



8100921

## **CERTIFICATE OF ANALYSIS**

REPORTED TO Keremeos Irrigation District

Box 220

Keremeos, BC V0X 1N0

**ATTENTION** Jo Cottrill

You know that the sample you collected after

snowshoeing to site, digging 5 meters, and

racing to get it on a plane so you can submit it

to the lab for time sensitive results needed to

make important and expensive decisions

(whew) is VERY important. We know that too.

**PO NUMBER** 

2018-10-10 13:15 / 14°C **RECEIVED / TEMP** REPORTED 2018-10-17 18:34 **PROJECT** General Potability

No Number **PROJECT INFO COC NUMBER** 

### Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

We've Got Chemistry

It's simple. We figure the more you enjoy with fun and working our engaged team the more members; likely you are to give us continued opportunities to support you.

Ahead of the Curve

**WORK ORDER** 

Through research, regulation knowledge, and instrumentation, are your analytical centre the knowledge technical you BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at jshanko@caro.ca

Authorized By:

Jennifer Shanko, A.Sc.T. Account Manager

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Analyte		Result	Guideline	RI	Units	Analyzed	Qualifier
REPORTED TO Keremeos Irrigation District PROJECT General Potability				WORK ORDER REPORTED		8100921 2018-10-17 18:34	

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifie
#4 Pump West Station (8100921-01)   Mai	trix: Water   Samp	oled: 2018-10-09 12	:20			
Anions						
Chloride	5.09	AO ≤ 250	0.10	mg/L	2018-10-12	
Fluoride	< 0.10	MAC = 1.5		mg/L	2018-10-12	
Nitrate (as N)	1.81	MAC = 10	0.010		2018-10-12	
Nitrite (as N)	< 0.010	MAC = 1	0.010		2018-10-12	
Sulfate	23.2	AO ≤ 500		mg/L	2018-10-12	
Calculated Parameters						
Hardness, Total (as CaCO3)	122	None Required	0.500	mg/L	N/A	
Langelier Index	-0.3	N/A	-5.0		2018-10-17	
Solids, Total Dissolved	149	AO ≤ 500	1.00	mg/L	N/A	
General Parameters						
Alkalinity, Total (as CaCO3)	100	N/A	1.0	mg/L	2018-10-11	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A		mg/L	2018-10-11	
Alkalinity, Bicarbonate (as CaCO3)	100	N/A		mg/L	2018-10-11	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A		mg/L	2018-10-11	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2018-10-11	
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2018-10-11	
Conductivity (EC)	267	N/A	2.0	μS/cm	2018-10-11	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020	•	2018-10-15	
pH	7.57	7.0-10.5		pH units	2018-10-11	HT2
Temperature, at pH	22.9	N/A		°C	2018-10-11	HT2
Turbidity	< 0.10	OG < 1	0.10	NTU	2018-10-11	
Total Metals						
Aluminum, total	< 0.0050	OG < 0.1	0.0050	mg/L	2018-10-13	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2018-10-13	
Arsenic, total	0.00079	MAC = 0.01	0.00050	mg/L	2018-10-13	
Barium, total	0.0334	MAC = 1	0.0050	mg/L	2018-10-13	
Boron, total	0.0121	MAC = 5	0.0050	mg/L	2018-10-13	
Cadmium, total	0.000012	MAC = 0.005	0.000010	mg/L	2018-10-13	
Calcium, total	38.8	None Required	0.20	mg/L	2018-10-13	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2018-10-13	
Cobalt, total	< 0.00010	N/A	0.00010		2018-10-13	
Copper, total	0.00902	AO ≤ 1	0.00040	mg/L	2018-10-13	
Iron, total	< 0.010	AO ≤ 0.3	0.010	mg/L	2018-10-13	
Lead, total	0.00035	MAC = 0.01	0.00020		2018-10-13	
Magnesium, total	6.16	None Required	0.010		2018-10-13	
Manganese, total	< 0.00020	AO ≤ 0.05	0.00020		2018-10-13	
Mercury, total	< 0.000010	MAC = 0.001	0.000010		2018-10-12	
Molybdenum, total	0.00154	N/A	0.00010	mg/L	2018-10-13	
Nickel, total	< 0.00040	N/A	0.00040		2018-10-13	
Potassium, total	1.29	N/A		mg/L	2018-10-13	



