers used in EPA Report SW-846 "Test Methods for Evaluating Solid Waste", third edition, November 1986, as revised, December 1987. Analytical details can be found in SW-846 and in documentation on file at the agency. CAUTION: The methods listed are representative SW-846 procedures and may not always be the most suitable method(s) for monitoring an analyte under the regulations.

6 Practical Quantitation Limits (PQLs) are the lowest concentrations of analytes in ground waters that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions. The PQLs listed are generally stated to one significant figure. PQLs are based on 5 mL samples for volatile organics and 1 L samples for semivolatile organics. CAUTION: The PQL values in many cases are based only on a general estimate for the method and not on a determination for individual compounds; PQLs are not a part of the regulation.

7 This substance is often called Bis(2-chloroisopropyl) ether, the name Chemical Abstracts Service applies to its noncommercial isomer, Propane, 2,2"-oxybis[2-chloro- (CAS RN 39638-32-9).

8 Chlordane: This entry includes alpha-chlordane (CAS RN 5103-71-9), beta-chlordane (CAS RN 5103-74-2), gamma-chlordane (CAS RN 5566-34-7), and constituents of chlordane (CAS RN 57-74-9 and CAS RN 12789-03-6). PQL shown is for technical chlordane. PQLs of specific isomers are about 20 µg/L by method 8270.

9 Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituents of Aroclor 1016 (CAS RN 12674-11-2), Aroclor 1221 (CAS RN 11104-28-2), Aroclor 1232 (CAS RN 11141-16-5), Aroclor 1242 (CAS RN 53469-21-9), Aroclor 1248 (CAS RN 12672-29-6), Aroclor 1254 (CAS RN 11097-69-1), and Aroclor 1260 (CAS RN 11096-82-5). The PQL shown is an average value for PCB congeners.

10 Toxaphene: This entry includes congener chemicals contained in technical toxaphene (CAS RN 8001-35-2), i.e., chlorinated camphene.

11 Xylene (total): This entry includes o-xylene (CAS RN 96-47-6), m-xylene (CAS RN 108-38-3), p-xylene (CAS RN 106-42-3), and unspecified xylenes (dimethylbenzenes) (CAS RN 1330-20-7). PQLs for method 8021 are 0.2 for o-xylene and 0.1 for m-or p-xylene. The PQL for m-xylene is 2.0 µg/L by method 8020 or 8260.

APPENDIX IV

PARAMETERS FOR LEACHATE ANALYSIS

Appendix I[1] Parameters
Appendix II Parameters
Nitrite
Total Colliform
COD
BOD
Cyanide

1_ All metals analysis should be for total recoverable metals, for the leachate analysis only.

Important Note: All other appendices require dissolved metals (field-filtration for metals).

[Statutory Authority: Chapter 70.95 RCW and 40 CFR 258. 93-22-016, § 173-351-990, filed 10/26/93, effective 11/26/93.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency.

Appendix H

Area-Wide Arsenic Data Discussion and Background Determination for Arsenic, Iron, and Manganese

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TECHNICAL MEMORANDUM
Arsenic in Groundwater at the Olalla Landfill
Kitsap County, WA

Introduction

Arsenic is a naturally occurring element in the environment and its presence in groundwater is largely the result of natural dissolution of arsenic-bearing minerals over time (USGS, 2008). Elevated concentrations of arsenic in groundwater affect many parts of the country where arsenic-bearing minerals are common, including the Puget Sound area of Washington State.

This Technical Memorandum has been prepared to provide supporting documentation to demonstrate that the occurrence of arsenic in groundwater samples from monitoring wells at the Olalla Landfill is partially caused by regional elevated arsenic concentrations in soil and groundwater.

Arsenic in Regional Groundwater

Higher levels of arsenic tend to be found more in groundwater sources than in surface water sources (i.e., lakes and rivers) of drinking water. Many states, including Washington, have a significant number of public water systems with arsenic concentrations greater than EPA's standard of 10 μg/L (EPA, 2011).

The United States Geological Survey (USGS) has evaluated arsenic data and has published maps summarizing a national data set for arsenic in groundwater. These maps provide a summary view of patterns of naturally occurring arsenic in groundwater across the United States. The arsenic occurrence map presented in Figure 1 shows elevated arsenic concentrations greater than the drinking water standard of 10 μg/L in western Washington, particularly in the Puget Sound, including Kitsap County.

The Washington State Department of Health (DOH) notes arsenic is found in well water throughout Washington State and recommends that water used for drinking or food preparation contain no more than 10 μg/L arsenic (DOH, 2008). DOH tracks arsenic in samples from regulated public drinking water sources at concentrations greater than the drinking water standard of 10 μg/L. These data are summarized on a map of Washington State presented in Figure 2. This map shows that regulated water systems in Kitsap County, including locations near the Olalla Landfill, have arsenic concentrations greater than the Washington State Drinking Water Standard of 10 μg/L.

The Bremerton-Kitsap County Health District Environmental Health Division conducted a domestic well survey in 1995 where a background level of arsenic in southern Kitsap County was determined to be 9.69 μg/L (KCHD 1995). The background arsenic concentration was taken from the Kitsap County Ground Water Management Plan, July 1989. The calculated concentration represents an average concentration measured in 84 wells in southern Kitsap County. According to the survey, the wells used in the comparison are all greater than one hundred feet deep; therefore, the wells are considered comparable to the conditions at the Olalla Landfill.

Arsenic in Kitsap County Groundwater

As groundwater flows through rocks and soil that contain naturally occurring arsenic bearing minerals some of the arsenic dissolves into the groundwater. Drinking water in Washington State typically contains less than 3 μg/L (DOH, 2008). However, levels of health concern (from 10 μg/L to 33,000 μg/L) have been detected in samples from some wells in Washington. These concentrations are commonly associated with aquifers located in rock or soil that has naturally high arsenic content (DOH, 2008).

Much of the Puget Sound area, including Kitsap County, has near surface geology consisting largely of glacially deposited volcanic rocks, which contain naturally occurring arsenic. In addition, the ASARCO smelter formerly operating in Ruston WA, approximately 10 miles from the Landfill, was one of the few smelters able to process ore containing high concentrations of arsenic. The ASARCO smelter released particulates containing high concentrations of arsenic and lead to the atmosphere, which was carried by the wind over a wide expanse of King, Pierce, Thurston, and Kitsap counties (Seattle and King County Public Health, 2011). For comparison to local groundwater arsenic concentrations, arsenic concentrations averaging 17 μg/L were detected in rain and snow collected downwind from the ASARCO smelter (Crecelius 1975).

The DOH Office of Drinking Water database contains analytical data, which include arsenic data for Kitsap County Class A and B water supply wells. Samples from many of these wells have arsenic at concentrations greater than the Washington State Drinking Water Standard of 10 μg/L. Database queries in the DOH database indicate that arsenic concentrations in Kitsap County Class A water supply wells are as high as 32 μg/L and as high as 100 μg/L in Class B water supply wells. Most of the drinking water standard exceedances in Kitsap County drinking water wells for which DOH has data are in the 11-20 μg/L range. The arsenic data exceeding drinking water standards in Kitsap County water supply wells are summarized in Figure 2 and Figure 3 (DOH, 2011). Among the public water supply systems noted in Figure 3, West Sound Utility Water District #1 has water supply wells that are closest to the Landfill at a distance of approximately 7 miles.

Arsenic in Olalla Landfill Groundwater

Arsenic has been routinely detected from 1992 to present in groundwater samples from all monitoring wells at the Landfill, including samples from upgradient well MW-1. Detected arsenic concentrations in samples from upgradient well MW-1 range from a high of 2.0 μg/L in January 1994 to a low of 0.05 μg/L during several monitoring events, the most recent in December 2002. The mean arsenic concentration in samples from 1992 to 2011 from MW-1 is 0.171 μg/L. Arsenic concentrations in samples from downgradient offsite wells range from a high of 11 μg/L to non-detect at a reporting limit of 0.05 μg/L. The mean arsenic concentration in samples from downgradient offsite wells is 1.04 μg/L.

Arsenic was also detected in samples from all water supply wells that were sampled as part of the RI/FS at concentrations ranging from a high of 7.04 μg/L in the sample from OW-3 to a low of 0.215 μg/L in the sample from OW-2. The water supply well designated as OW-3, which had the greatest arsenic concentration, is completed in a deeper confined aquifer that is separated from the unconfined aquifer underlying the Landfill by approximately 145 feet of dense clay.

Arsenic Background Concentration in Olalla Landfill Groundwater

Water supply wells were sampled prior to and during the RI activities conducted at the Landfill. Specifically, water supply wells were sampled in April 1995, September 1997, December 2010, and January 2011. The sampling results from the water supply wells and Landfill upgradient monitoring well MW-1 were used to define the data set for background concentration determination. Parametrix provided background calculations for arsenic in a letter dated August 13, 2012 (Parametrix, 2012). The background concentration of arsenic in groundwater at the Olalla Landfill was determined to be 1.29 μg/L.

Conclusions

The following conclusions regarding the presence of arsenic in groundwater are based on information and data presented in the preceding sections.

- Arsenic is a naturally occurring element that is found in groundwater in areas containing arsenic-bearing minerals.
- The Puget Sound, including Kitsap County, contains arsenic–bearing minerals that affect groundwater quality throughout the region.
- The presence of arsenic in the deeper aquifer at a concentration significantly greater than the mean concentration in data from downgradient monitoring well MW-6 indicates that the presence of arsenic in groundwater is partially a regional issue related to arsenic-bearing minerals.
- An arsenic background concentration of 1.29 µg/L was calculated for the Landfill using procedures described within MTCA.

References:

United States Geological Survey (USGS), Fact Sheet 063-00, August 7, 2008.

United States Environmental Protection Agency (EPA, 2011.) Web site reference: http://water.epa.gov/lawsregs/rulesregs/sdwa/arsenic/Basic-Information.cfm

Washington State Department of Health (DOH), Arsenic and Your Private Well. Publication # 334-156, June 2008.

Bremerton-Kitsap County Health District (KCHD), Environmental Health Division , Solid Waste Program. Olalla Landfill Domestic Well Survey Results. Prepared by Shawn Ultican, Environmental Health Specialist. October 23, 1995.

Seattle and King County Public Health website. Background on the Tacoma Smelter Plume. http://www.kingcounty.gov/healthservices/health/ehs/toxic/TacomaSmelterPlume/background.aspx. Updated September 9, 2011.

Crecelius, E.A. 1975. The geochemical cycle of arsenic in Lake Washington and its relation to other elements. Limnology and Oceanography 20, no. 3: 441-451.

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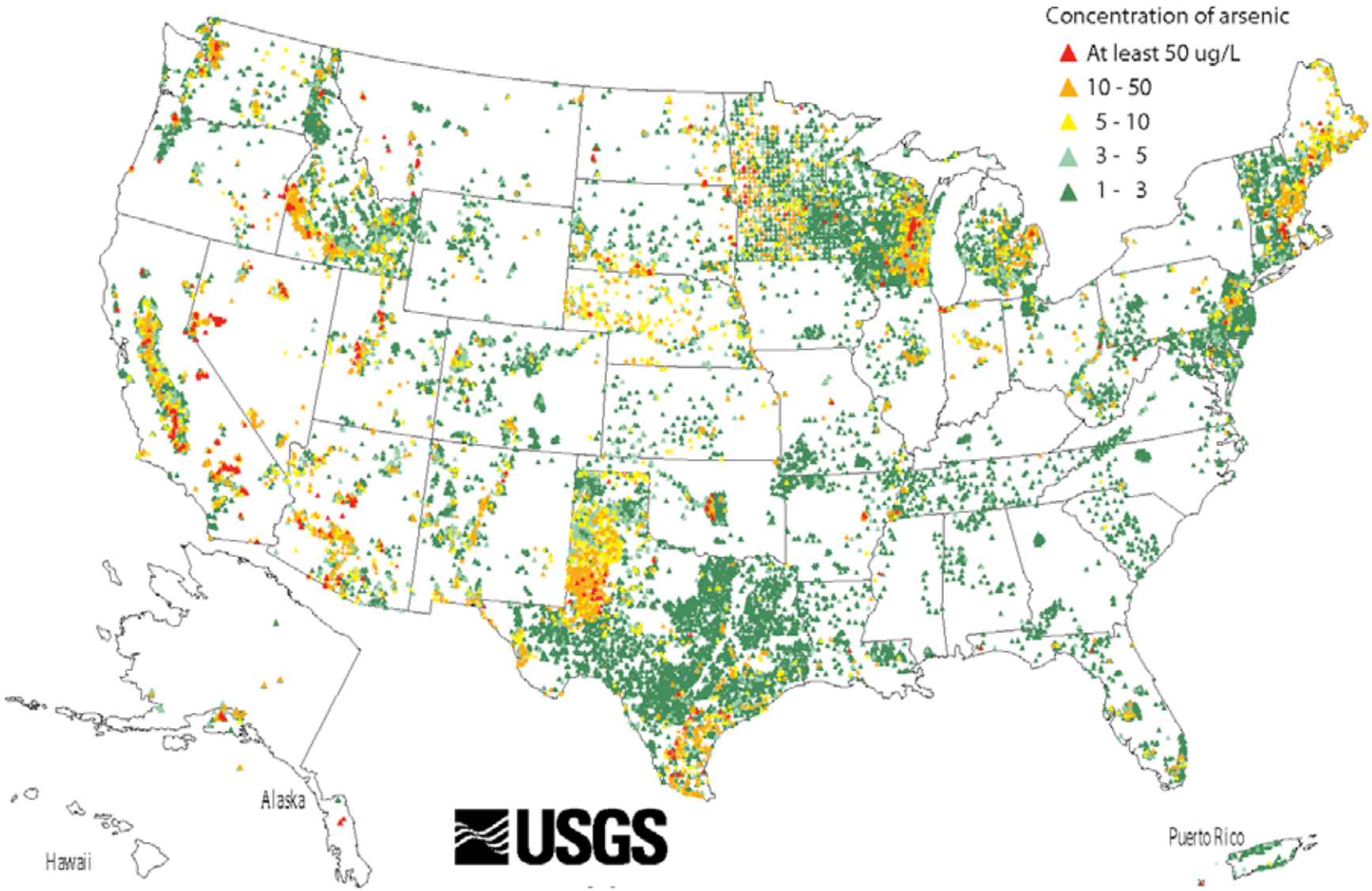

KEY:

SOURCE:
U.S. Department of the Interior | U.S. Geological Survey
URL: http://water.usgs.gov/nawqa/trace/pubs/geo_v46n11/fig1.html
Page Contact Information: gs-w_nawqa_info@usgs.gov
Page Last Modified: Tuesday, 20-Oct-2009 16:04:53 EDT

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FIGURE 1

ARSENIC CONCENTRATIONS IN GROUNDWATER THROUGHOUT THE UNITED STATES

PROJECT	60101.0 OLALLA, WASHINGTON		
PREPARED FOR	KITSAP COUNTY		
LOCATION	OLALLA LANDFILL KITSAP COUNTY, WASHINGTON		
SHEET	**DRAWN BY**	**REVIEWED BY**	**DATE**
1 of 1	ARM	DCK	02/14/12

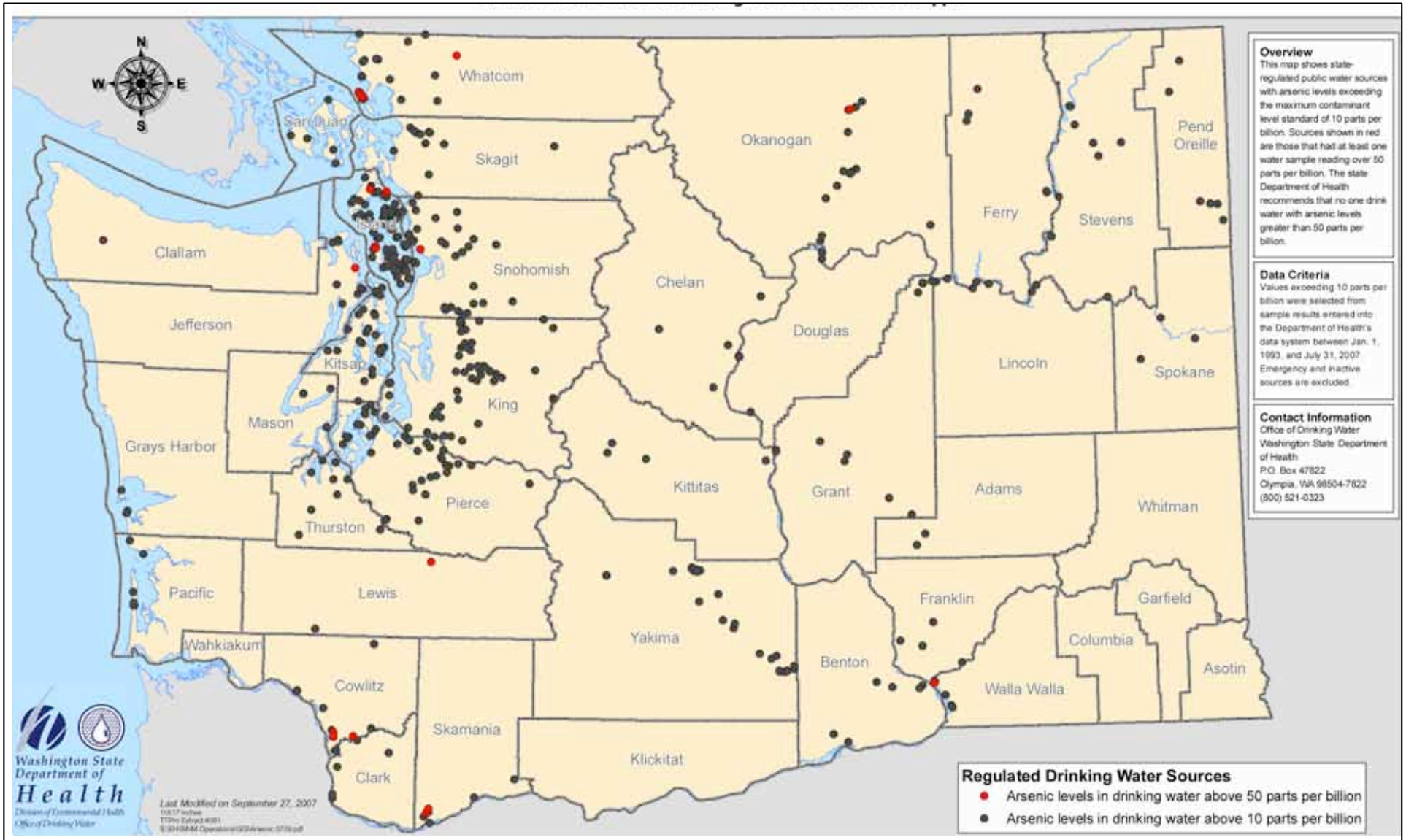

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FIGURE 2

ARSENIC DETECTIONS IN WASHINGTON
PUBLIC WATER SUPPLIES

PROJECT	60101.0 OLALLA, WASHINGTON		
PREPARED FOR	KITSAP COUNTY		
LOCATION	OLALLA LANDFILL KITSAP COUNTY, WASHINGTON		
SHEET 1 of 1	DRAWN BY ARM	REVIEWED BY DCK	DATE 02/14/12

Washington State Department of Health

Division of Environmental Health
Office of Drinking Water

Help

Water Quality Exceedences View

WSID	WS Name	County	Grp	Type	Status	Src #	DOE Src	Collect Date	Analyte Name	Result Quantity	UOM Code	Test Panel	Analyte Group	Sample Purpose	Sam #	Lab #
67613	AMBER WATER ASSOCIATION	KITSAP	B		Act	01		4/15/1991	ARSENIC	0.100	mg/L	ICHEM	IOC	RC	04269	081
46117	LARSON WATER	KITSAP	B		Act	01		3/11/1980	ARSENIC	0.065	mg/L	ICHEM	IOC	RC	03470	052
46117	LARSON WATER	KITSAP	B		Act	01		2/19/1979	ARSENIC	0.061	mg/L	ICHEM	IOC	RC	03413	051
00700	THORS WELL ASSN	KITSAP	B		Act	01		1/17/2006	ARSENIC	0.036	mg/L	IOC	IOC	RC	43407	010
AC483	Breidablik Baptist Church	KITSAP	A	TNC	Act	01		7/22/2002	ARSENIC	0.032	mg/L	AR	IOC	RC	76120	010
AC242	YAQUINA	KITSAP	B		PreAct	01		10/14/2010	ARSENIC	0.025	mg/L	IOC_SHORT	IOC	RC	04701	010
AC242	YAQUINA	KITSAP	B		PreAct	01		7/15/2010	ARSENIC	0.020	mg/L	IOC_SHORT	IOC	RC	25601	010
AC242	YAQUINA	KITSAP	B		PreAct	01		6/17/2010	ARSENIC	0.018	mg/L	IOC_SHORT	IOC	RC	37001	010
05122	NORTH PENINSULA	KITSAP	A	Comm	Act	13		6/15/2006	ARSENIC	0.016	mg/L	IOC	IOC	RC	55988	010
05122	NORTH PENINSULA	KITSAP	A	Comm	Act	13		6/13/2007	ARSENIC	0.016	mg/L	IOC_SHORT	IOC	RC	85739	010
05122	NORTH PENINSULA	KITSAP	A	Comm	Act	13		10/6/2010	ARSENIC	0.016	mg/L	IOC	IOC	RC	82301	010
92400	WALKER BEACH	KITSAP	B		Act	02		7/6/1999	ARSENIC	0.016	mg/L	IOC	IOC	RC	35890	010
AC242	YAQUINA	KITSAP	B		PreAct	01		7/15/2010	ARSENIC	0.016	mg/L	IOC_SHORT	IOC	RC	25602	010
02600	WEST SOUND UTILITY DISTRICT #1	KITSAP	A	Comm	Act	14	15G014	4/19/1983	ARSENIC	0.015	mg/L	ICHEM	IOC	RC	04344	089
05122	NORTH PENINSULA	KITSAP	A	Comm	Act	13		2/7/2007	ARSENIC	0.015	mg/L	IOC_SHORT	IOC	RC	75862	010
23740	ERICKSON	KITSAP	B		Act	01	15G502	3/18/2007	ARSENIC	0.015	mg/L	IOC	IOC	RC	78974	010
66936	BUCKLIN	KITSAP	A	Comm	Act	01	15G493	2/14/2007	ARSENIC	0.014	mg/L	AR	IOC	RC	14983	089
66936	BUCKLIN	KITSAP	A	Comm	Act	01	15G493	4/24/2007	ARSENIC	0.014	mg/L	AR	IOC	RC	16015	089
AB876	TOAD HOLLER	KITSAP	A	NTNC	Act	01		1/6/2010	ARSENIC	0.014	mg/L	AR	IOC	RC	20203	010
AB876	TOAD HOLLER	KITSAP	A	NTNC	Act	01		4/12/2011	ARSENIC	0.014	mg/L	AR	IOC	RC	38401	010
AB876	TOAD HOLLER	KITSAP	A	NTNC	Act	01		7/12/2011	ARSENIC	0.014	mg/L	AR	IOC	RC	75301	010
05122	NORTH PENINSULA	KITSAP	A	Comm	Act	13		6/15/2006	ARSENIC	0.013	mg/L	IOC_SHORT	IOC	RC	55987	010
05122	NORTH PENINSULA	KITSAP	A	Comm	Act	13		7/27/2010	ARSENIC	0.013	mg/L	AR	IOC	RC	60002	010
24800	FERNCLIFF	KITSAP	A	Comm	Act	02		9/5/2006	ARSENIC	0.013	mg/L	IOC	IOC	RC	64585	010
66936	BUCKLIN	KITSAP	A	Comm	Act	01	15G493	8/23/2006	ARSENIC	0.013	mg/L	IOC_SHORT	IOC	RC	11852	089

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FIGURE 3

ARSENIC CONCENTRATIONS EXCEEDING DRINKING WATER STANDARDS IN REGULATED WATER SUPPLY WELLS, KITSAP COUNTY, WASHINGTON

PROJECT	60101.0 OLALLA, WASHINGTON
PREPARED FOR	KITSAP COUNTY
LOCATION	OLALLA LANDFILL KITSAP COUNTY, WASHINGTON

SHEET	DRAWN BY	REVIEWED BY	DATE
1 of 1	ARM	DCK	08/25/11

Parametrix

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August 13, 2012
PMX No. 215-1578-121

Ms. Krystyna Kowalik
Regional Hydrogeologist
Department of Ecology
Northwest Regional Office
3190 160thAve SE
Bellevue, WA 98008-5452

Re: Olalla RI/FS Background Calculation Scenarios for Arsenic in Groundwater

Dear Ms. Kowalik:

INTRODUCTION

The May 31, 2012 Parametrix letter regarding Kitsap County Olalla Landfill Remedial Investigation /Feasibility Study (RI/FS) Arsenic Background Calculation Scenarios contained several scenarios for selecting data to be included in the arsenic background calculations. The recommended Scenario 2 uses data from wells located in close proximity to the Landfill and known to be completed in the uppermost aquifer beneath the landfill, including on-site wells MW-1 (upgradient) and MW-5A (cross-gradient), and off-site wells OW-1, OW-2, OW-4, and OW-9. The July 20, 2012 Department of Ecology letter agreed with the overall approach for Scenario 2 but requested that the calculations be expanded using the last three years of groundwater quality data for wells MW-1 and MW-5A. The data set was reevaluated in consideration of this request, and the results are presented in this letter.

BACKGROUND

In accordance with WAC 173-340-200, "Natural background" means the concentration of a hazardous substance consistently present in the environment that has not been influenced by localized human activities. In accordance with WAC 173-340-709(c), for log normally distributed data sets, background shall be defined as the true upper 90th percentile or four times the true 50th percentile, whichever is lower.

Additional guidance for determining background levels is presented in the Unified Guidance, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities (EPA 2009), which states that sample data from the background population are assumed to be independent and identically distributed. A key implication of this assumption is that a series of sample measurements should be stationary. A *stationary* statistical distribution is one whose population characteristics do not change over time and/or space.

ANALYSIS

A time-series plot of the historical data for MW-1 and MW-5A (Attachment A) indicates that the more recent data (since 2003) have lower variability than previous data, and do not contain obvious outliers or apparent trends. The lower variability is likely due to improved sampling procedures.

Trends in the data for MW-1 and MW-5A were evaluated using the Mann-Kendall and Sens Slope tests for trend. Three different sets of data were evaluated for each well: 1) all data since 1992; 2) data from 2003 to 2012; and 3) data from 2009 to 2012. Statistically significant downward trends in the data were observed using all data for both wells, and using the 2003-2012 data for well MW-5A. There were no upward or downward trends in the data for either well using the 2009-2012 data. Therefore using the past three years of data (2009-2012) for these wells, as requested by Ecology, is appropriate to represent the current water quality conditions at those locations.

Since the concentrations of arsenic in samples from wells in the vicinity of the landfill that are located within the same aquifer have a natural spatial variability due to variations in soil geochemistry, it is important to incorporate as many spatial locations as possible to calculate the arsenic background level. Therefore data for the four off-site wells not affected by the landfill will be used in addition to the two on-site wells in calculating the background concentration for arsenic, even though less data are available for the off-site wells. Since there are 13 or 14 points available in the 2009-2012 data set for wells MW-1 and MW-5A, it is necessary to calculate one representative concentration for each off-site well so that all six wells will be equally weighted spatially in the background calculation.

Probability plots were prepared using the 2009-2012 data for MW-1 and MW-5A and the results indicate the data are normally distributed (Attachment B). The distribution and summary statistics for each well were then verified using MTCA*Stat* and the recommended distribution was lognormal (see calculations in Attachment C). Therefore the lognormal mean of the data for each of the wells (0.106 ug/L at MW-1 and 0.160 ug/L at MW-5A) was selected to represent the current concentration at that well.

For off-site wells OW-2 and OW-4, either the most recent data point could be used or a representative concentration could be calculated that would use all three measurements (1995 through 2010/2011). However, since the data are not adequate to evaluate the presence of trends or to assess the distribution of the data (see distribution and summary statistics in Attachment C), it is recommended that only the most recent data point be used to represent those wells in the background calculations.

Background arsenic concentrations were calculated using MCTA*Stat* using the mean of the 2009-2012 data for MW-1 and MW-5A, and the individual data points collected in 2010 or 2011 for all the off-site wells (OW-1, OW-2, OW-4, and OW-9). This data set was determined to be log-normally distributed and the resulting background arsenic concentration is 1.29 ug/L. The data used are summarized in the table below and the calculations using MCTA*Stat* are presented in Attachment D.

Data Used to Calculate Arsenic Background Concentration Using MCTA*Stat*

Arsenic Concentration (ug/L)	Well	Data Used in Background Calculation	Calculated Arsenic Background Concentration (ug/L)
0.719	OW-1	12/28/2010	
0.215	OW-2	1/27/2011	
1.68	OW-4	12/28/2010	
0.253	OW-9	12/28/2010	
0.106	MW-1	2009-2012 Lognormal Mean	
0.160	MW-5A	2009-2012 Lognormal Mean	1.29 ug/L

CONCLUSION

Based on arsenic groundwater data from 2009 through 2012 for wells located in close proximity to the Landfill and known to be completed in the uppermost aquifer beneath the landfill, the background arsenic concentration is 1.29 ug/L.

Sincerely,
PARAMETRIX, INC.

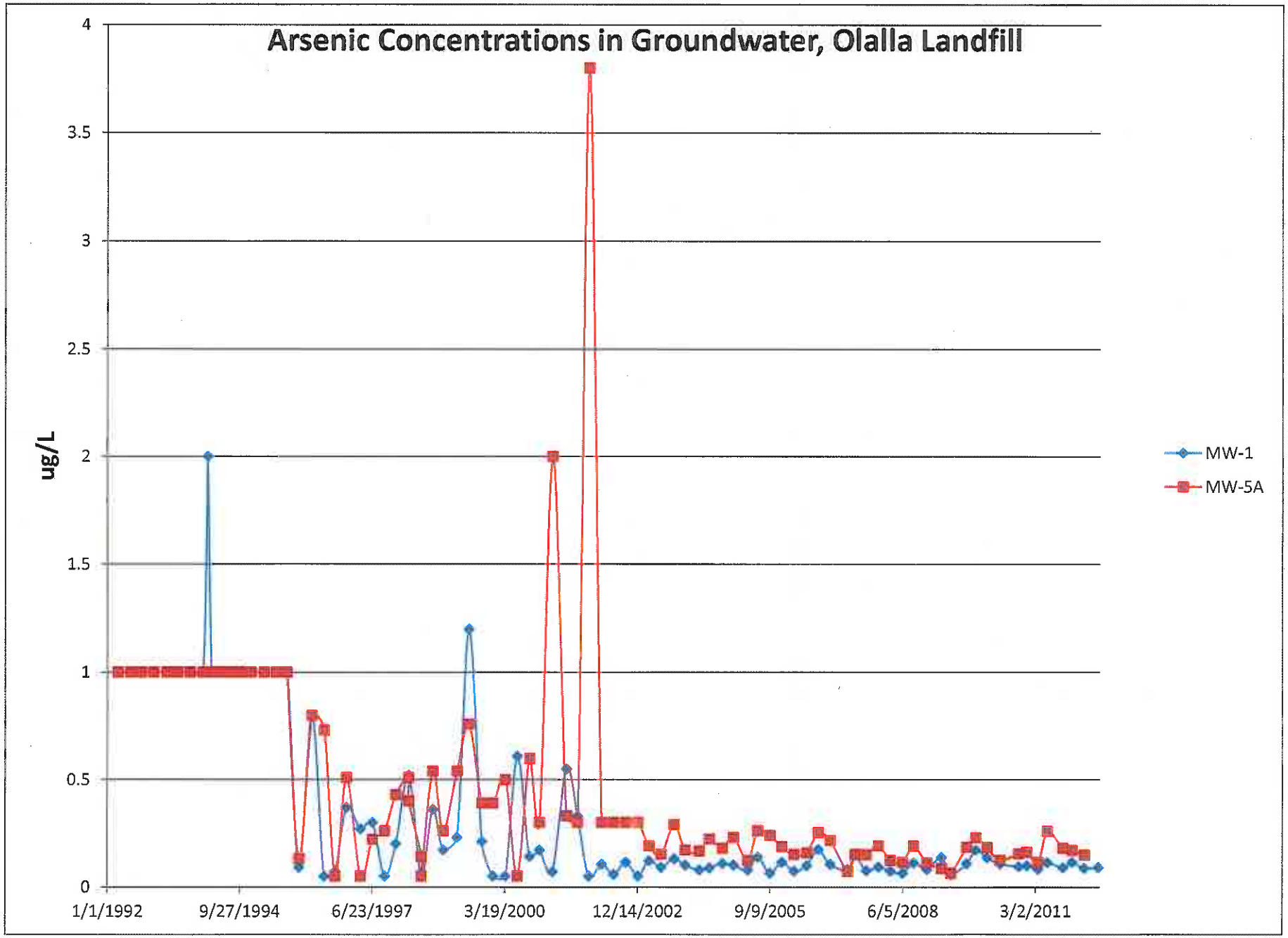
Blaine Hardy, PE

Attachments

cc: Jan Brower, Kitsap Public Health District
Madeline Wall, Department of Ecology
Peter Christiansen, Department of Ecology
Keli McKay-Means, Kitsap County Public Works
Pat Campbell, Kitsap County Public Works
Doug Kunkel, Environmental Partners, Inc.

ATTACHMENT A

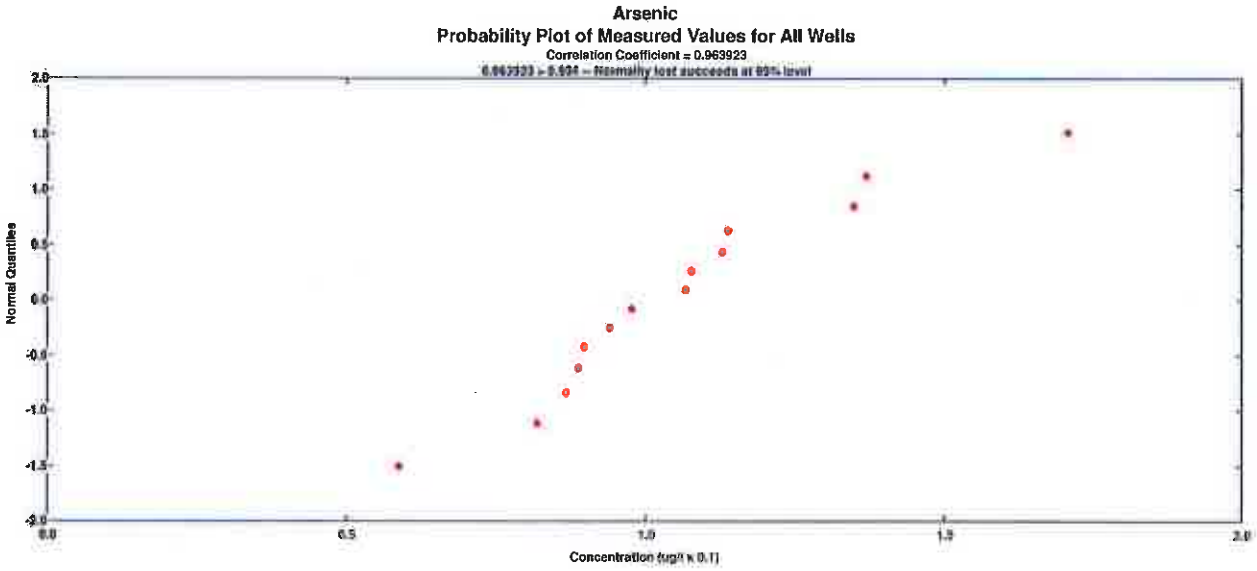
Time Series Plot MW-1 and MW-5A


Arsenic Concentrations in Groundwater, Olalla Landfill
ug/L
4
3.5
3
2.5
2
1.5
1
0.5
0
1/1/1992
9/27/1994
6/23/1997
3/19/2000
12/14/2002
9/9/2005
6/5/2008
3/2/2011
MW-1
MW-5A

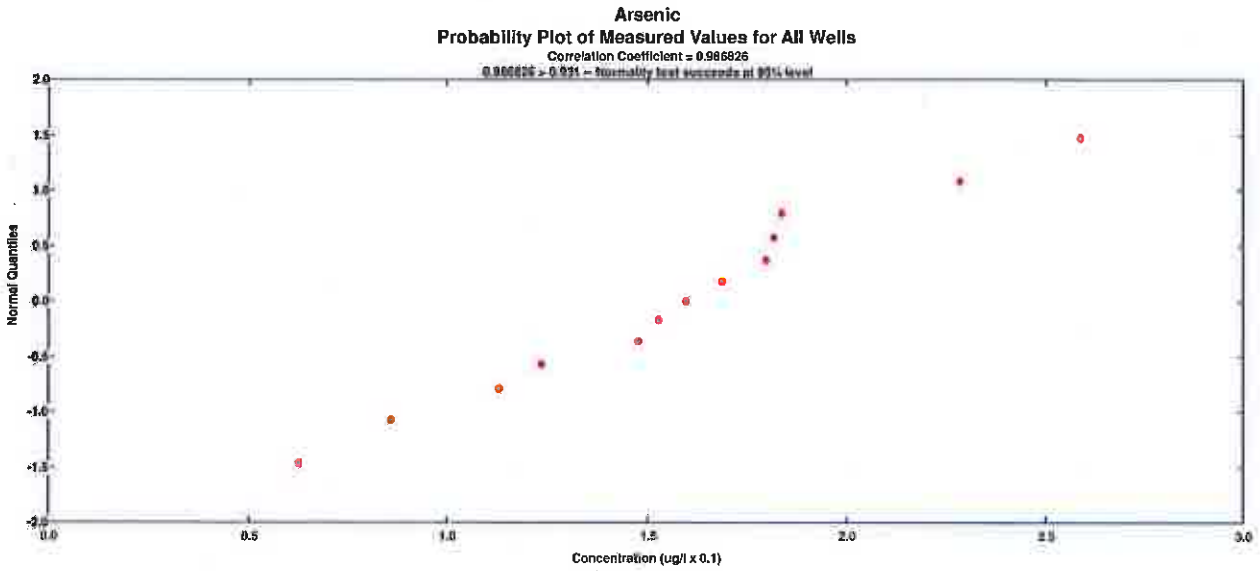
ATTACHMENT B

Probability Plots MW-1 and MW-5A

MW-1 2009-2012



MW-5A 2009-2012



ATTACHMENT C

Distribution and Summary Statistics

Compliance Calculations

MW-1 Arsenic Data (2009-2012)

Concentration (ug/L)	Date (mm/dd/yy)
0.059	6/2/09
0.082	3/23/11
0.087	3/6/12
0.089	9/26/11
0.09	6/21/12
0.0944	10/28/10
0.098	12/28/10
0.107	6/9/10
0.108	9/30/09
0.113	6/1/11
0.114	12/5/11
0.135	3/3/10
0.137	3/23/09

Distribution and Summary Stats by the MCTA*Stat* Method

		Summary Statistics	
Number of samples			
Uncensored	14	**Mean**	**0.1060**
Censored	0	**Lognormal mean**	**0.1063**
Detection limit or PQL		**Std. devn.**	**0.02778**
Method detection limit		**Median**	**0.1025**
TOTAL	14	**Min.**	**0.059**
		Max.	**0.171**

Lognormal distribution?		Normal distribution?	
r-squared is:	**0.956**	r-squared is:	0.932

Recommendations:

Use lognormal distribution.

Compliance Calculations

MW-5A Arsenic Data (2009-2012)

Concentration (ug/L)	Date (mm/dd/yy)
0.063	6/2/09
0.086	3/23/09
0.113	3/23/11
0.124	6/9/10
0.148	3/6/12
0.153	10/28/10
0.16	12/28/10
0.169	12/5/11
0.18	9/26/11
0.182	3/3/10
0.184	9/30/09
0.229	12/8/09
0.259	6/2/11

Distribution and Summary Stats by the MCTA*Stat* Method

		Summary Statistics	
Number of samples			
Uncensored	13	**Mean**	**0.1577**
Censored	0	**Lognormal mean**	**0.1596**
Detection limit or PQL		**Std. devn.**	**0.05371**
Method detection limit		**Median**	**0.1600**
TOTAL	13	**Min.**	**0.063**
		Max.	**0.259**

Lognormal distribution?		Normal distribution?	
r-squared is:	**0.930**	r-squared is:	0.975

Recommendations:

Use lognormal distribution.

OW-2 Arsenic Data

Concentration (ug/L)	Date (mm/dd/yy)
0.16	9/24/97
0.215	1/27/11
0.48	4/25/95

Distribution and Summary Stats by the MCTA*Stat* Method

Number of samples		Uncensored values	
Uncensored	3	Mean	0.2850
Censored	0	Lognormal mean	0.2993
Detection limit or PQL		Std. devn.	0.17110
Method detection limit		Median	0.2150
TOTAL	3	Min.	0.16
		Max.	0.48

Lognormal distribution? Normal distribution?

r-squared is: r-squared is:

Recommendations:

Unable to analyze probability plot for lognormal case.

Unable to analyze probability plot for normal case.

Consult Statistical Guidance document

OW-4 Arsenic Data

Concentration (ug/L)	Date (mm/dd/yy)
1.68	12/28/10
1.8	9/24/97
2.77	4/25/95

Distribution and Summary Stats by the MCTA*Stat* Method

Number of samples		Uncensored values	
Uncensored	3	Mean	2.0833
Censored	0	Lognormal mean	2.1069
Detection limit or PQL		Std. devn.	0.59769
Method detection limit		Median	1.8000
TOTAL	3	Min.	1.68
		Max.	2.77

Lognormal distribution?	Normal distribution?
r-squared is:	r-squared is:

Recommendations:

Unable to analyze probability plot for lognormal case.

Unable to analyze probability plot for normal case.

Consult Statistical Guidance document

ATTACHMENT D

Background Calculations Using MCTA*Stat*

0.106	MW-1
0.16	MW-5A
0.215	OW-2
0.253	OW-9
0.719	OW-1
1.68	OW-4

Calculation of Arsenic Background for Olalla Landfill

MTCA*Stat* 3.0

Number of samples		Uncensored values	
Uncensored	6	Mean	0.52
Censored	0	Lognormal mean	0.55
TOTAL	6	Std. devn.	0.61
		Median	0.234
		Min.	0.106
		Max.	1.68

Lognormal distribution?	Normal distribution?
r-squared is: 0.92	r-squared is: 0.73

Recommendations:

Use lognormal distribution.

Distribution selection	Enter percentile	Value corresponding to that percentile is:
1	90	1.44
1 = Lognormal	50th	0.32
2 = Normal	4 X 50th	1.29
3 = Nonparametric method	Coefficient of Variation = 1.72	

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TECHNICAL MEMORANDUM

Date:	December 23, 2013
To:	File
From:	David Dinkuhn
Subject:	Background Calculations for Iron and Manganese
Project Number:	215-1578-121
Project Name:	Olalla Landfill Remedial Investigation/Feasibility Study

STATISTICAL METHODS

Manganese and iron data for up gradient well MW-1, cross-gradient well MW-5A, and four off-site drinking water wells (OW1, OW2, OW4, and OW9) were used to calculate the background concentrations at the Olalla Landfill using the data evaluation procedures for arsenic described in the Parametrix letter to the Department of Ecology dated August 13, 2012. The 2009 through 2012 data were selected to represent background because they showed lower variability due to improved sampling procedures. For Wells MW-1 and MW-5A, the data evaluated were collected during the 3-year period from 2009 to 2012. For the off-site Wells OW-1, OW-2, OW-4 and OW-9, data consisted of the most recent data value collected during the RI/FS (samples collected in December 2010 and January 2011).

The manganese and iron data for MW-1 and MW-5A were converted from mg/L to µg/L and tested for normality using the probability plot method described by the Washington Department of Ecology (1992) for Model Toxic Control Act (MTCA) site cleanup work. Non-detects were evaluated as recorded in the data sets (equal to the method detection limit (MDL) or reporting limit (RL)) to be consistent with data from the off-site wells. Subsequently, the 50th and 90th percentiles of data from the 2009–2012 period were calculated, and background concentrations were determined in preparation for establishing cleanup levels for manganese and iron at the landfill. Non-detects were evaluated as one-half MDL.

MANGANESE

The manganese data for MW-1 (n=14) are neither log normally or normally distributed (r^2 = 0.42 and 0.42 respectively) with a median = 5 µg/L. The manganese data for MW-5A (n=14) are neither log normally or normally distributed (r^2 = 0.44 and 0.44 respectively) with a median = 5 µg/L.

These median data were combined as a data set with the manganese values for the off-site wells. The 90th and 50th percentiles were calculated using the log transformed data as described by Ecology (1992). The values of the percentiles are not applicable (N/A) and 2.5 respectively and the coefficient of variation (CV) is N/A. Non-parametric estimates of the 90th percentile and the CV cannot be calculated due to the small size of the data set. Although the 90th percentile cannot be estimated, that value must be greater than 32 (the highest value and rank of the manganese data set). The Ecology guidance (1992) indicates that the background value should be set at four times the 50th percentile when the 90th percentile is greater than four times the 50th percentile. Therefore, the background concentration of iron in groundwater at the Olalla Landfill was calculated to be 10 µg/L. These

results were verified by hand calculation as shown in Example 5 of the Ecology guidance document (1992). A copy of the spreadsheets, including data and calculations, are attached to this memorandum.

IRON

The iron data for MW-1 (n=14) are neither log normally or normally distributed (r^2 = 0.50 and 0.48 respectively) with a median = 20 µg/L. The iron data for MW-5A (n=14) could not be analyzed for log normal or normal distribution because all values but one were identical and all were non-detects. The MW-5A data have a median = 20 µg/L.

