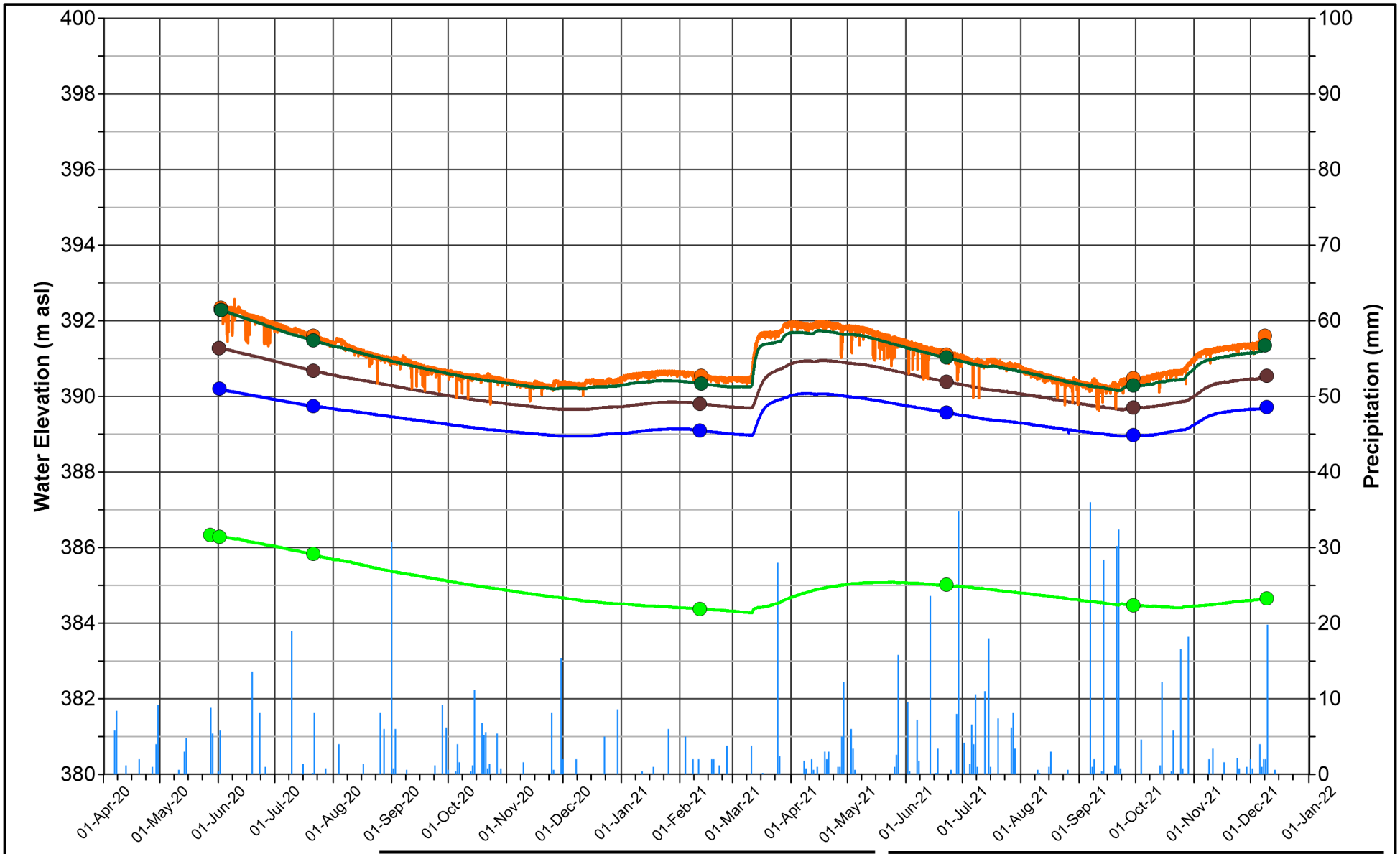
APPENDIX E

Groundwater Level Monitoring



PROJECT

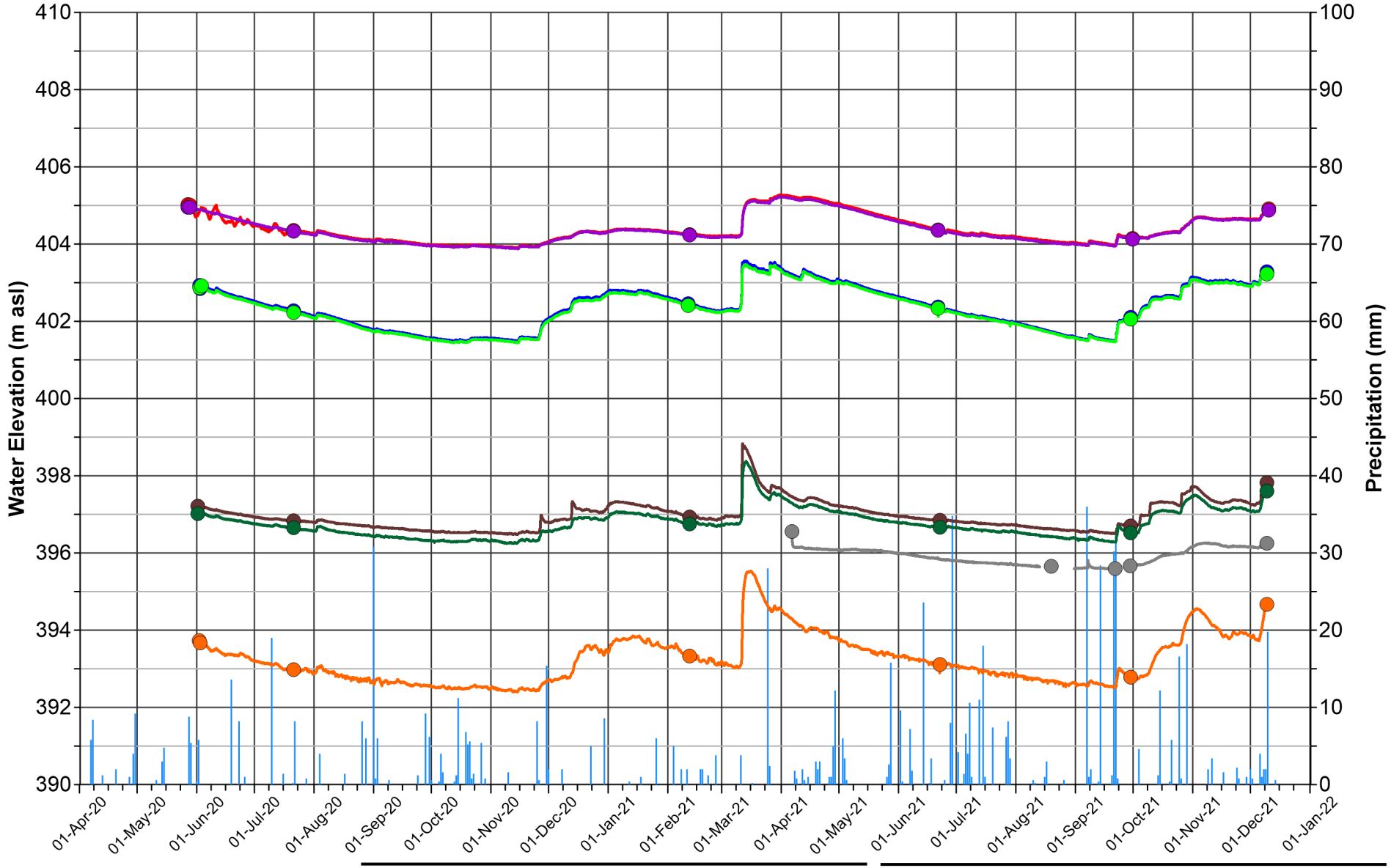
CBM CALEDON QUARRY

TITLE **GROUNDWATER MONITORING HYDROGRAPHS SOUTHERN AREA**

GOLDER
MEMBER OF WSP

DATE	November 2022
DESIGN	VRP
REVIEW	GRP
APPROVED	GWS

PROJECT NO.	REV	FIGURE
19129150	A	E1



PROJECT

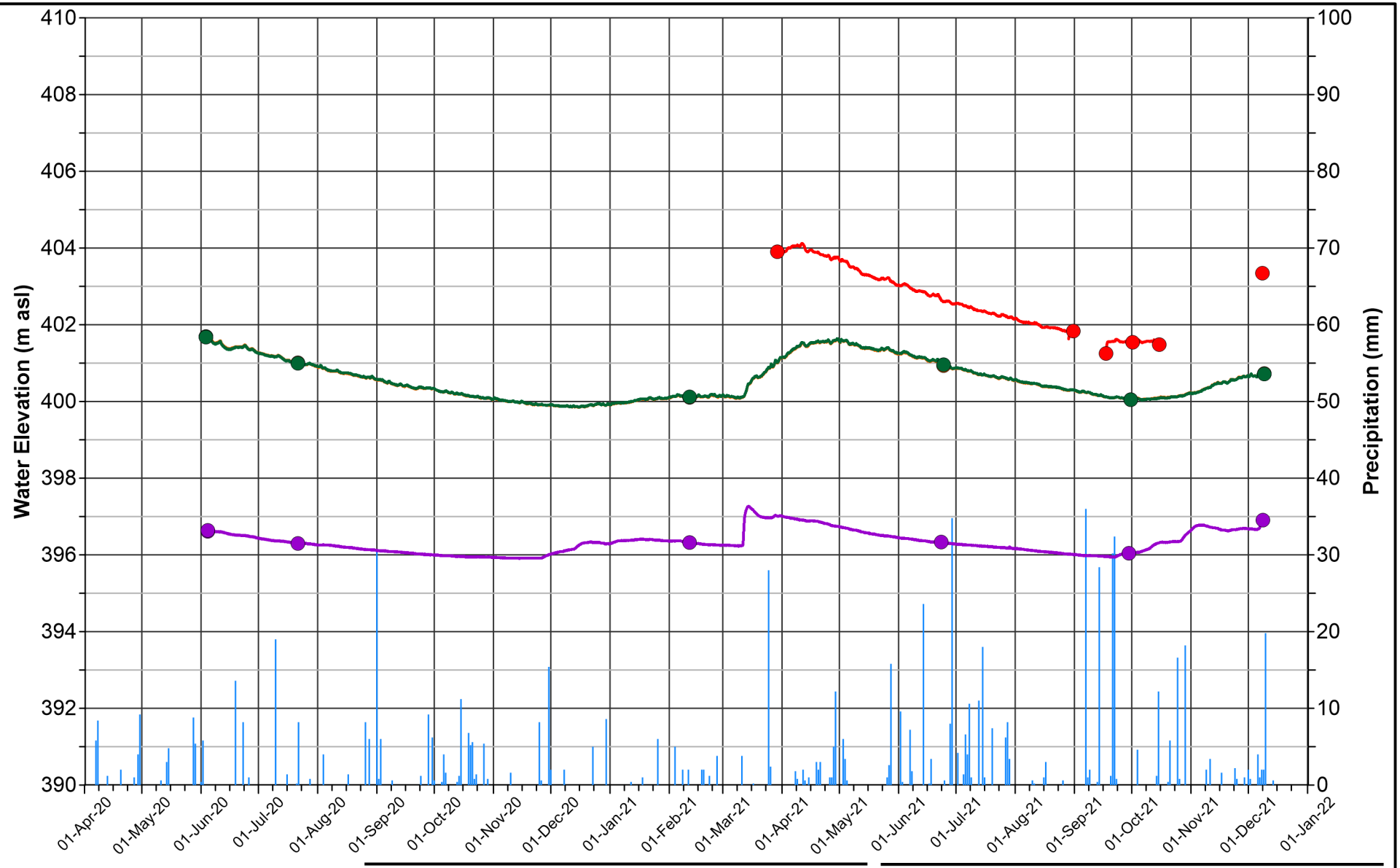
CBM CALEDON QUARRY

TITLE **GROUNDWATER MONITORING HYDROGRAPHS SOUTHEASTERN AREA**

GOLDER
MEMBER OF WSP

DATE	November 2022
DESIGN	VRP
REVIEW	GRP
APPROVED	GWS

PROJECT NO.	REV	FIGURE
19129150	A	E2



MW20-09
MW20-10A
MW20-10B
PW21-4

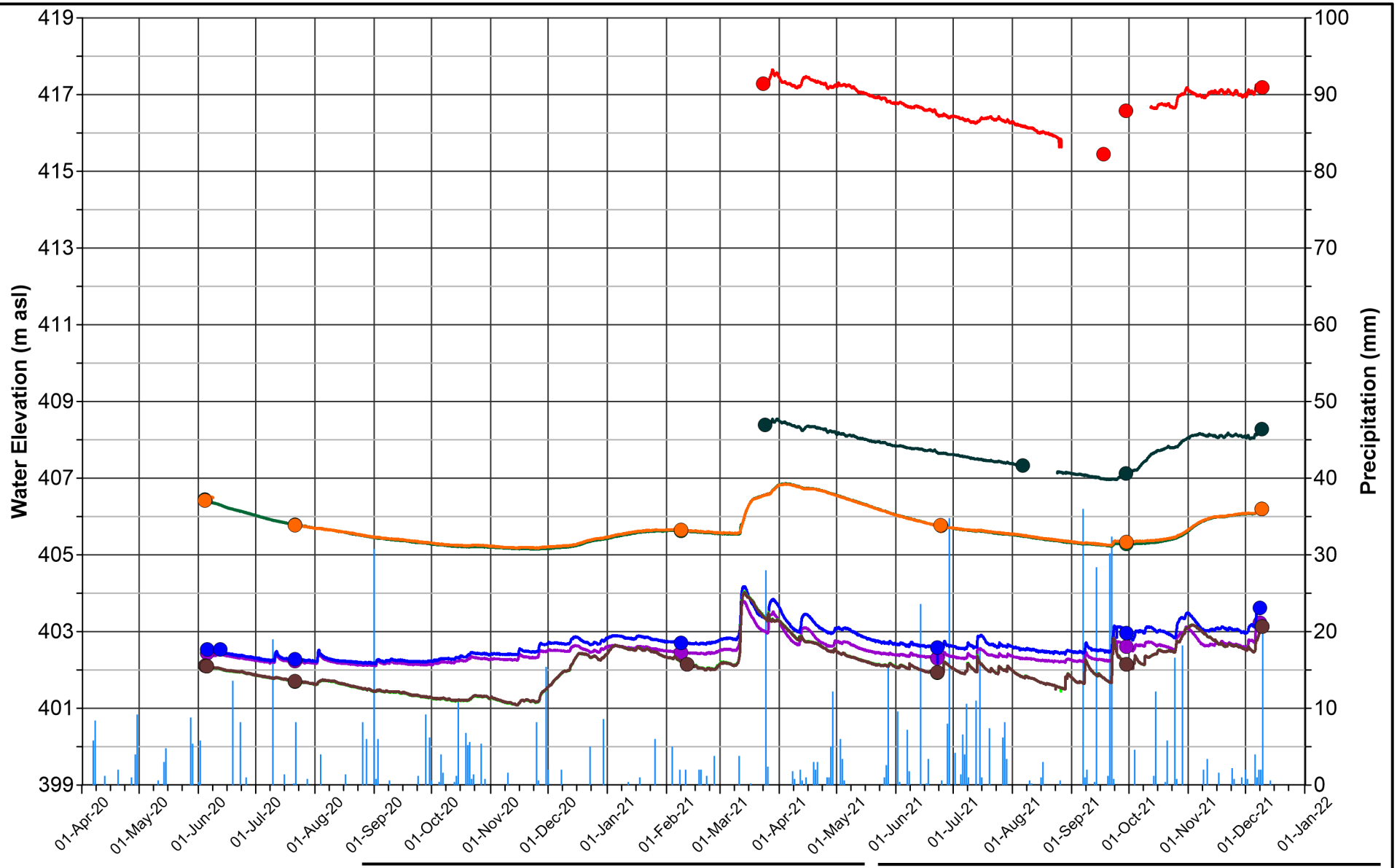
GOLDER
MEMBER OF WSP

DATE	November 2022
DESIGN	VRP
REVIEW	GRP
APPROVED	GWS

PROJECT
CBM CALEDON QUARRY

TITLE
GROUNDWATER MONITORING HYDROGRAPHS EASTERN AREA

PROJECT NO.	REV	FIGURE
19129150	A	E3



MW20-11A
MW20-11B
MW20-14A
MW20-14B
MW20-17A
MW20-17B
PW21-1
PW21-2

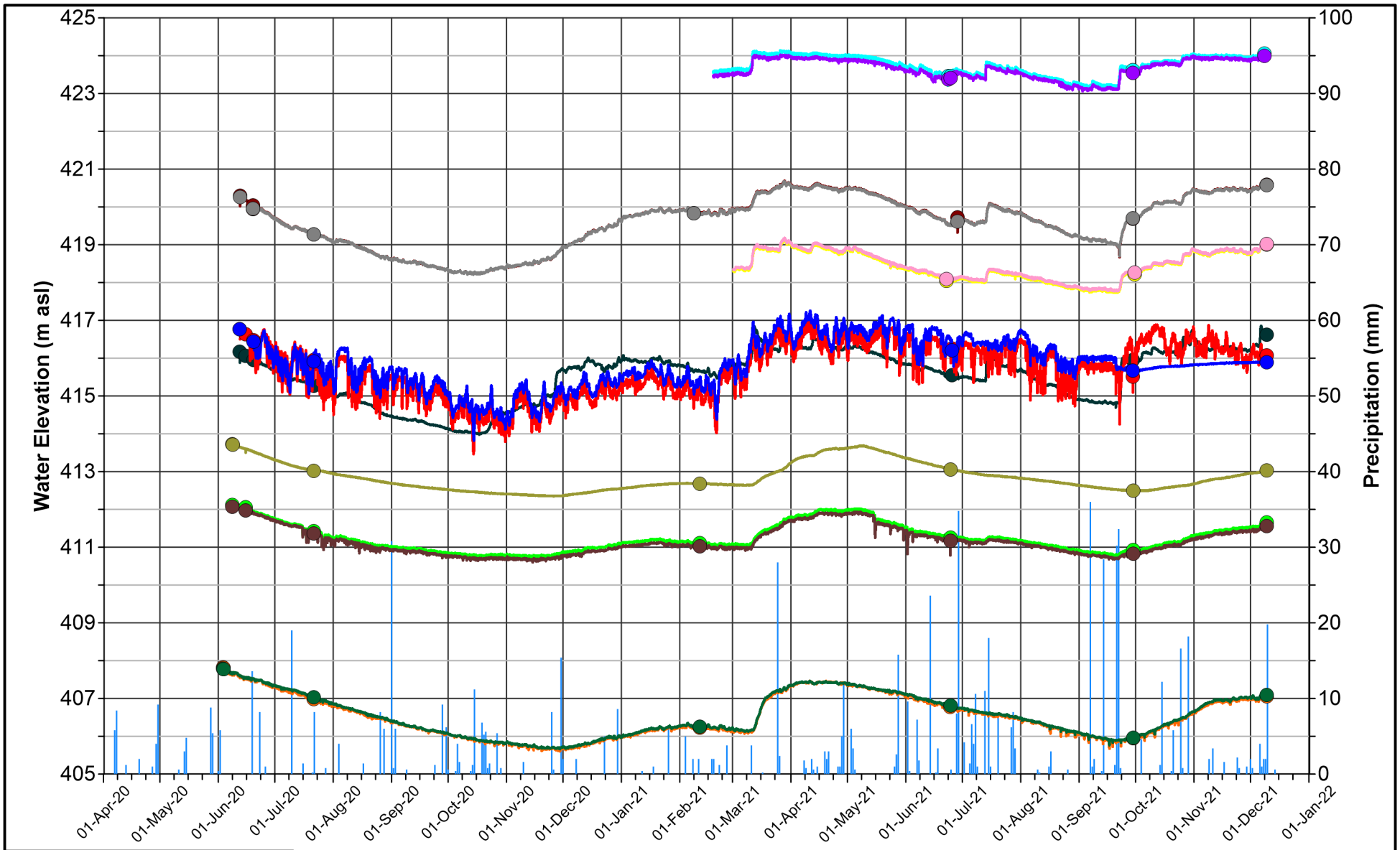
GOLDER
MEMBER OF WSP

DATE	November 2022
DESIGN	VRP
REVIEW	GRP
APPROVED	GWS

PROJECT
CBM CALEDON QUARRY

TITLE
GROUNDWATER MONITORING HYDROGRAPHS CENTRAL AREA

PROJECT NO.	REV	FIGURE
19129150	A	E4



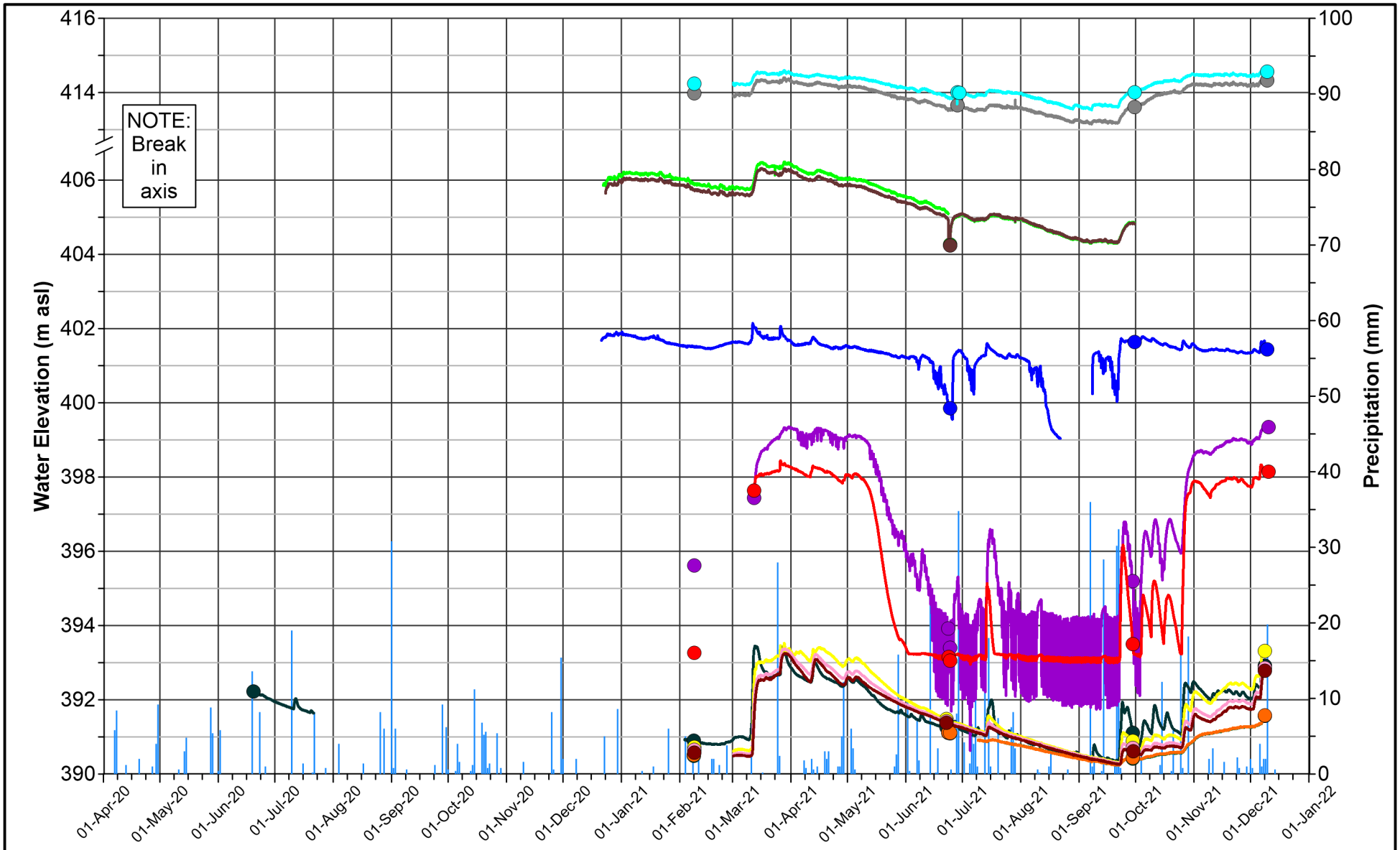
GOLDER
MEMBER OF WSP

DATE	November 2022
DESIGN	VRP
REVIEW	GRP
APPROVED	GWS

PROJECT
CBM CALEDON QUARRY

TITLE
GROUNDWATER MONITORING HYDROGRAPHS NORTHERN AREA

PROJECT NO.	REV	FIGURE
19129150	A	E5



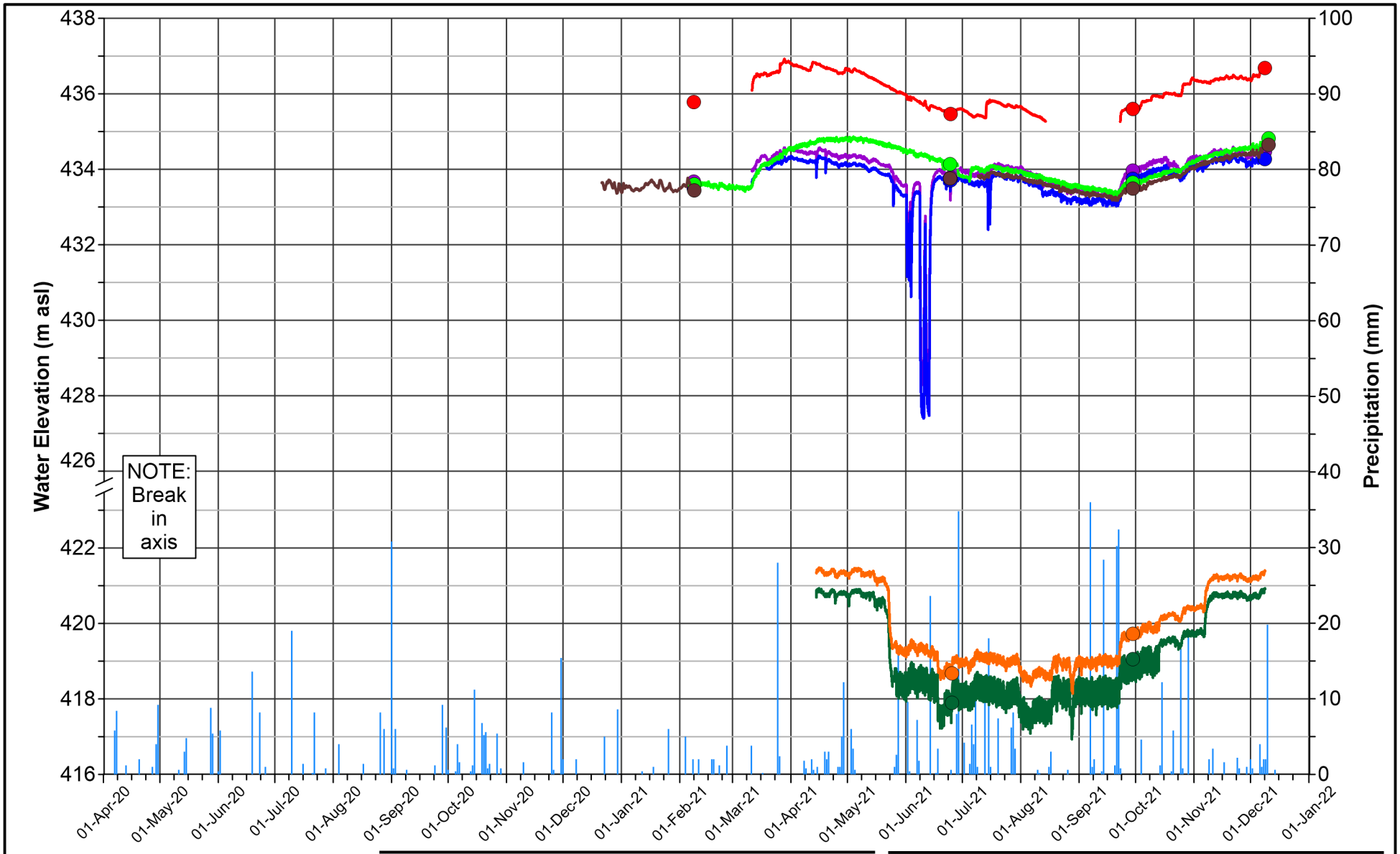
GOLDER
MEMBER OF WSP

DATE	November 2022
DESIGN	VRP
REVIEW	GRP
APPROVED	GWS

PROJECT
CBM CALEDON QUARRY

TITLE
GROUNDWATER MONITORING HYDROGRAPHS WESTERN AREA

PROJECT NO.	REV	FIGURE
19129150	A	E6



MW20-24A
MW20-24B
MW20-25A
MW20-25B
MW20-26A
MW20-26B
MW20-26C

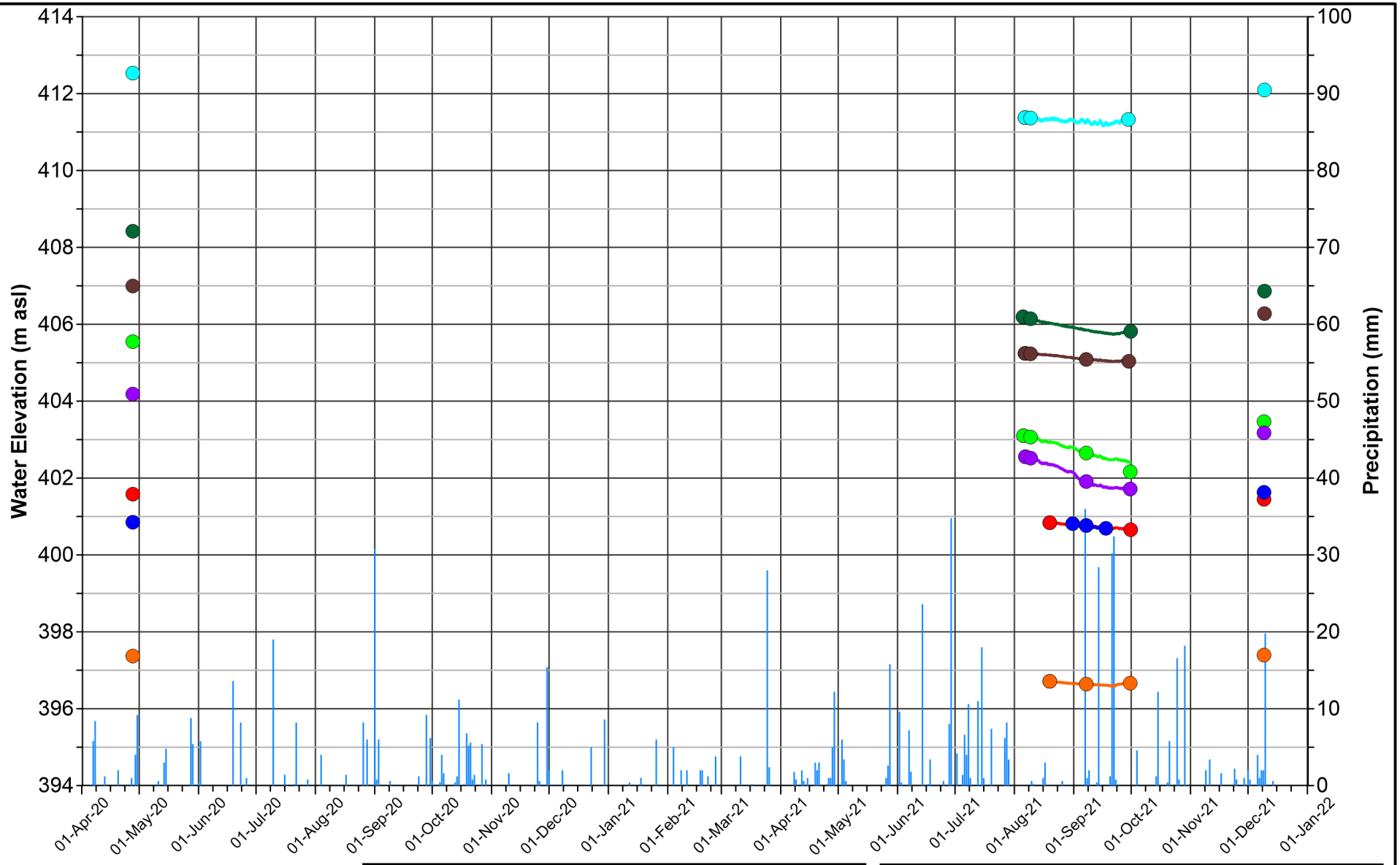
GOLDER
MEMBER OF WSP

DATE	November 2022
DESIGN	VRP
REVIEW	GRP
APPROVED	GWS

PROJECT
CBM CALEDON QUARRY

TITLE
GROUNDWATER MONITORING HYDROGRAPHS NORTHWESTERN AREA

PROJECT NO.	REV	FIGURE
19129150	A	E7



JHL-BH1
JHL-BH2
JHL-BH3
JHL-BH7
JHL-BH16
JHL-BH17
JHL-BH18
JHL-BH19

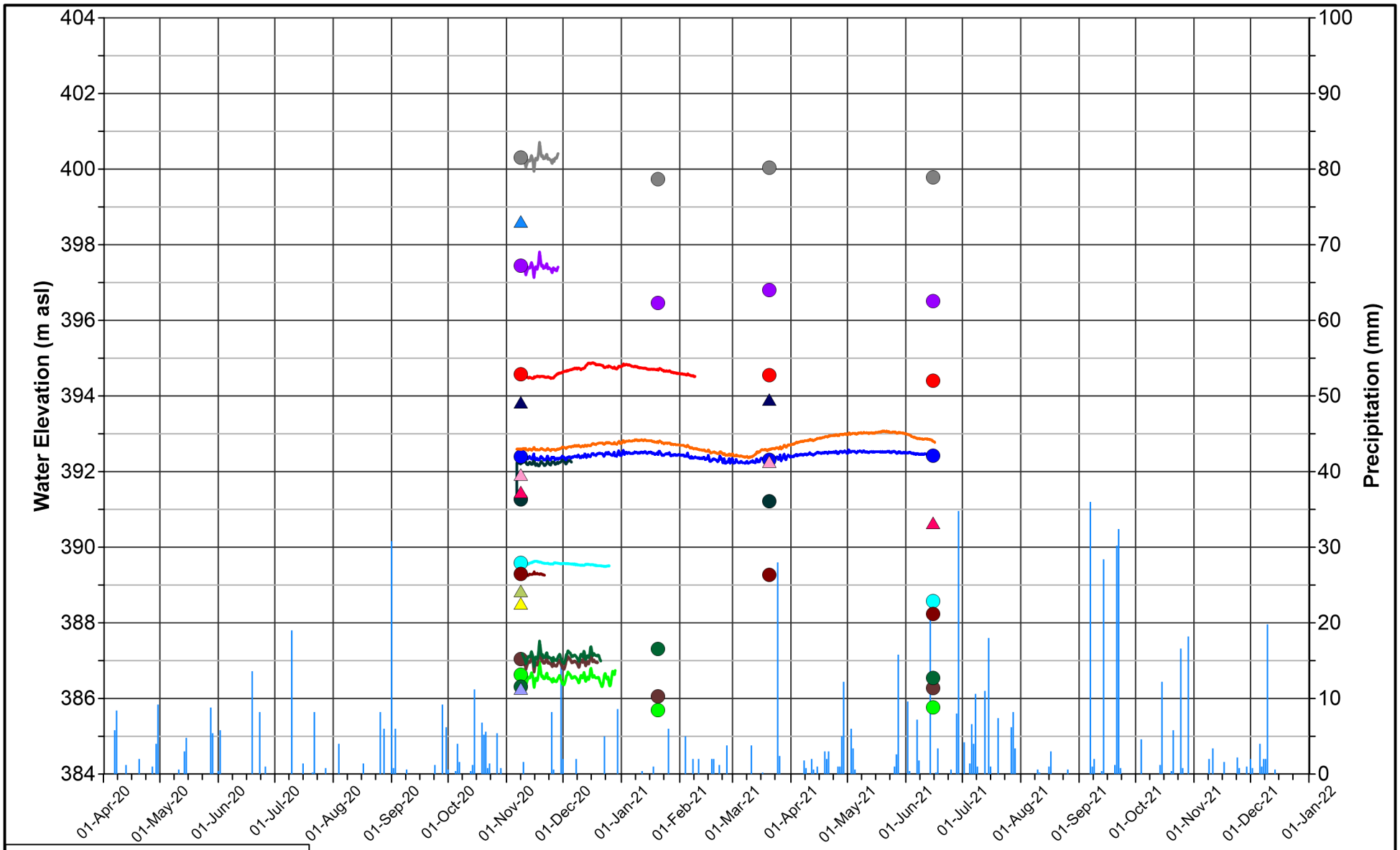
GOLDER
MEMBER OF WSP

DATE	November 2022
DESIGN	VRP
REVIEW	GRP
APPROVED	GWS

PROJECT
CBM CALEDON QUARRY

TITLE
GROUNDWATER MONITORING HYDROGRAPHS
JAGGER HIMS INVESTIGATION WELLS

PROJECT NO.	REV	FIGURE
19129150	A	E8



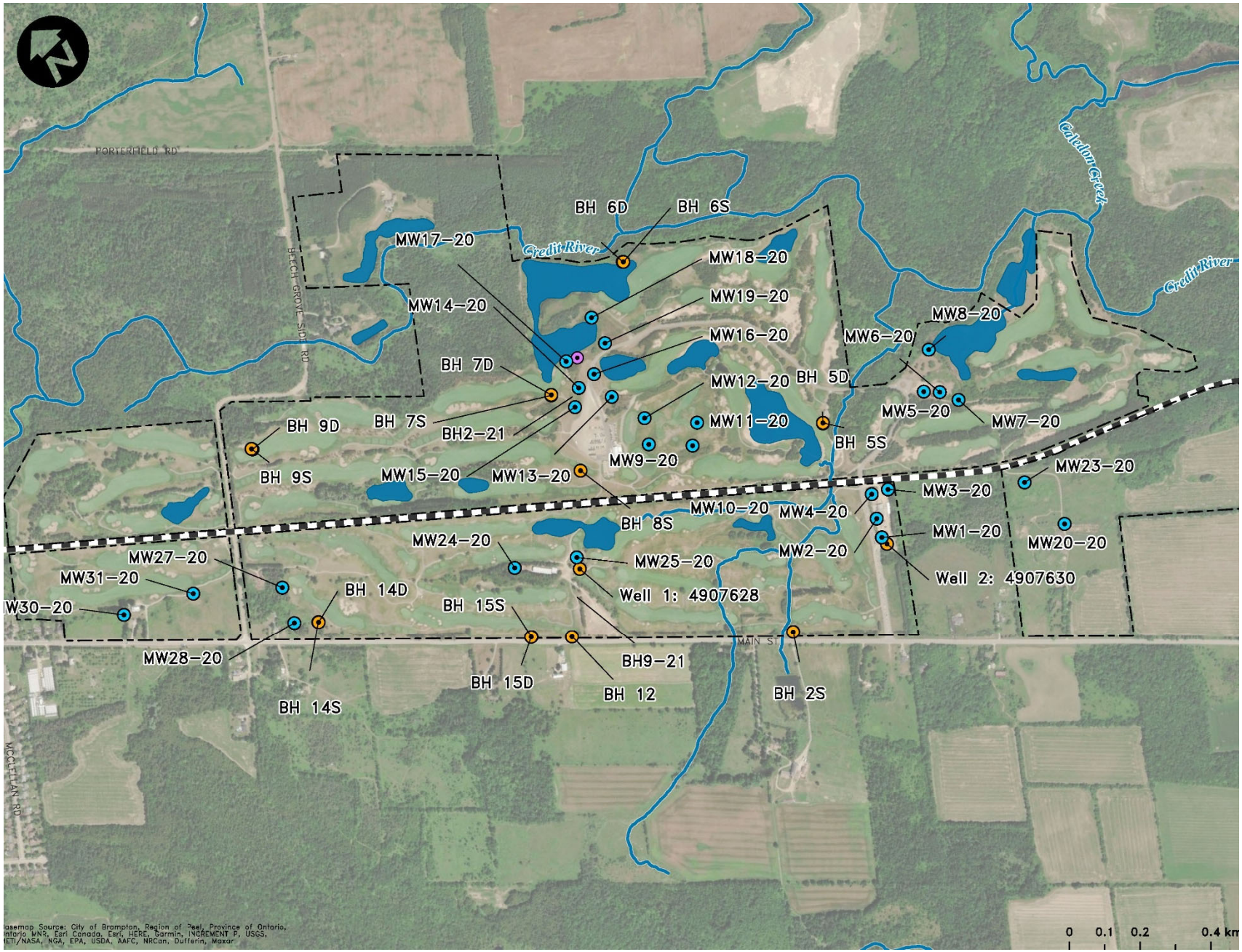
GOLDER
MEMBER OF WSP

DATE	November 2022
DESIGN	VRP
REVIEW	GRP
APPROVED	GWS

PROJECT
CBM CALEDON QUARRY

TITLE
GROUNDWATER MONITORING HYDROGRAPHS
OSPREY VALLEY GOLF MONITORING WELLS

PROJECT NO.	REV	FIGURE
19129150	A	E9



Note: figure body from Crozier Consulting Engineers (0129-5521, dated 2021-08-26) as communicated from Osprey Valley Golf Course

CLIENT
ST.MARY'S CEMENT INC. (CANADA)

PROJECT
CALEDON QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-03-15
PREPARED	PGM
DESIGN	PGM
REVIEW	###
APPROVED	

TITLE
OSPREY VALLEY GOLF COURSE MONITORING WELL LOCATION PLAN

PROJECT NO.	PHASE	Rev.	FIGURE
19129150	2300	A	E10

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

APPENDIX F

Packer Hydraulic Response Tests

Table F-1. Borehole Hydraulic (Packer) Testing Results
Caledon Quarry

BH ID	Figure Number	Top of Test Interval (mbgs)	Bottom of Test Interval (mbgs)	Interval (m)	Formation	Borehole Radius (m)	Test Tubing Radius (m)	Wellbore Storage Coefficent (m3/Pa)	Storativity (-)	Static Pressure (kPa)	Slug Injection Conductivity (m/s)	Constant Rate Injection Q (L/min)	Constant Rate Injection Conductivity (m/s)	Constant Rate Conductivity (m/s)	Selected transmissivity Selected Phase	Selected transmissivity Conductivity (m/s)	Selected transmissivity Flow Model	Comments (5)
BH20-01	F-4	4.3	11.0	6.7	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	74.5	9E-06	8	1E-05	1E-05	CRI	1E-05	Homogenous	
BH20-01	F-5	11.0	17.7	6.7	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	140.1	2E-06	(3)			SIR	2E-06	Homogenous	
BH20-01	F-6	19.5	22.1	2.6	Cabot Head Fm.	0.048	0.039	4.87E-07	5E-06	159.7	5E-08	(3)			SIR	5E-08	Homogenous	Packer bypass
BH20-02	F-7	6.1	12.7	6.7	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	83.1	2E-05	19	2E-05	2E-05	CRIR	2E-05	Homogenous	
BH20-02	F-8	12.9	19.6	6.7	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	121.0	1E-05	25	3E-05	3E-05	CRI	3E-05	Homogenous	
BH20-03	F-9	4.9	11.6	6.7	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	16.8	(2)	61	1E-04	8E-05	CRI	1E-04	Homogenous	Static water level in test interval
BH20-03	F-10	10.1	16.8	6.7	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	78.7	1E-05	18	1E-05	1E-05	CRI	1E-05	Homogenous	
BH20-04	F-11	10.7	14.3	3.6	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	15.0	(2)	51	2E-02	3E-02	CRI	2E-02	Homogenous	Static water level in test interval
BH20-04	F-12	13.5	17.0	3.6	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	41.6	1E-05	52	4E-04	4E-04	CRI	4E-04	Homogenous	
BH20-05	F-13	7.8	12.8	5.1	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	22.1	(2)	64	3E-03	4E-02	CRI	3E-03	Homogenous	
BH20-06	F-14	10.7	14.3	3.6	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	105.0	3E-07	(3)			SIR	3E-07	Homogenous	
BH20-07	F-15	4.6	11.3	6.7	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	88.2	7E-07	(3)			SIR	7E-07	Homogenous	
BH20-07	F-16	11.1	16.1	5.1	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	136.7	2E-06	2	2E-06	2E-06	CRI	2E-06	Homogenous	
BH20-08	F-17	7.0	10.5	3.6	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	28.0	2E-05	58	1E-04	9E-05	SIR	2E-05	Homogenous	
BH20-08	F-18	10.5	15.6	5.1	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	74.2	6E-06	6	6E-06	6E-06	SIR	6E-06	Homogenous	
BH20-09	F-19	5.3	10.4	5.1	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	40.4	2E-05	13	8E-06	1E-05	CRI	1E-05	Homogenous	
BH20-09	F-20	9.2	14.2	5.1	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	77.7	1E-05	16	2E-05	3E-05	CRIR	3E-05	Homogenous	
BH20-10	F-21	10.8	14.3	3.6	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	73.1	2E-06	(3)			SIR	2E-06	Homogenous	
BH20-10	F-22	13.3	16.9	3.6	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	164.5	2E-06	(3)			SIR	2E-06	Homogenous	
BH20-11	F-23	4.7	8.2	3.6	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	33.0	1E-04	58	3E-03	3E-03	CRI	3E-03	Homogenous	
BH20-12	F-24	14.1	19.2	5.1	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	102.7	3E-08	(3)			SIR	3E-08	Homogenous	
BH20-13	F-25	5.9	22.8	16.9	Gasport Fm.	0.048	0.067	1.44E-06	3E-05	143.7	9E-05	53	2E-04	2E-04	CRI	2E-04	Homogenous	Borehole integrity
BH20-14	F-26	10.8	19.1	8.2	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	100.3	8E-07	(3)			SIR	8E-07	Homogenous	
BH20-14	F-27	19.1	27.3	8.2	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	180.7	2E-06	1	9E-07	9E-07	SIR	2E-06	Homogenous	
BH20-15	F-28	17.2	23.9	6.7	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	193.5	1E-05	29	6E-06	6E-06	CRI	6E-06	Two shell composit model	
BH20-15	F-29	23.9	32.1	8.2	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	269.4	4E-06	31	2E-06	2E-06	CRI	2E-06	Two shell composit model	
BH20-16	F-30	15.5	23.7	8.1	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	199.7	2E-08	(3)			SIR	2E-08	Homogenous	Packer bypass
BH20-16	F-31	23.5	31.6	8.1	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	265.7	1E-06	(3)			SIR	1E-06	Homogenous with positive skin	
BH20-17	F-32	7.8	17.4	9.7	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	99.3	9E-06	21	7E-06	7E-06	CRIR	7E-06	Homogenous	
BH20-17	F-33	16.6	26.3	9.7	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	183.7	9E-06	30	1E-05	9E-06	CRIR	9E-06	Homogenous	Packer bypass
BH20-18	F-34	12.2	20.3	8.1	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	74.7	(4)	48	2E-04	6E-04	CRI	2E-04	Homogenous with negative skin	Small test pressure differential
BH20-18	F-35	20.6	28.7	8.1	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	169.2	5E-06	11	5E-06	4E-06	CRIR	4E-06	Homogenous	
BH20-19	F-36	5.0	13.1	8.1	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	69.7	3E-05	33	9E-05	8E-05	CRI	9E-05	Homogenous	
BH20-19	F-37	12.5	22.1	9.7	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	160.2	1E-05	22	2E-05	2E-05	CRIR	2E-05	Homogenous	
BH20-20	F-38	16.9	28.2	11.3	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	145.3	2E-07	(3)			SIR	2E-07	Homogenous	
BH20-20	F-39	27.3	38.5	11.3	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	246.2	2E-06	13	4E-06	4E-06	CRIR	4E-06	Homogenous	
BH20-21	F-40	8.3	19.5	11.3	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	125.9	9E-06	24	1E-05	1E-05	CRIR	1E-05	Two shell composit model	
BH20-21	F-41	19.5	30.8	11.3	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	231.7	4E-06	33	9E-07	9E-07	CRIR	9E-07	Two shell composit model	
BH20-22	F-42	7.6	17.4	9.8	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	130.9	2E-06	3	3E-06	2E-06	CRIR	2E-06	Homogenous	
BH20-22	F-43	16.4	26.2	9.8	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	216.0	4E-06	5	4E-06	4E-06	CRIR	4E-06	Homogenous	
BH20-23	F-44	16.9	25.1	8.2	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	207.0	4E-06	4	4E-06	4E-06	CRI	4E-06	Homogenous	
BH20-23	F-45	25.1	34.9	9.8	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	302.0	2E-06	3	1E-06	1E-06	CRIR	1E-06	Homogenous	
BH20-24	F-46	14.0	17.7	3.7	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	49.3	1E-04	40	2E-04	2E-04	CRI	2E-04	Homogenous	Static water level in packer mandrel
BH20-24	F-47	16.7	20.3	3.7	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	75.0	1E-04	32	2E-04	2E-04	CRI	2E-04	Homogenous	
BH20-25	F-48	7.9	13.1	5.2	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	75.6	4E-07	(3)			SIR	4E-07	Homogenous	
BH20-25	F-49	12.9	19.6	6.7	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	138.4	5E-06	7	4E-06	4E-06	CRI	4E-06	Homogenous with negative skin	

