

Table B1: Analytical Results for Nutrients in Surface Water		Upstream Background	CONTACT WATER			E292170 WTS			E292898 ANCILLARY DISCHARGE						E305365 SW-1						Field Blank		
Laboratory ID	BCAWWQG ²	6101529-01	6100550-01	6101012-01	6101420-01	6101420-02	RPD	6100550-02	6100918-01	6101011-01	6101054-01	6101423-01	6101528-01	6100550-03	6100550-04	6100550-06	6100918-02	6101011-02	6101054-02	6101423-02	6101528-02	6100550-05	
Sample ID		Bridge	PEA	PEA	WTS	WTS DUP		Weir	1	1	WEIR	Weir (1)	Weir	SW1	SW1	SW1	2	2	SW-1	SW-1 (2)	SW-1	FB	
Date Sampled/Time		21-Oct-16	08-Oct-16/10:00	14-Oct-16	20-Oct-16	20-Oct-16		08-Oct-16/11:15	14-Oct-16	15-Oct-16	16-Oct-16	20-Oct-16	21-Oct-16	08-Oct-16/11:00	08-Oct-16/18:00	09-Oct-16/9:00	14-Oct-16	15-Oct-16	16-Oct-16	20-Oct-16	21-Oct-16	08-Oct-16/17:45	
Physical Tests																							
Colour, True (Colour Units)	15 ⁰⁰ units absolute, or 5 units above background (30-day average)	34	8	6	<5	<5	*	14	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-
Conductivity (uS/cm)	-	-	1390	53	441	442	0%	275	528	520	645	442	514	1360	861	1060	591	443	631	819	692	3	
Hardness (as CaCO3)	-	-	651	14.3	124	128	3%	98.6	187	226	239	193	160	479	345	413	221	179	243	281	236	0.59	
pH	-	-	6.72	6.49	7.11	7.15	1%	7.35	7.54	7.3	7.14	7.58	7.65	7.22	7.33	7.26	7.51	7.25	7.17	7.62	7.63	7.21	
Total Suspended Solids (mg/L)	25 mg/L above background (24-hr during clear flow)	25	25200	175	<2	<2	*	95	13	3	7	43	46	28	3	<2	6	<2	<2	11	21	<2	
Total Dissolved Solids (mg/L)	-	-	1050	79	254	243	4%	159	304	334	383	409	330	833	534	663	346	269	378	540	410	<10	
Turbidity (NTU)	8 NTU above background (24-hr during clear flow)																						
	Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters	17.8		156	0.1	0.11	*		21.1	20.6	15.4	82.7	194				9.95	6.16	3.39	11.9	21.7		
	Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters		8960					416						45.8	6.41	1.79						0.35	
Antions and Nutrients mg/L																							
Alkalinity Total (as CaCO3)	<10 high sensitivity to acid inputs 20 moderate sensitivity to acid inputs >20 low sensitivity to acid inputs	10-	25	3	10	13	26%	25	25	28	33	39	43	118	86	77	44	28	43	63	59	<1	
Acid Sensitivity			Low	High	Moderate	Moderate		Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	-	
Chloride (Cl)	600 (instant max) 150 (30-day average) 1.5 (instant max) 1.0 (30-day average)	-	39.3	8.38	54.8	54.8	0%	12.6	42.3	29.4	68.1	74.1	60.8	225	93	132	42.8	29.3	59.1	96.2	74.1	<0.10	
Fluoride (F)	Hardness-Dependent BCAWWQG to protect AW ⁽⁷⁾	-	<0.10	<0.10	<0.10	<0.10	*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Nitrate (as N)	32.8 (instant maximum) 3.8 (30-day average)	-	1.49	<0.015	0.063	0.064	2%	0.29	1.02	1.44	0.943	0.418	0.489	0.309	0.886	1.12	1.35	0.969	1.07	1.07	0.936	0.03	
Nitrite (as N) ⁽⁸⁾ Cl <2 mg/L	0.06 (max) 0.02 (30-day average)																					<0.010	
Cl 2 - <4 mg/L	0.12 (max) 0.04 (30-day average)																						
Cl 4 - <6 mg/L	0.18 (max) 0.06 (30-day average)																						
Cl 6 - <8 mg/L	0.24 (max) 0.08 (30-day average)																						
Cl 8 - <10 mg/L	0.3 (max) 0.1 (30-day average)			<0.005																			
Cl > 10 mg/L	0.6 (max) 0.2 (30-day average)		0.222	6.4	<0.010	<0.010	*	<0.010	<0.010	<0.010	<0.010	<0.010	<0.005	0.019	0.018	<0.010	<0.010	<0.010	<0.010	<0.010	<0.005		
Sulfate (SO4) H 0-30 mg/L	128 (30-day average)																						
H 31 - 75 mg/L	218 (30-day average)				87.9	88.1	0%						88.7					134					
H 76 - 150 mg/L	309 (30-day average)							149	178	167	97.1						165		167		141		
H 181 - 250 mg/L	429 (30-day average)																						
H > 250 mg/L	TBD		666					79						259	215	265				173		<1.0	

