

CERTIFICATE OF ANALYSIS



CLIENT **Black Mountain Irrigation District**
285 Gray Avenue
KELOWNA BC TEL (250) 765-5169
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ATTENTION **Bob Hrasko**

RECEIVED / TEMP Apr-12-12 09:45 / 7.0 °C **WORK ORDER** K2D0421
REPORTED Apr-19-12 **PROJECT** Comprehensive
COC #(s) 19202 **PROJECT INFO** Booster #1

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

Final Review Per: **Jennifer Shanko, ASCT**
Administration Coordinator

Locations:

#120 12791 Clarke Place
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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 # K2D0421
REPORTED Apr-19-12

Analyte	Result	RDL	Units	Prepared	Analyzed	Notes
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General Parameters

Booster #1 (K2D0421-01) Matrix: Water Sampled: Apr-11-12 08:35

Alkalinity, Total as CaCO ₃	80.2	1.0	mg/L	Apr-13-12	Apr-18-12	
Chloride	7.27	0.10	mg/L	Apr-13-12	Apr-14-12	
Colour, True	< 5	5	Color Unit	Apr-11-12	Apr-16-12	
Conductivity (EC)	197	2	uS/cm	Apr-13-12	Apr-18-12	
Cyanide (total)	< 0.01	0.01	mg/L	Apr-12-12	Apr-17-12	
Fluoride	0.10	0.10	mg/L	Apr-13-12	Apr-14-12	
Hardness, Total (Total as CaCO ₃)	88.7	5.4	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	< 0.010	0.010	mg/L	Apr-13-12	Apr-14-12	
Nitrogen, Nitrite as N	< 0.01	0.01	mg/L	Apr-13-12	Apr-14-12	
pH	7.81	0.01	pH Units	Apr-13-12	Apr-18-12	
Solids, Total Dissolved	105	5	mg/L	Apr-19-12	Apr-19-12	
Sulfate	10.6	1.0	mg/L	Apr-13-12	Apr-14-12	
Turbidity	0.8	0.1	NTU	Apr-12-12	Apr-17-12	
UV Transmittance @ 254nm	90.4	0.1	%	Apr-12-12	Apr-19-12	

Total Recoverable Metals

Booster #1 (K2D0421-01) Matrix: Water Sampled: Apr-11-12 08:35

Aluminum, total	0.07	0.05	mg/L	Apr-16-12	Apr-17-12	
Antimony, total	< 0.001	0.001	mg/L	Apr-16-12	Apr-17-12	
Arsenic, total	< 0.005	0.005	mg/L	Apr-16-12	Apr-17-12	
Barium, total	< 0.05	0.05	mg/L	Apr-16-12	Apr-17-12	
Beryllium, total	< 0.001	0.001	mg/L	Apr-16-12	Apr-17-12	
Boron, total	< 0.04	0.04	mg/L	Apr-16-12	Apr-17-12	
Cadmium, total	< 0.0001	0.0001	mg/L	Apr-16-12	Apr-17-12	
Calcium, total	25	2	mg/L	Apr-16-12	Apr-17-12	
Chromium, total	< 0.005	0.005	mg/L	Apr-16-12	Apr-17-12	
Cobalt, total	< 0.0005	0.0005	mg/L	Apr-16-12	Apr-17-12	
Copper, total	< 0.002	0.002	mg/L	Apr-16-12	Apr-17-12	
Iron, total	0.1	0.1	mg/L	Apr-16-12	Apr-17-12	
Lead, total	0.001	0.001	mg/L	Apr-16-12	Apr-17-12	
Magnesium, total	6.4	0.1	mg/L	Apr-16-12	Apr-17-12	
Manganese, total	0.018	0.002	mg/L	Apr-16-12	Apr-17-12	
Mercury, total	< 0.0002	0.0002	mg/L	Apr-16-12	Apr-17-12	
Molybdenum, total	< 0.001	0.001	mg/L	Apr-16-12	Apr-17-12	
Nickel, total	< 0.002	0.002	mg/L	Apr-16-12	Apr-17-12	
Phosphorus, total	< 0.2	0.2	mg/L	Apr-16-12	Apr-17-12	
Potassium, total	1.2	0.2	mg/L	Apr-16-12	Apr-17-12	
Selenium, total	< 0.005	0.005	mg/L	Apr-16-12	Apr-17-12	
Silicon, total	7	5	mg/L	Apr-16-12	Apr-17-12	
Silver, total	< 0.0005	0.0005	mg/L	Apr-16-12	Apr-17-12	
Sodium, total	6.3	0.2	mg/L	Apr-16-12	Apr-17-12	
Uranium, total	0.0006	0.0002	mg/L	Apr-16-12	Apr-17-12	
Vanadium, total	< 0.01	0.01	mg/L	Apr-16-12	Apr-17-12	
Zinc, total	< 0.04	0.04	mg/L	Apr-16-12	Apr-17-12	

Microbiological Parameters

SAMPLE DATA



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Microbiological Parameters, Continued

Booster #1 (K2D0421-01) Matrix: Water Sampled: Apr-11-12 08:35

Coliforms, Total	< 1	1	CFU/100mL	Apr-12-12	Apr-13-12	
E. coli	< 1	1	CFU/100mL	Apr-12-12	Apr-13-12	

ANALYSIS / REPORT INFORMATION**CLIENT** Black Mountain Irrigation District
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Analysis Description	Method Reference(s) (* = modified from)		LAB
	Preparation	Analysis	
UV Transmittance at 254nm	N/A	APHA 5910 B	KEL
pH	N/A	APHA 4500-H+ B	KEL
Cyanide, Total	APHA 4500-CN C	APHA 4500-CN E	KEL
Chloride by IC	N/A	APHA 4110 B	KEL
Fluoride by IC	N/A	APHA 4110 B	KEL
Nitrite by IC	N/A	APHA 4110 B	KEL
Nitrate by IC	N/A	APHA 4110 B	KEL
Sulfate by IC	N/A	APHA 4110 B	KEL
Total Dissolved Solids (180C)- CALC.	N/A	APHA 2540 C	KEL
Conductivity-Water	N/A	APHA 2510 B	KEL
Alkalinity, total	N/A	APHA 2320 B *	KEL
Turbidity	N/A	APHA 2130 B	KEL
True Colour at 410 nm	N/A	APHA 2120 C	KEL
Total Coliforms (by CCA)	NA	APHA 9222 *	KEL
E. coli (by CCA)	NA	APHA 9222 *	KEL
Total Recoverable Metals	APHA 3030E *	APHA 3125 B	RMD