These median data were combined as a data set with the iron values for the off-site wells. The 90th and 50^{th} percentiles were calculated using the non-parametric method as described by Ecology (1992). The values of the percentiles are N/A and 10.00 respectively and the CV is N/A. Non-parametric estimates of the 90th percentile and the CV cannot be calculated due to the small size of the data set. Although the 90th percentile cannot be estimated, that value must be greater than 106 (the highest value and rank of the iron data set). The Ecology guidance (1992) indicates that the background value should be set at four times the 50th percentile when the 90th percentile is greater than four times the 50th percentile. Therefore the background concentration of iron in groundwater at the Olalla Landfill was calculated to be 40 µg/L. These results were verified by hand calculation as shown in Example 5 of the Ecology guidance document (1992). Copies of the spreadsheets, including data and calculations, are attached to this memorandum.

REFERENCES

Blakely, N. 1992. Statistical Guidance for Ecology Site Managers. Washington Department of Ecology. Olympia, Washington.

Attachments

Attachment A

Distribution and Summary Statistics

20	3/23/2009
20	6/2/2009
20	9/30/2009
20	12/8/2009
20	12/28/2010
20	3/23/2011
20	6/1/2011
20	9/26/2011
20	12/5/2011
20	3/6/2012
20	6/21/2012
25.1	10/28/2010
47	3/3/2010
50	6/9/2010

MW-1 Iron_ug/L (2009-2012)

MTCA*Stat* 3.0

Number of samples		Uncensored values	
Uncensored	14	Mean	24.44
Censored	0	Lognormal mean	24.28
TOTAL	14	Std. devn.	10.30
		Median	**20**
		Min.	20
		Max.	50

Lognormal distribution?	Normal distribution?
r-squared is: 0.50	r-squared is: 0.48

Recommendations:

Use nonparametric method.

~~Distribution selection~~	~~Enter percentile~~	~~Value corresponding to that percentile is:~~
~~1~~	~~90~~	
~~1 = Lognormal~~	~~50th~~	
~~2 = Normal~~	~~4 X 50th~~	
~~3 = Nonparametric method~~		

5	3/23/2009
5	6/2/2009
5	9/30/2009
5	12/8/2009
5	3/3/2010
5	6/9/2010
5	6/1/2011
5	12/5/2011
5	3/6/2012
5	6/21/2012
5	10/28/2010
5	3/23/2011
10	12/28/2010
10	9/26/2011

MW-1_ug/L Manganese (2009-2012)

MTCA*Stat* 3.0

Number of samples		Uncensored values	
Uncensored	14	Mean	5.71
Censored	0	Lognormal mean	5.70
TOTAL	14	Std. devn.	1.82
		Median	**5**
		Min.	5
		Max.	10

Lognormal distribution? r-squared is: 0.42

Normal distribution? r-squared is: 0.42

Recommendations:

Use nonparametric method.

~~Distribution selection~~

~~1~~

~~1 = Lognormal~~

~~2 = Normal~~

~~3 = Nonparametric method~~

~~Enter percentile~~

~~90~~

~~50th~~

~~4 X 50th~~

~~Value corresponding to that percentile is:~~

10	10/28/2010	**MW-5A_ug/L Iron (2009-2012)**
20	3/23/2009	
20	6/2/2009	
20	9/30/2009	
20	12/8/2009	
20	3/3/2010	
20	6/9/2010	
20	12/28/2010	
20	3/23/2011	
20	6/2/2011	
20	9/26/2011	
20	12/5/2011	
20	3/6/2012	

MTCA*Stat* 3.0

Number of samples		Uncensored values	
Uncensored	13	Mean	19.23
Censored	0	Lognormal mean	19.32
TOTAL	13	Std. devn.	2.77
		Median	**20**
		Min.	10
		Max.	20

Lognormal distribution?	Normal distribution?
r-squared is:	r-squared is:

Recommendations:

Unable to analyze probability plot for lognormal case.
Unable to analyze probability plot for normal case.
If data are OK, use nonparametric method.

~~Distribution selection~~	~~Enter percentile~~	~~Value corresponding to that percentile is:~~
~~1~~	~~90~~	
~~1 = Lognormal~~	~~50th~~	
~~2 = Normal~~	~~4 X 50th~~	
~~3 = Nonparametric method~~		

5	3/23/2009	**MW-5A_ug/L Manganese (2009-2012)**
5	6/2/2009	
5	9/30/2009	
5	12/8/2009	
5	3/3/2010	
5	6/9/2010	
5	12/28/2010	
5	6/2/2011	
5	9/26/2011	
5	12/5/2011	
5	3/6/2012	
10	10/28/2010	
10	3/23/2011	

MTCA*Stat* 3.0

Number of samples		Uncensored values	
Uncensored	13	Mean	5.77
Censored	0	Lognormal mean	5.75
TOTAL	13	Std. devn.	1.88
		Median	5
		Min.	5
		Max.	10

Lognormal distribution?	Normal distribution?
r-squared is: 0.44	r-squared is: 0.44

Recommendations:

Use nonparametric method.

~~Distribution selection~~

~~1~~

~~1 = Lognormal~~

~~2 = Normal~~

~~3 = Nonparametric method~~

~~Enter percentile~~

~~90~~

~~50th~~

~~4 X 50th~~

~~Value corresponding to that percentile is:~~

Attachment B

Background Calculations Using MTCA*Stat*

10	MW-1	**Calculation of Iron Background for Olalla Landfill (NDs = [1/2 MDL or RL])**
10	MW-5A	
10	OW1	
10	OW2	
71	OW9	
106	OW4	

MTCA*Stat* 3.0

Number of samples		Uncensored values	
Uncensored	6	Mean	36.17
Censored	0	Lognormal mean	38.60
TOTAL	6	Std. devn.	42.02
		Median	**10**
		Min.	10
		Max.	106

Lognormal distribution?	Normal distribution?
r-squared is: 0.69	r-squared is: 0.71

Recommendations:

Use nonparametric method.

Distribution selection	Enter percentile	Value corresponding to that percentile is:
3	**90**	**N/A**
1 = Lognormal	**50th**	**10.00**
2 = Normal	**4 X 50th**	**40.00**
3 = Nonparametric method	**Coefficient of Variation = N/A**	

2.5	MW-1	**Calculation of Mn Background for Olalla Landfill (NDs = [1/2 MDL or RL])**
2.5	MW-5A	
2.5	OW1	
2.5	OW2	
2.5	OW9	
32	OW4	

MTCA*Stat* 3.0

Number of samples		Uncensored values	
Uncensored	6	Mean	7.42
Censored	0	Lognormal mean	6.57
TOTAL	6	Std. devn.	12.04
		Median	**2.5**
		Min.	2.5
		Max.	32

Lognormal distribution?	Normal distribution?
r-squared is:	r-squared is:

Recommendations:

Unable to analyze probability plot for lognormal case.
Unable to analyze probability plot for normal case.
If data are OK, use nonparametric method.

Distribution selection	Enter percentile	Value corresponding to that percentile is:
3	**90**	**N/A**
1 = Lognormal	**50th**	**2.50**
2 = Normal	**4 X 50th**	**10.00**
3 = Nonparametric method	**Coefficient of Variation = N/A**	

Appendix I

Groundwater and Surface Water Laboratory Data Sheets

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A1	Matrix:	Water
Sample ID No.:	OL-MW-1	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/23/11	Dilution Factor:	1
Date Received:	03/24/11		
Date Analyzed	03/31/11	Analyst:	T. Meadows
Date of Report:	03/31/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110331\	0601006.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U
	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U
	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U
	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A1**	Matrix:	Water
Sample ID No.:	**OL-MW-1**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/23/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**0601006.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	79%	66-118%	66-118%				
	Toluene-d8	105%	51-143%	51-143%				
	4-Bromofluorobenzene	92%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A3**	Matrix:	Water
Sample ID No.:	**OL-MW-2**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/23/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**1001010.D**	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A3**	Matrix:	Water
Sample ID No.:	**OL-MW-2**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/23/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**1001010.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	77%	66-118%	66-118%				
	Toluene-d8	108%	51-143%	51-143%				
	4-Bromofluorobenzene	86%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A4	Matrix:	Water
Sample ID No.:	OL-MW-4	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/23/11	Dilution Factor:	1
Date Received:	03/24/11		
Date Analyzed	03/31/11	Analyst:	T. Meadows
Date of Report:	03/31/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110331\	1101011.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A4**	Matrix:	Water
Sample ID No.:	**OL-MW-4**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/23/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**1101011.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	72%	66-118%	66-118%				
	Toluene-d8	104%	51-143%	51-143%				
	4-Bromofluorobenzene	84%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A2	Matrix:	Water
Sample ID No.:	OL-MW-5A	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/23/11	Dilution Factor:	1
Date Received:	03/24/11		
Date Analyzed	03/31/11	Analyst:	T. Meadows
Date of Report:	03/31/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110331\	0801008.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U
	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U
	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U
	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A2**	Matrix:	Water
Sample ID No.:	**OL-MW-5A**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/23/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**0801008.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	80%	66-118%	66-118%				
	Toluene-d8	106%	51-143%	51-143%				
	4-Bromofluorobenzene	92%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A2 Dup**	Matrix:	Water
Sample ID No.:	**OL-MW-5A Duplicate**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/23/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**0901009.D**	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U
	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U
	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U
	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A2 Dup**	Matrix:	Water
Sample ID No.:	**OL-MW-5A Duplicate**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/23/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**0901009.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	70%	66-118%	66-118%				
	Toluene-d8	106%	51-143%	51-143%				
	4-Bromofluorobenzene	84%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A7	Matrix:	Water
Sample ID No.:	OL-ER	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/23/11	Dilution Factor:	1
Date Received:	03/24/11		
Date Analyzed	03/31/11	Analyst:	T. Meadows
Date of Report:	03/31/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110331\	1201012.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A7**	Matrix:	Water
Sample ID No.:	**OL-ER**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/23/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**1201012.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	72%	66-118%	66-118%				
	Toluene-d8	109%	51-143%	51-143%				
	4-Bromofluorobenzene	88%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A1 MS**	Matrix:	Water
Sample ID No.:	**BKS00147A1 MS**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**3/23/11**	Dilution Factor:	**1**
Date Received:	**3/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**3/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**0701007.D**	

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	79%	66%	118%
Toluene-d8	110%	51%	143%
4-Bromofluorobenzene	86%	63%	119%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	102%	75%	125%
Benzene	105%	75%	125%
Trichloroethene	112%	75%	125%
Toluene	112%	75%	125%
Chlorobenzene	113%	75%	125%

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	3/31/11-LCS	Matrix:	Water
Sample ID No.:	3/31/11-LCS	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	n/a	Dilution Factor:	1
Date Received:	n/a		
Date Analyzed	03/31/11	Analyst:	T. Meadows
Date of Report:	3/31/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110331\	0501005.D	

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	108%	66%	118%
Toluene-d8	107%	51%	143%
4-Bromofluorobenzene	107%	63%	119%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	103%	75%	125%
Benzene	102%	75%	125%
Trichloroethene	102%	75%	125%
Toluene	102%	75%	125%
Chlorobenzene	107%	75%	125%

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**3/31/11-MB**	Matrix:	Water
Sample ID No.:	**Method Blank**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**n/a**	Dilution Factor:	**1**
Date Received:	**n/a**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**0401004.D**	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**3/31/11-MB**	Matrix:	Water
Sample ID No.:	**Method Blank**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**n/a**	Dilution Factor:	**1**
Date Received:	**n/a**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**0401004.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	106%	66-118%	66-118%				
	Toluene-d8	104%	51-143%	51-143%				
	4-Bromofluorobenzene	106%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A8	Matrix:	Water
Sample ID No.:	OL-TB	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/15/11	Dilution Factor:	1
Date Received:	03/24/11		
Date Analyzed	03/31/11	Analyst:	T. Meadows
Date of Report:	03/31/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110331\	1301013.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U
	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U
	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U
	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A8**	Matrix:	Water
Sample ID No.:	**OL-TB**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/15/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**1301013.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	74%	66-118%	66-118%				
	Toluene-d8	106%	51-143%	51-143%				
	4-Bromofluorobenzene	83%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Aquatic Research Inc.
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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A1	Matrix:	Water
Sample ID No.:	OL-MW-1	Sample Vol. (ml)	1050
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0601006.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.76	U	86-73-7	Fluorene	0.76	U
76-01-7	Pentachloroethane	0.76	U	84-66-2	Diethyl phthalate	0.76	U
62-53-3	Aniline	0.76	U	100-01-6	4-Nitroaniline	0.76	U
108-95-2	Phenol	0.76	U	7005-72-3	4-Chlorophenyl phenyl ether	0.76	U
111-44-4	Bis(2-chloroethyl) ether	0.76	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.76	U
95-57-8	2-Chlorophenol	0.76	U	86-30-6	N-Nitrosodiphenyl amine	0.76	U
541-73-1	1,3-Dichlorobenzene	0.76	U	103-33-3	Azobenzene	0.76	U
106-46-7	1,4-Dichlorobenzene	0.76	U	101-55-3	4-Bromophenyl phenyl ether	0.76	U
95-50-1	1,2-Dichlorobenzene	0.76	U	319-84-6	a-BHC	0.76	U
100-51-6	Benzyl Alcohol	0.76	U	118-74-1	Hexachlorobenzene	0.76	U
95-48-7	2-Methyl phenol	0.76	U	319-85-7	b-BHC	0.76	U
108-60-1	Bis(2-chloroisopropyl) ether	0.76	U	87-86-5	Pentachlorophenol	0.76	U
98-86-2	Acetophenone	0.76	U	58-89-9	g-BHC (Lindane)	0.76	U
67-72-1	Hexachloroethane	0.76	U	85-01-8	Phenanthrene	0.76	U
621-64-7	N-Nitroso-n-propyl amine	0.76	U	120-12-7	Anthracene	0.76	U
106-44-5	4-Methyl phenol	0.76	U	319-86-8	d-BHC	0.76	U
98-95-3	Nitrobenzene	0.76	U	84-74-2	Di-n-butyl phthalate	0.76	U
100-75-4	N-nitrosopiperidine	0.76	U	76-44-8	Heptachlor	0.76	U
78-59-1	Isophorone	0.76	U	309-00-2	Aldrin	0.76	U
88-75-5	2-Nitrophenol	0.76	U	1024-57-3	Heptachlor epoxide	0.76	U
105-67-9	2,4-Dimethylphenol	0.76	U	206-44-0	Fluoranthrene	0.76	U
65-85-0	Benzoic Acid	0.76	U	129-00-0	Pyrene	0.76	U
111-91-1	Bis(2-chloroethoxy) methane	0.76	U	959-98-8	Endosulfan I	0.76	U
120-83-2	2,4-Dichlorophenol	0.76	U	92-87-5	Benzidine	0.76	U
120-82-1	1,2,4-Trichlorobenzene	0.76	U	72-55-9	4,4'-DDE	0.76	U
91-20-3	Naphthalene	0.76	U	60-57-1	Dieldrin	0.76	U
106-47-8	4-Chloroaniline	0.76	U	72-20-8	Endrin	0.76	U
87-68-3	Hexachlorobutadiene	0.76	U	33213-65-9	Endosulfan II	0.76	U
924-16-3	N-nitrosodi-n-butylamine	0.76	U	72-54-8	4,4'-DDD	0.76	U
59-50-7	4-Chloro-3-methyl phenol	0.76	U	7421-92-4	Endrin aldehyde	0.76	U
91-57-6	2-Methyl naphthalene	0.76	U	85-68-7	Butyl benzenyl phthalate	0.76	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.76	U	1031-07-8	Endosulfan sulfate	0.76	U
77-47-4	Hexachlorocylcopentadiene	0.76	U	50-29-3	4,4'-DDT	0.76	U
88-06-2	2,4,6-Trichlorophenol	0.76	U	56-55-3	Benzo(a)anthracene	0.76	U
95-95-4	2,4,5-Trichlorophenol	0.76	U	218-01-9	Chrysene	0.76	U
91-58-7	2-Chloronaphthalene	0.76	U	91-94-1	3,3'-Dichlorobenzidine	0.76	U
88-74-4	2-Nitroaniline	0.76	U	72-43-5	Methoxychlor	0.76	U
131-11-3	Dimethyl phthalate	0.76	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.76	U
208-96-8	Acenaphthylene	0.76	U	117-84-0	Di-n-octyl phthalate	0.76	U
606-20-2	2,6-Dinitrotoluene	0.76	U	205-97-2	Benzo(b)fluoranthrene	0.76	U
99-09-2	3-Nitroaniline	0.76	U	207-08-9	Benzo(k)fluoranthrene	0.76	U
83-32-9	Acenaphthene	0.76	U	50-32-8	Benzo(a)pyrene	0.76	U
51-28-5	2,4-Dinitrophenol	0.76	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.76	U
132-64-9	Dibenzofuran	0.76	U	53-70-3	Dibenzo(a,h)anthracene	0.76	U
100-02-7	4-Nitrophenol	0.76	U	91-24-2	Benzo(g,h,i)perlyene	0.76	U
121-14+2	2,4-Dinitrotoluene	0.76	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.76	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A1	Matrix:	Water
Sample ID No.:	OL-MW-1	Sample Vol. (ml)	1050
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\		0601006.D

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	50%	24-132%	65-135%
Phenol-d5	35%	0-105%	65-135%
Nitrobenzene-d5	99%	24-136%	65-135%
2-Fluorobiphenyl	81%	41-134%	65-135%
2,4,6-Tribromophenol	43%	0-183%	65-135%
p-Terphenyl-d14	125%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.76	U		2303-16-4	Diallate	0.76	U
100-52-7	Benzaldehyde	0.76	U		298-02-2	Phorate	0.76	U
930-55-2	N-nitrosopyrrolidine	0.76	U		99-35-4	1,3,5-Trinitrobenzene	0.76	U
95-53-4	o-Toluidine	0.76	U		62-44-2	Phenacetin	0.76	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.76	U		60-51-5	Dimethoate	0.76	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.76	U		1912-24-9	Atrazine	0.76	U
1888-71-7	Hexachloropropene	0.76	U		92-67-1	4-Aminobiphenyl	0.76	U
87-65-0	2,6-Dichlorophenol	0.76	U		82-68-8	Pentachloronitrobenzene	0.76	U
87-65-0	Caprolactam	0.76	U		23950-58-5	Pronamide	0.76	U
106-50-3	p-Phenylenediamine	0.76	U		298-04-4	Disulfoton	0.76	U
120-58-1	Isosafrole	0.76	U		298-00-0	Methyl parathion	0.76	U
90-12-0	1-Methyl naphthalene	0.76	U		56-38-2	Parathion	0.76	U
94-59-7	Safrole	0.76	U		91-80-5	Methapyrilene	0.76	U
92-52-4	Biphenyl	0.76	U		465-73-6	Isodrin	0.76	U
101-84-8	Diphenyl ether	0.76	U		60-11-7	p-(dimethyl amino) azobenzene	0.76	U
130-15-4	1,4-Naphthoquinone	0.76	U		510-15-0	Chlorobenzilate	0.76	U
99-65-0	1,3-Dinitrobenzene	0.76	U		143-50-0	Kepone	0.76	U
608-93-5	Pentachlorobenzene	0.76	U		119-93-7	3,3'-Dimethylbenzidine	0.76	U
134-32-7	1-Naphthalenamine	0.76	U		52-85-7	Famphur	0.76	U
91-59-8	2-Naphthalenamine	0.76	U		53-96-3	2-Acetylaminofluorene	0.76	U
99-55-8	5-Nitro-o-Toluidine	0.76	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.76	U
297-97-2	Thionazin (Zinophos)	0.76	U		56-49-5	3-Methylcholanthrene	0.76	U
122-39-4	Diphenylamine	0.76	U		226-36-8	Dibenzo(a,h)acridine	0.76	U
3689-24-5	Sulfotep	0.76	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A3	Matrix:	Water
Sample ID No.:	OL-MW-2	Sample Vol. (ml)	1060
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0801008.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A3	Matrix:	Water
Sample ID No.:	OL-MW-2	Sample Vol. (ml)	1060
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0801008.D	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	73%	24-132%	65-135%
Phenol-d5	51%	0-105%	65-135%
Nitrobenzene-d5	108%	24-136%	65-135%
2-Fluorobiphenyl	82%	41-134%	65-135%
2,4,6-Tribromophenol	46%	0-183%	65-135%
p-Terphenyl-d14	137%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A4	Matrix:	Water
Sample ID No.:	OL-MW-4	Sample Vol. (ml)	1070
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0901009.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A4	Matrix:	Water
Sample ID No.:	OL-MW-4	Sample Vol. (ml)	1070
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0901009.D	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	50%	24-132%	65-135%
Phenol-d5	43%	0-105%	65-135%
Nitrobenzene-d5	110%	24-136%	65-135%
2-Fluorobiphenyl	96%	41-134%	65-135%
2,4,6-Tribromophenol	38%	0-183%	65-135%
p-Terphenyl-d14	117%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A2	Matrix:	Water
Sample ID No.:	OL-MW-5A	Sample Vol. (ml)	1070
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0701007.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A2	Matrix:	Water
Sample ID No.:	OL-MW-5A	Sample Vol. (ml)	1070
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0701007.D	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	51%	24-132%	65-135%
Phenol-d5	43%	0-105%	65-135%
Nitrobenzene-d5	98%	24-136%	65-135%
2-Fluorobiphenyl	78%	41-134%	65-135%
2,4,6-Tribromophenol	37%	0-183%	65-135%
p-Terphenyl-d14	102%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A7	Matrix:	Water
Sample ID No.:	OL-ER	Sample Vol. (ml)	1040
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	1001010.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.77	U	86-73-7	Fluorene	0.77	U
76-01-7	Pentachloroethane	0.77	U	84-66-2	Diethyl phthalate	0.77	U
62-53-3	Aniline	0.77	U	100-01-6	4-Nitroaniline	0.77	U
108-95-2	Phenol	0.77	U	7005-72-3	4-Chlorophenyl phenyl ether	0.77	U
111-44-4	Bis(2-chloroethyl) ether	0.77	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.77	U
95-57-8	2-Chlorophenol	0.77	U	86-30-6	N-Nitrosodiphenyl amine	0.77	U
541-73-1	1,3-Dichlorobenzene	0.77	U	103-33-3	Azobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.77	U	101-55-3	4-Bromophenyl phenyl ether	0.77	U
95-50-1	1,2-Dichlorobenzene	0.77	U	319-84-6	a-BHC	0.77	U
100-51-6	Benzyl Alcohol	0.77	U	118-74-1	Hexachlorobenzene	0.77	U
95-48-7	2-Methyl phenol	0.77	U	319-85-7	b-BHC	0.77	U
108-60-1	Bis(2-chloroisopropyl) ether	0.77	U	87-86-5	Pentachlorophenol	0.77	U
98-86-2	Acetophenone	0.77	U	58-89-9	g-BHC (Lindane)	0.77	U
67-72-1	Hexachloroethane	0.77	U	85-01-8	Phenanthrene	0.77	U
621-64-7	N-Nitroso-n-propyl amine	0.77	U	120-12-7	Anthracene	0.77	U
106-44-5	4-Methyl phenol	0.77	U	319-86-8	d-BHC	0.77	U
98-95-3	Nitrobenzene	0.77	U	84-74-2	Di-n-butyl phthalate	0.77	U
100-75-4	N-nitrosopiperidine	0.77	U	76-44-8	Heptachlor	0.77	U
78-59-1	Isophorone	0.77	U	309-00-2	Aldrin	0.77	U
88-75-5	2-Nitrophenol	0.77	U	1024-57-3	Heptachlor epoxide	0.77	U
105-67-9	2,4-Dimethylphenol	0.77	U	206-44-0	Fluoranthrene	0.77	U
65-85-0	Benzoic Acid	0.77	U	129-00-0	Pyrene	0.77	U
111-91-1	Bis(2-chloroethoxy) methane	0.77	U	959-98-8	Endosulfan I	0.77	U
120-83-2	2,4-Dichlorophenol	0.77	U	92-87-5	Benzidine	0.77	U
120-82-1	1,2,4-Trichlorobenzene	0.77	U	72-55-9	4,4'-DDE	0.77	U
91-20-3	Naphthalene	0.77	U	60-57-1	Dieldrin	0.77	U
106-47-8	4-Chloroaniline	0.77	U	72-20-8	Endrin	0.77	U
87-68-3	Hexachlorobutadiene	0.77	U	33213-65-9	Endosulfan II	0.77	U
924-16-3	N-nitrosodi-n-butylamine	0.77	U	72-54-8	4,4'-DDD	0.77	U
59-50-7	4-Chloro-3-methyl phenol	0.77	U	7421-92-4	Endrin aldehyde	0.77	U
91-57-6	2-Methyl naphthalene	0.77	U	85-68-7	Butyl benzenyl phthalate	0.77	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.77	U	1031-07-8	Endosulfan sulfate	0.77	U
77-47-4	Hexachlorocylcopentadiene	0.77	U	50-29-3	4,4'-DDT	0.77	U
88-06-2	2,4,6-Trichlorophenol	0.77	U	56-55-3	Benzo(a)anthracene	0.77	U
95-95-4	2,4,5-Trichlorophenol	0.77	U	218-01-9	Chrysene	0.77	U
91-58-7	2-Chloronaphthalene	0.77	U	91-94-1	3,3'-Dichlorobenzidine	0.77	U
88-74-4	2-Nitroaniline	0.77	U	72-43-5	Methoxychlor	0.77	U
131-11-3	Dimethyl phthalate	0.77	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.77	U
208-96-8	Acenaphthylene	0.77	U	117-84-0	Di-n-octyl phthalate	0.77	U
606-20-2	2,6-Dinitrotoluene	0.77	U	205-97-2	Benzo(b)fluoranthrene	0.77	U
99-09-2	3-Nitroaniline	0.77	U	207-08-9	Benzo(k)fluoranthrene	0.77	U
83-32-9	Acenaphthene	0.77	U	50-32-8	Benzo(a)pyrene	0.77	U
51-28-5	2,4-Dinitrophenol	0.77	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.77	U
132-64-9	Dibenzofuran	0.77	U	53-70-3	Dibenzo(a,h)anthracene	0.77	U
100-02-7	4-Nitrophenol	0.77	U	91-24-2	Benzo(g,h,i)perlyene	0.77	U
121-14+2	2,4-Dinitrotoluene	0.77	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.77	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A7	Matrix:	Water
Sample ID No.:	OL-ER	Sample Vol. (ml)	1040
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	1001010.D	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	53%	24-132%	65-135%
Phenol-d5	49%	0-105%	65-135%
Nitrobenzene-d5	96%	24-136%	65-135%
2-Fluorobiphenyl	84%	41-134%	65-135%
2,4,6-Tribromophenol	28%	0-183%	65-135%
p-Terphenyl-d14	96%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.77	U		2303-16-4	Diallate	0.77	U
100-52-7	Benzaldehyde	0.77	U		298-02-2	Phorate	0.77	U
930-55-2	N-nitrosopyrrolidine	0.77	U		99-35-4	1,3,5-Trinitrobenzene	0.77	U
95-53-4	o-Toluidine	0.77	U		62-44-2	Phenacetin	0.77	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.77	U		60-51-5	Dimethoate	0.77	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.77	U		1912-24-9	Atrazine	0.77	U
1888-71-7	Hexachloropropene	0.77	U		92-67-1	4-Aminobiphenyl	0.77	U
87-65-0	2,6-Dichlorophenol	0.77	U		82-68-8	Pentachloronitrobenzene	0.77	U
87-65-0	Caprolactam	0.77	U		23950-58-5	Pronamide	0.77	U
106-50-3	p-Phenylenediamine	0.77	U		298-04-4	Disulfoton	0.77	U
120-58-1	Isosafrole	0.77	U		298-00-0	Methyl parathion	0.77	U
90-12-0	1-Methyl naphthalene	0.77	U		56-38-2	Parathion	0.77	U
94-59-7	Safrole	0.77	U		91-80-5	Methapyrilene	0.77	U
92-52-4	Biphenyl	0.77	U		465-73-6	Isodrin	0.77	U
101-84-8	Diphenyl ether	0.77	U		60-11-7	p-(dimethyl amino) azobenzene	0.77	U
130-15-4	1,4-Naphthoquinone	0.77	U		510-15-0	Chlorobenzilate	0.77	U
99-65-0	1,3-Dinitrobenzene	0.77	U		143-50-0	Kepone	0.77	U
608-93-5	Pentachlorobenzene	0.77	U		119-93-7	3,3'-Dimethylbenzidine	0.77	U
134-32-7	1-Naphthalenamine	0.77	U		52-85-7	Famphur	0.77	U
91-59-8	2-Naphthalenamine	0.77	U		53-96-3	2-Acetylaminofluorene	0.77	U
99-55-8	5-Nitro-o-Toluidine	0.77	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.77	U
297-97-2	Thionazin (Zinophos)	0.77	U		56-49-5	3-Methylcholanthrene	0.77	U
122-39-4	Diphenylamine	0.77	U		226-36-8	Dibenzo(a,h)acridine	0.77	U
3689-24-5	Sulfotep	0.77	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
10/14/1Cohy/Mass Spectrometry

Case File Number:	**3/25/11-LCS**	Matrix:	**Water**
Sample ID No.:	**Lab Control Spike**	Sample Vol. (ml)	**1000**
Date Collected:	**n/a**	Final Volume (ml)	**2.0**
Date Received:	**n/a**	Dilution Factor:	**1**
Date Analyzed	**04/06/11**		
Date of Report:	**04/08/11**	Analyst:	**T. Meadows**
		Supervisor's Initials:	
Data File Path:	**Q:\5973\8270\110406**	**0501005.D**	

		QC limits	
Surrogate Recoveries	%Rec.	**Water**	**Soil**
2-Fluorophenol	110%	24-132%	65-135%
Phenol-d5	68%	0-105%	65-135%
Nitrobenzene-d5	87%	24-136%	65-135%
2-Fluorobiphenyl	76%	41-134%	65-135%
2,4,6-Tribromophenol	37%	0-183%	65-135%
p-Terphenyl-d14	139%	80-141%	65-135%

		QC limits	
Matix Spike Recoveries	%Rec.	**Water**	**Soil**
Phenol	66%	50-150%	50-150%
2-Chlorophenol	77%	50-150%	50-150%
1,4-Dichlorobenzene	60%	50-150%	50-150%
N-Nitroso-n-propyl amine	57%	50-150%	50-150%
1,2,4-Trichlorobenzene	59%	50-150%	50-150%
4-Chloro-3-methyl phenol	77%	50-150%	50-150%
Acenaphthene	82%	50-150%	50-150%
4-Nitrophenol	47%	50-150%	50-150%
2,4-Dinitrotoluene	50%	50-150%	50-150%
Pentachlorophenol	0%	50-150%	50-150%
Pyrene	115%	50-150%	50-150%

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	3/25/11-MB	Matrix:	Water
Sample ID No.:	Method Blank	Sample Vol. (ml)	1000
Date Collected:	n/a	Final Volume (ml)	2.0
Date Received:	n/a	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0401004.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.80	U	86-73-7	Fluorene	0.80	U
76-01-7	Pentachloroethane	0.80	U	84-66-2	Diethyl phthalate	0.80	U
62-53-3	Aniline	0.80	U	100-01-6	4-Nitroaniline	0.80	U
108-95-2	Phenol	0.80	U	7005-72-3	4-Chlorophenyl phenyl ether	0.80	U
111-44-4	Bis(2-chloroethyl) ether	0.80	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.80	U
95-57-8	2-Chlorophenol	0.80	U	86-30-6	N-Nitrosodiphenyl amine	0.80	U
541-73-1	1,3-Dichlorobenzene	0.80	U	103-33-3	Azobenzene	0.80	U
106-46-7	1,4-Dichlorobenzene	0.80	U	101-55-3	4-Bromophenyl phenyl ether	0.80	U
95-50-1	1,2-Dichlorobenzene	0.80	U	319-84-6	a-BHC	0.80	U
100-51-6	Benzyl Alcohol	0.80	U	118-74-1	Hexachlorobenzene	0.80	U
95-48-7	2-Methyl phenol	0.80	U	319-85-7	b-BHC	0.80	U
108-60-1	Bis(2-chloroisopropyl) ether	0.80	U	87-86-5	Pentachlorophenol	0.80	U
98-86-2	Acetophenone	0.80	U	58-89-9	g-BHC (Lindane)	0.80	U
67-72-1	Hexachloroethane	0.80	U	85-01-8	Phenanthrene	0.80	U
621-64-7	N-Nitroso-n-propyl amine	0.80	U	120-12-7	Anthracene	0.80	U
106-44-5	4-Methyl phenol	0.80	U	319-86-8	d-BHC	0.80	U
98-95-3	Nitrobenzene	0.80	U	84-74-2	Di-n-butyl phthalate	0.80	U
100-75-4	N-nitrosopiperidine	0.80	U	76-44-8	Heptachlor	0.80	U
78-59-1	Isophorone	0.80	U	309-00-2	Aldrin	0.80	U
88-75-5	2-Nitrophenol	0.80	U	1024-57-3	Heptachlor epoxide	0.80	U
105-67-9	2,4-Dimethylphenol	0.80	U	206-44-0	Fluoranthrene	0.80	U
65-85-0	Benzoic Acid	0.80	U	129-00-0	Pyrene	0.80	U
111-91-1	Bis(2-chloroethoxy) methane	0.80	U	959-98-8	Endosulfan I	0.80	U
120-83-2	2,4-Dichlorophenol	0.80	U	92-87-5	Benzidine	0.80	U
120-82-1	1,2,4-Trichlorobenzene	0.80	U	72-55-9	4,4'-DDE	0.80	U
91-20-3	Naphthalene	0.80	U	60-57-1	Dieldrin	0.80	U
106-47-8	4-Chloroaniline	0.80	U	72-20-8	Endrin	0.80	U
87-68-3	Hexachlorobutadiene	0.80	U	33213-65-9	Endosulfan II	0.80	U
924-16-3	N-nitrosodi-n-butylamine	0.80	U	72-54-8	4,4'-DDD	0.80	U
59-50-7	4-Chloro-3-methyl phenol	0.80	U	7421-92-4	Endrin aldehyde	0.80	U
91-57-6	2-Methyl naphthalene	0.80	U	85-68-7	Butyl benzenyl phthalate	0.80	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.80	U	1031-07-8	Endosulfan sulfate	0.80	U
77-47-4	Hexachlorocylcopentadiene	0.80	U	50-29-3	4,4'-DDT	0.80	U
88-06-2	2,4,6-Trichlorophenol	0.80	U	56-55-3	Benzo(a)anthracene	0.80	U
95-95-4	2,4,5-Trichlorophenol	0.80	U	218-01-9	Chrysene	0.80	U
91-58-7	2-Chloronaphthalene	0.80	U	91-94-1	3,3'-Dichlorobenzidine	0.80	U
88-74-4	2-Nitroaniline	0.80	U	72-43-5	Methoxychlor	0.80	U
131-11-3	Dimethyl phthalate	0.80	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.80	U
208-96-8	Acenaphthylene	0.80	U	117-84-0	Di-n-octyl phthalate	0.80	U
606-20-2	2,6-Dinitrotoluene	0.80	U	205-97-2	Benzo(b)fluoranthrene	0.80	U
99-09-2	3-Nitroaniline	0.80	U	207-08-9	Benzo(k)fluoranthrene	0.80	U
83-32-9	Acenaphthene	0.80	U	50-32-8	Benzo(a)pyrene	0.80	U
51-28-5	2,4-Dinitrophenol	0.80	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.80	U
132-64-9	Dibenzofuran	0.80	U	53-70-3	Dibenzo(a,h)anthracene	0.80	U
100-02-7	4-Nitrophenol	0.80	U	91-24-2	Benzo(g,h,i)perlyene	0.80	U
121-14+2	2,4-Dinitrotoluene	0.80	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.80	U				

Aquatic Research Inc.
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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	3/25/11-MB	Matrix:	Water
Sample ID No.:	Method Blank	Sample Vol. (ml)	1000
Date Collected:	n/a	Final Volume (ml)	2.0
Date Received:	n/a	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0401004.D	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	50%	24-132%	65-135%
Phenol-d5	47%	0-105%	65-135%
Nitrobenzene-d5	92%	24-136%	65-135%
2-Fluorobiphenyl	86%	41-134%	65-135%
2,4,6-Tribromophenol	41%	0-183%	65-135%
p-Terphenyl-d14	118%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.80	U		2303-16-4	Diallate	0.80	U
100-52-7	Benzaldehyde	0.80	U		298-02-2	Phorate	0.80	U
930-55-2	N-nitrosopyrrolidine	0.80	U		99-35-4	1,3,5-Trinitrobenzene	0.80	U
95-53-4	o-Toluidine	0.80	U		62-44-2	Phenacetin	0.80	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.80	U		60-51-5	Dimethoate	0.80	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.80	U		1912-24-9	Atrazine	0.80	U
1888-71-7	Hexachloropropene	0.80	U		92-67-1	4-Aminobiphenyl	0.80	U
87-65-0	2,6-Dichlorophenol	0.80	U		82-68-8	Pentachloronitrobenzene	0.80	U
87-65-0	Caprolactam	0.80	U		23950-58-5	Pronamide	0.80	U
106-50-3	p-Phenylenediamine	0.80	U		298-04-4	Disulfoton	0.80	U
120-58-1	Isosafrole	0.80	U		298-00-0	Methyl parathion	0.80	U
90-12-0	1-Methyl naphthalene	0.80	U		56-38-2	Parathion	0.80	U
94-59-7	Safrole	0.80	U		91-80-5	Methapyrilene	0.80	U
92-52-4	Biphenyl	0.80	U		465-73-6	Isodrin	0.80	U
101-84-8	Diphenyl ether	0.80	U		60-11-7	p-(dimethyl amino) azobenzene	0.80	U
130-15-4	1,4-Naphthoquinone	0.80	U		510-15-0	Chlorobenzilate	0.80	U
99-65-0	1,3-Dinitrobenzene	0.80	U		143-50-0	Kepone	0.80	U
608-93-5	Pentachlorobenzene	0.80	U		119-93-7	3,3'-Dimethylbenzidine	0.80	U
134-32-7	1-Naphthalenamine	0.80	U		52-85-7	Famphur	0.80	U
91-59-8	2-Naphthalenamine	0.80	U		53-96-3	2-Acetylaminofluorene	0.80	U
99-55-8	5-Nitro-o-Toluidine	0.80	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.80	U
297-97-2	Thionazin (Zinophos)	0.80	U		56-49-5	3-Methylcholanthrene	0.80	U
122-39-4	Diphenylamine	0.80	U		226-36-8	Dibenzo(a,h)acridine	0.80	U
3689-24-5	Sulfotep	0.80	U					

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CASE FILE NUMBER:	BKS001-47,48	PAGE 1	
REPORT DATE:	04/06/11		
DATE SAMPLED:	03/23,24/11	DATE RECEIVED:	03/24,25/11

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

CASE NARRATIVE

Fifteen water samples were received by the laboratory in good condition. Analysis was performed according to the chain of custody received with the samples. Dissolved arsenic analysis was performed by ICP/MS by concentrating the samples 10 fold. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages. Organic data are included as separate reports.

