

CERTIFICATE OF ANALYSIS



CLIENT	Black Mountain Irrigation District 285 Gray Avenue KELOWNA BC V1X 1W8	TEL (250) 765-5169 FAX (250) 765-0277
ATTENTION	Bob Hrasko	
RECEIVED / TEMP	Dec-04-12 09:24 / 5.0 °C	WORK ORDER 2120082
REPORTED	Dec-11-12	PROJECT Comprehensive
COC #(s)	COC No#	

General Comments:

CARO Analytical Services employs methods which are based on those found in "Standard Methods for the Examination of Water and Wastewater", 21st Edition, 2005, published by the American Public Health Association (APHA); US EPA protocols found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846", 3rd Edition; protocols published by the British Columbia Ministry of Environment (BCMOE); and/or CCME Canada-wide Standard Reference methods.

Methods not described in these publications are conducted according to procedures accepted by appropriate regulatory agencies, and/or are done 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 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.

- All solids results are reported on a dry weight basis unless otherwise noted
- Units: mg/kg = milligrams per kilogram, equivalent to parts per million (ppm)
mg/L = milligrams per litre, equivalent to parts per million (ppm)
ug/L = micrograms per litre, equivalent to parts per billion (ppb)
ug/g = micrograms per gram, equivalent to parts per million (ppm)
ug/m3 = micrograms per cubic meter of air
- "RDL" Reported detection limit
- "<" Less than reported detection limit
- "AO" Aesthetic objective
- "MAC" Maximum acceptable concentration (health-related guideline)
- "LAB" RMD = Richmond location, KEL = Kelowna location, EDM = Edmonton location, SUB = Subcontracted

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

CARO Analytical Services

A handwritten signature in blue ink, appearing to read "J Shanko".

Final Review Per:

Jennifer Shanko, ASCT
Administration Coordinator, Kelowna

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

SAMPLE DATA



**CLIENT
PROJECT**

Black Mountain Irrigation District
Comprehensive

**WORK ORDER #
REPORTED**

2120082
Dec-11-12

Analyte	Result	RDL	Units	Prepared	Analyzed	Notes
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General Parameters

Booster #1 (2120082-01) Matrix: Water Sampled: Dec-04-12 09:14

Alkalinity, Total as CaCO ₃	55	1	mg/L	Dec-04-12	Dec-04-12	
Chloride	9.36	0.10	mg/L	Dec-04-12	Dec-05-12	
Colour, True	< 5	5	Color Unit	Dec-04-12	Dec-04-12	
Conductivity (EC)	140	2	uS/cm	Dec-04-12	Dec-04-12	
Cyanide, total	< 0.010	0.010	mg/L	Dec-06-12	Dec-07-12	
Fluoride	< 0.10	0.10	mg/L	Dec-04-12	Dec-05-12	
Nitrogen, Nitrate as N	< 0.010	0.010	mg/L	Dec-04-12	Dec-05-12	
Nitrogen, Nitrite as N	< 0.010	0.010	mg/L	Dec-04-12	Dec-05-12	
pH	6.88	0.01	pH units	Dec-04-12	Dec-04-12	
Sulfate	6.3	1.0	mg/L	Dec-04-12	Dec-05-12	
Turbidity	0.6	0.1	NTU	Dec-05-12	Dec-05-12	
UV Transmittance @ 254nm	87.5	0.1	%	Dec-06-12	Dec-10-12	

Calculated Parameters

Booster #1 (2120082-01) Matrix: Water Sampled: Dec-04-12 09:14

Hardness, Total (Total as CaCO ₃)	59.3	5.0	mg/L	N/A	N/A	
Ion Balance	103		%	N/A	N/A	
Solids, Total Dissolved	79.2	2.0	mg/L	N/A	N/A	

Total Recoverable Metals

Booster #1 (2120082-01) Matrix: Water Sampled: Dec-04-12 09:14

Aluminum, total	0.22	0.05	mg/L	Dec-05-12	Dec-06-12	
Antimony, total	< 0.001	0.001	mg/L	Dec-05-12	Dec-06-12	
Arsenic, total	< 0.005	0.005	mg/L	Dec-05-12	Dec-06-12	
Barium, total	< 0.05	0.05	mg/L	Dec-05-12	Dec-06-12	
Beryllium, total	< 0.001	0.001	mg/L	Dec-05-12	Dec-06-12	
Boron, total	< 0.04	0.04	mg/L	Dec-05-12	Dec-06-12	
Cadmium, total	< 0.0001	0.0001	mg/L	Dec-05-12	Dec-06-12	
Calcium, total	17	2	mg/L	Dec-05-12	Dec-06-12	
Chromium, total	< 0.005	0.005	mg/L	Dec-05-12	Dec-06-12	
Cobalt, total	< 0.0005	0.0005	mg/L	Dec-05-12	Dec-06-12	
Copper, total	< 0.002	0.002	mg/L	Dec-05-12	Dec-06-12	
Iron, total	< 0.1	0.1	mg/L	Dec-05-12	Dec-06-12	
Lead, total	< 0.001	0.001	mg/L	Dec-05-12	Dec-06-12	
Magnesium, total	4.3	0.1	mg/L	Dec-05-12	Dec-06-12	
Manganese, total	0.011	0.002	mg/L	Dec-05-12	Dec-06-12	
Mercury, total	< 0.0002	0.0002	mg/L	Dec-05-12	Dec-06-12	
Molybdenum, total	< 0.001	0.001	mg/L	Dec-05-12	Dec-06-12	
Nickel, total	< 0.002	0.002	mg/L	Dec-05-12	Dec-06-12	
Phosphorus, total	< 0.2	0.2	mg/L	Dec-05-12	Dec-06-12	
Potassium, total	0.8	0.2	mg/L	Dec-05-12	Dec-06-12	
Selenium, total	< 0.005	0.005	mg/L	Dec-05-12	Dec-06-12	
Silicon, total	6	5	mg/L	Dec-05-12	Dec-06-12	
Silver, total	< 0.0005	0.0005	mg/L	Dec-05-12	Dec-06-12	
Sodium, total	8.0	0.2	mg/L	Dec-05-12	Dec-06-12	

SAMPLE DATA

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Total Recoverable Metals, Continued**Booster #1 (2120082-01) Matrix: Water Sampled: Dec-04-12 09:14, Continued**

Uranium, total	0.0002	0.0002	mg/L	Dec-05-12	Dec-06-12	
Vanadium, total	< 0.01	0.01	mg/L	Dec-05-12	Dec-06-12	
Zinc, total	< 0.04	0.04	mg/L	Dec-05-12	Dec-06-12	

Microbiological Parameters**Booster #1 (2120082-01) Matrix: Water Sampled: Dec-04-12 09:14**

Coliforms, Total	< 1	1	CFU/100mL	Dec-04-12	Dec-05-12	
E. coli	< 1	1	CFU/100mL	Dec-04-12	Dec-05-12	

ANALYSIS / REPORT INFORMATION

CLIENT Black Mountain Irrigation District
PROJECT Comprehensive

WORK ORDER # 2120082
REPORTED Dec-11-12

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