## Pump West Station (8100921-01)   Matrix: Water   Sampled: 2018-10-09 12:20, Continued    Selenium, total	REPORTED TO PROJECT	Keremeos Irrigation District General Potability				WORK ORDER REPORTED	8100921 2018-10-1	7 18:34	
Selenium, total	Analyte		Result	Guideline	RL	Units	Analyzed	Qualifier	
Selenium, total	#4 Pump West St	tation (8100921-01)   Matrix: V	Vater   Sam	pled: 2018-10-09 12:	20, Continue	ed			
Soldium, total         5.07         AO ≤ 200         0.10         mg/L         2018-10-13           Strontium, total         0.202         N/A         0.0010         mg/L         2018-10-13           Zinc, total         0.00073         MAC = 0.02         0.00002         mg/L         2018-10-13           Interpretation of the properties	Total Metals, Conti	inued							
Strontium, total   0.002    N/A	Selenium, total		< 0.00050	MAC = 0.05	0.00050	mg/L	2018-10-13		
Uranium, total         0.00073         MAC = 0.02         0.00000         mg/L         2018-10-13           2 Inc, total         0.0073         AO ≤ 5         0.0040         mg/L         2018-10-13           10hp Red Bridge (8100921-02)   Matrix: Water   Sampled: 2018-10-09 12:40         Sampled: 2018-10-10         Sampled: 2018-10-10           Anions         Chloride         4.68         AO ≤ 250         0.10         mg/L         2018-10-12           Fluoride         < 0.10	Sodium, total		5.07	AO ≤ 200	0.10	mg/L	2018-10-13		
Zinc, total         0.0073         AO ≤ 5         0.0040 mg/L         2018-10-13           1010p Red Bridge (8100921-02)   Matrix: Water   Sampled: 2018-10-09 12:40           Anions           Chloride         4.58         AO ≤ 250         0.10 mg/L         2018-10-12           Fluoride         < 0.10	<td>Strontium, total</td> <td></td> <td>0.202</td> <td>N/A</td> <td>0.0010</td> <td>mg/L</td> <td>2018-10-13</td> <td></td>	Strontium, total		0.202	N/A	0.0010	mg/L	2018-10-13	
Anions  Chloride 4.68 A0 ≤ 250 0.010 mg/L 2018-10-12  Fluoride < 0.10 MAC = 1.5 0.10 mg/L 2018-10-12  Nitrate (as N) 0.215 MAC = 10 0.010 mg/L 2018-10-12  Nitrite (as N) < 0.010 MAC = 1 0.010 mg/L 2018-10-12  Suifate 17.5 AO ≤ 500 1.0 mg/L 2018-10-12  Calculated Parameters  Hardness, Total (as CaCO3) 98.7 None Required 0.500 mg/L N/A  Langelier Index 0.4 N/A 5.0 - 2018-10-17  Solids, Total Dissolved 116 AO ≤ 500 1.0 mg/L 2018-10-17  Solids, Total Dissolved 116 AO ≤ 500 1.0 mg/L 2018-10-17  Alkalinity, Total (as CaCO3) 84.0 N/A 1.0 mg/L 2018-10-11  Alkalinity, Phenolphthalein (as CaCO3) 84.0 N/A 1.0 mg/L 2018-10-11  Alkalinity, Bicarbonate (as CaCO3) 84.0 N/A 1.0 mg/L 2018-10-11  Alkalinity, Bicarbonate (as CaCO3) 4.10 N/A 1.0 mg/L 2018-10-11  Alkalinity, Bicarbonate (as CaCO3) 4.10 N/A 1.0 mg/L 2018-10-11  Alkalinity, Hydroxide (as CaCO3) 4.10 N/A 1.0 mg/L 2018-10-11  Alkalinity, Hydroxide (as CaCO3) 4.10 N/A 1.0 mg/L 2018-10-11  Alkalinity, Hydroxide (as CaCO3) 4.10 N/A 1.0 mg/L 2018-10-11  Colour, True 5.0 AO ≤ 15 5.0 CU 2018-10-11  Colour, True 5.0 AO ≤ 15 5.0 CU 2018-10-11  Conductivity (EC) 216 N/A 2.0 μS/cm 2018-10-11  Temperature, at pH 2.30 N/A 2.0 μS/cm 2018-10-15  pH 7.59 7.0-10.5 0.10 pH units 2018-10-15  Trubidity 0.30 OG < 1 0.0000 mg/L 2018-10-11  Trubidity 0.30 N/A 0.0000 mg/L 2018-10-13  Arsenic, total 0.00058 MAC = 0.0000 mg/L 2018-10-13  Barium, total 0.00052 MAC = 0.0000 mg/L 2018-10-13  Barium, total 0.00052 MAC = 0.0000 mg/L 2018-10-13  Cadcium, total 0.00051 MAC = 0.0050 mg/L 2018-10-13  Chromium, total 0.00053 MAC = 0.0000 mg/L 2018-10-13  Chromium, total 0.00051 MAC = 0.0050 mg/L 2018-10-13  Chromium, total 0.00051 MAC = 0.0050 mg/L 2018-10-13  Chromium, total 0.00051 MAC = 0.0050 mg/L 2018-10-13	Uranium, total		0.000733	MAC = 0.02	0.000020	mg/L	2018-10-13		
Anions Chloride	Zinc, total		0.0073	AO ≤ 5	0.0040	mg/L	2018-10-13		
Chloride         4.68         AO ≤ 250         0.10         mg/L         2018-10-12           Fluoride         < 0.10	10hp Red Bridge	(8100921-02)   Matrix: Water	Sampled:	2018-10-09 12:40					
Fluoride	Anions								