SAMPLE DATA

SAMPLE ID	AMMONIA (mg/L)	NITRATE (mg/L)	NITRITE (mg/L)	TOC (mg/L)	COD (mg/L)	VINYL CHLORIDE (ug/L)
OL-MW-1	<0.010	0.254	<0.002	<0.250	<10.0	<0.02
OL-MW-5A	<0.010	0.192	<0.002	<0.250	<10.0	<0.02
OL-MW-2	<0.010	0.389	<0.002	<0.250	<10.0	<0.02
OL-MW-4	<0.010	0.536	<0.002	<0.250	<10.0	<0.02
OL-SW-3		0.080	0.002			
OL-SW-4		0.147	0.002			
OL-ER	<0.010	<0.010	<0.002	<0.250	<10.0	0.05
OL-TB						0.09
OL-MW-7	0.012	0.549	<0.002	0.370	<10.0	<0.02
OL-MW-8	<0.010	0.131	<0.002	<0.250	<10.0	<0.02
OL-MW-6	<0.010	0.011	<0.002	1.14	<10.0	<0.02
OL-MW-10	0.017	0.292	<0.002	3.04	<10.0	<0.02
OL-MW-3	<0.010	0.200	0.003	1.28	<10.0	<0.02
OL-TB						0.05
OL-MW-11	<0.010	0.550	<0.002	0.400	<10.0	<0.02

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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

SAMPLE DATA-CONTINUED

SAMPLE ID	CHLORIDE (mg/L)	SULFATE (mg/L)	TDS (mg/L)	CYANIDE (mg/L)	TOTAL COLIFORM (#/100mls)	FECAL COLIFORM (#/100mls)
OL-MW-1	2.64	4.03	85.0	<0.010	<2	
OL-MW-5A	2.05	3.82	148	<0.010	<2	
OL-MW-2	2.15	2.62	100	<0.010	2	
OL-MW-4	2.54	2.46	101	<0.010	4	
OL-SW-3						2
OL-SW-4						<2
OL-ER	<0.50	<1.00	21.0	<0.010	6	
OL-MW-7	1.25	3.08	109	<0.010	<2	
OL-MW-8	1.17	1.42	118	<0.010	<2	
OL-MW-6	1.25	5.84	109	<0.010	<2	
OL-MW-10	3.07	27.0	326	<0.010	<2	
OL-MW-3	2.74	49.2	212	<0.010	<2	
OL-MW-11	1.27	4.32	103	<0.010	<2	

	pH	ALKALINITY (mgCaCO3/L)	HCO3 (mgCaCO3/l)	CO3 (mgCaCO3/l)
OL-MW-1	6.58	60.8	38.3	<1.00
OL-MW-5A	6.92	72.7	57.3	<1.00
OL-MW-2	7.13	55.2	47.3	<1.00
OL-MW-4	7.17	68.1	59.1	<1.00
OL-ER	6.23	<1.00	<1.00	<1.00
OL-MW-7	6.98	67.0	54.3	<1.00
OL-MW-8	7.01	59.0	48.4	<1.00
OL-MW-6	6.92	67.5	53.2	<1.00
OL-MW-10	6.58	257	162	<1.00
OL-MW-3	6.36	134	67.8	<1.00
OL-MW-11	6.96	65.1	52.2	<1.00

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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

SAMPLE DATA-CONTINUED

	DISSOLVED METALS					
SAMPLE ID	ARSENIC (ug/L)	ANTIMONY (mg/L)	BARIUM (mg/L)	BERYLLIUM (mg/L)	CADMIUM (mg/L)	CHROMIUM (mg/L)
OL-MW-1	0.082	<0.0020	<0.005	<0.0010	<0.0010	0.0023
OL-MW-5A	0.113	<0.0020	<0.005	<0.0010	<0.0010	0.0036
OL-MW-2	0.517	<0.0020	<0.005	<0.0010	<0.0010	0.0034
OL-MW-4	0.188	<0.0020	<0.005	<0.0010	<0.0010	0.0024
OL-MW-7	0.327	<0.0020	<0.005	<0.0010	<0.0010	0.0035
OL-MW-8	1.49	<0.0020	<0.005	<0.0010	<0.0010	0.0013
OL-MW-6	0.689	<0.0020	<0.005	<0.0010	<0.0010	<0.0010
OL-MW-10	1.03	<0.0020	0.016	<0.0010	<0.0010	0.0020
OL-MW-3	0.087	<0.0020	0.012	<0.0010	<0.0010	0.0014
OL-MW-11	0.349	<0.0020	<0.005	<0.0010	<0.0010	0.0034

	DISSOLVED METALS					
SAMPLE ID	COBALT (mg/L)	COPPER (mg/L)	LEAD (mg/L)	SELENIUM (mg/L)	SILVER (mg/L)	THALLIUM (mg/L)
OL-MW-1	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-5A	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-2	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-4	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-7	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-8	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-6	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-10	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-3	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-11	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020

	DISSOLVED METALS		
SAMPLE ID	TIN (mg/L)	VANADIUM (mg/L)	ZINC (mg/L)
OL-MW-1	<0.040	<0.0030	<0.0050
OL-MW-5A	<0.040	0.0030	<0.0050
OL-MW-2	<0.040	0.0040	<0.0050
OL-MW-4	<0.040	0.0032	<0.0050
OL-MW-7	<0.040	<0.0030	<0.0050
OL-MW-8	<0.040	<0.0030	<0.0050
OL-MW-6	<0.040	<0.0030	<0.0050
OL-MW-10	<0.040	<0.0030	<0.0050
OL-MW-3	<0.040	<0.0030	<0.0050
OL-MW-11	<0.040	<0.0030	<0.0050

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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

SAMPLE DATA-CONTINUED

	DISSOLVED METALS					
SAMPLE ID	CALCIUM (mg/L)	POTASSIUM (mg/L)	SODIUM (mg/L)	MAGNESIUM (mg/L)	IRON (mg/L)	MANGANESE (mg/L)
OL-MW-1	8.96	0.711	4.05	5.84	<0.020	<0.010
OL-MW-5A	8.73	0.811	4.49	8.45	<0.020	<0.010
OL-MW-2	6.76	1.06	4.02	6.01	<0.020	<0.010
OL-MW-4	8.54	0.942	4.54	7.64	<0.020	<0.010
OL-MW-7	8.69	0.818	3.83	7.00	<0.020	<0.010
OL-MW-8	9.28	0.680	4.11	4.69	<0.020	0.143
OL-MW-6	8.88	0.890	4.82	6.43	0.316	0.412
OL-MW-10	39.3	1.44	10.8	24.8	0.084	4.85
OL-MW-3	31.7	0.871	6.44	11.7	<0.020	1.33
OL-MW-11	8.86	0.821	3.83	7.21	<0.020	<0.010

	TOTAL METALS	
SAMPLE ID	MERCURY (mg/L)	NICKEL (mg/L)
OL-MW-1	<0.0002	<0.0050
OL-MW-5A	<0.0002	<0.0050
OL-MW-2	<0.0002	<0.0050
OL-MW-4	<0.0002	<0.0050
OL-ER	<0.0002	<0.0050
OL-MW-7	<0.0002	<0.0050
OL-MW-8	<0.0002	<0.0050
OL-MW-6	<0.0002	<0.0050
OL-MW-10	<0.0002	0.0227
OL-MW-3	<0.0002	<0.0050
OL-MW-11	<0.0002	<0.0050

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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA

QC PARAMETER	AMMONIA (mg/L)	NITRATE (mg/L)	NITRITE (mg/L)	TOC (mg/L)	COD (mg/L)	VINYL CHLORIDE (ug/L)
METHOD	EPA 350.1	EPA 353.2	EPA 354.1	EPA 415.1	EPA 410.2	EPA 8260-SIM
DATE ANALYZED	03/24,25/11	03/24,25/11	03/25/11	04/01/11	04/01/11	04/04/11
DETECTION LIMIT	0.006	0.005	0.001	0.100	6.00	0.01
REPORTING LIMIT	0.010	0.010	0.002	0.250	10.0	0.02
DUPLICATE						
SAMPLE ID	OL-MW-10	OL-MW-10	OL-ER	OL-MW-11	OL-MW-11	OL-MW-6
ORIGINAL	0.017	0.292	<0.002	0.400	<10.0	<0.02
DUPLICATE	0.017	0.294	<0.002	0.380	<10.0	<0.02
RPD	2.48%	0.63%	NC	5.07%	NC	NC
SPIKE SAMPLE						
SAMPLE ID	OL-MW-10	OL-MW-10	OL-ER	OL-MW-11	OL-MW-11	
ORIGINAL	0.017	0.292	<0.002	0.400	<10.0	
SPIKED SAMPLE	0.218	0.498	0.040	4.79	50.0	
SPIKE ADDED	0.200	0.200	0.040	4.50	50.0	
% RECOVERY	100.27%	102.75%	100.00%	97.46%	100.05%	NA
QC CHECK						
FOUND	0.313	0.400	0.041	4.12	94.4	0.10
TRUE	0.324	0.408	0.040	4.00	100	0.10
% RECOVERY	96.51%	98.05%	102.50%	102.93%	94.40%	100.00%
BLANK	<0.010	<0.010	<0.002	<0.250	<10.0	<0.02

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

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CASE FILE NUMBER:	BKS001-47,48	PAGE 6
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DATE SAMPLED:	03/23,24/11	03/24,25/11

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA

QC PARAMETER	CHLORIDE (mg/l)	SULFATE (mg/l)	TDS (mg/L)	CYANIDE (mg/L)	TOTAL COLIFORM (#/100mls)	FECAL COLIFORM (#/100mls)
METHOD	EPA 325.3	EPA 375.4	SM18 2540C	SM 4500CNE	SM18 9222B	SM18 9222D
DATE ANALYZED	04/04/11	03/30/11	03/29/11	03/30/11	03/24,25/11	03/24/11
DETECTION LIMIT	0.16	0.76	5.0	0.010	2	2
REPORTING LIMIT	0.50	1.00	5.0	0.010	2	2
DUPLICATE						
SAMPLE ID	OL-MW-10	OL-MW-11	OL-MW-10	OL-MW-10	OL-MW-10	OL-SW-4
ORIGINAL	3.07	4.32	326	<0.010	<2	<2
DUPLICATE	3.03	4.46	316	<0.010	<2	<2
RPD	1.19%	3.00%	3.12%	NC	NC	NC
SPIKE SAMPLE						
SAMPLE ID	OL-MW-10	OL-MW-11		OL-MW-10		
ORIGINAL	3.07	4.32		<0.010		
SPIKED SAMPLE	12.7	14.5		0.179		
SPIKE ADDED	10.0	10.0		0.200		
% RECOVERY	96.41%	101.53%	NA	89.50%	NA	NA
QC CHECK						
FOUND	28.3	9.95		0.184		
TRUE	30.0	10.0		0.200		
% RECOVERY	94.49%	99.51%	NA	92.00%	NA	NA
PREP BLANK	<0.50	<1.00	<5.0	<0.010	< 1	< 1

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA

QC PARAMETER	pH	ALKALINITY (mgCaCO3/l)	HCO3 (mgCaCO3/l)	CO3 (mgCaCO3/l)
METHOD	EPA 150.1	EPA 310.1	EPA 310.1	EPA 310.1
DATE ANALYZED	03/24,25/11	03/28/11	03/28/11	03/28/11
DETECTION LIMIT	0.10	1.00	1.00	1.00
REPORTING LIMIT	0.10	1.00	1.00	1.00
DUPLICATE				
SAMPLE ID		OL-MW-10		
ORIGINAL		257		
DUPLICATE		265		
RPD	NA	3.01%	NA	NA
SPIKE SAMPLE				
SAMPLE ID				
ORIGINAL				
SPIKED SAMPLE				
SPIKE ADDED				
% RECOVERY	NA	NA	NA	NA
QC CHECK				
FOUND		102		
TRUE		100		
% RECOVERY	NA	101.50%	NA	NA
PREP BLANK	NA	NA	NA	NA

RPD = RELATIVE PERCENT DIFFERENCE.
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OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES
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CASE FILE NUMBER:	BKS001-47,48	PAGE 8
REPORT DATE:	04/06/11	
DATE SAMPLED:	03/23,24/11	03/24,25/11

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA - DISSOLVED METALS

QC PARAMETER	ARSENIC (ug/l)	ANTIMONY (mg/L)	BARIUM (mg/L)	BERYLLIUM (mg/L)	CADMIUM (mg/L)	CHROMIUM (mg/L)
METHOD	EPA 6020	EPA 6020	EPA 6020	EPA 6020	EPA 6020	EPA 6020
DATE ANALYZED	03/28,30/11	03/25,28/11	03/25,28/11	03/25,28/11	03/25,28/11	03/25,28/11
DETECTION LIMIT	0.010	0.0010	0.001	0.0003	0.0002	0.0005
REPORTING LIMIT	0.050	0.0020	0.005	0.0010	0.0010	0.0010
DUPLICATE						
SAMPLE ID	OL-MW-10	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4
ORIGINAL	1.03	<0.0020	<0.005	<0.0010	<0.0010	0.0024
DUPLICATE	1.07	<0.0020	<0.005	<0.0010	<0.0010	0.0025
RPD	3.81%	NC	NC	NC	NC	1.30%
SPIKE SAMPLE						
SAMPLE ID	OL-MW-10	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4
ORIGINAL	1.03	<0.0020	<0.005	<0.0010	<0.0010	0.0024
SPIKED SAMPLE	1.21	0.0534	0.052	0.0555	0.0564	0.0491
SPIKE ADDED	0.200	0.0500	0.050	0.0500	0.0500	0.0500
% RECOVERY	90.00%	106.82%	103.94%	111.00%	112.76%	93.35%
QC CHECK						
FOUND	0.702	0.0489	0.048	0.0512	0.0470	0.0497
TRUE	0.668	0.0500	0.050	0.0500	0.0500	0.0500
% RECOVERY	105.09%	97.74%	95.00%	102.32%	93.92%	99.32%
PREP BLANK	<0.050	<0.0020	<0.010	<0.0010	<0.0010	<0.0010

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CASE FILE NUMBER:	BKS001-47,48	PAGE 9
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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA - DISSOLVED METALS

QC PARAMETER	COBALT (mg/L)	COPPER (mg/L)	LEAD (mg/L)	SELENIUM (mg/L)	SILVER (mg/L)	THALLIUM (mg/L)
METHOD	EPA 6020	EPA 6020	EPA 6020	EPA 6020	EPA 6020	EPA 6020
DATE ANALYZED	03/25,28/11	03/25,28/11	03/25,28/11	03/25,28/11	03/25,28/11	03/25,28/11
DETECTION LIMIT	0.001	0.0004	0.0003	0.0010	0.0004	0.0010
REPORTING LIMIT	0.010	0.0010	0.0010	0.0050	0.0010	0.0020
DUPLICATE						
SAMPLE ID	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4
ORIGINAL	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
DUPLICATE	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
RPD	NC	NC	NC	NC	NC	NC
SPIKE SAMPLE						
SAMPLE ID	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4
ORIGINAL	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
SPIKED SAMPLE	0.048	0.0487	0.0467	0.0598	0.0513	0.0475
SPIKE ADDED	0.050	0.0500	0.0500	0.0500	0.0500	0.0500
% RECOVERY	96.12%	97.34%	93.34%	119.50%	102.68%	94.90%
QC CHECK						
FOUND	0.051	0.0515	0.0505	0.0487	0.0520	0.0480
TRUE	0.050	0.0500	0.0500	0.0500	0.0500	0.0500
% RECOVERY	101.04%	102.92%	100.90%	97.30%	103.92%	96.08%
PREP BLANK	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020

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CASE FILE NUMBER:	BKS001-47,48	PAGE 10
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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA - DISSOLVED METALS

QC PARAMETER	TIN (mg/L)	VANADIUM (mg/L)	ZINC (mg/L)
METHOD	EPA 6010	EPA 6020	EPA 6020
DATE ANALYZED	03/25,29/11	03/25,28/11	03/25,28/11
DETECTION LIMIT	0.010	0.0010	0.0010
REPORTING LIMIT	0.040	0.0030	0.0050
DUPLICATE			
SAMPLE ID	OL-MW-4	OL-MW-4	OL-MW-4
ORIGINAL	<0.040	0.0032	<0.0050
DUPLICATE	<0.040	0.0032	<0.0050
RPD	NC	0.57%	NC
SPIKE SAMPLE			
SAMPLE ID	OL-MW-4	OL-MW-4	OL-MW-4
ORIGINAL	<0.040	0.0032	<0.0050
SPIKED SAMPLE	1.06	0.0510	0.0580
SPIKE ADDED	1.00	0.0500	0.0500
% RECOVERY	105.73%	95.56%	115.92%
QC CHECK			
FOUND	1.08	0.0496	0.0474
TRUE	1.00	0.0500	0.0500
% RECOVERY	108.20%	99.14%	94.86%
PREP BLANK	<0.040	<0.0030	<0.0050

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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA - DISSOLVED METALS

QC PARAMETER	CALCIUM (mg/L)	POTASSIUM (mg/L)	SODIUM (mg/L)	MAGNESIUM (mg/L)	IRON (mg/L)	MANGANESE (mg/L)
METHOD	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010
DATE ANALYZED	03/25,29/11	03/25,29/11	03/25,29/11	03/25,29/11	03/25,29/11	03/25,29/11
DETECTION LIMIT	0.050	0.300	0.300	0.050	0.010	0.003
REPORTING LIMIT	0.100	0.500	0.500	0.100	0.020	0.010
DUPLICATE						
SAMPLE ID	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4
ORIGINAL	8.54	0.942	4.54	7.64	<0.020	<0.010
DUPLICATE	8.53	0.948	4.51	7.62	<0.020	<0.010
RPD	0.14%	0.58%	0.56%	0.24%	NC	NC
SPIKE SAMPLE						
SAMPLE ID	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4
ORIGINAL	8.54	0.942	4.54	7.64	<0.020	<0.010
SPIKED SAMPLE	16.6	12.7	14.0	16.6	9.87	1.02
SPIKE ADDED	10.0	10.0	10.0	10.0	10.0	1.00
% RECOVERY	80.91%	117.46%	94.18%	89.60%	98.70%	102.00%
QC CHECK						
FOUND	0.977	9.81	10.3	10.0	0.981	1.02
TRUE	1.00	10.0	10.0	10.0	1.00	1.00
% RECOVERY	97.66%	98.08%	103.37%	100.04%	98.11%	101.65%
PREP BLANK	<0.100	<0.500	<0.500	<0.100	<0.020	<0.010

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CASE FILE NUMBER:	BKS001-47,48		PAGE 12
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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA - TOTAL METALS

QC PARAMETER	MERCURY (mg/l)	NICKEL (mg/l)
METHOD	EPA 6020	EPA 6020
DATE ANALYZED	03/25,28/11	03/25,28/11
DETECTION LIMIT	0.0001	0.0010
REPORTING LIMIT	0.0002	0.0050
DUPLICATE		
SAMPLE ID	OL-MW-1	OL-MW-1
ORIGINAL	<0.0002	<0.0050
DUPLICATE	<0.0002	<0.0050
RPD	NC	NC
SPIKE SAMPLE		
SAMPLE ID	OL-MW-1	OL-MW-1
ORIGINAL	<0.0002	<0.0050
SPIKED SAMPLE	0.0022	0.0517
SPIKE ADDED	0.0020	0.0500
% RECOVERY	110.00%	103.46%
QC CHECK		
FOUND	0.0021	0.0503
TRUE	0.0020	0.0500
% RECOVERY	104.00%	100.62%
PREP BLANK	<0.0002	<0.0050

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Submitted By:

Steven Lazoff
Laboratory Director

Aquatic Research, Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00147A1	**Matrix:**	Water
Sample ID No.:	OL-MW-1	**Sample Vol. (ml)**	990
Date Collected:	3/23/11	**Dilution Factor:**	1
Date Received:	3/24/11	**Prepped:**	TM
Date Prepped:	3/25/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	85%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

Aquatic Research, Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00147A3	**Matrix:**	Water
Sample ID No.:	OL-MW-2	**Sample Vol. (ml)**	990
Date Collected:	3/23/11	**Dilution Factor:**	1
Date Received:	3/24/11	**Prepped:**	TM
Date Prepped:	3/25/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	109%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00147A4	**Matrix:**	Water
Sample ID No.:	OL-MW-4	**Sample Vol. (ml)**	990
Date Collected:	3/23/11	**Dilution Factor:**	1
Date Received:	3/24/11	**Prepped:**	TM
Date Prepped:	3/25/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	71%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00147A2	**Matrix:**	Water
Sample ID No.:	OL-MW-5A	**Sample Vol. (ml)**	990
Date Collected:	3/23/11	**Dilution Factor:**	1
Date Received:	3/24/11	**Prepped:**	TM
Date Prepped:	3/25/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	70%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00147A7	**Matrix:**	Water
Sample ID No.:	OL-ER	**Sample Vol. (ml)**	990
Date Collected:	3/23/11	**Dilution Factor:**	1
Date Received:	3/24/11	**Prepped:**	TM
Date Prepped:	3/25/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	93%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs LABORATORY FORTIFIED BLANK REPORT

Results of Analysis by EPA Method 508.1

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	LFB (3/25/11)	**Matrix:**	Water
Sample ID No.:	LFB	**Sample Vol. (ml)**	1000
Date Collected:	NA	**Dilution Factor:**	1
Date Received:	NA	**Prepped:**	TM
Date Analyzed	4/7/11	**Analyst:**	JDS
Date of Report:	4/8/11	**Supervisor's Initials:**	

Total PCBs

Arochlor	RECOVERY	LCL	UCL
Total PCBs	75%	70%	130%

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	82%	70%	130%

MCL: Maximum Contaminant Level
RL: Reporting Limit
LCL: Lower Control Limit
UCL: Upper Control Limit

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TOTAL PCBs LABORATORY REAGENT BLANK REPORT

Results of Analysis by EPA Method 508.1

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	MB (3/25/11)	**Matrix:**	Water
Sample ID No.:	LRB	**Sample Vol. (ml):**	1000
Date Collected:	NA	**Dilution Factor:**	1
Date Received:	NA	**Prepped:**	TM
Date Analyzed	4/7/11	**Analyst:**	JDS
Date of Report:	4/8/11	**Supervisor's Initials:**	

Total PCBs

Aroclor	Result (ug/L)	UCL (ug/L)	RL	(ug/L)
Total PCBs	< 0.1	< 0.1	0.1	

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	73%	70%	130%

MCL: Maximum Contaminant Level
RL: Reporting Limit
LCL: Lower Control Limit
UCL: Upper Control Limit

Vinyl Chloride by SIM

T. Meadows
4/4/11

Sample ID	Client ID	Sample Amount (ml)	Dilution Factor	Vinyl Chloride (µg/L)	1,2-Dichloroethane-d4 (µg/L)	% R Surr	% R VC
CCV	CCV	25	1	0.10	0.11	110.0%	100.0%
CCV	CCV	25	1	0.09	0.08	80.0%	90.0%
4/4/11-MB	Method Blank	25	1	<0.02	0.11	110.0%	
BKS00147A1	OL-MW-1	25	1	<0.02	0.08	80.0%	
BKS00147A2	OL-MW-5A	25	1	<0.02	0.07	70.0%	
BKS00147A3	OL-MW-2	25	1	<0.02	0.08	80.0%	
BKS00147A4	OL-MW-4	25	1	<0.02	0.07	70.0%	
BKS00147A7	OL-ER	25	1	0.05	0.07	70.0%	
BKS00147A8	OL-TB	25	1	0.09	0.08	80.0%	
BKS00148A1	OL-MW-7	25	1	<0.02	0.07	70.0%	
BKS00148A2	OL-MW-8	25	1	<0.02	0.07	70.0%	
BKS00148A3	OL-MW-6	25	1	<0.02	0.07	70.0%	
BKS00148A3 Dup	OL-MW-6	25	1	<0.02	0.07	70.0%	
BKS00148A4	OL-MW-10	25	1	<0.02	0.07	70.0%	
BKS00148A5	OL-MW-3	25	1	<0.02	0.07	70.0%	
BKS00148A6	OL-TB	25	1	0.05	0.07	70.0%	
BKS00148A7	OL-MW-11	25	1	<0.02	0.07	70.0%	
			RPD	0%		0%	

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A5	Matrix:	Water
Sample ID No.:	OL-MW-3	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/24/11	Dilution Factor:	1
Date Received:	03/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	04/01/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110401\	1201012.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A5**	Matrix:	Water
Sample ID No.:	**OL-MW-3**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/24/11**	Dilution Factor:	**1**
Date Received:	**03/25/11**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**1201012.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	84%	66-118%	66-118%				
	Toluene-d8	110%	51-143%	51-143%				
	4-Bromofluorobenzene	84%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A3	Matrix:	Water
Sample ID No.:	OL-MW-6	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/24/11	Dilution Factor:	1
Date Received:	03/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	04/01/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110401\	0801008.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A3**	Matrix:	Water
Sample ID No.:	**OL-MW-6**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/24/11**	Dilution Factor:	**1**
Date Received:	**03/25/11**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**0801008.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	78%	66-118%	66-118%				
	Toluene-d8	107%	51-143%	51-143%				
	4-Bromofluorobenzene	82%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A1	Matrix:	Water
Sample ID No.:	OL-MW-7	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/24/11	Dilution Factor:	1
Date Received:	03/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	04/01/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110401\	0601006.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00148A1**	Matrix:	Water
Sample ID No.:	**OL-MW-7**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/24/11**	Dilution Factor:	**1**
Date Received:	**03/25/11**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**0601006.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	82%	66-118%	66-118%				
	Toluene-d8	107%	51-143%	51-143%				
	4-Bromofluorobenzene	88%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A2	Matrix:	Water
Sample ID No.:	OL-MW-8	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/24/11	Dilution Factor:	1
Date Received:	03/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	04/01/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110401\	0701007.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00148A2**	Matrix:	Water
Sample ID No.:	**OL-MW-8**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/24/11**	Dilution Factor:	**1**
Date Received:	**03/25/11**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**0701007.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	81%	66-118%	66-118%				
	Toluene-d8	109%	51-143%	51-143%				
	4-Bromofluorobenzene	79%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A4	Matrix:	Water
Sample ID No.:	OL-MW-10	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/24/11	Dilution Factor:	1
Date Received:	03/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	04/01/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110401\	0901009.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00148A4**	Matrix:	Water
Sample ID No.:	**OL-MW-10**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/24/11**	Dilution Factor:	**1**
Date Received:	**03/25/11**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**0901009.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	73%	66-118%	66-118%				
	Toluene-d8	101%	51-143%	51-143%				
	4-Bromofluorobenzene	80%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00148A7**	Matrix:	Water
Sample ID No.:	**OL-MW-11**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/24/11**	Dilution Factor:	**1**
Date Received:	**03/25/11**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**1401014.D**	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00148A7**	Matrix:	Water
Sample ID No.:	**OL-MW-11**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/24/11**	Dilution Factor:	**1**
Date Received:	**03/25/11**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**1401014.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	81%	66-118%	66-118%				
	Toluene-d8	107%	51-143%	51-143%				
	4-Bromofluorobenzene	83%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A4 MS / MSD	Matrix:	Water
Sample ID No.:	OL-MW-10	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	3/24/11	Dilution Factor:	1
Date Received:	3/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	4/1/11	Supervisor's Initials:	
Data File Paths:	C:\HPCHEM\1\DATA\VOA\110401\ 1001010.D		
	C:\HPCHEM\1\DATA\VOA\110401\ 1101011.D		

Surrogate Recoveries	% Rec. MS	MSD	RPD
Dibromofluoromethane	72%	70%	3%
Toluene-d8	106%	97%	10%
4-Bromofluorobenzene	84%	71%	15%

Spike Recoveries	% Rec. MS	MSD	RPD
1,1-Dichloroethene	116%	114%	2%
Benzene	94%	97%	3%
Trichloroethene	119%	108%	10%
Toluene	106%	105%	1%
Chlorobenzene	106%	112%	5%

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**4/1/11-LCS**	Matrix:	Water
Sample ID No.:	**4/1/11-LCS**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**n/a**	Dilution Factor:	**1**
Date Received:	**n/a**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**4/1/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**0501005.D**	

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	94%	66%	118%
Toluene-d8	97%	51%	143%
4-Bromofluorobenzene	83%	63%	119%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	91%	75%	125%
Benzene	96%	75%	125%
Trichloroethene	100%	75%	125%
Toluene	99%	75%	125%
Chlorobenzene	100%	75%	125%

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A4 MS	Matrix:	Water
Sample ID No.:	OL-MW-10	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/24/11	Dilution Factor:	1
Date Received:	03/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	4/1/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110401\ 1001010.D		

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	72%	66%	118%
Toluene-d8	106%	51%	143%
4-Bromofluorobenzene	84%	63%	119%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	116%	75%	125%
Benzene	94%	75%	125%
Trichloroethene	119%	75%	125%
Toluene	106%	75%	125%
Chlorobenzene	106%	75%	125%

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A4 MSD	Matrix:	Water
Sample ID No.:	OL-MW-10	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	3/24/11	Dilution Factor:	1
Date Received:	3/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	4/1/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110401\1101011.D		

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	70%	66%	118%
Toluene-d8	97%	51%	143%
4-Bromofluorobenzene	71%	63%	119%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	114%	75%	125%
Benzene	97%	75%	125%
Trichloroethene	108%	75%	125%
Toluene	105%	75%	125%
Chlorobenzene	112%	75%	125%

Aquatic Research Inc.
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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**4/1/11-MB**	Matrix:	Water
Sample ID No.:	**Method Blank**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**n/a**	Dilution Factor:	**1**
Date Received:	**n/a**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**0401004.D**	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**4/1/11-MB**	Matrix:	Water
Sample ID No.:	**Method Blank**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**n/a**	Dilution Factor:	**1**
Date Received:	**n/a**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**0401004.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	108%	66-118%	66-118%				
	Toluene-d8	105%	51-143%	51-143%				
	4-Bromofluorobenzene	91%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A6	Matrix:	Water
Sample ID No.:	OL-TB	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/24/11	Dilution Factor:	1
Date Received:	03/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	04/01/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110401\	1301013.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00148A6**	Matrix:	Water
Sample ID No.:	**OL-TB**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/24/11**	Dilution Factor:	**1**
Date Received:	**03/25/11**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**1301013.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	74%	66-118%	66-118%				
	Toluene-d8	108%	51-143%	51-143%				
	4-Bromofluorobenzene	82%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A5	Matrix:	Water
Sample ID No.:	OL-MW-3	Sample Vol. (ml)	1060
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\	3701019.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A5	Matrix:	Water
Sample ID No.:	OL-MW-3	Sample Vol. (ml)	1060
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3701019.D

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	39%	24-132%	65-135%
Phenol-d5	39%	0-105%	65-135%
Nitrobenzene-d5	99%	24-136%	65-135%
2-Fluorobiphenyl	82%	41-134%	65-135%
2,4,6-Tribromophenol	28%	0-183%	65-135%
p-Terphenyl-d14	110%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A3	Matrix:	Water
Sample ID No.:	OL-MW-6	Sample Vol. (ml)	1070
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3301015.D

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A3	Matrix:	Water
Sample ID No.:	OL-MW-6	Sample Vol. (ml)	1070
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3301015.D

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	61%	24-132%	65-135%
Phenol-d5	57%	0-105%	65-135%
Nitrobenzene-d5	119%	24-136%	65-135%
2-Fluorobiphenyl	113%	41-134%	65-135%
2,4,6-Tribromophenol	32%	0-183%	65-135%
p-Terphenyl-d14	127%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A1	Matrix:	Water
Sample ID No.:	OL-MW-7	Sample Vol. (ml)	1060
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/07/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3101013.D

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A1	Matrix:	Water
Sample ID No.:	OL-MW-7	Sample Vol. (ml)	1060
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/07/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3101013.D

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	77%	24-132%	65-135%
Phenol-d5	62%	0-105%	65-135%
Nitrobenzene-d5	129%	24-136%	65-135%
2-Fluorobiphenyl	95%	41-134%	65-135%
2,4,6-Tribromophenol	42%	0-183%	65-135%
p-Terphenyl-d14	118%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A2	Matrix:	Water
Sample ID No.:	OL-MW-8	Sample Vol. (ml)	1070
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\	3201014.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A2	Matrix:	Water
Sample ID No.:	OL-MW-8	Sample Vol. (ml)	1070
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3201014.D

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	41%	24-132%	65-135%
Phenol-d5	36%	0-105%	65-135%
Nitrobenzene-d5	133%	24-136%	65-135%
2-Fluorobiphenyl	101%	41-134%	65-135%
2,4,6-Tribromophenol	36%	0-183%	65-135%
p-Terphenyl-d14	114%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A4	Matrix:	Water
Sample ID No.:	OL-MW-10	Sample Vol. (ml)	1060
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3401016.D

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A4	Matrix:	Water
Sample ID No.:	OL-MW-10	Sample Vol. (ml)	1060
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3401016.D

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	10%	24-132%	65-135%
Phenol-d5	22%	0-105%	65-135%
Nitrobenzene-d5	127%	24-136%	65-135%
2-Fluorobiphenyl	114%	41-134%	65-135%
2,4,6-Tribromophenol	19%	0-183%	65-135%
p-Terphenyl-d14	125%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A7	Matrix:	Water
Sample ID No.:	OL-MW-11	Sample Vol. (ml)	1070
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3801020.D

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A7	Matrix:	Water
Sample ID No.:	OL-MW-11	Sample Vol. (ml)	1070
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3801020.D

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	44%	24-132%	65-135%
Phenol-d5	37%	0-105%	65-135%
Nitrobenzene-d5	125%	24-136%	65-135%
2-Fluorobiphenyl	102%	41-134%	65-135%
2,4,6-Tribromophenol	47%	0-183%	65-135%
p-Terphenyl-d14	118%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
10/14/1Cohy/Mass Spectrometry

Case File Number:	**3/28/11-LCS**	Matrix:	**Water**
Sample ID No.:	**Lab Control Spike**	Sample Vol. (ml)	**1000**
Date Collected:	**n/a**	Final Volume (ml)	**2.0**
Date Received:	**n/a**	Dilution Factor:	**1**
Date Analyzed	**04/07/11**		
Date of Report:	**04/11/11**	Analyst:	**T. Meadows**
		Supervisor's Initials:	
Data File Path:	**Q:\5973\PAM\040711**	**3001012.D**	

		QC limits	
Surrogate Recoveries	%Rec.	**Water**	**Soil**
2-Fluorophenol	87%	24-132%	65-135%
Phenol-d5	59%	0-105%	65-135%
Nitrobenzene-d5	116%	24-136%	65-135%
2-Fluorobiphenyl	106%	41-134%	65-135%
2,4,6-Tribromophenol	26%	0-183%	65-135%
p-Terphenyl-d14	119%	80-141%	65-135%

		QC limits	
Matix Spike Recoveries	%Rec.	**Water**	**Soil**
Phenol	52%	50-150%	50-150%
2-Chlorophenol	58%	50-150%	50-150%
1,4-Dichlorobenzene	76%	50-150%	50-150%
N-Nitroso-n-propyl amine	84%	50-150%	50-150%
1,2,4-Trichlorobenzene	68%	50-150%	50-150%
4-Chloro-3-methyl phenol	48%	50-150%	50-150%
Acenaphthene	96%	50-150%	50-150%
4-Nitrophenol	44%	50-150%	50-150%
2,4-Dinitrotoluene	48%	50-150%	50-150%
Pentachlorophenol	0%	50-150%	50-150%
Pyrene	90%	50-150%	50-150%

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
10/14/1Cohy/Mass Spectrometry

Case File Number:	**BKS00148A4 MS**	Matrix:	**Water**
Sample ID No.:	**OL-MW-10 Matrix Spike**	Sample Vol. (ml)	**1070**
Date Collected:	**3/24/11**	Final Volume (ml)	**2.0**
Date Received:	**3/25/11**	Dilution Factor:	**1**
Date Analyzed	**04/08/11**		
Date of Report:	**04/11/11**	Analyst:	**T. Meadows**
		Supervisor's Initials:	
Data File Path:	**Q:\5973\PAM\040711**	**3501017.D**	

		QC limits	
Surrogate Recoveries	%Rec.	**Water**	**Soil**
2-Fluorophenol	27%	24-132%	65-135%
Phenol-d5	29%	0-105%	65-135%
Nitrobenzene-d5	108%	24-136%	65-135%
2-Fluorobiphenyl	95%	41-134%	65-135%
2,4,6-Tribromophenol	12%	0-183%	65-135%
p-Terphenyl-d14	114%	80-141%	65-135%

		QC limits	
Matix Spike Recoveries	%Rec.	**Water**	**Soil**
Phenol	35%	50-150%	50-150%
2-Chlorophenol	37%	50-150%	50-150%
1,4-Dichlorobenzene	76%	50-150%	50-150%
N-Nitroso-n-propyl amine	100%	50-150%	50-150%
1,2,4-Trichlorobenzene	63%	50-150%	50-150%
4-Chloro-3-methyl phenol	33%	50-150%	50-150%
Acenaphthene	104%	50-150%	50-150%
4-Nitrophenol	51%	50-150%	50-150%
2,4-Dinitrotoluene	62%	50-150%	50-150%
Pentachlorophenol	4%	50-150%	50-150%
Pyrene	91%	50-150%	50-150%

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
10/14/1Cohy/Mass Spectrometry

Case File Number:	**BKS00148A4 MSD**	Matrix:	**Water**
Sample ID No.:	**OL-MW-10 Matrix Spike Duplicate**	Sample Vol. (ml)	**1070**
Date Collected:	**3/24/11**	Final Volume (ml)	**2.0**
Date Received:	**3/25/11**	Dilution Factor:	**1**
Date Analyzed	**04/08/11**		
Date of Report:	**04/11/11**	Analyst:	**T. Meadows**
		Supervisor's Initials:	
Data File Path:	**Q:\5973\PAM\040711**	**3601018.D**	

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil	RPD
2-Fluorophenol	25%	24-132%	65-135%	5.0%
Phenol-d5	30%	0-105%	65-135%	5.0%
Nitrobenzene-d5	125%	24-136%	65-135%	14.2%
2-Fluorobiphenyl	109%	41-134%	65-135%	13.7%
2,4,6-Tribromophenol	10%	0-183%	65-135%	19.8%
p-Terphenyl-d14	115%	80-141%	65-135%	0.8%

Matix Spike Recoveries	%Rec.	QC limits Water	QC limits Soil	RPD
Phenol	40%	50-150%	50-150%	12.3%
2-Chlorophenol	40%	50-150%	50-150%	7.0%
1,4-Dichlorobenzene	90%	50-150%	50-150%	17.0%
N-Nitroso-n-propyl amine	104%	50-150%	50-150%	4.5%
1,2,4-Trichlorobenzene	75%	50-150%	50-150%	17.2%
4-Chloro-3-methyl phenol	35%	50-150%	50-150%	6.9%
Acenaphthene	109%	50-150%	50-150%	4.3%
4-Nitrophenol	50%	50-150%	50-150%	1.3%
2,4-Dinitrotoluene	64%	50-150%	50-150%	3.0%
Pentachlorophenol	4%	50-150%	50-150%	8.4%
Pyrene	90%	50-150%	50-150%	0.4%

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	3/28/11-MB	Matrix:	Water
Sample ID No.:	Method Blank	Sample Vol. (ml)	1000
Date Collected:	n/a	Final Volume (ml)	2.0
Date Received:	n/a	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/07/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\	2901011.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.80	U	86-73-7	Fluorene	0.80	U
76-01-7	Pentachloroethane	0.80	U	84-66-2	Diethyl phthalate	0.80	U
62-53-3	Aniline	0.80	U	100-01-6	4-Nitroaniline	0.80	U
108-95-2	Phenol	0.80	U	7005-72-3	4-Chlorophenyl phenyl ether	0.80	U
111-44-4	Bis(2-chloroethyl) ether	0.80	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.80	U
95-57-8	2-Chlorophenol	0.80	U	86-30-6	N-Nitrosodiphenyl amine	0.80	U
541-73-1	1,3-Dichlorobenzene	0.80	U	103-33-3	Azobenzene	0.80	U
106-46-7	1,4-Dichlorobenzene	0.80	U	101-55-3	4-Bromophenyl phenyl ether	0.80	U
95-50-1	1,2-Dichlorobenzene	0.80	U	319-84-6	a-BHC	0.80	U
100-51-6	Benzyl Alcohol	0.80	U	118-74-1	Hexachlorobenzene	0.80	U
95-48-7	2-Methyl phenol	0.80	U	319-85-7	b-BHC	0.80	U
108-60-1	Bis(2-chloroisopropyl) ether	0.80	U	87-86-5	Pentachlorophenol	0.80	U
98-86-2	Acetophenone	0.80	U	58-89-9	g-BHC (Lindane)	0.80	U
67-72-1	Hexachloroethane	0.80	U	85-01-8	Phenanthrene	0.80	U
621-64-7	N-Nitroso-n-propyl amine	0.80	U	120-12-7	Anthracene	0.80	U
106-44-5	4-Methyl phenol	0.80	U	319-86-8	d-BHC	0.80	U
98-95-3	Nitrobenzene	0.80	U	84-74-2	Di-n-butyl phthalate	0.80	U
100-75-4	N-nitrosopiperidine	0.80	U	76-44-8	Heptachlor	0.80	U
78-59-1	Isophorone	0.80	U	309-00-2	Aldrin	0.80	U
88-75-5	2-Nitrophenol	0.80	U	1024-57-3	Heptachlor epoxide	0.80	U
105-67-9	2,4-Dimethylphenol	0.80	U	206-44-0	Fluoranthrene	0.80	U
65-85-0	Benzoic Acid	0.80	U	129-00-0	Pyrene	0.80	U
111-91-1	Bis(2-chloroethoxy) methane	0.80	U	959-98-8	Endosulfan I	0.80	U
120-83-2	2,4-Dichlorophenol	0.80	U	92-87-5	Benzidine	0.80	U
120-82-1	1,2,4-Trichlorobenzene	0.80	U	72-55-9	4,4'-DDE	0.80	U
91-20-3	Naphthalene	0.80	U	60-57-1	Dieldrin	0.80	U
106-47-8	4-Chloroaniline	0.80	U	72-20-8	Endrin	0.80	U
87-68-3	Hexachlorobutadiene	0.80	U	33213-65-9	Endosulfan II	0.80	U
924-16-3	N-nitrosodi-n-butylamine	0.80	U	72-54-8	4,4'-DDD	0.80	U
59-50-7	4-Chloro-3-methyl phenol	0.80	U	7421-92-4	Endrin aldehyde	0.80	U
91-57-6	2-Methyl naphthalene	0.80	U	85-68-7	Butyl benzenyl phthalate	0.80	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.80	U	1031-07-8	Endosulfan sulfate	0.80	U
77-47-4	Hexachlorocylcopentadiene	0.80	U	50-29-3	4,4'-DDT	0.80	U
88-06-2	2,4,6-Trichlorophenol	0.80	U	56-55-3	Benzo(a)anthracene	0.80	U
95-95-4	2,4,5-Trichlorophenol	0.80	U	218-01-9	Chrysene	0.80	U
91-58-7	2-Chloronaphthalene	0.80	U	91-94-1	3,3'-Dichlorobenzidine	0.80	U
88-74-4	2-Nitroaniline	0.80	U	72-43-5	Methoxychlor	0.80	U
131-11-3	Dimethyl phthalate	0.80	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.80	U
208-96-8	Acenaphthylene	0.80	U	117-84-0	Di-n-octyl phthalate	0.80	U
606-20-2	2,6-Dinitrotoluene	0.80	U	205-97-2	Benzo(b)fluoranthrene	0.80	U
99-09-2	3-Nitroaniline	0.80	U	207-08-9	Benzo(k)fluoranthrene	0.80	U
83-32-9	Acenaphthene	0.80	U	50-32-8	Benzo(a)pyrene	0.80	U
51-28-5	2,4-Dinitrophenol	0.80	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.80	U
132-64-9	Dibenzofuran	0.80	U	53-70-3	Dibenzo(a,h)anthracene	0.80	U
100-02-7	4-Nitrophenol	0.80	U	91-24-2	Benzo(g,h,i)perlyene	0.80	U
121-14+2	2,4-Dinitrotoluene	0.80	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.80	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	3/28/11-MB	Matrix:	Water
Sample ID No.:	Method Blank	Sample Vol. (ml)	1000
Date Collected:	n/a	Final Volume (ml)	2.0
Date Received:	n/a	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/07/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\	2901011.D	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:
- U Indicates compound was analyzed for, but not detected at the specified detection limit.
- B Blank contaminated with this analyte.
- J Estimated value - compound positively identified, but below specified detection limit.
- E Estimated value - compound exceeded calibration range.
- D Compound analyzed at a secondary dilution factor of _____ from data file: _____
- PP Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	79%	24-132%	65-135%
Phenol-d5	78%	0-105%	65-135%
Nitrobenzene-d5	128%	24-136%	65-135%
2-Fluorobiphenyl	102%	41-134%	65-135%
2,4,6-Tribromophenol	36%	0-183%	65-135%
p-Terphenyl-d14	110%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.80	U		2303-16-4	Diallate	0.80	U
100-52-7	Benzaldehyde	0.80	U		298-02-2	Phorate	0.80	U
930-55-2	N-nitrosopyrrolidine	0.80	U		99-35-4	1,3,5-Trinitrobenzene	0.80	U
95-53-4	o-Toluidine	0.80	U		62-44-2	Phenacetin	0.80	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.80	U		60-51-5	Dimethoate	0.80	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.80	U		1912-24-9	Atrazine	0.80	U
1888-71-7	Hexachloropropene	0.80	U		92-67-1	4-Aminobiphenyl	0.80	U
87-65-0	2,6-Dichlorophenol	0.80	U		82-68-8	Pentachloronitrobenzene	0.80	U
87-65-0	Caprolactam	0.80	U		23950-58-5	Pronamide	0.80	U
106-50-3	p-Phenylenediamine	0.80	U		298-04-4	Disulfoton	0.80	U
120-58-1	Isosafrole	0.80	U		298-00-0	Methyl parathion	0.80	U
90-12-0	1-Methyl naphthalene	0.80	U		56-38-2	Parathion	0.80	U
94-59-7	Safrole	0.80	U		91-80-5	Methapyrilene	0.80	U
92-52-4	Biphenyl	0.80	U		465-73-6	Isodrin	0.80	U
101-84-8	Diphenyl ether	0.80	U		60-11-7	p-(dimethyl amino) azobenzene	0.80	U
130-15-4	1,4-Naphthoquinone	0.80	U		510-15-0	Chlorobenzilate	0.80	U
99-65-0	1,3-Dinitrobenzene	0.80	U		143-50-0	Kepone	0.80	U
608-93-5	Pentachlorobenzene	0.80	U		119-93-7	3,3'-Dimethylbenzidine	0.80	U
134-32-7	1-Naphthalenamine	0.80	U		52-85-7	Famphur	0.80	U
91-59-8	2-Naphthalenamine	0.80	U		53-96-3	2-Acetylaminofluorene	0.80	U
99-55-8	5-Nitro-o-Toluidine	0.80	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.80	U
297-97-2	Thionazin (Zinophos)	0.80	U		56-49-5	3-Methylcholanthrene	0.80	U
122-39-4	Diphenylamine	0.80	U		226-36-8	Dibenzo(a,h)acridine	0.80	U
3689-24-5	Sulfotep	0.80	U					

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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00148A5	**Matrix:**	Water
Sample ID No.:	OL-MW-3	**Sample Vol. (ml)**	990
Date Collected:	3/24/11	**Dilution Factor:**	1
Date Received:	3/25/11	**Prepped:**	TM
Date Prepped:	3/28/11	**Analyst:**	JDS
Date Analyzed	4/8/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	107%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00148A3	**Matrix:**	Water
Sample ID No.:	OL-MW-6	**Sample Vol. (ml)**	990
Date Collected:	3/24/11	**Dilution Factor:**	1
Date Received:	3/25/11	**Prepped:**	TM
Date Prepped:	3/28/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	74%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00148A1	**Matrix:**	Water
Sample ID No.:	OL-MW-7	**Sample Vol. (ml)**	990
Date Collected:	3/24/11	**Dilution Factor:**	1
Date Received:	3/25/11	**Prepped:**	TM
Date Prepped:	3/28/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	103%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00148A2	**Matrix:**	Water
Sample ID No.:	OL-MW-8	**Sample Vol. (ml)**	990
Date Collected:	3/24/11	**Dilution Factor:**	1
Date Received:	3/25/11	**Prepped:**	TM
Date Prepped:	3/28/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	119%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00148A4	**Matrix:**	Water
Sample ID No.:	OL-MW-10	**Sample Vol. (ml)**	990
Date Collected:	3/24/11	**Dilution Factor:**	1
Date Received:	3/25/11	**Prepped:**	TM
Date Prepped:	3/28/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	115%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00148A7	**Matrix:**	Water
Sample ID No.:	OL-MW-11	**Sample Vol. (ml)**	990
Date Collected:	3/24/11	**Dilution Factor:**	1
Date Received:	3/25/11	**Prepped:**	TM
Date Prepped:	3/28/11	**Analyst:**	JDS
Date Analyzed	4/8/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	95%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs MATRIX SPIKE REPORT

Results of Analysis by EPA Method 508.1

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00148A4 MS	**Matrix:**	Water
Sample ID No.:	OL-MW-10 MS	**Sample Vol. (ml)**	1000
Date Collected:	NA	**Dilution Factor:**	1
Date Received:	NA	**Prepped:**	TM
Date Analyzed	4/7/11	**Analyst:**	JDS
Date of Report:	4/8/11	**Supervisor's Initials:**	

Total PCBs

Aroclor	RECOVERY	LCL	UCL
Total PCBs	97%	70%	130%

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	99%	70%	130%

MCL: Maximum Contaminant Level
RL: Reporting Limit
LCL: Lower Control Limit
UCL: Upper Control Limit

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TOTAL PCBs MATRIX SPIKE REPORT

Results of Analysis by EPA Method 508.1

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00148A4 MSD	**Matrix:**	Water
Sample ID No.:	OL-MW-10 MSD	**Sample Vol. (ml)**	1000
Date Collected:	NA	**Dilution Factor:**	1
Date Received:	NA	**Prepped:**	TM
Date Analyzed	4/8/11	**Analyst:**	JDS
Date of Report:	4/8/11	**Supervisor's Initials:**	

Total PCBs

Aroclor	RECOVERY	LCL	UCL
Total PCBs	104%	70%	130%

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	99%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs LABORATORY FORTIFIED BLANK REPORT

Results of Analysis by EPA Method 508.1

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	LFB (3/28/11)	**Matrix:**	Water
Sample ID No.:	LFB	**Sample Vol. (ml)**	1000
Date Collected:	NA	**Dilution Factor:**	1
Date Received:	NA	**Prepped:**	TM
Date Analyzed	4/7/11	**Analyst:**	JDS
Date of Report:	4/8/11	**Supervisor's Initials:**	

Total PCBs

Arochlor	RECOVERY	LCL	UCL
Total PCBs	121%	70%	130%

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	95%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs LABORATORY REAGENT BLANK REPORT

Results of Analysis by EPA Method 508.1

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	MB (3/28/11)	**Matrix:**	Water
Sample ID No.:	LRB	**Sample Vol. (ml):**	1000
Date Collected:	NA	**Dilution Factor:**	1
Date Received:	NA	**Prepped:**	TM
Date Analyzed	4/7/11	**Analyst:**	JDS
Date of Report:	4/8/11	**Supervisor's Initials:**	

Total PCBs

Aroclor	Result (ug/L)	UCL (ug/L)	RL	(ug/L)
Total PCBs	< 0.1	< 0.1	0.1	

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	95%	70%	130%

MCL: Maximum Contaminant Level
RL: Reporting Limit
LCL: Lower Control Limit
UCL: Upper Control Limit

