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KaizenLAB

ANALYTICAL DATA REPORT

Client Company: MVRWSC
Client Contact: Wes Olstad
Client Project #:

Date Received: Feb 14 2012
Date Reported: Mar 06 2012

Lab File #: 137895

Sample ID: 137895-2, MPR - Influent
Date Sampled: Feb 14 2012

Package Name: Trihalomethanes

Parameter Name	Units	Results	Guideline Limits*	Comments
Chloroform	mg/L	0.009		
Bromodichloromethane	mg/L	<0.002		
Dibromochloromethane	mg/L	<0.002		
Bromoform	mg/L	<0.002		
Total Trihalomethanes	mg/L	0.009	0.1(MAC)	Pass

*CDWQG = Canadian Drinking Water Quality Guidelines, Health Canada 2008
MAC = Maximum Acceptable Concentration (affects health), AO = Aesthetic Objective (does not affect health but affects color, taste, etc.)
[a]Based on conventional treatment/slow sand or diatomaceous earth filtration/membrane filtration. No limits apply for well water not under the influence of surface water. For further details and additional guidance restriction, see Guidelines for Canadian Drinking Water Quality (GCDWQ 2008).

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Client Company: MVRWSC
Client Contact: Wes Olstad
Client Project #:

Date Received: Feb 14 2012
Date Reported: Mar 06 2012

Lab File #: 137895

Sample ID: 137895-3, MPR - Effluent
Date Sampled: Feb 14 2012

Package Name: Trihalomethanes

Parameter Name	Units	Results	Guideline Limits*	Comments
Chloroform	mg/L	0.012		
Bromodichloromethane	mg/L	<0.002		
Dibromochloromethane	mg/L	<0.002		
Bromoform	mg/L	<0.002		
Total Trihalomethanes	mg/L	0.012	0.1(MAC)	Pass

*CDWQG = Canadian Drinking Water Quality Guidelines, Health Canada 2008
MAC = Maximum Acceptable Concentration (affects health), AO = Aesthetic Objective (does not affect health but affects color, taste, etc.)
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Client Company: MVRWSC
Client Contact: Wes Olstad
Client Project #:

Date Received: Feb 14 2012
Date Reported: Mar 06 2012

Lab File #: 137895

Sample ID: 137895-1, Plant
Date Sampled: Feb 14 2012

Package Name: Trihalomethanes

Parameter Name	Units	Results	Guideline Limits*	Comments
Chloroform	mg/L	0.014		
Bromodichloromethane	mg/L	<0.002		
Dibromochloromethane	mg/L	<0.002		
Bromoform	mg/L	<0.002		
Total Trihalomethanes	mg/L	0.014	0.1(MAC)	Pass

*CDWQG = Canadian Drinking Water Quality Guidelines, Health Canada 2008
MAC = Maximum Acceptable Concentration (affects health), AO = Aesthetic Objective (does not affect health but affects color, taste, etc.)
[a]Based on conventional treatment/slow sand or diatomaceous earth filtration/membrane filtration. No limits apply for well water not under the influence of surface water. For further details and additional guidance restriction, see Guidelines for Canadian Drinking Water Quality (GCDWQ 2008).

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Client Company: MVRWSC
Client Contact: Wes Olstad
Client Project #:

Date Received: Feb 14 2012
Date Reported: Mar 06 2012

Lab File #: 137895

Sample ID: 137895-4, Crossfield
Date Sampled: Feb 14 2012

Package Name: Routine Water Potability

Parameter Name	Units	Results	Guideline Limits*	Comments
pH @ 25 °C		7.6	6.5-8.5 (AO)	Acceptable
EC @ 25 °C	mS/cm	0.49		
Dissolved Calcium	mg/L	53.4		
Dissolved Potassium	mg/L	1.43		
Dissolved Magnesium	mg/L	24.2		
Dissolved Sodium	mg/L	8.29	≤200 (AO)	Acceptable
Dissolved Iron	mg/L	<0.002	≤0.3 (AO)	Acceptable
Dissolved Manganese	mg/L	<0.0002	≤0.05 (AO)	Acceptable
Chloride	mg/L	3.97	≤250 (AO)	Acceptable
Fluoride	mg/L	<0.09	1.5 (MAC)	Pass
Nitrite-N	mg/L	<0.003	1 (MAC)	Pass
Nitrate-N	mg/L	<0.002	10 (MAC)	Pass
Nitrate and Nitrite - N	mg/L	<0.005	10 (MAC)	Pass
Phosphate	mg/L	<0.01		
Sulphate	mg/L	46.6	≤500 (AO)	Acceptable
Carbonate	mg/L	<0.01		
Bicarbonate	mg/L	250		
Total Alkalinity as $CaCO_3$	mg/L	205		
Hardness as $CaCO_3$	mg/L	233		
Total Dissolved Solids	mg/L	261	≤500 (AO)	Acceptable
Turbidity	NTU	0.3	0.3/1.0/0.1[a]	Pass
Color True	TCU	<3	≤15 (AO)	Acceptable
Ionic Balance	%	102		