Nitrate (as N)         0.215         MAC = 10         0.010         mg/L         2018-10-12           Nitrite (as N)         < 0.010         MAC = 1         0.010         mg/L         2018-10-12           Sulfate         17.5         AO ≤ 500         1.0         mg/L         2018-10-12           Calculated Parameters           Hardness, Total (as CaCO3)         88.7         None Required         0.500         mg/L         N/A           Hardness, Total Dissolved         116         AO ≤ 500         1.00         mg/L         N/A           Barrian Milly, Total (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-17           Solids, Total Dissolved         84.0         N/A         1.0         mg/L         2018-10-17           Alkalinity, Total (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Phenolphthalein (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Phenolphthalein (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Phenolphthalein (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10									
Nitrite (as N)         < 0.010         MAC = 1         0.010         mg/L         2018-10-12           Sulfate         17.5         AO ≤ 500         1.0         mg/L         2018-10-12           Calculated Parameters           Hardness, Total (as CaCO3)         98.7         None Required         0.500         mg/L         N/A           Langelier Index         -0.4         N/A         -5.0         -         2018-10-17           Solids, Total Dissolved         116         AO ≤ 500         1.00         mg/L         N/A           Activate of ScacCO3         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Total (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Denolphthalein (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Carbonate (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Lydroxide (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Colour, True         < 5.0	Fluoride		< 0.10	MAC = 1.5	0.10	mg/L			
Sulfate         17.5         AO ≤ 500         1.0         mg/L         2018-10-12           Calculated Parameters           Hardness, Total (as CaCO3)         98.7         None Required         0.500         mg/L         N/A           Langelier Index         -0.4         N/A         -5.0         -         2018-10-17           Solids, Total Dissolved         116         AO ≤ 500         1.00         mg/L         N/A           Alkalinity, Total (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Denoiphthalein (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Bicarbonate (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Earbonate (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Earbonate (as CaCO3)         41.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Hydroxide (as CaCO3)         < 1.0	Nitrate (as N)		0.215	MAC = 10	0.010	mg/L	2018-10-12		
Calculated Parameters           Hardness, Total (as CaCO3)         98.7         None Required         0.500 mg/L         N/A           Langelier Index         4.04         N/A         5.0 -         2018-10-17           Solids, Total Dissolved         116         AO ≤ 500         1.00 mg/L         N/A           Carear Parameters           Alkalinity, Total (as CaCO3)         84.0         N/A         1.0 mg/L         2018-10-11           Alkalinity, Phenolphthalein (as CaCO3)         84.0         N/A         1.0 mg/L         2018-10-11           Alkalinity, Carbonate (as CaCO3)         84.0         N/A         1.0 mg/L         2018-10-11           Alkalinity, Earbonate (as CaCO3)         41.0         N/A         1.0 mg/L         2018-10-11           Alkalinity, Carbonate (as CaCO3)         41.0         N/A         1.0 mg/L         2018-10-11           Alkalinity, Hydroxide (as CaCO3)         41.0         N/A         1.0 mg/L         2018-10-11           Alkalinity, Hydroxide (as CaCO3)         41.0         N/A         1.0 mg/L         2018-10-11           Columbia, Tute         45.0         AO ≤ 15         5.0         CU         2018-10-11           Conductivity (EC)         216         N/A	Nitrite (as N)		< 0.010	MAC = 1	0.010	mg/L	2018-10-12		
Hardness, Total (as CaCO3)         98.7         None Required         0.500 mg/L         N/A           Langelier Index         4.04         N/A         5.0 -         2018-10-17           Solids, Total Dissolved         116         AO ≤ 500         1.00 mg/L         N/A           General Parameters           Alkalinity, Total (as CaCO3)         84.0         N/A         1.0 mg/L         2018-10-11           Alkalinity, Phenolphthalein (as CaCO3)         84.0         N/A         1.0 mg/L         2018-10-11           Alkalinity, Diarbonate (as CaCO3)         84.0         N/A         1.0 mg/L         2018-10-11           Alkalinity, Derolophthalein (as CaCO3)         84.0         N/A         1.0 mg/L         2018-10-11           Alkalinity, Derolophthalein (as CaCO3)         84.0         N/A         1.0 mg/L         2018-10-11           Alkalinity, Derolophthalein (as CaCO3)         84.0         N/A         1.0 mg/L         2018-10-11           Alkalinity, Derolophthalein (as CaCO3)         84.0         N/A         1.0 mg/L         2018-10-11           Alkalinity, Pdroxide (as CaCO3)         41.0         N/A         1.0 mg/L         2018-10-11           Colour, True         5.0         AO ≤ 15         5.0 CU         2018-10-11	Sulfate		17.5	AO ≤ 500	1.0	mg/L	2018-10-12		
