

REPORTED TO Black Mountain Irrigation District
285 Gray Avenue
KELOWNA, BC V1X 1W8

TEL (250) 765-5169
FAX (250) 765-0277

ATTENTION Bob Hrasko

WORK ORDER 4060069

PO NUMBER

RECEIVED / TEMP Jun-03-14 08:41 / 13°C

PROJECT Comprehensive

REPORTED Jun-09-14

PROJECT INFO

COC NUMBER COC No#

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Issued By:



Karin Miyazaki For Jennifer Shanko, ASCT
Administration Coordinator

Please contact CARO if more information is needed or to provide feedback on our services.

Locations:

#110 4011 Viking Way
Richmond, BC V6V 2K9
Tel: 604-279-1499 Fax: 604-279-1599

#102 3677 Highway 97N
Kelowna, BC V1X 5C3
Tel: 250-765-9646 Fax: 250-765-3893

17225 109 Avenue
Edmonton, AB T5S 1H7
Tel: 780-489-9100 Fax: 780-489-9700

www.caro.ca

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Analysis Description	Method Reference (* = modified from)		Location
	Preparation	Analysis	
Alkalinity, total	N/A	APHA 2320 B	Kelowna
Chloride in Water by IC	N/A	APHA 4110 B	Kelowna
Colour, True at 410 nm	N/A	APHA 2120 C *	Kelowna
Conductivity in Water	N/A	APHA 2510 B	Kelowna
Cyanide, Total in Liquids	APHA 4500-CN C	APHA 4500-CN E	Kelowna
E. coli (by CCA)	N/A	APHA 9222 *	Kelowna
Fluoride in Water by IC	N/A	APHA 4110 B	Kelowna
Hardness as CaCO3 (CALC)	N/A	APHA 2340 B	Richmond
Nitrate-N in Water by IC	N/A	APHA 4110 B	Kelowna
Nitrite-N in Water by IC	N/A	APHA 4110 B	Kelowna
pH in Water	N/A	APHA 4500-H+ B	Kelowna
Sulfate in Water by IC	N/A	APHA 4110 B	Kelowna
Total Coliforms (by CCA)	N/A	APHA 9222 *	Kelowna
Total Recoverable Metals	APHA 3030E *	APHA 3125 B	Richmond
Transmissivity at 254 nm	N/A	APHA 5910 B	Kelowna
Turbidity	N/A	APHA 2130 B	Kelowna

Note: The numbers in brackets represent the year that the method was published/approved

Method Reference Descriptions:

APHA Standard Methods for the Examination of Water and Wastewater, American Public Health Association

Glossary of Terms:

MRL Method Reporting Limit
 < Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences
 % T No Description
 CFU/100mL Colony Forming Units per 100 mL
 CU No Description
 mg/L Milligrams per litre
 NTU Nephelometric Turbidity Units
 pH units pH < 7 = acidic, pH > 7 = basic
 uS/cm Microsiemens per centimeter

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Analyte	Result / Recovery	MRL / Limit	Units	Prepared	Analyzed	Notes
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Anions

Sample ID: Booster #1 (4060069-01) [Water] Sampled: Jun-03-14 08:00

Alkalinity, Total as CaCO ₃	13	1	mg/L	N/A	Jun-03-14	
Chloride	9.26	0.10	mg/L	N/A	Jun-04-14	
Fluoride	< 0.10	0.10	mg/L	N/A	Jun-04-14	
Nitrogen, Nitrate as N	< 0.010	0.010	mg/L	N/A	Jun-04-14	
Nitrogen, Nitrite as N	< 0.010	0.010	mg/L	N/A	Jun-04-14	
Sulfate	1.7	1.0	mg/L	N/A	Jun-04-14	

Sample ID: Well 4 (4060069-02) [Water] Sampled: Jun-03-14 08:30

Alkalinity, Total as CaCO ₃	215	1	mg/L	N/A	Jun-03-14	
Chloride	13.0	0.10	mg/L	N/A	Jun-04-14	
Fluoride	0.12	0.10	mg/L	N/A	Jun-04-14	
Nitrogen, Nitrate as N	4.50	0.010	mg/L	N/A	Jun-04-14	
Nitrogen, Nitrite as N	< 0.010	0.010	mg/L	N/A	Jun-04-14	
Sulfate	23.7	1.0	mg/L	N/A	Jun-04-14	