Notes: Refer to Table Endnotes (attached)

Table B3: Analytical Results for Volatile Organic Compounds (VOCs) in Surface Water		CONTACT WATER		E292170 WTS			E292898 ANCILLARY DISCHARGE						E305365 SW-1						Field Blank		
Laboratory ID	BCAWWQG ⁽²⁾	6100550-01	6101012-01	6101420-01	6101420-02	RPD	6100550-02	6100918-01	6101011-01	6101054-01	6101423-01	6101528-01	6100550-03	6100550-04	6100550-06	6100918-02	6101011-02	6101054-02	6101423-02	6101528-02	6100550-05
Sample ID		PEA	PEA	WTS	WTS DUP		Weir	1	1	WEIR	Weir (1)	Weir	SW1	SW1	SW1	2	2	SW-1	SW-1 (2)	SW-1	FB
Date Sampled/Time		08-Oct-16/10:00	14-Oct-16	20-Oct-16	20-Oct-16		08-Oct-16/11:15	14-Oct-16	15-Oct-16	16-Oct-16	20-Oct-16	21-Oct-16	08-Oct-16/11:00	08-Oct-16/18:00	09-Oct-16/9:00	14-Oct-16	15-Oct-16	16-Oct-16	20-Oct-16	21-Oct-16	08-Oct-16/17:45
Volatile Organic Compounds (ug/L)																					
Benzene	40	<0.5	<0.5	<0.5	<0.5	*	<0.5	<0.5	1.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	-	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	-	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	13.3	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	1.3	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	-	<2.0	<2.0	<2.0	<2.0	*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	1.8	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.3
Chloromethane	-	<2.0	<2.0	<2.0	<2.0	*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Dibromochloromethane	-	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	0.7	<0.5	<0.5	<0.5	<0.5	*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	150	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	26	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	-	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	100	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	-	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	-	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	-	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene chloride	98.1	<3.0	<3.0	<3.0	<3.0	*	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
1,2-Dichloropropane	-	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	-	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	-	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichloropropene (cis & trans)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	200	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl t-butyl ether (MTBE)	3400	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene	72	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1,2-Tetrachloroethane	-	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1,2,2-Tetrachloroethane	-	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	110	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	0.5	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	14.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.9	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	-	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	-	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	21	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichlorofluoromethane	-	<1.0	<1.0	<1.0	<1.0	*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	-	<2.0	<2.0	<2.0	<2.0	*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Xylenes	30	<2.0	<2.0	<2.0	<2.0	*	<2.0	<2.0	6.1	2.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Notes: Refer to Table Endnotes (attached)