Table F-1. Borehole Hydraulic (Packer) Testing Results
Caledon Quarry

BH ID	Figure Number	Top of Test Interval (mbgs)	Bottom of Test Interval (mbgs)	Interval (m)	Formation	Borehole Radius (m)	Test Tubing Radius (m)	Wellbore Storage Coefficent (m3/Pa)	Storativity (-)	Static Pressure (kPa)	Slug Injection Conductivity (m/s)	Constant Rate Injection Q (L/min)	Constant Rate Injection Conductivity (m/s)	Constant Rate Conductivity (m/s)	Selected transmissivity Selected Phase	Selected transmissivity Conductivity (m/s)	Selected transmissivity Flow Model	Comments (5)
BH20-26	F-50	7.7	14.4	6.7	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	77.8	1E-07	(3)			SIR	1E-07	Homogenous	
BH20-26	F-51	13.6	20.3	6.7	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	132.4	6E-06	4	7E-06	2E-05	SIR	6E-06	Homogenous	
BH20-27	F-52	4.4	14.2	9.8	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	85.7	2E-06	5	2E-06	2E-06	CRI	2E-06	Homogenous	
BH20-27	F-53	13.8	23.5	9.7	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	169.1	3E-06	39	4E-06	4E-06	CRIR	4E-06	Two shell composit model	
MW20-01	F-54	10.9	14.5	3.6	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	113.1	5E+00	41	3E-03	2E-03	CRI	3E-03	Homogenous	Small test pressure differential
MW20-01	F-55	14.9	19.4	4.5	Shaley Dolostone/ Cabot Head Fm.	0.048	0.039	4.87E-07	9E-06	130.8	3E-06	(3)			SIR	2E-06	Homogenous	
MW20-02		Insufficient rock to test																
MW20-03		Insufficient rock to test																
MW20-04		Insufficient rock to test																
MW20-05	F-56	4.7	8.3	3.6	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	25.7	(2)	3	4E-06	4E-06	CRI	4E-06	Homogenous	
MW20-05	F-57	6.9	10.5	3.6	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	49.2	8E-06	6	7E-06	7E-06	CRI	7E-06	Homogenous	
MW20-05	F-58	10.6	14.8	4.2	Shaley Dolostone/ Cabot Head Fm.	0.048	0.039	4.87E-07	8E-06	87.9	5E-07	(3)			SIR	5E-07	Homogenous	Pressure oscillation
MW20-06	F-59	4.3	7.9	3.6	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	41.4	2E-05	12	3E-05	4E-05	CRI	3E-05	Homogenous	
MW20-06	F-60	7.2	10.8	3.6	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	68.3	2E-06	(3)			SIR	2E-06	Homogenous	
MW20-06	F-61	10.9	16.0	5.1	Shaley Dolostone/ Cabot Head Fm.	0.048	0.039	4.87E-07	1E-05	115.8	2E-08	(3)			SIR	2E-08	Homogenous	
MW20-07	F-62	4.6	8.1	3.6	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	67.0	5E-07	(3)			SIR	5E-07	Homogenous with negative skin	
MW20-07	F-63	8.0	13.1	5.1	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	112.1	2E-06	2	4E-06	4E-06	CRIR	4E-06	Homogenous	
MW20-07	F-64	13.2	16.8	3.6	Shaley Dolostone	0.048	0.039	4.87E-07	7E-06	150.1	3E-07	(3)			SIR	3E-07	Homogenous	
MW20-08	F-65	4.1	9.2	5.1	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	71.3	2E-04	33	2E-03	1E-03	CRI	2E-03	Homogenous	Small test pressure differential
MW20-08	F-66	8.4	15.1	6.7	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	127.7	2E-05	19	3E-05	4E-05	SIR	2E-05	Homogenous with positive skin	
MW20-08	F-67	15.2	18.6	3.4	Shaley Dolostone/ Cabot Head Fm.	0.048	0.039	4.87E-07	7E-06	164.4	1E-06	(3)			SIR	1E-06	Homogenous	
MW20-09		Insufficient rock to test																
MW20-10	F-68	13.9	17.4	3.6	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	71.9	1E-04	43	4E-04	3E-04	CRIR	3E-04	Homogenous	
MW20-10	F-69	16.9	21.2	4.3	Shaley Dolostone/ Cabot Head Fm.	0.048	0.039	4.87E-07	8E-06	100.7	6E-05	36	2E-04	2E-04	CRI	2E-04	Homogenous with positive skin	
MW20-11	F-70	4.8	10.0	5.2	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	61.8	2E-05	15	2E-05	2E-05	SIR	2E-05	Homogenous	
MW20-11	F-71	9.7	16.4	6.7	Gasport Fm.	0.048	0.039	1.40E-06	1E-05	125.0	4E-06	6	5E-06	5E-06	SIR	4E-06	Homogenous	
MW20-11	F-72	16.4	19.4	3.0	Shaley Dolostone/ Cabot Head Fm.	0.048	0.039	4.87E-07	6E-06	159.7	1E-06	(3)			SIR	1E-06	Homogenous	
MW20-12	F-73	7.5	14.2	6.7	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	90.1	1E-05	3	2E-06	8E-06	SIR	1E-05	Homogenous	
MW20-12	F-74	14.2	19.3	5.1	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	140.8	1E-05	11	1E-05	1E-05	SIR	1E-05	Homogenous	
MW20-12	F-75	19.8	22.7	2.9	Shaley Dolostone/ Cabot Head Fm.	0.048	0.039	4.87E-07	6E-06	179.9	2E-07	(3)			SIR	2E-07	Homogenous	
MW20-13	F-76	17.0	20.6	3.6	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	166.5	3E-06	2	7E-06	2E-06	SIR	3E-06	Homogenous with negative skin	
MW20-13	F-77	20.2	23.9	3.7	Gasport Fm.	0.048	0.039	4.87E-07	7E-06	198.2	4E-06	3	7E-06	2E-06	SIR	4E-06	Homogenous with negative skin	
MW20-13	F-78	23.9	28.2	4.3	Shaley Dolostone/ Cabot Head Fm.	0.048	0.039	4.87E-07	8E-06	229.7	3E-06	2	3E-06	2E-06	SIR	3E-06	Homogenous	Packer bypass
MW20-14	F-79	4.6	14.4	9.8	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	83.6	7E-05	43	3E-05	3E-05	CRIR	3E-05	Homogenous	
MW20-14	F-80	14.2	22.4	8.2	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	133.0	2E-05	40	6E-05	2E-05	CRI	6E-05	Homogenous	
MW20-14	F-81	22.4	26.4	4.0	Shaley Dolostone/ Cabot Head Fm.	0.048	0.039	4.87E-07	8E-06	167.6	6E-05	23	5E-05	6E-05	SIR	6E-05	Homogenous	
MW20-15	F-82	14.3	24.1	9.8	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	221.3	2E-06	(3)			SIR	2E-06	Homogenous	
MW20-15	F-83	24.1	33.8	9.8	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	314.9	5E-06	9	1E-05	1E-05	CRI	1E-05	Homogenous with negative skin	

Table F-1. Borehole Hydraulic (Packer) Testing Results
Caledon Quarry

BH ID	Figure Number	Top of Test Interval (mbgs)	Bottom of Test Interval (mbgs)	Interval (m)	Formation	Borehole Radius (m)	Test Tubing Radius (m)	Wellbore Storage Coefficent (m3/Pa)	Storativity (-)	Static Pressure (kPa)	Slug Injection Conductivity (m/s)	Constant Rate Injection Q (L/min)	Constant Rate Injection Conductivity (m/s)	Constant Rate Conductivity (m/s)	Selected transmissivity Selected Phase	Selected transmissivity Conductivity (m/s)	Selected transmissivity Flow Model	Comments (5)
MW20-15	F-84	33.8	37.2	3.3	Shaley Dolostone/ Cabot Head Fm.	0.048	0.039	4.87E-07	7E-06	349.5	2E-08	(3)			SIR	2E-08	Homogenous	
MW20-16	F-85	16.9	26.5	9.7	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	238.3	9E-08	(3)			SIR	9E-08	Homogenous	
MW20-16	F-86	25.8	35.4	9.7	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	324.1	2E-05	13	1E-05	1E-05	CRI	1E-05	Homogenous with positive skin	
MW20-16	F-87	35.5	39.8	4.3	Shaley Dolostone/ Cabot Head Fm.	0.048	0.039	4.87E-07	8E-06	358.9	2E-06	(3)			SIR	2E-06	Homogenous	
MW20-17	F-88	5.0	11.7	6.7	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	64.5	2E-06	2	2E-06	2E-06	CRI	2E-06	Homogenous	
MW20-17	F-89	11.7	18.4	6.7	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	127.1	1E-05	17	8E-06	7E-06	CRI	8E-06	Homogenous with negative skin	
MW20-17	F-90	18.4	27.5	9.1	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	162.9	1E-05	25	3E-06	3E-06	CRIR	3E-06	Two shell composit model	
MW20-18	F-91	14.0	28.2	14.1	Gasport Fm.	0.048	0.039	4.87E-07	3E-05	43.7	2E-05	44	2E-04	2E-04	CRI	2E-04	Homogenous	Borehole integrity, Small test pressure differential
MW20-19	F-92	8.0	16.2	8.1	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	81.7	(2)	66	8E-05	7E-05	CRI	8E-05	Homogenous with negative skin	Static water level in packer mandrel
MW20-19	F-93	15.4	22.1	6.7	Gasport Fm.	0.048	0.039	4.87E-07	1E-05	149.8	2E-05	77	2E-04	1E-04	CRI	2E-04	Homogenous	
MW20-19	F-94	22.1	27.4	5.3	Shaley Dolostone/ Cabot Head Fm.	0.048	0.039	4.87E-07	1E-05	171.2	6E-06	6	5E-06	5E-06	SIR	6E-06	Homogenous	
MW20-20	F-95	7.8	17.5	9.7	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	186.7	2E-05	7	3E-05	2E-05	SIR	2E-05	Homogenous	Transient formation pressure
MW20-20	F-96	17.0	25.2	8.1	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	254.2	9E-06	10	2E-05	2E-05	CRI	2E-05	Homogenous	Transient formation pressure
MW20-20	F-97	25.2	28.0	2.8	Shaley Dolostone/ Cabot Head Fm.	0.048	0.039	4.87E-07	6E-06	259.4	5E-09	(3)			SIR	5E-09	Homogenous	
MW20-21	F-98	16.9	26.6	9.7	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	230.7	3E-06	(3)			SIR	3E-06	Homogenous	
MW20-21	F-99	25.6	36.7	11.2	Gasport Fm.	0.048	0.039	4.87E-07	2E-05	329.1	1E-05	81	3E-04	2E-04	CRI	3E-04	Homogenous	
MW20-21	F-100	36.7	39.7	3.0	Shaley Dolostone/ Cabot Head Fm.	0.048	0.039	4.87E-07	6E-06	363.4	4E-07	(3)			SIR	4E-07	Homogenous	

Note:
1) Results calculated as transmisivity, and conductivty calculated as k = T/interval length.
2) Slug injection recovery occurs in multiple tubing diameters. Phase not analyzed.
3) Due to slow response of formation, only a slug injection was prepared.
4) Slug injection recovery was too rapid for analysis.
5) Refer to Section 7.1 of accompanying report for discussion of comments.

Test Specific Notes to Accompany Table F-1

The packer testing report subsection provides a generalized description of field methods, analysis, and the results of the borehole hydraulic testing program. However, specific field conditions impacted the data collection and analysis methods for a number of tests, as commented in Table F-1, including:

- Small test pressure differential: Some intervals had hydraulic conductivity approaching the upper limit of the tool. To create a test pressure differential, the ability of the pumps and tubing to convey water to the interval must be relatively large to compared to the ability of the interval to conduct the water into the formation. In the following cases, only a small test pressure differential was achieved using the maximum injection rate of the tool: MW20-01 upper (0.1 m), MW20-08 upper (0.1 m), MW20-18 (0.4 m), BH20-18 upper (0.3 m). In these cases, the hydraulic conductivity can only be estimated to within an order of magnitude and should be considered a lower bound for the actual interval hydraulic conductivity.
- Static water level in test interval or packer mandrel: In cases where the static water level was in the test interval or in the packer mandrel, the testing method was modified to exclude the falling head test which would not yield valuable information and a CRI test was performed as is typically described in Section 5. Tests BH20-03 upper (WL in interval), BH20-04 upper (WL in interval), BH20-24 (water level in packer mandrel), and MW20-19 upper (water level in packer mandrel), followed this methodology. Tests with this additional source of uncertainty should only be relied upon as an order of magnitude estimate of transmissivity.
- Packer bypass: During the packer seating test when water was added (typically 5 m) to the annular space above the upper packer, a pressure response was observed in the interval indicating bypass of the upper packer for the following tests:BH20-01 lower (0.3m), BH20-16 upper (0.3m), BH20-17 lower (0.3m), and MW20-13 lower (0.2m response). The bypass of the upper packer for these tests was likely occurring through fractures in the formation. In these cases, the estimated transmissivity should be considered an upper limit.
- Borehole integrity: In two cases, borehole integrity limited the depth to which the packer testing tool could be deployed. In BH20-13 a single open hole test was performed to test the bedrock. In this case the interval length was considered to be from the bottom of casing to the end of the borehole and the casing was used as the test tubing. Most of the length of borehole MW20-18 was inaccessible due borehole instability, so a single packer tool configuration was implemented to test the borehole.
- Pressure oscillation: While testing MW20-05 lower portion, a small pressure oscillation was observed in the test interval. This may have been the result of a small nitrogen leak at the top of the test interval, resulting in small pressure oscillations as the nitrogen bubbled up the test tubing. A portion of the test interval may have experienced variable saturation and the nitrogen bubbles may have a small impact on WBS; therefore, the accuracy of the bulk transmissivity estimate of the interval should be considered an order of magnitude.
- Transient formation pressure: While testing the upper and middle portions of MW20-20, changes in the static interval pressure were noted during the test. In the upper interval (upper Gasport Formation) the static level increased approximately 1 m during the test and the middle interval (lower Gasport Formation) fell by approximately 0.3 m.

- Variable injection rate: Some CRI tests experienced variations of the pumping rate during the test, either as a result of operational decisions to avoid the water level exceeding the height of the test tubing or due to variation of the pump performance. The average pump rate and late time pressure data were applied for the analysis. In tests where the injection rate varied significantly during the CRI, SIR or CRIR phases were selected for transmissivity analysis.

Figure 3a) Typical Straddle Packer Configuration Schematic Diagram

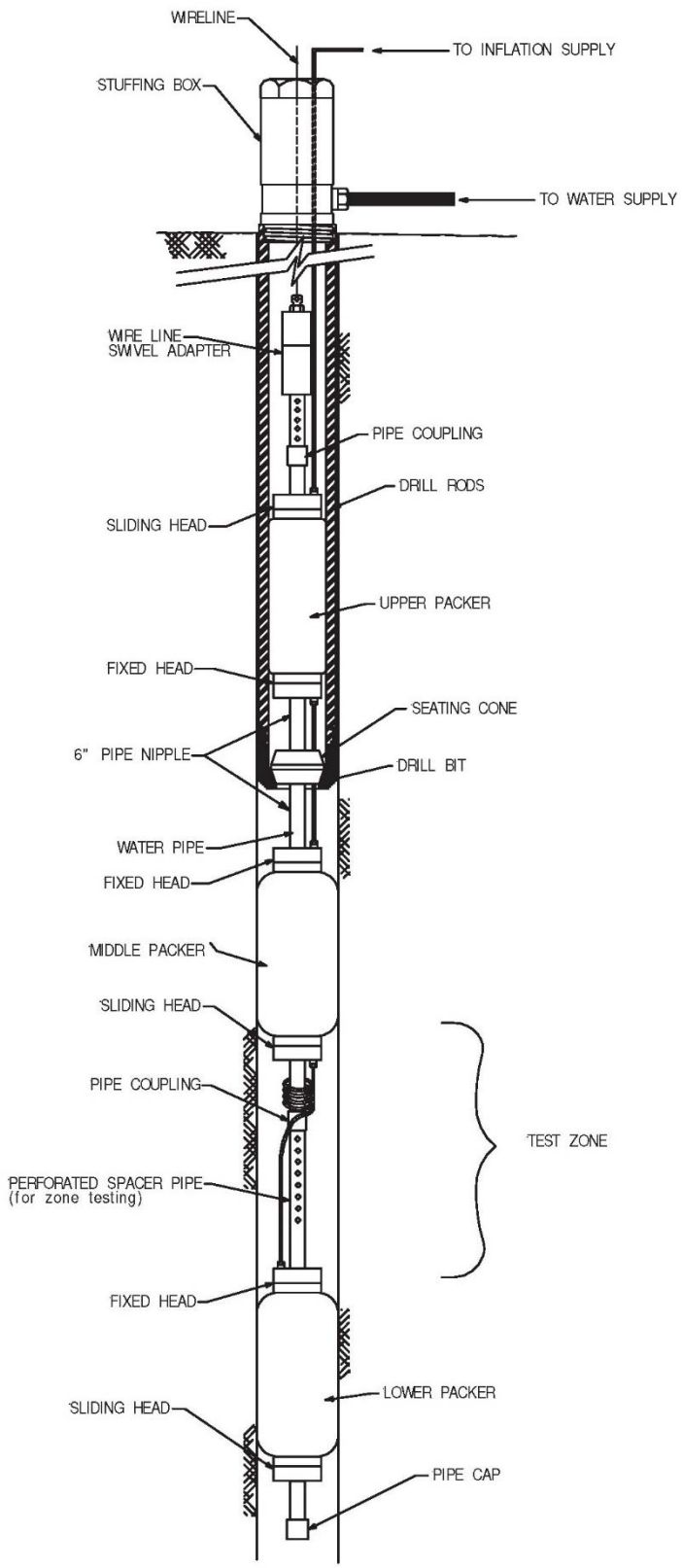
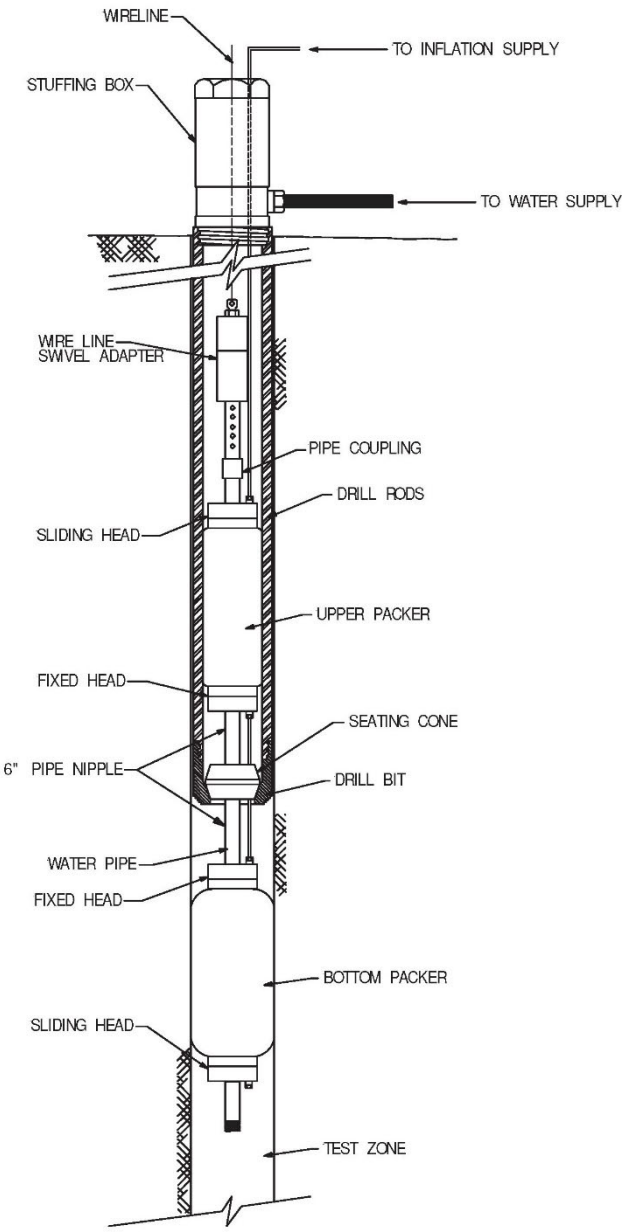


Figure 3b) Typical Single Packer Configuration Schematic Diagram



(RST Instruments Inc., 2019)

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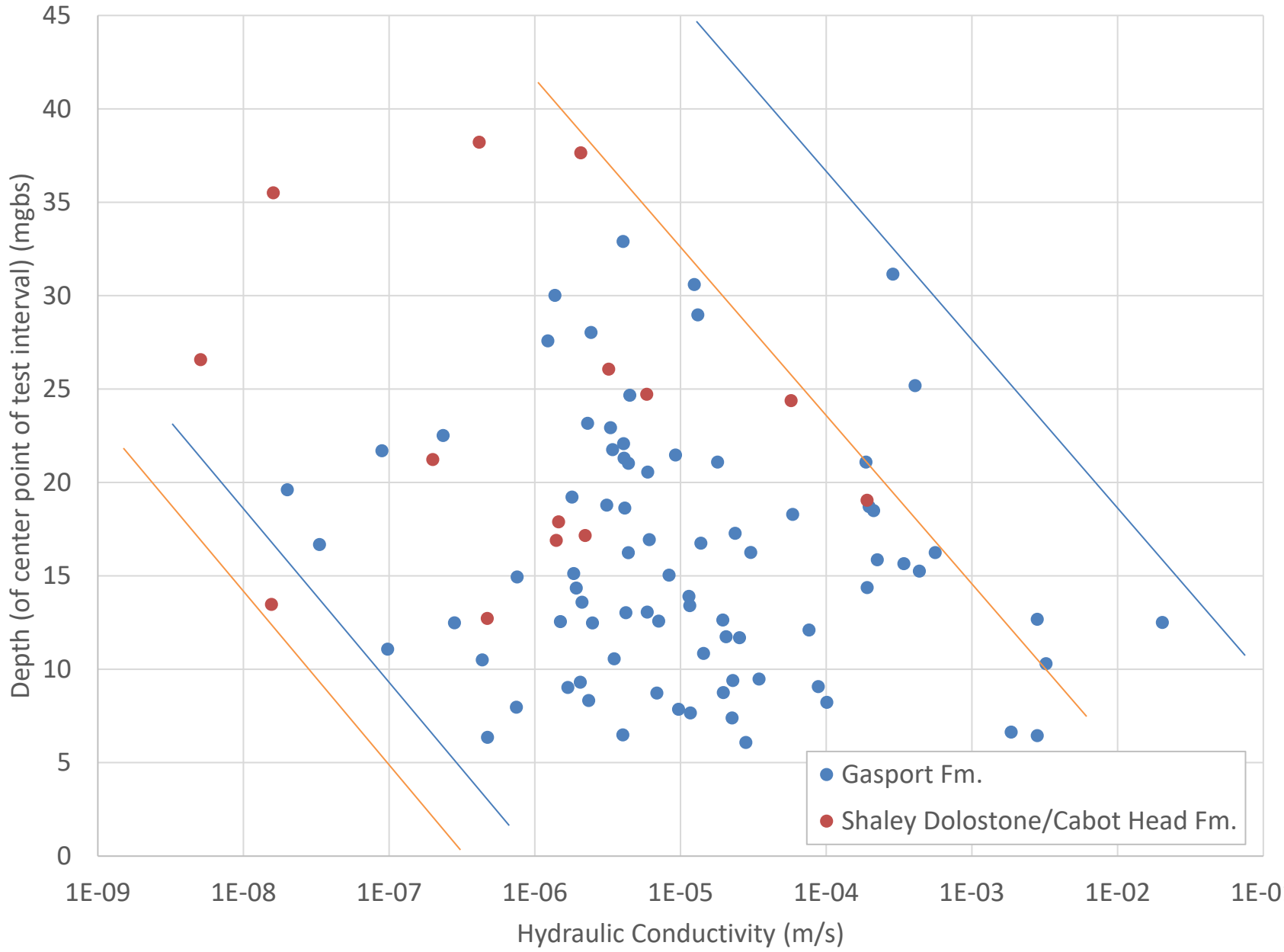
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MEMBER OF WSP

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TITLE
TYPICAL PACKER TESTING TOOL SCHEMATIC DIAGRAMS

PROJECT No.	PHASE	Rev.	FIGURE
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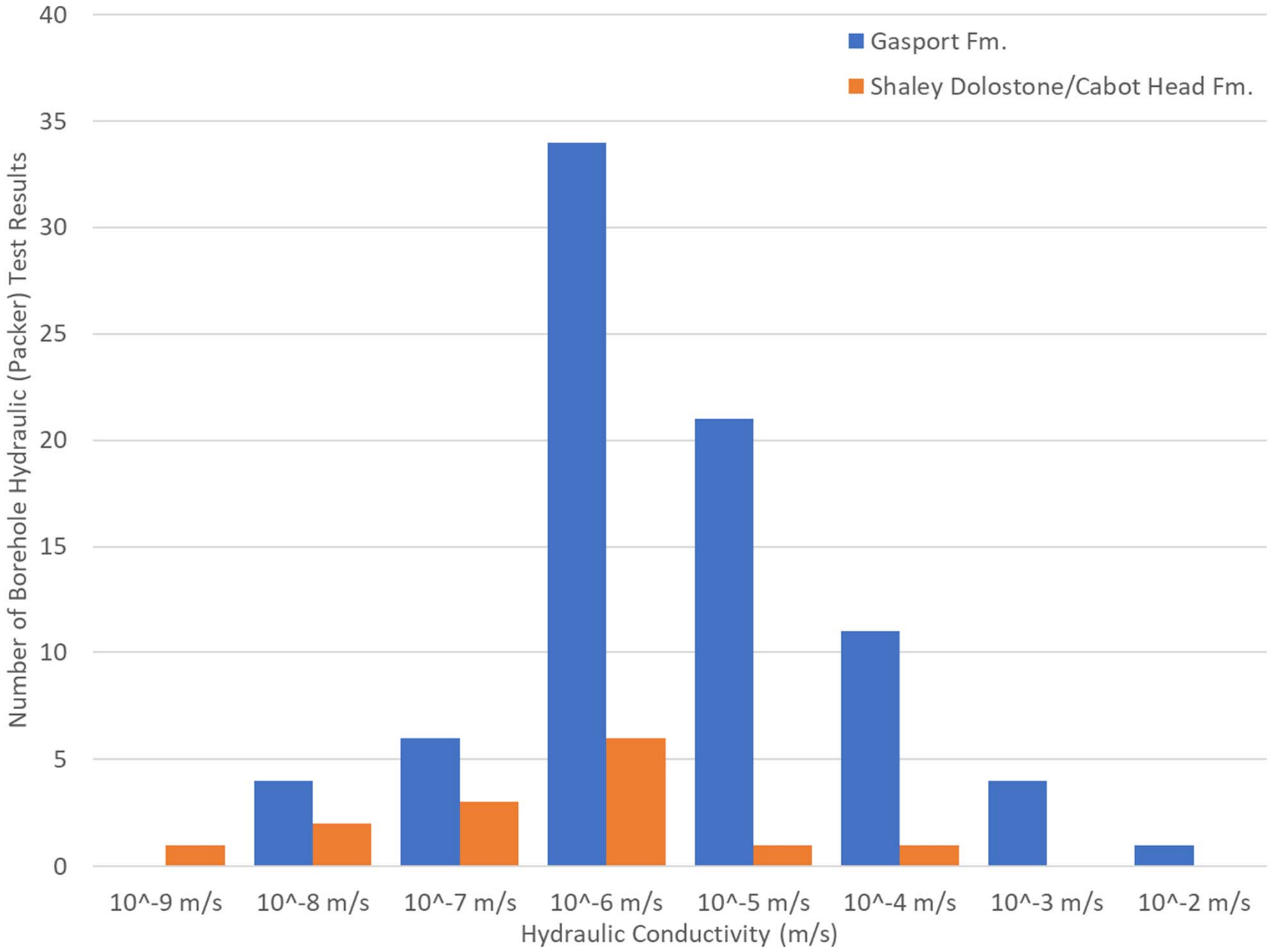
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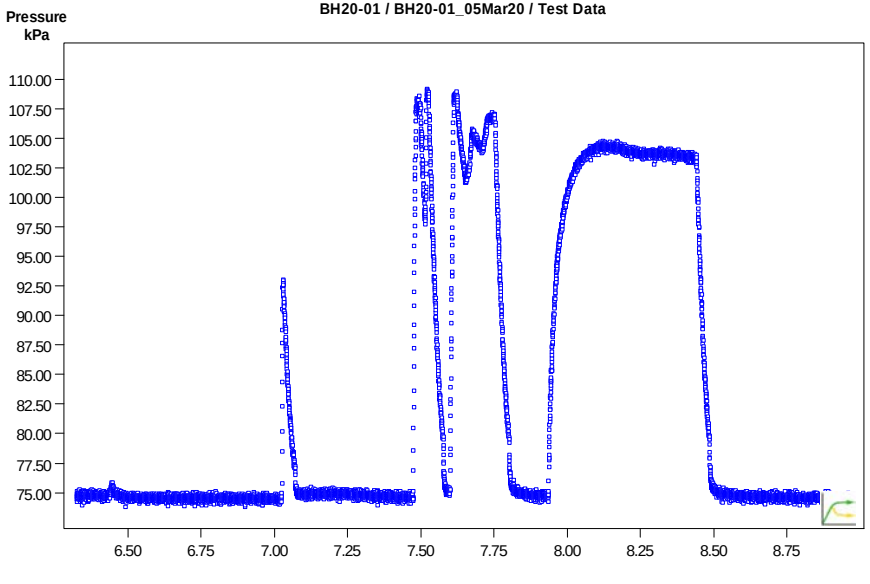
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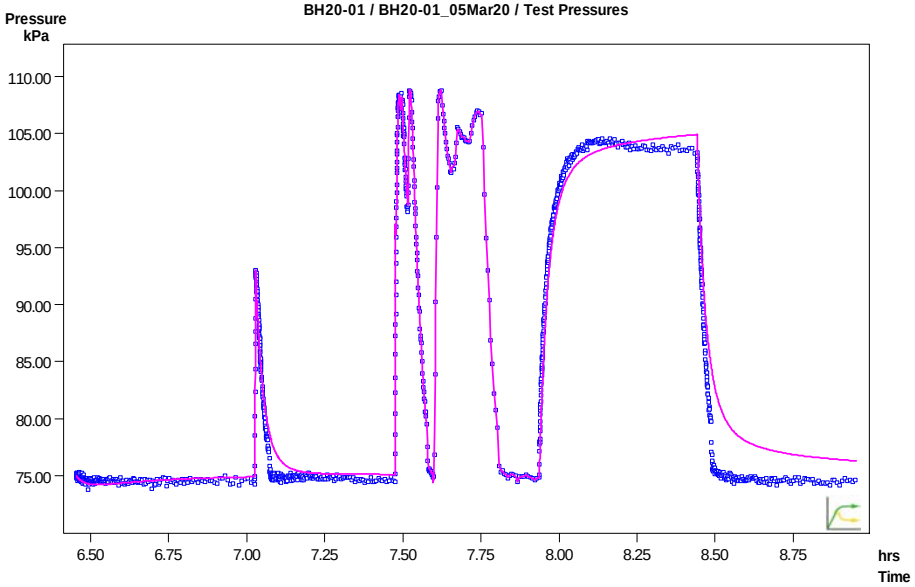
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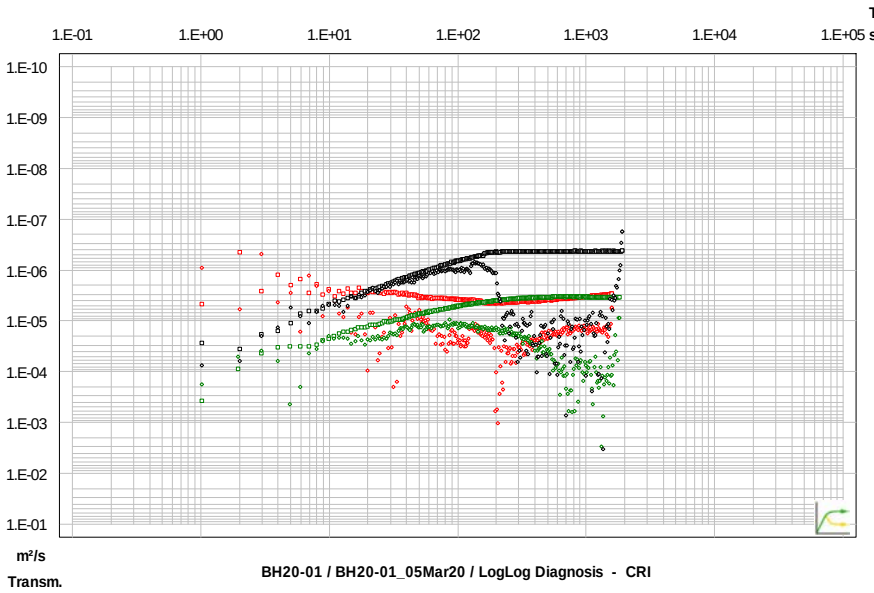
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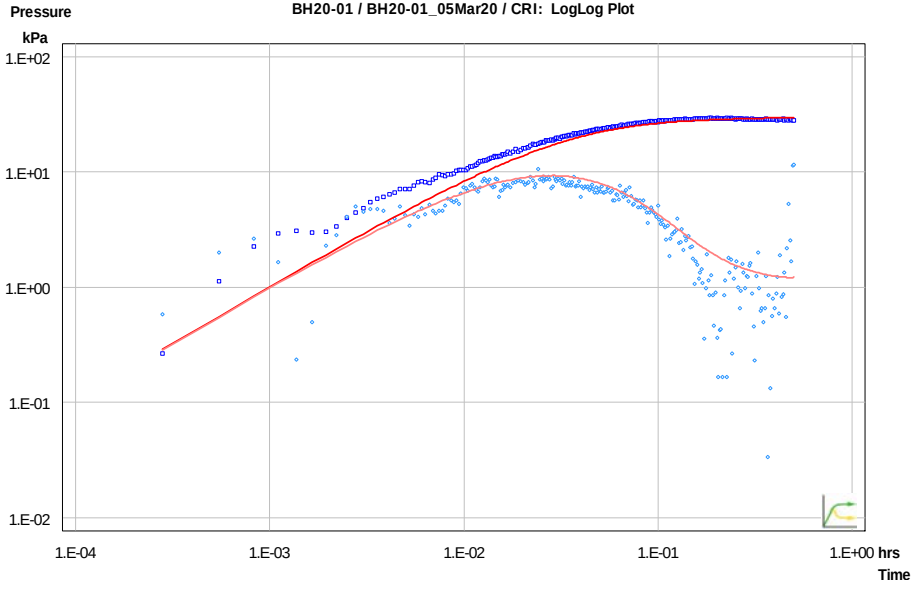
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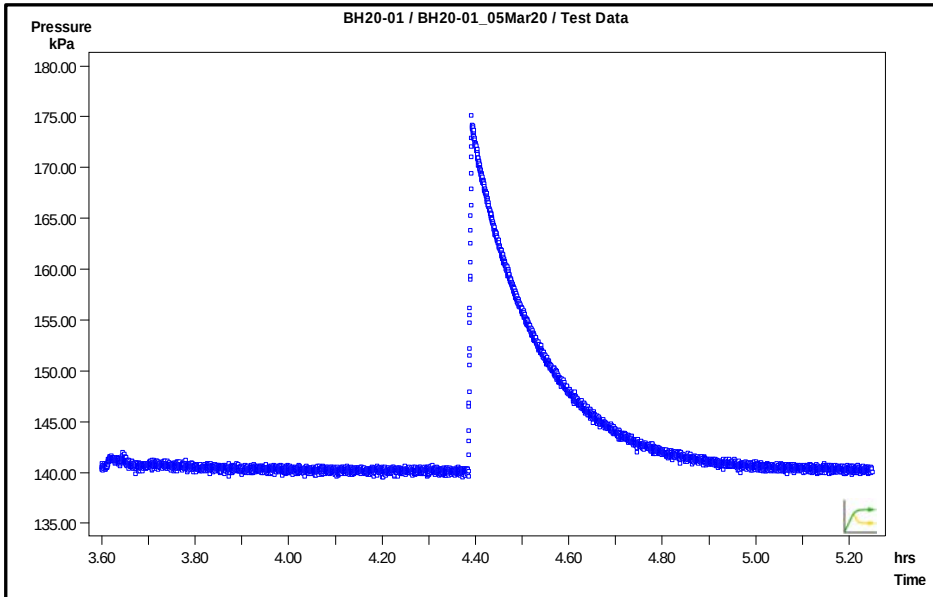
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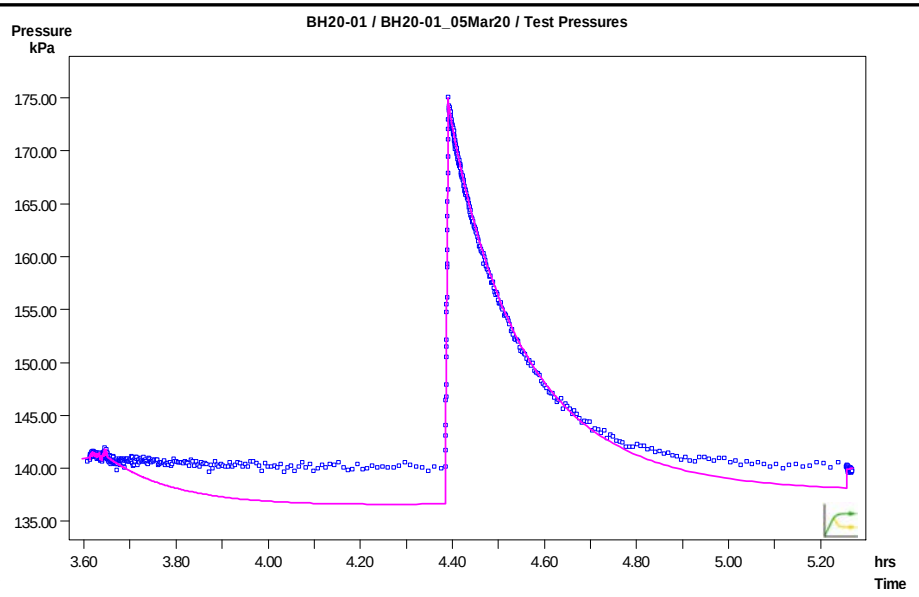
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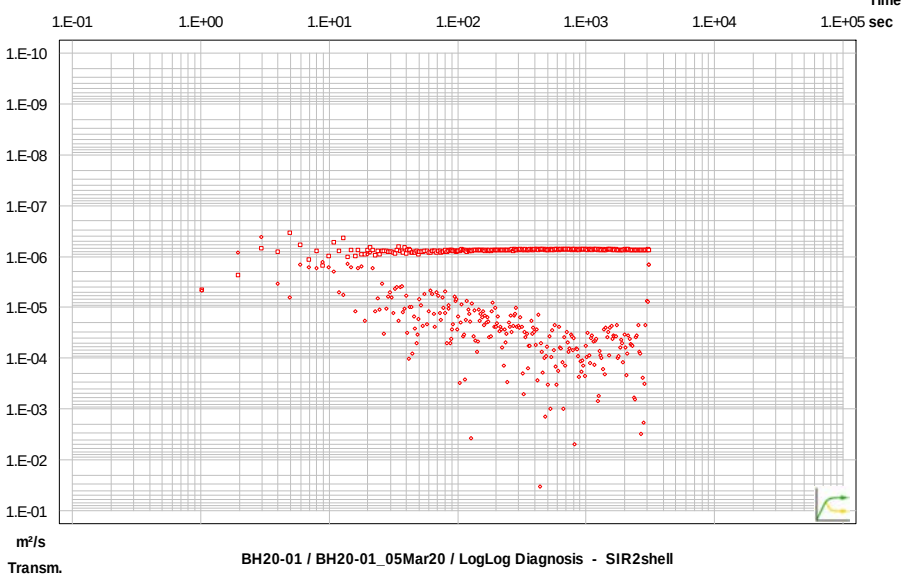
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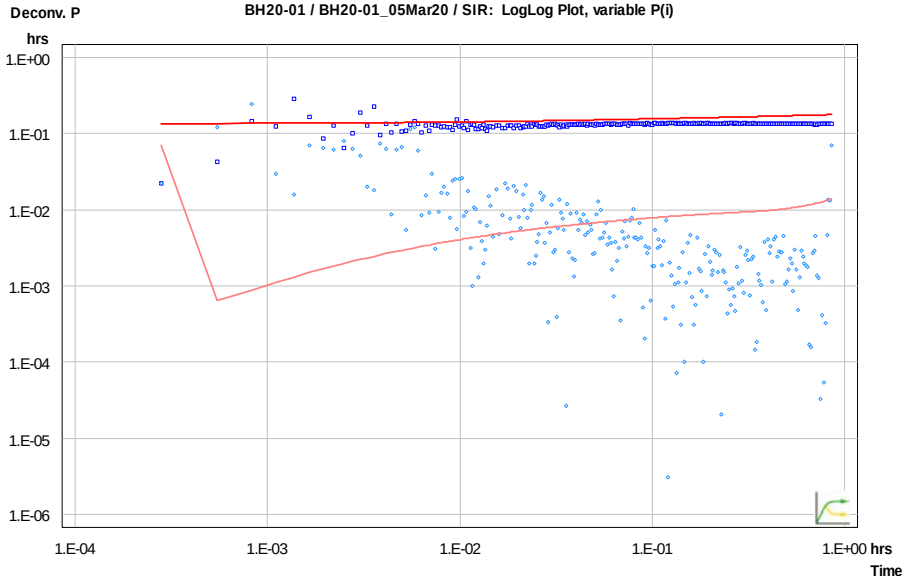
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Pressure Observation SI
Pressure Derivative SI
Pressure Observation CRI
Pressure Derivative CRI
Pressure Observation CRIR
Pressure Derivative CRIR

Pressure Observation Selected Phase
Pressure Derivative Selected Phase
Simulated Response
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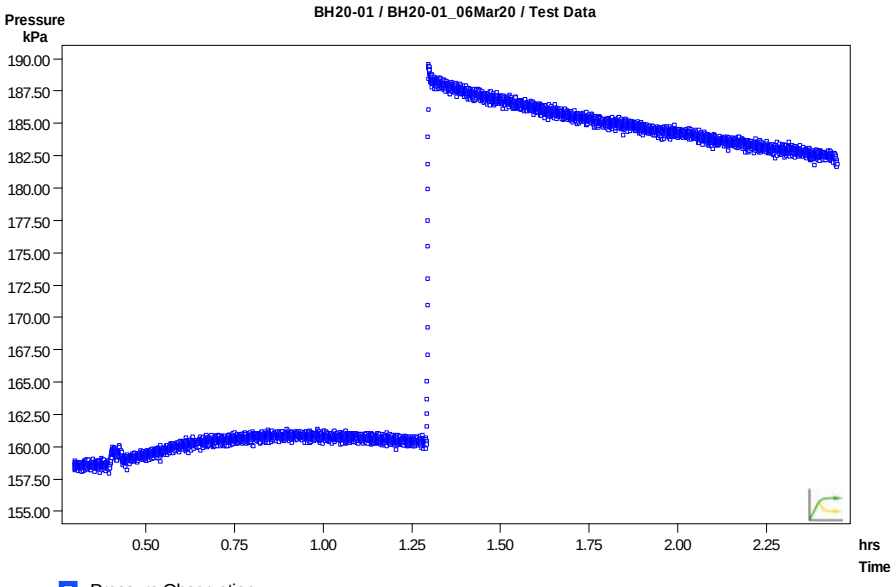
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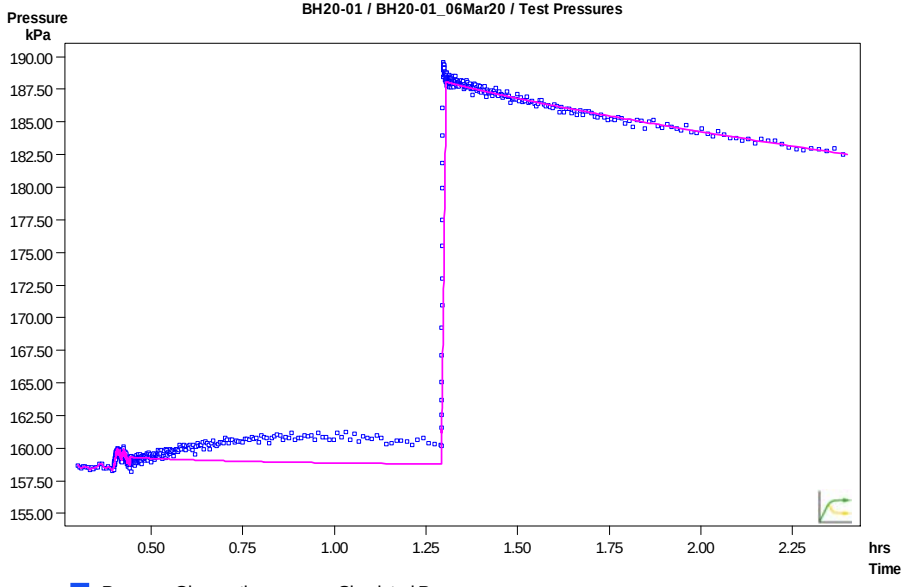
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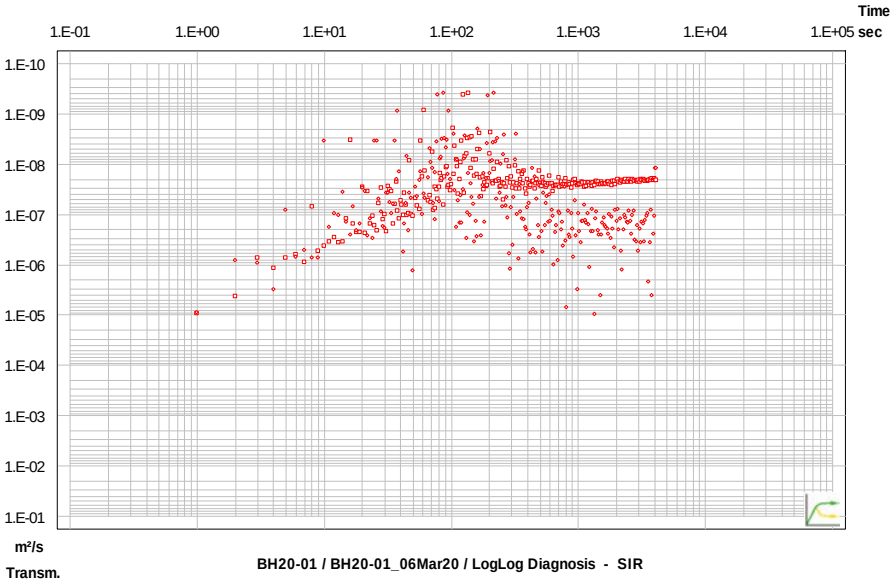
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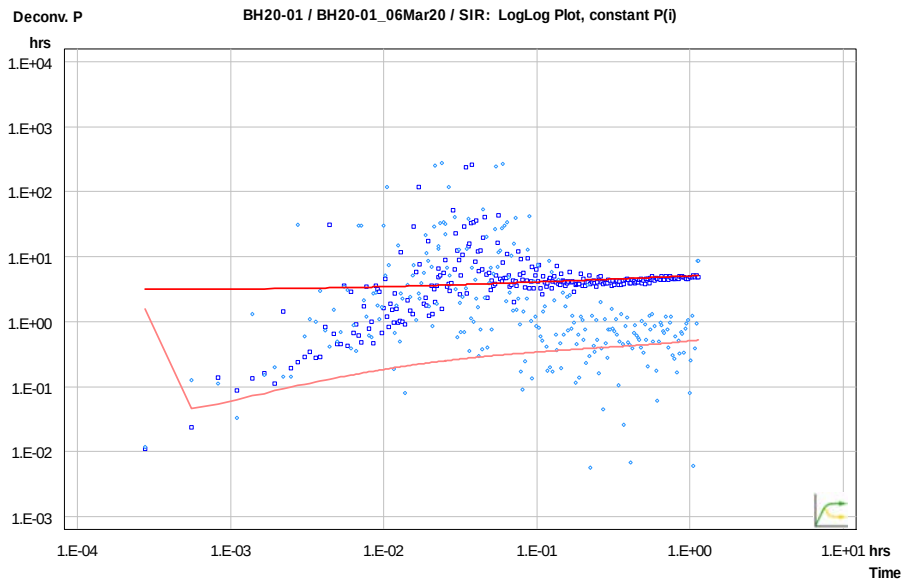
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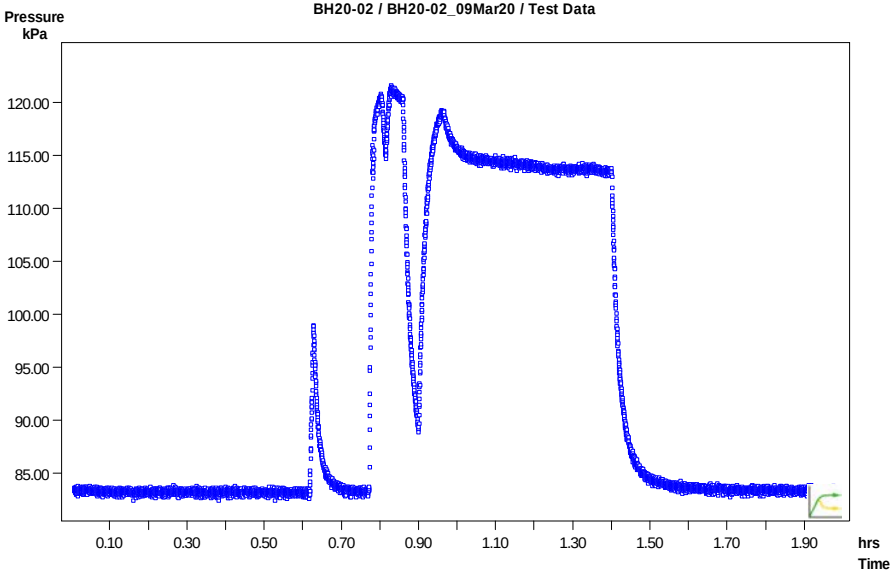
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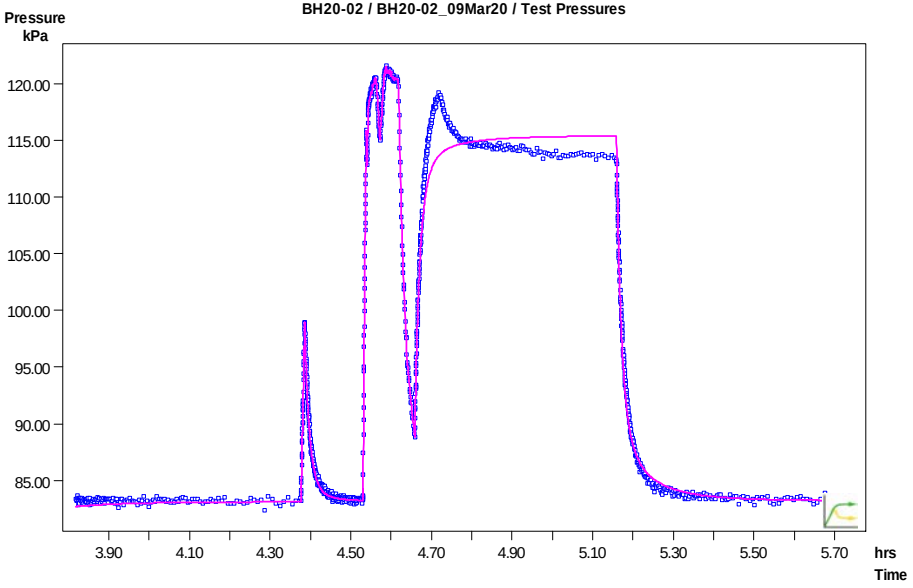
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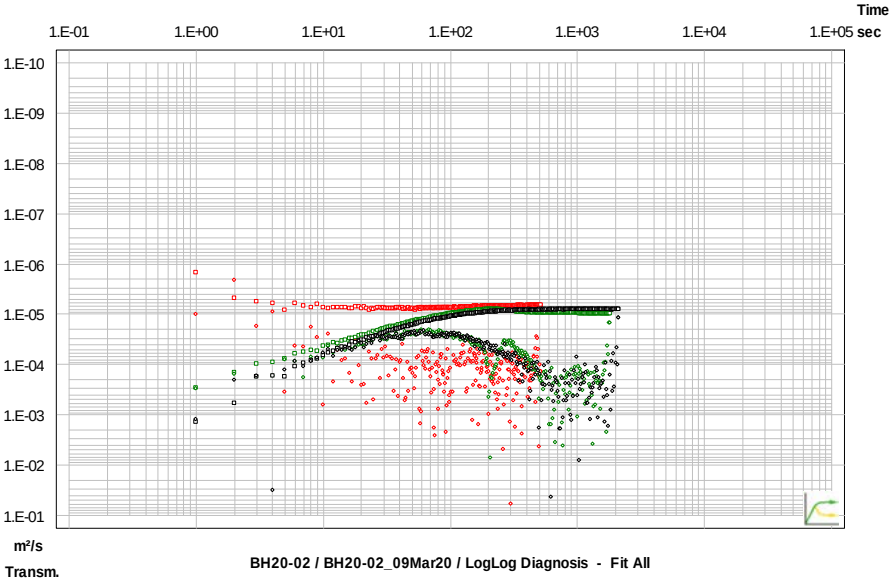
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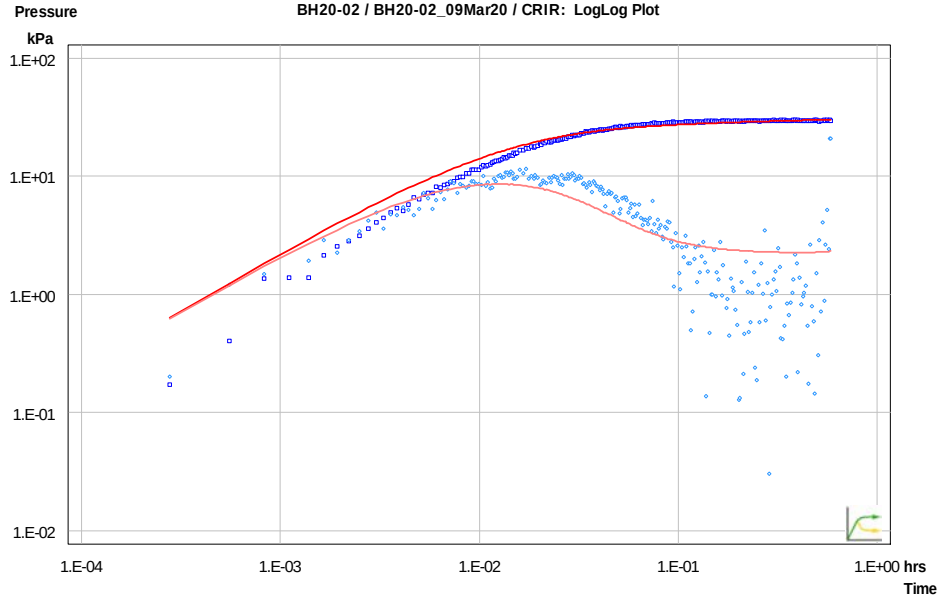
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-006