General Parameters

Sample ID: Booster #1 (4060069-01) [Water] Sampled: Jun-03-14 08:00

Colour, True	< 5	5	CU	N/A	Jun-05-14	
Conductivity (EC)	66	2	uS/cm	N/A	Jun-03-14	
Cyanide, total	< 0.010	0.010	mg/L	Jun-09-14	Jun-09-14	
pH	7.00	0.01	pH units	N/A	Jun-03-14	
Turbidity	0.7	0.1	NTU	N/A	Jun-03-14	
UV Transmittance @ 254nm	90.8	0.1	% T	N/A	Jun-03-14	

Sample ID: Well 4 (4060069-02) [Water] Sampled: Jun-03-14 08:30

Colour, True	< 5	5	CU	N/A	Jun-05-14	
Conductivity (EC)	523	2	uS/cm	N/A	Jun-03-14	
Cyanide, total	< 0.010	0.010	mg/L	Jun-09-14	Jun-09-14	
pH	7.69	0.01	pH units	N/A	Jun-03-14	
Turbidity	< 0.1	0.1	NTU	N/A	Jun-03-14	
UV Transmittance @ 254nm	96.9	0.1	% T	N/A	Jun-03-14	

Calculated Parameters

Sample ID: Booster #1 (4060069-01) [Water] Sampled: Jun-03-14 08:00

Hardness, Total (Total as CaCO ₃)	17.5	5.0	mg/L	N/A	N/A	
Solids, Total Dissolved	30.1	2.0	mg/L	N/A	N/A	

Sample ID: Well 4 (4060069-02) [Water] Sampled: Jun-03-14 08:30

Hardness, Total (Total as CaCO ₃)	267	5.0	mg/L	N/A	N/A	
Solids, Total Dissolved	298	2.0	mg/L	N/A	N/A	

Total Recoverable Metals

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Total Recoverable Metals, Continued

Sample ID: Booster #1 (4060069-01) [Water] Sampled: Jun-03-14 08:00

Aluminum, total	0.26	0.05	mg/L	Jun-04-14	Jun-05-14	
Antimony, total	< 0.001	0.001	mg/L	Jun-04-14	Jun-05-14	
Arsenic, total	< 0.005	0.005	mg/L	Jun-04-14	Jun-05-14	
Barium, total	< 0.05	0.05	mg/L	Jun-04-14	Jun-05-14	
Beryllium, total	< 0.001	0.001	mg/L	Jun-04-14	Jun-05-14	
Boron, total	< 0.04	0.04	mg/L	Jun-04-14	Jun-05-14	
Cadmium, total	< 0.0001	0.0001	mg/L	Jun-04-14	Jun-05-14	
Calcium, total	5.0	2.0	mg/L	Jun-04-14	Jun-05-14	
Chromium, total	< 0.005	0.005	mg/L	Jun-04-14	Jun-05-14	
Cobalt, total	< 0.0005	0.0005	mg/L	Jun-04-14	Jun-05-14	
Copper, total	0.013	0.002	mg/L	Jun-04-14	Jun-05-14	
Iron, total	< 0.10	0.10	mg/L	Jun-04-14	Jun-05-14	
Lead, total	< 0.001	0.001	mg/L	Jun-04-14	Jun-05-14	
Magnesium, total	1.2	0.1	mg/L	Jun-04-14	Jun-05-14	
Manganese, total	0.004	0.002	mg/L	Jun-04-14	Jun-05-14	
Mercury, total	< 0.0002	0.0002	mg/L	Jun-04-14	Jun-05-14	
Molybdenum, total	0.003	0.001	mg/L	Jun-04-14	Jun-05-14	
Nickel, total	< 0.002	0.002	mg/L	Jun-04-14	Jun-05-14	
Phosphorus, total	< 0.2	0.2	mg/L	Jun-04-14	Jun-05-14	
Potassium, total	0.5	0.2	mg/L	Jun-04-14	Jun-05-14	
Selenium, total	0.005	0.005	mg/L	Jun-04-14	Jun-05-14	
Silicon, total	5	5	mg/L	Jun-04-14	Jun-05-14	
Silver, total	< 0.0005	0.0005	mg/L	Jun-04-14	Jun-05-14	
Sodium, total	4.5	0.2	mg/L	Jun-04-14	Jun-05-14	
Uranium, total	< 0.0002	0.0002	mg/L	Jun-04-14	Jun-05-14	
Vanadium, total	< 0.01	0.01	mg/L	Jun-04-14	Jun-05-14	
Zinc, total	< 0.04	0.04	mg/L	Jun-04-14	Jun-05-14	