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A1	Matrix:	Water
Sample ID No.:	OL-MW-1	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/23/11	Dilution Factor:	1
Date Received:	03/24/11		
Date Analyzed	03/31/11	Analyst:	T. Meadows
Date of Report:	03/31/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110331\	0601006.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U
	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U
	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U
	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A1**	Matrix:	Water
Sample ID No.:	**OL-MW-1**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/23/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**0601006.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	79%	66-118%	66-118%				
	Toluene-d8	105%	51-143%	51-143%				
	4-Bromofluorobenzene	92%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A3**	Matrix:	Water
Sample ID No.:	**OL-MW-2**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/23/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**1001010.D**	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A3**	Matrix:	Water
Sample ID No.:	**OL-MW-2**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/23/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**1001010.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	77%	66-118%	66-118%				
	Toluene-d8	108%	51-143%	51-143%				
	4-Bromofluorobenzene	86%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A4	Matrix:	Water
Sample ID No.:	OL-MW-4	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/23/11	Dilution Factor:	1
Date Received:	03/24/11		
Date Analyzed	03/31/11	Analyst:	T. Meadows
Date of Report:	03/31/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110331\	1101011.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A4**	Matrix:	Water
Sample ID No.:	**OL-MW-4**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/23/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**1101011.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	72%	66-118%	66-118%				
	Toluene-d8	104%	51-143%	51-143%				
	4-Bromofluorobenzene	84%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A2	Matrix:	Water
Sample ID No.:	OL-MW-5A	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/23/11	Dilution Factor:	1
Date Received:	03/24/11		
Date Analyzed	03/31/11	Analyst:	T. Meadows
Date of Report:	03/31/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110331\	0801008.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U
	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U
	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U
	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A2**	Matrix:	Water
Sample ID No.:	**OL-MW-5A**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/23/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**0801008.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	80%	66-118%	66-118%				
	Toluene-d8	106%	51-143%	51-143%				
	4-Bromofluorobenzene	92%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A2 Dup**	Matrix:	Water
Sample ID No.:	**OL-MW-5A Duplicate**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/23/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**0901009.D**	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U
	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U
	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U
	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A2 Dup**	Matrix:	Water
Sample ID No.:	**OL-MW-5A Duplicate**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/23/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**0901009.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	70%	66-118%	66-118%				
	Toluene-d8	106%	51-143%	51-143%				
	4-Bromofluorobenzene	84%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A7	Matrix:	Water
Sample ID No.:	OL-ER	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/23/11	Dilution Factor:	1
Date Received:	03/24/11		
Date Analyzed	03/31/11	Analyst:	T. Meadows
Date of Report:	03/31/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110331\	1201012.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A7**	Matrix:	Water
Sample ID No.:	**OL-ER**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/23/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**1201012.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	72%	66-118%	66-118%				
	Toluene-d8	109%	51-143%	51-143%				
	4-Bromofluorobenzene	88%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A1 MS**	Matrix:	Water
Sample ID No.:	**BKS00147A1 MS**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**3/23/11**	Dilution Factor:	**1**
Date Received:	**3/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**3/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**0701007.D**	

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	79%	66%	118%
Toluene-d8	110%	51%	143%
4-Bromofluorobenzene	86%	63%	119%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	102%	75%	125%
Benzene	105%	75%	125%
Trichloroethene	112%	75%	125%
Toluene	112%	75%	125%
Chlorobenzene	113%	75%	125%

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	3/31/11-LCS	Matrix:	Water
Sample ID No.:	3/31/11-LCS	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	n/a	Dilution Factor:	1
Date Received:	n/a		
Date Analyzed	03/31/11	Analyst:	T. Meadows
Date of Report:	3/31/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110331\	0501005.D	

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	108%	66%	118%
Toluene-d8	107%	51%	143%
4-Bromofluorobenzene	107%	63%	119%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	103%	75%	125%
Benzene	102%	75%	125%
Trichloroethene	102%	75%	125%
Toluene	102%	75%	125%
Chlorobenzene	107%	75%	125%

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**3/31/11-MB**	Matrix:	Water
Sample ID No.:	**Method Blank**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**n/a**	Dilution Factor:	**1**
Date Received:	**n/a**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**0401004.D**	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**3/31/11-MB**	Matrix:	Water
Sample ID No.:	**Method Blank**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**n/a**	Dilution Factor:	**1**
Date Received:	**n/a**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**0401004.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	106%	66-118%	66-118%				
	Toluene-d8	104%	51-143%	51-143%				
	4-Bromofluorobenzene	106%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A8	Matrix:	Water
Sample ID No.:	OL-TB	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/15/11	Dilution Factor:	1
Date Received:	03/24/11		
Date Analyzed	03/31/11	Analyst:	T. Meadows
Date of Report:	03/31/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110331\	1301013.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U
	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U
	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U
	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A8**	Matrix:	Water
Sample ID No.:	**OL-TB**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/15/11**	Dilution Factor:	**1**
Date Received:	**03/24/11**		
Date Analyzed	**03/31/11**	Analyst:	**T. Meadows**
Date of Report:	**03/31/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110331**	**1301013.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	74%	66-118%	66-118%				
	Toluene-d8	106%	51-143%	51-143%				
	4-Bromofluorobenzene	83%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A1	Matrix:	Water
Sample ID No.:	OL-MW-1	Sample Vol. (ml)	1050
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0601006.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.76	U	86-73-7	Fluorene	0.76	U
76-01-7	Pentachloroethane	0.76	U	84-66-2	Diethyl phthalate	0.76	U
62-53-3	Aniline	0.76	U	100-01-6	4-Nitroaniline	0.76	U
108-95-2	Phenol	0.76	U	7005-72-3	4-Chlorophenyl phenyl ether	0.76	U
111-44-4	Bis(2-chloroethyl) ether	0.76	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.76	U
95-57-8	2-Chlorophenol	0.76	U	86-30-6	N-Nitrosodiphenyl amine	0.76	U
541-73-1	1,3-Dichlorobenzene	0.76	U	103-33-3	Azobenzene	0.76	U
106-46-7	1,4-Dichlorobenzene	0.76	U	101-55-3	4-Bromophenyl phenyl ether	0.76	U
95-50-1	1,2-Dichlorobenzene	0.76	U	319-84-6	a-BHC	0.76	U
100-51-6	Benzyl Alcohol	0.76	U	118-74-1	Hexachlorobenzene	0.76	U
95-48-7	2-Methyl phenol	0.76	U	319-85-7	b-BHC	0.76	U
108-60-1	Bis(2-chloroisopropyl) ether	0.76	U	87-86-5	Pentachlorophenol	0.76	U
98-86-2	Acetophenone	0.76	U	58-89-9	g-BHC (Lindane)	0.76	U
67-72-1	Hexachloroethane	0.76	U	85-01-8	Phenanthrene	0.76	U
621-64-7	N-Nitroso-n-propyl amine	0.76	U	120-12-7	Anthracene	0.76	U
106-44-5	4-Methyl phenol	0.76	U	319-86-8	d-BHC	0.76	U
98-95-3	Nitrobenzene	0.76	U	84-74-2	Di-n-butyl phthalate	0.76	U
100-75-4	N-nitrosopiperidine	0.76	U	76-44-8	Heptachlor	0.76	U
78-59-1	Isophorone	0.76	U	309-00-2	Aldrin	0.76	U
88-75-5	2-Nitrophenol	0.76	U	1024-57-3	Heptachlor epoxide	0.76	U
105-67-9	2,4-Dimethylphenol	0.76	U	206-44-0	Fluoranthrene	0.76	U
65-85-0	Benzoic Acid	0.76	U	129-00-0	Pyrene	0.76	U
111-91-1	Bis(2-chloroethoxy) methane	0.76	U	959-98-8	Endosulfan I	0.76	U
120-83-2	2,4-Dichlorophenol	0.76	U	92-87-5	Benzidine	0.76	U
120-82-1	1,2,4-Trichlorobenzene	0.76	U	72-55-9	4,4'-DDE	0.76	U
91-20-3	Naphthalene	0.76	U	60-57-1	Dieldrin	0.76	U
106-47-8	4-Chloroaniline	0.76	U	72-20-8	Endrin	0.76	U
87-68-3	Hexachlorobutadiene	0.76	U	33213-65-9	Endosulfan II	0.76	U
924-16-3	N-nitrosodi-n-butylamine	0.76	U	72-54-8	4,4'-DDD	0.76	U
59-50-7	4-Chloro-3-methyl phenol	0.76	U	7421-92-4	Endrin aldehyde	0.76	U
91-57-6	2-Methyl naphthalene	0.76	U	85-68-7	Butyl benzenyl phthalate	0.76	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.76	U	1031-07-8	Endosulfan sulfate	0.76	U
77-47-4	Hexachlorocylcopentadiene	0.76	U	50-29-3	4,4'-DDT	0.76	U
88-06-2	2,4,6-Trichlorophenol	0.76	U	56-55-3	Benzo(a)anthracene	0.76	U
95-95-4	2,4,5-Trichlorophenol	0.76	U	218-01-9	Chrysene	0.76	U
91-58-7	2-Chloronaphthalene	0.76	U	91-94-1	3,3'-Dichlorobenzidine	0.76	U
88-74-4	2-Nitroaniline	0.76	U	72-43-5	Methoxychlor	0.76	U
131-11-3	Dimethyl phthalate	0.76	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.76	U
208-96-8	Acenaphthylene	0.76	U	117-84-0	Di-n-octyl phthalate	0.76	U
606-20-2	2,6-Dinitrotoluene	0.76	U	205-97-2	Benzo(b)fluoranthrene	0.76	U
99-09-2	3-Nitroaniline	0.76	U	207-08-9	Benzo(k)fluoranthrene	0.76	U
83-32-9	Acenaphthene	0.76	U	50-32-8	Benzo(a)pyrene	0.76	U
51-28-5	2,4-Dinitrophenol	0.76	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.76	U
132-64-9	Dibenzofuran	0.76	U	53-70-3	Dibenzo(a,h)anthracene	0.76	U
100-02-7	4-Nitrophenol	0.76	U	91-24-2	Benzo(g,h,i)perlyene	0.76	U
121-14+2	2,4-Dinitrotoluene	0.76	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.76	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A1	Matrix:	Water
Sample ID No.:	OL-MW-1	Sample Vol. (ml)	1050
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\		0601006.D

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	50%	24-132%	65-135%
Phenol-d5	35%	0-105%	65-135%
Nitrobenzene-d5	99%	24-136%	65-135%
2-Fluorobiphenyl	81%	41-134%	65-135%
2,4,6-Tribromophenol	43%	0-183%	65-135%
p-Terphenyl-d14	125%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.76	U		2303-16-4	Diallate	0.76	U
100-52-7	Benzaldehyde	0.76	U		298-02-2	Phorate	0.76	U
930-55-2	N-nitrosopyrrolidine	0.76	U		99-35-4	1,3,5-Trinitrobenzene	0.76	U
95-53-4	o-Toluidine	0.76	U		62-44-2	Phenacetin	0.76	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.76	U		60-51-5	Dimethoate	0.76	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.76	U		1912-24-9	Atrazine	0.76	U
1888-71-7	Hexachloropropene	0.76	U		92-67-1	4-Aminobiphenyl	0.76	U
87-65-0	2,6-Dichlorophenol	0.76	U		82-68-8	Pentachloronitrobenzene	0.76	U
87-65-0	Caprolactam	0.76	U		23950-58-5	Pronamide	0.76	U
106-50-3	p-Phenylenediamine	0.76	U		298-04-4	Disulfoton	0.76	U
120-58-1	Isosafrole	0.76	U		298-00-0	Methyl parathion	0.76	U
90-12-0	1-Methyl naphthalene	0.76	U		56-38-2	Parathion	0.76	U
94-59-7	Safrole	0.76	U		91-80-5	Methapyrilene	0.76	U
92-52-4	Biphenyl	0.76	U		465-73-6	Isodrin	0.76	U
101-84-8	Diphenyl ether	0.76	U		60-11-7	p-(dimethyl amino) azobenzene	0.76	U
130-15-4	1,4-Naphthoquinone	0.76	U		510-15-0	Chlorobenzilate	0.76	U
99-65-0	1,3-Dinitrobenzene	0.76	U		143-50-0	Kepone	0.76	U
608-93-5	Pentachlorobenzene	0.76	U		119-93-7	3,3'-Dimethylbenzidine	0.76	U
134-32-7	1-Naphthalenamine	0.76	U		52-85-7	Famphur	0.76	U
91-59-8	2-Naphthalenamine	0.76	U		53-96-3	2-Acetylaminofluorene	0.76	U
99-55-8	5-Nitro-o-Toluidine	0.76	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.76	U
297-97-2	Thionazin (Zinophos)	0.76	U		56-49-5	3-Methylcholanthrene	0.76	U
122-39-4	Diphenylamine	0.76	U		226-36-8	Dibenzo(a,h)acridine	0.76	U
3689-24-5	Sulfotep	0.76	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A3	Matrix:	Water
Sample ID No.:	OL-MW-2	Sample Vol. (ml)	1060
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0801008.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A3	Matrix:	Water
Sample ID No.:	OL-MW-2	Sample Vol. (ml)	1060
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0801008.D	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	73%	24-132%	65-135%
Phenol-d5	51%	0-105%	65-135%
Nitrobenzene-d5	108%	24-136%	65-135%
2-Fluorobiphenyl	82%	41-134%	65-135%
2,4,6-Tribromophenol	46%	0-183%	65-135%
p-Terphenyl-d14	137%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A4	Matrix:	Water
Sample ID No.:	OL-MW-4	Sample Vol. (ml)	1070
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0901009.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A4	Matrix:	Water
Sample ID No.:	OL-MW-4	Sample Vol. (ml)	1070
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0901009.D	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	50%	24-132%	65-135%
Phenol-d5	43%	0-105%	65-135%
Nitrobenzene-d5	110%	24-136%	65-135%
2-Fluorobiphenyl	96%	41-134%	65-135%
2,4,6-Tribromophenol	38%	0-183%	65-135%
p-Terphenyl-d14	117%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A2	Matrix:	Water
Sample ID No.:	OL-MW-5A	Sample Vol. (ml)	1070
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0701007.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A2	Matrix:	Water
Sample ID No.:	OL-MW-5A	Sample Vol. (ml)	1070
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0701007.D	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	51%	24-132%	65-135%
Phenol-d5	43%	0-105%	65-135%
Nitrobenzene-d5	98%	24-136%	65-135%
2-Fluorobiphenyl	78%	41-134%	65-135%
2,4,6-Tribromophenol	37%	0-183%	65-135%
p-Terphenyl-d14	102%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A7	Matrix:	Water
Sample ID No.:	OL-ER	Sample Vol. (ml)	1040
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	1001010.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.77	U	86-73-7	Fluorene	0.77	U
76-01-7	Pentachloroethane	0.77	U	84-66-2	Diethyl phthalate	0.77	U
62-53-3	Aniline	0.77	U	100-01-6	4-Nitroaniline	0.77	U
108-95-2	Phenol	0.77	U	7005-72-3	4-Chlorophenyl phenyl ether	0.77	U
111-44-4	Bis(2-chloroethyl) ether	0.77	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.77	U
95-57-8	2-Chlorophenol	0.77	U	86-30-6	N-Nitrosodiphenyl amine	0.77	U
541-73-1	1,3-Dichlorobenzene	0.77	U	103-33-3	Azobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.77	U	101-55-3	4-Bromophenyl phenyl ether	0.77	U
95-50-1	1,2-Dichlorobenzene	0.77	U	319-84-6	a-BHC	0.77	U
100-51-6	Benzyl Alcohol	0.77	U	118-74-1	Hexachlorobenzene	0.77	U
95-48-7	2-Methyl phenol	0.77	U	319-85-7	b-BHC	0.77	U
108-60-1	Bis(2-chloroisopropyl) ether	0.77	U	87-86-5	Pentachlorophenol	0.77	U
98-86-2	Acetophenone	0.77	U	58-89-9	g-BHC (Lindane)	0.77	U
67-72-1	Hexachloroethane	0.77	U	85-01-8	Phenanthrene	0.77	U
621-64-7	N-Nitroso-n-propyl amine	0.77	U	120-12-7	Anthracene	0.77	U
106-44-5	4-Methyl phenol	0.77	U	319-86-8	d-BHC	0.77	U
98-95-3	Nitrobenzene	0.77	U	84-74-2	Di-n-butyl phthalate	0.77	U
100-75-4	N-nitrosopiperidine	0.77	U	76-44-8	Heptachlor	0.77	U
78-59-1	Isophorone	0.77	U	309-00-2	Aldrin	0.77	U
88-75-5	2-Nitrophenol	0.77	U	1024-57-3	Heptachlor epoxide	0.77	U
105-67-9	2,4-Dimethylphenol	0.77	U	206-44-0	Fluoranthrene	0.77	U
65-85-0	Benzoic Acid	0.77	U	129-00-0	Pyrene	0.77	U
111-91-1	Bis(2-chloroethoxy) methane	0.77	U	959-98-8	Endosulfan I	0.77	U
120-83-2	2,4-Dichlorophenol	0.77	U	92-87-5	Benzidine	0.77	U
120-82-1	1,2,4-Trichlorobenzene	0.77	U	72-55-9	4,4'-DDE	0.77	U
91-20-3	Naphthalene	0.77	U	60-57-1	Dieldrin	0.77	U
106-47-8	4-Chloroaniline	0.77	U	72-20-8	Endrin	0.77	U
87-68-3	Hexachlorobutadiene	0.77	U	33213-65-9	Endosulfan II	0.77	U
924-16-3	N-nitrosodi-n-butylamine	0.77	U	72-54-8	4,4'-DDD	0.77	U
59-50-7	4-Chloro-3-methyl phenol	0.77	U	7421-92-4	Endrin aldehyde	0.77	U
91-57-6	2-Methyl naphthalene	0.77	U	85-68-7	Butyl benzenyl phthalate	0.77	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.77	U	1031-07-8	Endosulfan sulfate	0.77	U
77-47-4	Hexachlorocylcopentadiene	0.77	U	50-29-3	4,4'-DDT	0.77	U
88-06-2	2,4,6-Trichlorophenol	0.77	U	56-55-3	Benzo(a)anthracene	0.77	U
95-95-4	2,4,5-Trichlorophenol	0.77	U	218-01-9	Chrysene	0.77	U
91-58-7	2-Chloronaphthalene	0.77	U	91-94-1	3,3'-Dichlorobenzidine	0.77	U
88-74-4	2-Nitroaniline	0.77	U	72-43-5	Methoxychlor	0.77	U
131-11-3	Dimethyl phthalate	0.77	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.77	U
208-96-8	Acenaphthylene	0.77	U	117-84-0	Di-n-octyl phthalate	0.77	U
606-20-2	2,6-Dinitrotoluene	0.77	U	205-97-2	Benzo(b)fluoranthrene	0.77	U
99-09-2	3-Nitroaniline	0.77	U	207-08-9	Benzo(k)fluoranthrene	0.77	U
83-32-9	Acenaphthene	0.77	U	50-32-8	Benzo(a)pyrene	0.77	U
51-28-5	2,4-Dinitrophenol	0.77	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.77	U
132-64-9	Dibenzofuran	0.77	U	53-70-3	Dibenzo(a,h)anthracene	0.77	U
100-02-7	4-Nitrophenol	0.77	U	91-24-2	Benzo(g,h,i)perlyene	0.77	U
121-14+2	2,4-Dinitrotoluene	0.77	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.77	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A7	Matrix:	Water
Sample ID No.:	OL-ER	Sample Vol. (ml)	1040
Date Collected:	03/23/11	Final Volume (ml)	2.0
Date Received:	03/24/11	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	1001010.D	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	53%	24-132%	65-135%
Phenol-d5	49%	0-105%	65-135%
Nitrobenzene-d5	96%	24-136%	65-135%
2-Fluorobiphenyl	84%	41-134%	65-135%
2,4,6-Tribromophenol	28%	0-183%	65-135%
p-Terphenyl-d14	96%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.77	U		2303-16-4	Diallate	0.77	U
100-52-7	Benzaldehyde	0.77	U		298-02-2	Phorate	0.77	U
930-55-2	N-nitrosopyrrolidine	0.77	U		99-35-4	1,3,5-Trinitrobenzene	0.77	U
95-53-4	o-Toluidine	0.77	U		62-44-2	Phenacetin	0.77	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.77	U		60-51-5	Dimethoate	0.77	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.77	U		1912-24-9	Atrazine	0.77	U
1888-71-7	Hexachloropropene	0.77	U		92-67-1	4-Aminobiphenyl	0.77	U
87-65-0	2,6-Dichlorophenol	0.77	U		82-68-8	Pentachloronitrobenzene	0.77	U
87-65-0	Caprolactam	0.77	U		23950-58-5	Pronamide	0.77	U
106-50-3	p-Phenylenediamine	0.77	U		298-04-4	Disulfoton	0.77	U
120-58-1	Isosafrole	0.77	U		298-00-0	Methyl parathion	0.77	U
90-12-0	1-Methyl naphthalene	0.77	U		56-38-2	Parathion	0.77	U
94-59-7	Safrole	0.77	U		91-80-5	Methapyrilene	0.77	U
92-52-4	Biphenyl	0.77	U		465-73-6	Isodrin	0.77	U
101-84-8	Diphenyl ether	0.77	U		60-11-7	p-(dimethyl amino) azobenzene	0.77	U
130-15-4	1,4-Naphthoquinone	0.77	U		510-15-0	Chlorobenzilate	0.77	U
99-65-0	1,3-Dinitrobenzene	0.77	U		143-50-0	Kepone	0.77	U
608-93-5	Pentachlorobenzene	0.77	U		119-93-7	3,3'-Dimethylbenzidine	0.77	U
134-32-7	1-Naphthalenamine	0.77	U		52-85-7	Famphur	0.77	U
91-59-8	2-Naphthalenamine	0.77	U		53-96-3	2-Acetylaminofluorene	0.77	U
99-55-8	5-Nitro-o-Toluidine	0.77	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.77	U
297-97-2	Thionazin (Zinophos)	0.77	U		56-49-5	3-Methylcholanthrene	0.77	U
122-39-4	Diphenylamine	0.77	U		226-36-8	Dibenzo(a,h)acridine	0.77	U
3689-24-5	Sulfotep	0.77	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
10/14/1Cohy/Mass Spectrometry

Case File Number:	**3/25/11-LCS**	Matrix:	**Water**
Sample ID No.:	**Lab Control Spike**	Sample Vol. (ml)	**1000**
Date Collected:	**n/a**	Final Volume (ml)	**2.0**
Date Received:	**n/a**	Dilution Factor:	**1**
Date Analyzed	**04/06/11**		
Date of Report:	**04/08/11**	Analyst:	**T. Meadows**
		Supervisor's Initials:	
Data File Path:	**Q:\5973\8270\110406**	**0501005.D**	

		QC limits	
Surrogate Recoveries	%Rec.	**Water**	**Soil**
2-Fluorophenol	110%	24-132%	65-135%
Phenol-d5	68%	0-105%	65-135%
Nitrobenzene-d5	87%	24-136%	65-135%
2-Fluorobiphenyl	76%	41-134%	65-135%
2,4,6-Tribromophenol	37%	0-183%	65-135%
p-Terphenyl-d14	139%	80-141%	65-135%

		QC limits	
Matix Spike Recoveries	%Rec.	**Water**	**Soil**
Phenol	66%	50-150%	50-150%
2-Chlorophenol	77%	50-150%	50-150%
1,4-Dichlorobenzene	60%	50-150%	50-150%
N-Nitroso-n-propyl amine	57%	50-150%	50-150%
1,2,4-Trichlorobenzene	59%	50-150%	50-150%
4-Chloro-3-methyl phenol	77%	50-150%	50-150%
Acenaphthene	82%	50-150%	50-150%
4-Nitrophenol	47%	50-150%	50-150%
2,4-Dinitrotoluene	50%	50-150%	50-150%
Pentachlorophenol	0%	50-150%	50-150%
Pyrene	115%	50-150%	50-150%

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	3/25/11-MB	Matrix:	Water
Sample ID No.:	Method Blank	Sample Vol. (ml)	1000
Date Collected:	n/a	Final Volume (ml)	2.0
Date Received:	n/a	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0401004.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.80	U	86-73-7	Fluorene	0.80	U
76-01-7	Pentachloroethane	0.80	U	84-66-2	Diethyl phthalate	0.80	U
62-53-3	Aniline	0.80	U	100-01-6	4-Nitroaniline	0.80	U
108-95-2	Phenol	0.80	U	7005-72-3	4-Chlorophenyl phenyl ether	0.80	U
111-44-4	Bis(2-chloroethyl) ether	0.80	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.80	U
95-57-8	2-Chlorophenol	0.80	U	86-30-6	N-Nitrosodiphenyl amine	0.80	U
541-73-1	1,3-Dichlorobenzene	0.80	U	103-33-3	Azobenzene	0.80	U
106-46-7	1,4-Dichlorobenzene	0.80	U	101-55-3	4-Bromophenyl phenyl ether	0.80	U
95-50-1	1,2-Dichlorobenzene	0.80	U	319-84-6	a-BHC	0.80	U
100-51-6	Benzyl Alcohol	0.80	U	118-74-1	Hexachlorobenzene	0.80	U
95-48-7	2-Methyl phenol	0.80	U	319-85-7	b-BHC	0.80	U
108-60-1	Bis(2-chloroisopropyl) ether	0.80	U	87-86-5	Pentachlorophenol	0.80	U
98-86-2	Acetophenone	0.80	U	58-89-9	g-BHC (Lindane)	0.80	U
67-72-1	Hexachloroethane	0.80	U	85-01-8	Phenanthrene	0.80	U
621-64-7	N-Nitroso-n-propyl amine	0.80	U	120-12-7	Anthracene	0.80	U
106-44-5	4-Methyl phenol	0.80	U	319-86-8	d-BHC	0.80	U
98-95-3	Nitrobenzene	0.80	U	84-74-2	Di-n-butyl phthalate	0.80	U
100-75-4	N-nitrosopiperidine	0.80	U	76-44-8	Heptachlor	0.80	U
78-59-1	Isophorone	0.80	U	309-00-2	Aldrin	0.80	U
88-75-5	2-Nitrophenol	0.80	U	1024-57-3	Heptachlor epoxide	0.80	U
105-67-9	2,4-Dimethylphenol	0.80	U	206-44-0	Fluoranthrene	0.80	U
65-85-0	Benzoic Acid	0.80	U	129-00-0	Pyrene	0.80	U
111-91-1	Bis(2-chloroethoxy) methane	0.80	U	959-98-8	Endosulfan I	0.80	U
120-83-2	2,4-Dichlorophenol	0.80	U	92-87-5	Benzidine	0.80	U
120-82-1	1,2,4-Trichlorobenzene	0.80	U	72-55-9	4,4'-DDE	0.80	U
91-20-3	Naphthalene	0.80	U	60-57-1	Dieldrin	0.80	U
106-47-8	4-Chloroaniline	0.80	U	72-20-8	Endrin	0.80	U
87-68-3	Hexachlorobutadiene	0.80	U	33213-65-9	Endosulfan II	0.80	U
924-16-3	N-nitrosodi-n-butylamine	0.80	U	72-54-8	4,4'-DDD	0.80	U
59-50-7	4-Chloro-3-methyl phenol	0.80	U	7421-92-4	Endrin aldehyde	0.80	U
91-57-6	2-Methyl naphthalene	0.80	U	85-68-7	Butyl benzenyl phthalate	0.80	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.80	U	1031-07-8	Endosulfan sulfate	0.80	U
77-47-4	Hexachlorocylcopentadiene	0.80	U	50-29-3	4,4'-DDT	0.80	U
88-06-2	2,4,6-Trichlorophenol	0.80	U	56-55-3	Benzo(a)anthracene	0.80	U
95-95-4	2,4,5-Trichlorophenol	0.80	U	218-01-9	Chrysene	0.80	U
91-58-7	2-Chloronaphthalene	0.80	U	91-94-1	3,3'-Dichlorobenzidine	0.80	U
88-74-4	2-Nitroaniline	0.80	U	72-43-5	Methoxychlor	0.80	U
131-11-3	Dimethyl phthalate	0.80	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.80	U
208-96-8	Acenaphthylene	0.80	U	117-84-0	Di-n-octyl phthalate	0.80	U
606-20-2	2,6-Dinitrotoluene	0.80	U	205-97-2	Benzo(b)fluoranthrene	0.80	U
99-09-2	3-Nitroaniline	0.80	U	207-08-9	Benzo(k)fluoranthrene	0.80	U
83-32-9	Acenaphthene	0.80	U	50-32-8	Benzo(a)pyrene	0.80	U
51-28-5	2,4-Dinitrophenol	0.80	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.80	U
132-64-9	Dibenzofuran	0.80	U	53-70-3	Dibenzo(a,h)anthracene	0.80	U
100-02-7	4-Nitrophenol	0.80	U	91-24-2	Benzo(g,h,i)perlyene	0.80	U
121-14+2	2,4-Dinitrotoluene	0.80	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.80	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	3/25/11-MB	Matrix:	Water
Sample ID No.:	Method Blank	Sample Vol. (ml)	1000
Date Collected:	n/a	Final Volume (ml)	2.0
Date Received:	n/a	Dilution Factor:	1
Date Extracted:	03/25/11		
Date Analyzed	04/06/11	Analyst:	T. Meadows
Date of Report:	04/08/11	Supervisor's Initials:	
Data File Path:	Q:\5973\8270\110406\	0401004.D	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	50%	24-132%	65-135%
Phenol-d5	47%	0-105%	65-135%
Nitrobenzene-d5	92%	24-136%	65-135%
2-Fluorobiphenyl	86%	41-134%	65-135%
2,4,6-Tribromophenol	41%	0-183%	65-135%
p-Terphenyl-d14	118%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.80	U		2303-16-4	Diallate	0.80	U
100-52-7	Benzaldehyde	0.80	U		298-02-2	Phorate	0.80	U
930-55-2	N-nitrosopyrrolidine	0.80	U		99-35-4	1,3,5-Trinitrobenzene	0.80	U
95-53-4	o-Toluidine	0.80	U		62-44-2	Phenacetin	0.80	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.80	U		60-51-5	Dimethoate	0.80	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.80	U		1912-24-9	Atrazine	0.80	U
1888-71-7	Hexachloropropene	0.80	U		92-67-1	4-Aminobiphenyl	0.80	U
87-65-0	2,6-Dichlorophenol	0.80	U		82-68-8	Pentachloronitrobenzene	0.80	U
87-65-0	Caprolactam	0.80	U		23950-58-5	Pronamide	0.80	U
106-50-3	p-Phenylenediamine	0.80	U		298-04-4	Disulfoton	0.80	U
120-58-1	Isosafrole	0.80	U		298-00-0	Methyl parathion	0.80	U
90-12-0	1-Methyl naphthalene	0.80	U		56-38-2	Parathion	0.80	U
94-59-7	Safrole	0.80	U		91-80-5	Methapyrilene	0.80	U
92-52-4	Biphenyl	0.80	U		465-73-6	Isodrin	0.80	U
101-84-8	Diphenyl ether	0.80	U		60-11-7	p-(dimethyl amino) azobenzene	0.80	U
130-15-4	1,4-Naphthoquinone	0.80	U		510-15-0	Chlorobenzilate	0.80	U
99-65-0	1,3-Dinitrobenzene	0.80	U		143-50-0	Kepone	0.80	U
608-93-5	Pentachlorobenzene	0.80	U		119-93-7	3,3'-Dimethylbenzidine	0.80	U
134-32-7	1-Naphthalenamine	0.80	U		52-85-7	Famphur	0.80	U
91-59-8	2-Naphthalenamine	0.80	U		53-96-3	2-Acetylaminofluorene	0.80	U
99-55-8	5-Nitro-o-Toluidine	0.80	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.80	U
297-97-2	Thionazin (Zinophos)	0.80	U		56-49-5	3-Methylcholanthrene	0.80	U
122-39-4	Diphenylamine	0.80	U		226-36-8	Dibenzo(a,h)acridine	0.80	U
3689-24-5	Sulfotep	0.80	U					

AQUATIC RESEARCH INCORPORATED

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CASE FILE NUMBER:	BKS001-47,48	PAGE 1	
REPORT DATE:	04/06/11		
DATE SAMPLED:	03/23,24/11	DATE RECEIVED:	03/24,25/11

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

CASE NARRATIVE

Fifteen water samples were received by the laboratory in good condition. Analysis was performed according to the chain of custody received with the samples. Dissolved arsenic analysis was performed by ICP/MS by concentrating the samples 10 fold. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages. Organic data are included as separate reports.

SAMPLE DATA

SAMPLE ID	AMMONIA (mg/L)	NITRATE (mg/L)	NITRITE (mg/L)	TOC (mg/L)	COD (mg/L)	VINYL CHLORIDE (ug/L)
OL-MW-1	<0.010	0.254	<0.002	<0.250	<10.0	<0.02
OL-MW-5A	<0.010	0.192	<0.002	<0.250	<10.0	<0.02
OL-MW-2	<0.010	0.389	<0.002	<0.250	<10.0	<0.02
OL-MW-4	<0.010	0.536	<0.002	<0.250	<10.0	<0.02
OL-SW-3		0.080	0.002			
OL-SW-4		0.147	0.002			
OL-ER	<0.010	<0.010	<0.002	<0.250	<10.0	0.05
OL-TB						0.09
OL-MW-7	0.012	0.549	<0.002	0.370	<10.0	<0.02
OL-MW-8	<0.010	0.131	<0.002	<0.250	<10.0	<0.02
OL-MW-6	<0.010	0.011	<0.002	1.14	<10.0	<0.02
OL-MW-10	0.017	0.292	<0.002	3.04	<10.0	<0.02
OL-MW-3	<0.010	0.200	0.003	1.28	<10.0	<0.02
OL-TB						0.05
OL-MW-11	<0.010	0.550	<0.002	0.400	<10.0	<0.02

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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

SAMPLE DATA-CONTINUED

SAMPLE ID	CHLORIDE (mg/L)	SULFATE (mg/L)	TDS (mg/L)	CYANIDE (mg/L)	TOTAL COLIFORM (#/100mls)	FECAL COLIFORM (#/100mls)
OL-MW-1	2.64	4.03	85.0	<0.010	<2	
OL-MW-5A	2.05	3.82	148	<0.010	<2	
OL-MW-2	2.15	2.62	100	<0.010	2	
OL-MW-4	2.54	2.46	101	<0.010	4	
OL-SW-3						2
OL-SW-4						<2
OL-ER	<0.50	<1.00	21.0	<0.010	6	
OL-MW-7	1.25	3.08	109	<0.010	<2	
OL-MW-8	1.17	1.42	118	<0.010	<2	
OL-MW-6	1.25	5.84	109	<0.010	<2	
OL-MW-10	3.07	27.0	326	<0.010	<2	
OL-MW-3	2.74	49.2	212	<0.010	<2	
OL-MW-11	1.27	4.32	103	<0.010	<2	

	pH	ALKALINITY (mgCaCO3/L)	HCO3 (mgCaCO3/l)	CO3 (mgCaCO3/l)
OL-MW-1	6.58	60.8	38.3	<1.00
OL-MW-5A	6.92	72.7	57.3	<1.00
OL-MW-2	7.13	55.2	47.3	<1.00
OL-MW-4	7.17	68.1	59.1	<1.00
OL-ER	6.23	<1.00	<1.00	<1.00
OL-MW-7	6.98	67.0	54.3	<1.00
OL-MW-8	7.01	59.0	48.4	<1.00
OL-MW-6	6.92	67.5	53.2	<1.00
OL-MW-10	6.58	257	162	<1.00
OL-MW-3	6.36	134	67.8	<1.00
OL-MW-11	6.96	65.1	52.2	<1.00

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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

SAMPLE DATA-CONTINUED

	DISSOLVED METALS					
SAMPLE ID	ARSENIC (ug/L)	ANTIMONY (mg/L)	BARIUM (mg/L)	BERYLLIUM (mg/L)	CADMIUM (mg/L)	CHROMIUM (mg/L)
OL-MW-1	0.082	<0.0020	<0.005	<0.0010	<0.0010	0.0023
OL-MW-5A	0.113	<0.0020	<0.005	<0.0010	<0.0010	0.0036
OL-MW-2	0.517	<0.0020	<0.005	<0.0010	<0.0010	0.0034
OL-MW-4	0.188	<0.0020	<0.005	<0.0010	<0.0010	0.0024
OL-MW-7	0.327	<0.0020	<0.005	<0.0010	<0.0010	0.0035
OL-MW-8	1.49	<0.0020	<0.005	<0.0010	<0.0010	0.0013
OL-MW-6	0.689	<0.0020	<0.005	<0.0010	<0.0010	<0.0010
OL-MW-10	1.03	<0.0020	0.016	<0.0010	<0.0010	0.0020
OL-MW-3	0.087	<0.0020	0.012	<0.0010	<0.0010	0.0014
OL-MW-11	0.349	<0.0020	<0.005	<0.0010	<0.0010	0.0034

	DISSOLVED METALS					
SAMPLE ID	COBALT (mg/L)	COPPER (mg/L)	LEAD (mg/L)	SELENIUM (mg/L)	SILVER (mg/L)	THALLIUM (mg/L)
OL-MW-1	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-5A	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-2	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-4	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-7	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-8	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-6	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-10	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-3	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
OL-MW-11	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020

	DISSOLVED METALS		
SAMPLE ID	TIN (mg/L)	VANADIUM (mg/L)	ZINC (mg/L)
OL-MW-1	<0.040	<0.0030	<0.0050
OL-MW-5A	<0.040	0.0030	<0.0050
OL-MW-2	<0.040	0.0040	<0.0050
OL-MW-4	<0.040	0.0032	<0.0050
OL-MW-7	<0.040	<0.0030	<0.0050
OL-MW-8	<0.040	<0.0030	<0.0050
OL-MW-6	<0.040	<0.0030	<0.0050
OL-MW-10	<0.040	<0.0030	<0.0050
OL-MW-3	<0.040	<0.0030	<0.0050
OL-MW-11	<0.040	<0.0030	<0.0050

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SAMPLE DATA-CONTINUED

	DISSOLVED METALS					
SAMPLE ID	CALCIUM (mg/L)	POTASSIUM (mg/L)	SODIUM (mg/L)	MAGNESIUM (mg/L)	IRON (mg/L)	MANGANESE (mg/L)
OL-MW-1	8.96	0.711	4.05	5.84	<0.020	<0.010
OL-MW-5A	8.73	0.811	4.49	8.45	<0.020	<0.010
OL-MW-2	6.76	1.06	4.02	6.01	<0.020	<0.010
OL-MW-4	8.54	0.942	4.54	7.64	<0.020	<0.010
OL-MW-7	8.69	0.818	3.83	7.00	<0.020	<0.010
OL-MW-8	9.28	0.680	4.11	4.69	<0.020	0.143
OL-MW-6	8.88	0.890	4.82	6.43	0.316	0.412
OL-MW-10	39.3	1.44	10.8	24.8	0.084	4.85
OL-MW-3	31.7	0.871	6.44	11.7	<0.020	1.33
OL-MW-11	8.86	0.821	3.83	7.21	<0.020	<0.010

	TOTAL METALS	
SAMPLE ID	MERCURY (mg/L)	NICKEL (mg/L)
OL-MW-1	<0.0002	<0.0050
OL-MW-5A	<0.0002	<0.0050
OL-MW-2	<0.0002	<0.0050
OL-MW-4	<0.0002	<0.0050
OL-ER	<0.0002	<0.0050
OL-MW-7	<0.0002	<0.0050
OL-MW-8	<0.0002	<0.0050
OL-MW-6	<0.0002	<0.0050
OL-MW-10	<0.0002	0.0227
OL-MW-3	<0.0002	<0.0050
OL-MW-11	<0.0002	<0.0050

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QA/QC DATA

QC PARAMETER	AMMONIA (mg/L)	NITRATE (mg/L)	NITRITE (mg/L)	TOC (mg/L)	COD (mg/L)	VINYL CHLORIDE (ug/L)
METHOD	EPA 350.1	EPA 353.2	EPA 354.1	EPA 415.1	EPA 410.2	EPA 8260-SIM
DATE ANALYZED	03/24,25/11	03/24,25/11	03/25/11	04/01/11	04/01/11	04/04/11
DETECTION LIMIT	0.006	0.005	0.001	0.100	6.00	0.01
REPORTING LIMIT	0.010	0.010	0.002	0.250	10.0	0.02
DUPLICATE						
SAMPLE ID	OL-MW-10	OL-MW-10	OL-ER	OL-MW-11	OL-MW-11	OL-MW-6
ORIGINAL	0.017	0.292	<0.002	0.400	<10.0	<0.02
DUPLICATE	0.017	0.294	<0.002	0.380	<10.0	<0.02
RPD	2.48%	0.63%	NC	5.07%	NC	NC
SPIKE SAMPLE						
SAMPLE ID	OL-MW-10	OL-MW-10	OL-ER	OL-MW-11	OL-MW-11	
ORIGINAL	0.017	0.292	<0.002	0.400	<10.0	
SPIKED SAMPLE	0.218	0.498	0.040	4.79	50.0	
SPIKE ADDED	0.200	0.200	0.040	4.50	50.0	
% RECOVERY	100.27%	102.75%	100.00%	97.46%	100.05%	NA
QC CHECK						
FOUND	0.313	0.400	0.041	4.12	94.4	0.10
TRUE	0.324	0.408	0.040	4.00	100	0.10
% RECOVERY	96.51%	98.05%	102.50%	102.93%	94.40%	100.00%
BLANK	<0.010	<0.010	<0.002	<0.250	<10.0	<0.02

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QA/QC DATA

QC PARAMETER	CHLORIDE (mg/l)	SULFATE (mg/l)	TDS (mg/L)	CYANIDE (mg/L)	TOTAL COLIFORM (#/100mls)	FECAL COLIFORM (#/100mls)
METHOD	EPA 325.3	EPA 375.4	SM18 2540C	SM 4500CNE	SM18 9222B	SM18 9222D
DATE ANALYZED	04/04/11	03/30/11	03/29/11	03/30/11	03/24,25/11	03/24/11
DETECTION LIMIT	0.16	0.76	5.0	0.010	2	2
REPORTING LIMIT	0.50	1.00	5.0	0.010	2	2
DUPLICATE						
SAMPLE ID	OL-MW-10	OL-MW-11	OL-MW-10	OL-MW-10	OL-MW-10	OL-SW-4
ORIGINAL	3.07	4.32	326	<0.010	<2	<2
DUPLICATE	3.03	4.46	316	<0.010	<2	<2
RPD	1.19%	3.00%	3.12%	NC	NC	NC
SPIKE SAMPLE						
SAMPLE ID	OL-MW-10	OL-MW-11		OL-MW-10		
ORIGINAL	3.07	4.32		<0.010		
SPIKED SAMPLE	12.7	14.5		0.179		
SPIKE ADDED	10.0	10.0		0.200		
% RECOVERY	96.41%	101.53%	NA	89.50%	NA	NA
QC CHECK						
FOUND	28.3	9.95		0.184		
TRUE	30.0	10.0		0.200		
% RECOVERY	94.49%	99.51%	NA	92.00%	NA	NA
PREP BLANK	<0.50	<1.00	<5.0	<0.010	< 1	< 1

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QA/QC DATA

QC PARAMETER	pH	ALKALINITY (mgCaCO3/l)	HCO3 (mgCaCO3/l)	CO3 (mgCaCO3/l)
METHOD	EPA 150.1	EPA 310.1	EPA 310.1	EPA 310.1
DATE ANALYZED	03/24,25/11	03/28/11	03/28/11	03/28/11
DETECTION LIMIT	0.10	1.00	1.00	1.00
REPORTING LIMIT	0.10	1.00	1.00	1.00
DUPLICATE				
SAMPLE ID		OL-MW-10		
ORIGINAL		257		
DUPLICATE		265		
RPD	NA	3.01%	NA	NA
SPIKE SAMPLE				
SAMPLE ID				
ORIGINAL				
SPIKED SAMPLE				
SPIKE ADDED				
% RECOVERY	NA	NA	NA	NA
QC CHECK				
FOUND		102		
TRUE		100		
% RECOVERY	NA	101.50%	NA	NA
PREP BLANK	NA	NA	NA	NA

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QA/QC DATA - DISSOLVED METALS

QC PARAMETER	ARSENIC (ug/l)	ANTIMONY (mg/L)	BARIUM (mg/L)	BERYLLIUM (mg/L)	CADMIUM (mg/L)	CHROMIUM (mg/L)
METHOD	EPA 6020	EPA 6020	EPA 6020	EPA 6020	EPA 6020	EPA 6020
DATE ANALYZED	03/28,30/11	03/25,28/11	03/25,28/11	03/25,28/11	03/25,28/11	03/25,28/11
DETECTION LIMIT	0.010	0.0010	0.001	0.0003	0.0002	0.0005
REPORTING LIMIT	0.050	0.0020	0.005	0.0010	0.0010	0.0010
DUPLICATE						
SAMPLE ID	OL-MW-10	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4
ORIGINAL	1.03	<0.0020	<0.005	<0.0010	<0.0010	0.0024
DUPLICATE	1.07	<0.0020	<0.005	<0.0010	<0.0010	0.0025
RPD	3.81%	NC	NC	NC	NC	1.30%
SPIKE SAMPLE						
SAMPLE ID	OL-MW-10	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4
ORIGINAL	1.03	<0.0020	<0.005	<0.0010	<0.0010	0.0024
SPIKED SAMPLE	1.21	0.0534	0.052	0.0555	0.0564	0.0491
SPIKE ADDED	0.200	0.0500	0.050	0.0500	0.0500	0.0500
% RECOVERY	90.00%	106.82%	103.94%	111.00%	112.76%	93.35%
QC CHECK						
FOUND	0.702	0.0489	0.048	0.0512	0.0470	0.0497
TRUE	0.668	0.0500	0.050	0.0500	0.0500	0.0500
% RECOVERY	105.09%	97.74%	95.00%	102.32%	93.92%	99.32%
PREP BLANK	<0.050	<0.0020	<0.010	<0.0010	<0.0010	<0.0010