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

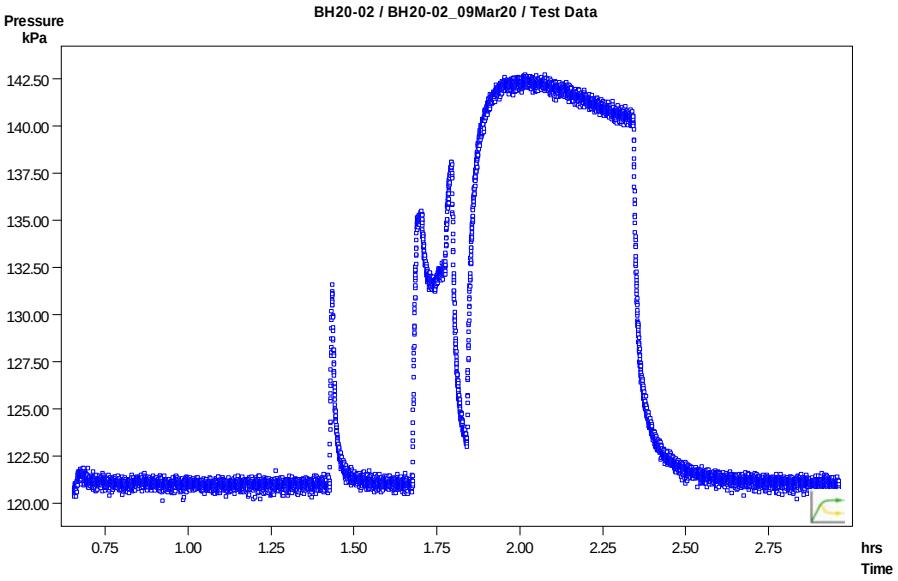
CALEDON PIT / QUARRY

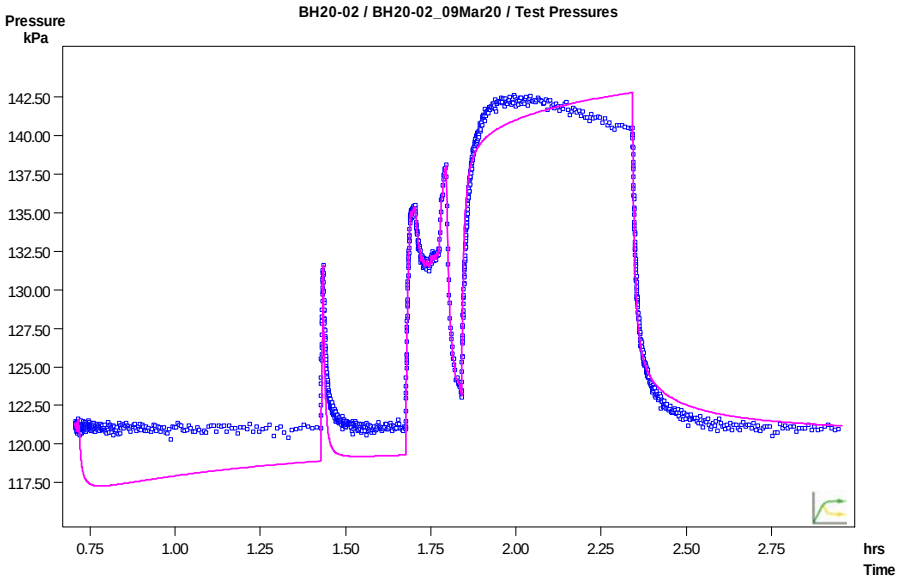
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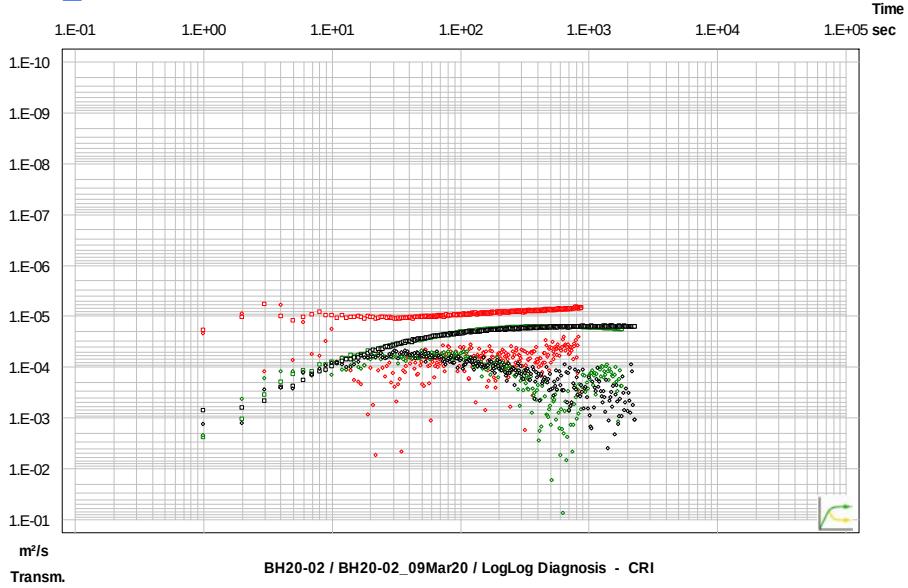
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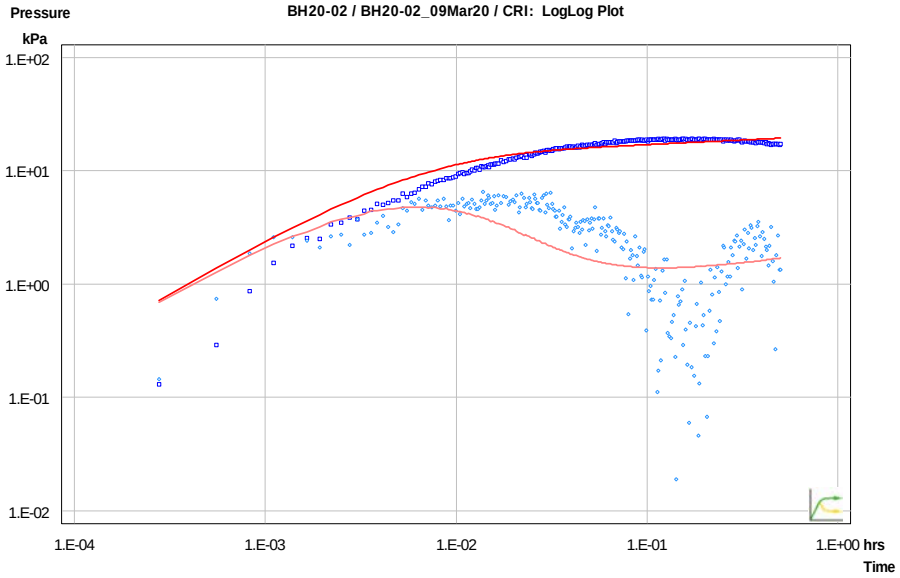
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-007

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

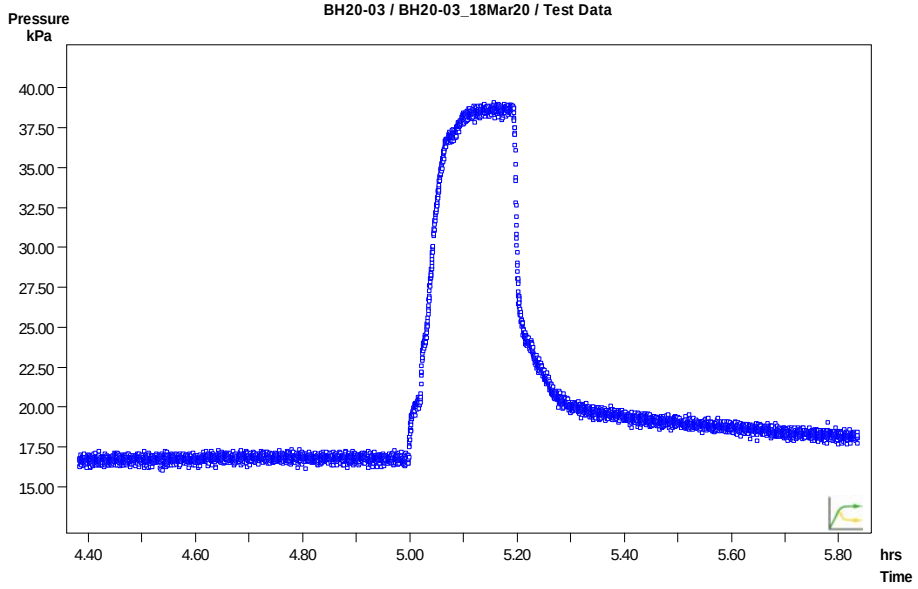
YYYY-MM-DD	2022-02-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

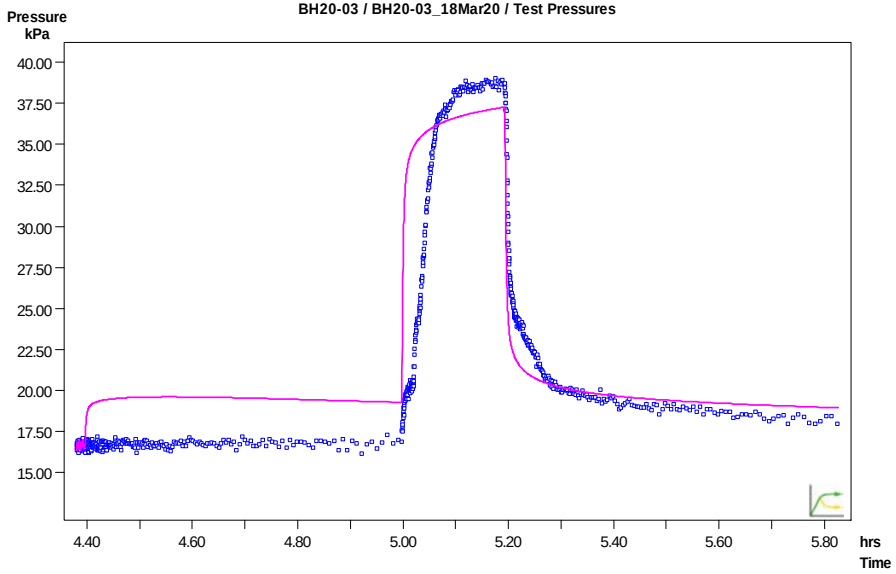
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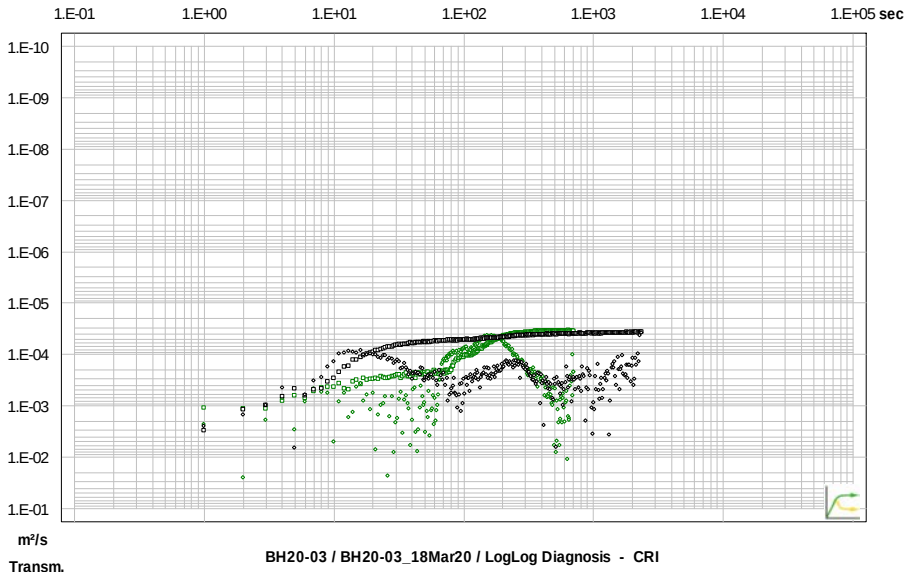
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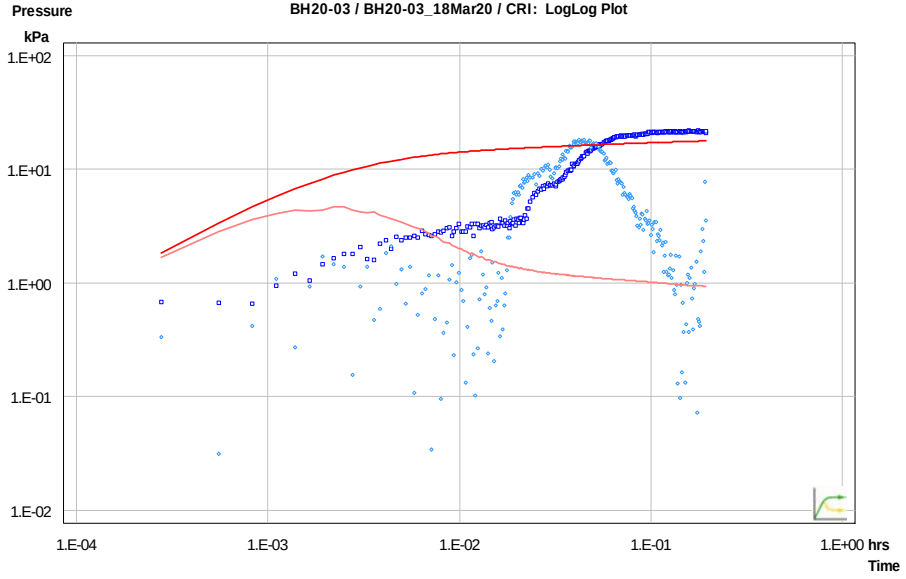
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-008

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

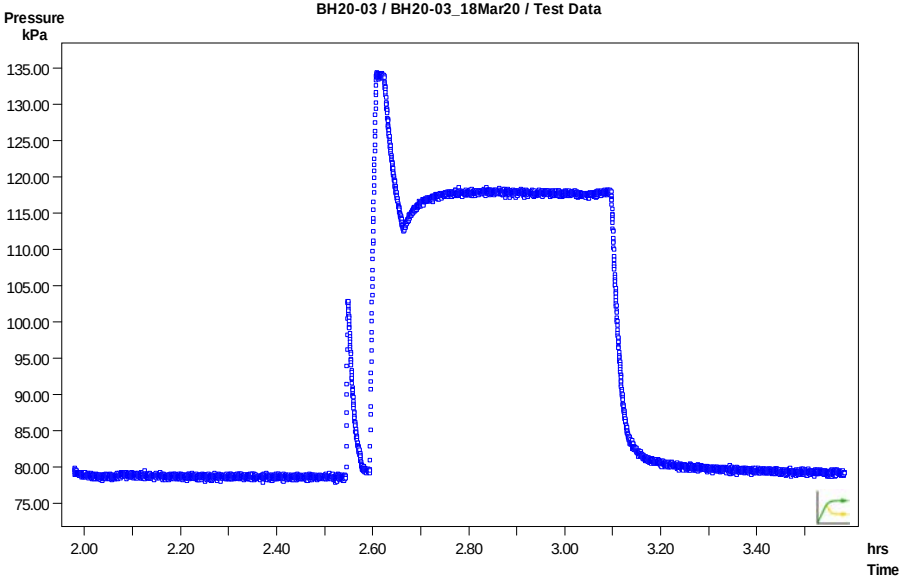
CALEDON PIT / QUARRY

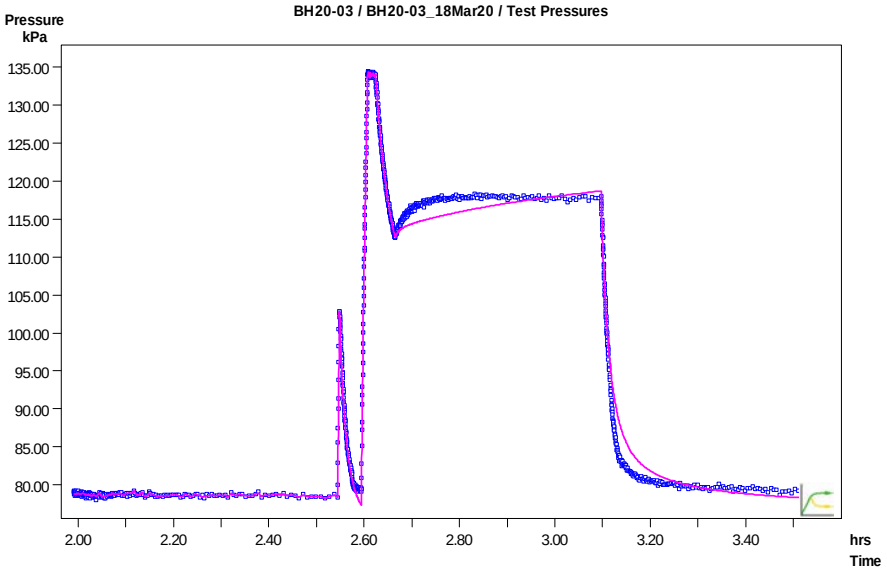
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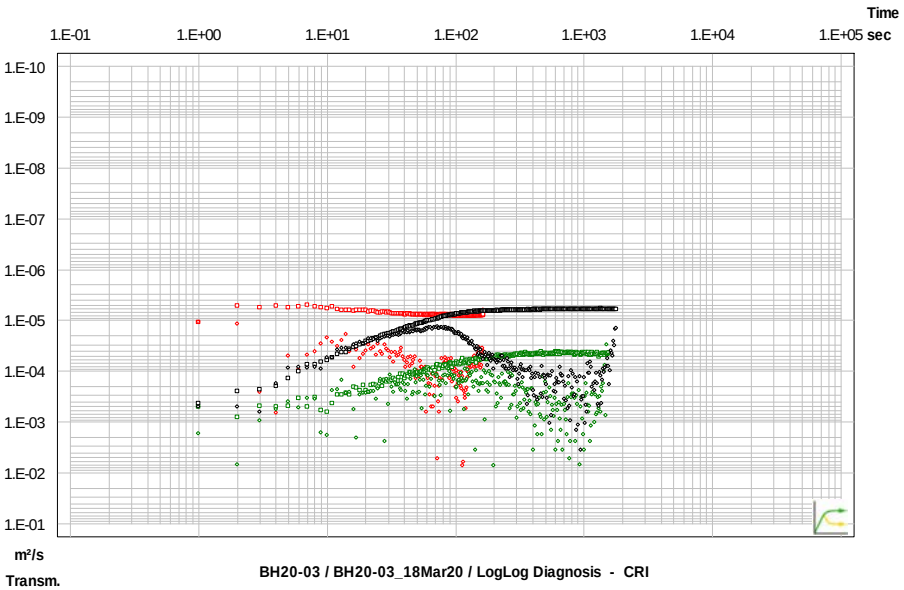
PACKER TEST RESULTS BH20-03 UPPER INTERVAL (4.9 to 11.6 mbgs)

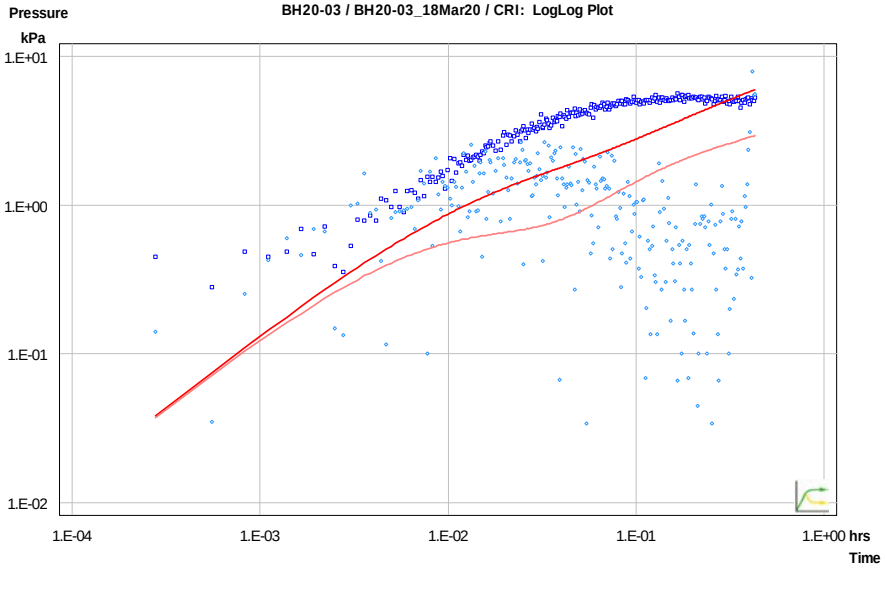
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-009

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-17
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

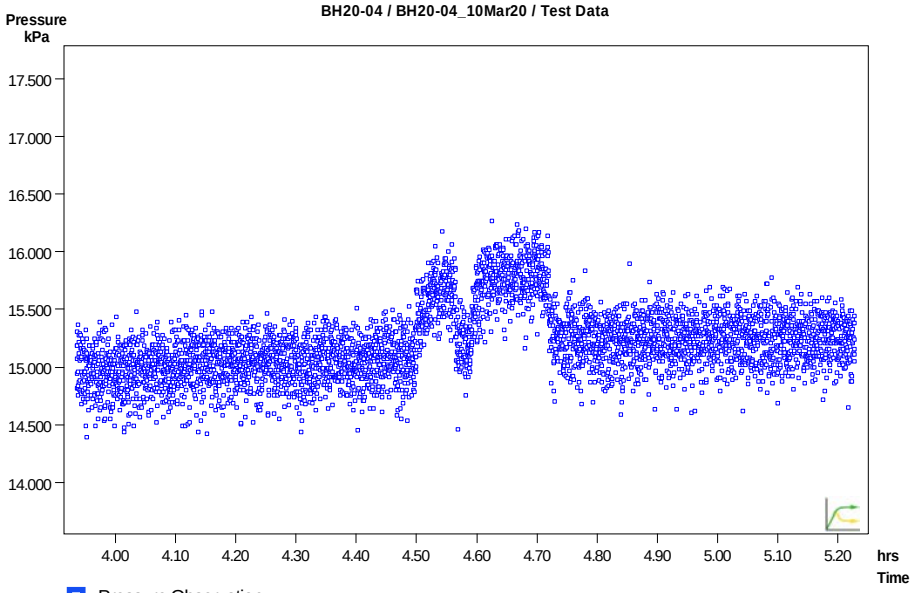
CALEDON PIT / QUARRY

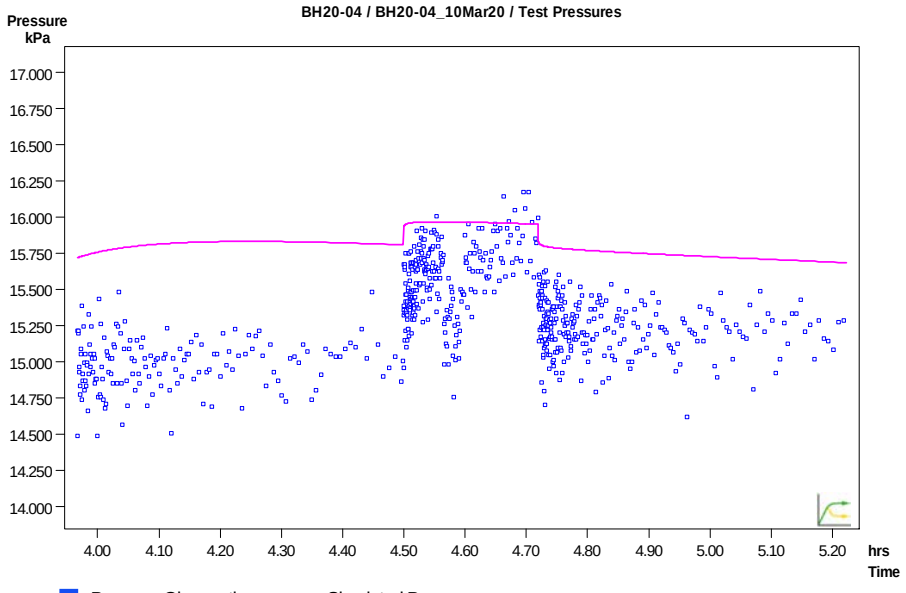
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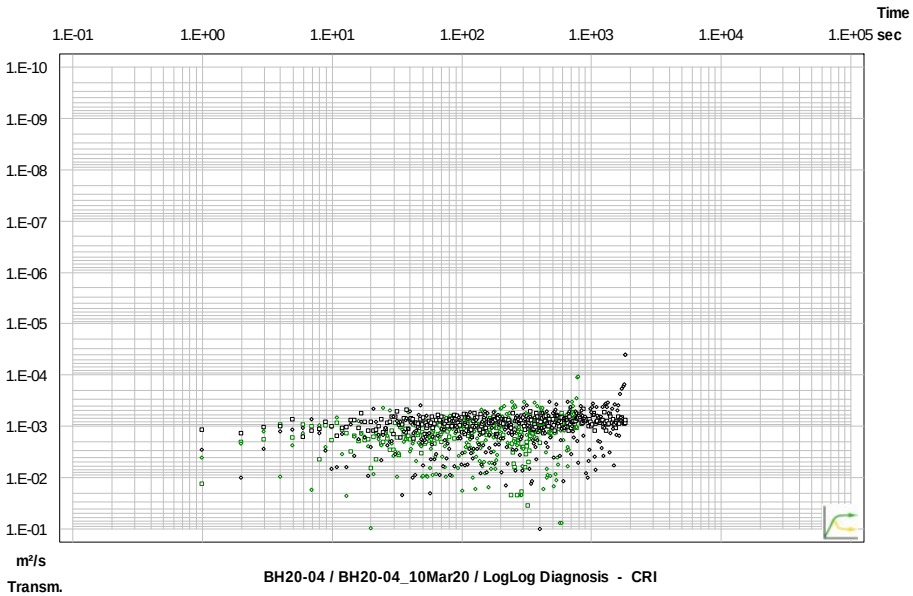
PACKER TEST RESULTS BH20-03 LOWER INTERVAL (10.1 to 16.8 mbgs)

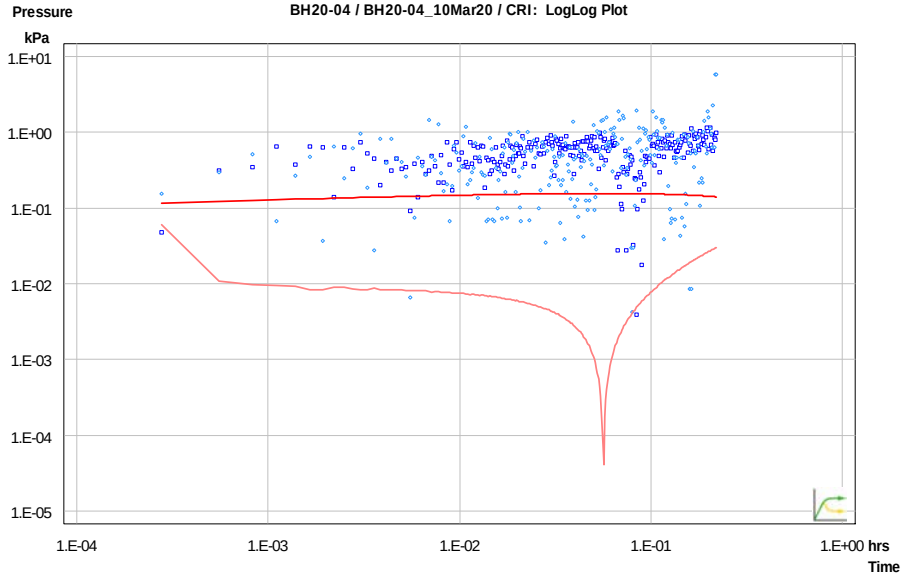
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-010

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0









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CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

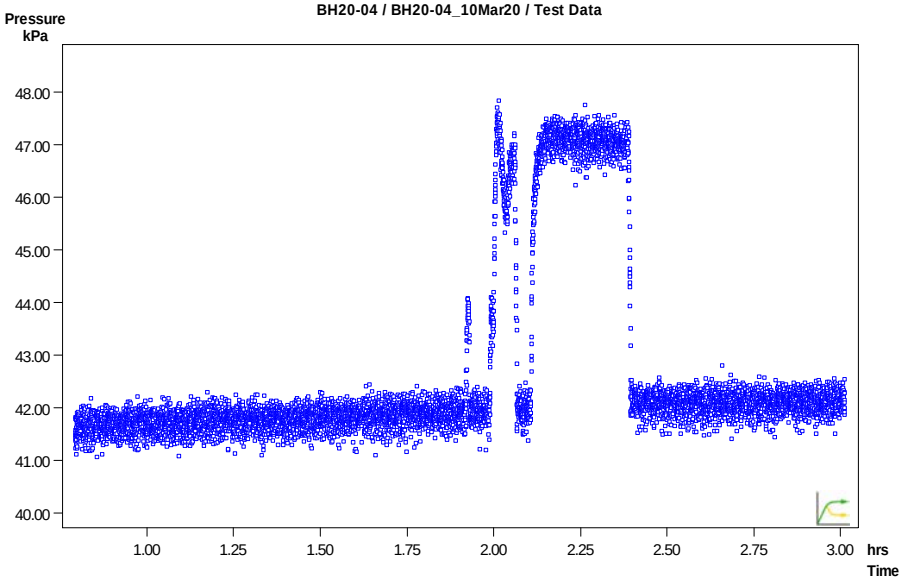
CALEDON PIT / QUARRY

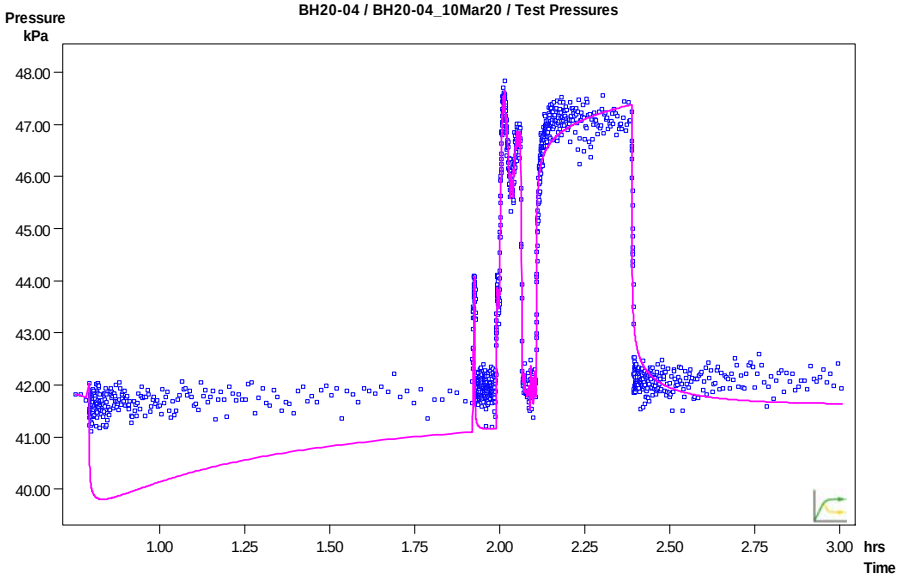
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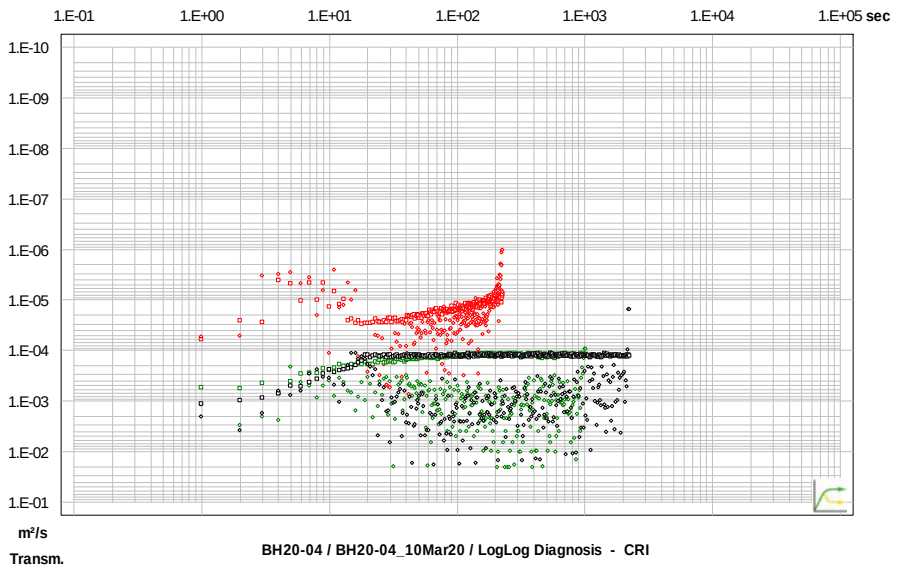
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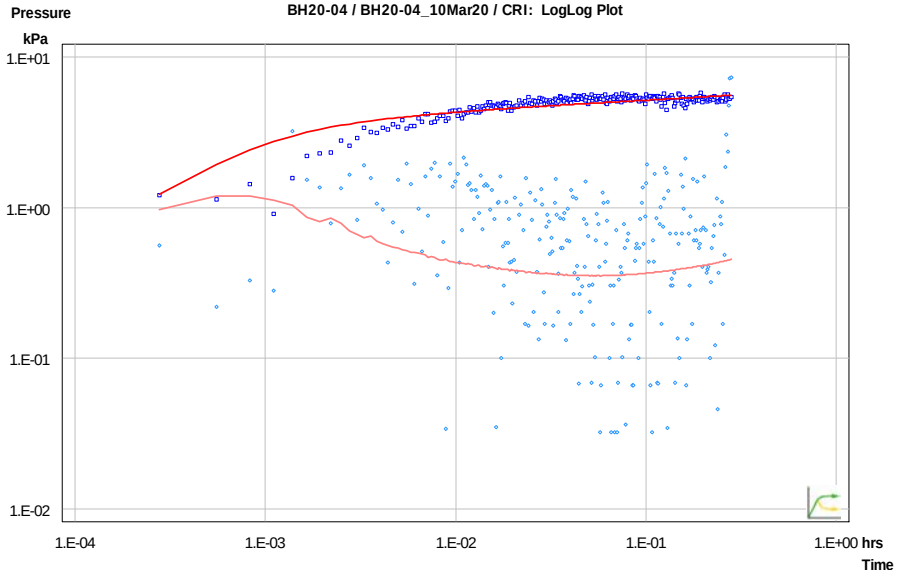
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-011

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0









Pressure Observation SI
Pressure Derivative SI
Pressure Observation CRI
Pressure Derivative CRI
Pressure Observation CRIR
Pressure Derivative CRIR

Pressure Observation Selected Phase
Pressure Derivative Selected Phase
Simulated Response
Simulated Response Derivative

CLIENT
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PROJECT
CALEDON PIT / QUARRY

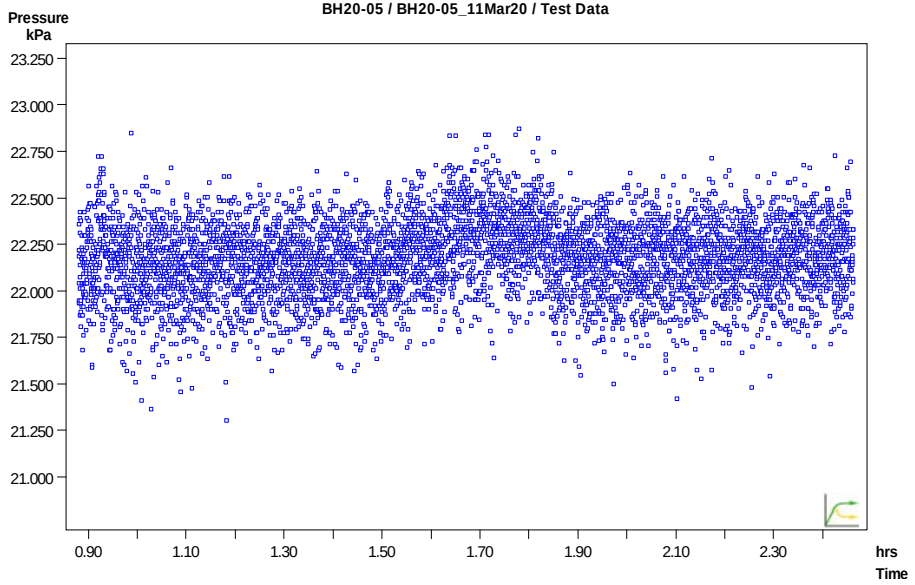
CONSULTANT
GOLDER
MEMBER OF WSP

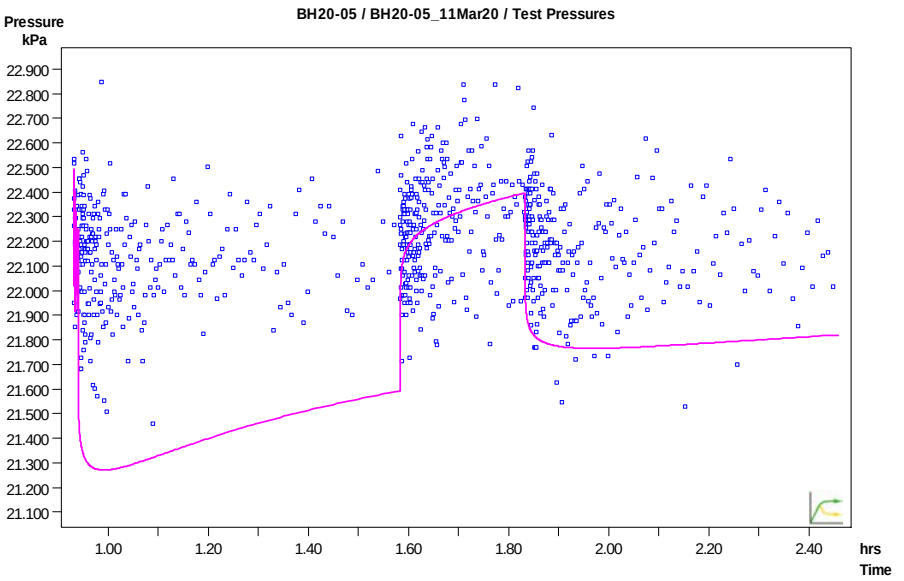
YYYY-MM-DD	2022-02-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

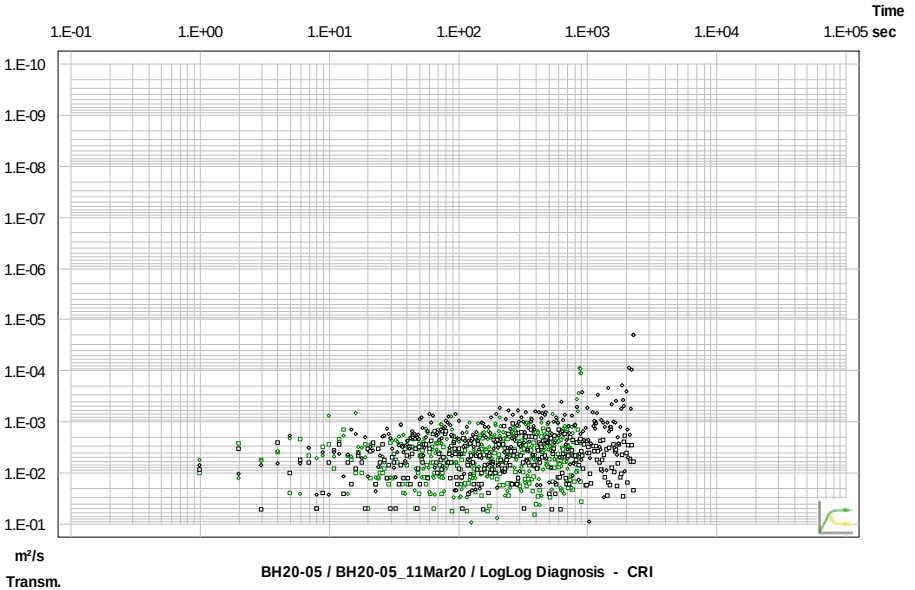
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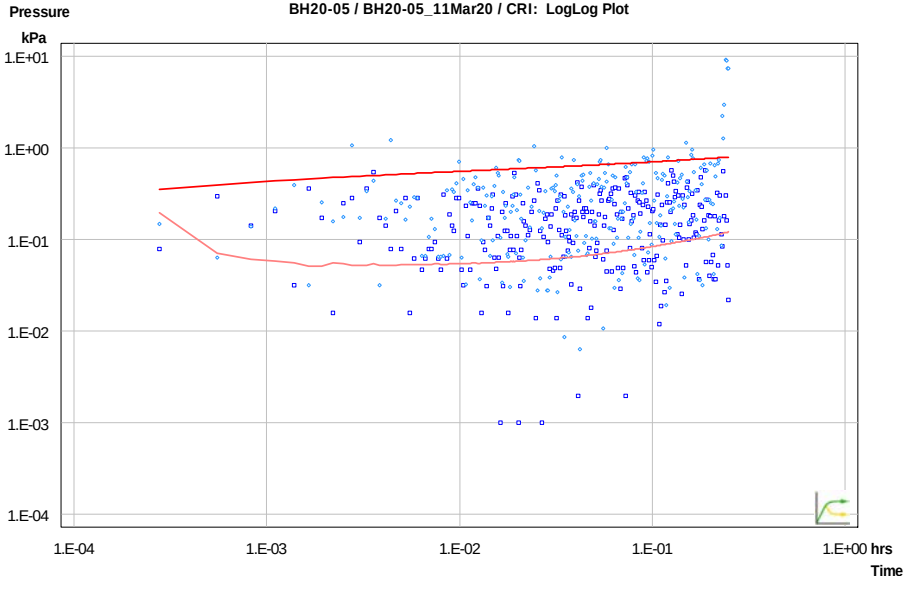
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-012

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

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CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

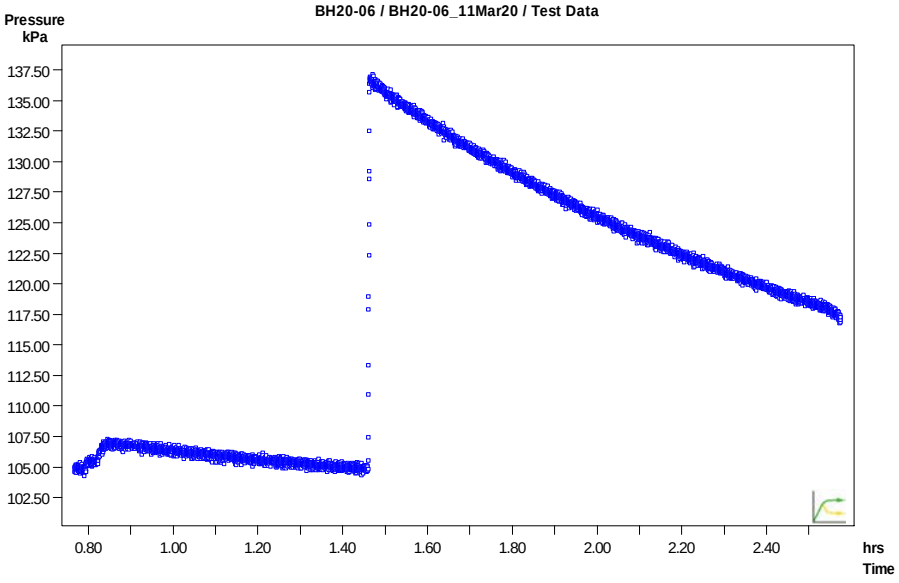
CALEDON PIT / QUARRY

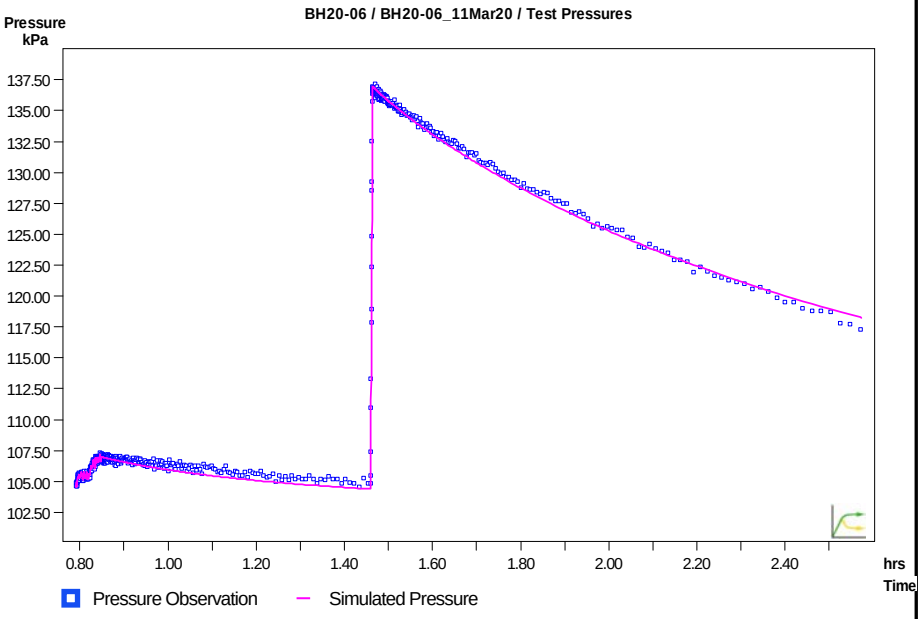
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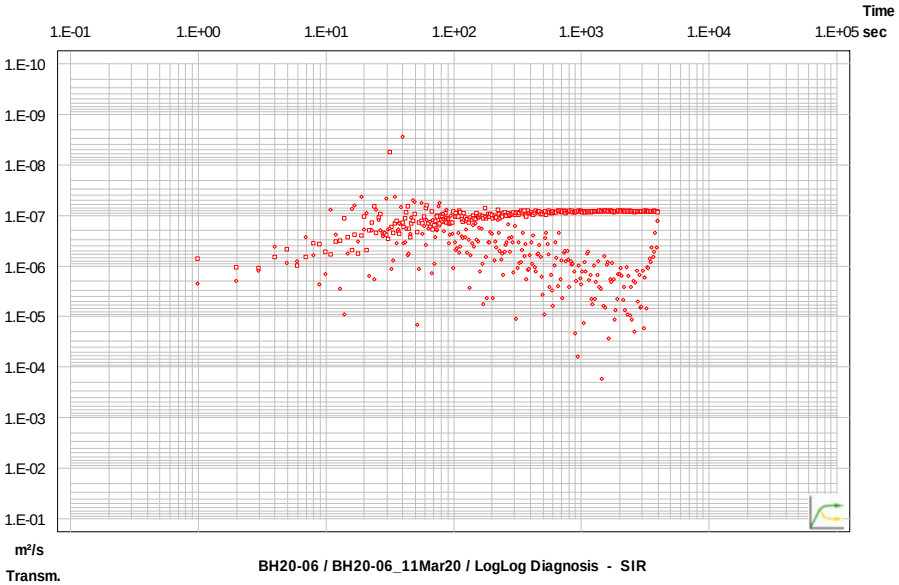
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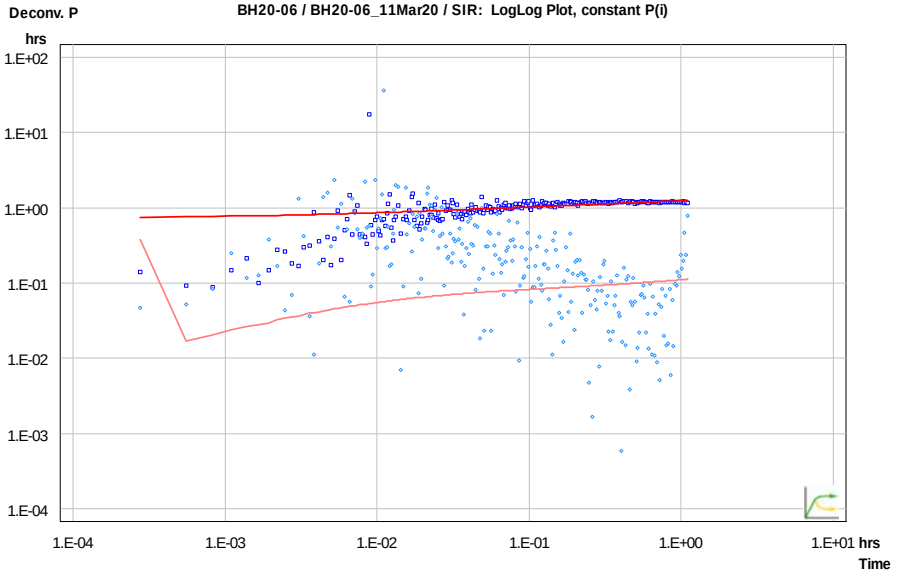
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-013