Package Name: Non-Routine Inorganic Analysis (Primary)

Parameter Name	Units	Results	Guideline Limits*	Comments
Bromate	mg/L	<0.01	<0.01 (MAC)	Pass
Cyanide	mg/L	<0.2	<0.2 (MAC)	Pass

Package Name: Non-Routine Inorganic and Organic Analysis (Secondary)

Parameter Name	Units	Results	Guideline Limits*	Comments
Ammonia-N	mg/L	<0.01		
Sulphide (as H_2S)	mg/L	<0.005	≤0.05 (AO)	Acceptable
Total Organic Carbon	mg/L	1.89		
Total Xylenes	mg/L	<0.004	≤0.3 (AO)	Acceptable

*CDWQG = Canadian Drinking Water Quality Guidelines, Health Canada 2008
MAC = Maximum Acceptable Concentration (affects health), AO = Aesthetic Objective (does not affect health but affects color, taste, etc.)
[a]Based on conventional treatment/slow sand or diatomaceous earth filtration/membrane filtration. No limits apply for well water not under the influence of surface water. For further details and additional guidance restriction, see Guidelines for Canadian Drinking Water Quality (GCDWQ 2008).

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ANALYTICAL DATA REPORT

Client Company: MVRWSC
Client Contact: Wes Olstad
Client Project #:

Date Received: Feb 14 2012
Date Reported: Mar 06 2012

Lab File #: 137895

Sample ID: 137895-4, Crossfield
Date Sampled: Feb 14 2012

Package Name: Total Metals

Parameter Name	Units	Results	Guideline Limits*	Comments
Total Aluminum	mg/L	<0.05	≤0.1/0.2 (OG)[b]	Acceptable
Total Antimony	mg/L	<0.001	0.006 (MAC)	Pass
Total Arsenic	mg/L	<0.001	0.01 (MAC)	Pass
Total Barium	mg/L	0.139	1 (MAC)	Pass
Total Boron	mg/L	<0.05	5 (MAC)	Pass
Total Cadmium	mg/L	<0.0005	0.005 (MAC)	Pass
Total Chromium	mg/L	<0.02	0.05 (MAC)	Pass
Total Copper	mg/L	<0.002	≤1.0 (AO)	Acceptable
Total Iron	mg/L	<0.05	≤0.3 (AO)	Acceptable
Total Lead	mg/L	<0.001	0.01 (MAC)	Pass
Total Manganese	mg/L	0.015	≤0.05 (AO)	Acceptable
Total Mercury	mg/L	<0.0001	0.001 (MAC)	Pass
Total Selenium	mg/L	<0.002	0.01 (MAC)	Pass
Total Silver	mg/L	<0.001		
Total Uranium	mg/L	<0.001	0.02 (MAC)	Pass
Total Zinc	mg/L	<0.02	≤5.0 (AO)	Acceptable

Package Name: Organic Chemicals & Pesticides (Primary)

Parameter Name	Units	Results	Guideline Limits*	Comments
Atrazine + Metaboliites	mg/L	<0.002	0.005 (MAC)	Pass
Benzene	mg/L	<0.002	0.005 (MAC)	Pass
Benzo(a)pyrene	mg/L	<0.000005	0.00001 (MAC)	Pass
Bromoxynil	mg/L	<0.002	0.005 (MAC)	Pass
Carbon Tetrachloride	mg/L	<0.002	0.005 (MAC)	Pass
Chlorobenzene	mg/L	<0.002	0.08 (MAC)	Pass
Chlorpyrifos	mg/L	<0.002	0.09 (MAC)	Pass
Cyanazine	mg/L	<0.002	0.01 (MAC)	Pass
Diazinon	mg/L	<0.002	0.02 (MAC)	Pass
Dicamba	mg/L	<0.002	0.12 (MAC)	Pass
1,2-Dichlorobenzene	mg/L	<0.002	0.2 (MAC)	Pass
1,4-Dichlorobenzene	mg/L	<0.001	0.005 (MAC)	Pass
1,2-Dichlorethane	mg/L	<0.002	0.005 (MAC)	Pass
Dichloromethane	mg/L	<0.005	0.05 (MAC)	Pass
2,4-Dichlorophenol	mg/L	<0.0003	0.9 (MAC)	Pass
2,4-D	mg/L	<0.002	0.1 (MAC)	Pass
Diclofop-methyl	mg/L	<0.002	0.009 (MAC)	Pass
Diuron	mg/L	<0.003	0.15 (MAC)	Pass