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QA/QC DATA - DISSOLVED METALS

QC PARAMETER	COBALT (mg/L)	COPPER (mg/L)	LEAD (mg/L)	SELENIUM (mg/L)	SILVER (mg/L)	THALLIUM (mg/L)
METHOD	EPA 6020	EPA 6020	EPA 6020	EPA 6020	EPA 6020	EPA 6020
DATE ANALYZED	03/25,28/11	03/25,28/11	03/25,28/11	03/25,28/11	03/25,28/11	03/25,28/11
DETECTION LIMIT	0.001	0.0004	0.0003	0.0010	0.0004	0.0010
REPORTING LIMIT	0.010	0.0010	0.0010	0.0050	0.0010	0.0020
DUPLICATE						
SAMPLE ID	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4
ORIGINAL	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
DUPLICATE	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
RPD	NC	NC	NC	NC	NC	NC
SPIKE SAMPLE						
SAMPLE ID	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4
ORIGINAL	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
SPIKED SAMPLE	0.048	0.0487	0.0467	0.0598	0.0513	0.0475
SPIKE ADDED	0.050	0.0500	0.0500	0.0500	0.0500	0.0500
% RECOVERY	96.12%	97.34%	93.34%	119.50%	102.68%	94.90%
QC CHECK						
FOUND	0.051	0.0515	0.0505	0.0487	0.0520	0.0480
TRUE	0.050	0.0500	0.0500	0.0500	0.0500	0.0500
% RECOVERY	101.04%	102.92%	100.90%	97.30%	103.92%	96.08%
PREP BLANK	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020

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QA/QC DATA - DISSOLVED METALS

QC PARAMETER	TIN (mg/L)	VANADIUM (mg/L)	ZINC (mg/L)
METHOD	EPA 6010	EPA 6020	EPA 6020
DATE ANALYZED	03/25,29/11	03/25,28/11	03/25,28/11
DETECTION LIMIT	0.010	0.0010	0.0010
REPORTING LIMIT	0.040	0.0030	0.0050
DUPLICATE			
SAMPLE ID	OL-MW-4	OL-MW-4	OL-MW-4
ORIGINAL	<0.040	0.0032	<0.0050
DUPLICATE	<0.040	0.0032	<0.0050
RPD	NC	0.57%	NC
SPIKE SAMPLE			
SAMPLE ID	OL-MW-4	OL-MW-4	OL-MW-4
ORIGINAL	<0.040	0.0032	<0.0050
SPIKED SAMPLE	1.06	0.0510	0.0580
SPIKE ADDED	1.00	0.0500	0.0500
% RECOVERY	105.73%	95.56%	115.92%
QC CHECK			
FOUND	1.08	0.0496	0.0474
TRUE	1.00	0.0500	0.0500
% RECOVERY	108.20%	99.14%	94.86%
PREP BLANK	<0.040	<0.0030	<0.0050

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES
3927 AURORA AVENUE NORTH, SEATTLE, WA 98103
PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	BKS001-47,48		PAGE 11
REPORT DATE:	04/06/11		
DATE SAMPLED:	03/23,24/11	DATE RECEIVED:	03/24,25/11

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA - DISSOLVED METALS

QC PARAMETER	CALCIUM (mg/L)	POTASSIUM (mg/L)	SODIUM (mg/L)	MAGNESIUM (mg/L)	IRON (mg/L)	MANGANESE (mg/L)
METHOD	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010
DATE ANALYZED	03/25,29/11	03/25,29/11	03/25,29/11	03/25,29/11	03/25,29/11	03/25,29/11
DETECTION LIMIT	0.050	0.300	0.300	0.050	0.010	0.003
REPORTING LIMIT	0.100	0.500	0.500	0.100	0.020	0.010
DUPLICATE						
SAMPLE ID	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4
ORIGINAL	8.54	0.942	4.54	7.64	<0.020	<0.010
DUPLICATE	8.53	0.948	4.51	7.62	<0.020	<0.010
RPD	0.14%	0.58%	0.56%	0.24%	NC	NC
SPIKE SAMPLE						
SAMPLE ID	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4	OL-MW-4
ORIGINAL	8.54	0.942	4.54	7.64	<0.020	<0.010
SPIKED SAMPLE	16.6	12.7	14.0	16.6	9.87	1.02
SPIKE ADDED	10.0	10.0	10.0	10.0	10.0	1.00
% RECOVERY	80.91%	117.46%	94.18%	89.60%	98.70%	102.00%
QC CHECK						
FOUND	0.977	9.81	10.3	10.0	0.981	1.02
TRUE	1.00	10.0	10.0	10.0	1.00	1.00
% RECOVERY	97.66%	98.08%	103.37%	100.04%	98.11%	101.65%
PREP BLANK	<0.100	<0.500	<0.500	<0.100	<0.020	<0.010

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES
3927 AURORA AVENUE NORTH, SEATTLE, WA 98103
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CASE FILE NUMBER:	BKS001-47,48		PAGE 12
REPORT DATE:	04/06/11		
DATE SAMPLED:	03/23,24/11	DATE RECEIVED:	03/24,25/11

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA - TOTAL METALS

QC PARAMETER	MERCURY (mg/l)	NICKEL (mg/l)
METHOD	EPA 6020	EPA 6020
DATE ANALYZED	03/25,28/11	03/25,28/11
DETECTION LIMIT	0.0001	0.0010
REPORTING LIMIT	0.0002	0.0050
DUPLICATE		
SAMPLE ID	OL-MW-1	OL-MW-1
ORIGINAL	<0.0002	<0.0050
DUPLICATE	<0.0002	<0.0050
RPD	NC	NC
SPIKE SAMPLE		
SAMPLE ID	OL-MW-1	OL-MW-1
ORIGINAL	<0.0002	<0.0050
SPIKED SAMPLE	0.0022	0.0517
SPIKE ADDED	0.0020	0.0500
% RECOVERY	110.00%	103.46%
QC CHECK		
FOUND	0.0021	0.0503
TRUE	0.0020	0.0500
% RECOVERY	104.00%	100.62%
PREP BLANK	<0.0002	<0.0050

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

Submitted By:

Steven Lazoff
Laboratory Director

Aquatic Research, Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00147A1	**Matrix:**	Water
Sample ID No.:	OL-MW-1	**Sample Vol. (ml)**	990
Date Collected:	3/23/11	**Dilution Factor:**	1
Date Received:	3/24/11	**Prepped:**	TM
Date Prepped:	3/25/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	85%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

Aquatic Research, Inc.
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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00147A3	**Matrix:**	Water
Sample ID No.:	OL-MW-2	**Sample Vol. (ml)**	990
Date Collected:	3/23/11	**Dilution Factor:**	1
Date Received:	3/24/11	**Prepped:**	TM
Date Prepped:	3/25/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	109%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

Aquatic Research, Inc.
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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00147A4	**Matrix:**	Water
Sample ID No.:	OL-MW-4	**Sample Vol. (ml)**	990
Date Collected:	3/23/11	**Dilution Factor:**	1
Date Received:	3/24/11	**Prepped:**	TM
Date Prepped:	3/25/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	71%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

Aquatic Research, Inc.
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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00147A2	**Matrix:**	Water
Sample ID No.:	OL-MW-5A	**Sample Vol. (ml)**	990
Date Collected:	3/23/11	**Dilution Factor:**	1
Date Received:	3/24/11	**Prepped:**	TM
Date Prepped:	3/25/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	70%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

Aquatic Research, Inc.
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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00147A7	**Matrix:**	Water
Sample ID No.:	OL-ER	**Sample Vol. (ml)**	990
Date Collected:	3/23/11	**Dilution Factor:**	1
Date Received:	3/24/11	**Prepped:**	TM
Date Prepped:	3/25/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	93%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

TOTAL PCBs LABORATORY FORTIFIED BLANK REPORT

Results of Analysis by EPA Method 508.1

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	LFB (3/25/11)	**Matrix:**	Water
Sample ID No.:	LFB	**Sample Vol. (ml)**	1000
Date Collected:	NA	**Dilution Factor:**	1
Date Received:	NA	**Prepped:**	TM
Date Analyzed	4/7/11	**Analyst:**	JDS
Date of Report:	4/8/11	**Supervisor's Initials:**	

Total PCBs

Arochlor	RECOVERY	LCL	UCL
Total PCBs	75%	70%	130%

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	82%	70%	130%

MCL: Maximum Contaminant Level
RL: Reporting Limit
LCL: Lower Control Limit
UCL: Upper Control Limit

Aquatic Research, Inc.
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TOTAL PCBs LABORATORY REAGENT BLANK REPORT

Results of Analysis by EPA Method 508.1

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	MB (3/25/11)	**Matrix:**	Water
Sample ID No.:	LRB	**Sample Vol. (ml):**	1000
Date Collected:	NA	**Dilution Factor:**	1
Date Received:	NA	**Prepped:**	TM
Date Analyzed	4/7/11	**Analyst:**	JDS
Date of Report:	4/8/11	**Supervisor's Initials:**	

Total PCBs

Aroclor	Result (ug/L)	UCL (ug/L)	RL	(ug/L)
Total PCBs	< 0.1	< 0.1	0.1	

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	73%	70%	130%

MCL: Maximum Contaminant Level
RL: Reporting Limit
LCL: Lower Control Limit
UCL: Upper Control Limit

Vinyl Chloride by SIM

T. Meadows
4/4/11

Sample ID	Client ID	Sample Amount (ml)	Dilution Factor	Vinyl Chloride (µg/L)	1,2-Dichloroethane-d4 (µg/L)	% R Surr	% R VC
CCV	CCV	25	1	0.10	0.11	110.0%	100.0%
CCV	CCV	25	1	0.09	0.08	80.0%	90.0%
4/4/11-MB	Method Blank	25	1	<0.02	0.11	110.0%	
BKS00147A1	OL-MW-1	25	1	<0.02	0.08	80.0%	
BKS00147A2	OL-MW-5A	25	1	<0.02	0.07	70.0%	
BKS00147A3	OL-MW-2	25	1	<0.02	0.08	80.0%	
BKS00147A4	OL-MW-4	25	1	<0.02	0.07	70.0%	
BKS00147A7	OL-ER	25	1	0.05	0.07	70.0%	
BKS00147A8	OL-TB	25	1	0.09	0.08	80.0%	
BKS00148A1	OL-MW-7	25	1	<0.02	0.07	70.0%	
BKS00148A2	OL-MW-8	25	1	<0.02	0.07	70.0%	
BKS00148A3	OL-MW-6	25	1	<0.02	0.07	70.0%	
BKS00148A3 Dup	OL-MW-6	25	1	<0.02	0.07	70.0%	
BKS00148A4	OL-MW-10	25	1	<0.02	0.07	70.0%	
BKS00148A5	OL-MW-3	25	1	<0.02	0.07	70.0%	
BKS00148A6	OL-TB	25	1	0.05	0.07	70.0%	
BKS00148A7	OL-MW-11	25	1	<0.02	0.07	70.0%	
			RPD	0%		0%	

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A5	Matrix:	Water
Sample ID No.:	OL-MW-3	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/24/11	Dilution Factor:	1
Date Received:	03/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	04/01/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110401\	1201012.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A5**	Matrix:	Water
Sample ID No.:	**OL-MW-3**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/24/11**	Dilution Factor:	**1**
Date Received:	**03/25/11**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**1201012.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	84%	66-118%	66-118%				
	Toluene-d8	110%	51-143%	51-143%				
	4-Bromofluorobenzene	84%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00147A3	Matrix:	Water
Sample ID No.:	OL-MW-6	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/24/11	Dilution Factor:	1
Date Received:	03/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	04/01/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110401\	0801008.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00147A3**	Matrix:	Water
Sample ID No.:	**OL-MW-6**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/24/11**	Dilution Factor:	**1**
Date Received:	**03/25/11**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**0801008.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	78%	66-118%	66-118%				
	Toluene-d8	107%	51-143%	51-143%				
	4-Bromofluorobenzene	82%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A1	Matrix:	Water
Sample ID No.:	OL-MW-7	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/24/11	Dilution Factor:	1
Date Received:	03/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	04/01/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110401\	0601006.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00148A1**	Matrix:	Water
Sample ID No.:	**OL-MW-7**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/24/11**	Dilution Factor:	**1**
Date Received:	**03/25/11**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**0601006.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	82%	66-118%	66-118%				
	Toluene-d8	107%	51-143%	51-143%				
	4-Bromofluorobenzene	88%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A2	Matrix:	Water
Sample ID No.:	OL-MW-8	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/24/11	Dilution Factor:	1
Date Received:	03/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	04/01/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110401\	0701007.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00148A2**	Matrix:	Water
Sample ID No.:	**OL-MW-8**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/24/11**	Dilution Factor:	**1**
Date Received:	**03/25/11**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**0701007.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	81%	66-118%	66-118%				
	Toluene-d8	109%	51-143%	51-143%				
	4-Bromofluorobenzene	79%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A4	Matrix:	Water
Sample ID No.:	OL-MW-10	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/24/11	Dilution Factor:	1
Date Received:	03/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	04/01/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110401\	0901009.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00148A4**	Matrix:	Water
Sample ID No.:	**OL-MW-10**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/24/11**	Dilution Factor:	**1**
Date Received:	**03/25/11**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**0901009.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	73%	66-118%	66-118%				
	Toluene-d8	101%	51-143%	51-143%				
	4-Bromofluorobenzene	80%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00148A7**	Matrix:	Water
Sample ID No.:	**OL-MW-11**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/24/11**	Dilution Factor:	**1**
Date Received:	**03/25/11**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**1401014.D**	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00148A7**	Matrix:	Water
Sample ID No.:	**OL-MW-11**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/24/11**	Dilution Factor:	**1**
Date Received:	**03/25/11**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**1401014.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	81%	66-118%	66-118%				
	Toluene-d8	107%	51-143%	51-143%				
	4-Bromofluorobenzene	83%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A4 MS / MSD	Matrix:	Water
Sample ID No.:	OL-MW-10	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	3/24/11	Dilution Factor:	1
Date Received:	3/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	4/1/11	Supervisor's Initials:	
Data File Paths:	C:\HPCHEM\1\DATA\VOA\110401\ 1001010.D		
	C:\HPCHEM\1\DATA\VOA\110401\ 1101011.D		

Surrogate Recoveries	% Rec. MS	MSD	RPD
Dibromofluoromethane	72%	70%	3%
Toluene-d8	106%	97%	10%
4-Bromofluorobenzene	84%	71%	15%

Spike Recoveries	% Rec. MS	MSD	RPD
1,1-Dichloroethene	116%	114%	2%
Benzene	94%	97%	3%
Trichloroethene	119%	108%	10%
Toluene	106%	105%	1%
Chlorobenzene	106%	112%	5%

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**4/1/11-LCS**	Matrix:	Water
Sample ID No.:	**4/1/11-LCS**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**n/a**	Dilution Factor:	**1**
Date Received:	**n/a**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**4/1/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**0501005.D**	

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	94%	66%	118%
Toluene-d8	97%	51%	143%
4-Bromofluorobenzene	83%	63%	119%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	91%	75%	125%
Benzene	96%	75%	125%
Trichloroethene	100%	75%	125%
Toluene	99%	75%	125%
Chlorobenzene	100%	75%	125%

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A4 MS	Matrix:	Water
Sample ID No.:	OL-MW-10	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/24/11	Dilution Factor:	1
Date Received:	03/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	4/1/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110401\ 1001010.D		

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	72%	66%	118%
Toluene-d8	106%	51%	143%
4-Bromofluorobenzene	84%	63%	119%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	116%	75%	125%
Benzene	94%	75%	125%
Trichloroethene	119%	75%	125%
Toluene	106%	75%	125%
Chlorobenzene	106%	75%	125%

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A4 MSD	Matrix:	Water
Sample ID No.:	OL-MW-10	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	3/24/11	Dilution Factor:	1
Date Received:	3/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	4/1/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110401\1101011.D		

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	70%	66%	118%
Toluene-d8	97%	51%	143%
4-Bromofluorobenzene	71%	63%	119%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	114%	75%	125%
Benzene	97%	75%	125%
Trichloroethene	108%	75%	125%
Toluene	105%	75%	125%
Chlorobenzene	112%	75%	125%

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**4/1/11-MB**	Matrix:	Water
Sample ID No.:	**Method Blank**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**n/a**	Dilution Factor:	**1**
Date Received:	**n/a**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**0401004.D**	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**4/1/11-MB**	Matrix:	Water
Sample ID No.:	**Method Blank**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**n/a**	Dilution Factor:	**1**
Date Received:	**n/a**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**0401004.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	108%	66-118%	66-118%				
	Toluene-d8	105%	51-143%	51-143%				
	4-Bromofluorobenzene	91%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A6	Matrix:	Water
Sample ID No.:	OL-TB	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	03/24/11	Dilution Factor:	1
Date Received:	03/25/11		
Date Analyzed	04/ 1/11	Analyst:	T. Meadows
Date of Report:	04/01/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110401\	1301013.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00148A6**	Matrix:	Water
Sample ID No.:	**OL-TB**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**03/24/11**	Dilution Factor:	**1**
Date Received:	**03/25/11**		
Date Analyzed	**04/ 1/11**	Analyst:	**T. Meadows**
Date of Report:	**04/01/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110401**	**1301013.D**	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits					
	Surrogate Recoveries	%Rec.	**Water**	**Soil**				
	Dibromofluoromethane	74%	66-118%	66-118%				
	Toluene-d8	108%	51-143%	51-143%				
	4-Bromofluorobenzene	82%	63 - 119%	63 - 119%				
107-13-1	Acrylonitrile	0.4	U		126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U		96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U		1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U		80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U		98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U		79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U		76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U					

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A5	Matrix:	Water
Sample ID No.:	OL-MW-3	Sample Vol. (ml)	1060
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\	3701019.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A5	Matrix:	Water
Sample ID No.:	OL-MW-3	Sample Vol. (ml)	1060
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3701019.D

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	39%	24-132%	65-135%
Phenol-d5	39%	0-105%	65-135%
Nitrobenzene-d5	99%	24-136%	65-135%
2-Fluorobiphenyl	82%	41-134%	65-135%
2,4,6-Tribromophenol	28%	0-183%	65-135%
p-Terphenyl-d14	110%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A3	Matrix:	Water
Sample ID No.:	OL-MW-6	Sample Vol. (ml)	1070
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3301015.D

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A3	Matrix:	Water
Sample ID No.:	OL-MW-6	Sample Vol. (ml)	1070
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3301015.D

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	61%	24-132%	65-135%
Phenol-d5	57%	0-105%	65-135%
Nitrobenzene-d5	119%	24-136%	65-135%
2-Fluorobiphenyl	113%	41-134%	65-135%
2,4,6-Tribromophenol	32%	0-183%	65-135%
p-Terphenyl-d14	127%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A1	Matrix:	Water
Sample ID No.:	OL-MW-7	Sample Vol. (ml)	1060
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/07/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3101013.D

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A1	Matrix:	Water
Sample ID No.:	OL-MW-7	Sample Vol. (ml)	1060
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/07/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3101013.D

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	77%	24-132%	65-135%
Phenol-d5	62%	0-105%	65-135%
Nitrobenzene-d5	129%	24-136%	65-135%
2-Fluorobiphenyl	95%	41-134%	65-135%
2,4,6-Tribromophenol	42%	0-183%	65-135%
p-Terphenyl-d14	118%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A2	Matrix:	Water
Sample ID No.:	OL-MW-8	Sample Vol. (ml)	1070
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\	3201014.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A2	Matrix:	Water
Sample ID No.:	OL-MW-8	Sample Vol. (ml)	1070
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3201014.D

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	41%	24-132%	65-135%
Phenol-d5	36%	0-105%	65-135%
Nitrobenzene-d5	133%	24-136%	65-135%
2-Fluorobiphenyl	101%	41-134%	65-135%
2,4,6-Tribromophenol	36%	0-183%	65-135%
p-Terphenyl-d14	114%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A4	Matrix:	Water
Sample ID No.:	OL-MW-10	Sample Vol. (ml)	1060
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3401016.D

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A4	Matrix:	Water
Sample ID No.:	OL-MW-10	Sample Vol. (ml)	1060
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3401016.D

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	10%	24-132%	65-135%
Phenol-d5	22%	0-105%	65-135%
Nitrobenzene-d5	127%	24-136%	65-135%
2-Fluorobiphenyl	114%	41-134%	65-135%
2,4,6-Tribromophenol	19%	0-183%	65-135%
p-Terphenyl-d14	125%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A7	Matrix:	Water
Sample ID No.:	OL-MW-11	Sample Vol. (ml)	1070
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3801020.D

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.75	U	86-73-7	Fluorene	0.75	U
76-01-7	Pentachloroethane	0.75	U	84-66-2	Diethyl phthalate	0.75	U
62-53-3	Aniline	0.75	U	100-01-6	4-Nitroaniline	0.75	U
108-95-2	Phenol	0.75	U	7005-72-3	4-Chlorophenyl phenyl ether	0.75	U
111-44-4	Bis(2-chloroethyl) ether	0.75	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.75	U
95-57-8	2-Chlorophenol	0.75	U	86-30-6	N-Nitrosodiphenyl amine	0.75	U
541-73-1	1,3-Dichlorobenzene	0.75	U	103-33-3	Azobenzene	0.75	U
106-46-7	1,4-Dichlorobenzene	0.75	U	101-55-3	4-Bromophenyl phenyl ether	0.75	U
95-50-1	1,2-Dichlorobenzene	0.75	U	319-84-6	a-BHC	0.75	U
100-51-6	Benzyl Alcohol	0.75	U	118-74-1	Hexachlorobenzene	0.75	U
95-48-7	2-Methyl phenol	0.75	U	319-85-7	b-BHC	0.75	U
108-60-1	Bis(2-chloroisopropyl) ether	0.75	U	87-86-5	Pentachlorophenol	0.75	U
98-86-2	Acetophenone	0.75	U	58-89-9	g-BHC (Lindane)	0.75	U
67-72-1	Hexachloroethane	0.75	U	85-01-8	Phenanthrene	0.75	U
621-64-7	N-Nitroso-n-propyl amine	0.75	U	120-12-7	Anthracene	0.75	U
106-44-5	4-Methyl phenol	0.75	U	319-86-8	d-BHC	0.75	U
98-95-3	Nitrobenzene	0.75	U	84-74-2	Di-n-butyl phthalate	0.75	U
100-75-4	N-nitrosopiperidine	0.75	U	76-44-8	Heptachlor	0.75	U
78-59-1	Isophorone	0.75	U	309-00-2	Aldrin	0.75	U
88-75-5	2-Nitrophenol	0.75	U	1024-57-3	Heptachlor epoxide	0.75	U
105-67-9	2,4-Dimethylphenol	0.75	U	206-44-0	Fluoranthrene	0.75	U
65-85-0	Benzoic Acid	0.75	U	129-00-0	Pyrene	0.75	U
111-91-1	Bis(2-chloroethoxy) methane	0.75	U	959-98-8	Endosulfan I	0.75	U
120-83-2	2,4-Dichlorophenol	0.75	U	92-87-5	Benzidine	0.75	U
120-82-1	1,2,4-Trichlorobenzene	0.75	U	72-55-9	4,4'-DDE	0.75	U
91-20-3	Naphthalene	0.75	U	60-57-1	Dieldrin	0.75	U
106-47-8	4-Chloroaniline	0.75	U	72-20-8	Endrin	0.75	U
87-68-3	Hexachlorobutadiene	0.75	U	33213-65-9	Endosulfan II	0.75	U
924-16-3	N-nitrosodi-n-butylamine	0.75	U	72-54-8	4,4'-DDD	0.75	U
59-50-7	4-Chloro-3-methyl phenol	0.75	U	7421-92-4	Endrin aldehyde	0.75	U
91-57-6	2-Methyl naphthalene	0.75	U	85-68-7	Butyl benzenyl phthalate	0.75	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.75	U	1031-07-8	Endosulfan sulfate	0.75	U
77-47-4	Hexachlorocylcopentadiene	0.75	U	50-29-3	4,4'-DDT	0.75	U
88-06-2	2,4,6-Trichlorophenol	0.75	U	56-55-3	Benzo(a)anthracene	0.75	U
95-95-4	2,4,5-Trichlorophenol	0.75	U	218-01-9	Chrysene	0.75	U
91-58-7	2-Chloronaphthalene	0.75	U	91-94-1	3,3'-Dichlorobenzidine	0.75	U
88-74-4	2-Nitroaniline	0.75	U	72-43-5	Methoxychlor	0.75	U
131-11-3	Dimethyl phthalate	0.75	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.75	U
208-96-8	Acenaphthylene	0.75	U	117-84-0	Di-n-octyl phthalate	0.75	U
606-20-2	2,6-Dinitrotoluene	0.75	U	205-97-2	Benzo(b)fluoranthrene	0.75	U
99-09-2	3-Nitroaniline	0.75	U	207-08-9	Benzo(k)fluoranthrene	0.75	U
83-32-9	Acenaphthene	0.75	U	50-32-8	Benzo(a)pyrene	0.75	U
51-28-5	2,4-Dinitrophenol	0.75	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.75	U
132-64-9	Dibenzofuran	0.75	U	53-70-3	Dibenzo(a,h)anthracene	0.75	U
100-02-7	4-Nitrophenol	0.75	U	91-24-2	Benzo(g,h,i)perlyene	0.75	U
121-14+2	2,4-Dinitrotoluene	0.75	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.75	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00148A7	Matrix:	Water
Sample ID No.:	OL-MW-11	Sample Vol. (ml)	1070
Date Collected:	03/24/11	Final Volume (ml)	2.0
Date Received:	03/25/11	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/08/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\		3801020.D

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	44%	24-132%	65-135%
Phenol-d5	37%	0-105%	65-135%
Nitrobenzene-d5	125%	24-136%	65-135%
2-Fluorobiphenyl	102%	41-134%	65-135%
2,4,6-Tribromophenol	47%	0-183%	65-135%
p-Terphenyl-d14	118%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.75	U		2303-16-4	Diallate	0.75	U
100-52-7	Benzaldehyde	0.75	U		298-02-2	Phorate	0.75	U
930-55-2	N-nitrosopyrrolidine	0.75	U		99-35-4	1,3,5-Trinitrobenzene	0.75	U
95-53-4	o-Toluidine	0.75	U		62-44-2	Phenacetin	0.75	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.75	U		60-51-5	Dimethoate	0.75	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.75	U		1912-24-9	Atrazine	0.75	U
1888-71-7	Hexachloropropene	0.75	U		92-67-1	4-Aminobiphenyl	0.75	U
87-65-0	2,6-Dichlorophenol	0.75	U		82-68-8	Pentachloronitrobenzene	0.75	U
87-65-0	Caprolactam	0.75	U		23950-58-5	Pronamide	0.75	U
106-50-3	p-Phenylenediamine	0.75	U		298-04-4	Disulfoton	0.75	U
120-58-1	Isosafrole	0.75	U		298-00-0	Methyl parathion	0.75	U
90-12-0	1-Methyl naphthalene	0.75	U		56-38-2	Parathion	0.75	U
94-59-7	Safrole	0.75	U		91-80-5	Methapyrilene	0.75	U
92-52-4	Biphenyl	0.75	U		465-73-6	Isodrin	0.75	U
101-84-8	Diphenyl ether	0.75	U		60-11-7	p-(dimethyl amino) azobenzene	0.75	U
130-15-4	1,4-Naphthoquinone	0.75	U		510-15-0	Chlorobenzilate	0.75	U
99-65-0	1,3-Dinitrobenzene	0.75	U		143-50-0	Kepone	0.75	U
608-93-5	Pentachlorobenzene	0.75	U		119-93-7	3,3'-Dimethylbenzidine	0.75	U
134-32-7	1-Naphthalenamine	0.75	U		52-85-7	Famphur	0.75	U
91-59-8	2-Naphthalenamine	0.75	U		53-96-3	2-Acetylaminofluorene	0.75	U
99-55-8	5-Nitro-o-Toluidine	0.75	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.75	U
297-97-2	Thionazin (Zinophos)	0.75	U		56-49-5	3-Methylcholanthrene	0.75	U
122-39-4	Diphenylamine	0.75	U		226-36-8	Dibenzo(a,h)acridine	0.75	U
3689-24-5	Sulfotep	0.75	U					

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
10/14/1Cohy/Mass Spectrometry

Case File Number:	**3/28/11-LCS**	Matrix:	**Water**
Sample ID No.:	**Lab Control Spike**	Sample Vol. (ml)	**1000**
Date Collected:	**n/a**	Final Volume (ml)	**2.0**
Date Received:	**n/a**	Dilution Factor:	**1**
Date Analyzed	**04/07/11**		
Date of Report:	**04/11/11**	Analyst:	**T. Meadows**
		Supervisor's Initials:	
Data File Path:	**Q:\5973\PAM\040711**	**3001012.D**	

		QC limits	
Surrogate Recoveries	%Rec.	**Water**	**Soil**
2-Fluorophenol	87%	24-132%	65-135%
Phenol-d5	59%	0-105%	65-135%
Nitrobenzene-d5	116%	24-136%	65-135%
2-Fluorobiphenyl	106%	41-134%	65-135%
2,4,6-Tribromophenol	26%	0-183%	65-135%
p-Terphenyl-d14	119%	80-141%	65-135%

		QC limits	
Matix Spike Recoveries	%Rec.	**Water**	**Soil**
Phenol	52%	50-150%	50-150%
2-Chlorophenol	58%	50-150%	50-150%
1,4-Dichlorobenzene	76%	50-150%	50-150%
N-Nitroso-n-propyl amine	84%	50-150%	50-150%
1,2,4-Trichlorobenzene	68%	50-150%	50-150%
4-Chloro-3-methyl phenol	48%	50-150%	50-150%
Acenaphthene	96%	50-150%	50-150%
4-Nitrophenol	44%	50-150%	50-150%
2,4-Dinitrotoluene	48%	50-150%	50-150%
Pentachlorophenol	0%	50-150%	50-150%
Pyrene	90%	50-150%	50-150%

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
10/14/1Cohy/Mass Spectrometry

Case File Number:	**BKS00148A4 MS**	Matrix:	**Water**
Sample ID No.:	**OL-MW-10 Matrix Spike**	Sample Vol. (ml)	**1070**
Date Collected:	**3/24/11**	Final Volume (ml)	**2.0**
Date Received:	**3/25/11**	Dilution Factor:	**1**
Date Analyzed	**04/08/11**		
Date of Report:	**04/11/11**	Analyst:	**T. Meadows**
		Supervisor's Initials:	
Data File Path:	**Q:\5973\PAM\040711**	**3501017.D**	

		QC limits	
Surrogate Recoveries	%Rec.	**Water**	**Soil**
2-Fluorophenol	27%	24-132%	65-135%
Phenol-d5	29%	0-105%	65-135%
Nitrobenzene-d5	108%	24-136%	65-135%
2-Fluorobiphenyl	95%	41-134%	65-135%
2,4,6-Tribromophenol	12%	0-183%	65-135%
p-Terphenyl-d14	114%	80-141%	65-135%

		QC limits	
Matix Spike Recoveries	%Rec.	**Water**	**Soil**
Phenol	35%	50-150%	50-150%
2-Chlorophenol	37%	50-150%	50-150%
1,4-Dichlorobenzene	76%	50-150%	50-150%
N-Nitroso-n-propyl amine	100%	50-150%	50-150%
1,2,4-Trichlorobenzene	63%	50-150%	50-150%
4-Chloro-3-methyl phenol	33%	50-150%	50-150%
Acenaphthene	104%	50-150%	50-150%
4-Nitrophenol	51%	50-150%	50-150%
2,4-Dinitrotoluene	62%	50-150%	50-150%
Pentachlorophenol	4%	50-150%	50-150%
Pyrene	91%	50-150%	50-150%

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
10/14/1Cohy/Mass Spectrometry

Case File Number:	**BKS00148A4 MSD**	Matrix:	**Water**
Sample ID No.:	**OL-MW-10 Matrix Spike Duplicate**	Sample Vol. (ml)	**1070**
Date Collected:	**3/24/11**	Final Volume (ml)	**2.0**
Date Received:	**3/25/11**	Dilution Factor:	**1**
Date Analyzed	**04/08/11**		
Date of Report:	**04/11/11**	Analyst:	**T. Meadows**
		Supervisor's Initials:	
Data File Path:	**Q:\5973\PAM\040711**	**3601018.D**	

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil	RPD
2-Fluorophenol	25%	24-132%	65-135%	5.0%
Phenol-d5	30%	0-105%	65-135%	5.0%
Nitrobenzene-d5	125%	24-136%	65-135%	14.2%
2-Fluorobiphenyl	109%	41-134%	65-135%	13.7%
2,4,6-Tribromophenol	10%	0-183%	65-135%	19.8%
p-Terphenyl-d14	115%	80-141%	65-135%	0.8%

Matix Spike Recoveries	%Rec.	QC limits Water	QC limits Soil	RPD
Phenol	40%	50-150%	50-150%	12.3%
2-Chlorophenol	40%	50-150%	50-150%	7.0%
1,4-Dichlorobenzene	90%	50-150%	50-150%	17.0%
N-Nitroso-n-propyl amine	104%	50-150%	50-150%	4.5%
1,2,4-Trichlorobenzene	75%	50-150%	50-150%	17.2%
4-Chloro-3-methyl phenol	35%	50-150%	50-150%	6.9%
Acenaphthene	109%	50-150%	50-150%	4.3%
4-Nitrophenol	50%	50-150%	50-150%	1.3%
2,4-Dinitrotoluene	64%	50-150%	50-150%	3.0%
Pentachlorophenol	4%	50-150%	50-150%	8.4%
Pyrene	90%	50-150%	50-150%	0.4%

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	3/28/11-MB	Matrix:	Water
Sample ID No.:	Method Blank	Sample Vol. (ml)	1000
Date Collected:	n/a	Final Volume (ml)	2.0
Date Received:	n/a	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/07/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\	2901011.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
55-18-5	N-nitrosodiethylamine	0.80	U	86-73-7	Fluorene	0.80	U
76-01-7	Pentachloroethane	0.80	U	84-66-2	Diethyl phthalate	0.80	U
62-53-3	Aniline	0.80	U	100-01-6	4-Nitroaniline	0.80	U
108-95-2	Phenol	0.80	U	7005-72-3	4-Chlorophenyl phenyl ether	0.80	U
111-44-4	Bis(2-chloroethyl) ether	0.80	U	534-52-1	2-Methyl-4,6-dinitrophenol	0.80	U
95-57-8	2-Chlorophenol	0.80	U	86-30-6	N-Nitrosodiphenyl amine	0.80	U
541-73-1	1,3-Dichlorobenzene	0.80	U	103-33-3	Azobenzene	0.80	U
106-46-7	1,4-Dichlorobenzene	0.80	U	101-55-3	4-Bromophenyl phenyl ether	0.80	U
95-50-1	1,2-Dichlorobenzene	0.80	U	319-84-6	a-BHC	0.80	U
100-51-6	Benzyl Alcohol	0.80	U	118-74-1	Hexachlorobenzene	0.80	U
95-48-7	2-Methyl phenol	0.80	U	319-85-7	b-BHC	0.80	U
108-60-1	Bis(2-chloroisopropyl) ether	0.80	U	87-86-5	Pentachlorophenol	0.80	U
98-86-2	Acetophenone	0.80	U	58-89-9	g-BHC (Lindane)	0.80	U
67-72-1	Hexachloroethane	0.80	U	85-01-8	Phenanthrene	0.80	U
621-64-7	N-Nitroso-n-propyl amine	0.80	U	120-12-7	Anthracene	0.80	U
106-44-5	4-Methyl phenol	0.80	U	319-86-8	d-BHC	0.80	U
98-95-3	Nitrobenzene	0.80	U	84-74-2	Di-n-butyl phthalate	0.80	U
100-75-4	N-nitrosopiperidine	0.80	U	76-44-8	Heptachlor	0.80	U
78-59-1	Isophorone	0.80	U	309-00-2	Aldrin	0.80	U
88-75-5	2-Nitrophenol	0.80	U	1024-57-3	Heptachlor epoxide	0.80	U
105-67-9	2,4-Dimethylphenol	0.80	U	206-44-0	Fluoranthrene	0.80	U
65-85-0	Benzoic Acid	0.80	U	129-00-0	Pyrene	0.80	U
111-91-1	Bis(2-chloroethoxy) methane	0.80	U	959-98-8	Endosulfan I	0.80	U
120-83-2	2,4-Dichlorophenol	0.80	U	92-87-5	Benzidine	0.80	U
120-82-1	1,2,4-Trichlorobenzene	0.80	U	72-55-9	4,4'-DDE	0.80	U
91-20-3	Naphthalene	0.80	U	60-57-1	Dieldrin	0.80	U
106-47-8	4-Chloroaniline	0.80	U	72-20-8	Endrin	0.80	U
87-68-3	Hexachlorobutadiene	0.80	U	33213-65-9	Endosulfan II	0.80	U
924-16-3	N-nitrosodi-n-butylamine	0.80	U	72-54-8	4,4'-DDD	0.80	U
59-50-7	4-Chloro-3-methyl phenol	0.80	U	7421-92-4	Endrin aldehyde	0.80	U
91-57-6	2-Methyl naphthalene	0.80	U	85-68-7	Butyl benzenyl phthalate	0.80	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.80	U	1031-07-8	Endosulfan sulfate	0.80	U
77-47-4	Hexachlorocylcopentadiene	0.80	U	50-29-3	4,4'-DDT	0.80	U
88-06-2	2,4,6-Trichlorophenol	0.80	U	56-55-3	Benzo(a)anthracene	0.80	U
95-95-4	2,4,5-Trichlorophenol	0.80	U	218-01-9	Chrysene	0.80	U
91-58-7	2-Chloronaphthalene	0.80	U	91-94-1	3,3'-Dichlorobenzidine	0.80	U
88-74-4	2-Nitroaniline	0.80	U	72-43-5	Methoxychlor	0.80	U
131-11-3	Dimethyl phthalate	0.80	U	117-81-7	Bis(2-ethylhexyl) phthalate	0.80	U
208-96-8	Acenaphthylene	0.80	U	117-84-0	Di-n-octyl phthalate	0.80	U
606-20-2	2,6-Dinitrotoluene	0.80	U	205-97-2	Benzo(b)fluoranthrene	0.80	U
99-09-2	3-Nitroaniline	0.80	U	207-08-9	Benzo(k)fluoranthrene	0.80	U
83-32-9	Acenaphthene	0.80	U	50-32-8	Benzo(a)pyrene	0.80	U
51-28-5	2,4-Dinitrophenol	0.80	U	193-39-5	Indeno(1,2,3-cd)pyrene	0.80	U
132-64-9	Dibenzofuran	0.80	U	53-70-3	Dibenzo(a,h)anthracene	0.80	U
100-02-7	4-Nitrophenol	0.80	U	91-24-2	Benzo(g,h,i)perlyene	0.80	U
121-14+2	2,4-Dinitrotoluene	0.80	U				
58-90-2	2,3,4,6-Tetrachlorophenol	0.80	U				

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SEMI-VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8270
Measurement of Extractable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	3/28/11-MB	Matrix:	Water
Sample ID No.:	Method Blank	Sample Vol. (ml)	1000
Date Collected:	n/a	Final Volume (ml)	2.0
Date Received:	n/a	Dilution Factor:	1
Date Extracted:	03/28/11		
Date Analyzed	04/07/11	Analyst:	T. Meadows
Date of Report:	04/11/11	Supervisor's Initials:	
Data File Path:	Q:\5973\PAM\040711\	2901011.D	

CAS#	Name of Compound	Amount (ppb)	Flag		CAS#	Name of Compound	Amount (ppb)	Flag

FLAGS:
- U Indicates compound was analyzed for, but not detected at the specified detection limit.
- B Blank contaminated with this analyte.
- J Estimated value - compound positively identified, but below specified detection limit.
- E Estimated value - compound exceeded calibration range.
- D Compound analyzed at a secondary dilution factor of _____ from data file: _____
- PP Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppm Amounts are in mg/L or mg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Surrogate Recoveries	%Rec.	QC limits Water	QC limits Soil
2-Fluorophenol	79%	24-132%	65-135%
Phenol-d5	78%	0-105%	65-135%
Nitrobenzene-d5	128%	24-136%	65-135%
2-Fluorobiphenyl	102%	41-134%	65-135%
2,4,6-Tribromophenol	36%	0-183%	65-135%
p-Terphenyl-d14	110%	80-141%	65-135%

62-50-0	Ethyl methanesulfonic acid	0.80	U		2303-16-4	Diallate	0.80	U
100-52-7	Benzaldehyde	0.80	U		298-02-2	Phorate	0.80	U
930-55-2	N-nitrosopyrrolidine	0.80	U		99-35-4	1,3,5-Trinitrobenzene	0.80	U
95-53-4	o-Toluidine	0.80	U		62-44-2	Phenacetin	0.80	U
106-44-5	3 + 4-Methyl phenol (unresolved	0.80	U		60-51-5	Dimethoate	0.80	U
126-68-1	O,O,O-Triethyl Phosphorothioate	0.80	U		1912-24-9	Atrazine	0.80	U
1888-71-7	Hexachloropropene	0.80	U		92-67-1	4-Aminobiphenyl	0.80	U
87-65-0	2,6-Dichlorophenol	0.80	U		82-68-8	Pentachloronitrobenzene	0.80	U
87-65-0	Caprolactam	0.80	U		23950-58-5	Pronamide	0.80	U
106-50-3	p-Phenylenediamine	0.80	U		298-04-4	Disulfoton	0.80	U
120-58-1	Isosafrole	0.80	U		298-00-0	Methyl parathion	0.80	U
90-12-0	1-Methyl naphthalene	0.80	U		56-38-2	Parathion	0.80	U
94-59-7	Safrole	0.80	U		91-80-5	Methapyrilene	0.80	U
92-52-4	Biphenyl	0.80	U		465-73-6	Isodrin	0.80	U
101-84-8	Diphenyl ether	0.80	U		60-11-7	p-(dimethyl amino) azobenzene	0.80	U
130-15-4	1,4-Naphthoquinone	0.80	U		510-15-0	Chlorobenzilate	0.80	U
99-65-0	1,3-Dinitrobenzene	0.80	U		143-50-0	Kepone	0.80	U
608-93-5	Pentachlorobenzene	0.80	U		119-93-7	3,3'-Dimethylbenzidine	0.80	U
134-32-7	1-Naphthalenamine	0.80	U		52-85-7	Famphur	0.80	U
91-59-8	2-Naphthalenamine	0.80	U		53-96-3	2-Acetylaminofluorene	0.80	U
99-55-8	5-Nitro-o-Toluidine	0.80	U		57-97-6	7,12-Dimethyl benz(a) anthracer	0.80	U
297-97-2	Thionazin (Zinophos)	0.80	U		56-49-5	3-Methylcholanthrene	0.80	U
122-39-4	Diphenylamine	0.80	U		226-36-8	Dibenzo(a,h)acridine	0.80	U
3689-24-5	Sulfotep	0.80	U					

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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00148A5	**Matrix:**	Water
Sample ID No.:	OL-MW-3	**Sample Vol. (ml)**	990
Date Collected:	3/24/11	**Dilution Factor:**	1
Date Received:	3/25/11	**Prepped:**	TM
Date Prepped:	3/28/11	**Analyst:**	JDS
Date Analyzed	4/8/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	107%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00148A3	**Matrix:**	Water
Sample ID No.:	OL-MW-6	**Sample Vol. (ml)**	990
Date Collected:	3/24/11	**Dilution Factor:**	1
Date Received:	3/25/11	**Prepped:**	TM
Date Prepped:	3/28/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	74%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00148A1	**Matrix:**	Water
Sample ID No.:	OL-MW-7	**Sample Vol. (ml)**	990
Date Collected:	3/24/11	**Dilution Factor:**	1
Date Received:	3/25/11	**Prepped:**	TM
Date Prepped:	3/28/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	103%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00148A2	**Matrix:**	Water
Sample ID No.:	OL-MW-8	**Sample Vol. (ml)**	990
Date Collected:	3/24/11	**Dilution Factor:**	1
Date Received:	3/25/11	**Prepped:**	TM
Date Prepped:	3/28/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	119%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00148A4	**Matrix:**	Water
Sample ID No.:	OL-MW-10	**Sample Vol. (ml)**	990
Date Collected:	3/24/11	**Dilution Factor:**	1
Date Received:	3/25/11	**Prepped:**	TM
Date Prepped:	3/28/11	**Analyst:**	JDS
Date Analyzed	4/7/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	115%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs SAMPLE REPORT

Results of Analysis by EPA Method 8082A

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00148A7	**Matrix:**	Water
Sample ID No.:	OL-MW-11	**Sample Vol. (ml)**	990
Date Collected:	3/24/11	**Dilution Factor:**	1
Date Received:	3/25/11	**Prepped:**	TM
Date Prepped:	3/28/11	**Analyst:**	JDS
Date Analyzed	4/8/11	**Supervisor's Initials:**	
Date of Report:	4/8/11		

Total PCBs

Aroclor	Result (ug/L)	RL (ug/L)
1016	< 0.1	0.1
1221	< 0.1	0.1
1232	< 0.1	0.1
1242	< 0.1	0.1
1248	< 0.1	0.1
1254	< 0.1	0.1
1260	< 0.1	0.1

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	95%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs MATRIX SPIKE REPORT

Results of Analysis by EPA Method 508.1

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00148A4 MS	**Matrix:**	Water
Sample ID No.:	OL-MW-10 MS	**Sample Vol. (ml)**	1000
Date Collected:	NA	**Dilution Factor:**	1
Date Received:	NA	**Prepped:**	TM
Date Analyzed	4/7/11	**Analyst:**	JDS
Date of Report:	4/8/11	**Supervisor's Initials:**	