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

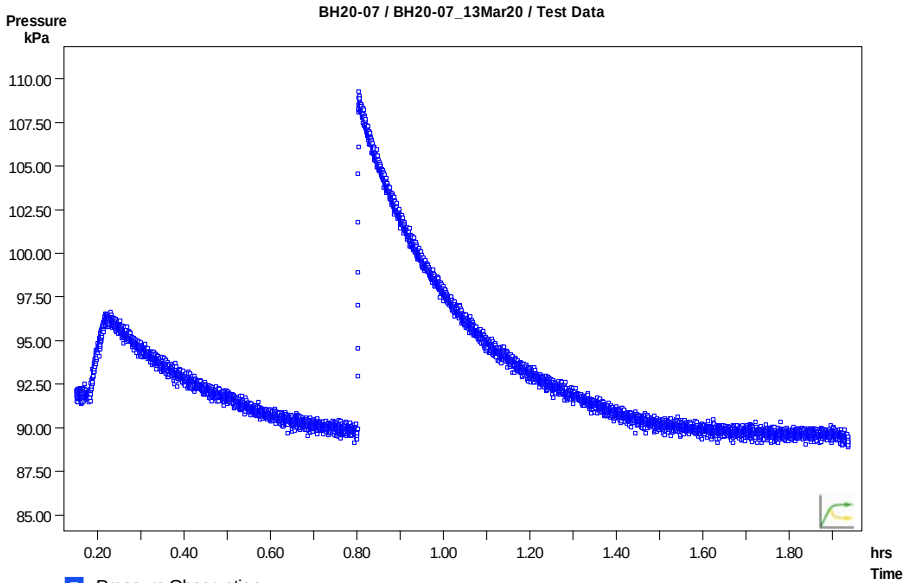
CALEDON PIT / QUARRY

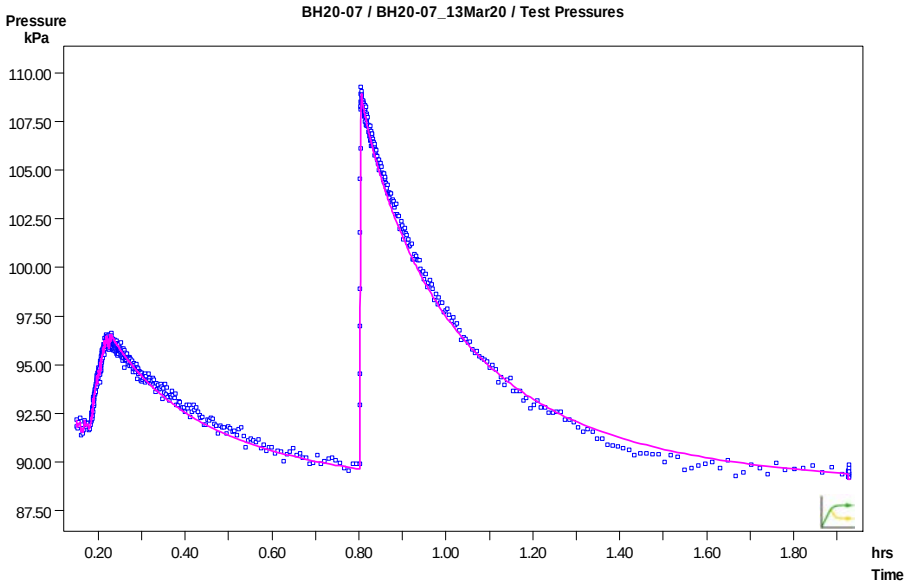
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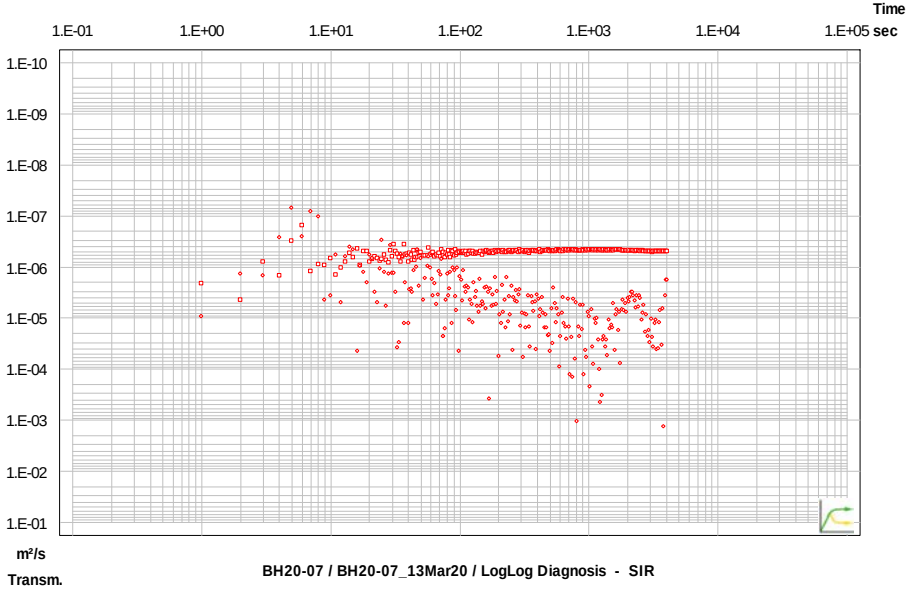
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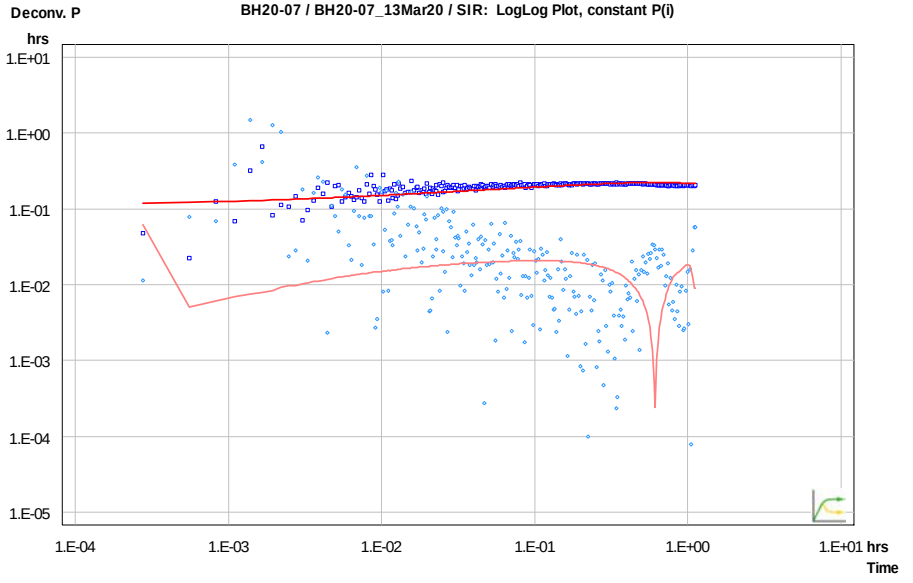
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-014

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
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CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

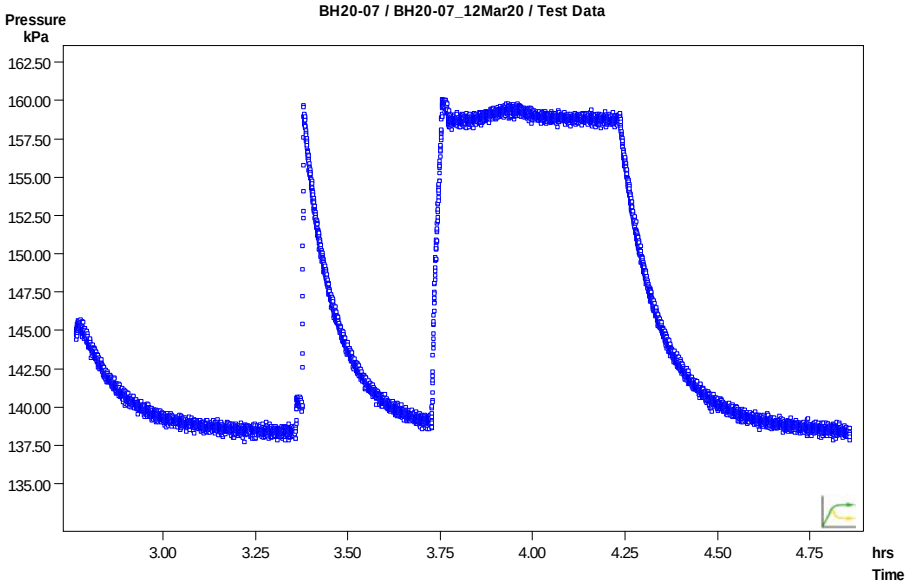
CALEDON PIT / QUARRY

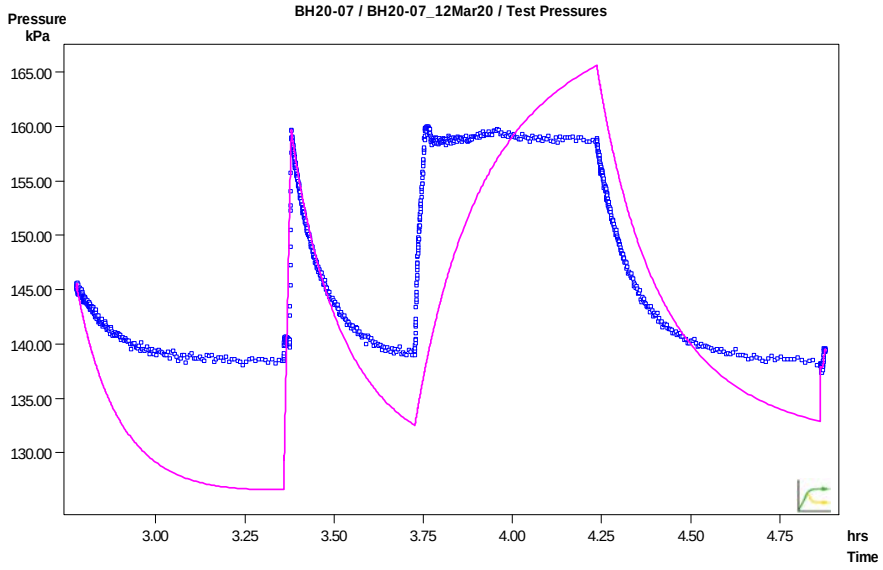
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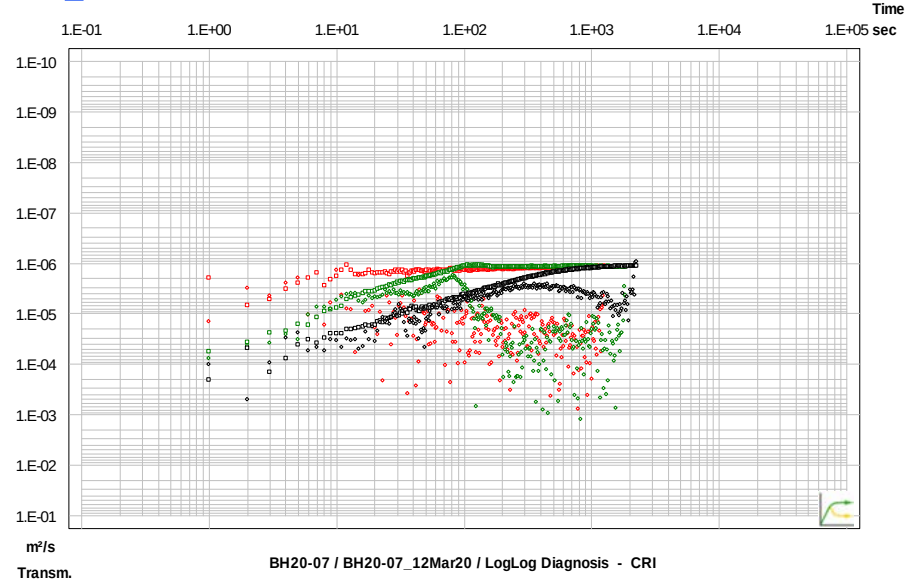
PACKER TEST RESULTS BH20-07 UPPER INTERVAL (4.6 to 11.3 mbgs)

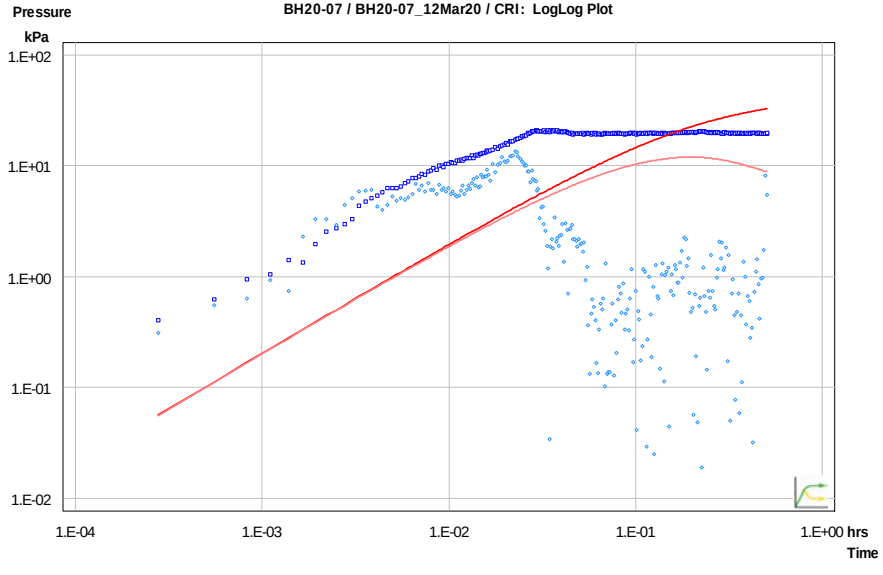
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-015

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

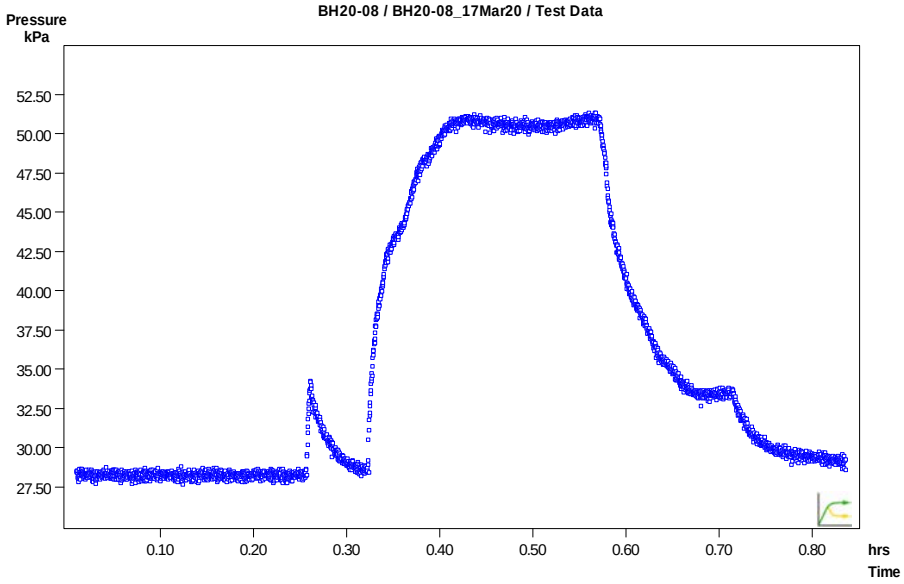
CALEDON PIT / QUARRY

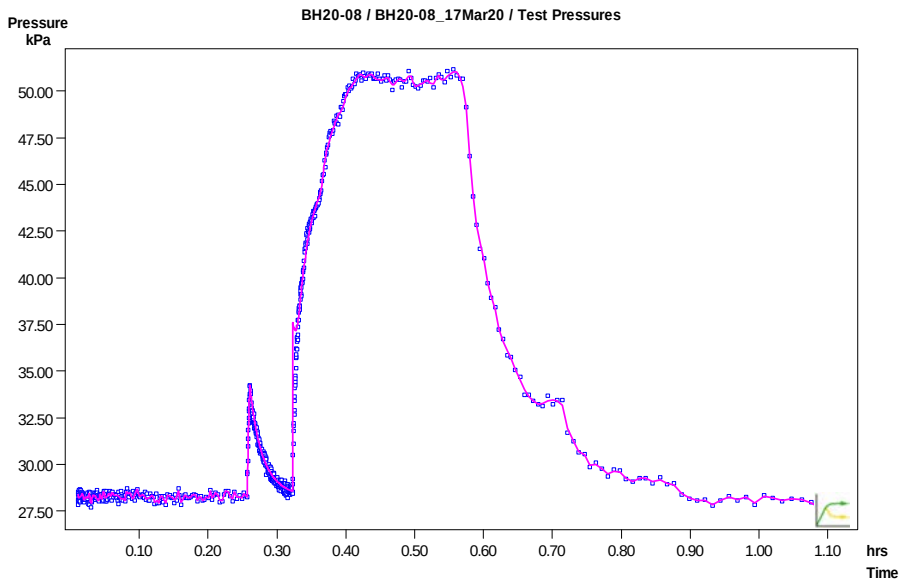
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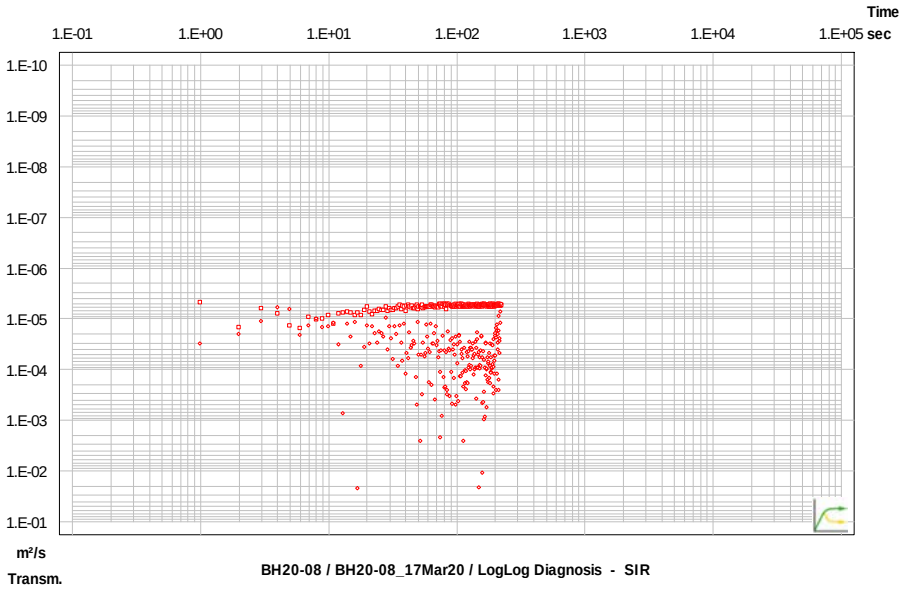
PACKER TEST RESULTS BH20-07 LOWER INTERVAL (11.1 to 16.1 mbgs)

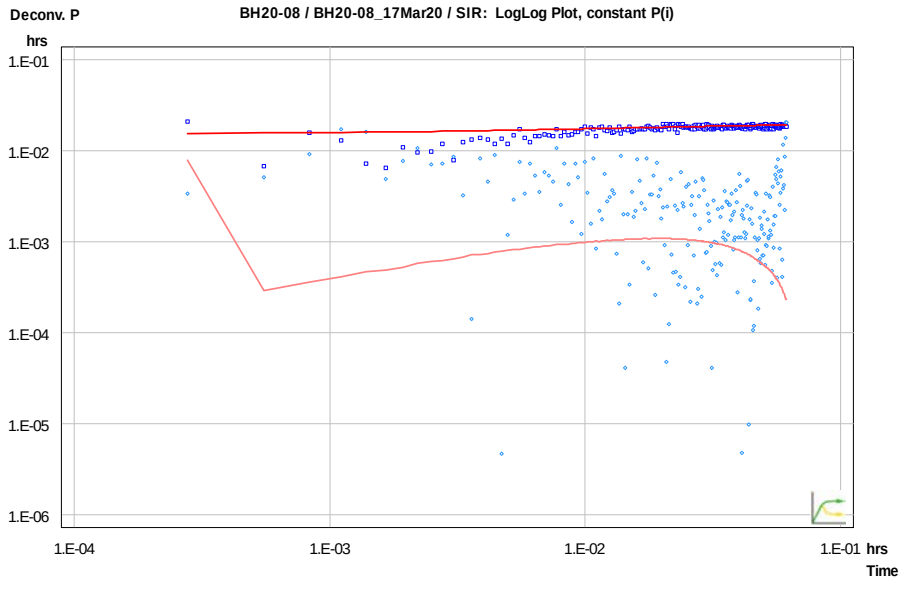
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-016

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

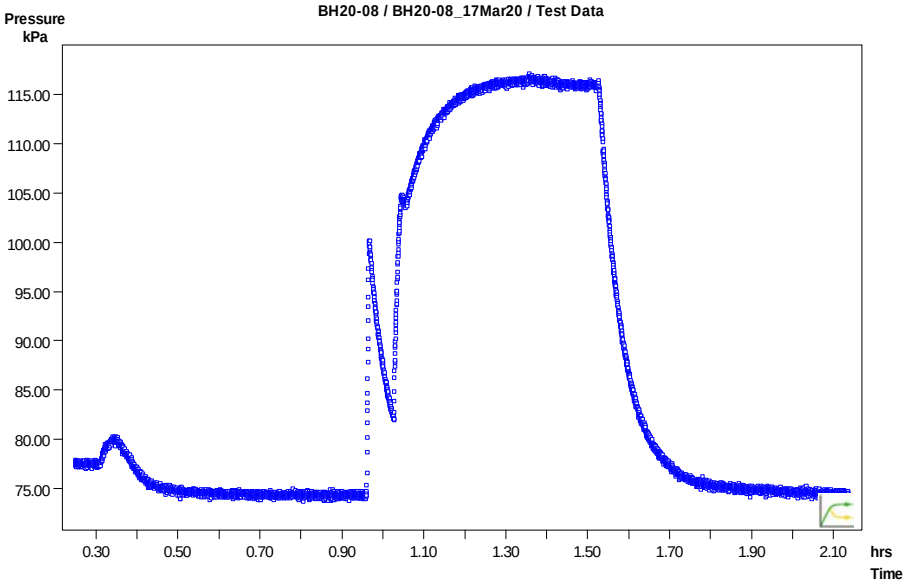
YYYY-MM-DD	2022-02-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

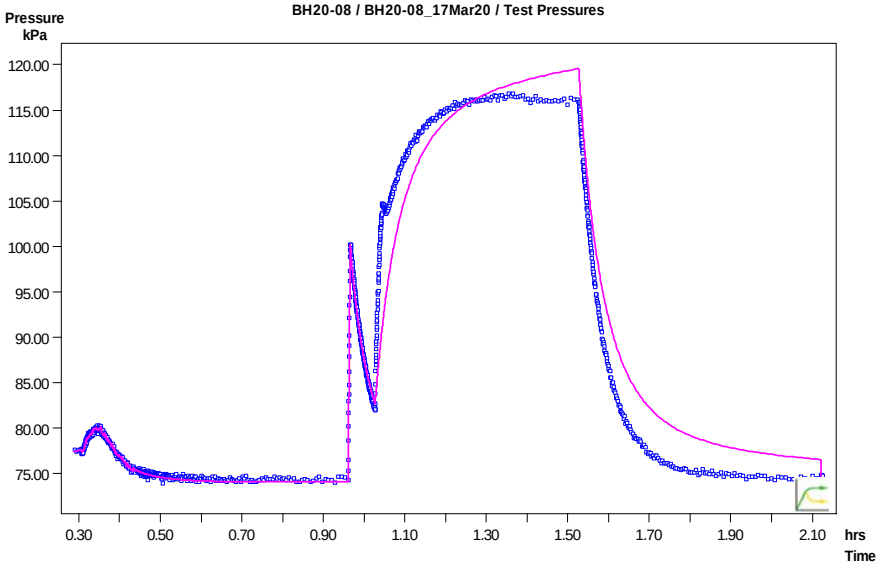
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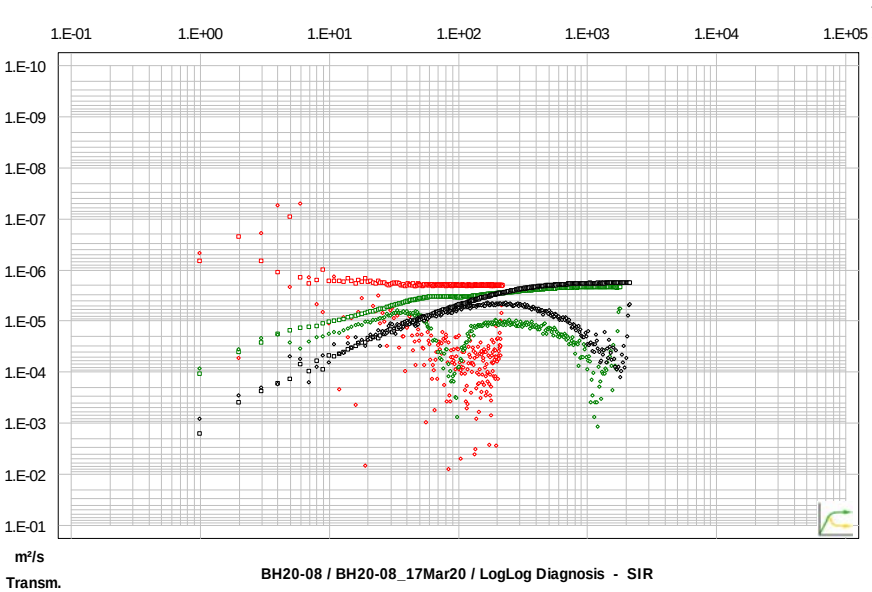
PACKER TEST RESULTS BH20-08 UPPER INTERVAL (7.0 to 10.5 mbgs)

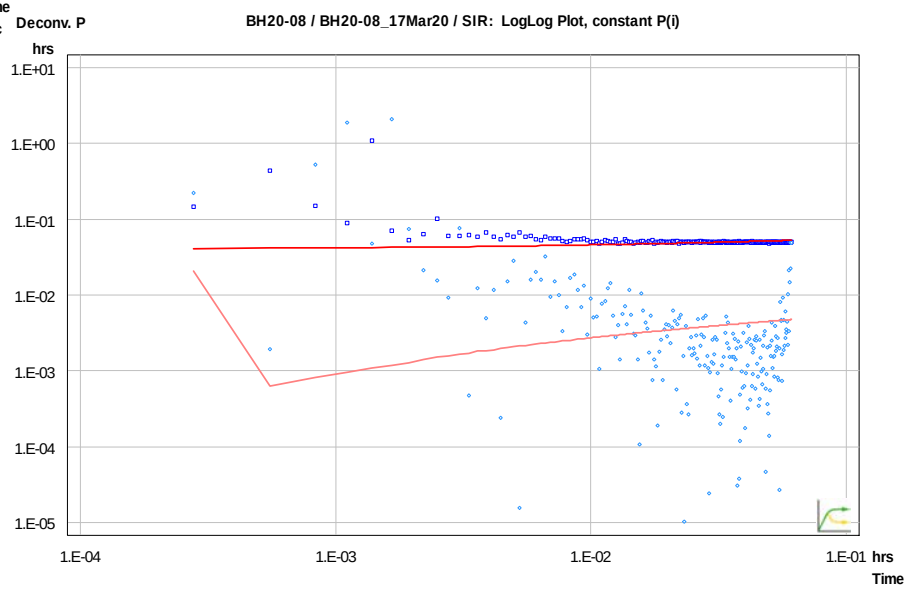
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-017

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

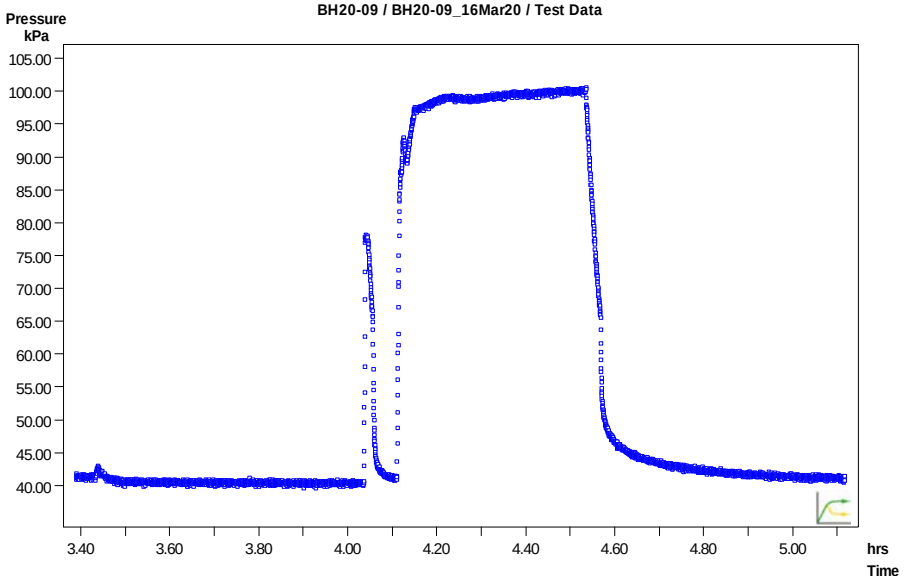
YYYY-MM-DD	2022-02-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

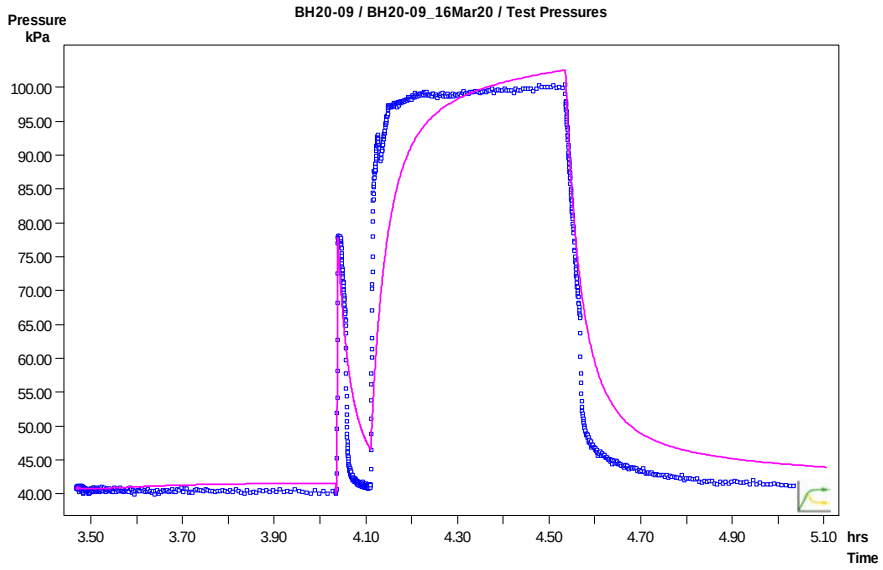
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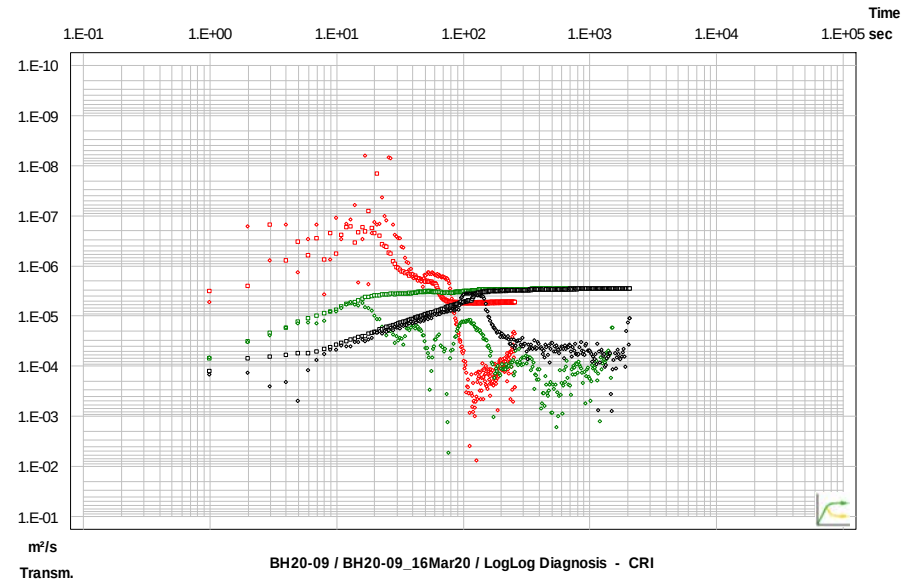
PACKER TEST RESULTS BH20-08 LOWER INTERVAL (10.5 to 15.6 mbgs)

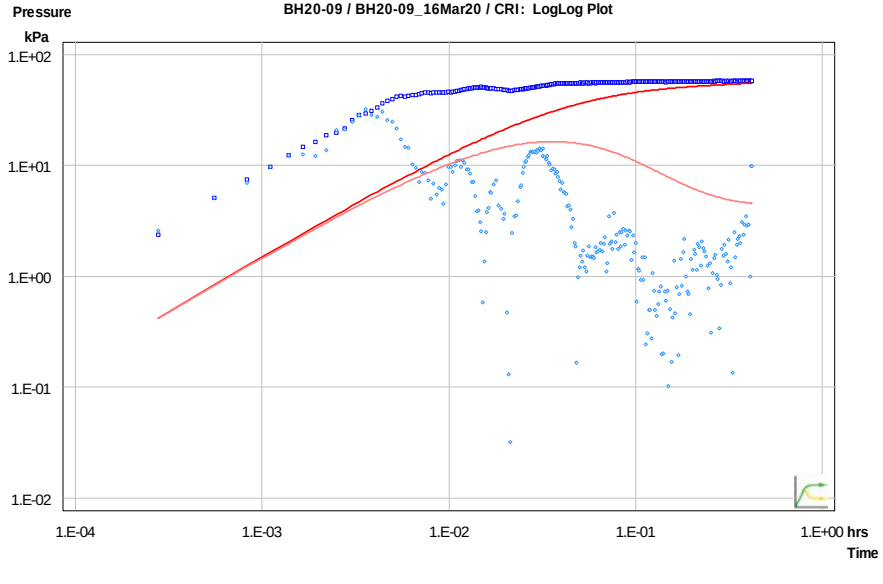
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-018

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

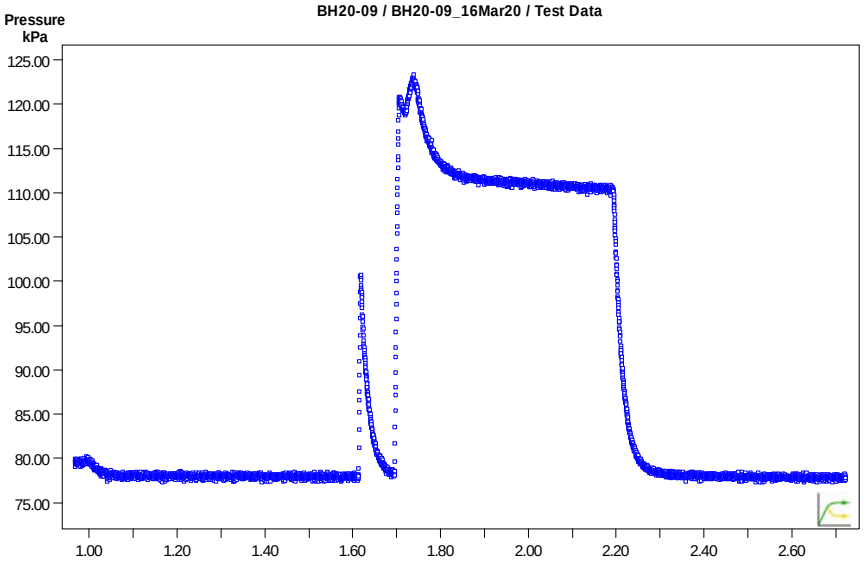
CALEDON PIT / QUARRY

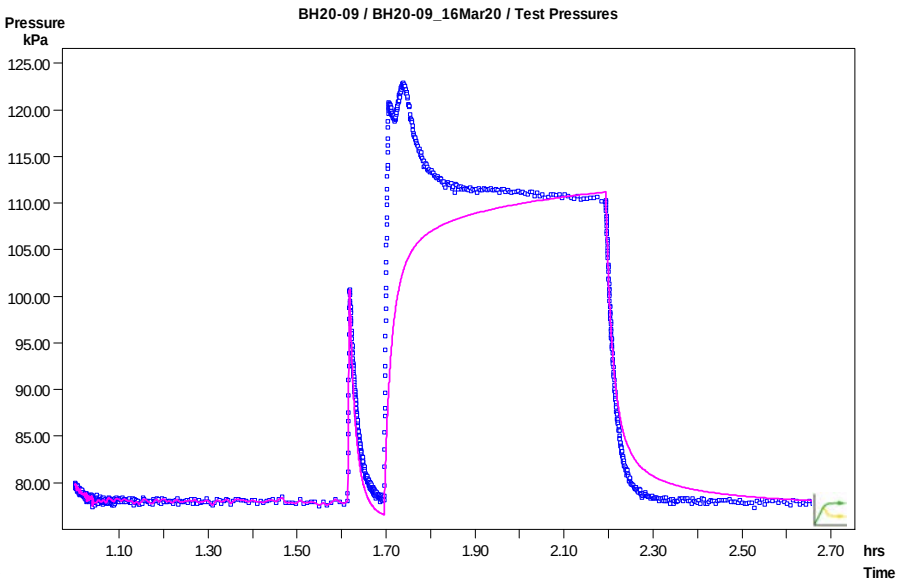
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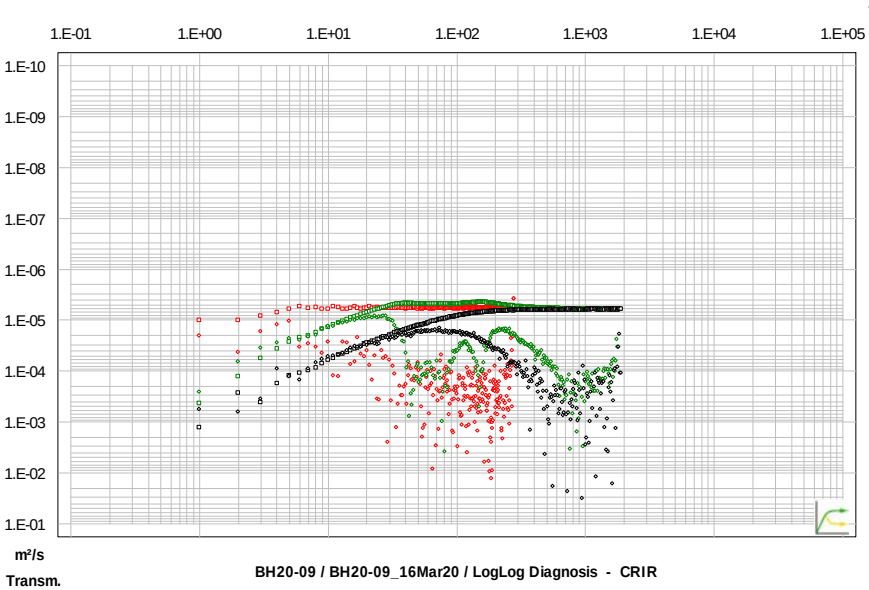
PACKER TEST RESULTS BH20-09 UPPER INTERVAL (5.3 to 10.4 mbgs)

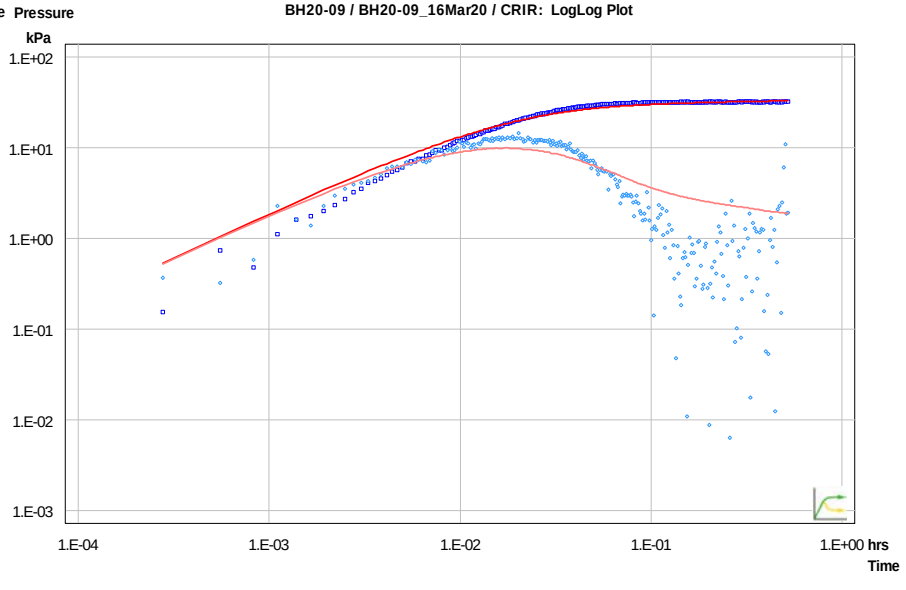
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-019

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

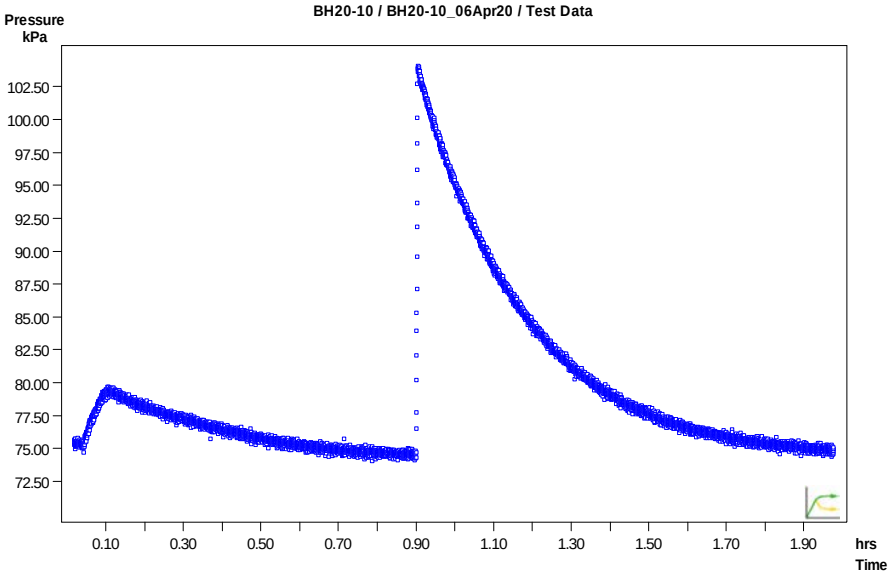
YYYY-MM-DD	2022-02-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

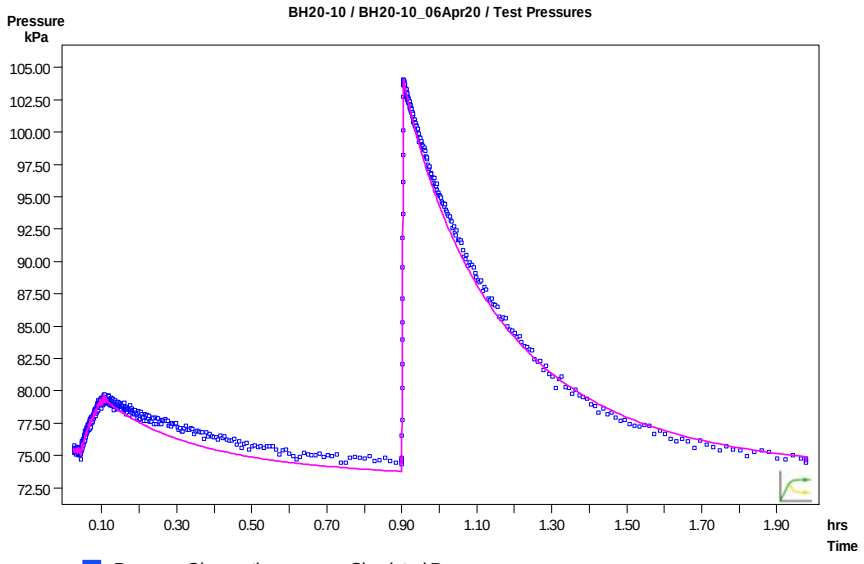
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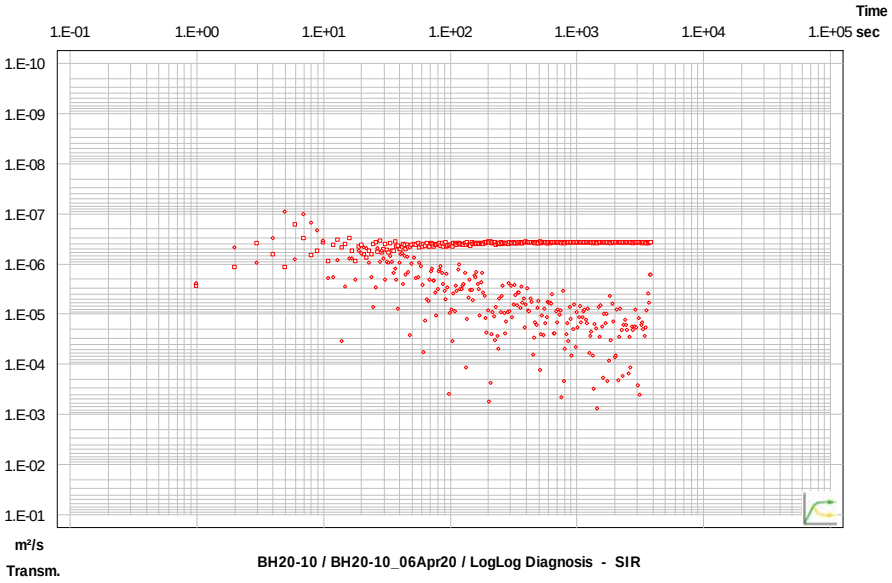
PACKER TEST RESULTS BH20-09 LOWER INTERVAL (9.2 to 14.2 mbgs)

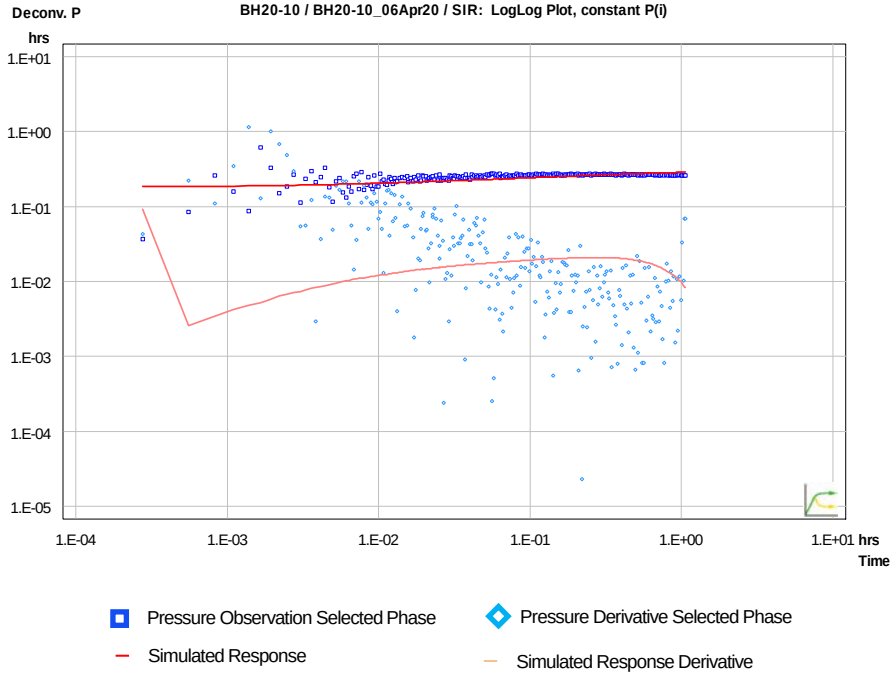
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-020

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
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CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

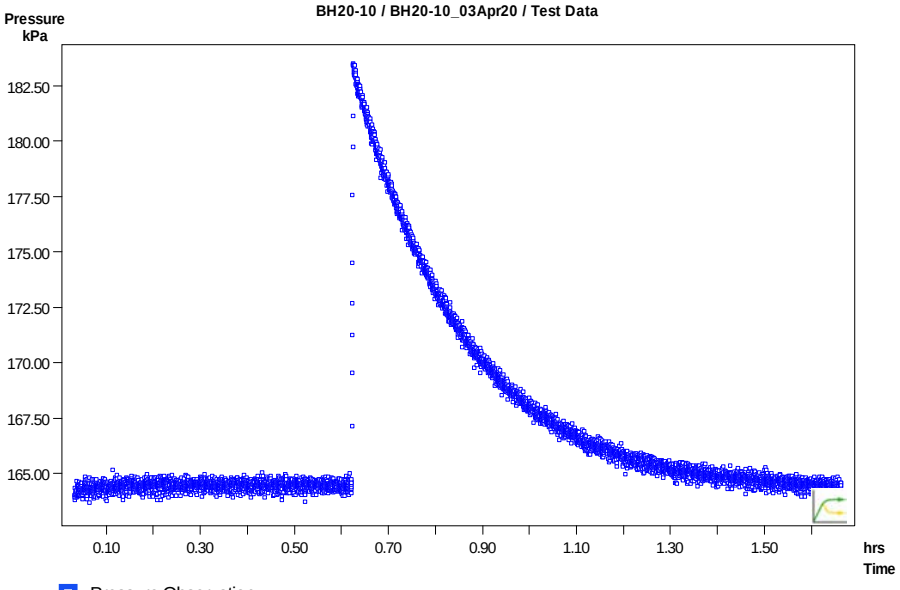
YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