*CDWQG = Canadian Drinking Water Quality Guidelines, Health Canada 2008
MAC = Maximum Acceptable Concentration (affects health), AO = Aesthetic Objective (does not affect health but affects color, taste, etc.)
[b]This Operational Guideline applies only to drinking water treatment plants using aluminum-based coagulants: conventional systems - 0.1 mg/L, other systems - 0.2 mg/L

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Date Received: Feb 14 2012
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Lab File #: 137895

Sample ID: 137895-4, Crossfield
Date Sampled: Feb 14 2012

Package Name: Organic Chemicals & Pesticides (Primary) - continues

Parameter Name	Units	Results	Guideline Limits*	Comments
Dimethoate	mg/L	<0.002	0.02 (MAC)	Pass
Ethylbenzene	mg/L	<0.002	≤0.0024 (AO)	Acceptable
Glyphosate	mg/L	<0.02	0.28 (MAC)	Pass
Malathion	mg/L	<0.002	0.19 (MAC)	Pass
Methoxychlor	mg/L	<0.002	0.9 (MAC)	Pass
Metolachlor	mg/L	<0.002	0.05 (MAC)	Pass
Metribuzin	mg/L	<0.002	0.08 (MAC)	Pass
Microcystin	mg/L	<0.00015	0.0015 (MAC)	Pass
Nitrilotriacetic Acid (NTA)	mg/L	<0.4	0.4 (MAC)	Pass
Pentachlorophenol	mg/L	<0.002	0.06 (MAC)	Pass
Picloram	mg/L	<0.002	0.19 (MAC)	Pass
Simazine	mg/L	<0.002	0.01 (MAC)	Pass
Terbufos	mg/L	<0.0005	0.001 (MAC)	Pass
Tetrachloroethylene	mg/L	<0.002	0.03 (MAC)	Pass
2,3,4,6-Tetrachlorophenol	mg/L	<0.001	0.1 (MAC)	Pass
Toluene	mg/L	<0.002	≤0.024 (AO)	Acceptable
Triallate	mg/L	<0.002		
Trichloroethylene	mg/L	<0.002	0.005 (MAC)	Pass
2,4,6-Trichlorophenol	mg/L	<0.002	0.005 (MAC)	Pass
Trifluralin	mg/L	<0.002	0.045 (MAC)	Pass
Vinyl Chloride	mg/L	<0.002	0.002 (MAC)	Pass

Package Name: Miscellaneous

Parameter Name	Units	Results	Guideline Limits*	Comments
Total Residual Chlorine[c]	mg/L	2.85		

Package Name: Trihalomethanes

Parameter Name	Units	Results	Guideline Limits*	Comments
Chloroform	mg/L	0.027		
Bromodichloromethane	mg/L	0.002		
Dibromochloromethane	mg/L	<0.002		
Bromoform	mg/L	<0.002		
Total Trihalomethanes	mg/L	0.029	0.1(MAC)	Pass

*CDWQG = Canadian Drinking Water Quality Guidelines, Health Canada 2008
MAC = Maximum Acceptable Concentration (affects health), AO = Aesthetic Objective (does not affect health but affects color, taste, etc.)
[c]Total residual chlorine analysis is performed in lieu of chloramines analysis.

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Date Received: Feb 14 2012
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Lab File #: 137895

Comments:

Test Methodologies*:

Alkalinity (water): Based on APHA 2320B
Ammonia: Based on EPA 300.1 & APHA 4110B
Benzo(a)pyrene: Based on EPA 8270C by GC-MS
Bromate: Based on EPA 300.1
Carbonate (water): Based on APHA 2320B
Chlorophenols: Based on EPA 8270C by GC-MS
Cyanide: Based on EPA 335.3
Dissolved Metals: Based on APHA 3030B, APHA 3120 by ICP-OES and APHA 3125 by ICP-MS
EC (water): Based on APHA 2510B & Hach Manual
Hardness (water): Based on APHA 1030F
Major Ions: Based on EPA 300.1 & APHA 4110B
Microcystin: Envirologix Quantitube™ Kit for Microcystin
Pesticides & Herbicides: Based on EPA 8270 by GC-MS
pH (water): Based on APHA 4500-H+B
Sulphide: Based on APHA 4500-SE-Auto-Colorimetry
Volatile Organic Compounds: Based on SW-846 8260
Total Metals (water): Based on APHA 3030E, APHA 3120 by ICP-OES and APHA 3125 by ICP-MS
Total Mercury (water): Based on APHA 3030E and APHA 3112 by Cold Vapor Atomic Fluorescence
TOC: Based on APHA 5310
Total Chlorine: Based on APHA Method 4500-Cl
True Color (water): Based on APHA 2120C
Turbidity (water): Based on APHA 2130B

QA/QC Reviewed By: Sasha Hall

Lab Manager: A. Salcedo

*Detailed test methodologies available upon request