Langelier Index         -0.4         N/A         -5.0         -         2018-10-17           Solids, Total Dissolved         116         AO ≤ 500         1.00         mg/L         N/A           General Parameters           Alkalinity, Total (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Phenolphthalein (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Denolphthalein (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Denolphthalein (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Denolphthalein (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Carbonate (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Hydroxide (as CaCO3)         < 1.0         N/A         1.0         mg/L         2018-10-11           Colour, True         < 5.0         AO ≤ 15         5.0         CU         2018-10-11           Cyride, Total         < 7.5         7.0         1.0         py/cm         2018-10-11         HT2 <td>Calculated Parame</td> <td>eters</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Calculated Parame	eters							
Solids, Total Dissolved         116         AO ≤ 500         1.00         mg/L         N/A           General Parameters         Alkalinity, Total (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Phenolphthalein (as CaCO3)         \$4.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Phenolphthalein (as CaCO3)         \$4.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Ederbonate (as CaCO3)         \$4.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Hydroxide (as CaCO3)         \$4.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Hydroxide (as CaCO3)         \$4.0         N/A         1.0         mg/L         2018-10-11           Colour, True         \$5.0         AO ≤ 15         5.0         CU         2018-10-11           Conductivity (EC)         216         N/A         \$2.0         µS/cm         2018-10-11           Cyanide, Total         \$0.0020         MAC = 0.2         0.0020         mg/L         2018-10-15           pH         \$7.59         \$7.0-10.5         0.10         pH units         2018-10-11         HT2           Temperatur	Hardness, Total (a	as CaCO3)	98.7	None Required	0.500	mg/L	N/A		
General Parameters         Alkalinity, Total (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Phenolphthalein (as CaCO3)         < 1.0			-0.4	N/A			2018-10-17		
Alkalinity, Total (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Phenolphthalein (as CaCO3)         < 1.0	Solids, Total Disso	olved	116	AO ≤ 500	1.00	mg/L	N/A		
Alkalinity, Phenolphthalein (as CaCO3)         < 1.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Bicarbonate (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Carbonate (as CaCO3)         < 1.0	General Parameter	'S							
Alkalinity, Phenolphthalein (as CaCO3)         < 1.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Bicarbonate (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Carbonate (as CaCO3)         < 1.0	Alkalinity Total (as	s CaCO3)	84.0	N/A	1.0	ma/l	2018-10-11		
Alkalinity, Bicarbonate (as CaCO3)         84.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Carbonate (as CaCO3)         < 1.0		<u> </u>							
Alkalinity, Carbonate (as CaCO3)         < 1.0         N/A         1.0         mg/L         2018-10-11           Alkalinity, Hydroxide (as CaCO3)         < 1.0									
Alkalinity, Hydroxide (as CaCO3)         < 1.0         N/A         1.0         mg/L         2018-10-11           Colour, True         < 5.0									