Sample ID: Well 4 (4060069-02) [Water] Sampled: Jun-03-14 08:30

Aluminum, total	< 0.05	0.05	mg/L	Jun-04-14	Jun-05-14	
Antimony, total	< 0.001	0.001	mg/L	Jun-04-14	Jun-05-14	
Arsenic, total	< 0.005	0.005	mg/L	Jun-04-14	Jun-05-14	
Barium, total	< 0.05	0.05	mg/L	Jun-04-14	Jun-05-14	
Beryllium, total	< 0.001	0.001	mg/L	Jun-04-14	Jun-05-14	
Boron, total	< 0.04	0.04	mg/L	Jun-04-14	Jun-05-14	
Cadmium, total	< 0.0001	0.0001	mg/L	Jun-04-14	Jun-05-14	
Calcium, total	80.1	2.0	mg/L	Jun-04-14	Jun-05-14	
Chromium, total	< 0.005	0.005	mg/L	Jun-04-14	Jun-05-14	
Cobalt, total	< 0.0005	0.0005	mg/L	Jun-04-14	Jun-05-14	
Copper, total	< 0.002	0.002	mg/L	Jun-04-14	Jun-05-14	
Iron, total	< 0.10	0.10	mg/L	Jun-04-14	Jun-05-14	
Lead, total	< 0.001	0.001	mg/L	Jun-04-14	Jun-05-14	
Magnesium, total	16.2	0.1	mg/L	Jun-04-14	Jun-05-14	
Manganese, total	< 0.002	0.002	mg/L	Jun-04-14	Jun-05-14	
Mercury, total	< 0.0002	0.0002	mg/L	Jun-04-14	Jun-05-14	

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Total Recoverable Metals, Continued

Sample ID: Well 4 (4060069-02) [Water] Sampled: Jun-03-14 08:30, Continued

Molybdenum, total	0.002	0.001	mg/L	Jun-04-14	Jun-05-14	
Nickel, total	< 0.002	0.002	mg/L	Jun-04-14	Jun-05-14	
Phosphorus, total	< 0.2	0.2	mg/L	Jun-04-14	Jun-05-14	
Potassium, total	2.2	0.2	mg/L	Jun-04-14	Jun-05-14	
Selenium, total	< 0.005	0.005	mg/L	Jun-04-14	Jun-05-14	
Silicon, total	13	5	mg/L	Jun-04-14	Jun-05-14	
Silver, total	< 0.0005	0.0005	mg/L	Jun-04-14	Jun-05-14	
Sodium, total	11.2	0.2	mg/L	Jun-04-14	Jun-05-14	
Uranium, total	0.0009	0.0002	mg/L	Jun-04-14	Jun-05-14	
Vanadium, total	< 0.01	0.01	mg/L	Jun-04-14	Jun-05-14	
Zinc, total	< 0.04	0.04	mg/L	Jun-04-14	Jun-05-14	

Microbiological Parameters

Sample ID: Booster #1 (4060069-01) [Water] Sampled: Jun-03-14 08:00

Coliforms, Total	< 1	1	CFU/100mL	Jun-03-14	Jun-04-14	
E. coli	< 1	1	CFU/100mL	Jun-03-14	Jun-04-14	

Sample ID: Well 4 (4060069-02) [Water] Sampled: Jun-03-14 08:30

Coliforms, Total	< 1	1	CFU/100mL	Jun-03-14	Jun-04-14	
E. coli	< 1	1	CFU/100mL	Jun-03-14	Jun-04-14	