Total PCBs

Aroclor	RECOVERY	LCL	UCL
Total PCBs	97%	70%	130%

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	99%	70%	130%

MCL: Maximum Contaminant Level
RL: Reporting Limit
LCL: Lower Control Limit
UCL: Upper Control Limit

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TOTAL PCBs MATRIX SPIKE REPORT

Results of Analysis by EPA Method 508.1

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	BKS00148A4 MSD	**Matrix:**	Water
Sample ID No.:	OL-MW-10 MSD	**Sample Vol. (ml)**	1000
Date Collected:	NA	**Dilution Factor:**	1
Date Received:	NA	**Prepped:**	TM
Date Analyzed	4/8/11	**Analyst:**	JDS
Date of Report:	4/8/11	**Supervisor's Initials:**	

Total PCBs

Aroclor	RECOVERY	LCL	UCL
Total PCBs	104%	70%	130%

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	99%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs LABORATORY FORTIFIED BLANK REPORT

Results of Analysis by EPA Method 508.1

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	LFB (3/28/11)	**Matrix:**	Water
Sample ID No.:	LFB	**Sample Vol. (ml)**	1000
Date Collected:	NA	**Dilution Factor:**	1
Date Received:	NA	**Prepped:**	TM
Date Analyzed	4/7/11	**Analyst:**	JDS
Date of Report:	4/8/11	**Supervisor's Initials:**	

Total PCBs

Arochlor	RECOVERY	LCL	UCL
Total PCBs	121%	70%	130%

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	95%	70%	130%

MCL: Maximum Contaminant Level

RL: Reporting Limit

LCL: Lower Control Limit

UCL: Upper Control Limit

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TOTAL PCBs LABORATORY REAGENT BLANK REPORT

Results of Analysis by EPA Method 508.1

Measurement of Total PCBs in Water by GC/ECD

Case File Number:	MB (3/28/11)	**Matrix:**	Water
Sample ID No.:	LRB	**Sample Vol. (ml):**	1000
Date Collected:	NA	**Dilution Factor:**	1
Date Received:	NA	**Prepped:**	TM
Date Analyzed	4/7/11	**Analyst:**	JDS
Date of Report:	4/8/11	**Supervisor's Initials:**	

Total PCBs

Aroclor	Result (ug/L)	UCL (ug/L)	RL	(ug/L)
Total PCBs	< 0.1	< 0.1	0.1	

Surrogate Compounds

Parameter	% Rec.	LCL	UCL
Decachlorobiphenyl (DCB)	95%	70%	130%

MCL: Maximum Contaminant Level
RL: Reporting Limit
LCL: Lower Control Limit
UCL: Upper Control Limit

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A2	Matrix:	Water
Sample ID No.:	MW-1	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\11010 0801008.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U
	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U
	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U
	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A2	Matrix:	Water
Sample ID No.:	MW-1	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\11010 0801008.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water Soil				
	Dibromofluoromethane	71%	66-118% 66-118%				
	Toluene-d8	93%	51-143% 51-143%				
	4-Bromofluorobenzene	99%	46-103% 46-103%				
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in µg/L or µg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Aquatic Research Inc.
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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A2 MS	Matrix:	Water
Sample ID No.:	BKS00145A2 MS	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	1/4/11	Analyst:	T. Meadows
Date of Report:	1/5/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110104\ 0901009.D		

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	73%	66%	118%
Toluene-d8	92%	51%	143%
4-Bromofluorobenzene	86%	46%	103%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	84%	75%	125%
Benzene	94%	75%	125%
Trichloroethene	113%	75%	125%
Toluene	116%	75%	125%
Chlorobenzene	111%	75%	125%

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A4	Matrix:	Water
Sample ID No.:	MW-2	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\11010 1101011.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U
	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U
	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U
	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A4	Matrix:	Water
Sample ID No.:	MW-2	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\11010 1101011.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	67%	66-118%	66-118%			
	Toluene-d8	93%	51-143%	51-143%			
	4-Bromofluorobenzene	95%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in µg/L or µg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A5	Matrix:	Water
Sample ID No.:	MW-4	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110104\1201012.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A5	Matrix:	Water
Sample ID No.:	MW-4	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110104\1201012.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	76%	66-118%	66-118%			
	Toluene-d8	96%	51-143%	51-143%			
	4-Bromofluorobenzene	94%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in µg/L or µg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A3	Matrix:	Water
Sample ID No.:	MW-5A	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110104\ 1001010.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U
	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U
	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U
	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A3	Matrix:	Water
Sample ID No.:	MW-5A	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110104\ 1001010.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	70%	66-118%	66-118%			
	Toluene-d8	91%	51-143%	51-143%			
	4-Bromofluorobenzene	93%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A1	Matrix:	Water
Sample ID No.:	MW-10	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110104 0601006.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A1	Matrix:	Water
Sample ID No.:	MW-10	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110104 0601006.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	70%	66-118%	66-118%			
	Toluene-d8	91%	51-143%	51-143%			
	4-Bromofluorobenzene	85%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A1 Dup	Matrix:	Water
Sample ID No.:	MW-10 Duplicate	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110104\0701007.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00145A1 Dup**	Matrix:	Water
Sample ID No.:	**MW-10 Duplicate**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**12/28/10**	Dilution Factor:	**1**
Date Received:	**12/29/10**		
Date Analyzed	**01/04/11**	Analyst:	**T. Meadows**
Date of Report:	**01/05/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110104\0701007.D**		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water / Soil				
	Dibromofluoromethane	68%	66-118% / 66-118%				
	Toluene-d8	89%	51-143% / 51-143%				
	4-Bromofluorobenzene	86%	46-103% / 46-103%				
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in µg/L or µg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A8	Matrix:	Water
Sample ID No.:	SW-3	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110104\ 1501015.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A8	Matrix:	Water
Sample ID No.:	SW-3	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110104\ 1501015.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	72%	66-118%	66-118%			
	Toluene-d8	93%	51-143%	51-143%			
	4-Bromofluorobenzene	88%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A6	Matrix:	Water
Sample ID No.:	SW-2	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110104\ 1301013.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A6	Matrix:	Water
Sample ID No.:	SW-2	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110104\ 1301013.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	74%	66-118%	66-118%			
	Toluene-d8	92%	51-143%	51-143%			
	4-Bromofluorobenzene	99%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	1/4/11-MB	Matrix:	Water
Sample ID No.:	Method Blank	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	n/a	Dilution Factor:	1
Date Received:	n/a		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110104\0401004.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	1/4/11-MB	Matrix:	Water
Sample ID No.:	Method Blank	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	n/a	Dilution Factor:	1
Date Received:	n/a		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110104\0401004.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water / Soil				
	Dibromofluoromethane	106%	66-118% / 66-118%				
	Toluene-d8	95%	51-143% / 51-143%				
	4-Bromofluorobenzene	99%	46-103% / 46-103%				
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**1/4/11-LCS**	Matrix:	Water
Sample ID No.:	**1/4/11-LCS**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**n/a**	Dilution Factor:	**1**
Date Received:	**n/a**		
Date Analyzed	**1/4/11**	Analyst:	**T. Meadows**
Date of Report:	**1/5/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110104**	**0501005.D**	

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	103%	66%	118%
Toluene-d8	95%	51%	143%
4-Bromofluorobenzene	103%	46%	103%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	78%	75%	125%
Benzene	90%	75%	125%
Trichloroethene	89%	75%	125%
Toluene	100%	75%	125%
Chlorobenzene	97%	75%	125%

Vinyl Chloride by SIM

T. Meadows
1/7/11

Sample ID	Client ID	Sample Amount (ml)	Dilution Factor	Vinyl Chloride (µg/L)	1,2-Dichloroethane-d4 (µg/L)	% R Surr	% R VC
CCV	CCV	25	1	0.10	0.10	100.0%	100.0%
CCV	CCV	25	1	0.09	0.09	90.0%	90.0%
1/6/11-MB	Method Blank	25	1	<0.02	0.10	100.0%	
BKS00145A1	MW-10	25	1	<0.02	0.08	80.0%	
BKS00145A2	MW-1	25	1	<0.02	0.08	80.0%	
BKS00145A3	MW-5A	25	1	<0.02	0.07	70.0%	
BKS00145A4	MW-2	25	1	<0.02	0.07	70.0%	
BKS00145A5	MW-4	25	1	<0.02	0.07	70.0%	
BKS00145A6	SW-2	25	1	<0.02	0.07	70.0%	
BKS00145A7	SW-4	25	1	<0.02	0.07	70.0%	
BKS00145A8	SW-3	25	1	<0.02	0.07	70.0%	
			RPD	0%			

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CASE FILE NUMBER:	BKS001-45	PAGE 1	
REPORT DATE:	01/13/11		
DATE SAMPLED:	12/28/10	DATE RECEIVED:	12/29/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

CASE NARRATIVE

Eight water samples were received by the laboratory in good condition. Analysis was performed according to the chain of custody received with the samples. Dissolved arsenic analysis was performed by ICP/MS by concentrating the samples 10 fold. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages. VOC data and Vinyl Chloride QC data are included as separate reports.

SAMPLE DATA

SAMPLE ID	AMMONIA (mg/l)	NITRATE (mg/l)	NITRITE (mg/l)	TOC (mg/l)	COD (mg/l)	VINYL CHLORIDE (ug/l)
MW-10	0.022	<0.010	<0.002	2.86	<10.0	<0.02
MW-1	<0.010	0.122	<0.002	<0.250	<10.0	<0.02
MW-5A	<0.010	0.441	<0.002	0.328	<10.0	<0.02
MW-2	<0.010	0.369	0.002	0.429	86.5	<0.02
MW-4	<0.010	0.550	<0.002	<0.250	<10.0	<0.02
SW-2	<0.010	<0.010	0.003	7.95	24.2	<0.02
SW-4	<0.010	0.227	0.003	8.55	25.5	<0.02
SW-3	<0.010	0.171	0.002	5.83	17.8	<0.02

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CASE FILE NUMBER:	BKS001-45	PAGE 2
REPORT DATE:	01/13/11	
DATE SAMPLED:	12/28/10	12/29/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

SAMPLE DATA-CONTINUED

SAMPLE ID	TOTAL COLIFORM (#/100mls)	FECAL COLIFORM (#/100mls)	CHLORIDE (mg/l)	SULFATE (mg/l)
MW-10	<1		0.88	14.2
MW-1	<1		2.40	3.69
MW-5A	<1		1.86	3.18
MW-2	<1		1.76	3.34
MW-4	10		2.54	3.02
SW-2		4	1.56	<1.00
SW-4		1	1.76	<1.00
SW-3		46	2.15	<1.00

	pH	ALKALINITY (mgCaCO3/l)	HCO3 (mgCaCO3/l)	CO3 (mgCaCO3/l)
MW-10	6.57	196	122	<1.00
MW-1	6.41	66.3	35.5	<1.00
MW-5A	6.53	103	62.2	<1.00
MW-2	7.03	58.1	48.1	<1.00
MW-4	7.13	60.6	51.9	<1.00
SW-2	7.17	18.3	15.9	<1.00
SW-4	6.78	15.8	11.5	<1.00
SW-3	6.30	6.18	2.91	<1.00

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CASE FILE NUMBER:	BKS001-45	PAGE 3
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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

SAMPLE DATA-CONTINUED

	DISSOLVED METALS				
SAMPLE ID	ARSENIC (ug/l)	BARIUM (mg/l)	IRON (mg/l)	MANGANESE (mg/l)	ZINC (mg/l)
MW-10	1.05	0.007	<0.020	3.34	<0.005
MW-1	0.098	<0.005	<0.020	<0.005	<0.005
MW-5A	0.160	<0.005	<0.020	<0.005	<0.005
MW-2	0.652	<0.005	<0.020	<0.005	<0.005
MW-4	0.216	<0.005	<0.020	<0.005	<0.005
SW-2	0.737	0.007	0.087	<0.005	0.018
SW-4	0.566	0.005	0.105	0.005	0.019
SW-3	0.230	0.006	0.091	0.007	0.006

	METALS		
SAMPLE ID	CALCIUM (mg/l)	POTASSIUM (mg/l)	SODIUM (mg/l)
MW-10	30.1	1.12	9.51
MW-1	9.93	0.708	4.27
MW-5A	12.1	0.915	5.36
MW-2	7.24	1.06	4.32
MW-4	8.19	0.882	4.54
SW-2	6.81	<0.500	2.28
SW-4	6.55	<0.500	2.11
SW-3	2.55	<0.500	1.71

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CASE FILE NUMBER:	BKS001-45	PAGE 4
REPORT DATE:	01/13/11	
DATE SAMPLED:	12/28/10	12/29/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA

QC PARAMETER	AMMONIA (mg/l)	NITRATE (mg/l)	NITRITE (mg/l)	TOC (mg/l)	COD (mg/l)	VINYL CHLORIDE (ug/l)
METHOD	EPA 350.1	EPA 353.2	EPA 354.1	EPA 415.1	EPA 410.2	EPA 8260-SIM
DATE ANALYZED	12/30/10	12/30/10	12/30/10	01/11/11	01/11/11	01/06/11
DETECTION LIMIT	0.006	0.005	0.001	0.100	6.00	0.01
REPORTING LIMIT	0.010	0.010	0.002	0.250	10.0	0.02
DUPLICATE						
SAMPLE ID	BATCH	BATCH	SW-3	MW-10	BATCH	BATCH
ORIGINAL	<0.010	0.594	0.002	2.86	<10.0	<0.02
DUPLICATE	<0.010	0.593	0.002	2.87	<10.0	<0.02
RPD	NC	0.21%	0.00%	0.14%	NC	NC
SPIKE SAMPLE						
SAMPLE ID	BATCH	BATCH	SW-3	MW-10	BATCH	
ORIGINAL	<0.010	0.594	0.002	2.86	<10.0	
SPIKED SAMPLE	0.194	0.796	0.042	6.87	54.3	
SPIKE ADDED	0.200	0.200	0.040	4.50	50.0	
% RECOVERY	96.87%	100.64%	100.00%	89.11%	108.66%	NA
QC CHECK						
FOUND	0.332	0.409	0.040	3.88	97.7	0.10
TRUE	0.324	0.408	0.040	4.00	100	0.10
% RECOVERY	102.42%	100.17%	100.00%	96.93%	97.69%	100.00%
BLANK	<0.010	<0.010	<0.002	<0.250	<10.0	<0.02

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

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CASE FILE NUMBER:	BKS001-45	PAGE 5
REPORT DATE:	01/13/11	
DATE SAMPLED:	12/28/10	12/29/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA

QC PARAMETER	TOTAL COLIFORM (#/100mls)	FECAL COLIFORM (#/100mls)	CHLORIDE (mg/l)	SULFATE (mg/l)
METHOD	SM18 9222B	SM18 9222D	EPA 325.3	EPA 375.4
DATE ANALYZED	12/29/10	12/29/10	01/04/11	01/05/11
DETECTION LIMIT	1	1	0.16	0.76
REPORTING LIMIT	1	1	0.50	1.00
DUPLICATE				
SAMPLE ID	MW-4	SW-3	BATCH	BATCH
ORIGINAL	10	46	1.37	3.50
DUPLICATE	7	51	1.37	3.42
RPD	35.29%	10.31%	0.00%	2.31%
SPIKE SAMPLE				
SAMPLE ID			BATCH	BATCH
ORIGINAL			1.37	3.50
SPIKED SAMPLE			11.0	13.2
SPIKE ADDED			10.0	10.0
% RECOVERY	NA	NA	96.78%	97.43%
QC CHECK				
FOUND			28.4	9.76
TRUE			30.0	10.0
% RECOVERY	NA	NA	94.82%	97.56%
PREP BLANK	< 1	< 1	<0.50	<1.00

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CASE FILE NUMBER:	BKS001-45	PAGE 6
REPORT DATE:	01/13/11	
DATE SAMPLED:	12/28/10	12/29/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA

QC PARAMETER	pH	ALKALINITY (mgCaCO3/l)	HCO3 (mgCaCO3/l)	CO3 (mgCaCO3/l)
METHOD	EPA 150.1	EPA 310.1	EPA 310.1	EPA 310.1
DATE ANALYZED	12/29/10	01/03/11	01/03/11	01/03/11
DETECTION LIMIT	0.10	1.00	1.00	1.00
REPORTING LIMIT	0.10	1.00	1.00	1.00
DUPLICATE				
SAMPLE ID		BATCH		
ORIGINAL		380		
DUPLICATE		392		
RPD	NA	3.08%	NA	NA
SPIKE SAMPLE				
SAMPLE ID				
ORIGINAL				
SPIKED SAMPLE				
SPIKE ADDED				
% RECOVERY	NA	NA	NA	NA
QC CHECK				
FOUND		102		
TRUE		100		
% RECOVERY	NA	102.20%	NA	NA
PREP BLANK	NA	NA	NA	NA

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CASE FILE NUMBER:	BKS001-45	PAGE 7
REPORT DATE:	01/13/11	
DATE SAMPLED:	12/28/10	12/29/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA - DISSOLVED METALS

QC PARAMETER	ARSENIC (ug/l)	BARIUM (mg/l)	IRON (mg/l)	MANGANESE (mg/l)	ZINC (mg/l)
METHOD	EPA 6020	EPA 6010	EPA 6010	EPA 6010	EPA 6010
DATE ANALYZED	01/05/11	01/04/11	01/04/11	01/04/11	01/04/11
DETECTION LIMIT	0.010	0.002	0.008	0.003	0.003
REPORTING LIMIT	0.050	0.005	0.020	0.005	0.005
DUPLICATE					
SAMPLE ID	BATCH	SW-3	SW-3	SW-3	SW-3
ORIGINAL	0.318	0.006	0.091	0.007	0.006
DUPLICATE	0.365	0.006	0.092	0.007	0.006
RPD	13.76%	1.77%	1.42%	2.86%	3.17%
SPIKE SAMPLE					
SAMPLE ID	BATCH	SW-3	SW-3	SW-3	SW-3
ORIGINAL	0.318	0.006	0.091	0.007	0.006
SPIKED SAMPLE	0.522	1.01	9.86	0.972	1.03
SPIKE ADDED	0.200	1.00	10.0	1.00	1.00
% RECOVERY	102.00%	100.71%	97.64%	96.45%	102.73%
QC CHECK					
FOUND	0.721	1.02	1.05	1.01	1.02
TRUE	0.668	1.00	1.00	1.00	1.00
% RECOVERY	108.00%	101.96%	104.91%	101.44%	102.04%
PREP BLANK	<0.050	<0.005	<0.020	<0.005	<0.005

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CASE FILE NUMBER:	BKS001-45		PAGE 8
REPORT DATE:	01/13/11		
DATE SAMPLED:	12/28/10	DATE RECEIVED:	12/29/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA

QC PARAMETER	CALCIUM (mg/l)	POTASSIUM (mg/l)	SODIUM (mg/l)
METHOD	EPA 200.7	EPA 200.7	EPA 200.7
DATE ANALYZED	01/04/11	01/04/11	01/04/11
DETECTION LIMIT	0.050	0.300	0.300
REPORTING LIMIT	0.100	0.500	0.500
DUPLICATE			
SAMPLE ID	SW-3	SW-3	SW-3
ORIGINAL	2.55	<0.500	1.71
DUPLICATE	2.54	<0.500	1.71
RPD	0.45%	NC	0.42%
SPIKE SAMPLE			
SAMPLE ID	SW-3	SW-3	SW-3
ORIGINAL	2.55	<0.500	1.71
SPIKED SAMPLE	12.3	11.9	12.6
SPIKE ADDED	10.0	10.0	10.0
% RECOVERY	97.47%	119.47%	109.16%
QC CHECK			
FOUND	10.1	9.53	9.67
TRUE	10.0	10.0	10.0
% RECOVERY	101.20%	95.28%	96.71%
PREP BLANK	<0.100	<0.500	<0.500

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Submitted By:

Steven Lazoff
Laboratory Director

Aquatic Research Inc.
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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A7	Matrix:	Water
Sample ID No.:	SW-4	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110104\1401014.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00145A7	Matrix:	Water
Sample ID No.:	SW-4	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/28/10	Dilution Factor:	1
Date Received:	12/29/10		
Date Analyzed	01/04/11	Analyst:	T. Meadows
Date of Report:	01/05/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110104\1401014.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	73%	66-118%	66-118%			
	Toluene-d8	94%	51-143%	51-143%			
	4-Bromofluorobenzene	89%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in µg/L or µg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00146A4 MS	Matrix:	Water
Sample ID No.:	BKS00146A4 MS	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	n/a	Dilution Factor:	1
Date Received:	n/a		
Date Analyzed	1/5/11	Analyst:	T. Meadows
Date of Report:	1/6/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110105\	1101011.D	

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	65%	66%	118%
Toluene-d8	89%	51%	143%
4-Bromofluorobenzene	68%	46%	103%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	115%	75%	125%
Benzene	83%	75%	125%
Trichloroethene	102%	75%	125%
Toluene	107%	75%	125%
Chlorobenzene	102%	75%	125%

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00146A4	Matrix:	Water
Sample ID No.:	OL-MW-8-0	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/29/10	Dilution Factor:	1
Date Received:	12/30/10		
Date Analyzed	01/05/11	Analyst:	T. Meadows
Date of Report:	01/06/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110105\1001010.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00146A4**	Matrix:	Water
Sample ID No.:	**OL-MW-8-0**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**12/29/10**	Dilution Factor:	**1**
Date Received:	**12/30/10**		
Date Analyzed	**01/05/11**	Analyst:	**T. Meadows**
Date of Report:	**01/06/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110105\1001010.D**		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	**Water**	**Soil**			
	Dibromofluoromethane	67%	66-118%	66-118%			
	Toluene-d8	87%	51-143%	51-143%			
	4-Bromofluorobenzene	72%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in µg/L or µg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00146A5	Matrix:	Water
Sample ID No.:	OL-MW-7-0	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/29/10	Dilution Factor:	1
Date Received:	12/30/10		
Date Analyzed	01/05/11	Analyst:	T. Meadows
Date of Report:	01/06/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110105\1201012.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00146A5	Matrix:	Water
Sample ID No.:	OL-MW-7-0	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/29/10	Dilution Factor:	1
Date Received:	12/30/10		
Date Analyzed	01/05/11	Analyst:	T. Meadows
Date of Report:	01/06/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110105\1201012.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	64%	66-118%	66-118%			
	Toluene-d8	92%	51-143%	51-143%			
	4-Bromofluorobenzene	78%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in µg/L or µg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00146A3	Matrix:	Water
Sample ID No.:	OL-MW-6-1	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/29/10	Dilution Factor:	1
Date Received:	12/30/10		
Date Analyzed	01/05/11	Analyst:	T. Meadows
Date of Report:	01/06/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110105 0901009.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.7	
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00146A3	Matrix:	Water
Sample ID No.:	OL-MW-6-1	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/29/10	Dilution Factor:	1
Date Received:	12/30/10		
Date Analyzed	01/05/11	Analyst:	T. Meadows
Date of Report:	01/06/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110105	0901009.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	70%	66-118%	66-118%			
	Toluene-d8	90%	51-143%	51-143%			
	4-Bromofluorobenzene	79%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in µg/L or µg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 l (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00146A2	Matrix:	Water
Sample ID No.:	OL-MW-6-0	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/29/10	Dilution Factor:	1
Date Received:	12/30/10		
Date Analyzed	01/05/11	Analyst:	T. Meadows
Date of Report:	01/06/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110105\ 0801008.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.8	
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00146A2	Matrix:	Water
Sample ID No.:	OL-MW-6-0	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/29/10	Dilution Factor:	1
Date Received:	12/30/10		
Date Analyzed	01/05/11	Analyst:	T. Meadows
Date of Report:	01/06/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110105\ 0801008.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	64%	66-118%	66-118%			
	Toluene-d8	91%	51-143%	51-143%			
	4-Bromofluorobenzene	87%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in µg/L or µg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00146A1 Dup	Matrix:	Water
Sample ID No.:	OL-MW-3-0 Duplicate	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/29/10	Dilution Factor:	1
Date Received:	12/30/10		
Date Analyzed	01/05/11	Analyst:	T. Meadows
Date of Report:	01/06/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110105\ 0701007.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	**BKS00146A1 Dup**	Matrix:	Water
Sample ID No.:	**OL-MW-3-0 Duplicate**	Sample Wt/Vol. (gm/ml)	**25.0**
Date Collected:	**12/29/10**	Dilution Factor:	**1**
Date Received:	**12/30/10**		
Date Analyzed	**01/05/11**	Analyst:	**T. Meadows**
Date of Report:	**01/06/11**	Supervisor's Initials:	
Data File Path:	**C:\HPCHEM\1\DATA\VOA\110105\ 0701007.D**		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	**Water**	**Soil**			
	Dibromofluoromethane	65%	66-118%	66-118%			
	Toluene-d8	92%	51-143%	51-143%			
	4-Bromofluorobenzene	70%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00146A1	Matrix:	Water
Sample ID No.:	OL-MW-3-0	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/29/10	Dilution Factor:	1
Date Received:	12/30/10		
Date Analyzed	01/05/11	Analyst:	T. Meadows
Date of Report:	01/06/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110105\ 0601006.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00146A1	Matrix:	Water
Sample ID No.:	OL-MW-3-0	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	12/29/10	Dilution Factor:	1
Date Received:	12/30/10		
Date Analyzed	01/05/11	Analyst:	T. Meadows
Date of Report:	01/06/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110105\ 0601006.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	70%	66-118%	66-118%			
	Toluene-d8	93%	51-143%	51-143%			
	4-Bromofluorobenzene	77%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
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E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	1/5/11-MB	Matrix:	Water
Sample ID No.:	Method Blank	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	n/a	Dilution Factor:	1
Date Received:	n/a		
Date Analyzed	01/05/11	Analyst:	T. Meadows
Date of Report:	01/06/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110105\ 0401004.D		

Name of Compound	Amount (ppb)	Flag
Bromobenzene	0.4	U
Bromochloromethane	0.4	U
Bromomethane	0.4	U
n-Butylbenzene	0.4	U
sec-Butylbenzene	0.4	U
tert-Butylbenzene	0.4	U
Carbon tetrachloride	0.4	U
Chlorobenzene	0.4	U
Chloroethane	0.4	U
Chloromethane	0.4	U
2-Chlorotoluene	0.4	U
4-Chlorotoluene	0.4	U
1,2-Dibromo-3-Chloropropane	0.4	U
1,2-Dibromoethane	0.4	U
Dibromomethane	0.4	U
1,2-Dichlorobenzene	0.4	U
1,3-Dichlorobenzene	0.4	U
1,4-Dichlorobenzene	0.4	U
Dichlorodifluoromethane	0.4	U
1,1-Dichloroethane	0.4	U
1,2-Dichloroethane	0.4	U
1,1-Dichloroethene	0.4	U
cis-1,2-Dichloroethene	0.4	U
trans-1,2-Dichloroethene	0.4	U
1,2-Dichloropropane	0.4	U
1,3-Dichloropropane	0.4	U
2,2-Dichloropropane	0.4	U
1,1-Dichloropropene	0.4	U
cis-1,3-Dichloropropene	0.4	U
trans-1,3-Dichloropropene	0.4	U
Hexachlorobutadiene	0.4	U
Isopropylbenzene	0.4	U
4-Isopropyltoluene	0.4	U
Methylene chloride	0.4	U
Naphthalene	0.4	U
n-Propylbenzene	0.4	U
Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U
	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U
	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U
	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	1/5/11-MB	Matrix:	Water
Sample ID No.:	Method Blank	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	n/a	Dilution Factor:	1
Date Received:	n/a		
Date Analyzed	01/05/11	Analyst:	T. Meadows
Date of Report:	01/06/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110105\ 0401004.D		

Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
		QC limits				
Surrogate Recoveries	%Rec.	Water	Soil			
Dibromofluoromethane	102%	66-118%	66-118%			
Toluene-d8	91%	51-143%	51-143%			
4-Bromofluorobenzene	92%	46-103%	46-103%			
Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
Iodomethane	0.4	U				

Indicates compound was analyzed for, but not detected at the specified detection limit.
Blank contaminated with this analyte.
Estimated value - compound positively identified, but below specified detection limit.
Estimated value - compound exceeded calibration range.
Compound analyzed at a secondary dilution factor of _____ from data file: _____
Compound Purges Poorly, requiring elevated detection limit.

ppb Amounts are in µg/L or µg/KG dry weight.

Tenatively Identified Compounds

CAS#	Compound	Rel. Conc.

:ompounds have been tentatively identified as present. In general, specific identities of isomers of
enes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	1/5/11-LCS	Matrix:	Water
Sample ID No.:	1/5/11-LCS	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	n/a	Dilution Factor:	1
Date Received:	n/a		
Date Analyzed	1/5/11	Analyst:	T. Meadows
Date of Report:	1/6/11	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\110105\	0501005.D	

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	108%	66%	118%
Toluene-d8	96%	51%	143%
4-Bromofluorobenzene	103%	46%	103%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	80%	75%	125%
Benzene	88%	75%	125%
Trichloroethene	92%	75%	125%
Toluene	104%	75%	125%
Chlorobenzene	102%	75%	125%

Vinyl Chloride by SIM

T. Meadows
1/7/11

Sample ID	Client ID	Sample Amount (ml)	Dilution Factor	Vinyl Chloride (µg/L)	1,2-Dichloroethane-d4 (µg/L)	% R Surr	% R VC
CCV	CCV	25	1	0.09	0.11	110.0%	90.0%
CCV	CCV	25	1	0.10	0.09	90.0%	100.0%
1/7/11-MB	Method Blank	25	1	<0.02	0.08	80.0%	
BKS00146A1	OL-MW-3-0	25	1	<0.02	0.08	80.0%	
BKS00146A2	OL-MW-6-0	25	1	<0.02	0.07	70.0%	
BKS00146A2 Dup	OL-MW-6-0	25	1	<0.02	0.08	80.0%	
BKS00146A3	OL-MW-6-1	25	1	<0.02	0.07	70.0%	
BKS00146A4	OL-MW-8-0	25	1	<0.02	0.08	80.0%	
BKS00146A5	OL-MW-7-0	25	1	<0.02	0.08	80.0%	
BKS00146A6	OL-MW-3-2	25	1	<0.02	0.07	70.0%	
			RPD	0%		13%	

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CASE FILE NUMBER:	BKS001-46	PAGE 1	
REPORT DATE:	01/13/11		
DATE SAMPLED:	12/29/10	DATE RECEIVED:	12/30/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

CASE NARRATIVE

Five water samples were received by the laboratory in good condition. Analysis was performed according to the chain of custody received with the samples. Dissolved arsenic analysis was performed by ICP/MS by concentrating the samples 10 fold. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages. VOC data and Vinyl Chloride QC data are included as separate reports.

SAMPLE DATA

SAMPLE ID	AMMONIA (mg/l)	NITRATE (mg/l)	NITRITE (mg/l)	TOC (mg/l)	COD (mg/l)	VINYL CHLORIDE (ug/l)
OL-MW-3-0	<0.010	0.373	<0.002	2.31	<10.0	<0.02
OL-MW-6-0	0.011	<0.010	<0.002	2.58	<10.0	<0.02
OL-MW-6-1	0.014	<0.010	<0.002	2.62	<10.0	<0.02
OL-MW-8-0	0.017	0.424	0.003	0.607	<10.0	<0.02
OL-MW-7-0	<0.010	0.594	<0.002	0.358	<10.0	<0.02

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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

SAMPLE DATA-CONTINUED

SAMPLE ID	TOTAL COLIFORM (#/100mls)	CHLORIDE (mg/l)	SULFATE (mg/l)
OL-MW-3-0	<1	2.59	17.1
OL-MW-6-0	<1	0.98	9.90
OL-MW-6-1	<1	1.08	10.3
OL-MW-8-0	<1	1.17	3.02
OL-MW-7-0	<1	1.37	3.50

	pH	ALKALINITY (mgCaCO3/l)	HCO3 (mgCaCO3/l)	CO3 (mgCaCO3/l)
OL-MW-3-0	6.16	178	69.7	<1.00
OL-MW-6-0	6.60	75.0	48.0	<1.00
OL-MW-6-1	6.57	75.4	47.0	<1.00
OL-MW-8-0	6.75	50.2	35.9	<1.00
OL-MW-7-0	6.70	51.8	35.8	<1.00

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CASE FILE NUMBER:	BKS001-46	PAGE 3
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DATE SAMPLED:	12/29/10	12/30/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

SAMPLE DATA-CONTINUED

	DISSOLVED METALS				
SAMPLE ID	ARSENIC (ug/l)	BARIUM (mg/l)	IRON (mg/l)	MANGANESE (mg/l)	ZINC (mg/l)
OL-MW-3-0	0.107	0.009	<0.020	1.10	<0.005
OL-MW-6-0	0.983	<0.005	0.298	0.713	<0.005
OL-MW-6-1	0.979	<0.005	0.268	0.698	<0.005
OL-MW-8-0	1.87	<0.005	0.180	0.631	<0.005
OL-MW-7-0	0.318	<0.005	<0.020	<0.005	<0.005

	METALS		
SAMPLE ID	CALCIUM (mg/l)	POTASSIUM (mg/l)	SODIUM (mg/l)
OL-MW-3-0	35.9	0.907	8.21
OL-MW-6-0	12.3	0.991	6.51
OL-MW-6-1	12.0	0.973	6.38
OL-MW-8-0	9.64	0.677	4.36
OL-MW-7-0	9.30	0.806	4.29

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CASE FILE NUMBER:	BKS001-46	PAGE 4
REPORT DATE:	01/13/11	
DATE SAMPLED:	12/29/10	12/30/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA

QC PARAMETER	AMMONIA (mg/l)	NITRATE (mg/l)	NITRITE (mg/l)	TOC (mg/l)	COD (mg/l)	VINYL CHLORIDE (ug/l)
METHOD	EPA 350.1	EPA 353.2	EPA 354.1	EPA 415.1	EPA 410.2	EPA 8260-SIM
DATE ANALYZED	12/30/10	12/30/10	12/30/10	01/11/11	01/11/11	01/07/11
DETECTION LIMIT	0.006	0.005	0.001	0.100	6.00	0.01
REPORTING LIMIT	0.010	0.010	0.002	0.250	10.0	0.02
DUPLICATE						
SAMPLE ID	OL-MW-7-0	OL-MW-7-0	OL-MW-7-0	BATCH	OL-MW-7-0	OL-MW-6-0
ORIGINAL	<0.010	0.594	<0.002	2.86	<10.0	<0.02
DUPLICATE	<0.010	0.593	<0.002	2.87	<10.0	<0.02
RPD	NC	0.21%	NC	0.14%	NC	NC
SPIKE SAMPLE						
SAMPLE ID	OL-MW-7-0	OL-MW-7-0	OL-MW-7-0	BATCH	OL-MW-7-0	
ORIGINAL	<0.010	0.594	<0.002	2.86	<10.0	
SPIKED SAMPLE	0.194	0.796	0.041	6.87	54.3	
SPIKE ADDED	0.200	0.200	0.040	4.50	50.0	
% RECOVERY	96.87%	100.64%	102.50%	89.11%	108.66%	NA
QC CHECK						
FOUND	0.332	0.409	0.040	3.88	97.7	0.09
TRUE	0.324	0.408	0.040	4.00	100	0.10
% RECOVERY	102.42%	100.17%	100.00%	96.93%	97.69%	90.00%
BLANK	<0.010	<0.010	<0.002	<0.250	<10.0	<0.02

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

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CASE FILE NUMBER:	BKS001-46	PAGE 5
REPORT DATE:	01/13/11	
DATE SAMPLED:	12/29/10	12/30/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA

QC PARAMETER	TOTAL COLIFORM (#/100mls)	CHLORIDE (mg/l)	SULFATE (mg/l)
METHOD	SM18 9222B	EPA 325.3	EPA 375.4
DATE ANALYZED	12/30/10	01/04/11	01/05/11
DETECTION LIMIT	1	0.16	0.76
REPORTING LIMIT	1	0.50	1.00
DUPLICATE			
SAMPLE ID	OL-MW-7-0	OL-MW-7-0	OL-MW-7-0
ORIGINAL	<1	1.37	3.50
DUPLICATE	<1	1.37	3.42
RPD	NC	0.00%	2.31%
SPIKE SAMPLE			
SAMPLE ID		OL-MW-7-0	OL-MW-7-0
ORIGINAL		1.37	3.50
SPIKED SAMPLE		11.0	13.2
SPIKE ADDED		10.0	10.0
% RECOVERY	NA	96.78%	97.43%
QC CHECK			
FOUND		28.4	9.76
TRUE		30.0	10.0
% RECOVERY	NA	94.82%	97.56%
PREP BLANK	< 1	<0.50	<1.00

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CASE FILE NUMBER:	BKS001-46	PAGE 6
REPORT DATE:	01/13/11	
DATE SAMPLED:	12/29/10	12/30/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA

QC PARAMETER	pH	ALKALINITY (mgCaCO3/l)	HCO3 (mgCaCO3/l)	CO3 (mgCaCO3/l)
METHOD	EPA 150.1	EPA 310.1	EPA 310.1	EPA 310.1
DATE ANALYZED	12/30/10	01/03/11	01/03/11	01/03/11
DETECTION LIMIT	0.10	1.00	1.00	1.00
REPORTING LIMIT	0.10	1.00	1.00	1.00
DUPLICATE				
SAMPLE ID		OL-MW-7-0		
ORIGINAL		51.8		
DUPLICATE		52.2		
RPD	NA	0.77%	NA	NA
SPIKE SAMPLE				
SAMPLE ID				
ORIGINAL				
SPIKED SAMPLE				
SPIKE ADDED				
% RECOVERY	NA	NA	NA	NA
QC CHECK				
FOUND		102		
TRUE		100		
% RECOVERY	NA	102.20%	NA	NA
PREP BLANK	NA	NA	NA	NA

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OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

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CASE FILE NUMBER:	BKS001-46	PAGE 7
REPORT DATE:	01/13/11	
DATE SAMPLED:	12/29/10	12/30/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA - DISSOLVED METALS

QC PARAMETER	ARSENIC (ug/l)	BARIUM (mg/l)	IRON (mg/l)	MANGANESE (mg/l)	ZINC (mg/l)
METHOD	EPA 6020	EPA 6010	EPA 6010	EPA 6010	EPA 6010
DATE ANALYZED	01/05/11	01/04/11	01/04/11	01/04/11	01/04/11
DETECTION LIMIT	0.010	0.002	0.008	0.003	0.003
REPORTING LIMIT	0.050	0.005	0.020	0.005	0.005
DUPLICATE					
SAMPLE ID	OL-MW-7-0	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.318	0.006	0.091	0.007	0.006
DUPLICATE	0.365	0.006	0.092	0.007	0.006
RPD	13.76%	1.77%	1.42%	2.86%	3.17%
SPIKE SAMPLE					
SAMPLE ID	OL-MW-7-0	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.318	0.006	0.091	0.007	0.006
SPIKED SAMPLE	0.522	1.01	9.86	0.972	1.03
SPIKE ADDED	0.200	1.00	10.0	1.00	1.00
% RECOVERY	102.00%	100.71%	97.64%	96.45%	102.73%
QC CHECK					
FOUND	0.721	1.02	1.05	1.01	1.02
TRUE	0.668	1.00	1.00	1.00	1.00
% RECOVERY	108.00%	101.96%	104.91%	101.44%	102.04%
PREP BLANK	<0.050	<0.005	<0.020	<0.005	<0.005

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CASE FILE NUMBER:	BKS001-46		PAGE 8
REPORT DATE:	01/13/11		
DATE SAMPLED:	12/29/10	DATE RECEIVED:	12/30/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA

QC PARAMETER	CALCIUM (mg/l)	POTASSIUM (mg/l)	SODIUM (mg/l)
METHOD	EPA 200.7	EPA 200.7	EPA 200.7
DATE ANALYZED	01/04/11	01/04/11	01/04/11
DETECTION LIMIT	0.050	0.300	0.300
REPORTING LIMIT	0.100	0.500	0.500
DUPLICATE			
SAMPLE ID	BATCH	BATCH	BATCH
ORIGINAL	2.55	<0.500	1.71
DUPLICATE	2.54	<0.500	1.71
RPD	0.45%	NC	0.42%
SPIKE SAMPLE			
SAMPLE ID	BATCH	BATCH	BATCH
ORIGINAL	2.55	<0.500	1.71
SPIKED SAMPLE	12.3	11.9	12.6
SPIKE ADDED	10.0	10.0	10.0
% RECOVERY	97.47%	119.47%	109.16%
QC CHECK			
FOUND	10.1	9.53	9.67
TRUE	10.0	10.0	10.0
% RECOVERY	101.20%	95.28%	96.71%
PREP BLANK	<0.100	<0.500	<0.500

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NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

Submitted By:

Steven Lazoff
Laboratory Director

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00143A1	Matrix:	Water
Sample ID No.:	MW-1	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/28/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\1011(0601006.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00143A1	Matrix:	Water
Sample ID No.:	MW-1	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/28/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\1011(0601006.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	74%	66-118%	66-118%			
	Toluene-d8	95%	51-143%	51-143%			
	4-Bromofluorobenzene	92%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00143A2	Matrix:	Water
Sample ID No.:	MW-2	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/28/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\10110 0701007.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00143A2	Matrix:	Water
Sample ID No.:	MW-2	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/28/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\10110 0701007.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	70%	66-118%	66-118%			
	Toluene-d8	97%	51-143%	51-143%			
	4-Bromofluorobenzene	87%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00143A5	Matrix:	Water
Sample ID No.:	MW-3	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/28/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101109 1001010.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00143A5	Matrix:	Water
Sample ID No.:	MW-3	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/28/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101109 1001010.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	68%	66-118%	66-118%			
	Toluene-d8	91%	51-143%	51-143%			
	4-Bromofluorobenzene	85%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00143A3	Matrix:	Water
Sample ID No.:	MW-4	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/28/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101109\0801008.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00143A3	Matrix:	Water
Sample ID No.:	MW-4	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/28/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101109\0801008.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	70%	66-118%	66-118%			
	Toluene-d8	93%	51-143%	51-143%			
	4-Bromofluorobenzene	86%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00143A4	Matrix:	Water
Sample ID No.:	MW-5A	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/28/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101109\0901009.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00143A4	Matrix:	Water
Sample ID No.:	MW-5A	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/28/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101109\0901009.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	74%	66-118%	66-118%			
	Toluene-d8	94%	51-143%	51-143%			
	4-Bromofluorobenzene	92%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in µg/L or µg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00144A2	Matrix:	Water
Sample ID No.:	MW-6	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/29/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101109 1301013.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00144A2	Matrix:	Water
Sample ID No.:	MW-6	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/29/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101109 1301013.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	73%	66-118%	66-118%			
	Toluene-d8	108%	51-143%	51-143%			
	4-Bromofluorobenzene	88%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00144A3	Matrix:	Water
Sample ID No.:	MW-7	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/29/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/10/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101110\ 0601007.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 | (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00144A3	Matrix:	Water
Sample ID No.:	MW-7	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/29/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/10/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101110\ 0601007.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	78%	66-118%	66-118%			
	Toluene-d8	96%	51-143%	51-143%			
	4-Bromofluorobenzene	105%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in µg/L or µg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00144A4	Matrix:	Water
Sample ID No.:	MW-8	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/29/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/10/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\10111(	0801009.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.2	J
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00144A4	Matrix:	Water
Sample ID No.:	MW-8	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/29/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/10/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\10111(	0801009.D	

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	78%	66-118%	66-118%			
	Toluene-d8	95%	51-143%	51-143%			
	4-Bromofluorobenzene	108%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00143A6	Matrix:	Water
Sample ID No.:	MW-9	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/28/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101109\ 1101011.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00143A6	Matrix:	Water
Sample ID No.:	MW-9	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/28/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101109\ 1101011.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water / Soil				
	Dibromofluoromethane	63%	66-118% / 66-118%				
	Toluene-d8	91%	51-143% / 51-143%				
	4-Bromofluorobenzene	82%	46-103% / 46-103%				
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00144A1	Matrix:	Water
Sample ID No.:	MW-10	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/29/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101109\1201012.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00144A1	Matrix:	Water
Sample ID No.:	MW-10	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/29/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101109\1201012.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	69%	66-118%	66-118%			
	Toluene-d8	94%	51-143%	51-143%			
	4-Bromofluorobenzene	87%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in μg/L or μg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

Aquatic Research Inc.
3927 Aurora Ave. N. , Seattle, WA 98103 I (206) 632-2715

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00144A2 Dup	Matrix:	Water
Sample ID No.:	MW-6 Duplicate	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/29/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\10110$1401014.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.5	
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.4	U
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00144A2 Dup	Matrix:	Water
Sample ID No.:	MW-6 Duplicate	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/29/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101109\1401014.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	72%	66-118%	66-118%			
	Toluene-d8	102%	51-143%	51-143%			
	4-Bromofluorobenzene	86%	46-103%	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in µg/L or µg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	BKS00144A3 MS	Matrix:	Water
Sample ID No.:	BKS00144A3 MS	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	10/29/10	Dilution Factor:	1
Date Received:	10/29/10		
Date Analyzed	11/10/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101110\	0701008.D	

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	81%	66%	118%
Toluene-d8	97%	51%	143%
4-Bromofluorobenzene	104%	46%	103%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	89%	75%	125%
Benzene	99%	75%	125%
Trichloroethene	118%	75%	125%
Toluene	118%	75%	125%
Chlorobenzene	118%	75%	125%

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	11/10/10-MB	Matrix:	Water
Sample ID No.:	Method Blank	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	n/a	Dilution Factor:	1
Date Received:	n/a		
Date Analyzed	11/10/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\1011 0401005.D		

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	1.4	
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	11/10/10-MB	Matrix:	Water
Sample ID No.:	Method Blank	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	n/a	Dilution Factor:	1
Date Received:	n/a		
Date Analyzed	11/10/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\1011 0401005.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water	Soil			
	Dibromofluoromethane	112%	66-11	66-118%			
	Toluene-d8	97%	51-14	51-143%			
	4-Bromofluorobenzene	106%	46-10	46-103%			
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in µg/L or µg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	11/9/10-MB	Matrix:	Water
Sample ID No.:	Method Blank	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	n/a	Dilution Factor:	1
Date Received:	n/a		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\1011(	0401004.D	

CAS#	Name of Compound	Amount (ppb)	Flag
108-86-1	Bromobenzene	0.4	U
74-97-5	Bromochloromethane	0.4	U
74-83-9	Bromomethane	0.4	U
104-51-8	n-Butylbenzene	0.4	U
135-98-8	sec-Butylbenzene	0.4	U
98-06-6	tert-Butylbenzene	0.4	U
56-23-5	Carbon tetrachloride	0.4	U
108-90-7	Chlorobenzene	0.4	U
75-00-3	Chloroethane	0.4	U
74-87-3	Chloromethane	0.4	U
95-49-8	2-Chlorotoluene	0.4	U
106-43-4	4-Chlorotoluene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.4	U
106-93-4	1,2-Dibromoethane	0.4	U
74-95-3	Dibromomethane	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
541-73-1	1,3-Dichlorobenzene	0.4	U
106-46-7	1,4-Dichlorobenzene	0.4	U
75-71-8	Dichlorodifluoromethane	0.4	U
75-34-3	1,1-Dichloroethane	0.4	U
107-06-2	1,2-Dichloroethane	0.4	U
75-35-4	1,1-Dichloroethene	0.4	U
156-59-4	cis-1,2-Dichloroethene	0.4	U
156-60-5	trans-1,2-Dichloroethene	0.4	U
78-87-5	1,2-Dichloropropane	0.4	U
142-28-9	1,3-Dichloropropane	0.4	U
590-20-7	2,2-Dichloropropane	0.4	U
563-58-6	1,1-Dichloropropene	0.4	U
10061-01-5	cis-1,3-Dichloropropene	0.4	U
10061-02-6	trans-1,3-Dichloropropene	0.4	U
87-68-3	Hexachlorobutadiene	0.4	U
98-82-8	Isopropylbenzene	0.4	U
99-87-6	4-Isopropyltoluene	0.4	U
75-09-2	Methylene chloride	0.6	
91-20-3	Naphthalene	0.4	U
103-65-1	n-Propylbenzene	0.4	U
100-42-5	Styrene	0.4	U

CAS#	Name of Compound	Amount (ppb)	Flag
630-20-6	1,1,1,2-Tetrachloroethane	0.4	U
79-34-5	1,1,2,2-Tetrachloroethane	0.4	U
127-18-4	Tetrachloroethene	0.4	U
87-61-6	1,2,3-Trichlorobenzene	0.4	U
120-82-1	1,2,4-Trichlorobenzene	0.4	U
71-55-6	1,1,1-Trichloroethane	0.4	U
79-00-5	1,1,2-Trichloroethane	0.4	U
79-01-6	Trichloroethene	0.4	U
75-69-4	Trichlorofluoromethane	0.4	U
96-18-4	1,2,3-Trichloropropane	0.4	U
95-63-6	1,2,4-Trimethylbenzene	0.4	U
108-67-8	1,3,5-Trimethylbenzene	0.4	U
75-01-4	Vinyl chloride	0.4	U

	BTEX		
71-43-2	Benzene	0.4	U
108-88-3	Toluene	0.4	U
100-41-4	Ethylbenzene	0.4	U
	p/m-Xylene	0.4	U
95-47-6	o-Xylene	0.4	U

	TRIHALOMETHANES (THM)		
67-66-3	Chloroform	0.4	U
75-27-4	Bromodichloromethane	0.4	U
124-48-1	Dibromochloromethane	0.4	U
75-25-2	Bromoform	0.4	U

	KETONES, CS2, 2-CEVE		
67-64-1	Acetone	0.4	U
78-93-3	2-Butanone	0.4	U
591-78-6	2-Hexanone	0.4	U
108-10-1	4-Methyl-2-Pentanone	0.4	U
75-15-0	Carbon Disulfide	0.4	U
110-75-8	2-Chloroethylvinylether	0.4	U

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	11/9/10-MB	Matrix:	Water
Sample ID No.:	Method Blank	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	n/a	Dilution Factor:	1
Date Received:	n/a		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\1011(0401004.D		

CAS#	Name of Compound	Amount (ppb)	Flag	CAS#	Name of Compound	Amount (ppb)	Flag
			QC limits				
	Surrogate Recoveries	%Rec.	Water Soil				
	Dibromofluoromethane	93%	66-118 66-118%				
	Toluene-d8	93%	51-143 51-143%				
	4-Bromofluorobenzene	92%	46-103 46-103%				
107-13-1	Acrylonitrile	0.4	U	126-98-7	Methacrylonitrile	0.4	U
107-05-1	Allyl Chloride	0.4	U	96-33-3	Methyl Acrylate	0.4	U
109-69-3	1-Chlorobutane	0.4	U	1634-04-4	Methyl-t-Butyl Ether	0.4	U
110-57-6	trans-1,4-Dichloro-2-Butene	0.4	U	80-62-6	Methyl methacrylate	0.4	U
60-29-7	Diethyl Ether	0.4	U	98-95-3	Nitrobenzene	0.4	U
97-63-2	Ethyl Methacrylate	0.4	U	79-46-9	2-Nitropropane	0.4	U
67-72-1	Hexachloroethane	0.4	U	76-01-7	Pentachloroethane	0.4	U
74-88-4	Iodomethane	0.4	U				

FLAGS:

U	Indicates compound was analyzed for, but not detected at the specified detection limit.
B	Blank contaminated with this analyte.
J	Estimated value - compound positively identified, but below specified detection limit.
E	Estimated value - compound exceeded calibration range.
D	Compound analyzed at a secondary dilution factor of _____ from data file: _____
PP	Compound Purges Poorly, requiring elevated detection limit.