Colour, True         < 5.0         AO ≤ 15         5.0         CU         2018-10-11           Conductivity (EC)         216         N/A         2.0         µS/cm         2018-10-11           Cyanide, Total         < 0.0020         MAC = 0.2         0.0020         mg/L         2018-10-15           pH         7.59         7.0-10.5         0.10         pH units         2018-10-11         HT2           Temperature, at pH         23.0         N/A         °C         2018-10-11         HT2           Turbidity         0.30         OG < 1         0.10         NTU         2018-10-11         HT2           Total Metals           Aluminum, total         < 0.0050         OG < 0.1         0.0050         mg/L         2018-10-13           Antimony, total         < 0.00020         MAC = 0.006         0.00020         mg/L         2018-10-13           Arsenic, total         0.00058         MAC = 0.01         0.00050         mg/L         2018-10-13           Barium, total         0.0052         MAC = 1         0.0050         mg/L         2018-10-13           Cadmium, total         0.00051         MAC = 0.005         0.000010         mg/L         2018-10-13           Chromium, total <td></td> <td><u> </u></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		<u> </u>							
Conductivity (EC)         216         N/A         2.0 μS/cm         2018-10-11           Cyanide, Total         < 0.0020		(							
Cyanide, Total         < 0.0020         MAC = 0.2         0.0020         mg/L         2018-10-15           pH         7.59         7.0-10.5         0.10         pH units         2018-10-11         HT2           Temperature, at pH         23.0         N/A         °C         2018-10-11         HT2           Turbidity         0.30         OG < 1									
pH         7.59         7.0-10.5         0.10         pH units         2018-10-11         HT2           Temperature, at pH         23.0         N/A         °C         2018-10-11         HT2           Turbidity         0.30         OG < 1						•			
Temperature, at pH         23.0         N/A         °C         2018-10-11         HT2           Turbidity         0.30         OG < 1								HT2	
Turbidity         0.30         OG < 1         0.10         NTU         2018-10-11           Total Metals           Aluminum, total         < 0.0050		Н				•			
Total Metals           Aluminum, total         < 0.0050         OG < 0.1         0.0050         mg/L         2018-10-13           Antimony, total         < 0.00020					0.10				
Antimony, total         < 0.00020         MAC = 0.006         0.00020 mg/L         2018-10-13           Arsenic, total         0.00058         MAC = 0.01         0.00050 mg/L         2018-10-13           Barium, total         0.0295         MAC = 1         0.0050 mg/L         2018-10-13           Boron, total         0.0052         MAC = 5         0.0050 mg/L         2018-10-13           Cadmium, total         < 0.000010	Total Metals								
Arsenic, total         0.00058         MAC = 0.01         0.00050 mg/L         2018-10-13           Barium, total         0.0295         MAC = 1         0.0050 mg/L         2018-10-13           Boron, total         0.0052         MAC = 5         0.0050 mg/L         2018-10-13           Cadmium, total         < 0.000010			< 0.0050	OG < 0.1	0.0050	mg/L	2018-10-13		
Barium, total         0.0295         MAC = 1         0.0050         mg/L         2018-10-13           Boron, total         0.0052         MAC = 5         0.0050         mg/L         2018-10-13           Cadmium, total         < 0.000010	Antimony, total		< 0.00020	MAC = 0.006	0.00020	mg/L	2018-10-13		
Barium, total         0.0295         MAC = 1         0.0050         mg/L         2018-10-13           Boron, total         0.0052         MAC = 5         0.0050         mg/L         2018-10-13           Cadmium, total         < 0.000010			0.00058	MAC = 0.01			2018-10-13		
Boron, total         0.0052         MAC = 5         0.0050 mg/L         2018-10-13           Cadmium, total         < 0.000010	Barium, total		0.0295	MAC = 1					
Cadmium, total         < 0.000010         MAC = 0.005         0.000010         mg/L         2018-10-13           Calcium, total         31.5         None Required         0.20         mg/L         2018-10-13           Chromium, total         0.00063         MAC = 0.05         0.00050         mg/L         2018-10-13	Boron, total								
Calcium, total         31.5         None Required         0.20 mg/L         2018-10-13           Chromium, total         0.00063         MAC = 0.05         0.00050 mg/L         2018-10-13	Cadmium, total						2018-10-13		
Chromium, total <b>0.00063</b> MAC = 0.05 0.00050 mg/L 2018-10-13	Calcium, total		31.5	None Required			2018-10-13		
	Chromium, total			·			2018-10-13		
	Cobalt, total						2018-10-13		