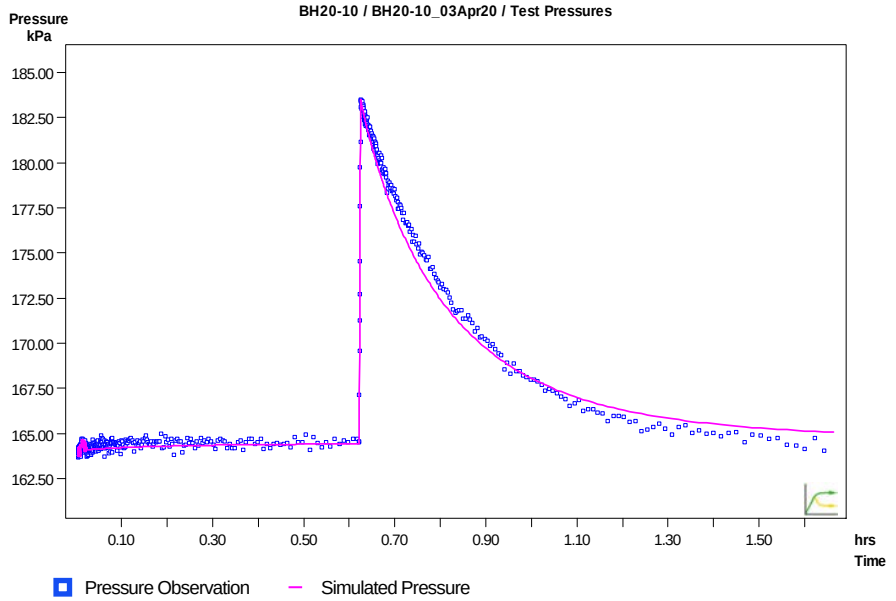
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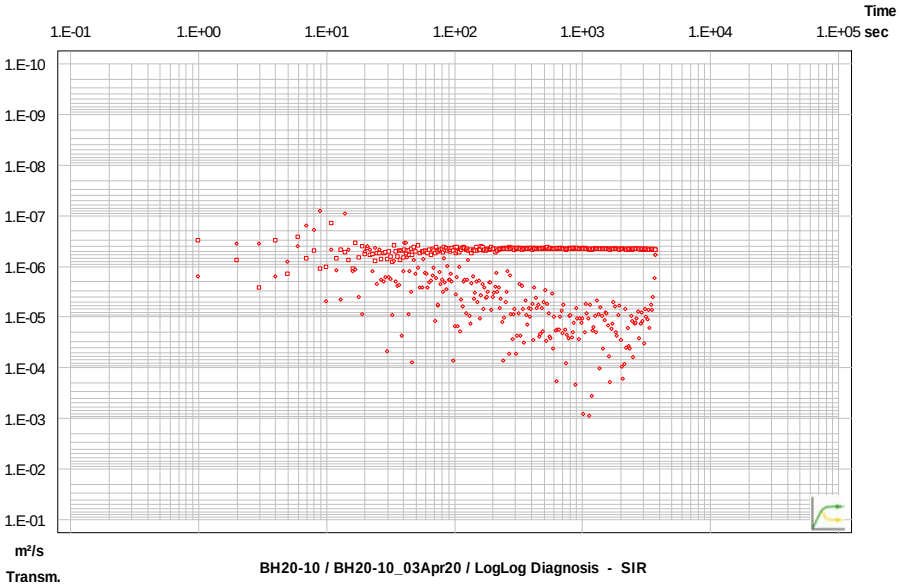
PACKER TEST RESULTS BH20-10 UPPER INTERVAL (10.8 to 14.3 mbgs)

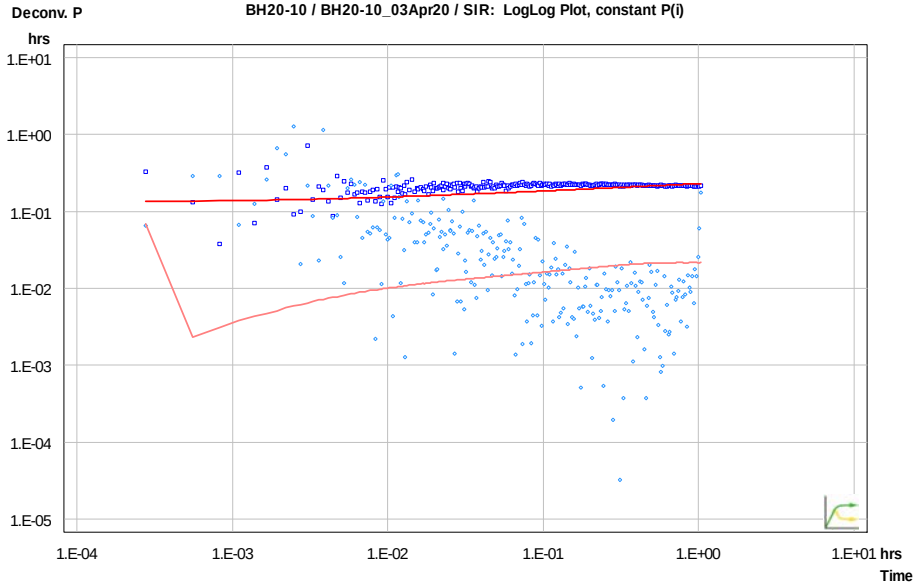
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-021

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
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CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

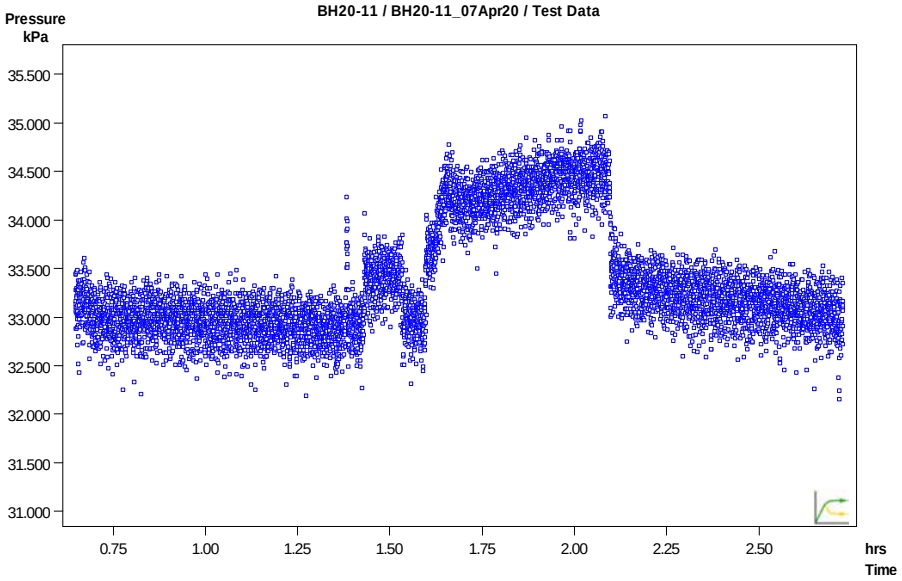
CALEDON PIT / QUARRY

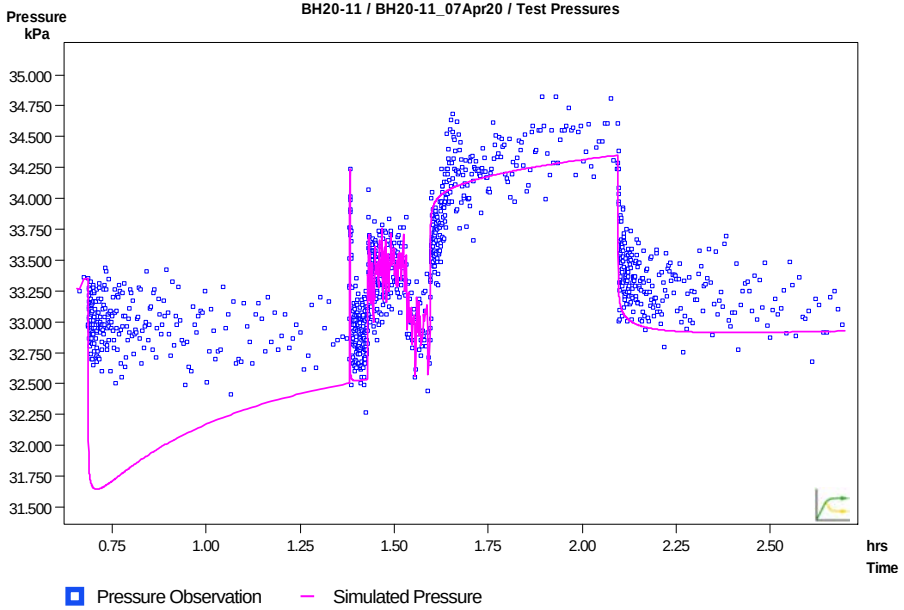
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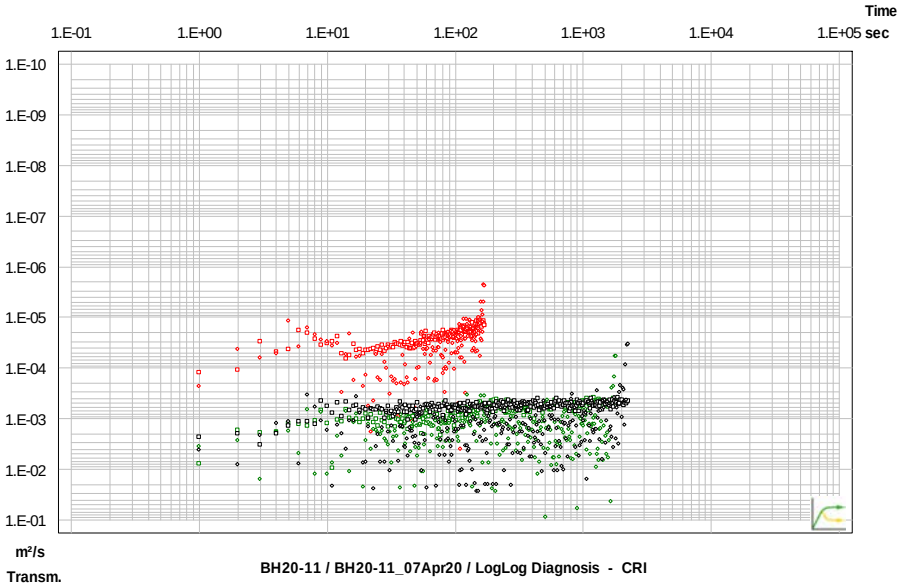
PACKER TEST RESULTS BH20-10 LOWER INTERVAL (13.3 to 16.9 mbgs)

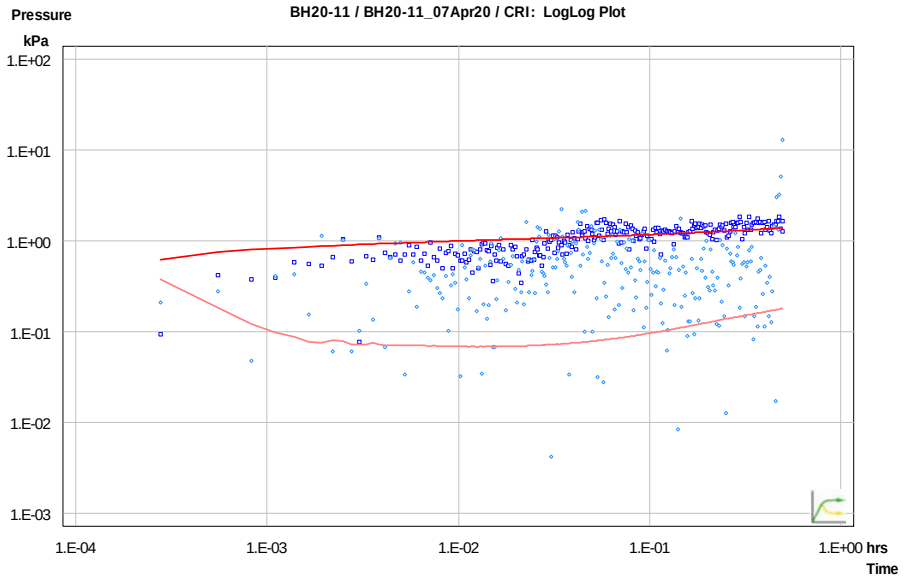
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-022

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

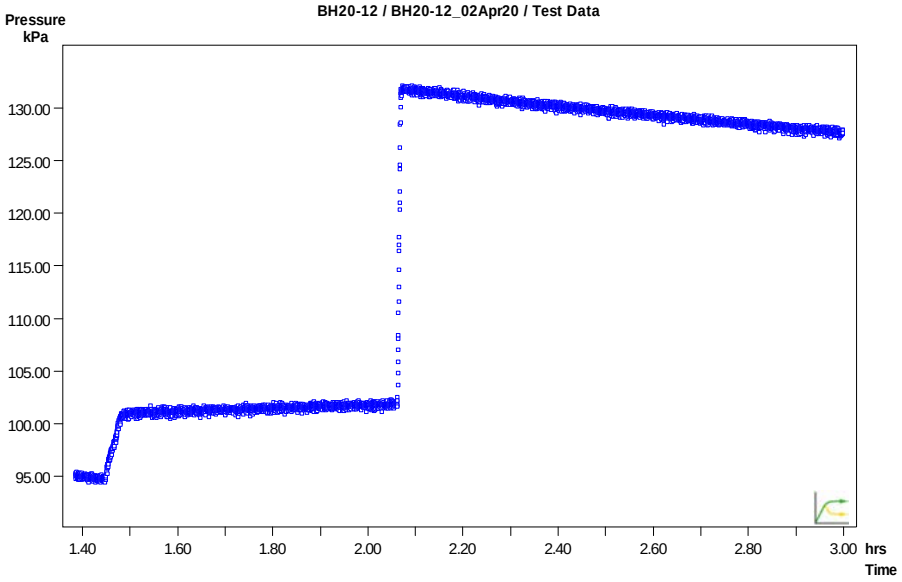
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PREPARED	PGM
DESIGN	ML
REVIEW	###
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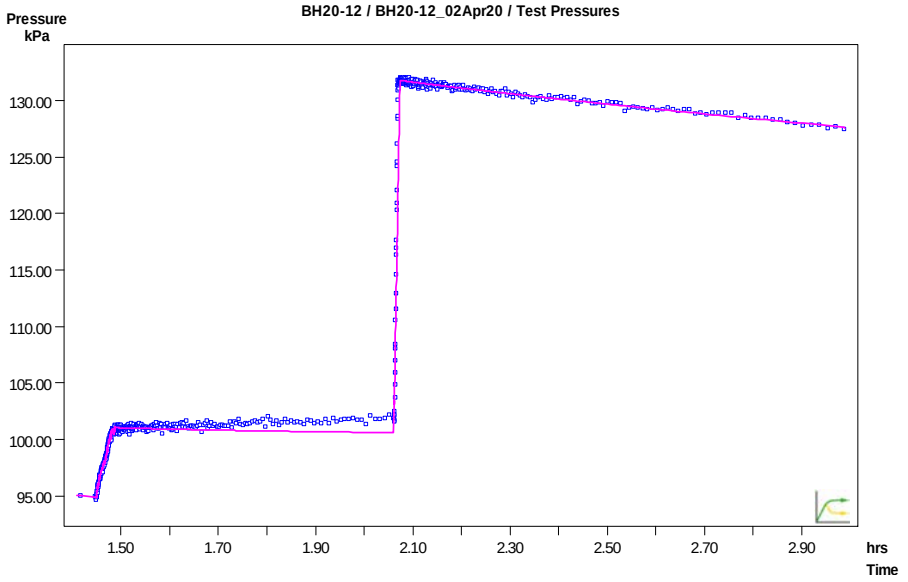
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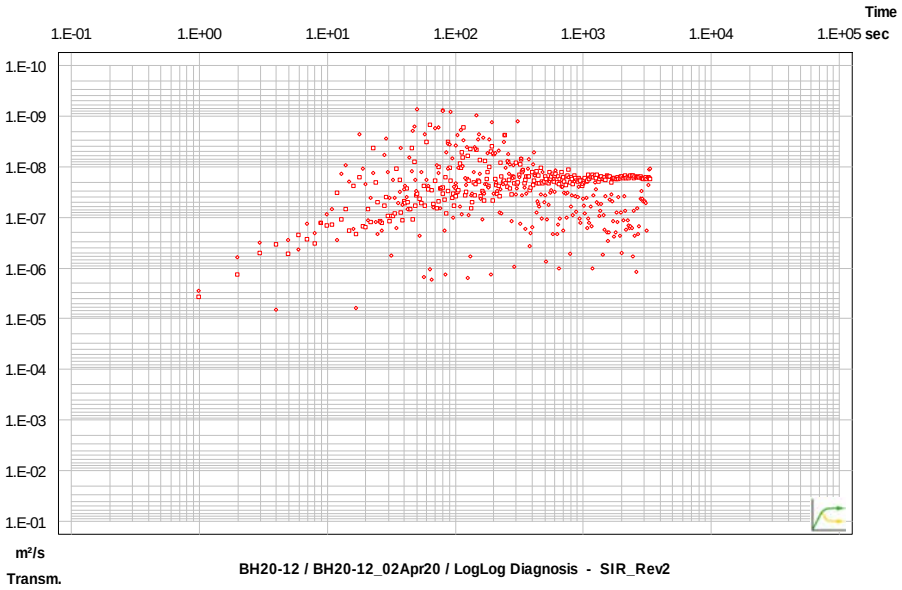
PACKER TEST RESULTS BH20-11 SINGLE INTERVAL (4.7 to 8.2 mbgs)

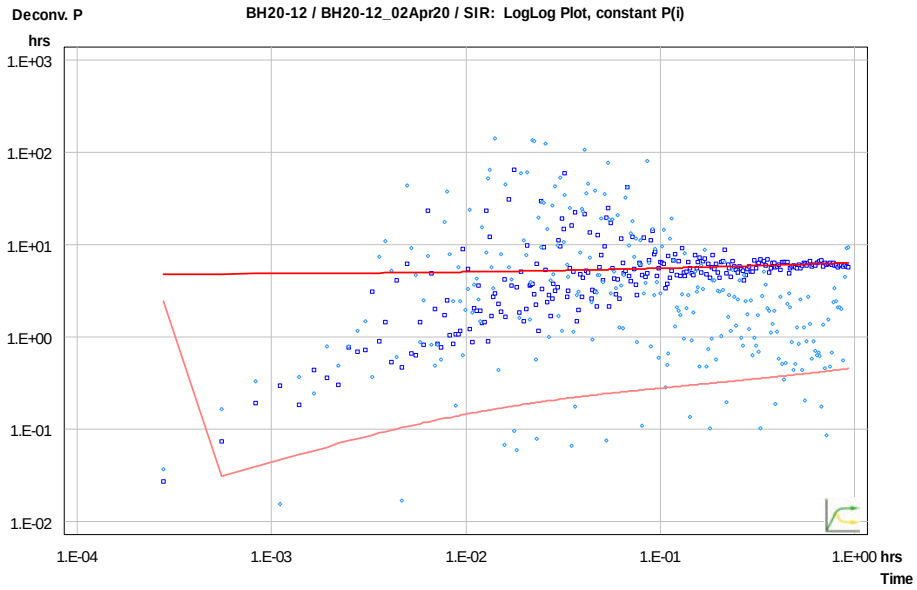
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-023

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
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CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

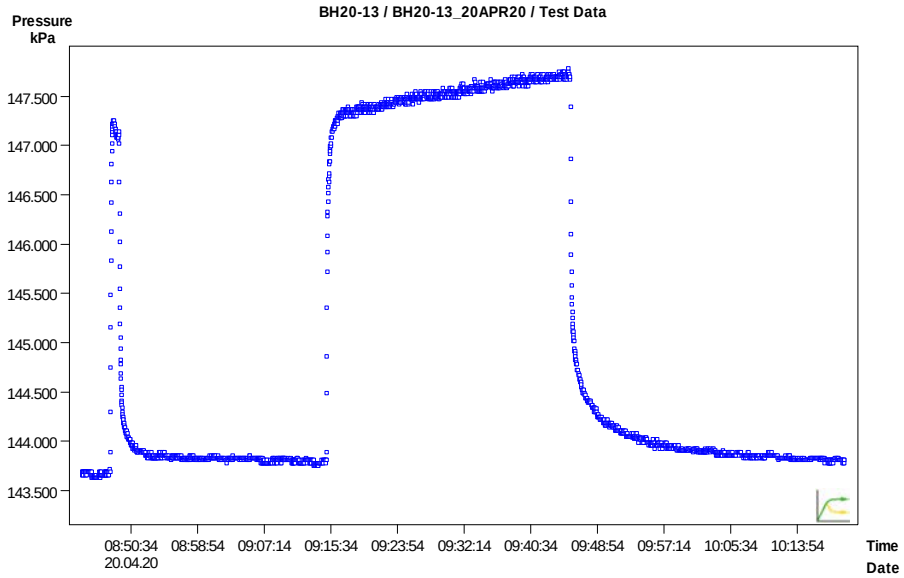
YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
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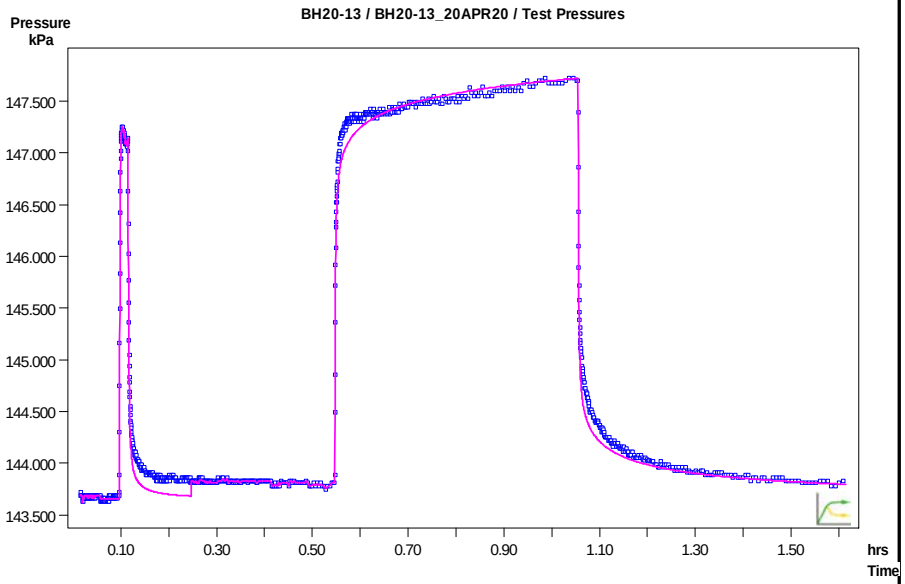
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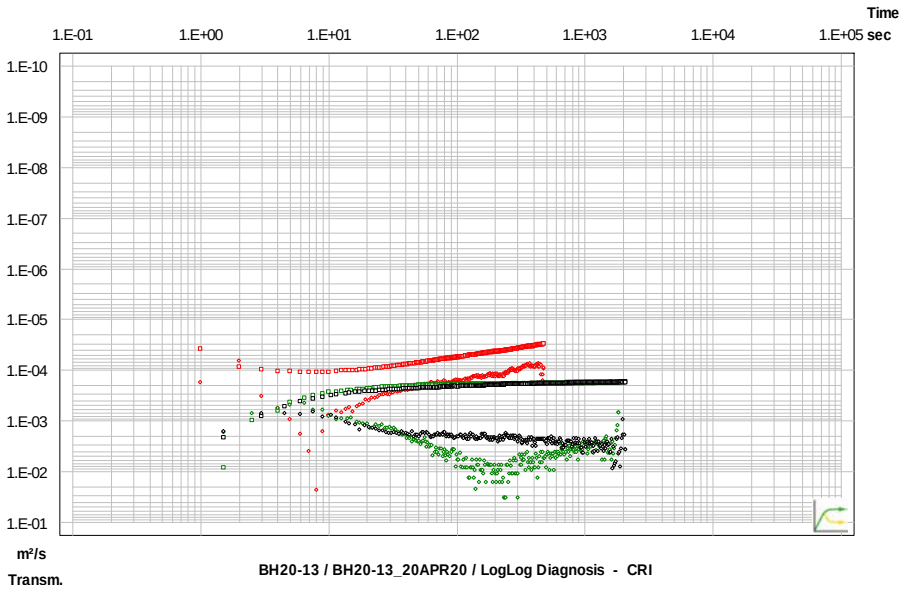
PACKER TEST RESULTS BH20-12 SINGLE INTERVAL (14.1 to 19.2 mbgs)

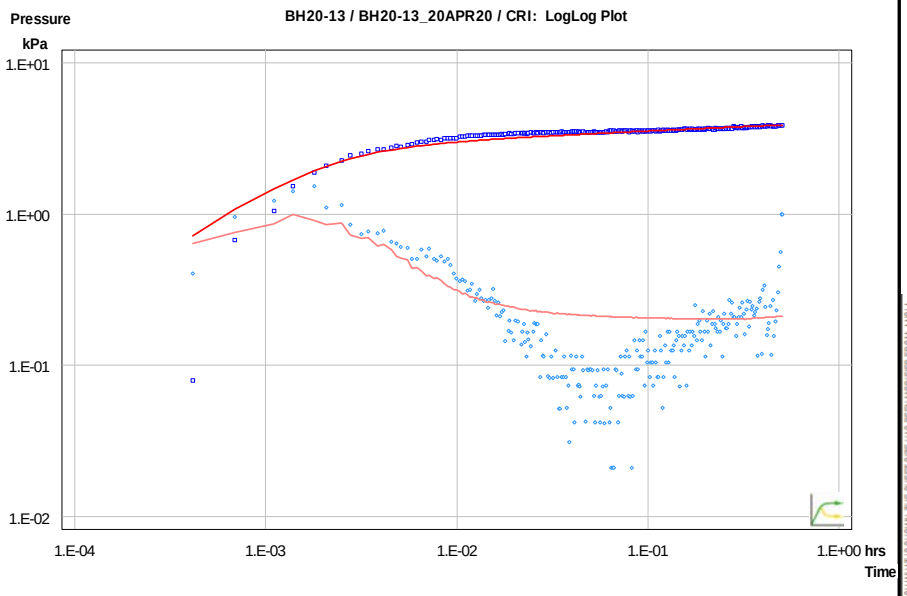
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-024

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

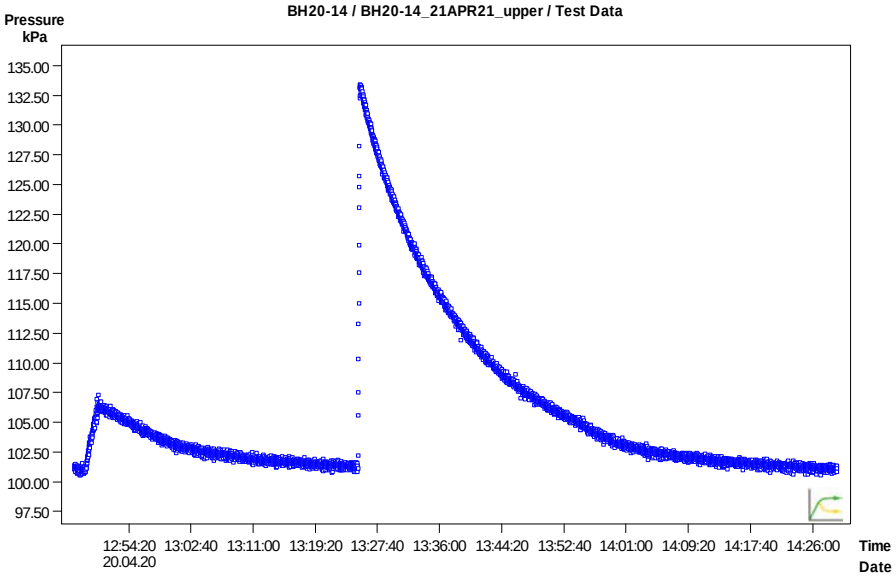
CALEDON PIT / QUARRY

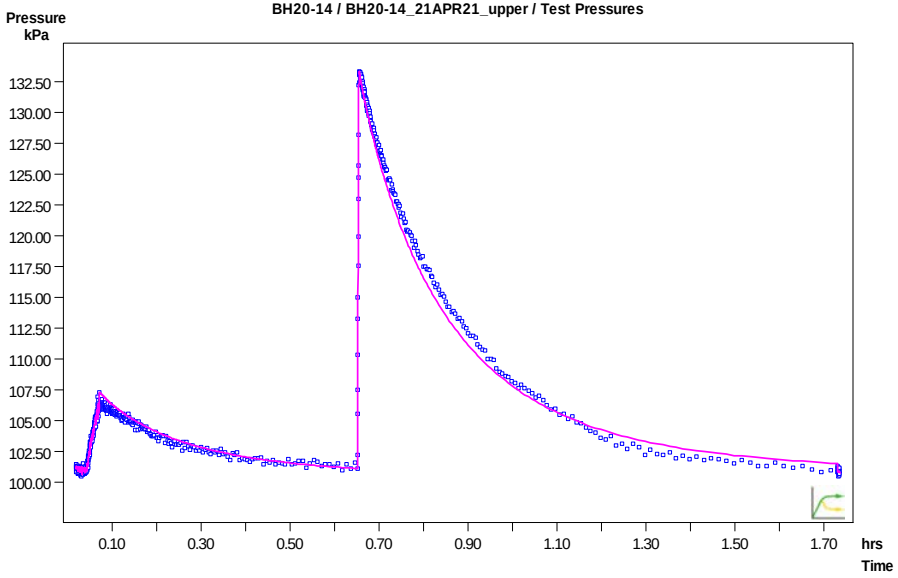
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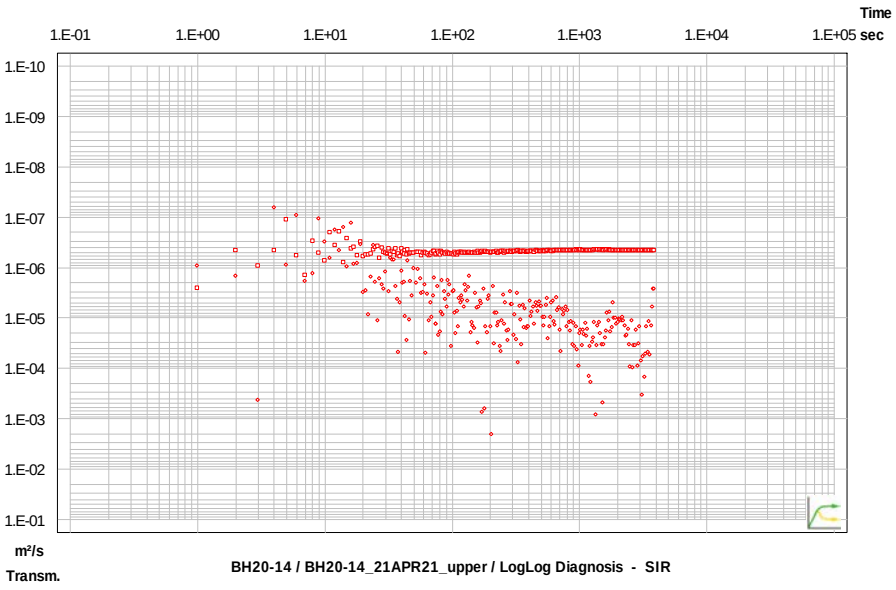
PACKER TEST RESULTS BH20-13 OPEN BOREHOLE (5.9 to 22.8 mbgs)

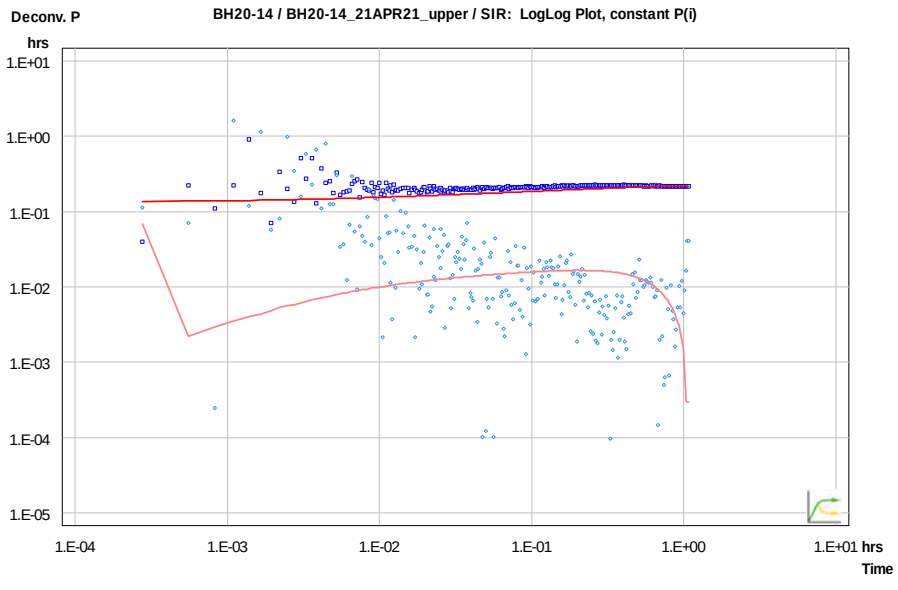
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-025

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

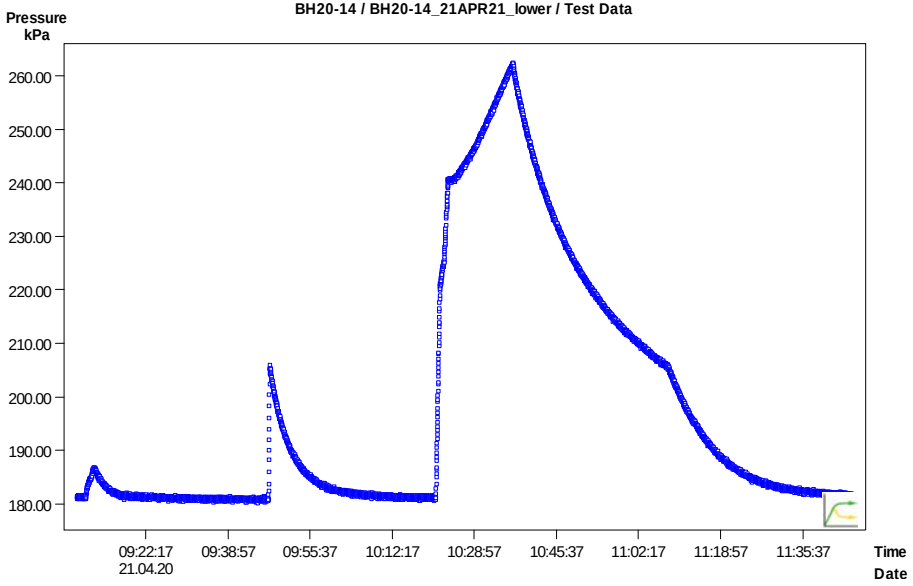
CALEDON PIT / QUARRY

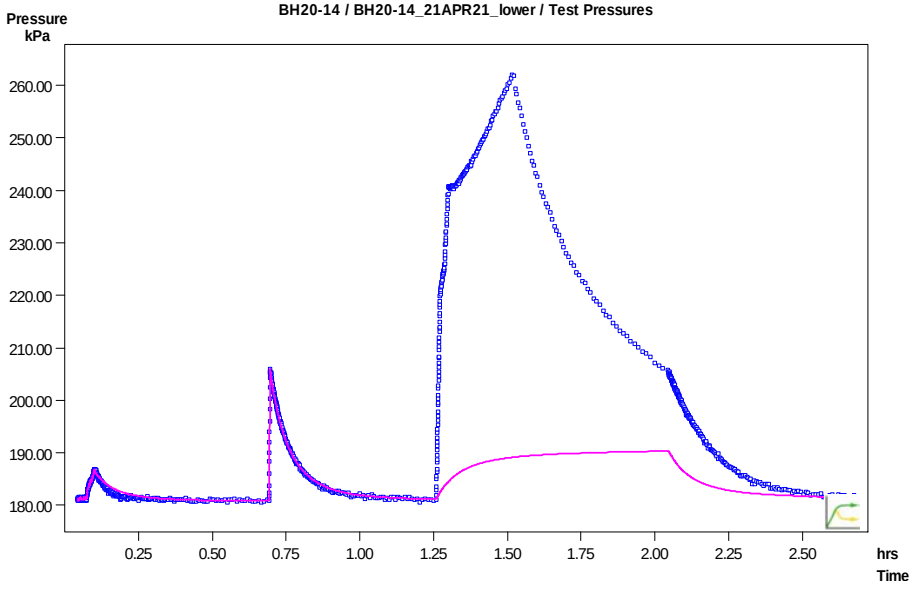
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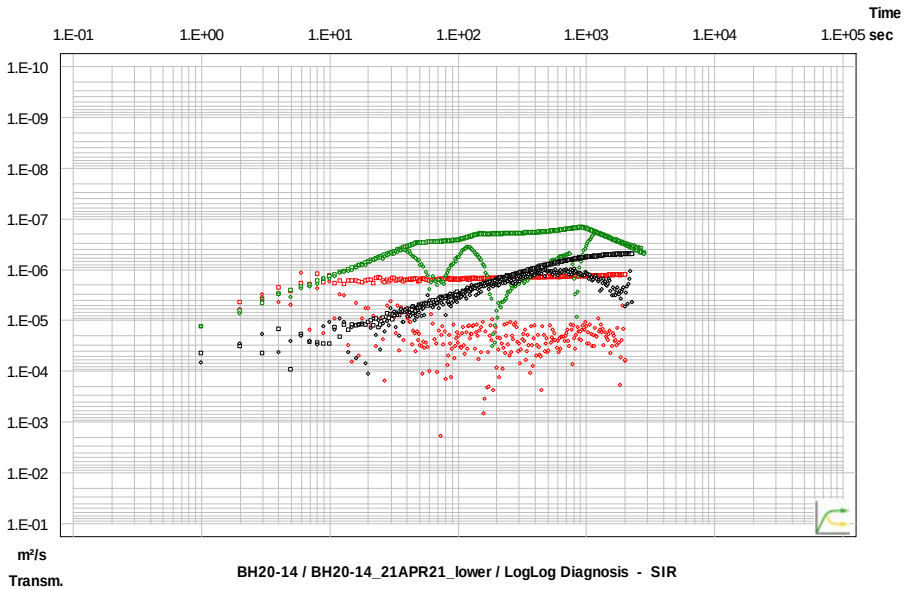
PACKER TEST RESULTS BH20-14 UPPER INTERVAL (10.8 to 19.1 mbgs)

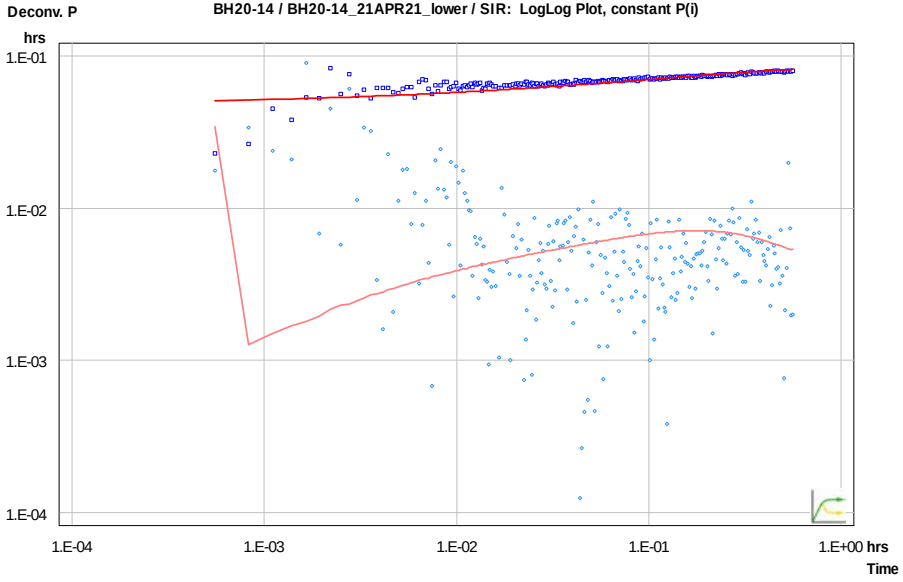
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-026

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
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CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

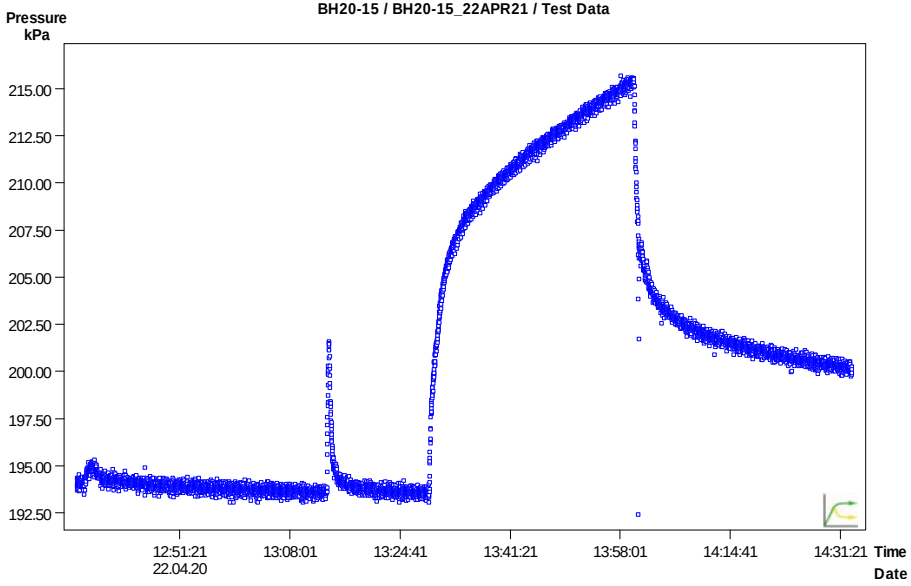
CALEDON PIT / QUARRY

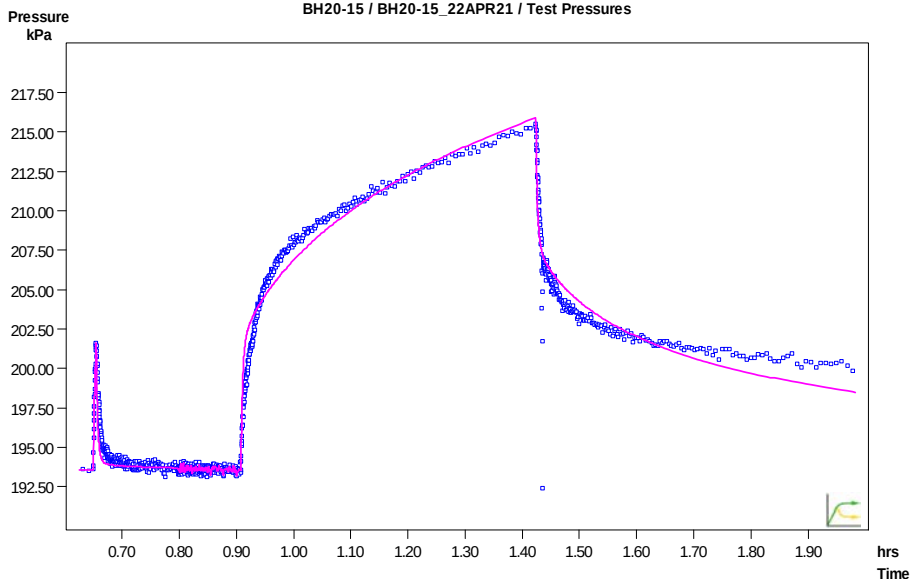
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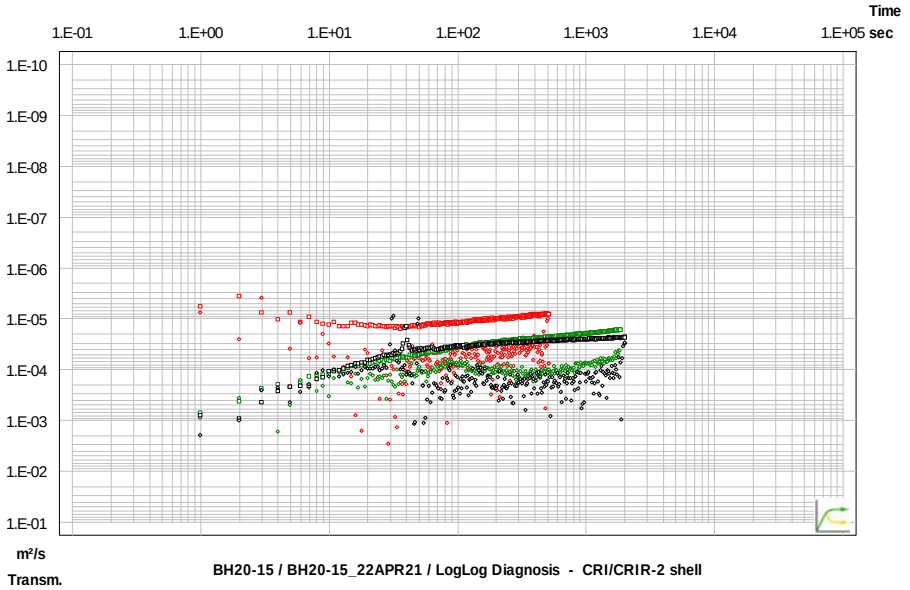
PACKER TEST RESULTS BH20-14 LOWER INTERVAL (19.1 to 27.3 mbgs)

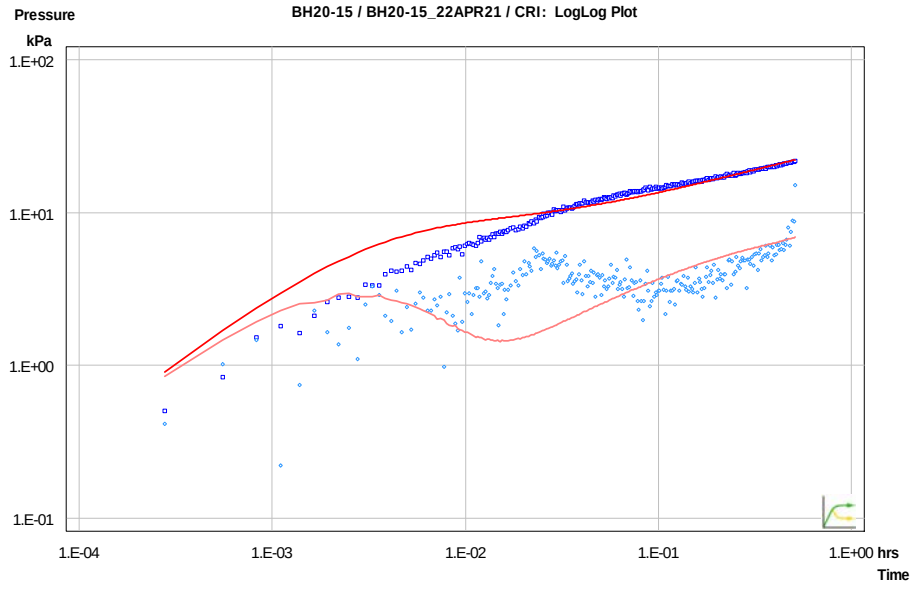
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-027

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-03-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

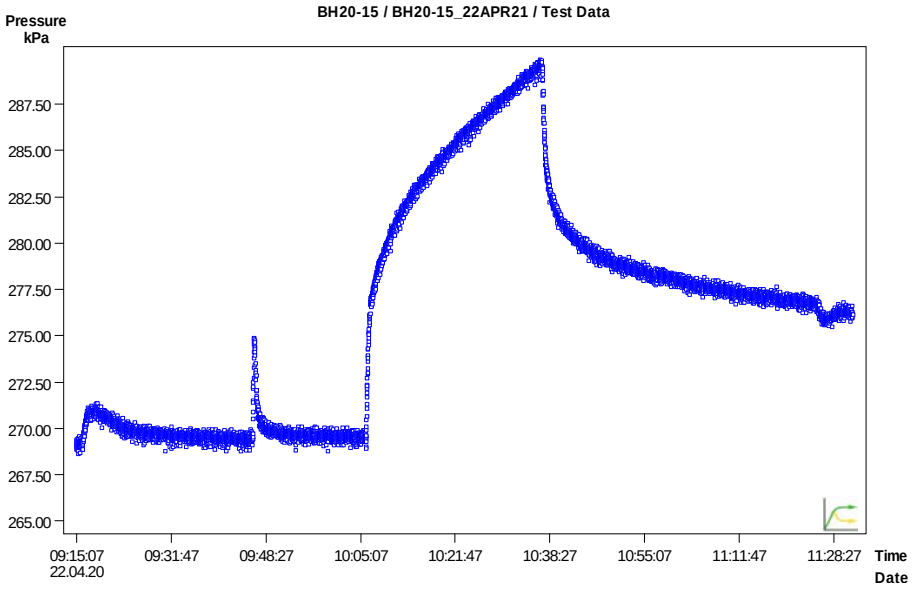
CALEDON PIT / QUARRY

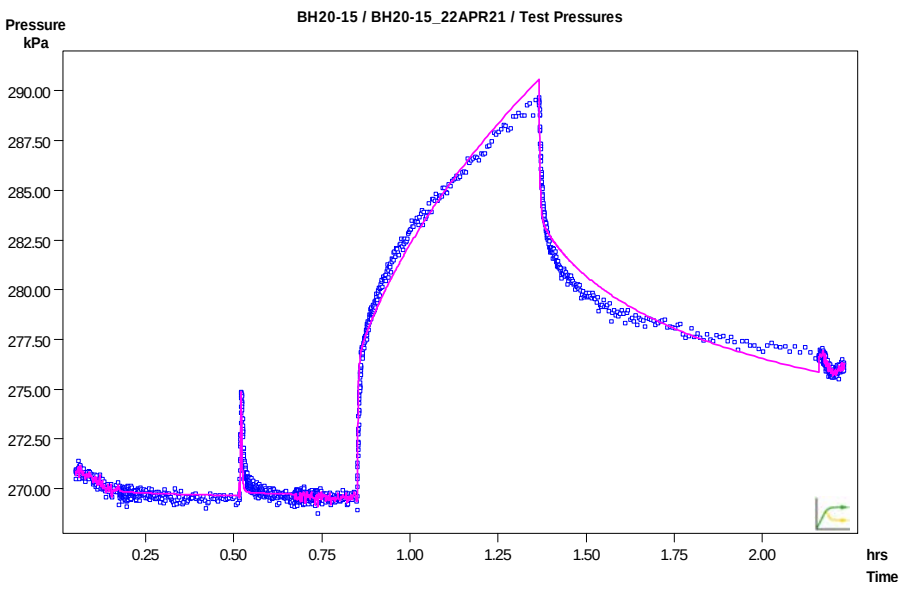
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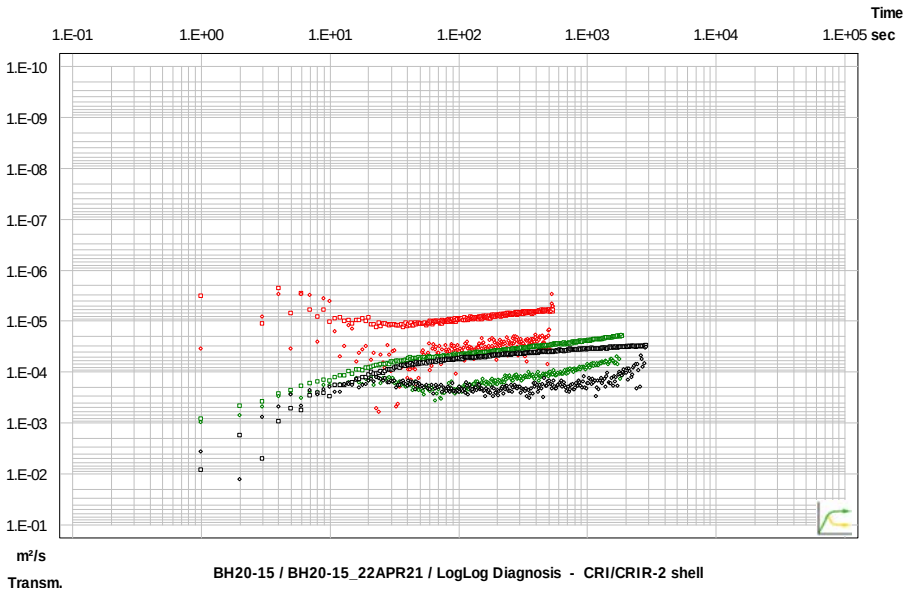
PACKER TEST RESULTS BH20-15 UPPER INTERVAL (17.2 to 23.9 mbgs)