NOTE: ppb Amounts are in µg/L or µg/KG dry weight.

Tenatively Identified Compounds

R.T.	CAS#	Compound	Rel. Conc.

The above compounds have been tentatively identified as present. In general, specific identities of isomers of alkanes/alkenes is not possible to resolve.

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	11/10/10-LCS	Matrix:	Water
Sample ID No.:	11/10/10-LCS	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	n/a	Dilution Factor:	1
Date Received:	n/a		
Date Analyzed	11/10/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101110\	0501006.D	

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	116%	66%	118%
Toluene-d8	99%	51%	143%
4-Bromofluorobenzene	110%	46%	103%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	87%	75%	125%
Benzene	113%	75%	125%
Trichloroethene	110%	75%	125%
Toluene	98%	75%	125%
Chlorobenzene	97%	75%	125%

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VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 8260
Measurement of Purgeable Organic Compounds by Capillary Column
Gas Chromatography/Mass Spectrometry

Case File Number:	11/9/10-LCS	Matrix:	Water
Sample ID No.:	11/9/10-LCS	Sample Wt/Vol. (gm/ml)	25.0
Date Collected:	n/a	Dilution Factor:	1
Date Received:	n/a		
Date Analyzed	11/ 9/10	Analyst:	T. Meadows
Date of Report:	11/10/10	Supervisor's Initials:	
Data File Path:	C:\HPCHEM\1\DATA\VOA\101109\	0501005.D	

Surrogate Recoveries	%Rec.	QC limits	
Dibromofluoromethane	91%	66%	118%
Toluene-d8	92%	51%	143%
4-Bromofluorobenzene	96%	46%	103%

Spike Recoveries	%Rec.	QC limits	
1,1-Dichloroethene	105%	75%	125%
Benzene	111%	75%	125%
Trichloroethene	112%	75%	125%
Toluene	109%	75%	125%
Chlorobenzene	103%	75%	125%

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CASE FILE NUMBER:	BKS001-43,44	PAGE 1	
REPORT DATE:	12/03/10		
DATE SAMPLED:	10/28,29/10	DATE RECEIVED:	10/29/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

CASE NARRATIVE

Ten water samples were received by the laboratory in good condition. Analysis was performed according to the chain of custody received with the samples. Dissolved arsenic analysis was performed by ICP/MS by concentrating the samples 10 fold. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages. Organic data are included as separate reports.

SAMPLE DATA

SAMPLE ID	AMMONIA (mg/L)	NITRATE (mg/L)	NITRITE (mg/L)	TOC (mg/L)	COD (mg/L)	VINYL CHLORIDE (ug/L)
MW-1	<0.010	0.126	0.003	0.338	<10.0	<0.02
MW-2	<0.010	0.347	<0.002	<0.250	<10.0	<0.02
MW-4	<0.010	0.470	<0.002	<0.250	<10.0	<0.02
MW-5A	<0.010	0.341	<0.002	<0.250	<10.0	<0.02
MW-3	<0.010	0.033	<0.002	1.81	<10.0	0.03
MW-9	<0.010	0.033	<0.002	2.11	12.3	0.03
MW-10	0.024	<0.010	<0.002	2.83	<10.0	0.06
MW-6	0.018	<0.010	0.002	1.93	<10.0	0.04
MW-7	<0.010	0.615	<0.002	0.436	<10.0	<0.02
MW-8	0.016	<0.010	0.003	1.42	<10.0	0.16

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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

SAMPLE DATA-CONTINUED

SAMPLE ID	CHLORIDE (mg/L)	SULFATE (mg/L)	TDS (mg/L)	CYANIDE (mg/L)	TOTAL COLIFORM (#/100mls)	FECAL COLIFORM (#/100mls)
MW-1	2.64	3.80	90.5	<0.010	30	<2
MW-2	2.01	2.83	111	<0.010	52	<2
MW-4	2.40	2.48	112	<0.010	4	<2
MW-5A	1.92	3.74	112	<0.010	4	<2
MW-3	2.64	9.56	239	<0.010	<2	<2
MW-9	2.64	10.4	288	<0.010	<2	<2
MW-10	0.88	21.5	299	<0.010	<2	<2
MW-6	2.01	18.7	270	<0.010	<2	<2
MW-7	1.37	4.38	97.5	<0.010	<2	<2
MW-8	1.96	6.35	224	<0.010	62	<2

	pH	ALKALINITY (mgCaCO3/L)	HCO3 (mgCaCO3/l)	CO3 (mgCaCO3/l)
MW-1	6.72	64.4	45.1	<1.00
MW-2	7.27	57.5	51.3	<1.00
MW-4	7.37	63.5	57.9	<1.00
MW-5A	6.82	79.4	59.3	<1.00
MW-3	6.58	209	132	<1.00
MW-9	6.43	209	114	<1.00
MW-10	6.86	257	197	<1.00
MW-6	6.85	259	196	<1.00
MW-7	7.07	67.6	56.7	<1.00
MW-8	6.93	206	163	<1.00

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CASE FILE NUMBER:	BKS001-43,44	PAGE 3
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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

SAMPLE DATA-CONTINUED

	DISSOLVED METALS					
SAMPLE ID	ARSENIC (ug/L)	ANTIMONY (mg/L)	BARIUM (mg/L)	BERYLLIUM (mg/L)	CADMIUM (mg/L)	CHROMIUM (mg/L)
MW-1	0.094	<0.0020	<0.005	<0.0010	<0.0010	0.0043
MW-2	0.687	<0.0020	<0.005	<0.0010	<0.0010	0.0036
MW-4	0.226	<0.0020	<0.005	<0.0010	<0.0010	0.0030
MW-5A	0.153	<0.0020	0.005	<0.0010	<0.0010	0.0031
MW-3	0.184	<0.0020	0.014	<0.0010	<0.0010	<0.0010
MW-9	0.179	<0.0020	0.014	<0.0010	<0.0010	<0.0010
MW-10	2.37	<0.0020	0.015	<0.0010	<0.0010	<0.0010
MW-6	1.17	<0.0020	0.018	<0.0010	<0.0010	0.0031
MW-7	0.345	<0.0020	<0.005	<0.0010	<0.0010	0.0032
MW-8	2.77	<0.0020	0.014	<0.0010	<0.0010	<0.0010

	DISSOLVED METALS					
SAMPLE ID	COBALT (mg/L)	COPPER (mg/L)	LEAD (mg/L)	SELENIUM (mg/L)	SILVER (mg/L)	THALLIUM (mg/L)
MW-1	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
MW-2	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
MW-4	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
MW-5A	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
MW-3	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
MW-9	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
MW-10	<0.010	0.0017	<0.0010	<0.0050	<0.0010	<0.0020
MW-6	0.038	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
MW-7	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
MW-8	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020

	DISSOLVED METALS		
SAMPLE ID	TIN (mg/L)	VANADIUM (mg/L)	ZINC (mg/L)
MW-1	<0.040	<0.0030	<0.0050
MW-2	<0.040	0.0038	<0.0050
MW-4	<0.040	<0.0030	<0.0050
MW-5A	<0.040	<0.0030	<0.0050
MW-3	<0.040	<0.0030	<0.0050
MW-9	<0.040	<0.0030	<0.0050
MW-10	<0.040	<0.0030	<0.0050
MW-6	<0.040	<0.0030	<0.0050
MW-7	<0.040	<0.0030	<0.0050
MW-8	<0.040	<0.0030	<0.0050

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CASE FILE NUMBER:	BKS001-43,44	PAGE 4
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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

SAMPLE DATA-CONTINUED

	DISSOLVED METALS					
SAMPLE ID	CALCIUM (mg/L)	POTASSIUM (mg/L)	SODIUM (mg/L)	MAGNESIUM (mg/L)	IRON (mg/L)	MANGANESE (mg/L)
MW-1	11.5	0.712	4.50	5.71	0.025	<0.010
MW-2	8.27	1.03	4.53	6.03	<0.010	<0.010
MW-4	9.33	0.874	4.72	6.69	<0.010	<0.010
MW-5A	11.6	0.821	5.03	8.74	<0.010	<0.010
MW-3	43.0	0.951	10.9	14.1	0.023	1.30
MW-9	42.1	0.927	11.2	13.8	0.025	1.28
MW-10	41.0	1.36	14.8	21.9	0.037	5.31
MW-6	39.3	1.93	11.7	23.1	2.15	0.745
MW-7	10.4	0.825	4.77	7.37	0.016	<0.010
MW-8	35.4	1.76	11.0	16.7	0.215	2.16

	TOTAL METALS	
SAMPLE ID	MERCURY (mg/L)	NICKEL (mg/L)
MW-1	<0.0002	0.0288
MW-2	<0.0002	<0.0050
MW-4	<0.0002	<0.0050
MW-5A	<0.0002	<0.0050
MW-3	<0.0002	<0.0050
MW-9	<0.0002	<0.0050
MW-10	<0.0002	0.0199
MW-6	<0.0002	<0.0050
MW-7	<0.0002	<0.0050
MW-8	<0.0002	0.0087

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DATE SAMPLED:	10/28,29/10	10/29/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA

QC PARAMETER	AMMONIA (mg/L)	NITRATE (mg/L)	NITRITE (mg/L)	TOC (mg/L)	COD (mg/L)	VINYL CHLORIDE (ug/L)
METHOD	EPA 350.1	EPA 353.2	EPA 354.1	EPA 415.1	EPA 410.2	EPA 8260-SIM
DATE ANALYZED	10/29/10	10/29/10	10/29/10	11/12/10	11/08/10	11/08/10
DETECTION LIMIT	0.006	0.005	0.001	0.100	6.00	0.01
REPORTING LIMIT	0.010	0.010	0.002	0.250	10.0	0.02
DUPLICATE						
SAMPLE ID	MW-9	MW-9	MW-9	MW-1	MW-8	MW-6
ORIGINAL	<0.010	0.033	<0.002	0.338	<10.0	0.04
DUPLICATE	<0.010	0.033	<0.002	<0.250	<10.0	0.04
RPD	NC	0.40%	NC	NC	NC	0.00%
SPIKE SAMPLE						
SAMPLE ID	MW-9	MW-9	MW-9	MW-1	MW-8	
ORIGINAL	<0.010	0.033	<0.002	0.338	<10.0	
SPIKED SAMPLE	0.191	0.229	0.041	4.82	60.0	
SPIKE ADDED	0.200	0.200	0.040	4.50	50.0	
% RECOVERY	95.41%	97.81%	102.50%	99.66%	119.97%	NA
QC CHECK						
FOUND	0.320	0.408	0.040	4.09	98.2	0.09
TRUE	0.324	0.408	0.040	4.00	100	0.10
% RECOVERY	98.83%	99.89%	100.00%	102.18%	98.16%	90.00%
BLANK	<0.010	<0.010	<0.002	<0.250	<10.0	<0.02

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

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CASE FILE NUMBER:	BKS001-43,44	PAGE 6
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DATE SAMPLED:	10/28,29/10	10/29/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA

QC PARAMETER	CHLORIDE (mg/l)	SULFATE (mg/l)	TDS (mg/L)	CYANIDE (mg/L)	TOTAL COLIFORM (#/100mls)	FECAL COLIFORM (#/100mls)
METHOD	EPA 325.3	EPA 375.4	SM18 2540C	SM 4500CNE	SM18 9222B	SM18 9222D
DATE ANALYZED	11/01/10	11/10/10	11/04/10	11/09/10	10/29/10	10/29/10
DETECTION LIMIT	0.16	0.76	5.0	0.010	2	2
REPORTING LIMIT	0.50	1.00	5.0	0.010	2	2
DUPLICATE						
SAMPLE ID	BATCH	MW-8	MW-8	MW-9	MW-9	MW-9
ORIGINAL	0.98	6.35	224	<0.010	<2	<2
DUPLICATE	0.98	6.43	240	<0.010	<2	<2
RPD	0.00%	1.20%	6.91%	NC	NC	NC
SPIKE SAMPLE						
SAMPLE ID	BATCH	MW-8				
ORIGINAL	0.98	6.35				
SPIKED SAMPLE	10.9	16.3				
SPIKE ADDED	10.0	10.0				
% RECOVERY	98.73%	99.01%	NA	NA	NA	NA
QC CHECK						
FOUND	28.4	10.2		0.182		
TRUE	30.0	10.0		0.200		
% RECOVERY	94.82%	102.18%	NA	90.80%	NA	NA
PREP BLANK	<0.50	<1.00	<5.0	<0.010	< 1	< 1

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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA

QC PARAMETER	pH	ALKALINITY (mgCaCO3/l)	HCO3 (mgCaCO3/l)	CO3 (mgCaCO3/l)
METHOD	EPA 150.1	EPA 310.1	EPA 310.1	EPA 310.1
DATE ANALYZED	10/29/10	11/11/10	11/11/10	11/11/10
DETECTION LIMIT	0.10	1.00	1.00	1.00
REPORTING LIMIT	0.10	1.00	1.00	1.00
DUPLICATE				
SAMPLE ID		MW-8		
ORIGINAL		206		
DUPLICATE		196		
RPD	NA	5.10%	NA	NA
SPIKE SAMPLE				
SAMPLE ID				
ORIGINAL				
SPIKED SAMPLE				
SPIKE ADDED				
% RECOVERY	NA	NA	NA	NA
QC CHECK				
FOUND		99.9		
TRUE		100		
% RECOVERY	NA	99.90%	NA	NA
PREP BLANK	NA	NA	NA	NA

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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA - DISSOLVED METALS

QC PARAMETER	ARSENIC (ug/l)	ANTIMONY (mg/L)	BARIUM (mg/L)	BERYLLIUM (mg/L)	CADMIUM (mg/L)	CHROMIUM (mg/L)
METHOD	EPA 6020	EPA 6020	EPA 6020	EPA 6020	EPA 6020	EPA 6020
DATE ANALYZED	12/02/10	11/12/10	11/12/10	11/12/10	11/12/10	11/12/10
DETECTION LIMIT	0.010	0.0010	0.001	0.0003	0.0002	0.0005
REPORTING LIMIT	0.050	0.0020	0.005	0.0010	0.0010	0.0010
DUPLICATE						
SAMPLE ID	MW-1	MW-8	MW-8	MW-8	MW-8	MW-8
ORIGINAL	0.094	<0.0020	0.014	<0.0010	<0.0010	<0.0010
DUPLICATE	0.094	<0.0020	0.014	<0.0010	<0.0010	<0.0010
RPD	0.21%	NC	0.43%	NC	NC	NC
SPIKE SAMPLE						
SAMPLE ID	MW-1	MW-8	MW-8	MW-8	MW-8	MW-8
ORIGINAL	0.094	<0.0020	0.0138	<0.0010	<0.0010	<0.0010
SPIKED SAMPLE	0.268	0.0258	0.065	0.0548	0.0535	0.0523
SPIKE ADDED	0.200	0.0250	0.050	0.0500	0.0500	0.0500
% RECOVERY	86.80%	103.20%	102.56%	109.56%	107.02%	104.52%
QC CHECK						
FOUND	0.668	0.0474	0.048	0.0549	0.0483	0.0502
TRUE	0.668	0.0500	0.050	0.0500	0.0500	0.0500
% RECOVERY	100.00%	94.74%	96.48%	109.74%	96.68%	100.40%
PREP BLANK	<0.050	<0.0020	<0.010	<0.0010	<0.0010	<0.0010

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OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

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DATE SAMPLED:	10/28,29/10	10/29/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA - DISSOLVED METALS

QC PARAMETER	COBALT (mg/L)	COPPER (mg/L)	LEAD (mg/L)	SELENIUM (mg/L)	SILVER (mg/L)	THALLIUM (mg/L)
METHOD	EPA 6020	EPA 6020	EPA 6020	EPA 6020	EPA 6020	EPA 6020
DATE ANALYZED	11/12/10	11/12/10	11/12/10	11/12/10	11/12/10	11/12/10
DETECTION LIMIT	0.001	0.0004	0.0003	0.0010	0.0004	0.0010
REPORTING LIMIT	0.010	0.0010	0.0010	0.0050	0.0010	0.0020
DUPLICATE						
SAMPLE ID	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8
ORIGINAL	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
DUPLICATE	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
RPD	NC	NC	NC	NC	NC	NC
SPIKE SAMPLE						
SAMPLE ID	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8
ORIGINAL	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020
SPIKED SAMPLE	0.054	0.0508	0.0506	0.0583	0.0254	0.0511
SPIKE ADDED	0.050	0.0500	0.0500	0.0500	0.0500	0.0500
% RECOVERY	107.94%	101.50%	101.18%	116.58%	50.80%	102.10%
QC CHECK						
FOUND	0.050	0.0496	0.0476	0.0488	0.0507	0.0462
TRUE	0.050	0.0500	0.0500	0.0500	0.0500	0.0500
% RECOVERY	99.14%	99.20%	95.20%	97.52%	101.30%	92.38%
PREP BLANK	<0.010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0020

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES
3927 AURORA AVENUE NORTH, SEATTLE, WA 98103
PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	BKS001-43,44	PAGE 10
REPORT DATE:	12/03/10	
DATE SAMPLED:	10/28,29/10	10/29/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA - DISSOLVED METALS

QC PARAMETER	TIN (mg/L)	VANADIUM (mg/L)	ZINC (mg/L)
METHOD	EPA 6010	EPA 6020	EPA 6020
DATE ANALYZED	11/07/10	11/12/10	11/12/10
DETECTION LIMIT	0.010	0.0010	0.0010
REPORTING LIMIT	0.040	0.0030	0.0050
DUPLICATE			
SAMPLE ID	MW-8	MW-8	MW-8
ORIGINAL	<0.040	<0.0030	<0.0050
DUPLICATE	<0.040	<0.0030	<0.0050
RPD	NC	NC	NC
SPIKE SAMPLE			
SAMPLE ID	MW-8	MW-8	MW-8
ORIGINAL	<0.040	<0.0030	<0.0050
SPIKED SAMPLE	1.00	0.0526	0.0532
SPIKE ADDED	1.00	0.0500	0.0500
% RECOVERY	100.48%	105.20%	106.30%
QC CHECK			
FOUND	0.942	0.0504	0.0482
TRUE	1.00	0.0500	0.0500
% RECOVERY	94.15%	100.78%	96.34%
PREP BLANK	<0.040	<0.0030	<0.0050

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OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

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LABORATORY & CONSULTING SERVICES
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CASE FILE NUMBER:	BKS001-43,44		PAGE 11
REPORT DATE:	12/03/10		
DATE SAMPLED:	10/28,29/10	DATE RECEIVED:	10/29/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA - DISSOLVED METALS

QC PARAMETER	CALCIUM (mg/L)	POTASSIUM (mg/L)	SODIUM (mg/L)	MAGNESIUM (mg/L)	IRON (mg/L)	MANGANESE (mg/L)
METHOD	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010
DATE ANALYZED	11/16/10	11/07/10	11/16/10	11/07/10	11/17/10	11/07/10
DETECTION LIMIT	0.050	0.300	0.300	0.050	0.010	0.003
REPORTING LIMIT	0.100	0.500	0.500	0.100	0.020	0.010
DUPLICATE						
SAMPLE ID	MW-8	MW-8	MW-8	MW-8	MW-4	MW-8
ORIGINAL	35.4	1.76	11.0	16.7	<0.010	2.16
DUPLICATE	35.2	1.83	11.2	17.5	0.011	2.30
RPD	0.46%	3.99%	2.06%	4.83%	NC	4.97%
SPIKE SAMPLE						
SAMPLE ID	MW-8	MW-8	MW-8	MW-8	MW-4	MW-8
ORIGINAL	35.4	1.76	11.0	16.7	<0.010	2.16
SPIKED SAMPLE	83.2	12.9	59.5	25.8	0.975	3.22
SPIKE ADDED	50.0	10.0	50.0	10.0	1.00	1.00
% RECOVERY	95.71%	111.61%	97.12%	91.44%	97.52%	106.58%
QC CHECK						
FOUND	10.2	10.1	10.3	0.979	9.25	0.961
TRUE	10.0	10.0	10.0	1.00	10.0	1.00
% RECOVERY	102.38%	100.99%	103.37%	97.90%	92.51%	96.05%
PREP BLANK	<0.100	<0.500	<0.500	<0.100	<0.500	<0.500

RPD = RELATIVE PERCENT DIFFERENCE.
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OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

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LABORATORY & CONSULTING SERVICES
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PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	BKS001-43,44		PAGE 12
REPORT DATE:	12/03/10		
DATE SAMPLED:	10/28,29/10	DATE RECEIVED:	10/29/10

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM KITSAP COUNTY SOLID WASTE / OLALLA LANDFILL

QA/QC DATA - TOTAL METALS

QC PARAMETER	MERCURY (mg/l)	NICKEL (mg/l)
METHOD	EPA 6020	EPA 6020
DATE ANALYZED	11/12/10	11/12/10
DETECTION LIMIT	0.0001	0.0010
REPORTING LIMIT	0.0002	0.0050
DUPLICATE		
SAMPLE ID	MW-8	MW-8
ORIGINAL	<0.0002	0.0087
DUPLICATE	<0.0002	0.0088
RPD	NC	0.91%
SPIKE SAMPLE		
SAMPLE ID	MW-8	MW-8
ORIGINAL	<0.0002	0.0087
SPIKED SAMPLE	0.0023	0.0600
SPIKE ADDED	0.0020	0.0500
% RECOVERY	113.40%	102.53%
QC CHECK		
FOUND	0.0019	0.0491
TRUE	0.0020	0.0500
% RECOVERY	96.40%	98.16%
PREP BLANK	<0.0002	<0.0050

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

Submitted By:

Steven Lazoff
Laboratory Director

Vinyl Chloride by SIM

T. Meadows
11/8/10

Sample ID	Client ID	Sample Amount (ml)	Dilution Factor	Vinyl Chloride (µg/L)	1,2-Dichloroethane-d4 (µg/L)	% R Surr	% R VC
CCV	CCV	25	1	0.09	0.10	100.0%	90.0%
CCV	CCV	25	1	0.10	0.11	110.0%	100.0%
11/8/10-MB	Method Blank	25	1	<0.02	0.10	100.0%	
BKS00143A1	MW-1	25	1	<0.02	0.11	110.0%	
BKS00143A2	MW-2	25	1	<0.02	0.09	90.0%	
BKS00143A3	MW-4	25	1	<0.02	0.11	110.0%	
BKS00143A4	MW-5A	25	1	<0.02	0.09	90.0%	
BKS00143A5	MW-3	25	1	0.03	0.10	100.0%	
BKS00143A6	MW-9	25	1	0.03	0.10	100.0%	
BKS00144A1	MW-10	25	1	0.06	0.08	80.0%	
BKS00144A2	MW-6	25	1	0.04	0.08	80.0%	
BKS00144A2 Dup	MW-6	25	1	0.04	0.09	90.0%	
BKS00144A3	MW-7	25	1	<0.02	0.09	90.0%	
BKS00144A4	MW-8	25	1	0.16	0.11	110.0%	
			RPD	0%		12%	

Appendix J

Test Pit Logs and Photos

Olalla Landfill

OL-MW-##-W-0 primary
1 dup
2 trip
3 equip

0945 onsite
Met Kel: (Means McKay)
Jan Brower, KCHD
Eric Caddey, EPI
Mike Warfel, parametrix

Glacier Cascade
~~Paul~~
Noel Phillips
↓
Ecology
Well construction coordinator

10/7/10

MW-2 water level @ 11:12 am 66.89" toc
OL-MW-02-W-0 collected @ "11:00"
MW-4 water level @ 11:59 64.09" toc
OL-MW-04-W-0 collected @ "12:00"

Sampled by
Mike & Mary
Warfel Holder
with bailers
put on ice

Samples taken by Mike to Aquatic Research

Approximately 13:30 started digging Test Pit 1
~ 14:00 Test Pit 2
~ 14:15 Test Pit 3
~ 14:35 Test Pit 4
~ 14:50 dug out drum & additional area @ TP 4 (North end)
~ 1520 Test Pit 5
~ 1545 started backfilling
reburied all waste
16:15 M. Holder offsite only E. Caddey & Ben Bohren (Glacier) onsite – finishing the backfilling of TP2 & TP1.

N. Phillips offsite
M. Warfel & J. Brower offsite
K. McKay-Means offsite

Multi Rae (Mine Safety) used to measure PID readings.

ENVIRONMENTAL PARTNERS INC

Test Pit Designation: 1

Client:	**Site Personnel:** Mary Holder - EPI Mike Warfel - Paramatrix Keli McKay - Means - KCco Jan Brower - KCHD Noel Phillips - Ecy Ben Bohren - Glacier
Logged By: M Holder	started ~ 1:30
Date of Excavation: 10/7/10	ended 1:53pm
Site Address:	
Excavation Contractor: Glacier	
Method:	

Length along trench (in feet)	SUBSURFACE PROFILE DESCRIPTION: Trash, Soil, Color, Moisture, Description. If liquid: pH, conductivity, temperature, DO, ORP	Trash	Liquid	Depth (Feet bgs)	Comments (Including location(s) of additional excavation along side of trench)
1	North				
2	brick plastic				
3	tires wood debris				
4	2x4				
5	Rebar				
6	plywood				
7					no PID hits
8					
9					
10					
11					
12					
13					
14					
15					
16	grey dirt some black dirt				
17					
18	roof shingles				Mostly dirt & wood debris with sm amounts of trash
19	car bumper				
20	~3in diam alum? pipe				
21					
22					
23	yellow insulation				
24					
25	South				

Project No. Page: of

ENVIRONMENTAL PARTNERS INC

Test Pit Designation: 2

Client: Olalla Landfill - Kitsap County
Logged By: Mary Holder
Date of Excavation: 10/7/10 started ~ 2pm finished ~ 2:15
Site Address:
Excavation Contractor: Glacier
Method:

Site Personnel: Mary, Mike, Kali, Jan, Ben Bohren - Glacier

Length along trench (in feet)	SUBSURFACE PROFILE DESCRIPTION: Trash, Soil, Color, Moisture, Description. If liquid: pH, conductivity, temperature, DO, ORP	Trash	Liquid	Depth (Feet bgs)	Comments (Including location(s) of additional excavation along side of trench)
1	North		NA	8'	
2					
3					
4	grey				
5					
6	darker brown than TP 1				
7					
8					no PID hits
9					no liquids no perched layers
10					
11					
12					
13	no trash or wood debris				
14					
15					
16	layers of grey brown and vegetation (grassy)				
17					
18					
19					
20					
21					
22					
23					
24					
25	South				

Project No. **Page:** of

ENVIRONMENTAL PARTNERS INC

Test Pit Designation: 3

Client: Kitsap County Olalla Landfill
Logged By: Mary Holder
Date of Excavation: 10/7/10 started ~ 2:15 finished ~ 2:30
Site Address:
Excavation Contractor: Glacier 4:45pm Finishing Filling in
Method:

Site Personnel: Mary, Mike, Kali, Jan

Length along trench (in feet)	SUBSURFACE PROFILE — DESCRIPTION: Trash, Soil, Color, Moisture, Description. If liquid: pH, conductivity, temperature, DO, ORP	Trash	Liquid	Depth (Feet bgs)	Comments (Including location(s) of additional excavation along side of trench)
1	North		NA	8'	
2	top soil lighter tan color than pit 1				
3					
4					
5					
6					
7					
8	bit copper				
9	brick section of bldg				
10	plastic bag				no PID hits
11	"landscape planters" black woody debris @ bottom				No liquids or perched layer
12					
13					
14					
15	top of metal bucket				
16					
17					
18	netting or strins small boot				
19	wood debris @ bottom				
20					
21	plastic onion bags				
22					
23					
24					
25	South				

Project No. **Page:** of

ENVIRONMENTAL PARTNERS INC

Test Pit Designation: 4

Client: Olalla Landfill Kitsap county	**Site Personnel:** Mary, Mike, Keli, Jan, Noel
Logged By: Mary Holder	
Date of Excavation: 10/7/2010 started @ 230pm, Finished 3:05, started filling @ 4pm	
Site Address:	
Excavation Contractor: Glacier	
Method:	

Length along trench (in feet)	SUBSURFACE PROFILE — DESCRIPTION: Trash, Soil, Color, Moisture, Description. If liquid: pH, conductivity, temperature, DO, ORP	Trash	Liquid	Depth (Feet bgs)	Comments (Including location(s) of additional excavation along side of trench)
1–25	North painted red dirt 55 gal drum barrel ★ tar like black subs bicycle tires inner tube bottle styrofoam toilet or sink small amnts of random trash old tire random debris metal some wood glass bottles mostly dirt for most of south end South end		NA	8'	★ ↑ cloth pulled out barrel - 55 gal drum @ start of hole & went back another 22' TOTAL Trench 47' plastic bottles shoe netting possibly cooling coils from back of refrigerator or grill large metal pieces thick 22' — shingles metal netting 22' further North from starting point NO PID hits except for 2.3 ppm when held up * to tar like substance in 55 gal drum No liquid or perched layers

Project No.	**Page:** of

ENVIRONMENTAL PARTNERS INC

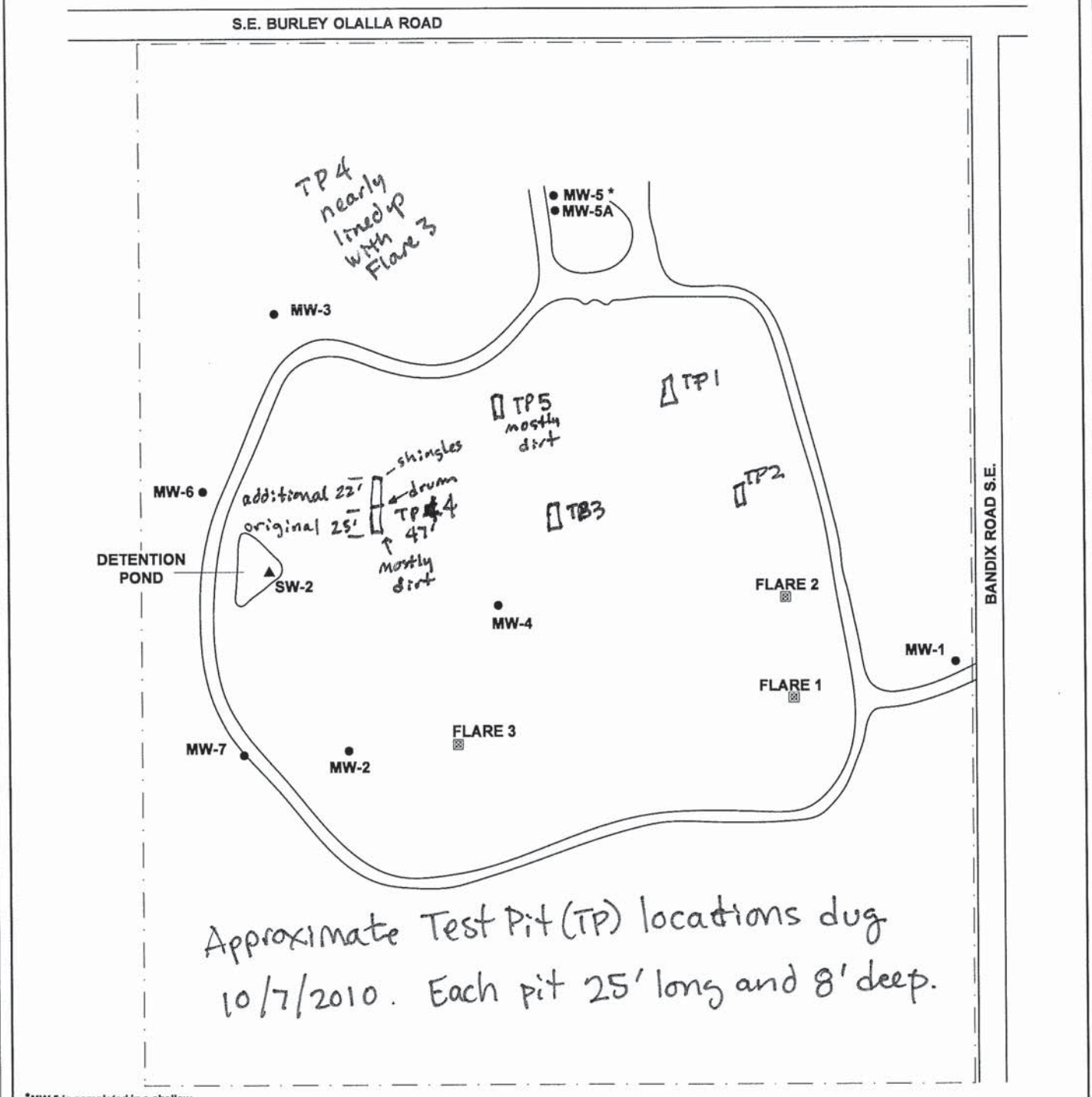
Test Pit Designation: 5

Client: Olalla Landfill / Kitsap County
Logged By: Mary Holder
Date of Excavation: 10/7/10 digging started at 3:10pm
Site Address:
Excavation Contractor: Glacier started filling in @330 Finished @ 4pm
Method: back excavator

Site Personnel: Mary, Mike, Keli, Jan

Length along trench (in feet)	SUBSURFACE PROFILE DESCRIPTION: Trash, Soil, Color, Moisture, Description. If liquid: pH, conductivity, temperature, DO, ORP	Trash	Liquid	Depth (Feet bgs)	Comments (Including location(s) of additional excavation along side of trench)
1	North		NA	8'	Overall this pit seemed the cleanest of the 5 with very little trash or construction debris. Mostly soil. No liquid or perched layers.
2					
3	dirt				
4					
5					
6					
7					
8	glass bottle				
9					
10					
11					
12	small amount construction debris				
13					
14					
15					
16					
17					
18					
19					
20	bottles newspaper				
21	plastic				
22					
23					
24					
25	South				

Project No. Page: of



*MW-5 is completed in a shallow perched groundwater zone.