REPORTED TO	Keremeos Irrigation District	<b>WORK ORDER</b>	8100921
PROJECT	General Potability	REPORTED	2018-10-17 18:34

	Result	Guideline	KL	Units	Analyzed	Qualifie
Ohp Red Bridge (8100921-02)   Matrix: V	Vater   Sampled: 2	2018-10-09 12:40, Co	ontinued			
otal Metals, Continued						
Copper, total	0.00248	AO ≤ 1	0.00040	mg/L	2018-10-13	
Iron, total	0.017	AO ≤ 0.3	0.010		2018-10-13	
Lead, total	0.00021	MAC = 0.01	0.00020		2018-10-13	
Magnesium, total	4.87	None Required	0.010	mg/L	2018-10-13	
Manganese, total	0.00081	AO ≤ 0.05	0.00020	mg/L	2018-10-13	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2018-10-12	
Molybdenum, total	0.00138	N/A	0.00010	mg/L	2018-10-13	
Nickel, total	< 0.00040	N/A	0.00040	mg/L	2018-10-13	
Potassium, total	1.06	N/A	0.10	mg/L	2018-10-13	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2018-10-13	
Sodium, total	4.42	AO ≤ 200	0.10	mg/L	2018-10-13	
Strontium, total	0.160	N/A	0.0010	mg/L	2018-10-13	
Uranium, total	0.000564	MAC = 0.02	0.000020		2018-10-13	
Zinc, total	0.0109	AO ≤ 5	0.0040		2018-10-13	
Chlorido	44.2	AO < 250	0.10	ma/l	2019 10 12	
Chloride Fluoride	<b>14.3</b> < 0.10	AO ≤ 250 MAC = 1.5		mg/L	2018-10-12	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2018-10-12	
Fluoride Nitrate (as N)	< 0.10 <b>1.74</b>	MAC = 1.5 MAC = 10	0.10 0.010	mg/L mg/L	2018-10-12 2018-10-12	
Fluoride	< 0.10	MAC = 1.5	0.10 0.010 0.010	mg/L mg/L	2018-10-12	
Fluoride Nitrate (as N) Nitrite (as N) Sulfate	< 0.10 1.74 < 0.010	MAC = 1.5 MAC = 10 MAC = 1	0.10 0.010 0.010	mg/L mg/L mg/L	2018-10-12 2018-10-12 2018-10-12	
Fluoride Nitrate (as N) Nitrite (as N) Sulfate	< 0.10 1.74 < 0.010	MAC = 1.5 MAC = 10 MAC = 1	0.10 0.010 0.010	mg/L mg/L mg/L mg/L	2018-10-12 2018-10-12 2018-10-12	
Fluoride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters	< 0.10 1.74 < 0.010 65.7	MAC = 1.5 MAC = 10 MAC = 1 AO ≤ 500	0.10 0.010 0.010 1.0	mg/L mg/L mg/L mg/L mg/L	2018-10-12 2018-10-12 2018-10-12 2018-10-12	
Fluoride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3)	< 0.10 1.74 < 0.010 65.7	MAC = 1.5  MAC = 10  MAC = 1  AO ≤ 500  None Required	0.10 0.010 0.010 1.0 0.500	mg/L mg/L mg/L mg/L mg/L	2018-10-12 2018-10-12 2018-10-12 2018-10-12 N/A	
Fluoride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Langelier Index Solids, Total Dissolved	< 0.10 1.74 < 0.010 65.7 255 0.6	MAC = 1.5  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A	0.10 0.010 0.010 1.0 0.500	mg/L mg/L mg/L mg/L mg/L	2018-10-12 2018-10-12 2018-10-12 2018-10-12 N/A 2018-10-17	
Fluoride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Langelier Index Solids, Total Dissolved	< 0.10 1.74 < 0.010 65.7 255 0.6	MAC = 1.5  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A	0.10 0.010 0.010 1.0 0.500 -5.0	mg/L mg/L mg/L mg/L mg/L	2018-10-12 2018-10-12 2018-10-12 2018-10-12 N/A 2018-10-17	
Fluoride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Langelier Index Solids, Total Dissolved General Parameters	< 0.10 1.74 < 0.010 65.7 255 0.6 307	MAC = 1.5  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  AO ≤ 500	0.10 0.010 0.010 1.0 0.500 -5.0 1.00	mg/L mg/L mg/L mg/L  mg/L	2018-10-12 2018-10-12 2018-10-12 2018-10-12 N/A 2018-10-17 N/A	
Fluoride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Langelier Index Solids, Total Dissolved General Parameters Alkalinity, Total (as CaCO3)	< 0.10 1.74 < 0.010 65.7 255 0.6 307	MAC = 1.5  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  AO ≤ 500	0.10 0.010 1.0 0.500 -5.0 1.00	mg/L mg/L mg/L mg/L  mg/L  mg/L  mg/L  mg/L  mg/L	2018-10-12 2018-10-12 2018-10-12 2018-10-12 N/A 2018-10-17 N/A	
Fluoride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Langelier Index Solids, Total Dissolved General Parameters Alkalinity, Total (as CaCO3) Alkalinity, Phenolphthalein (as CaCO3)	< 0.10 1.74 < 0.010 65.7  255 0.6 307	MAC = 1.5  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  AO ≤ 500  N/A  N/A	0.10 0.010 1.0 0.500 -5.0 1.00	mg/L mg/L mg/L mg/L  mg/L  mg/L  mg/L  mg/L  mg/L	2018-10-12 2018-10-12 2018-10-12 2018-10-12 N/A 2018-10-17 N/A	