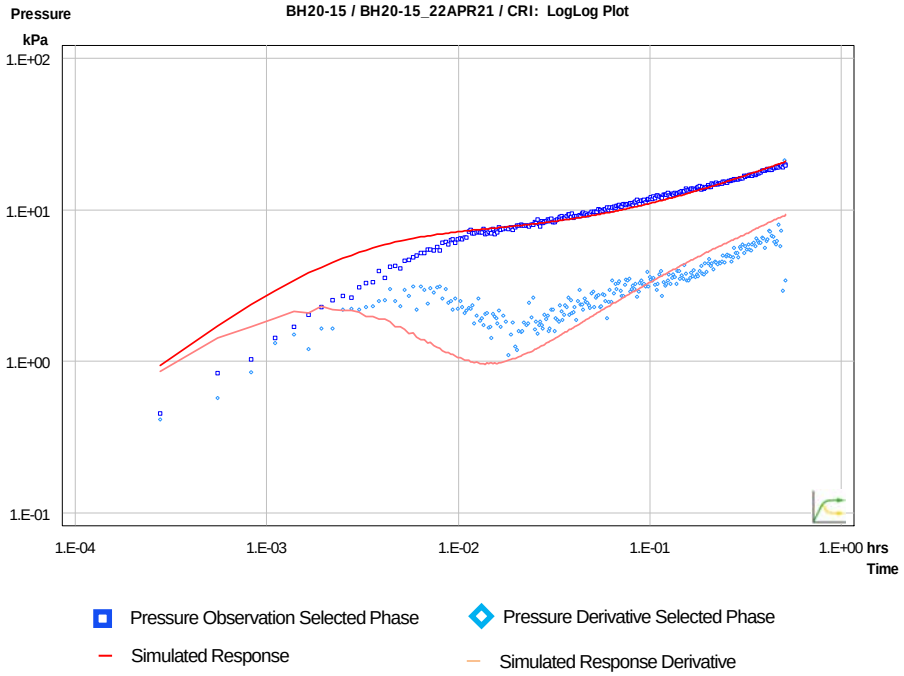
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-028

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-03-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

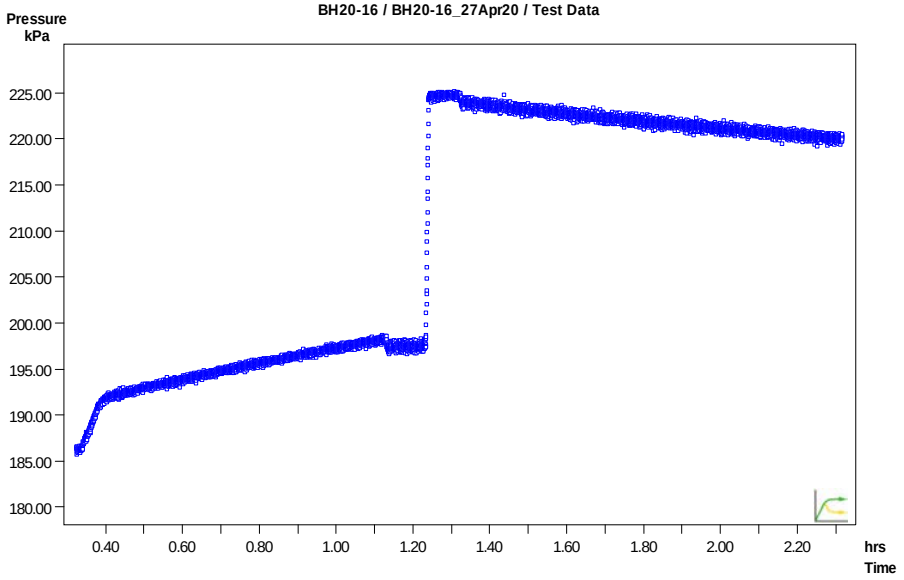
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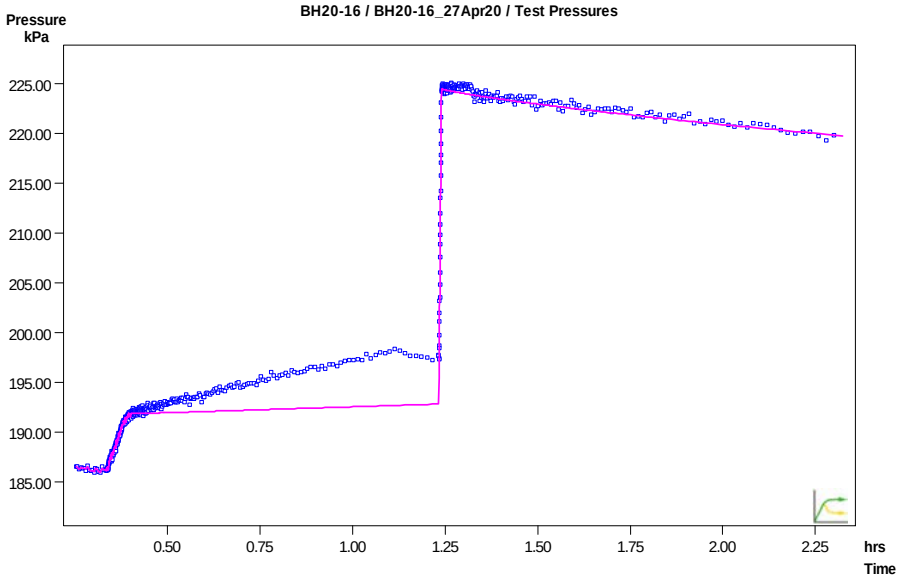
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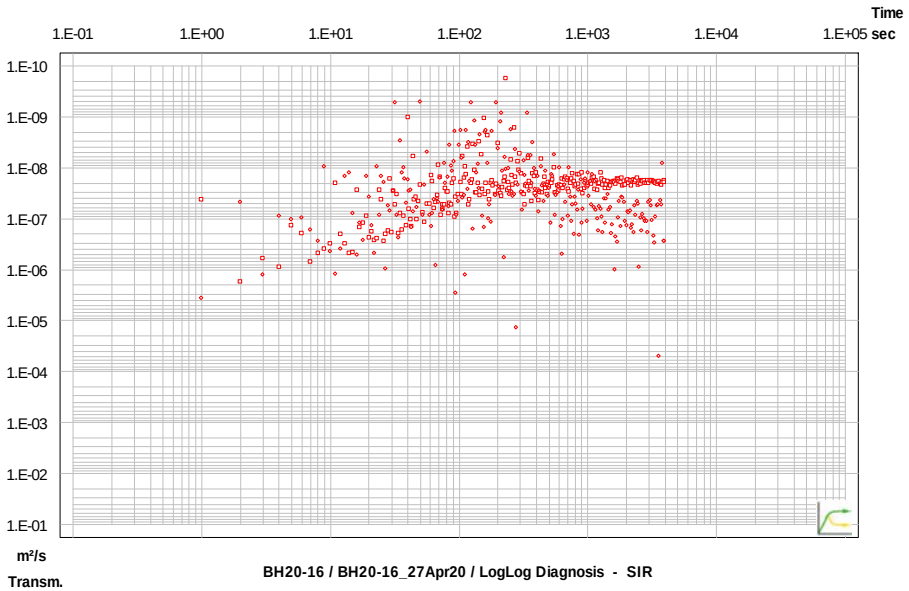
PACKER TEST RESULTS BH20-15 LOWER INTERVAL (23.9 to 32.1 mbgs)

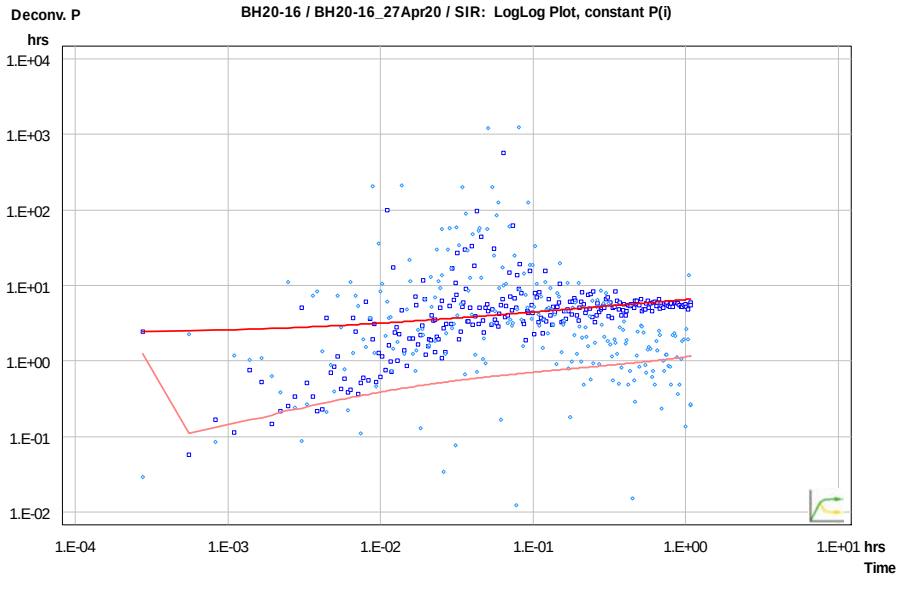
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-029

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

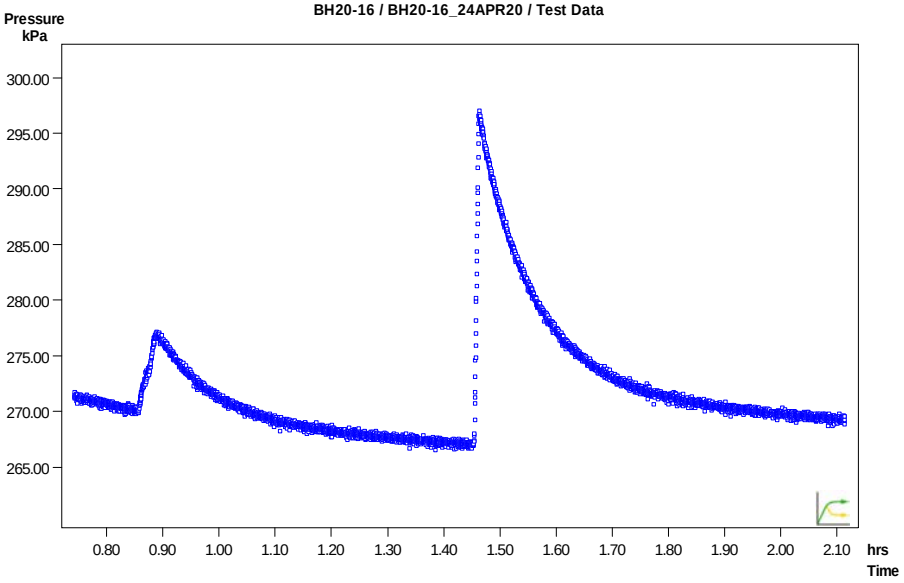
YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

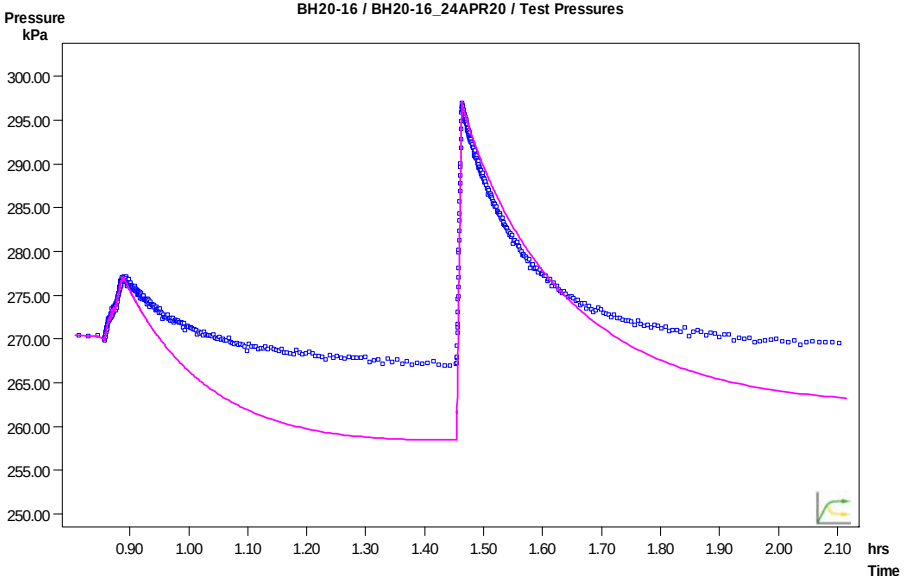
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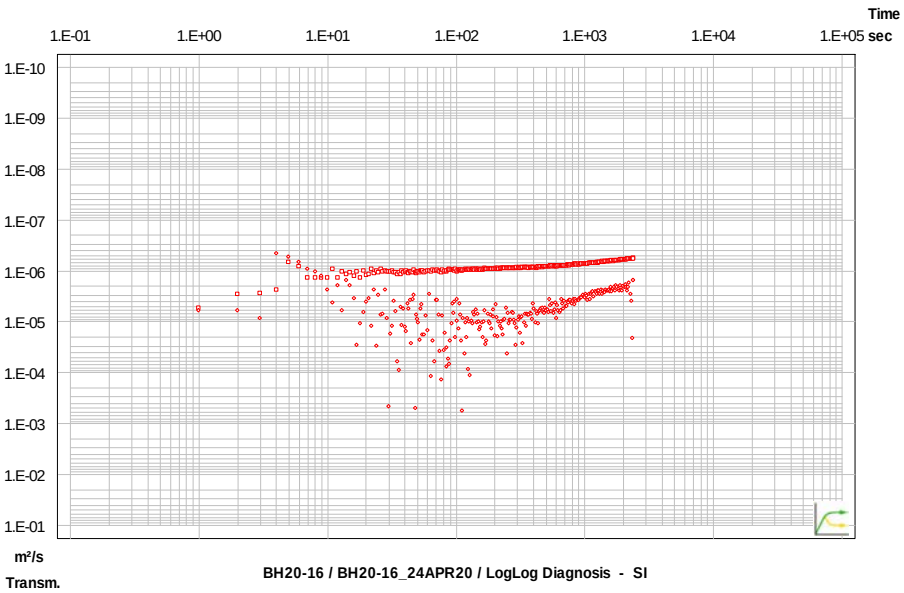
PACKER TEST RESULTS BH20-16 UPPER INTERVAL (15.5 to 23.7 mbgs)

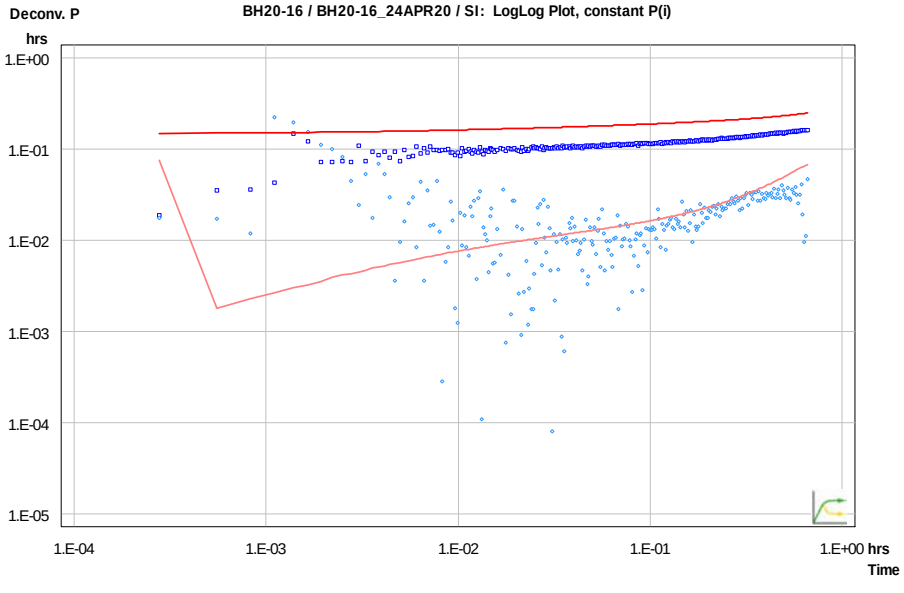
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-030

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

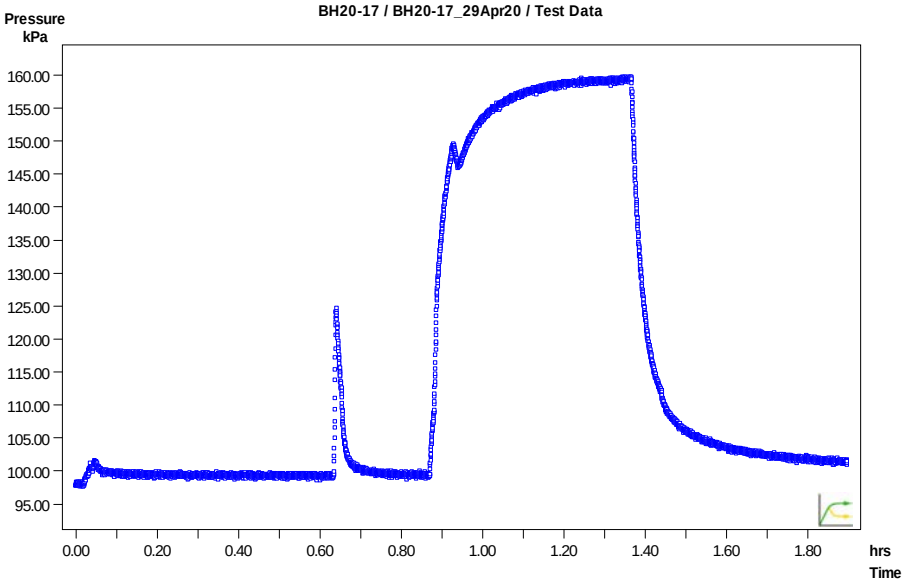
YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

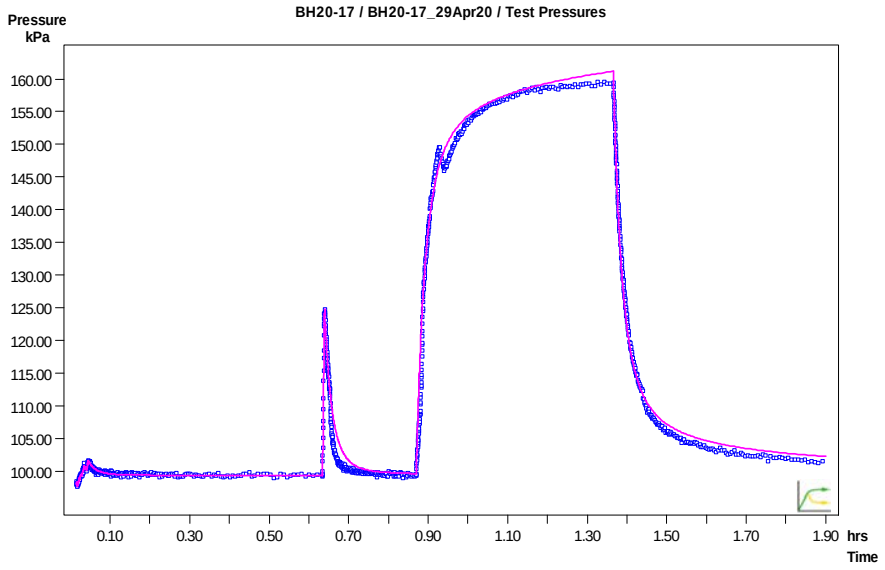
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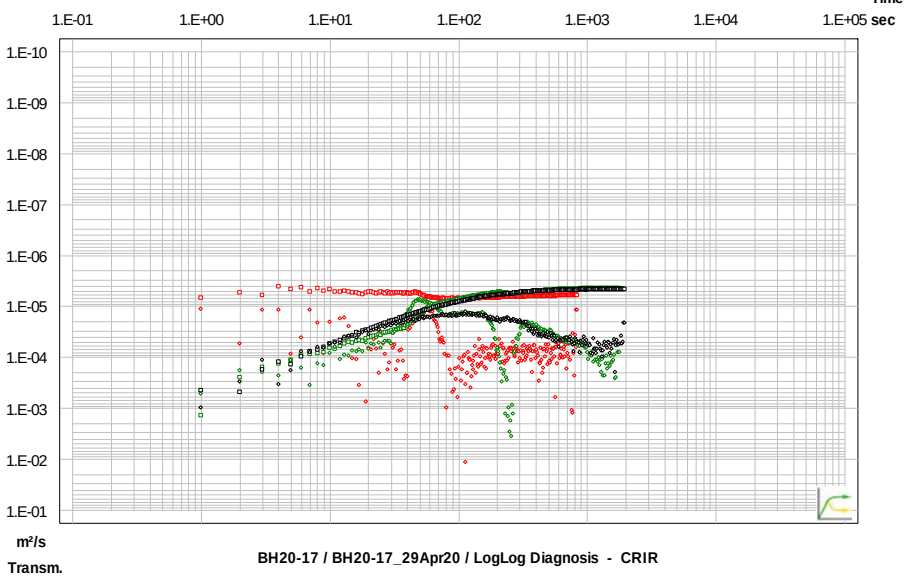
PACKER TEST RESULTS BH20-16 LOWER INTERVAL (23.5 to 31.6 mbgs)

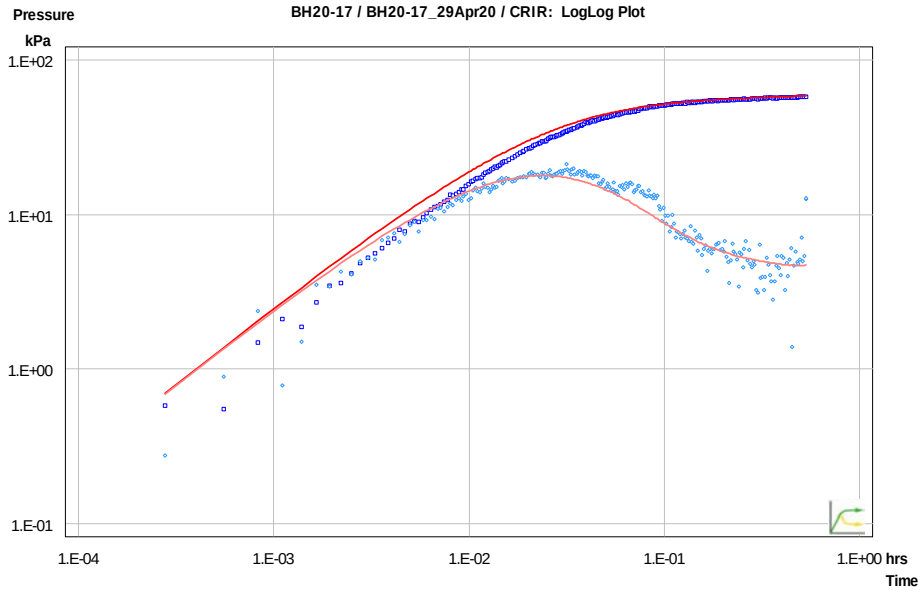
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-031

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

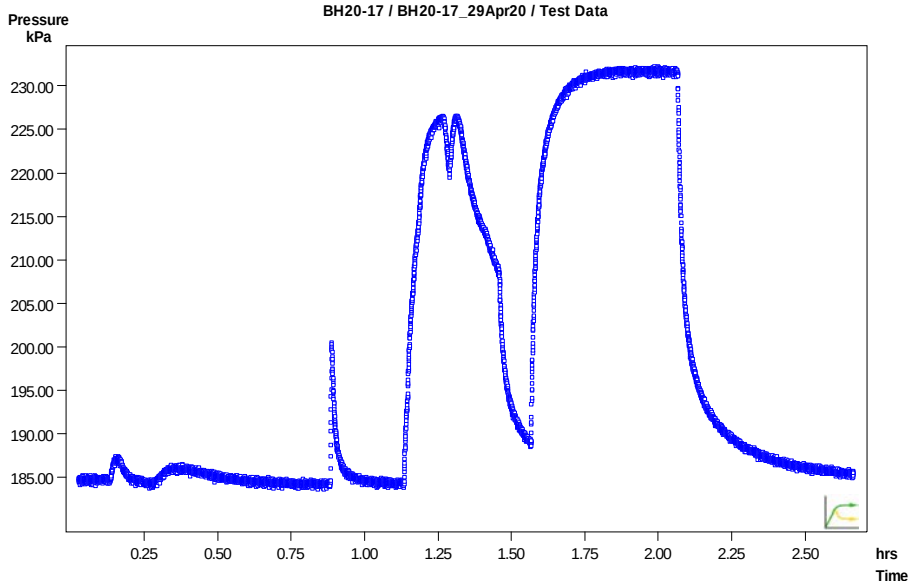
CALEDON PIT / QUARRY

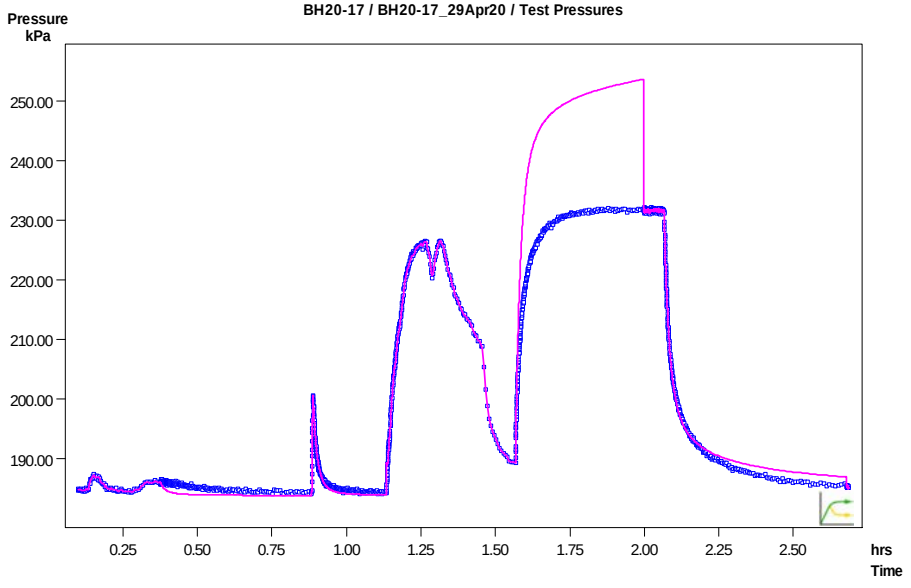
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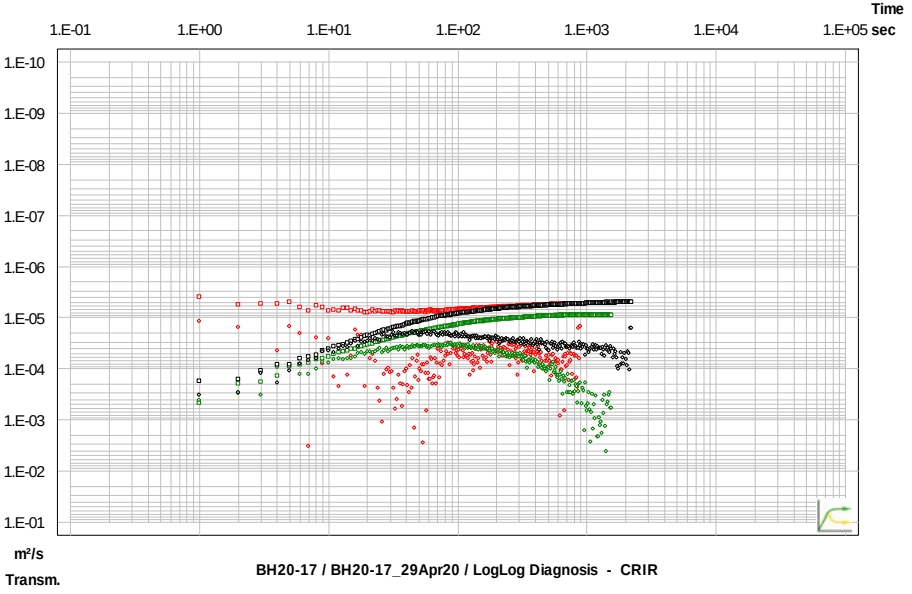
PACKER TEST RESULTS BH20-17 UPPER INTERVAL (7.8 to 17.4 mbgs)

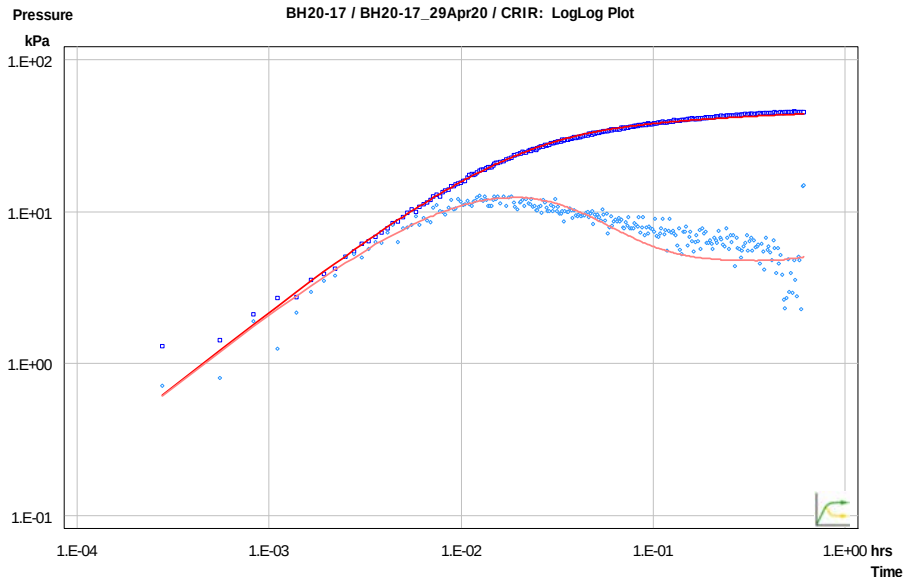
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-032

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









Pressure Observation SI
Pressure Derivative SI
Pressure Observation CRI
Pressure Derivative CRI
Pressure Observation CRIR
Pressure Derivative CRIR

Pressure Observation Selected Phase
Pressure Derivative Selected Phase
Simulated Response
Simulated Response Derivative

CLIENT
CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT
CALEDON PIT / QUARRY

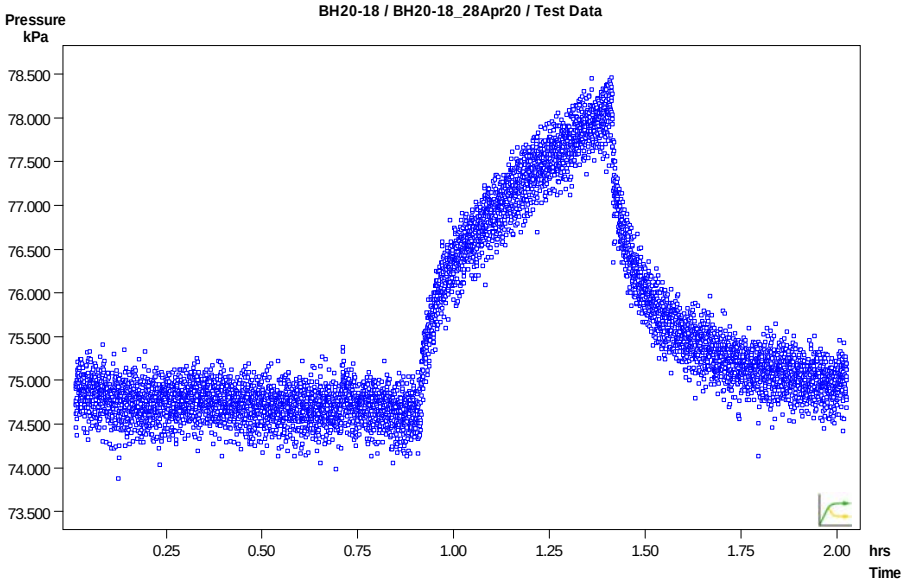
CONSULTANT
GOLDER
MEMBER OF WSP

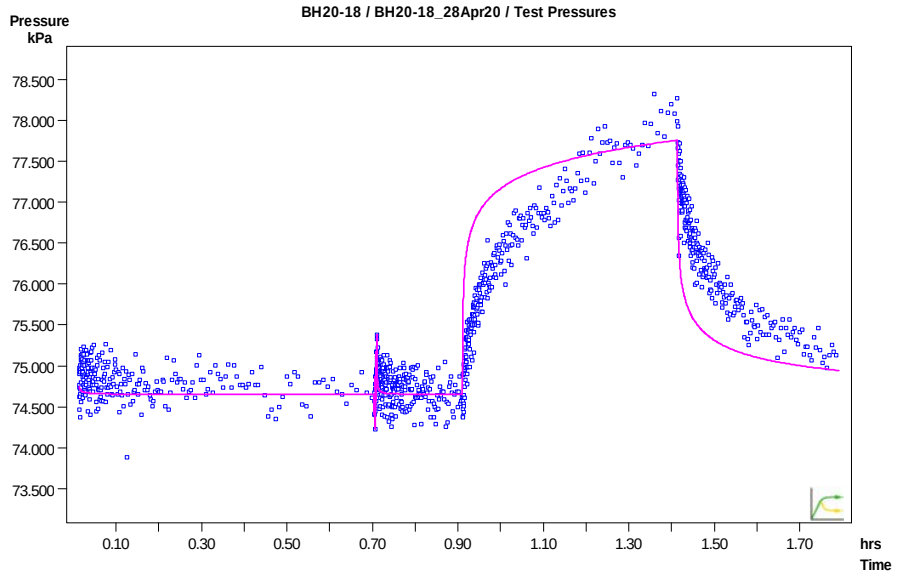
YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

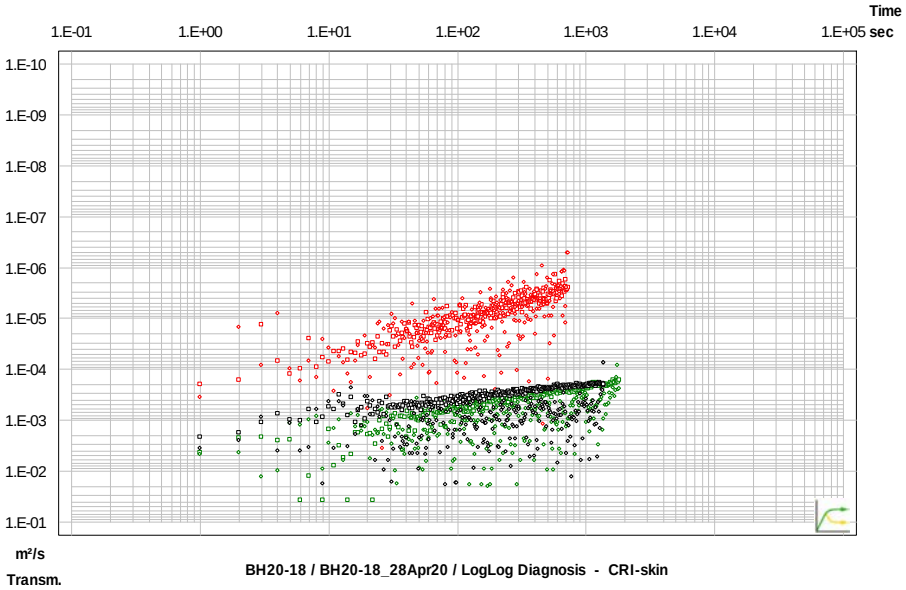
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PACKER TEST RESULTS BH20-17 LOWER INTERVAL (16.6 to 26.3 mbgs)

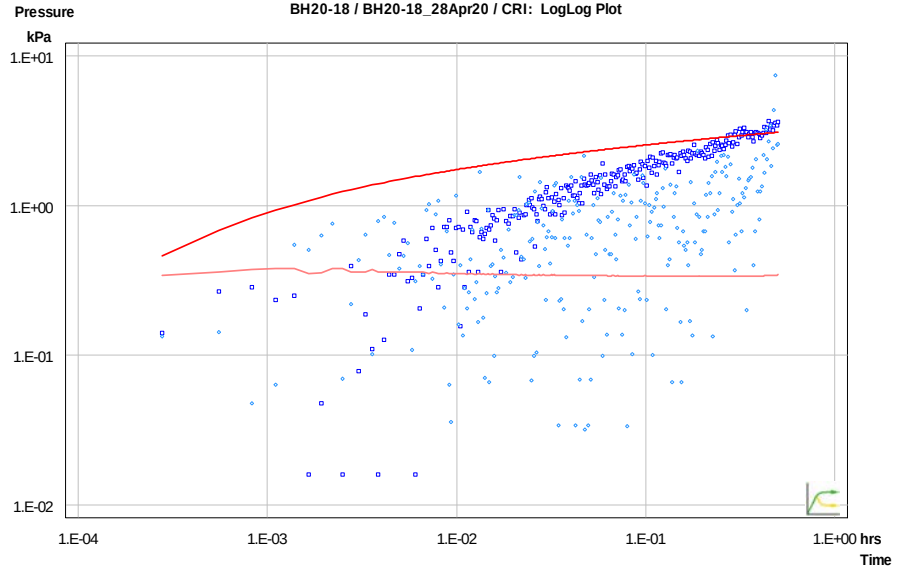
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-033

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-17
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

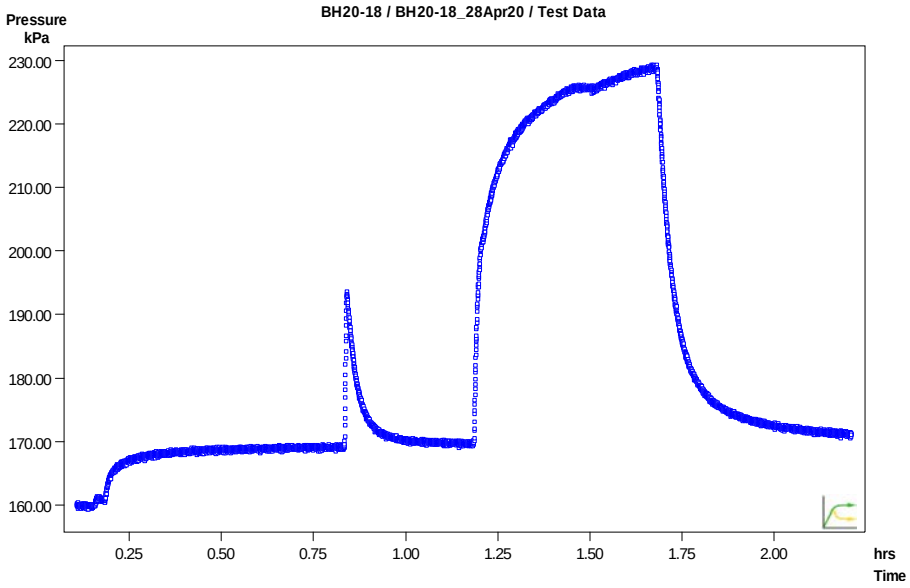
CALEDON PIT / QUARRY

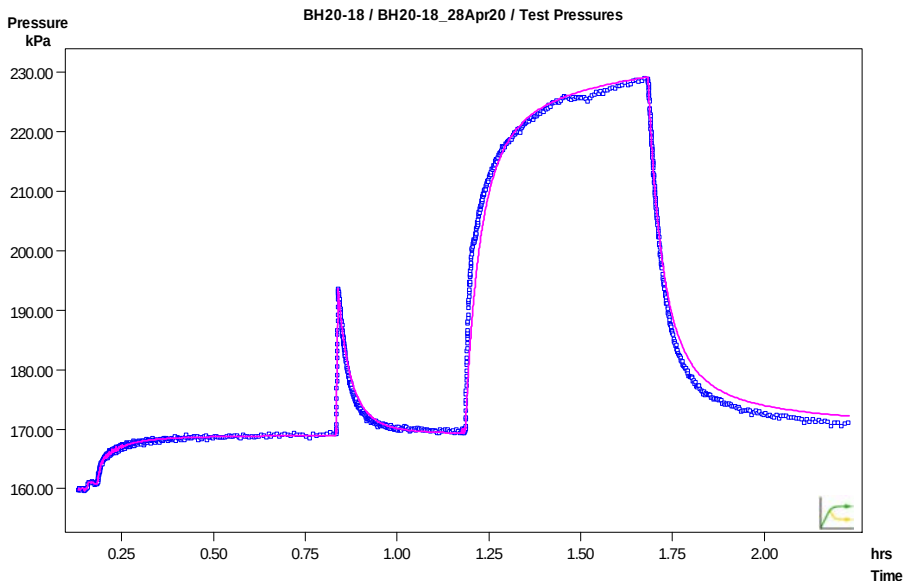
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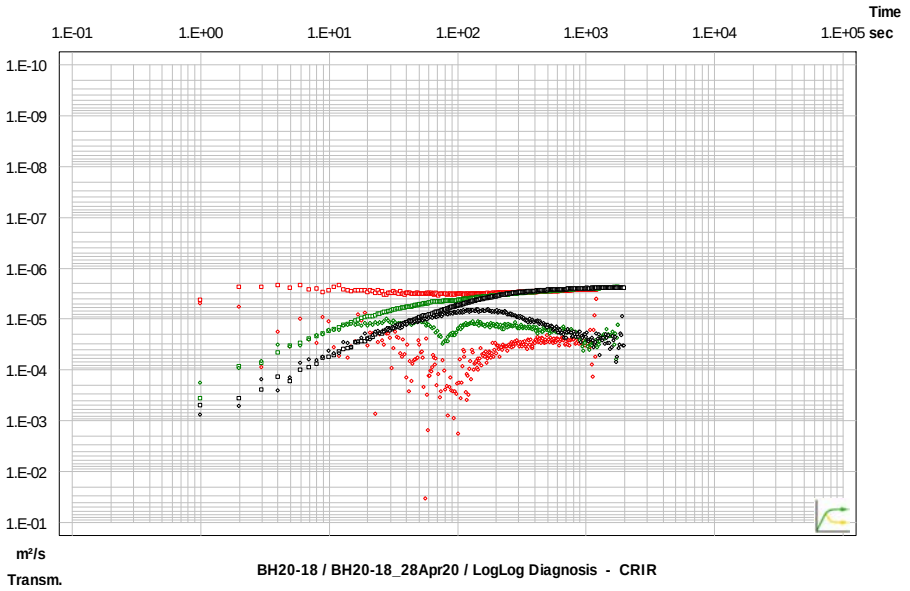
PACKER TEST RESULTS BH20-18 UPPER INTERVAL (12.2 to 20.3 mbgs)

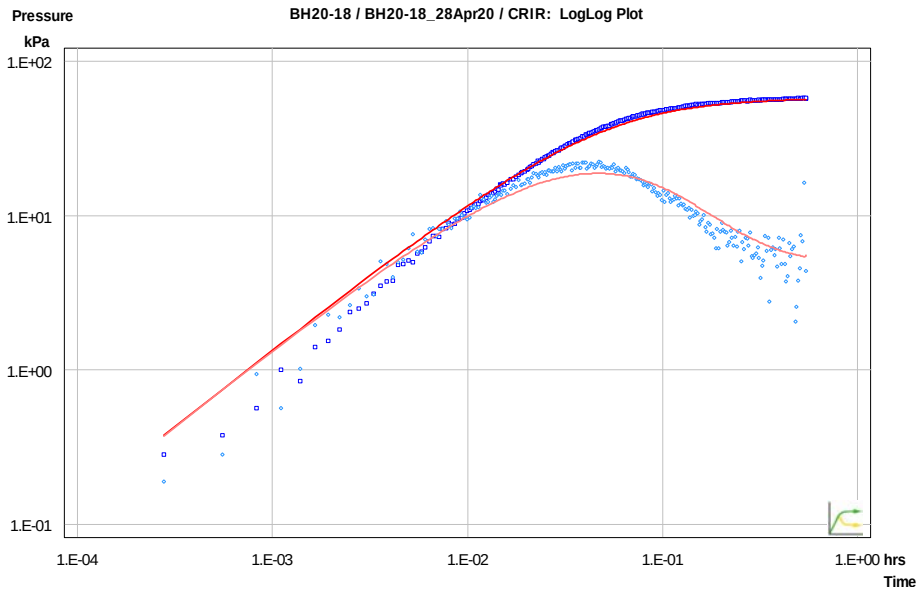
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-034

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

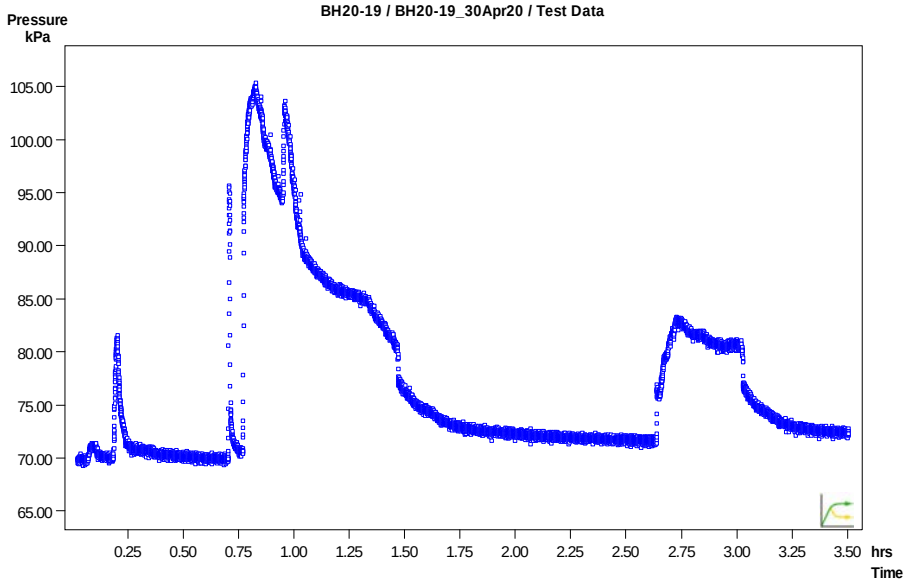
CALEDON PIT / QUARRY

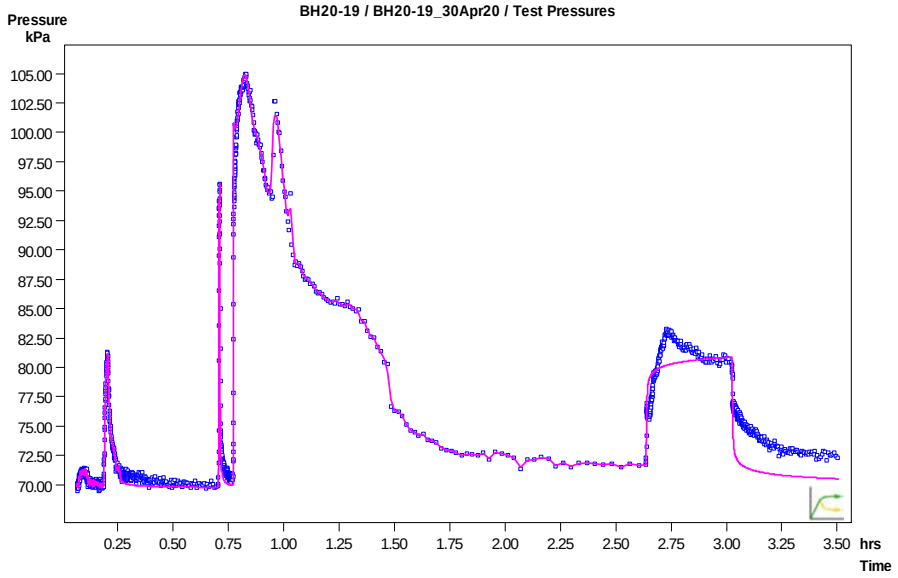
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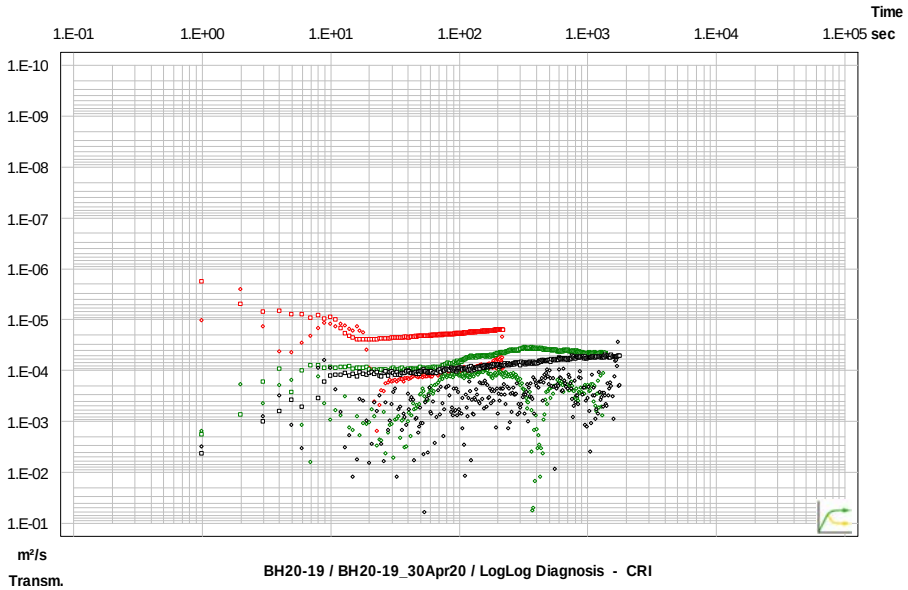
PACKER TEST RESULTS BH20-18 LOWER INTERVAL (20.6 to 28.7 mbgs)

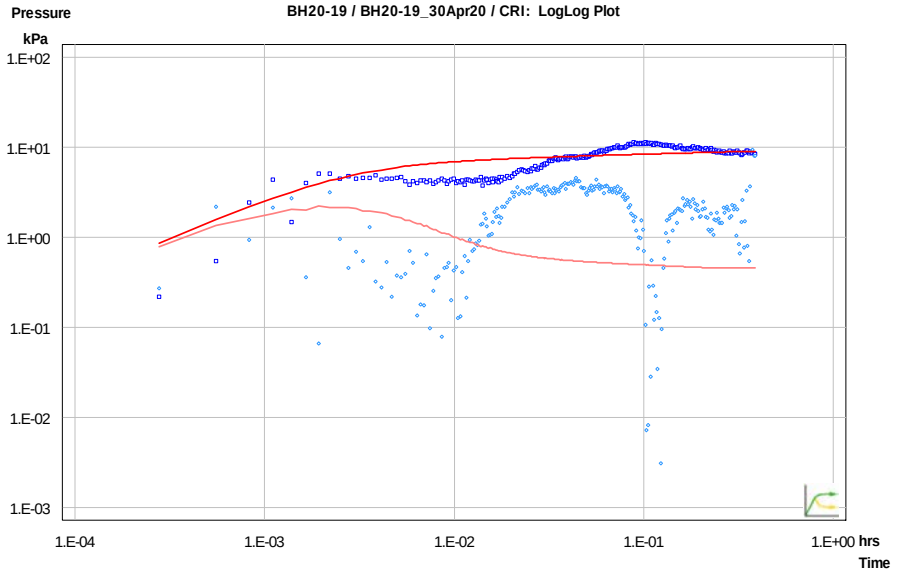
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-035

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15	
PREPARED	PGM	
DESIGN	ML	
REVIEW	###	
APPROVED		