KEY:
- — · — : APPROXIMATE PROPERTY BOUNDARY
- : PERIMETER ACCESS ROAD
- MW-2 ● : MONITORING WELL
- SW-2 ▲ : SURFACE WATER SAMPLING LOCATION
- ⊠ : LANDFILL GAS FLARE

N

0 50 100 200

SCALE: 1" = 200'

ENVIRONMENTAL PARTNERS INC
295 NE Gilman Boulevard, Suite 201
Issaquah, Washington 98027

FIGURE 1
OLALLA LANDFILL
MONITORING LOCATIONS
KITSAP COUNTY, WASHINGTON

PROJECT	45401.6 OLALLA, WASHINGTON		
PREPARED FOR	KITSAP COUNTY		
LOCATION	OLALLA LANDFILL KITSAP COUNTY, WASHINGTON		
SHEET	DRAWN BY	REVIEWED BY	DATE
1 of 1	ARM	DCK	07/06/10

ENVIRONMENTAL PARTNERS INC

Test Pit Designation: TP-5

Client:	Kitsap County Dept. of Public Works	***Site Personnel:***	
Logged By:	Mary Holder		Mary Holder - EPI, Ben Bohren - Glacier,
Date of Excavation:	October 7, 2010		Mike Warfel - Parametrix, Keli McKay-Means - KCDPW,
Site Address:	0.75 mi E of Hwy 16 on Olalla-Burley Rd		Jan Brower - KCHD, Noel Phillips - WADOE
Excavation Contractor	Glacier Environmental Services, Inc.		
Method:	Excavator		

Length along trench (in feet)	SUBSURFACE PROFILE DESCRIPTION: Refuse, Soil, Color, Moisture, Description. If liquid: pH, conductivity, temperature, DO, ORP	Liquid	Trench Depth	Comments (Including location(s) of additional excavation along side of trench)
1	North End	No	8' bgs	No PID hits.
2		No	8' bgs	No perched water layers.
3	Soil with no refuse	No	8' bgs	Predominately soil with very little refuse and construction debris
4		No	8' bgs	(See photos IMG_0890.jpg, 0893 and 0899)
5		No	8' bgs	Thin layers of light brown and grey soils
6		No	8' bgs	(See photo IMG_0889.jpg and 0897)
7		No	8' bgs	Walls of pit collapsed
8	Glass bottle	No	8' bgs	(See photo IMG_0898.jpg)
9		No	8' bgs	
10		No	8' bgs	
11		No	8' bgs	
12		No	8' bgs	
13	A couple pieces of construction debris	No	8' bgs	
14		No	8' bgs	
15		No	8' bgs	
16		No	8' bgs	
17		No	8' bgs	
18		No	8' bgs	
19		No	8' bgs	
20		No	8' bgs	
21	Woody debris	No	8' bgs	
22		No	8' bgs	
23	Newspaper	No	8' bgs	
24	Grouping of glass bottles and plastic bags or sheeting	No	8' bgs	
25		No	8' bgs	
	South End			

ENVIRONMENTAL PARTNERS INC

Test Pit Designation: TP-4

Client:	Kitsap County Dept. of Public Works	***Site Personnel:***	Mary Holder - EPI, Ben Bohren - Glacier,
Logged By:	Mary Holder		Mike Warfel - Parametrix, Keli McKay-Means - KCDPW,
Date of Excavation:	October 7, 2010		Jan Brower - KCHD, Noel Phillips - WADOE
Site Address:	0.75 mi E of Hwy 16 on Olalla-Burley Rd		
Excavation Contractor	Glacier Environmental Services, Inc.		
Method:	Excavator		

Length along trench (in feet)	SUBSURFACE PROFILE DESCRIPTION: Trash, Soil, Color, Moisture, Description. If liquid: pH, conductivity, temperature, DO, ORP	Liquid Observed?	Trench Depth	Comments (Including location(s) of additional excavation along side of trench)
	North End			
1		No	8' bgs	No organic vapors were measured with PID
2	Nearly empty red 55-gallon drum containing a small quantity of tar-like material	No	8' bgs	No perched water layers were observed
3	(See photos IMG_0864.jpg and 0865)	No	8' bgs	Mostly soil with construction debris and refuse
4		No	8' bgs	(See photos IMG_0859.jpg, 0861, 0862 and 0871)
5	Bicycle tire or innertube	No	8' bgs	Light brown and grey soil in thick layers
6	Bottle, styrofoam	No	8' bgs	Soils are predominately sand and gravel
7	Piece of a toilet	No	8' bgs	Walls of pit collapsed while digging out drum
8		No	8' bgs	(See photo IMG_0866.jpg)
9	Small amounts of random refuse	No	8' bgs	
10	Metal, glass, foam, plastic, lumber, brick, etc.	No	8' bgs	
11		No	8' bgs	
12		No	8' bgs	
13		No	8' bgs	
14		No	8' bgs	
15		No	8' bgs	
16		No	8' bgs	
17	Automobile tire	No	8' bgs	
18		No	8' bgs	
19		No	8' bgs	
20		No	8' bgs	
21	Small amount of metal debris and wood	No	8' bgs	
22		No	8' bgs	
23	glass bottles	No	8' bgs	
24		No	8' bgs	
25		No	8' bgs	
	South End			

ENVIRONMENTAL PARTNERS INC

Test Pit Designation: TP-4

Client:	Kitsap County Dept. of Public Works	***Site Personnel:***	Mary Holder - EPI, Ben Bohren - Glacier,
Logged By:	Mary Holder		Mike Warfel - Parametrix, Keli McKay-Means - KCDPW,
Date of Excavation:	October 7, 2010		Jan Brower - KCHD, Noel Phillips - WADOE
Site Address:	0.75 mi E of Hwy 16 on Olalla-Burley Rd		
Excavation Contractor:	Glacier Environmental Services, Inc.		
Method:	Excavator		

Length along trench (in feet)	SUBSURFACE PROFILE DESCRIPTION: Refuse, Soil, Color, Moisture, Description. If liquid: pH, conductivity, temperature, DO, ORP	Liquid Observed?	Trench Depth	Comments (Including location(s) of additional excavation along side of trench)
22	North end of TP-4 extension	No	8' bgs	In order to check for the possibility of more buried drums, additional soils were excavated to the north of the red drum.
21	Heavy duty woven metal screen	No	8' bgs	
20	Large quantity of roofing shingles	No	8' bgs	No measured PID detections other than from the small volume of tar-like substance from red
19		No	8' bgs	No perched water layers were observed
18	Lumber and wood debris	No	8' bgs	Soil, construction debris and metal objects
17		No	8' bgs	(See photos IMG_0874.jpg, 0875, 0877, 0880, 0883, and 0885)
16	Grey soil, lumber and wood debris and netting	No	8' bgs	Soil layered light brown and grey
15		No	8' bgs	(See photo IMG_0881.jpg)
14	Automobile tire	No	8' bgs	Soils are predominately sand and gravel
13		No	8' bgs	Walls of pit collapsed
12	Large pieces of thick metal	No	8' bgs	(See photo IMG_0886.jpg)
11		No	8' bgs	
10		No	8' bgs	
9		No	8' bgs	
8	Netting	No	8' bgs	
7		No	8' bgs	
6	Metal - possibly cooling coils from back or refrigerator or grill	No	8' bgs	
5		No	8' bgs	
4	Shoe	No	8' bgs	
3	Plastic bottles	No	8' bgs	
2	Cloth	No	8' bgs	
1	Drum was surrounded by soil and contained approximately one liter of a black tar like substance	No	8' bgs	PID reading of 2.3 ppm when tar-like substance was kneaded

South end of additional excavation

North end of 25' test pit and location of red drum

(See photos IMG_0867.jpg through 0870)

ENVIRONMENTAL PARTNERS INC

Test Pit Designation: TP-3

Client:	Kitsap County Dept. of Public Works	***Site Personnel:***	
Logged By:	Mary Holder		Mary Holder - EPI, Ben Bohren - Glacier,
Date of Excavation:	October 7, 2010		Mike Warfel - Parametrix, Keli McKay-Means - KCDPW,
Site Address:	0.75 mi E of Hwy 16 on Olalla-Burley Rd		Jan Brower - KCHD, Noel Phillips - WADOE
Excavation Contractor	Glacier Environmental Services, Inc.		
Method:	Excavator		

Length along trench (in feet)	SUBSURFACE PROFILE DESCRIPTION: Refuse Soil, Color, Moisture, Description. If liquid: pH, conductivity, temperature, DO, ORP	Liquid Observed?	Trench Depth	Comments (Including location(s) of additional excavation along side of trench)
	North End			
1		No	8' bgs	No organic vapors measured with PID
2	Soil with no refuse	No	8' bgs	No perched water layers were observed
3		No	8' bgs	Mostly soil and construction debris
4		No	8' bgs	Very little refuse observed
5		No	8' bgs	(See photos IMG_0840.jpg, 0842 and 0850)
6		No	8' bgs	Top 1-2' of soil tan in color with grey soil below
7		No	8' bgs	Blackened soil at bottom of excavation
8	Strip of copper	No	8' bgs	(See photos IMG_0850.jpg and 0851)
9	Section of brick building	No	8' bgs	Soils are predominately sand and gravel
10	Plastic bag printed with the words "landscape planters"	No	8' bgs	Walls of pit started collapsing
11	Blackened lumber and woody debris toward bottom of trench	No	8' bgs	(See photo IMG_0855.jpg)
12		No	8' bgs	
13		No	8' bgs	For location see photo IMG_0852.jpg
14		No	8' bgs	
15	Top of gallon sized metal bucket	No	8' bgs	
16		No	8' bgs	
17		No	8' bgs	
18	Netting or string	No	8' bgs	
19	Small boot	No	8' bgs	
20	Lumber and wood debris at bottom of excavation	No	8' bgs	
21		No	8' bgs	
22		No	8' bgs	
23		No	8' bgs	
24	Plastic onion bags	No	8' bgs	
25		No	8' bgs	
	South End			

ENVIRONMENTAL PARTNERS INC

Test Pit Designation: TP-2

Client:	Kitsap County Dept. of Public Works	***Site Personnel:***	
Logged By:	Mary Holder		Mary Holder - EPI, Ben Bohren - Glacier,
Date of Excavation:	October 7, 2010		Mike Warfel - Parametrix, Keli McKay-Means - KCDPW,
Site Address:	0.75 mi E of Hwy 16 on Olalla-Burley Rd		Jan Brower - KCHD, Noel Phillips - WADOE
Excavation Contractor:	Glacier Environmental Services, Inc.		
Method:	Excavator		

Length along trench (in feet)	SUBSURFACE PROFILE DESCRIPTION: Refuse Soil, Color, Moisture, Description. If liquid: pH, conductivity, temperature, DO, ORP	Liquid Observed?	Trench Depth	Comments (Including location(s) of additional excavation along side of trench)
1	North End	No	8' bgs	No organic vapors were measured with PID
2	Grey and brown soils	No	8' bgs	No perched water layers were observed
3		No	8' bgs	No refuse was observed
4		No	8' bgs	(See photos IMG_0837.jpg and 0838)
5		No	8' bgs	Light brown and grey soils layered with grasses
6		No	8' bgs	(See photo IMG_0835.jpg)
7		No	8' bgs	
8		No	8' bgs	Soils consisted predominately of
9		No	8' bgs	sand and gravel with silt
10		No	8' bgs	(See photo IMG_0831.jpg)
11	No trash or wood debris were observed	No	8' bgs	
12	Soil layered with grassy vegetation	No	8' bgs	
13		No	8' bgs	
14		No	8' bgs	
15		No	8' bgs	
16		No	8' bgs	
17		No	8' bgs	
18		No	8' bgs	
19		No	8' bgs	
20		No	8' bgs	
21		No	8' bgs	
22		No	8' bgs	
23		No	8' bgs	
24	Soil with no refuse	No	8' bgs	
25		No	8' bgs	
	South End			

ENVIRONMENTAL PARTNERS INC

Test Pit Designation: TP-1

Client:	Kitsap County Dept. of Public Works	***Site Personnel:***	
Logged By:	Mary Holder		Mary Holder - EPI, Ben Bohren - Glacier,
Date of Excavation:	October 7, 2010		Mike Warfel - Parametrix, Keli McKay-Means - KCDPW,
Site Address:	0.75 mi E of Hwy 16 on Olalla-Burley Rd		Jan Brower - KCHD, Noel Phillips - WADOE
Excavation Contractor	Glacier Environmental Services, Inc.		
Method:	Excavator		

Length along trench (in feet)	SUBSURFACE PROFILE DESCRIPTION: Refuse, Soil, Color, Moisture, Description. If liquid: pH, conductivity, temperature, DO, ORP	Liquid Observed?	Trench Depth	Comments (Including location(s) of additional excavation along side of trench)
1	North End	No	8' bgs	No organic vapors were measured with PID.
2	Brick, plastic	No	8' bgs	No perched water layers were observed.
3	tire, wood debris	No	8' bgs	Mostly soil and wood debris with
4	2 x 4	No	8' bgs	small amounts of refuse.
5	Rebar	No	8' bgs	(See photos IMG_0811.jpg, 0812, 0823 and 0828)
6	Plywood	No	8' bgs	Soils predominately sand and gravel with
7		No	8' bgs	layers of light brownsoil, grey soil, and refuse
8		No	8' bgs	(See photos IMG_0822.jpg, 0825 and 0826)
9		No	8' bgs	
10		No	8' bgs	
11		No	8' bgs	
12	Wood debris	No	8' bgs	For location see photo IMG_0830.jpg
13		No	8' bgs	
14		No	8' bgs	
15		No	8' bgs	
16	Grey and black soil at bottom	No	8' bgs	
17	Possibly burned materials	No	8' bgs	
18		No	8' bgs	
19		No	8' bgs	
20	~ 3" diameter metal pipe	No	8' bgs	
21	Automobile tire	No	8' bgs	
22	Roof shingles	No	8' bgs	
23	Automobile bumper	No	8' bgs	
24		No	8' bgs	
25	Piece of yellow insulation	No	8' bgs	
	South End			

TEST PIT NO. 5

IMG_0888.JPG

IMG_0889.JPG

IMG_0890.JPG

IMG_0891.JPG

TEST PIT NO. 5

IMG_0892.JPG

IMG_0893.JPG

IMG_0894.JPG

IMG_0895.JPG

TEST PIT NO. 5

IMG_0896.JPG

IMG_0897.JPG

IMG_0898.JPG

IMG_0899.JPG

TEST PIT NO. 5

IMG_0900.JPG

IMG_0901.JPG

IMG_0902.JPG

IMG_0903.JPG

TEST PIT NO. 4

IMG_0858.JPG

IMG_0858.JPEG

TEST PIT NO. 3

IMG_0840.JPG

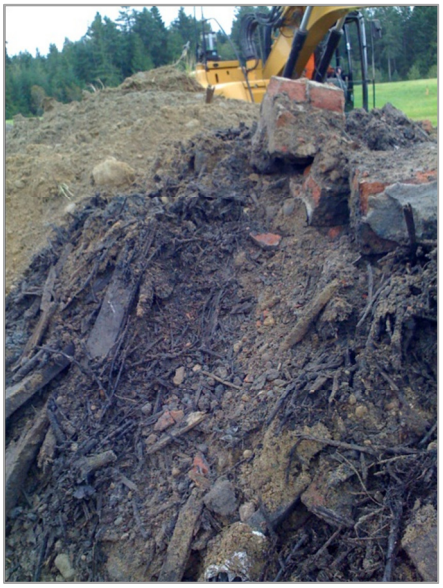
IMG_0841.JPG

IMG_0842.JPG

IMG_0843.JPG

TEST PIT NO. 3

IMG_0844.JPG



IMG_0845.JPG

IMG_0846.JPG

IMG_0847.JPG

TEST PIT NO. 3

IMG_0848.JPG

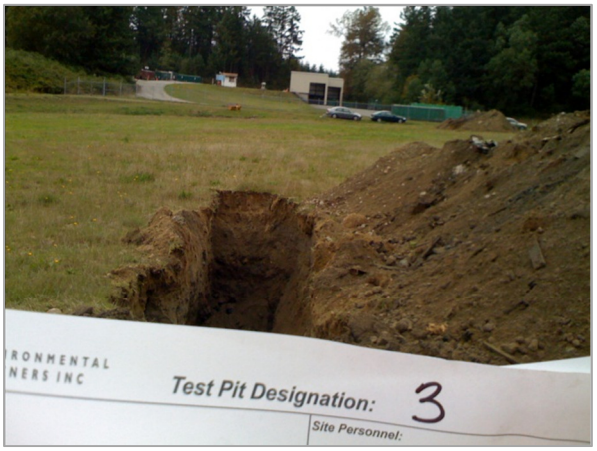
IMG_0849.JPG

IMG_0850.JPG

IMG_0851.JPG

TEST PIT NO. 3

IMG_0852.JPG



IMG_0853.JPG

IMG_0854.JPG

IMG_0855.JPG

TEST PIT NO. 3

IMG_0856.JPG

IMG_0857.JPG

TEST PIT NO. 2

IMG_0831.JPG

IMG_0832.JPG

IMG_0833.JPG

IMG_0834.JPG

TEST PIT NO. 2

IMG_0835.JPG

IMG_0836.JPG

IMG_0837.JPG

IMG_0838.JPG

TEST PIT NO. 2

IMG_0839.JPG

TEST PIT NO. 1

IMG_0811.JPG

IMG_0812.JPG

IMG_0813.JPG

IMG_0814.JPG

TEST PIT NO. 1

IMG_0815.JPG

IMG_0816.JPG

IMG_0817.JPG

IMG_0818.JPG

TEST PIT NO. 1

IMG_0819.JPG

IMG_0820.JPG

IMG_0821.JPG

IMG_0822.JPG

TEST PIT NO. 1

IMG_0823.JPG

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IMG_0826.JPG

TEST PIT NO. 1

IMG_0827.JPG

IMG_0828.JPG

IMG_0829.JPG

IMG_0830.JPG

Appendix K

Landfill Gas Laboratory Data Sheets

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager: MIKE WARFEL

Collected by: (Print and Sign) STEVE Enge

Company: PARAMETRIX Email: enge@parametrix.com

Address: 411 108th AVE NE Suite 1800 City: Bellevue State: WA Zip: 98004

Phone: 425-458-6200 Fax: 425-458-6363

Project Info:
P.O. #
Project # 215-1578-121 (03/0303P)
Project Name: OLALLA LF

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01A	FL-1	36570	10/15/10	1025	TO-15	-29"Hg			
02A	FL-2	34170	10/15/10	1045	TO-15	-30"Hg			
03A	FL-3	34582	10/15/10	1110	TO-15	-30"Hg			

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
[signature]	10/15/10 1230	[signature]	10-15-10 0925
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
			10-25-10
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEx		NA	Good	Yes No (None)	1010352

Form 1293 rev.11

Air Toxics LTD.
Laboratory Services Since 1989

10/28/2010
Mr. Michael Warfel
Parametrix, Inc.
5814 Graham Avenue, Suite 201
PO Box 460
Sumner WA 98390

Project Name: Olalla LF
Project #: 215-1578-121(03/0303P)
Workorder #: 1010352

Dear Mr. Michael Warfel

The following report includes the data for the above referenced project for sample(s) received on 10/18/2010 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Karen Lopez at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Karen Lopez

Project Manager

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 1010352

Work Order Summary

CLIENT:	Mr. Michael Warfel Parametrix, Inc. 5814 Graham Avenue, Suite 201 PO Box 460 Sumner, WA 98390	**BILL TO:**	Mr. Stephen Emge Parametrix, Inc. 411 108th Avenue Suite 1800 Bellevue, WA 98004-5571
PHONE:	253-863-5128	**P.O. #**	
FAX:	253-826-2873	**PROJECT #**	215-1578-121(03/0303P) Olalla LF
DATE RECEIVED:	10/18/2010	**CONTACT:**	Karen Lopez
DATE COMPLETED:	10/28/2010		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	FL-1	Modified TO-15	0.6 psi	15 psi
02A	FL-2	Modified TO-15	0.6 "Hg	15 psi
03A	FL-3	Modified TO-15	1.0 "Hg	15 psi
04A	Lab Blank	Modified TO-15	NA	NA
05A	CCV	Modified TO-15	NA	NA
06A	LCS	Modified TO-15	NA	NA
06AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Fruman DATE: 10/28/10

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

Air Toxics LTD.
Laboratory Services Since 1989

LABORATORY NARRATIVE
EPA Method TO-15
Parametrix, Inc.
Workorder# 1010352

Three 1 Liter Summa Canister samples were received on October 18, 2010. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

All Quality Control Limit exceedences and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the reporting limit.
UJ- Non-detected compound associated with low bias in the CCV
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: FL-1

Lab ID#: 1010352-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.97	1.3	4.8	6.6
Freon 11	0.97	2.0	5.4	11
Acetone	3.9	12	9.2	28
Heptane	0.97	11	4.0	44
Toluene	0.97	5.8	3.6	22

Client Sample ID: FL-2

Lab ID#: 1010352-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.0	39	5.1	190
Freon 114	1.0	25	7.2	180
Freon 11	1.0	17	5.8	94
Acetone	4.1	47	9.8	110
Hexane	1.0	34	3.6	120
Heptane	1.0	63	4.2	260
Toluene	1.0	12	3.9	45

Client Sample ID: FL-3

Lab ID#: 1010352-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.0	4.9	5.2	24
Freon 114	1.0	3.7	7.3	26
Freon 11	1.0	6.5	5.9	36
Acetone	4.2	8.0	9.9	19
Heptane	1.0	9.1	4.3	37
Toluene	1.0	5.7	3.9	22

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: FL-1

Lab ID#: 1010352-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3102324**	**Date of Collection: 10/15/10 10:25:00 A**	
Dil. Factor:	**1.94**	**Date of Analysis: 10/23/10 07:29 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.97	1.3	4.8	6.6
Freon 114	0.97	Not Detected	6.8	Not Detected
Chloromethane	3.9	Not Detected	8.0	Not Detected
Vinyl Chloride	0.97	Not Detected	2.5	Not Detected
1,3-Butadiene	0.97	Not Detected	2.1	Not Detected
Bromomethane	0.97	Not Detected	3.8	Not Detected
Chloroethane	0.97	Not Detected	2.6	Not Detected
Freon 11	0.97	2.0	5.4	11
Ethanol	3.9	Not Detected	7.3	Not Detected
Freon 113	0.97	Not Detected	7.4	Not Detected
1,1-Dichloroethene	0.97	Not Detected	3.8	Not Detected
Acetone	3.9	12	9.2	28
2-Propanol	3.9	Not Detected	9.5	Not Detected
Carbon Disulfide	0.97	Not Detected	3.0	Not Detected
3-Chloropropene	3.9	Not Detected	12	Not Detected
Methylene Chloride	0.97	Not Detected	3.4	Not Detected
Methyl tert-butyl ether	0.97	Not Detected	3.5	Not Detected
trans-1,2-Dichloroethene	0.97	Not Detected	3.8	Not Detected
Hexane	0.97	Not Detected	3.4	Not Detected
1,1-Dichloroethane	0.97	Not Detected	3.9	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.97	Not Detected	2.9	Not Detected
cis-1,2-Dichloroethene	0.97	Not Detected	3.8	Not Detected
Tetrahydrofuran	0.97	Not Detected	2.9	Not Detected
Chloroform	0.97	Not Detected	4.7	Not Detected
1,1,1-Trichloroethane	0.97	Not Detected	5.3	Not Detected
Cyclohexane	0.97	Not Detected	3.3	Not Detected
Carbon Tetrachloride	0.97	Not Detected	6.1	Not Detected
2,2,4-Trimethylpentane	0.97	Not Detected	4.5	Not Detected
Benzene	0.97	Not Detected	3.1	Not Detected
1,2-Dichloroethane	0.97	Not Detected	3.9	Not Detected
Heptane	0.97	11	4.0	44
Trichloroethene	0.97	Not Detected	5.2	Not Detected
1,2-Dichloropropane	0.97	Not Detected	4.5	Not Detected
1,4-Dioxane	3.9	Not Detected	14	Not Detected
Bromodichloromethane	0.97	Not Detected	6.5	Not Detected
cis-1,3-Dichloropropene	0.97	Not Detected	4.4	Not Detected
4-Methyl-2-pentanone	0.97	Not Detected	4.0	Not Detected
Toluene	0.97	5.8	3.6	22
trans-1,3-Dichloropropene	0.97	Not Detected	4.4	Not Detected
1,1,2-Trichloroethane	0.97	Not Detected	5.3	Not Detected
Tetrachloroethene	0.97	Not Detected	6.6	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: FL-1

Lab ID#: 1010352-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3102324**	**Date of Collection: 10/15/10 10:25:00 A**	
Dil. Factor:	**1.94**	**Date of Analysis: 10/23/10 07:29 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Hexanone	3.9	Not Detected	16	Not Detected
Dibromochloromethane	0.97	Not Detected	8.3	Not Detected
1,2-Dibromoethane (EDB)	0.97	Not Detected	7.4	Not Detected
Chlorobenzene	0.97	Not Detected	4.5	Not Detected
Ethyl Benzene	0.97	Not Detected	4.2	Not Detected
m,p-Xylene	0.97	Not Detected	4.2	Not Detected
o-Xylene	0.97	Not Detected	4.2	Not Detected
Styrene	0.97	Not Detected	4.1	Not Detected
Bromoform	0.97	Not Detected	10	Not Detected
Cumene	0.97	Not Detected	4.8	Not Detected
1,1,2,2-Tetrachloroethane	0.97	Not Detected	6.6	Not Detected
Propylbenzene	0.97	Not Detected	4.8	Not Detected
4-Ethyltoluene	0.97	Not Detected	4.8	Not Detected
1,3,5-Trimethylbenzene	0.97	Not Detected	4.8	Not Detected
1,2,4-Trimethylbenzene	0.97	Not Detected	4.8	Not Detected
1,3-Dichlorobenzene	0.97	Not Detected	5.8	Not Detected
1,4-Dichlorobenzene	0.97	Not Detected	5.8	Not Detected
alpha-Chlorotoluene	0.97	Not Detected	5.0	Not Detected
1,2-Dichlorobenzene	0.97	Not Detected	5.8	Not Detected
1,2,4-Trichlorobenzene	3.9	Not Detected	29	Not Detected
Hexachlorobutadiene	3.9	Not Detected	41	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	112	70-130
4-Bromofluorobenzene	94	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: FL-2

Lab ID#: 1010352-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3102326**	**Date of Collection: 10/15/10 10:40:00 A**	
Dil. Factor:	**2.06**	**Date of Analysis: 10/23/10 08:22 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.0	39	5.1	190
Freon 114	1.0	25	7.2	180
Chloromethane	4.1	Not Detected	8.5	Not Detected
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
1,3-Butadiene	1.0	Not Detected	2.3	Not Detected
Bromomethane	1.0	Not Detected	4.0	Not Detected
Chloroethane	1.0	Not Detected	2.7	Not Detected
Freon 11	1.0	17	5.8	94
Ethanol	4.1	Not Detected	7.8	Not Detected
Freon 113	1.0	Not Detected	7.9	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Acetone	4.1	47	9.8	110
2-Propanol	4.1	Not Detected	10	Not Detected
Carbon Disulfide	1.0	Not Detected	3.2	Not Detected
3-Chloropropene	4.1	Not Detected	13	Not Detected
Methylene Chloride	1.0	Not Detected	3.6	Not Detected
Methyl tert-butyl ether	1.0	Not Detected	3.7	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Hexane	1.0	34	3.6	120
1,1-Dichloroethane	1.0	Not Detected	4.2	Not Detected
2-Butanone (Methyl Ethyl Ketone)	1.0	Not Detected	3.0	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Tetrahydrofuran	1.0	Not Detected	3.0	Not Detected
Chloroform	1.0	Not Detected	5.0	Not Detected
1,1,1-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Cyclohexane	1.0	Not Detected	3.5	Not Detected
Carbon Tetrachloride	1.0	Not Detected	6.5	Not Detected
2,2,4-Trimethylpentane	1.0	Not Detected	4.8	Not Detected
Benzene	1.0	Not Detected	3.3	Not Detected
1,2-Dichloroethane	1.0	Not Detected	4.2	Not Detected
Heptane	1.0	63	4.2	260
Trichloroethene	1.0	Not Detected	5.5	Not Detected
1,2-Dichloropropane	1.0	Not Detected	4.8	Not Detected
1,4-Dioxane	4.1	Not Detected	15	Not Detected
Bromodichloromethane	1.0	Not Detected	6.9	Not Detected
cis-1,3-Dichloropropene	1.0	Not Detected	4.7	Not Detected
4-Methyl-2-pentanone	1.0	Not Detected	4.2	Not Detected
Toluene	1.0	12	3.9	45
trans-1,3-Dichloropropene	1.0	Not Detected	4.7	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Tetrachloroethene	1.0	Not Detected	7.0	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: FL-2

Lab ID#: 1010352-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3102326**	**Date of Collection: 10/15/10 10:40:00 A**	
Dil. Factor:	**2.06**	**Date of Analysis: 10/23/10 08:22 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Hexanone	4.1	Not Detected	17	Not Detected
Dibromochloromethane	1.0	Not Detected	8.8	Not Detected
1,2-Dibromoethane (EDB)	1.0	Not Detected	7.9	Not Detected
Chlorobenzene	1.0	Not Detected	4.7	Not Detected
Ethyl Benzene	1.0	Not Detected	4.5	Not Detected
m,p-Xylene	1.0	Not Detected	4.5	Not Detected
o-Xylene	1.0	Not Detected	4.5	Not Detected
Styrene	1.0	Not Detected	4.4	Not Detected
Bromoform	1.0	Not Detected	11	Not Detected
Cumene	1.0	Not Detected	5.1	Not Detected
1,1,2,2-Tetrachloroethane	1.0	Not Detected	7.1	Not Detected
Propylbenzene	1.0	Not Detected	5.1	Not Detected
4-Ethyltoluene	1.0	Not Detected	5.1	Not Detected
1,3,5-Trimethylbenzene	1.0	Not Detected	5.1	Not Detected
1,2,4-Trimethylbenzene	1.0	Not Detected	5.1	Not Detected
1,3-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
alpha-Chlorotoluene	1.0	Not Detected	5.3	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
1,2,4-Trichlorobenzene	4.1	Not Detected	30	Not Detected
Hexachlorobutadiene	4.1	Not Detected	44	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	106	70-130
4-Bromofluorobenzene	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: FL-3

Lab ID#: 1010352-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3102325**	**Date of Collection: 10/15/10 11:10:00 A**	
Dil. Factor:	**2.09**	**Date of Analysis: 10/23/10 07:52 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.0	4.9	5.2	24
Freon 114	1.0	3.7	7.3	26
Chloromethane	4.2	Not Detected	8.6	Not Detected
Vinyl Chloride	1.0	Not Detected	2.7	Not Detected
1,3-Butadiene	1.0	Not Detected	2.3	Not Detected
Bromomethane	1.0	Not Detected	4.0	Not Detected
Chloroethane	1.0	Not Detected	2.8	Not Detected
Freon 11	1.0	6.5	5.9	36
Ethanol	4.2	Not Detected	7.9	Not Detected
Freon 113	1.0	Not Detected	8.0	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Acetone	4.2	8.0	9.9	19
2-Propanol	4.2	Not Detected	10	Not Detected
Carbon Disulfide	1.0	Not Detected	3.2	Not Detected
3-Chloropropene	4.2	Not Detected	13	Not Detected
Methylene Chloride	1.0	Not Detected	3.6	Not Detected
Methyl tert-butyl ether	1.0	Not Detected	3.8	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Hexane	1.0	Not Detected	3.7	Not Detected
1,1-Dichloroethane	1.0	Not Detected	4.2	Not Detected
2-Butanone (Methyl Ethyl Ketone)	1.0	Not Detected	3.1	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Tetrahydrofuran	1.0	Not Detected	3.1	Not Detected
Chloroform	1.0	Not Detected	5.1	Not Detected
1,1,1-Trichloroethane	1.0	Not Detected	5.7	Not Detected
Cyclohexane	1.0	Not Detected	3.6	Not Detected
Carbon Tetrachloride	1.0	Not Detected	6.6	Not Detected
2,2,4-Trimethylpentane	1.0	Not Detected	4.9	Not Detected
Benzene	1.0	Not Detected	3.3	Not Detected
1,2-Dichloroethane	1.0	Not Detected	4.2	Not Detected
Heptane	1.0	9.1	4.3	37
Trichloroethene	1.0	Not Detected	5.6	Not Detected
1,2-Dichloropropane	1.0	Not Detected	4.8	Not Detected
1,4-Dioxane	4.2	Not Detected	15	Not Detected
Bromodichloromethane	1.0	Not Detected	7.0	Not Detected
cis-1,3-Dichloropropene	1.0	Not Detected	4.7	Not Detected
4-Methyl-2-pentanone	1.0	Not Detected	4.3	Not Detected
Toluene	1.0	5.7	3.9	22
trans-1,3-Dichloropropene	1.0	Not Detected	4.7	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected	5.7	Not Detected
Tetrachloroethene	1.0	Not Detected	7.1	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: FL-3

Lab ID#: 1010352-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3102325**	**Date of Collection: 10/15/10 11:10:00 A**	
Dil. Factor:	**2.09**	**Date of Analysis: 10/23/10 07:52 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Hexanone	4.2	Not Detected	17	Not Detected
Dibromochloromethane	1.0	Not Detected	8.9	Not Detected
1,2-Dibromoethane (EDB)	1.0	Not Detected	8.0	Not Detected
Chlorobenzene	1.0	Not Detected	4.8	Not Detected
Ethyl Benzene	1.0	Not Detected	4.5	Not Detected
m,p-Xylene	1.0	Not Detected	4.5	Not Detected
o-Xylene	1.0	Not Detected	4.5	Not Detected
Styrene	1.0	Not Detected	4.4	Not Detected
Bromoform	1.0	Not Detected	11	Not Detected
Cumene	1.0	Not Detected	5.1	Not Detected
1,1,2,2-Tetrachloroethane	1.0	Not Detected	7.2	Not Detected
Propylbenzene	1.0	Not Detected	5.1	Not Detected
4-Ethyltoluene	1.0	Not Detected	5.1	Not Detected
1,3,5-Trimethylbenzene	1.0	Not Detected	5.1	Not Detected
1,2,4-Trimethylbenzene	1.0	Not Detected	5.1	Not Detected
1,3-Dichlorobenzene	1.0	Not Detected	6.3	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected	6.3	Not Detected
alpha-Chlorotoluene	1.0	Not Detected	5.4	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected	6.3	Not Detected
1,2,4-Trichlorobenzene	4.2	Not Detected	31	Not Detected
Hexachlorobutadiene	4.2	Not Detected	44	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	107	70-130
4-Bromofluorobenzene	98	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 1010352-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3102309**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/23/10 12:42 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	2.0	Not Detected	4.1	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	0.50	Not Detected	1.9	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	2.0	Not Detected	4.8	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	0.50	Not Detected	1.7	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected	1.5	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 1010352-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3102309**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/23/10 12:42 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Hexanone	2.0	Not Detected	8.2	Not Detected
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	90	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 1010352-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3102304**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/23/10 09:46 AM**	

Compound	%Recovery
Freon 12	123
Freon 114	112
Chloromethane	130
Vinyl Chloride	120
1,3-Butadiene	117
Bromomethane	118
Chloroethane	125
Freon 11	114
Ethanol	124
Freon 113	105
1,1-Dichloroethene	109
Acetone	117
2-Propanol	117
Carbon Disulfide	116
3-Chloropropene	110
Methylene Chloride	123
Methyl tert-butyl ether	103
trans-1,2-Dichloroethene	115
Hexane	110
1,1-Dichloroethane	112
2-Butanone (Methyl Ethyl Ketone)	113
cis-1,2-Dichloroethene	106
Tetrahydrofuran	112
Chloroform	109
1,1,1-Trichloroethane	107
Cyclohexane	106
Carbon Tetrachloride	109
2,2,4-Trimethylpentane	112
Benzene	115
1,2-Dichloroethane	115
Heptane	116
Trichloroethene	110
1,2-Dichloropropane	112
1,4-Dioxane	106
Bromodichloromethane	115
cis-1,3-Dichloropropene	112
4-Methyl-2-pentanone	119
Toluene	110
trans-1,3-Dichloropropene	121
1,1,2-Trichloroethane	116
Tetrachloroethene	114

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 1010352-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3102304**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/23/10 09:46 AM**	

Compound	%Recovery
2-Hexanone	126
Dibromochloromethane	123
1,2-Dibromoethane (EDB)	118
Chlorobenzene	114
Ethyl Benzene	119
m,p-Xylene	122
o-Xylene	117
Styrene	122
Bromoform	123
Cumene	120
1,1,2,2-Tetrachloroethane	116
Propylbenzene	119
4-Ethyltoluene	124
1,3,5-Trimethylbenzene	126
1,2,4-Trimethylbenzene	124
1,3-Dichlorobenzene	117
1,4-Dichlorobenzene	118
alpha-Chlorotoluene	133 Q
1,2-Dichlorobenzene	118
1,2,4-Trichlorobenzene	111
Hexachlorobutadiene	111

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	98	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 1010352-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3102305**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/23/10 10:28 AM**	

Compound	%Recovery
Freon 12	104
Freon 114	110
Chloromethane	108
Vinyl Chloride	101
1,3-Butadiene	114
Bromomethane	94
Chloroethane	109
Freon 11	117
Ethanol	94
Freon 113	102
1,1-Dichloroethene	93
Acetone	103
2-Propanol	107
Carbon Disulfide	102
3-Chloropropene	101
Methylene Chloride	98
Methyl tert-butyl ether	112
trans-1,2-Dichloroethene	109
Hexane	116
1,1-Dichloroethane	109
2-Butanone (Methyl Ethyl Ketone)	114
cis-1,2-Dichloroethene	103
Tetrahydrofuran	117
Chloroform	109
1,1,1-Trichloroethane	115
Cyclohexane	118
Carbon Tetrachloride	119
2,2,4-Trimethylpentane	114
Benzene	114
1,2-Dichloroethane	109
Heptane	119
Trichloroethene	110
1,2-Dichloropropane	113
1,4-Dioxane	111
Bromodichloromethane	113
cis-1,3-Dichloropropene	113
4-Methyl-2-pentanone	120
Toluene	109
trans-1,3-Dichloropropene	121
1,1,2-Trichloroethane	116
Tetrachloroethene	113

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 1010352-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3102305**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/23/10 10:28 AM**	

Compound	%Recovery
2-Hexanone	127
Dibromochloromethane	123
1,2-Dibromoethane (EDB)	123
Chlorobenzene	116
Ethyl Benzene	122
m,p-Xylene	127
o-Xylene	122
Styrene	125
Bromoform	126
Cumene	122
1,1,2,2-Tetrachloroethane	120
Propylbenzene	120
4-Ethyltoluene	125
1,3,5-Trimethylbenzene	130
1,2,4-Trimethylbenzene	130
1,3-Dichlorobenzene	122
1,4-Dichlorobenzene	124
alpha-Chlorotoluene	137 Q
1,2-Dichlorobenzene	124
1,2,4-Trichlorobenzene	110
Hexachlorobutadiene	111

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	106	70-130
4-Bromofluorobenzene	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCSD

Lab ID#: 1010352-06AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3102306**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/23/10 10:52 AM**	

Compound	%Recovery
Freon 12	104
Freon 114	105
Chloromethane	108
Vinyl Chloride	102
1,3-Butadiene	110
Bromomethane	93
Chloroethane	111
Freon 11	132 Q
Ethanol	98
Freon 113	98
1,1-Dichloroethene	92
Acetone	102
2-Propanol	104
Carbon Disulfide	103
3-Chloropropene	102
Methylene Chloride	100
Methyl tert-butyl ether	107
trans-1,2-Dichloroethene	109
Hexane	114
1,1-Dichloroethane	106
2-Butanone (Methyl Ethyl Ketone)	112
cis-1,2-Dichloroethene	103
Tetrahydrofuran	115
Chloroform	107
1,1,1-Trichloroethane	110
Cyclohexane	112
Carbon Tetrachloride	114
2,2,4-Trimethylpentane	112
Benzene	112
1,2-Dichloroethane	108
Heptane	117
Trichloroethene	109
1,2-Dichloropropane	112
1,4-Dioxane	108
Bromodichloromethane	113
cis-1,3-Dichloropropene	113
4-Methyl-2-pentanone	119
Toluene	107
trans-1,3-Dichloropropene	122
1,1,2-Trichloroethane	116
Tetrachloroethene	114

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCSD

Lab ID#: 1010352-06AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3102306**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/23/10 10:52 AM**	

Compound	%Recovery
2-Hexanone	128
Dibromochloromethane	123
1,2-Dibromoethane (EDB)	124
Chlorobenzene	115
Ethyl Benzene	121
m,p-Xylene	126
o-Xylene	120
Styrene	125
Bromoform	123
Cumene	120
1,1,2,2-Tetrachloroethane	118
Propylbenzene	120
4-Ethyltoluene	125
1,3,5-Trimethylbenzene	128
1,2,4-Trimethylbenzene	129
1,3-Dichlorobenzene	121
1,4-Dichlorobenzene	123
alpha-Chlorotoluene	132 Q
1,2-Dichlorobenzene	124
1,2,4-Trichlorobenzene	114
Hexachlorobutadiene	115

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	100	70-130

Appendix L

Opinion of Probable Costs for Alternatives

Opinion of Probable Cost for Alternative 1
Monitored Natural Attenuation and Land Use Controls

Item	Quantity	Units	Unit Cost	Capital Cost	O&M Cost Annual	O&M Cost Present Worth[1]	Source
Low Permeability Caps							
Low Permeability Soil Cap					$2,500	$63,586	Similar Projects
Monitoring Well Decommissioning							
Well Decommissioning	10	ea	$2,000			$14,560	Similar Project
Subtotal				$0			
Contingency	25% of Capital Cost			$0			
Construction/Project Management	20% of Capital Cost			$0			
Engineering (PS&E)	15% of Capital Cost			$0			
Construction Cost Subtotal				**$0**			
Sales Tax			**8.6%**	**$0**			
Environmental Oversight							
General Reporting							
Draft Groundwater Monitoring and Well Maintenance Plan	1	Each	$14,000	$14,000			Engineer's Estimate
Final Groundwater Monitoring and Well Maintenance Plan	1	Each	$6,500	$6,500			Engineer's Estimate
Annual Groundwater Monitoring Reports	30	Each	$9,000			$231,407	Engineer's Estimate
Quarterly Groundwater Monitoring Reports	90	Each	$6,500			$501,383	Engineer's Estimate
Periodic Review Report (every 5 years)	6	Each	$27,700			$139,342	Engineer's Estimate
Project Management	1	LS	$6,370	$6,370			Engineer's Estimate
Land Use Controls							
Environmental Covenant	1	LS	$6,000	$6,000	$500	$12,717	Engineer's Estimate
Draft Land Use Control Implementation Plan (LUCIP)	1	LS	$5,000	$5,000			Engineer's Estimate
Final LUCIP	1	LS	$2,200	$2,200	$500	$12,717	Engineer's Estimate
Notice of Conveyance or Other Transfer of an Interest	1	LS	$2,000			$4,893	Engineer's Estimate
Land Use Control Maintenance	1	LS	$1,000		$1,000	$25,435	Engineer's Estimate
Long Term Groundwater Monitoring (yrs 1-30)							
Sample Collection (Quarterly)	120	ea	$3,346			$779,612	Actual Costs; Annual Costs
Sample Analysis (Quarterly)	120	ea	$4,234				Eng. Estimate; Annual Costs
SWHP Permit Fees	30	ea	$8,000			$203,476	
Environmental Oversight Subtotal				**$40,070**			
Operation and Maintenance Subtotal						$1,989,128	
O&M Project Management and Support	10% of O&M Present Worth					$198,912.85	
O&M Contingency	25% of O&M Present Worth					$497,282.12	
Operation and Maintenance Total						**$2,685,323**	
NET PRESENT WORTH						**$2,725,393**	

Notes:
1 - Discount rate used for all present worth calculations per EPA Guidance = 1.1%

Opinion of Probable Cost for Alternative 2
Low Permeability Geomembrane Cap Phase I Area with MNA and Land Use Controls

Item	Quantity	Units	Unit Cost	Capital Cost	O&M Cost Annual	O&M Cost Present Worth[1]	Source
Low Permeability Caps							
Landfill Phase I Area							
Low Permeability Geomembrane Cap	6.5	Acre	$153,500	$997,750	$7,500	$190,759	Similar Projects
Mobilization	8%	LS	$997,750	$79,820			Similar Projects
Monitoring Well Decommissioning							
Well Decommissioning	10	ea	$2,000			$14,560	Similar Project
Subtotal				$1,077,570			
Contingency	25% of Capital Cost			$269,393			
Construction/Project Management	20% of Capital Cost			$215,514			
Engineering (PS&E)	15% of Capital Cost			$161,636			
Construction Cost Subtotal				**$1,724,112**			
Sales Tax			**8.6%**	**$148,274**			
Environmental Oversight							
General Reporting							
Draft Groundwater Monitoring and Well Maintenance Plan	1	Each	$14,000	$14,000			Engineer's Estimate
Final Groundwater Monitoring and Well Maintenance Plan	1	Each	$6,500	$6,500			Engineer's Estimate
Annual Groundwater Monitoring Reports	30	Each	$9,000			$231,407	Engineer's Estimate
Quarterly Groundwater Monitoring Reports	70	Each	$6,500			$401,916	Engineer's Estimate
Periodic Review Report (every 5 years)	6	Each	$27,700			$139,342	Engineer's Estimate
Project Management	1	LS	$6,370	$6,370			Engineer's Estimate
Land Use Controls							
Environmental Covenant	1	LS	$6,000	$6,000	$500	$12,717	Engineer's Estimate
Draft Land Use Control Implementation Plan (LUCIP)	1	LS	$5,000	$5,000			Engineer's Estimate
Final LUCIP	1	LS	$2,200	$2,200	$500	$12,717	Engineer's Estimate
Notice of Conveyance or Other Transfer of an Interest	1	LS	$2,000			$4,893	Engineer's Estimate
Land Use Control Maintenance	1	LS	$1,000		$1,000	$25,435	Engineer's Estimate
Long Term Groundwater Monitoring (yrs 1-30)							
Sample Collection (Quarterly)	100	ea	$3,346			$663,614	Actual Costs; Annual Costs
Sample Analysis (Quarterly)	100	ea	$4,234				Eng. Estimate; Annual Costs
SWHP Permit Fees	30	ea	$8,000			$203,476	
Environmental Oversight Subtotal				**$40,070**			
Operation and Maintenance Subtotal						$1,900,836	
O&M Project Management and Support	10% of O&M Present Worth					$190,084	
O&M Contingency	25% of O&M Present Worth					$475,209	
Operation and Maintenance Total						**$2,566,129**	
NET PRESENT WORTH						**$4,478,585**	

Notes:
1 - Discount rate used for all present worth calculations per EPA Guidance = 1.1%

Opinion of Probable Cost for Alternative 3
In-Situ Treatment, Monitored Natural Attenuation, and Land Use Controls

Item	Quantity	Units	Unit Cost	Capital Cost	O&M Cost Annual	O&M Cost Present Worth[1]	Source
Low Permeability Caps							
Low Permeability Soil Cap					$2,500	$63,586	Similar Projects
MRC™ Injection							
Injection Wells	21	ea	$11,600	$243,600			MW-8 & MW-10 Costs
Field Pilot Study							
Injection Well	1	ea	$11,600	$11,600			
MRC™	100	lb	$8.50	$850			Similar Projects; Vendor Quote
Freight	1	LS	$500	$500			Similar Project
Dosing Labor	1	Day	$2,750	$2,750			Similar Project
Water	600	gal	$0.002	$1			Similar Project
Mobilization	8%	LS	$4,101	$328			Similar Project; % of Capital Cost
MRC™ Injection Implementation							
MRC™	2,100	lb	$8.50	$17,850			Similar Projects; Vendor Quote
Freight	1	LS	$3,900	$3,900			Similar Project
Dosing Labor	10	Day	$2,750	$27,500		$260,357	Similar Project
Water	12,600	gal	$0.002	$25			Similar Project
Mobilization	8%	LS	$49,275	$3,942			Similar Project; % of Capital Cost
Air Sparging							
Sparge Wells	10	ea	$8,000	$80,000			MW-8 & MW-10 Costs
Field Pilot Study	1	LS	$30,000	$30,000			Similar Project
Mobilization	8%	LS	$30,000	$2,400			Similar Project; % of Capital Cost
Air Sparging Implementation							
Air Sparge Equipment	1	LS	$40,000	$40,000			Similar Projects
Equipment Building	400	SF	$100	$40,000			
Site Work	1	LS	$10,000	$10,000	$12,000	$305,214	
Well Head Completions	10	ea	$2,000	$20,000			
Mobilization	8%	LS	$110,000	$8,800			Similar Project; % of Capital Cost
Decommissioning	1	LS	$10,000			$7,202	
Well Decommissioning							
Well Decommissioning	42	ea	$2,000			$61,151	Similar Project
Subtotal				$544,047			
Contingency	25% of Capital Cost			$136,012			
Construction/Project Management	20% of Capital Cost			$108,809			
Engineering (PS&E)	15% of Capital Cost			$81,607			
Construction Cost Subtotal				**$870,474**			
Sales Tax			**8.6%**	**$74,861**			
Environmental Oversight							
General Reporting							
Draft Groundwater Monitoring and Well Maintenance Plan	1	Each	$14,000	$14,000			Engineer's Estimate
Final Groundwater Monitoring and Well Maintenance Plan	1	Each	$6,500	$6,500			Engineer's Estimate
Annual Groundwater Monitoring Reports	30	Each	$9,000			$231,407	Engineer's Estimate
Quarterly Groundwater Monitoring Reports	90	Each	$6,500			$501,383	Engineer's Estimate
Annual Cleanup Action Activity Reports	30	Each	$10,700			$275,118	Engineer's Estimate
Periodic Review Report (every 5 years)	6	Each	$27,700			$139,342	Engineer's Estimate
Project Management	1	LS	$7,440	$7,440			Engineer's Estimate
Land Use Controls[1]							
Environmental Covenant	1	LS	$6,000	$6,000	$500	$12,717	Engineer's Estimate
Draft Land Use Control Implementation Plan (LUCIP)	1	LS	$5,000	$5,000			Engineer's Estimate
Final LUCIP	1	LS	$2,200	$2,200	$500	$12,717	Engineer's Estimate
Notice of Conveyance or Other Transfer of Interest	1	LS	$2,000			$4,893	Engineer's Estimate
Land Use Control Maintenance	1	LS	$1,000		$1,000	$25,435	Engineer's Estimate
Short Term Groundwater Monitoring (yrs 1-5)							
Sample Collection	48	ea	$26,768			$577,542	Actual Costs; Annual Costs
Sample Analysis	48	ea	$33,872				Engineer's Estimate; Annual Costs
Long Term Groundwater Monitoring (yrs 1-30)							
Sample Collection (Quarterly)	120	ea	$3,346			$779,612	Actual Costs; Annual Costs
Sample Analysis (Quarterly)	120	ea	$4,234				Engineer's Estimate; Annual Costs
SWHP Permit Fees	30	ea	$8,000			$203,476	
Environmental Oversight Subtotal				**$41,140**			
Operation and Maintenance Subtotal						$3,461,153	
O&M Project Management and Support	10% of O&M Present Worth					$346,115	
O&M Contingency	25% of O&M Present Worth					$865,288	
Operation and Maintenance Total						**$4,672,556**	
NET PRESENT WORTH						**$5,659,031**	

Notes:
1 - Discount rate used for all present worth calculations per EPA Guidance = 1.1%