Fluoride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Langelier Index Solids, Total Dissolved General Parameters Alkalinity, Total (as CaCO3) Alkalinity, Phenolphthalein (as CaCO3) Alkalinity, Bicarbonate (as CaCO3)	< 0.10 1.74 < 0.010 65.7  255 0.6 307  185 < 1.0 185	MAC = 1.5  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  AO ≤ 500  N/A  N/A  N/A  N/A	0.10 0.010 1.0 0.500 -5.0 1.00 1.0 1.0	mg/L mg/L mg/L mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L	2018-10-12 2018-10-12 2018-10-12 2018-10-12 N/A 2018-10-17 N/A 2018-10-11 2018-10-11	
Fluoride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Langelier Index Solids, Total Dissolved General Parameters Alkalinity, Total (as CaCO3) Alkalinity, Phenolphthalein (as CaCO3) Alkalinity, Bicarbonate (as CaCO3) Alkalinity, Carbonate (as CaCO3)	< 0.10 1.74 < 0.010 65.7  255 0.6 307  185 < 1.0 185 < 1.0	MAC = 1.5  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  AO ≤ 500  N/A  N/A  N/A  N/A  N/A  N/A	0.10 0.010 1.0 0.500 -5.0 1.00 1.0 1.0 1.0	mg/L mg/L mg/L mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L	2018-10-12 2018-10-12 2018-10-12 2018-10-12 2018-10-12 N/A 2018-10-17 N/A 2018-10-11 2018-10-11 2018-10-11	
Fluoride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Langelier Index Solids, Total Dissolved General Parameters Alkalinity, Total (as CaCO3) Alkalinity, Phenolphthalein (as CaCO3) Alkalinity, Bicarbonate (as CaCO3) Alkalinity, Carbonate (as CaCO3) Alkalinity, Hydroxide (as CaCO3)	< 0.10 1.74 < 0.010 65.7  255 0.6 307  185 < 1.0 185 < 1.0 < 1.0	MAC = 1.5  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  AO ≤ 500  N/A  N/A  N/A  N/A  N/A  N/A  N/A	0.10 0.010 1.0 0.500 -5.0 1.00 1.0 1.0 1.0 1.0 5.0	mg/L mg/L mg/L mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L	2018-10-12 2018-10-12 2018-10-12 2018-10-12 2018-10-12 N/A 2018-10-17 N/A 2018-10-11 2018-10-11 2018-10-11 2018-10-11	
Fluoride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Langelier Index Solids, Total Dissolved General Parameters Alkalinity, Total (as CaCO3) Alkalinity, Phenolphthalein (as CaCO3) Alkalinity, Bicarbonate (as CaCO3) Alkalinity, Hydroxide (as CaCO3) Colour, True	< 0.10 1.74 < 0.010 65.7  255 0.6 307  185 < 1.0 185 < 1.0 < 1.0 < 5.0	MAC = 1.5  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  AO ≤ 500  N/A  N/A  N/A  N/A  N/A  N/A  N/A  AO ≤ 15	0.10 0.010 1.0 0.500 -5.0 1.00 1.0 1.0 1.0 1.0 5.0	mg/L mg/L mg/L mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L	2018-10-12 2018-10-12 2018-10-12 2018-10-12 N/A 2018-10-17 N/A 2018-10-11 2018-10-11 2018-10-11 2018-10-11 2018-10-11 2018-10-11	
Fluoride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Langelier Index Solids, Total Dissolved General Parameters Alkalinity, Total (as CaCO3) Alkalinity, Phenolphthalein (as CaCO3) Alkalinity, Bicarbonate (as CaCO3) Alkalinity, Carbonate (as CaCO3) Alkalinity, Hydroxide (as CaCO3) Colour, True Conductivity (EC)	< 0.10 1.74 < 0.010 65.7  255 0.6 307  185 < 1.0 185 < 1.0 < 1.0 < 5.0 521	MAC = 1.5  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  AO ≤ 500  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N	0.10 0.010 1.0 0.500 -5.0 1.00 1.0 1.0 1.0 1.0 2.0 0.0020	mg/L mg/L mg/L mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L	2018-10-12 2018-10-12 2018-10-12 2018-10-12 N/A 2018-10-17 N/A 2018-10-11 2018-10-11 2018-10-11 2018-10-11 2018-10-11 2018-10-11 2018-10-11	HT2
Fluoride Nitrate (as N) Nitrite (as N) Sulfate  Calculated Parameters Hardness, Total (as CaCO3) Langelier Index Solids, Total Dissolved  General Parameters Alkalinity, Total (as CaCO3) Alkalinity, Phenolphthalein (as CaCO3) Alkalinity, Bicarbonate (as CaCO3) Alkalinity, Carbonate (as CaCO3) Alkalinity, Hydroxide (as CaCO3) Colour, True Conductivity (EC) Cyanide, Total	< 0.10 1.74 < 0.010 65.7  255 0.6 307  185 < 1.0 185 < 1.0 < 5.0 521 < 0.0020	MAC = 1.5  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  AO ≤ 500  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N	0.10 0.010 1.0 0.500 -5.0 1.00 1.0 1.0 1.0 1.0 2.0 0.0020	mg/L mg/L mg/L mg/L mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L  mg/L	2018-10-12 2018-10-12 2018-10-12 2018-10-12 2018-10-12 N/A 2018-10-17 N/A 2018-10-11 2018-10-11 2018-10-11 2018-10-11 2018-10-11 2018-10-11 2018-10-11	HT2 HT2