PROJECT

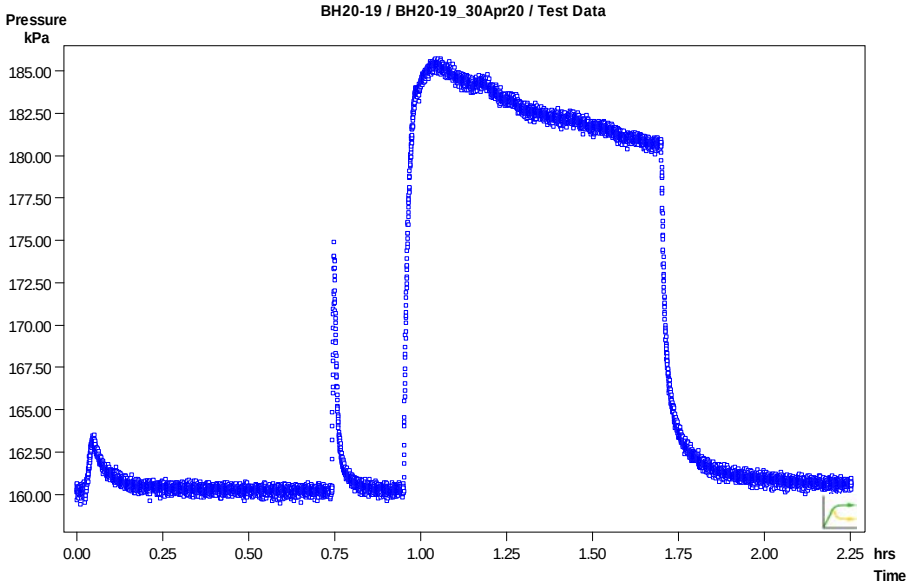
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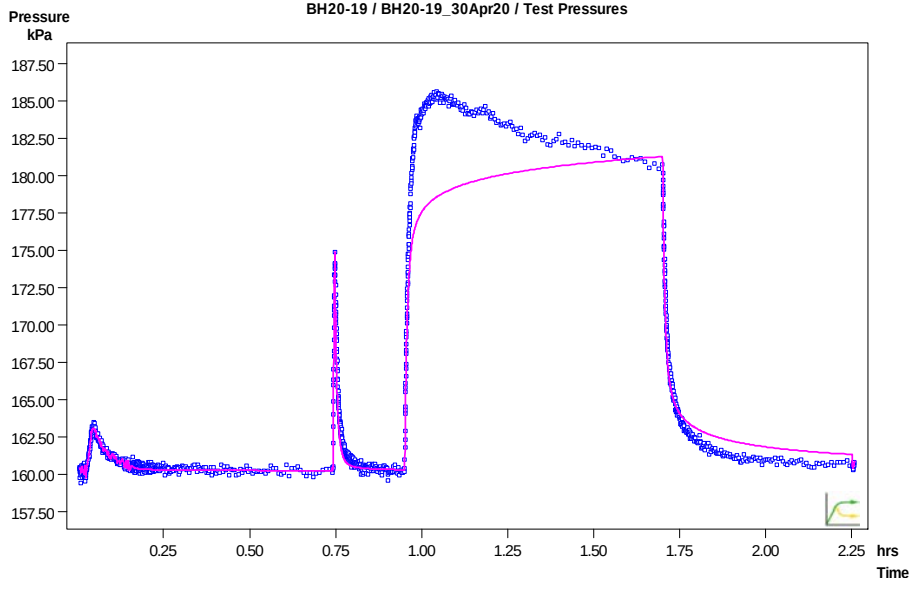
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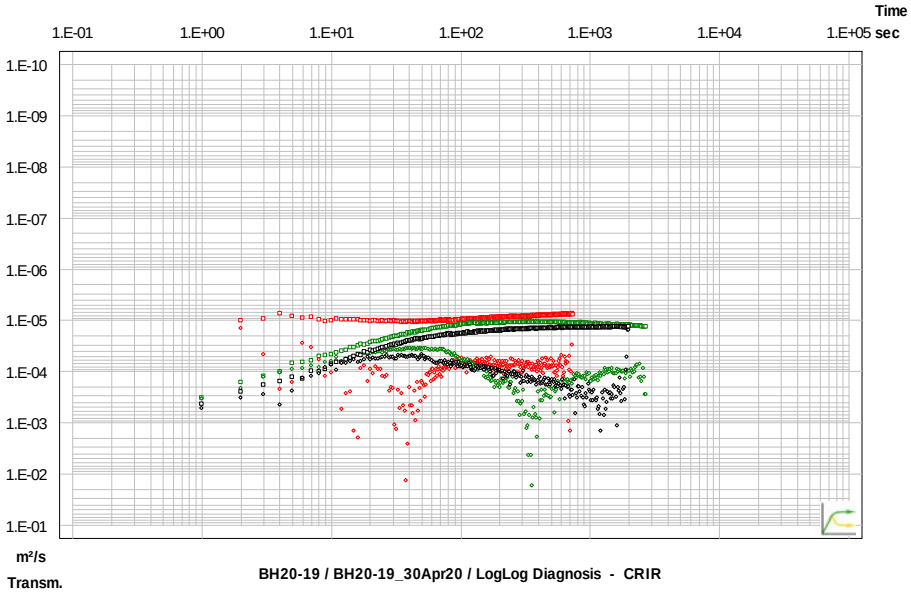
PACKER TEST RESULTS BH20-19 UPPER INTERVAL (5.0 to 13.1 mbgs)

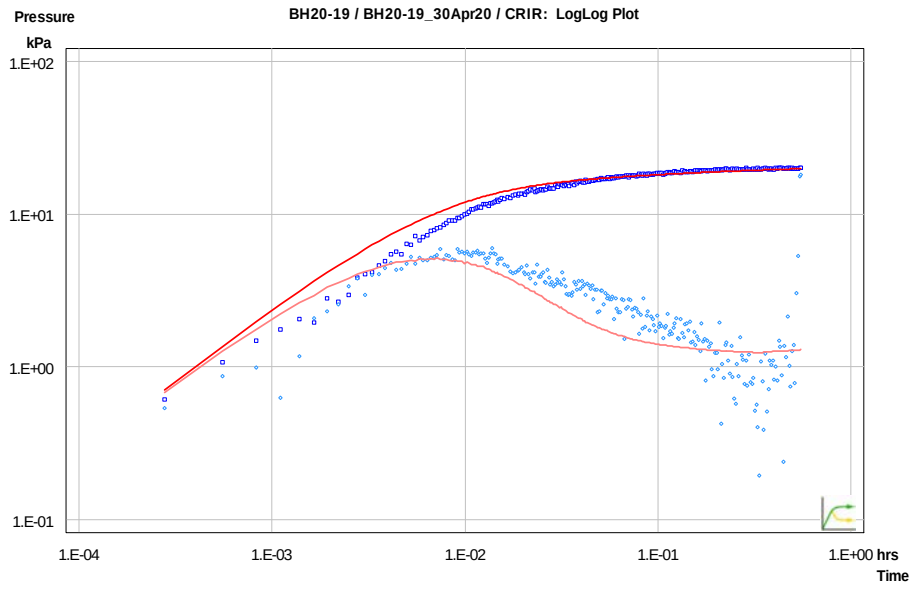
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-036

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

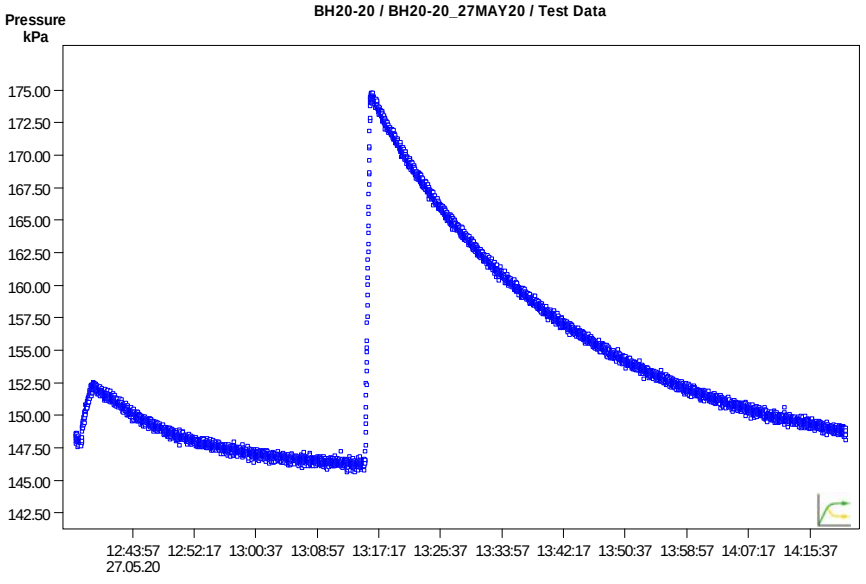
CALEDON PIT / QUARRY

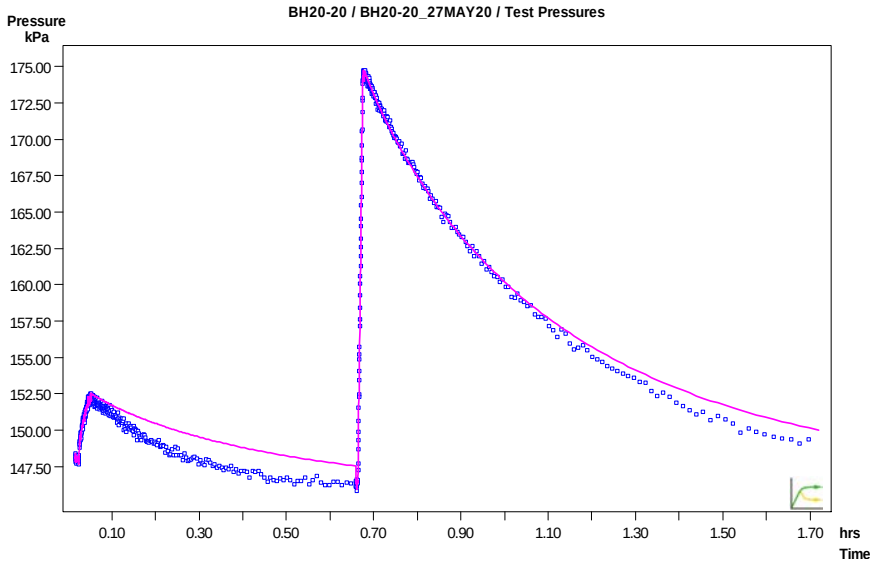
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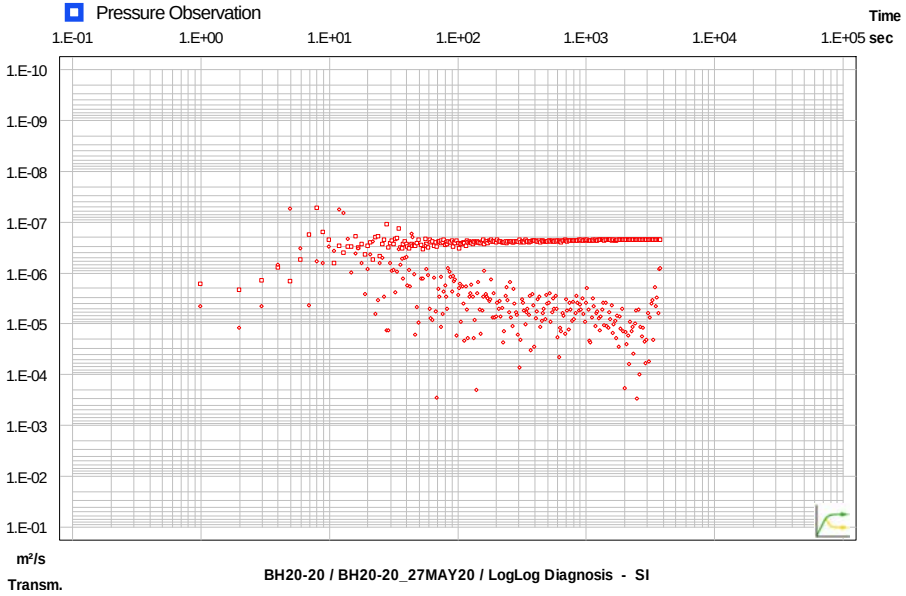
PACKER TEST RESULTS BH20-19 LOWER INTERVAL (12.5 to 22.1 mbgs)

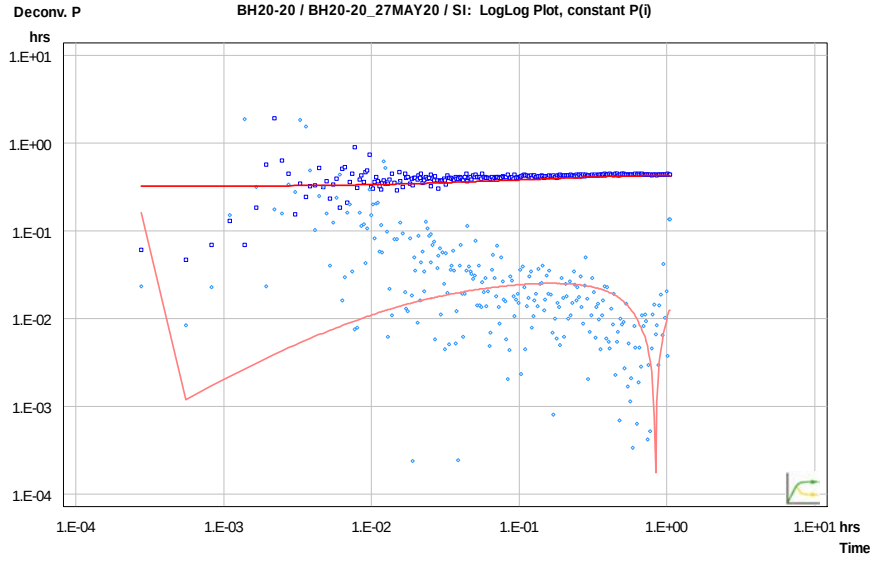
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-037

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0









Pressure Observation SI
Pressure Derivative SI
Pressure Observation CRI
Pressure Derivative CRI
Pressure Observation CRIR
Pressure Derivative CRIR

Pressure Observation Selected Phase
Pressure Derivative Selected Phase
Simulated Response
Simulated Response Derivative

CLIENT
CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT
CALEDON PIT / QUARRY

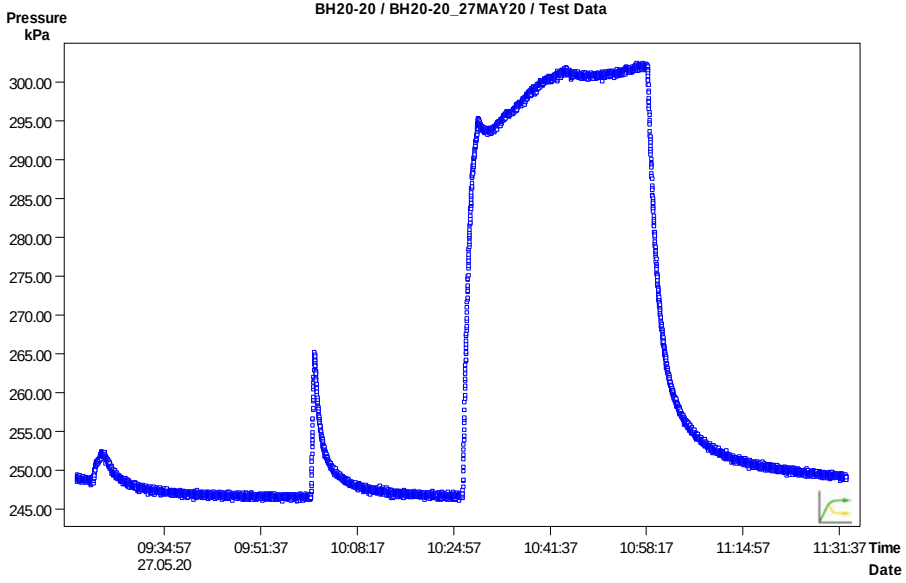
CONSULTANT
GOLDER
MEMBER OF WSP

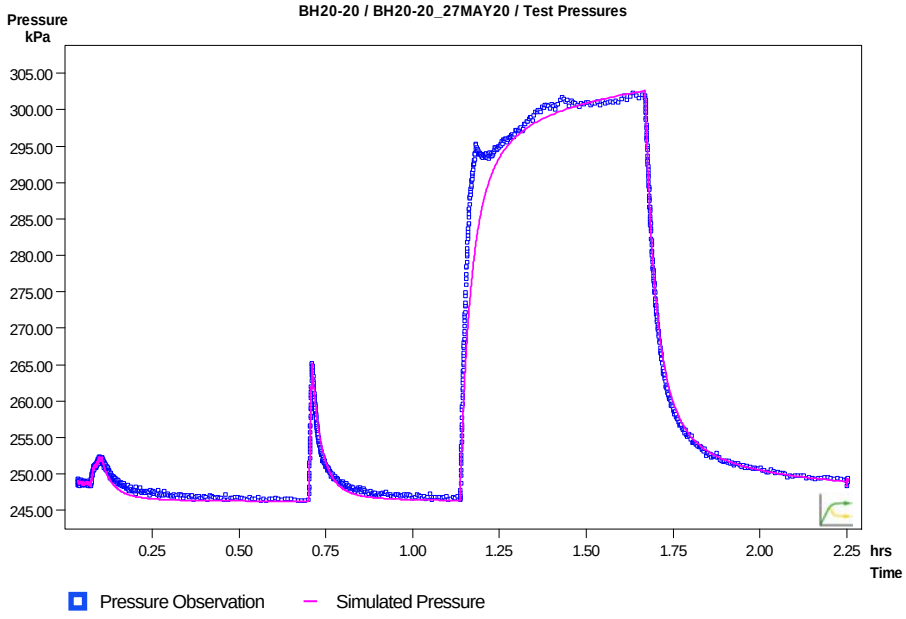
	YYYY-MM-DD	2022-02-15
PREPARED		PGM
DESIGN		ML
REVIEW		###
APPROVED		

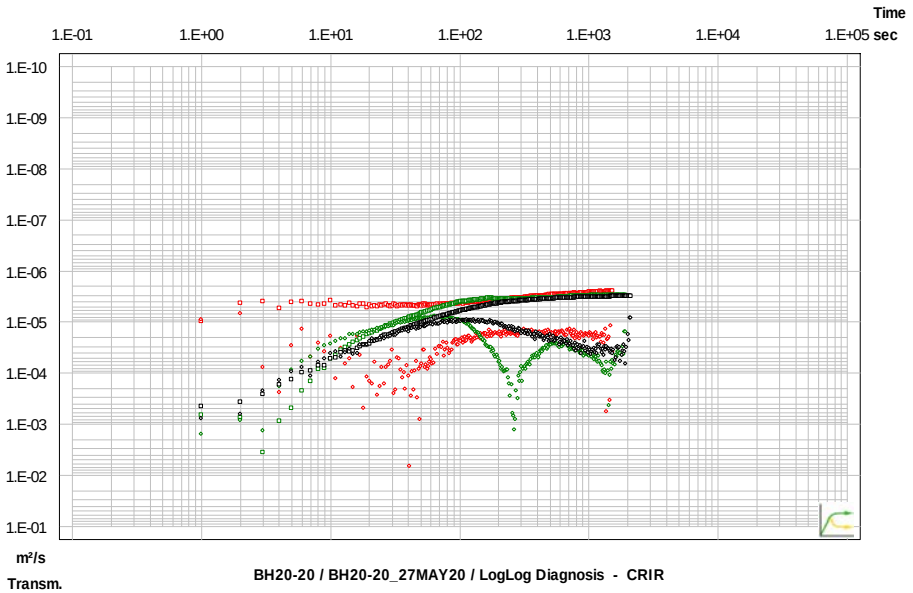
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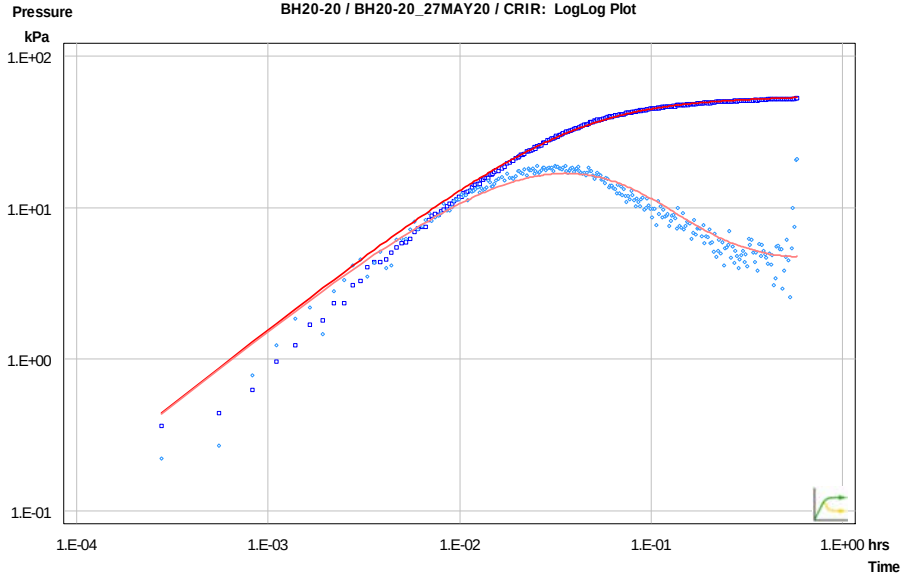
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-038

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
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CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

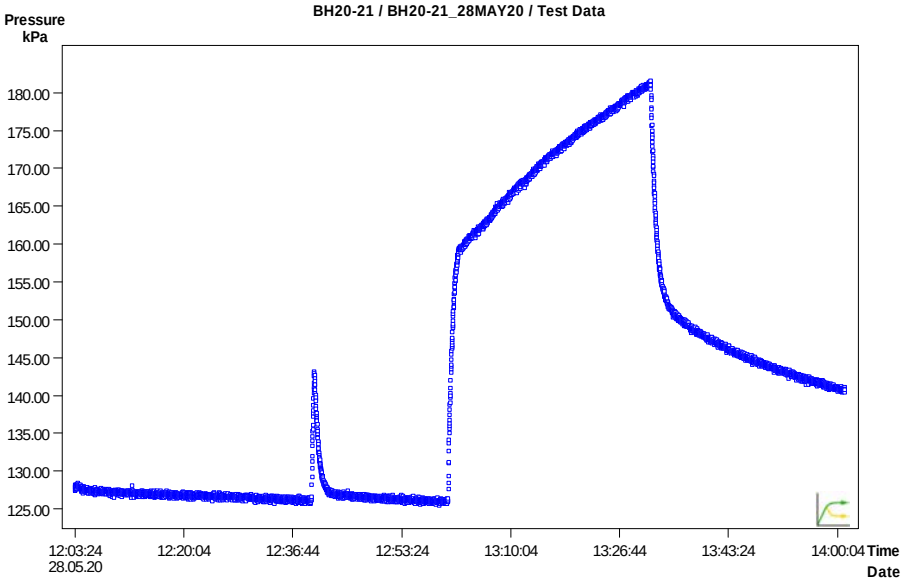
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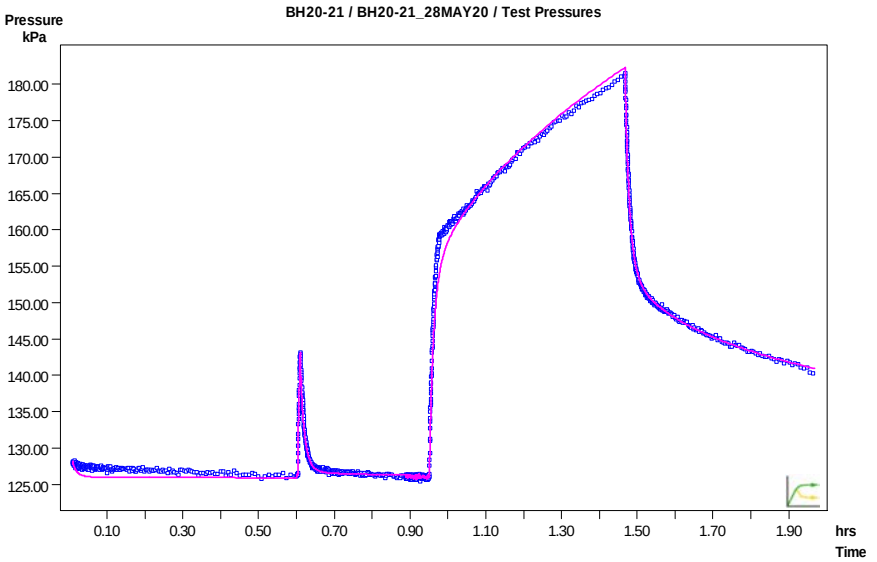
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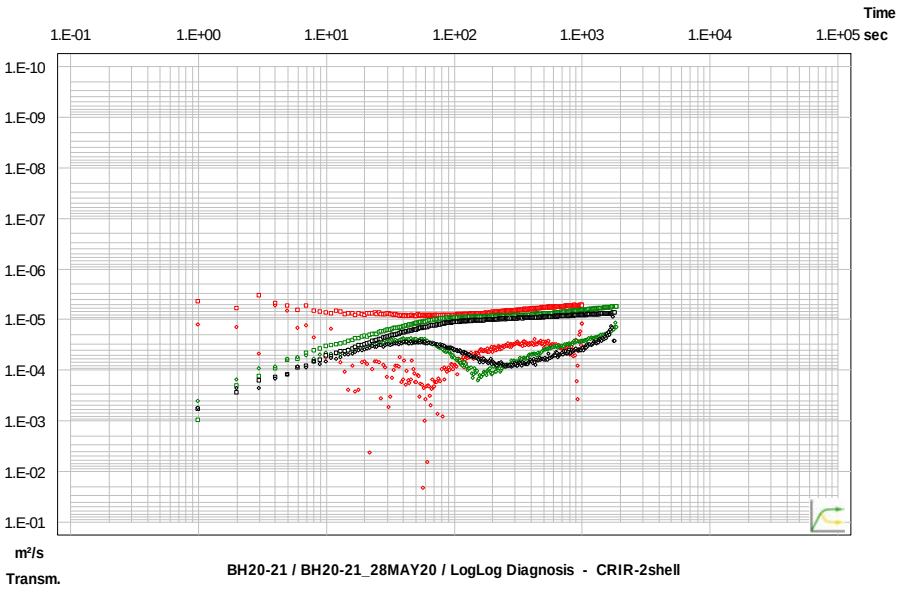
PACKER TEST RESULTS BH20-20 LOWER INTERVAL (27.3 to 38.5 mbgs)

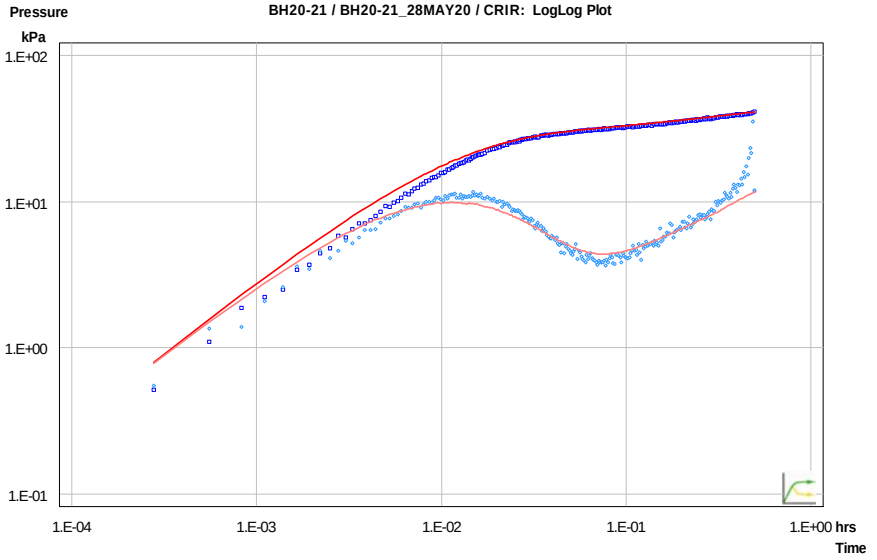
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-039

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

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MEMBER OF WSP

YYYY-MM-DD	2022-02-15	
PREPARED	PGM	
DESIGN	ML	
REVIEW	###	
APPROVED		

PROJECT

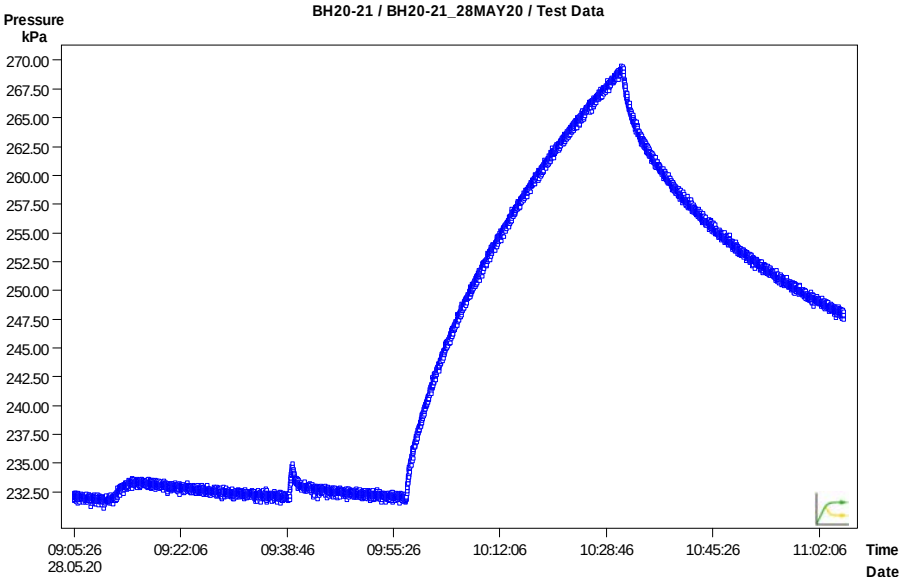
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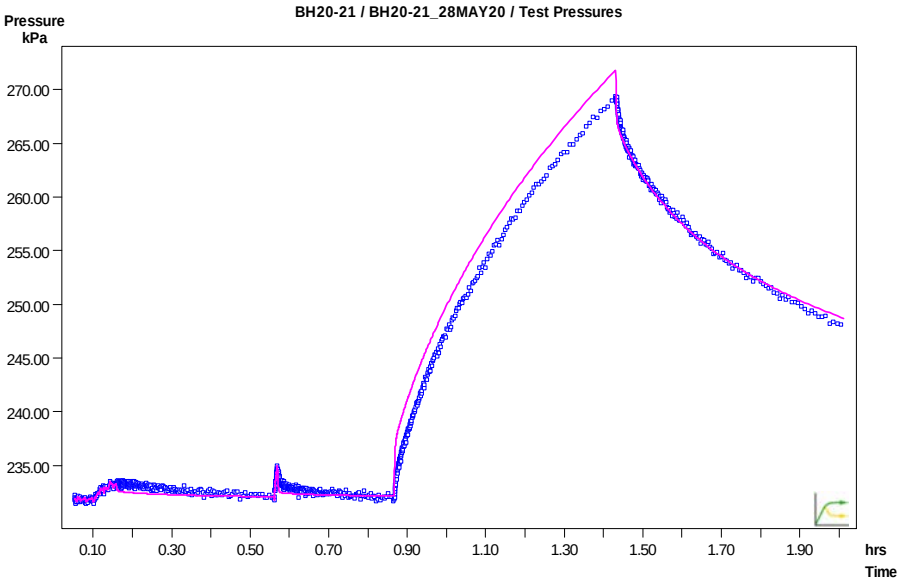
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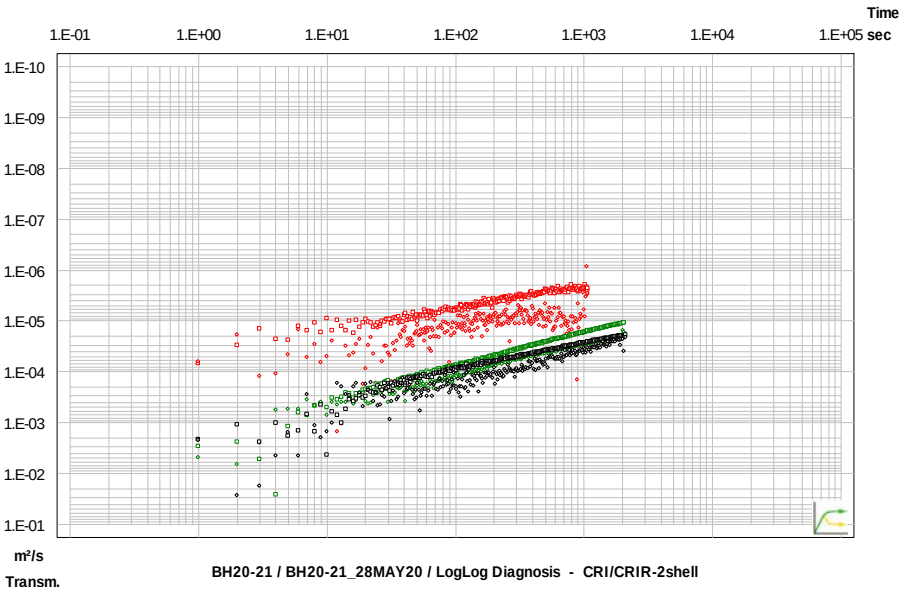
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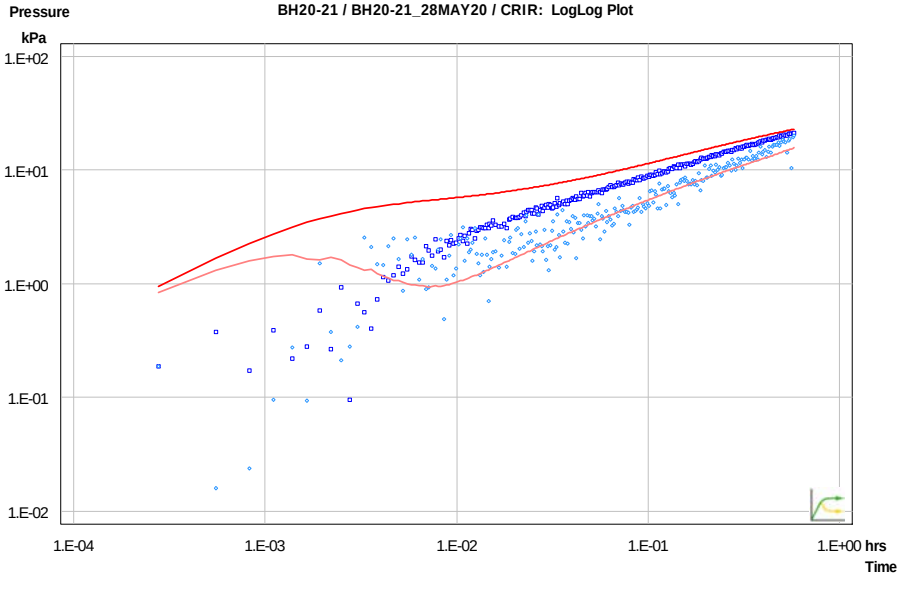
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-040

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-03-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

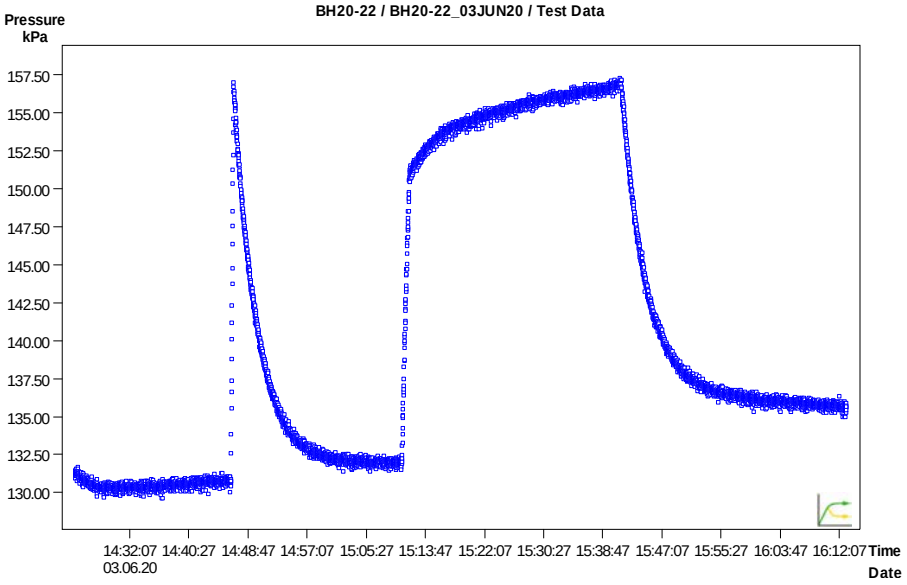
CALEDON PIT / QUARRY

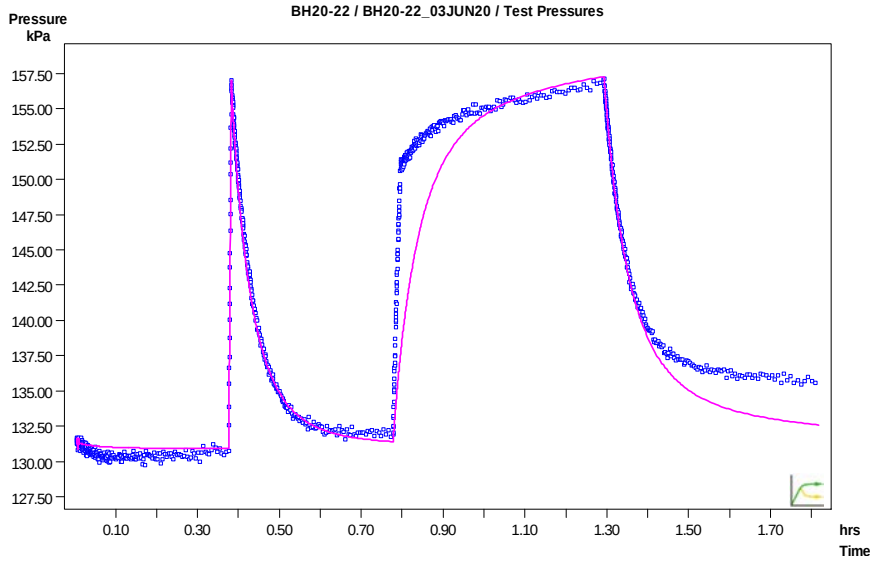
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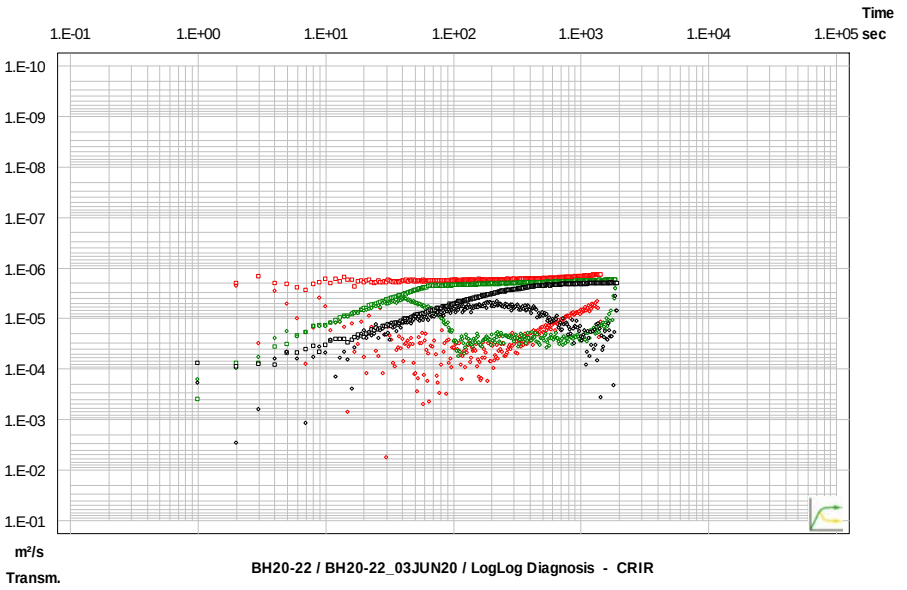
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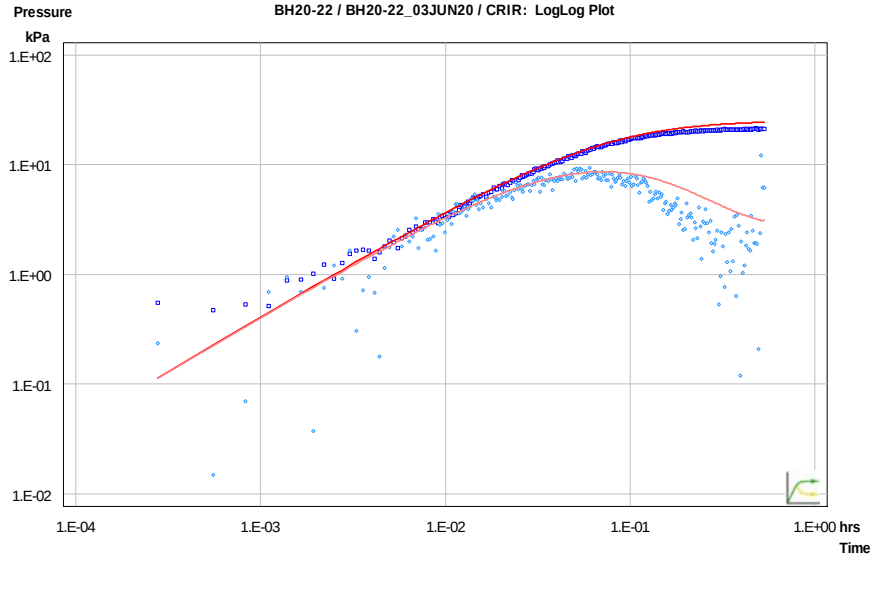
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-041

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

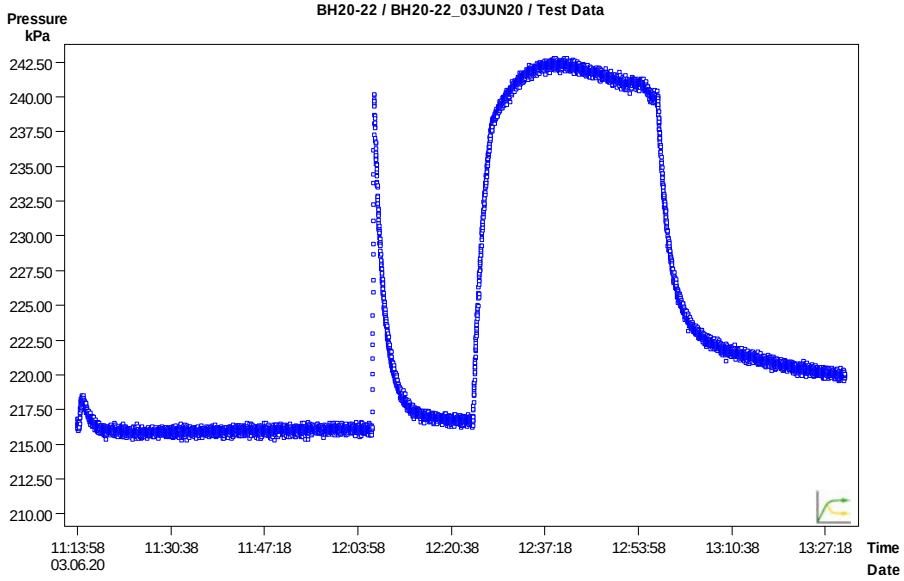
YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

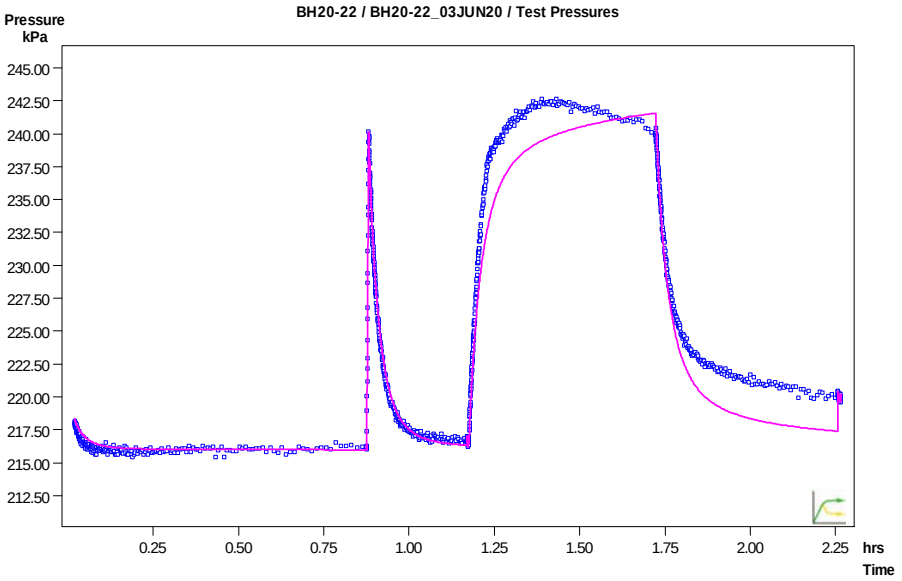
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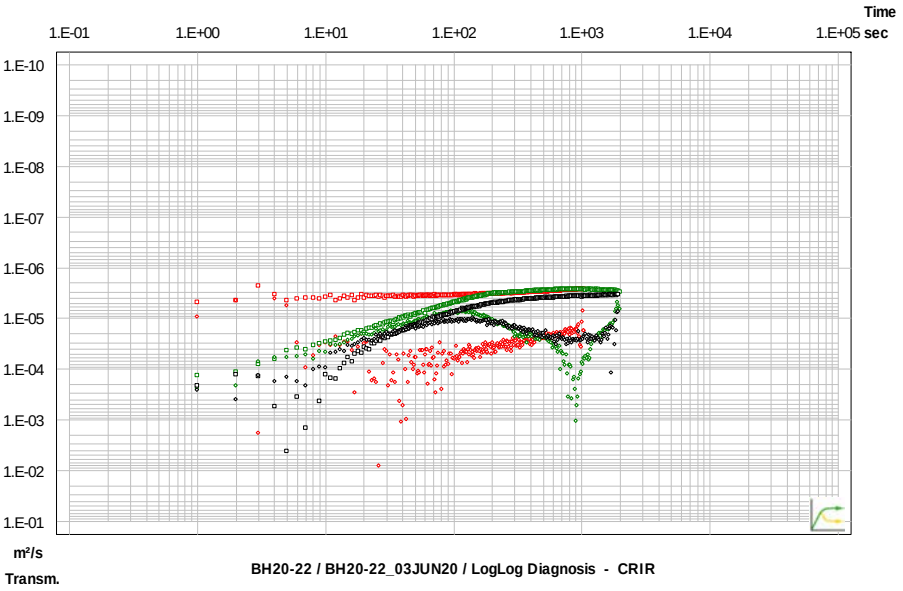
PACKER TEST RESULTS BH20-22 UPPER INTERVAL (7.6 to 17.4 mbgs)

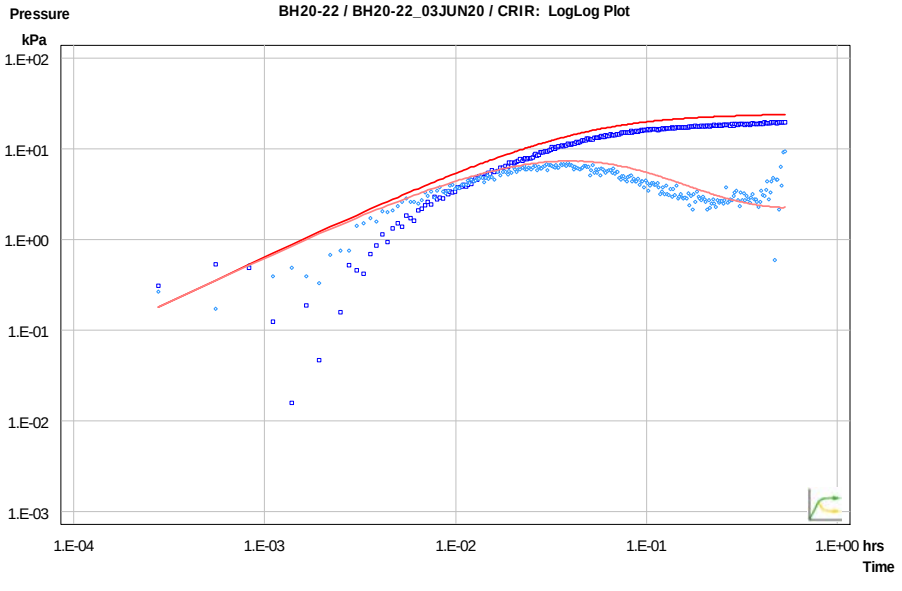
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-042

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
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CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

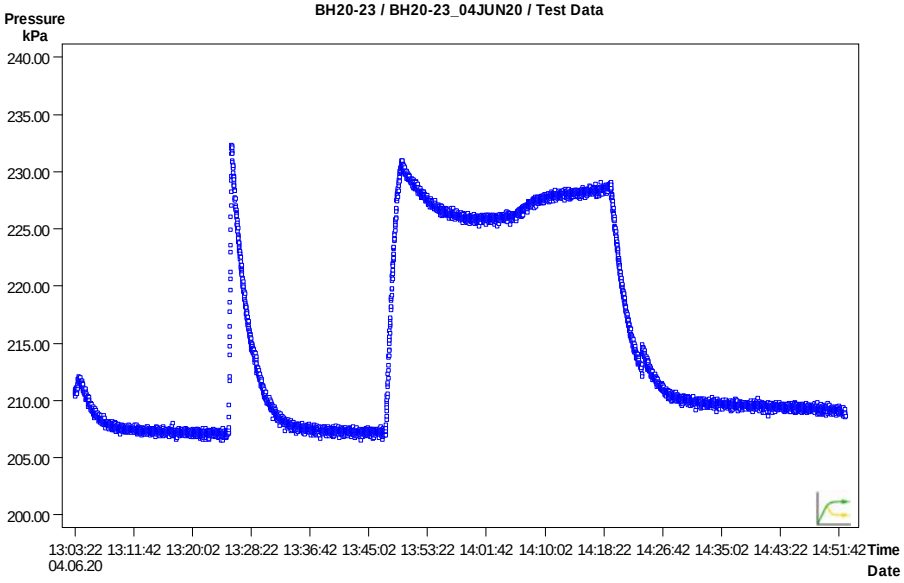
YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