Table B4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Surface Water

Laboratory ID	Sample ID	Date Sampled/ Time	CONTACT WATER		E292170 WTS			E292898 ANCILLARY DISCHARGE						E305365 SW-1						Field Blank		
			6100550-01	6101012-01	6101420-01	6101420-02	RPD	6100550-02	6100918-01	6101011-01	6101054-01	6101423-01	6101528-01	6100550-03	6100550-04	6100550-06	6100918-02	6101011-02	6101054-02	6101423-02	6101528-02	6100550-05
			PEA	PEA	WTS	WTS DUP		Weir	1	1	WEIR	Weir (1)	Weir	SW1	SW1	SW1	2	2	SW-1	SW-1 (2)	SW-1	FB
			08-Oct-16/10:00	14-Oct-16	20-Oct-16	20-Oct-16		08-Oct-16/11:15	14-Oct-16	15-Oct-16	16-Oct-16	20-Oct-16	21-Oct-16	08-Oct-16/11:00	08-Oct-16/18:00	09-Oct-16/9:00	14-Oct-16	15-Oct-16	16-Oct-16	20-Oct-16	21-Oct-16	08-Oct-16/17:45
Hydrocarbons ug/L																						
	LEPH	-	<250	<250	<250	<250	*	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
	HEPH	-	899	612	<250	265	*	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
ug/l																						
	Acenaphthene	6	0.08	<0.05	<0.05	<0.05	*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Acenaphthylene	-	<0.20	<0.20	<0.20	<0.20	*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	Acridine	3	<0.10	<0.10	<0.10	<0.10	*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Anthracene	4	0.12	<0.01	<0.01	<0.01	*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Benz(a)anthracene	0.1	0.19	<0.01	<0.01	<0.01	*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Benzo(a)pyrene	0.01	0.26	<0.01	<0.01	<0.01	*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Benzo(b)fluoranthene	-	0.2	<0.05	<0.05	<0.05	*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Benzo(g,h,i)perylene	-	0.36	<0.05	<0.05	<0.05	*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Benzo(k)fluoranthene	-	0.13	<0.05	<0.05	<0.05	*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Chrysene	-	0.21	<0.05	<0.05	<0.05	*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Dibenz(a,h)anthracene	-	0.1	<0.05	<0.05	<0.05	*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Fluoranthene	4	0.86	<0.03	<0.03	<0.03	*	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
	Fluorene	12	0.06	<0.05	<0.05	<0.05	*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Indeno(1,2,3-c,d)pyrene	-	0.27	<0.05	<0.05	<0.05	*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Naphthalene	1	<0.20	<0.20	<0.20	<0.20	*	<0.20	<0.20	0.22	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	Phenanthrene	0.3	0.41	<0.10	<0.10	<0.10	*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Pyrene	0.02	0.45	<0.02	<0.02	<0.02	*	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Quinoline	3.4	<0.10	<0.10	<0.10	<0.10	*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Glycols mg/l																						
	Diethylene Glycol	-	<5	<5	<5	<5	*	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	Ethylene Glycol	192 nd	<5	<5	<5	<5	*	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	1,2-Propylene Glycol	500 nd	<5	<5	<5	<5	*	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Notes: Refer to Table Endnotes (attached)

Analytical Table Footnotes: Analytical Results for Surface Water

- All concentrations in mg/L, except pH or as indicated.
- "<" less than the laboratory detection limit indicated.
- "-" means not analyzed or no standard or guideline applies.
- * RPDs are not normally calculated where one or more concentrations are less than five times MDL.
- (2) A Compendium of Approved and Working Water Quality Guidelines for BC (updated January 2010). Applicable water uses include Drinking Water (for toxicity, not odour/taste), and Freshwater Aquatic Life.
- (3) Nitrite BCAWWQG Guideline is Chloride dependent. Nitrite AW Standard is dissolved Chloride-dependent. The most conservative standard has been applied.
- (4) Guideline of 15 mg/L Pt for Drinking Water. Once background levels are established, colour should also not exceed 5 mg/L above background, to protect for Aquatic Life. This is considered a clearwater system (background less than 20 mg/L Pt.)
- (6) Working Water Quality Guidelines for Glycols
- (7) Standard is calculated based on the hardness dependent BCAWWQG formula, and has been calculated and shown for each individual result
- (8) Standards exist for Trivalent (III) and Hexavalent (VI) Chromium. As chromium results were not speciated, the most stringent standard has been applied.
- (9) Standard applies to all sites irrespective of water use.
- (10) pH-dependent maximum where instant pH < 6.5
- ** No hardness value was reported for the WTP Outlet sample from March 10, 2014. The Hardness value from the previous sampling event (3 March 14) has been used for calculating hardness-dependend guidelines.

BOLD, UNDERLINE

Laboratory Detection Limit exceeds one or more applicable Standard

BOLD, BLUE SHADING

Concentration greater than BCAWWQG Guideline