**Analyte** 

**REPORTED TO** Keremeos Irrigation District

General Potability **PROJECT** 

**WORK ORDER REPORTED** 

**RL** Units

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Qualifier

Analyzed

Result

otal Metals, Continued					
Aluminum, total	< 0.0050	OG < 0.1	0.0050	mg/L	2018-10-13
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2018-10-13
Arsenic, total	0.00100	MAC = 0.01	0.00050	mg/L	2018-10-13
Barium, total	0.0348	MAC = 1	0.0050	mg/L	2018-10-13
Boron, total	0.0200	MAC = 5	0.0050	mg/L	2018-10-13
Cadmium, total	0.000021	MAC = 0.005	0.000010	mg/L	2018-10-13
Calcium, total	79.5	None Required	0.20	mg/L	2018-10-13
Chromium, total	0.00069	MAC = 0.05	0.00050	mg/L	2018-10-13
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2018-10-13
Copper, total	0.00272	AO ≤ 1	0.00040	mg/L	2018-10-13
Iron, total	< 0.010	AO ≤ 0.3	0.010	mg/L	2018-10-13
Lead, total	< 0.00020	MAC = 0.01	0.00020	mg/L	2018-10-13
Magnesium, total	13.7	None Required	0.010	mg/L	2018-10-13
Manganese, total	0.00035	AO ≤ 0.05	0.00020	mg/L	2018-10-13
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2018-10-12
Molybdenum, total	0.00285	N/A	0.00010	mg/L	2018-10-13
Nickel, total	< 0.00040	N/A	0.00040	mg/L	2018-10-13
Potassium, total	2.49	N/A	0.10	mg/L	2018-10-13
Selenium, total	0.00140	MAC = 0.05	0.00050	mg/L	2018-10-13
Sodium, total	11.3	AO ≤ 200	0.10	mg/L	2018-10-13
Strontium, total	0.447	N/A	0.0010	mg/L	2018-10-13
Uranium, total	0.00223	MAC = 0.02	0.000020	mg/L	2018-10-13
Zinc, total	0.0044	AO ≤ 5	0.0040	mg/L	2018-10-13

Guideline

## Sample Qualifiers:

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.



## **APPENDIX 1: SUPPORTING INFORMATION**

REPORTED TO Keremeos Irrigation District

PROJECT General Potability

WORK ORDER

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**REPORTED** 2018-10-17 18:34

Analysis Description	Method Ref.	Technique	Location
Alkalinity in Water	SM 2320 B* (2011)	Titration with H2SO4	Kelowna
Anions in Water	SM 4110 B (2011)	Ion Chromatography	Kelowna
Colour, True in Water	SM 2120 C (2011)	Spectrophotometry (456 nm)	Kelowna
Conductivity in Water	SM 2510 B (2011)	Conductivity Meter	Kelowna
Cyanide, SAD in Water	ASTM D7511-12	Flow Injection with In-Line UV Digestion and Amperometry	Kelowna
Hardness in Water	SM 2340 B* (2011)	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Est)	N/A
Langelier Index in Water	SM 2330 B (2010)	Calculation	N/A
Mercury, total in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
pH in Water	SM 4500-H+ B (2011)	Electrometry	Kelowna
Solids, Total Dissolved in Water	SM 1030 E (2011)	Calculation: 100 x ([Cations]-[Anions])/([Cations]+[Anions])	N/A
Total Metals in Water	EPA 200.2* / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond
Turbidity in Water	SM 2130 B (2011)	Nephelometry	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

### **Glossary of Terms:**

RL Reporting Limit (default)

Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors

°C Degrees Celcius AO Aesthetic Objective

CU Colour Units (referenced against a platinum cobalt standard)

MAC Maximum Acceptable Concentration (health based)

mg/L Milligrams per litre

NTU Nephelometric Turbidity Units
OG Operational Guideline (treated water)
pH units pH < 7 = acidic, ph > 7 = basic  $\mu S/cm$  Microsiemens per centimetre
ASTM ASTM International Test Methods

EPA United States Environmental Protection Agency Test Methods

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

### **General Comments:**

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. The quality control (QC) data is available upon request