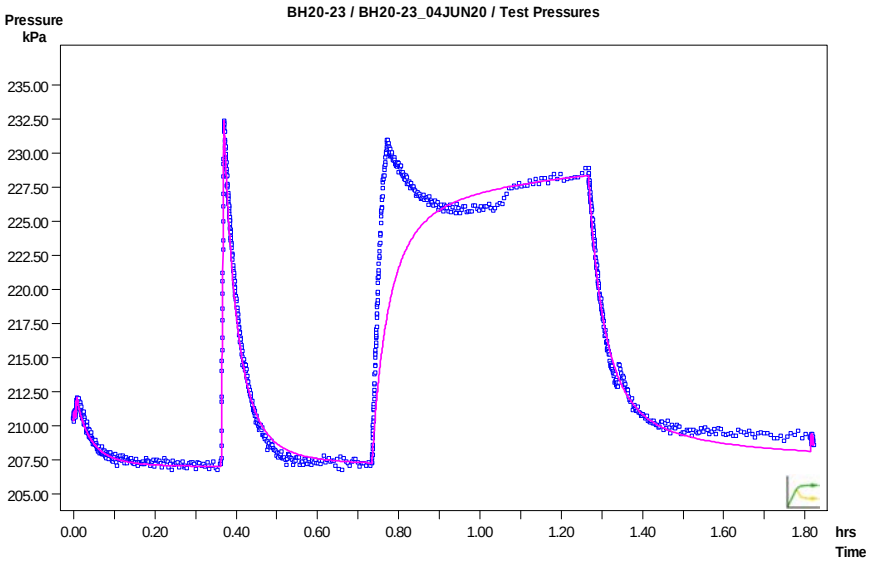
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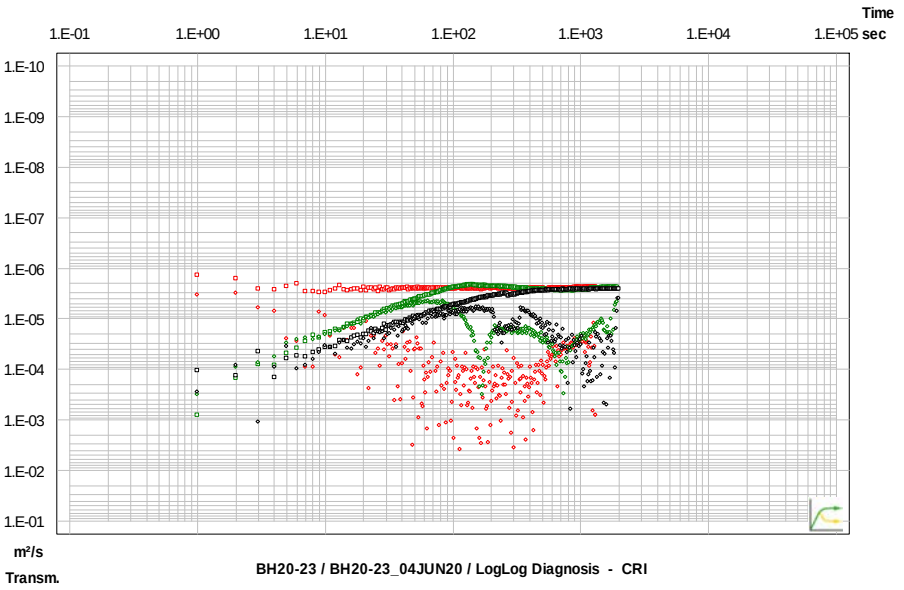
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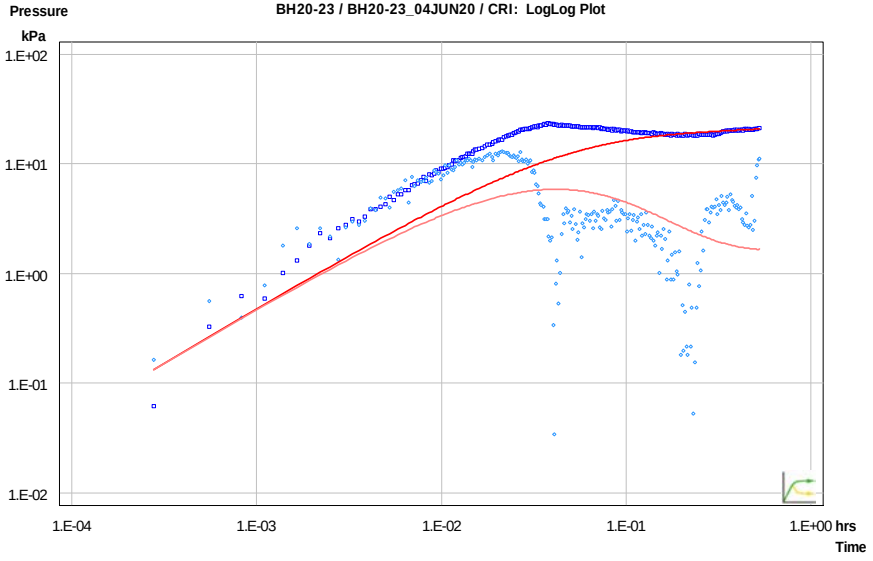
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-043

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

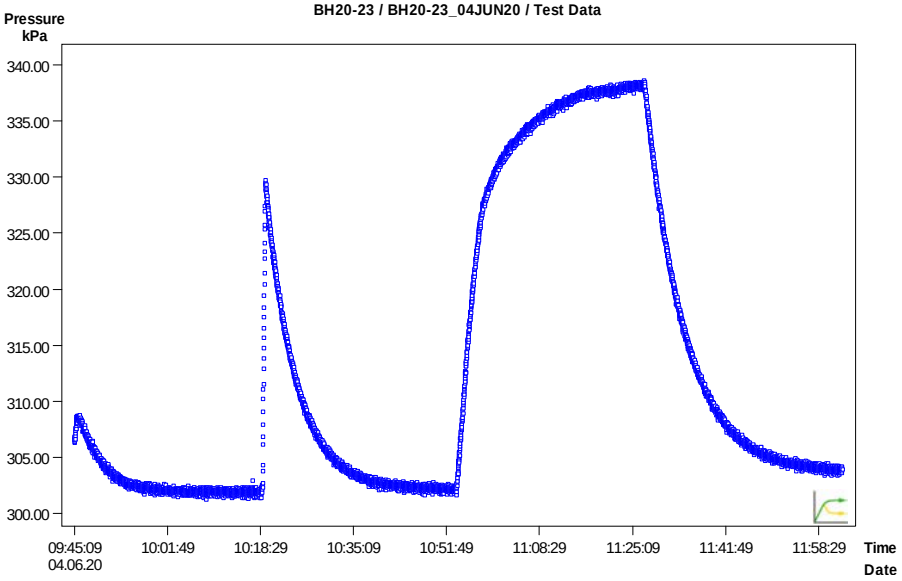
CALEDON PIT / QUARRY

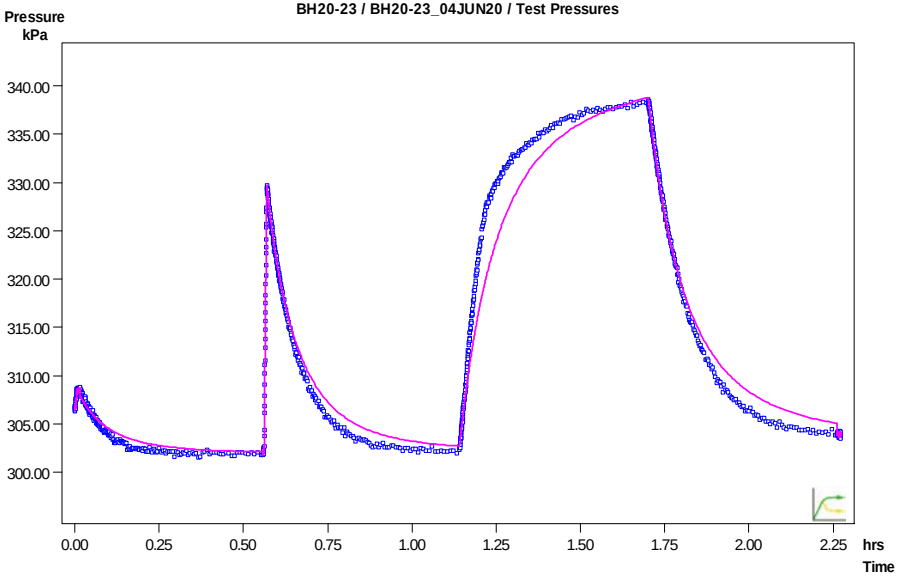
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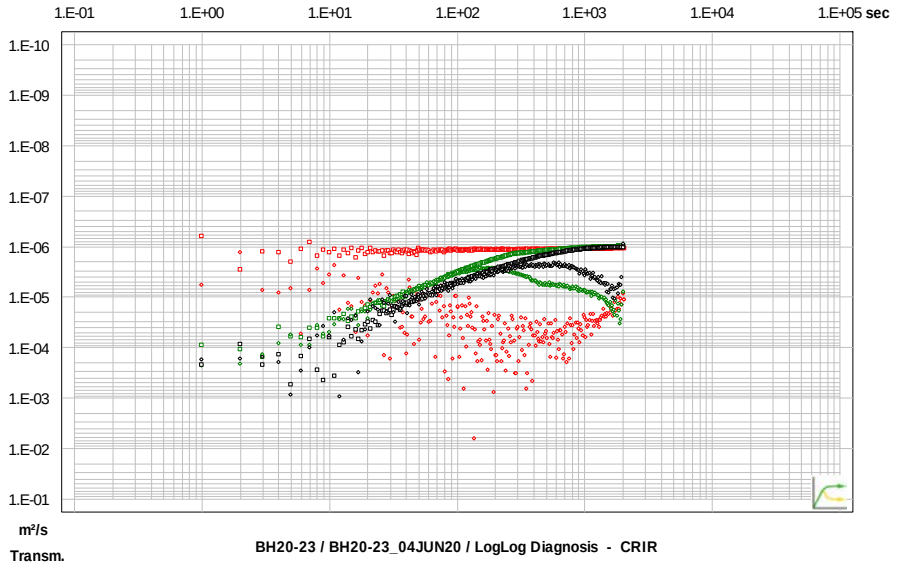
PACKER TEST RESULTS BH20-23 UPPER INTERVAL (16.9 to 25.1 mbgs)

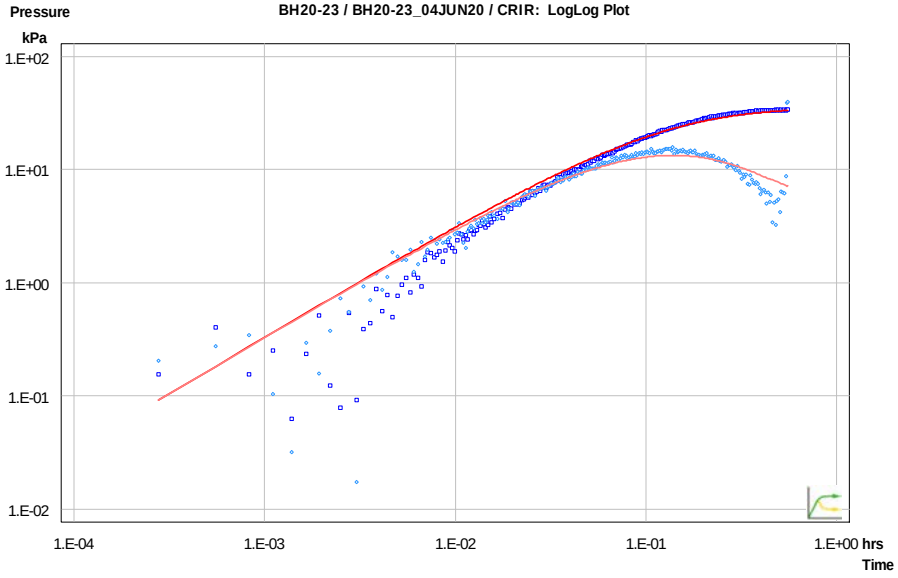
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-044

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

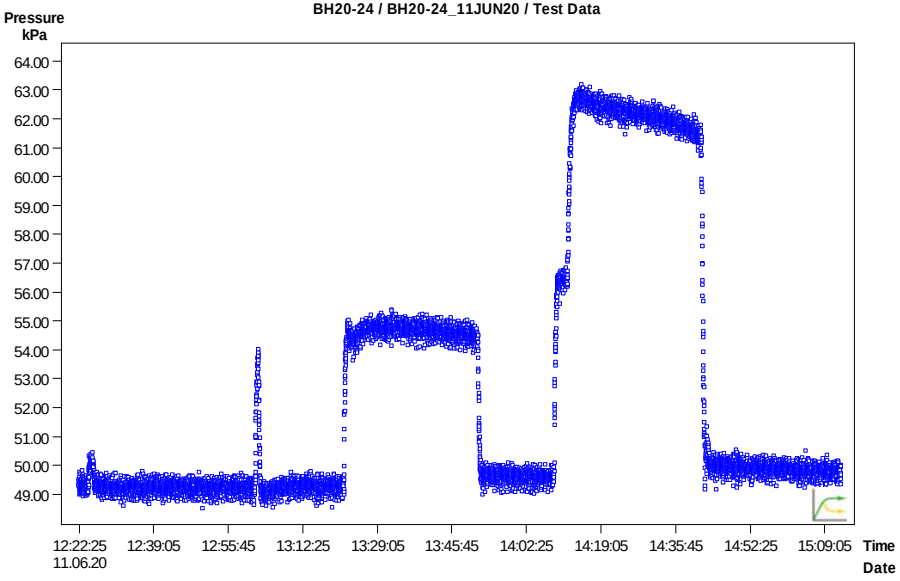
YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

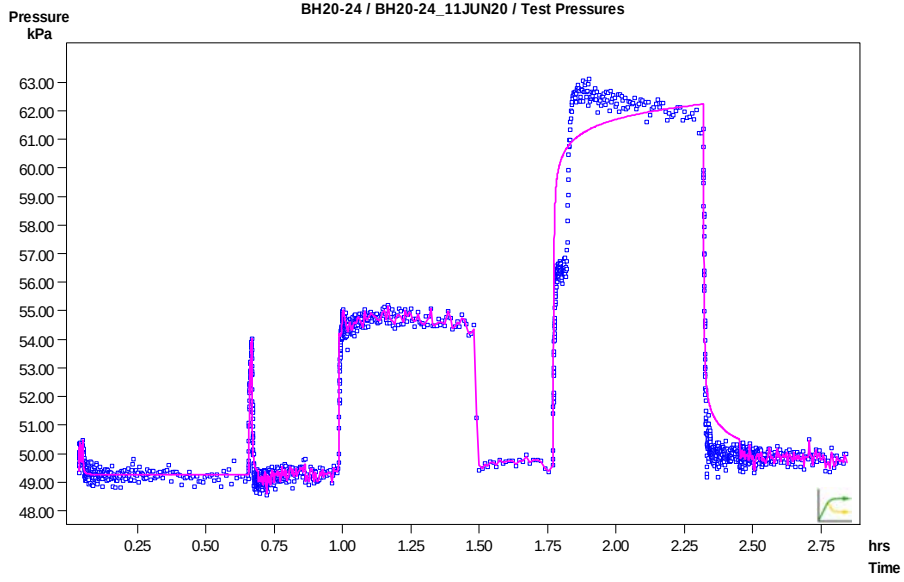
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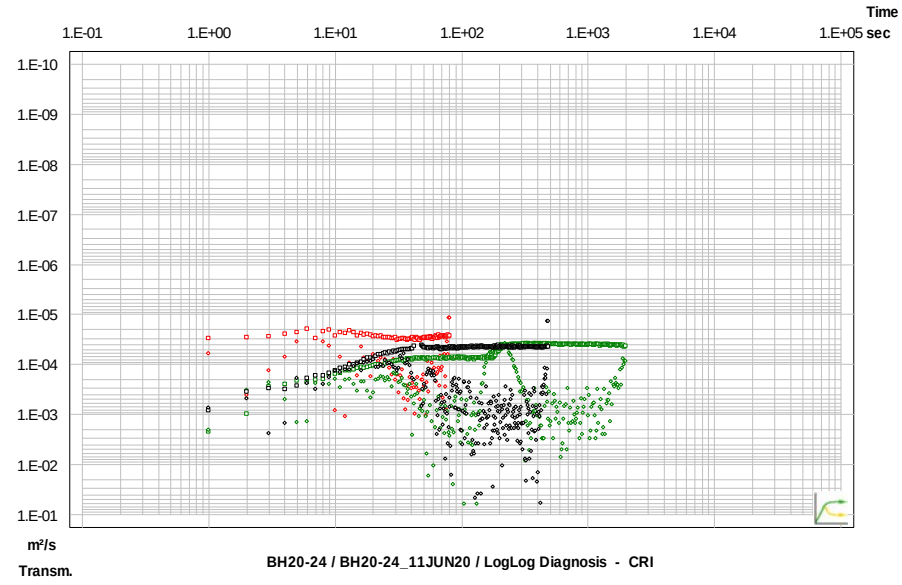
PACKER TEST RESULTS BH20-23 LOWER INTERVAL (25.1 to 34.9 mbgs)

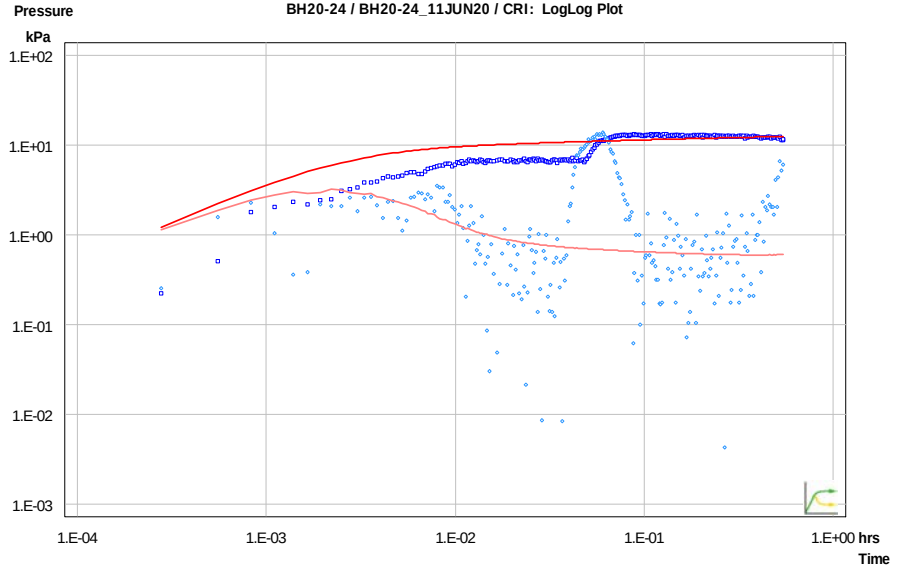
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-045

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
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CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

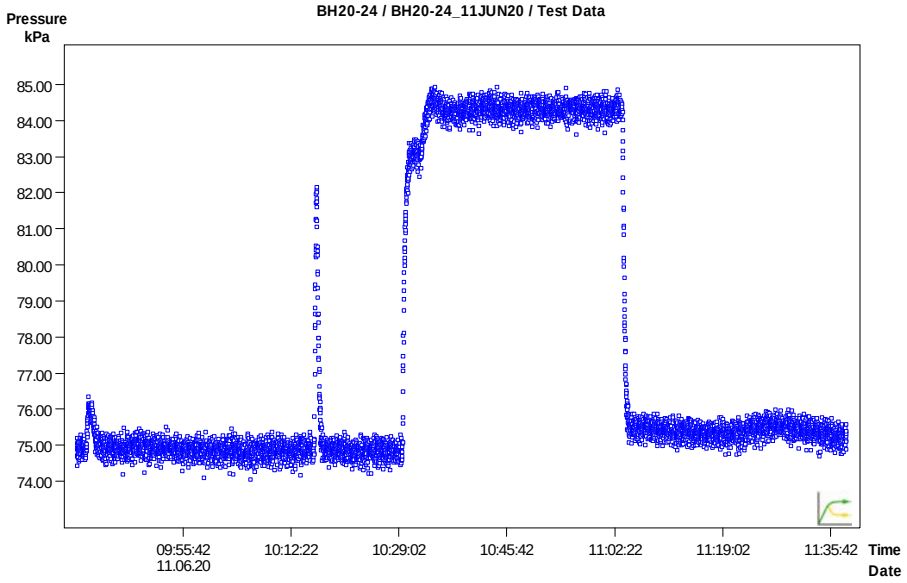
CALEDON PIT / QUARRY

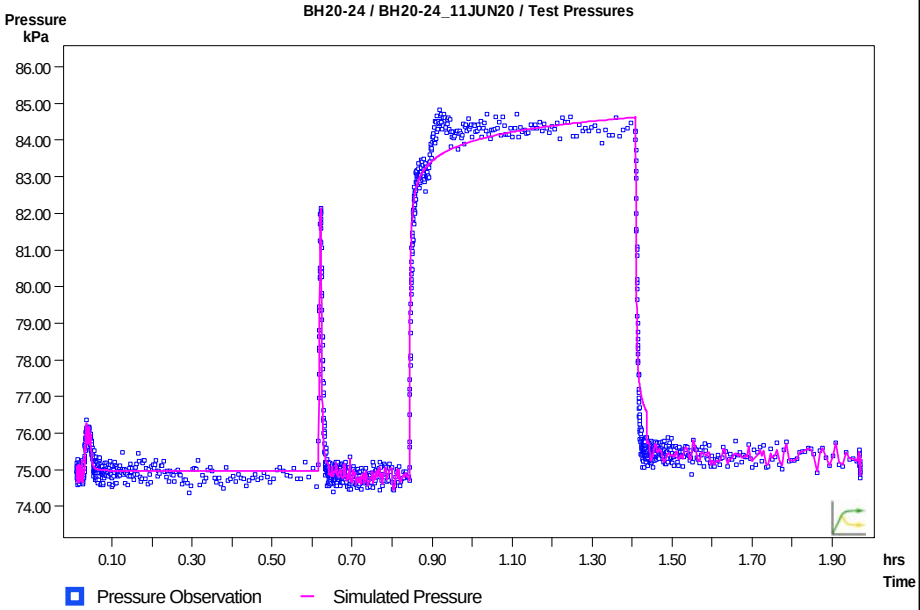
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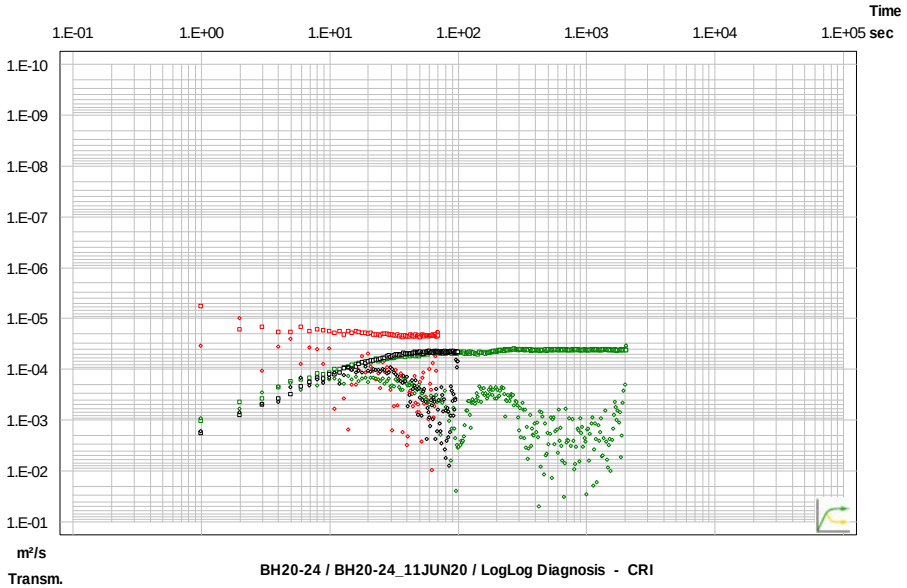
PACKER TEST RESULTS BH20-24 UPPER INTERVAL (14.0 to 17.7 mbgs)

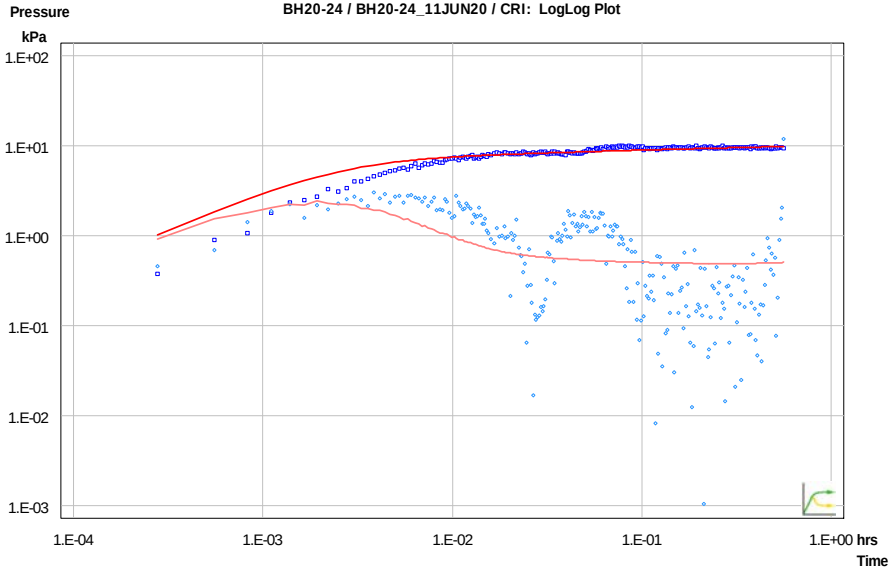
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-046

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

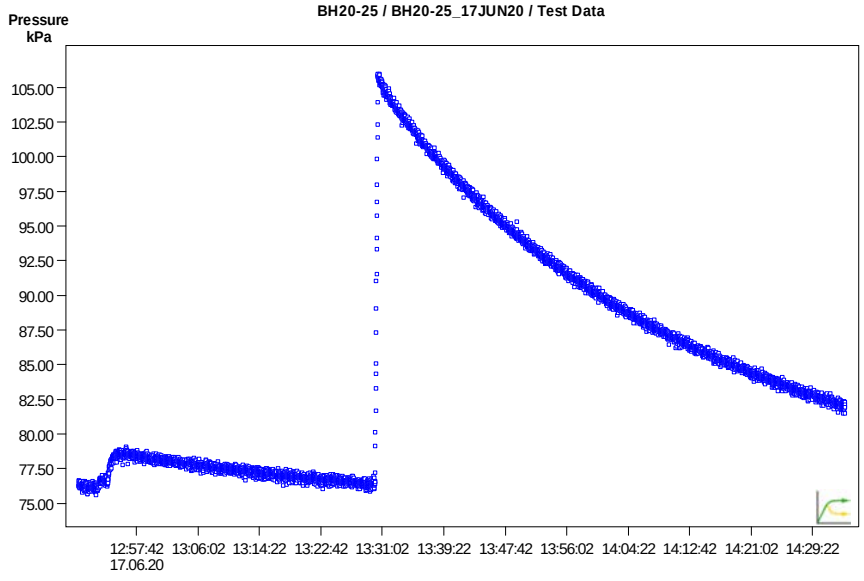
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PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

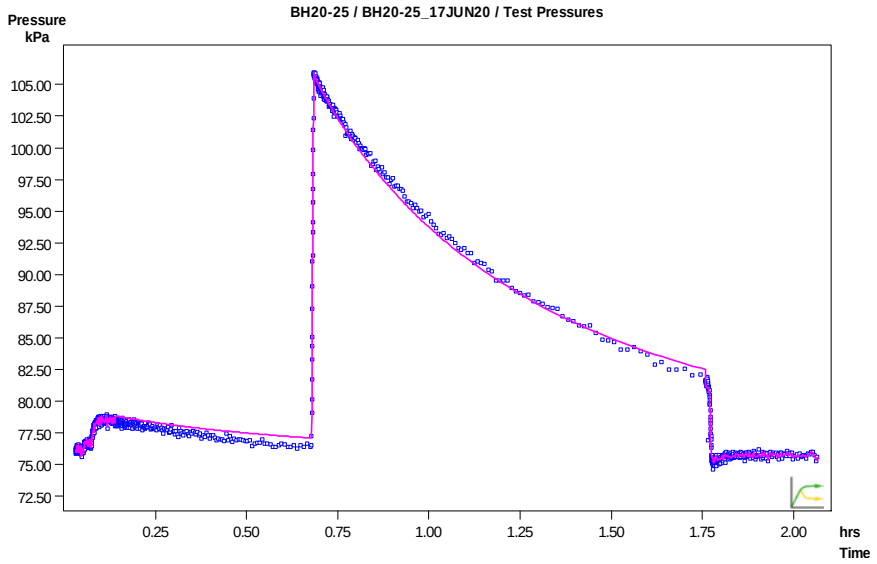
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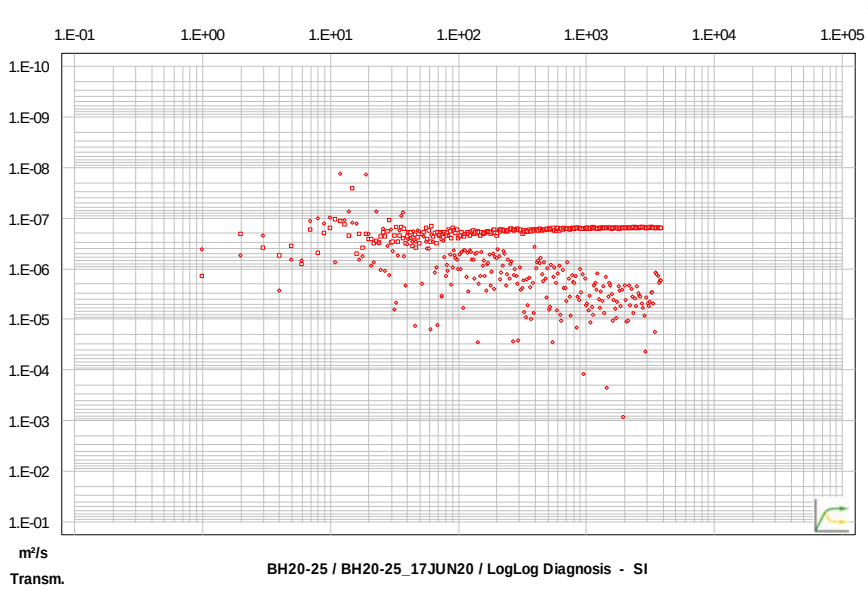
PACKER TEST RESULTS BH20-24 LOWER INTERVAL (16.7 to 20.3 mbgs)

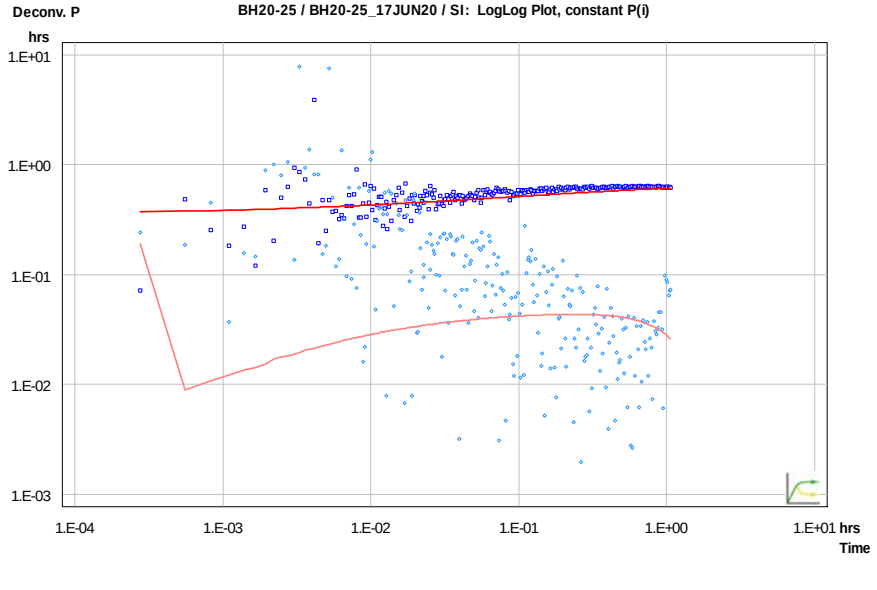
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-047

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
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CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

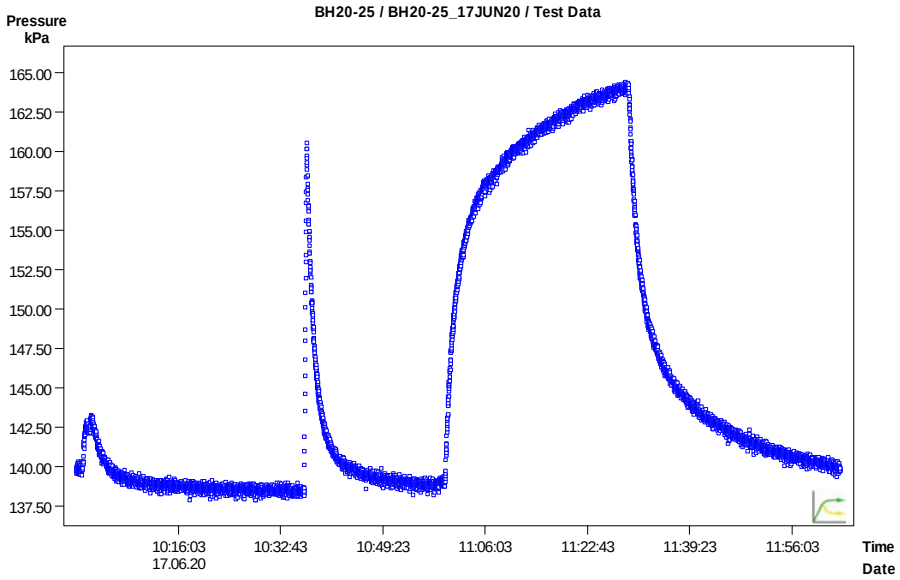
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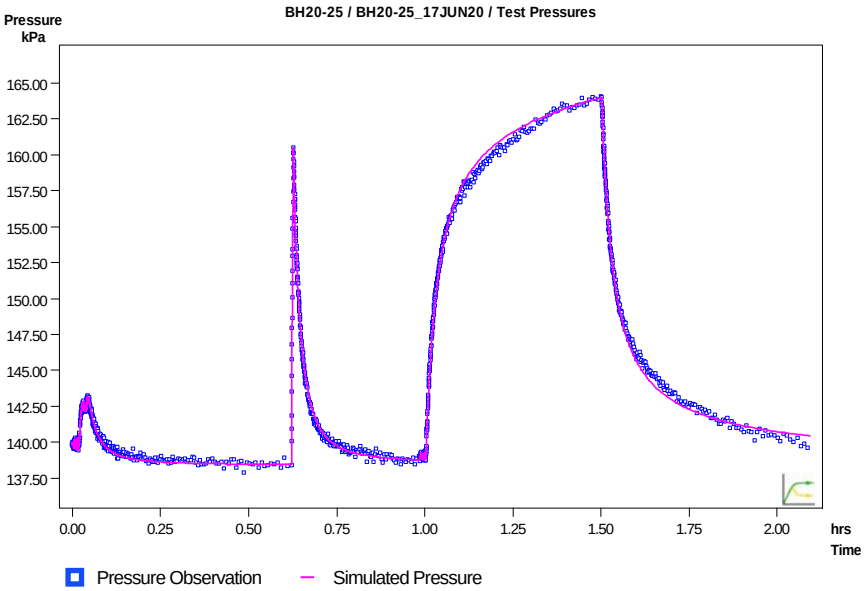
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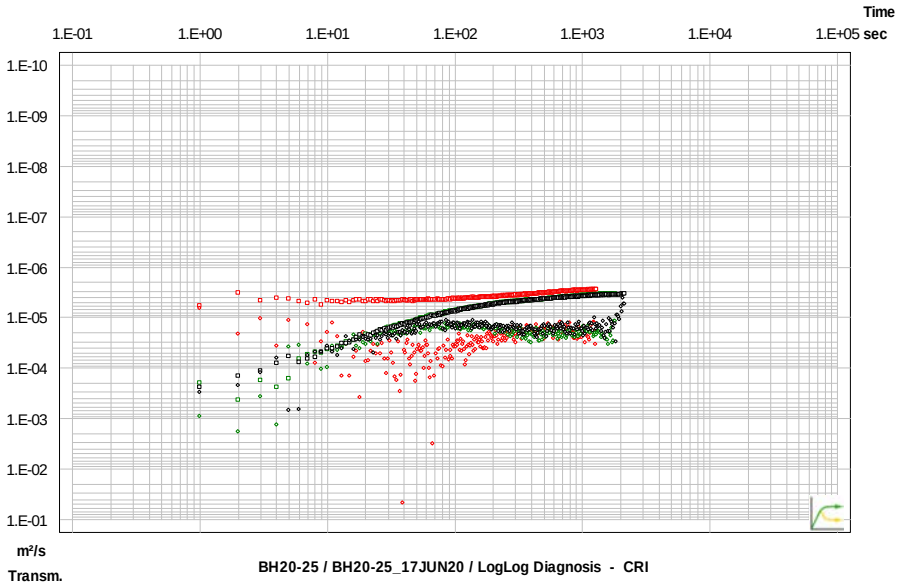
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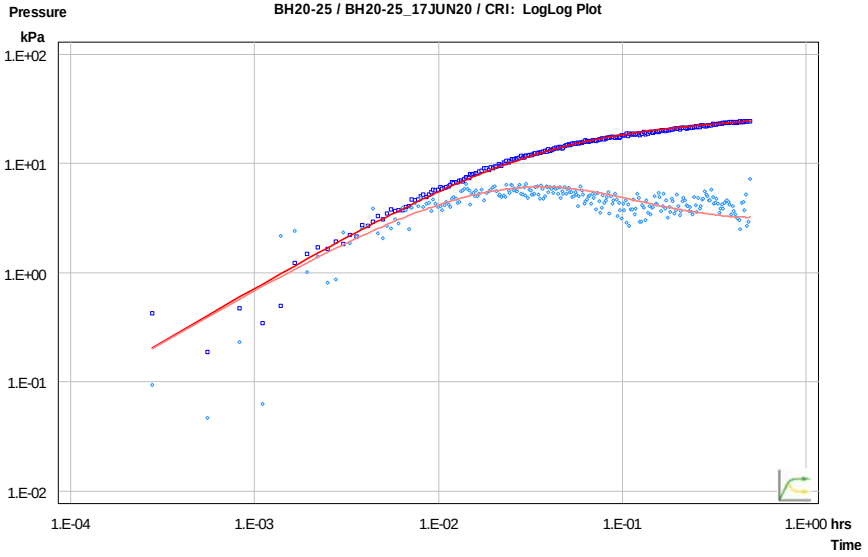
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-048

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

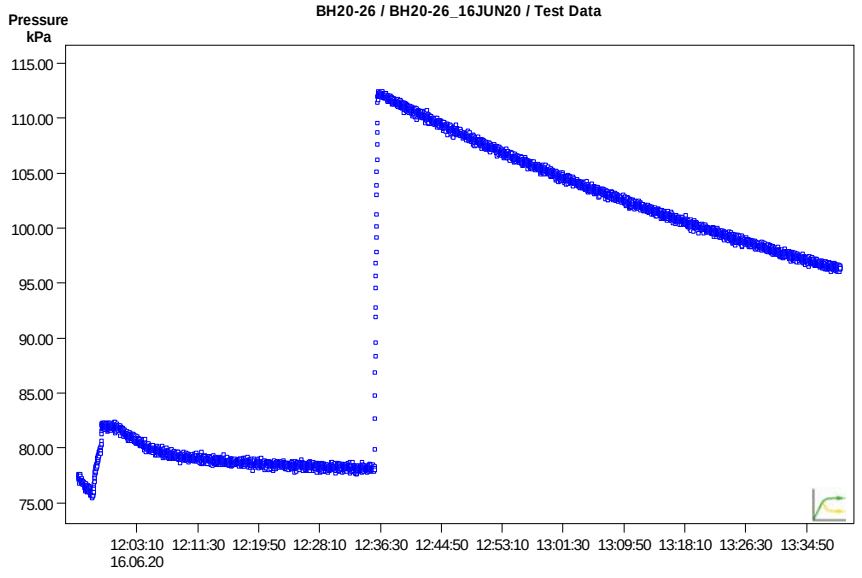
CALEDON PIT / QUARRY

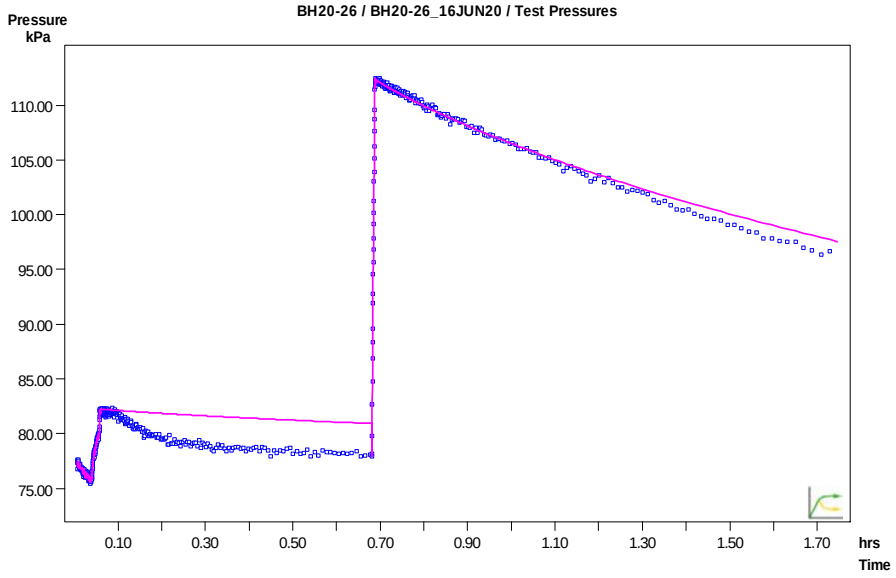
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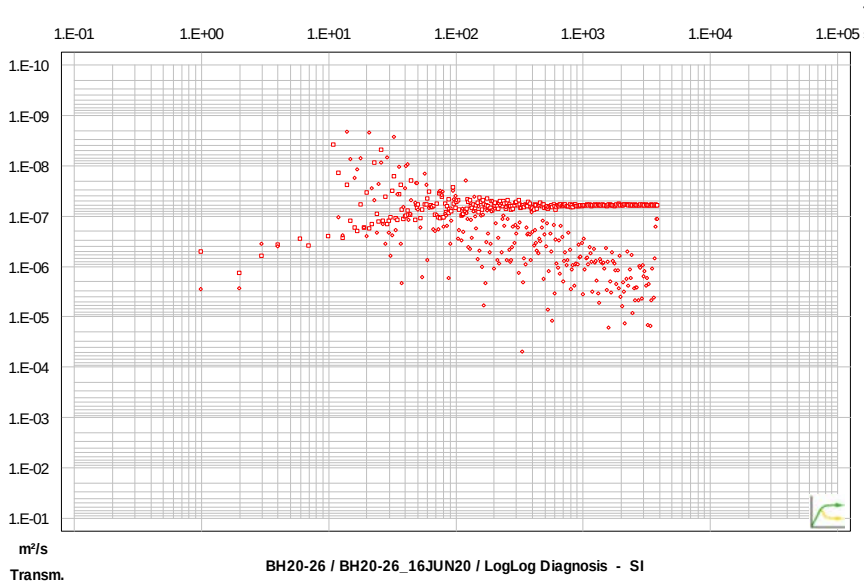
PACKER TEST RESULTS BH20-25 LOWER INTERVAL (12.9 to 19.6 mbgs)

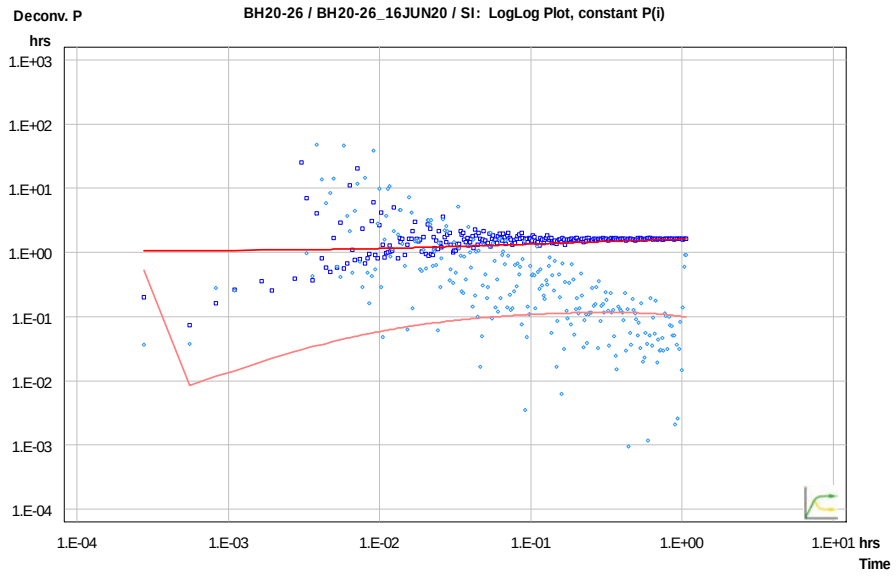
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-049

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

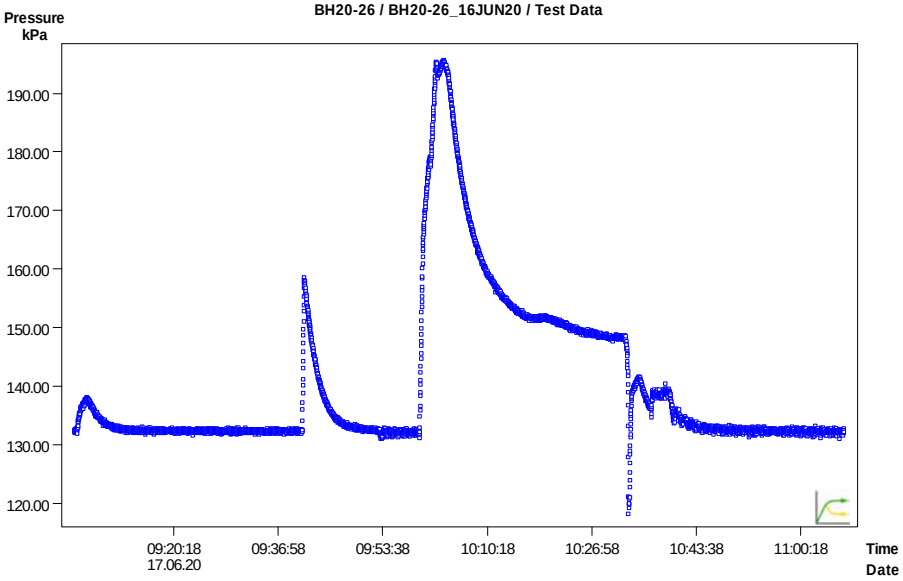
YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

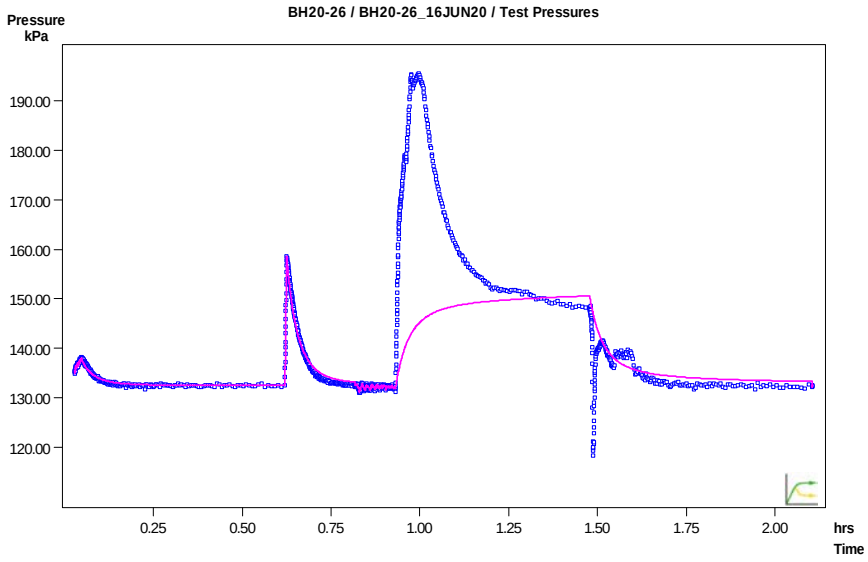
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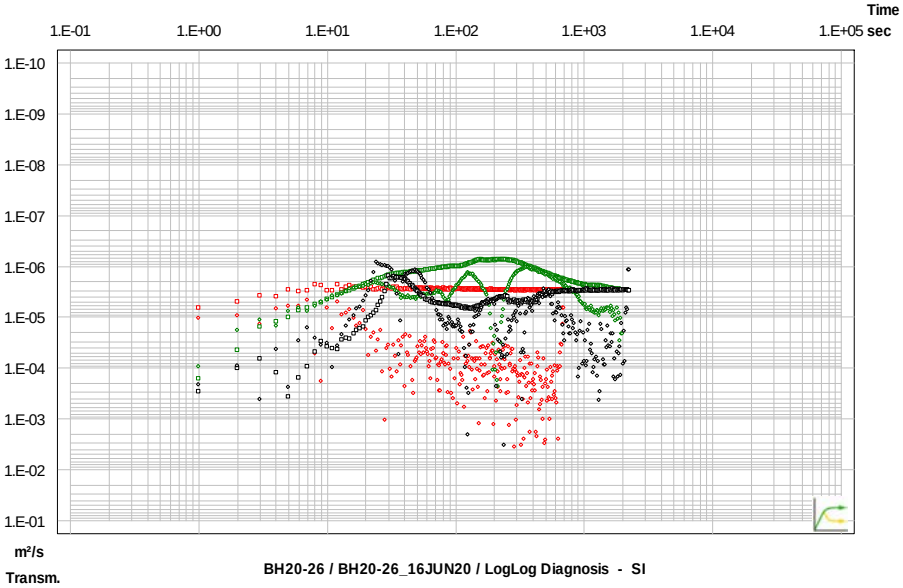
PACKER TEST RESULTS BH20-26 UPPER INTERVAL (7.7 to 14.4 mbgs)

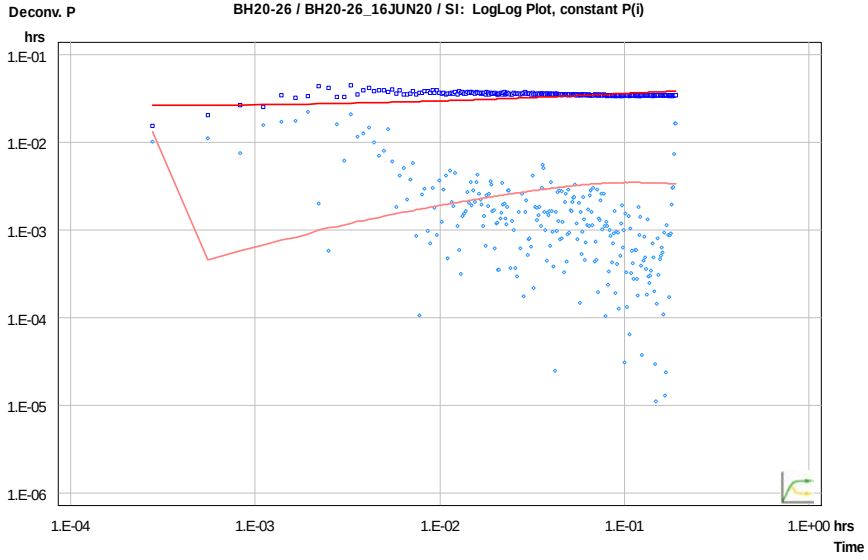
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-050

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

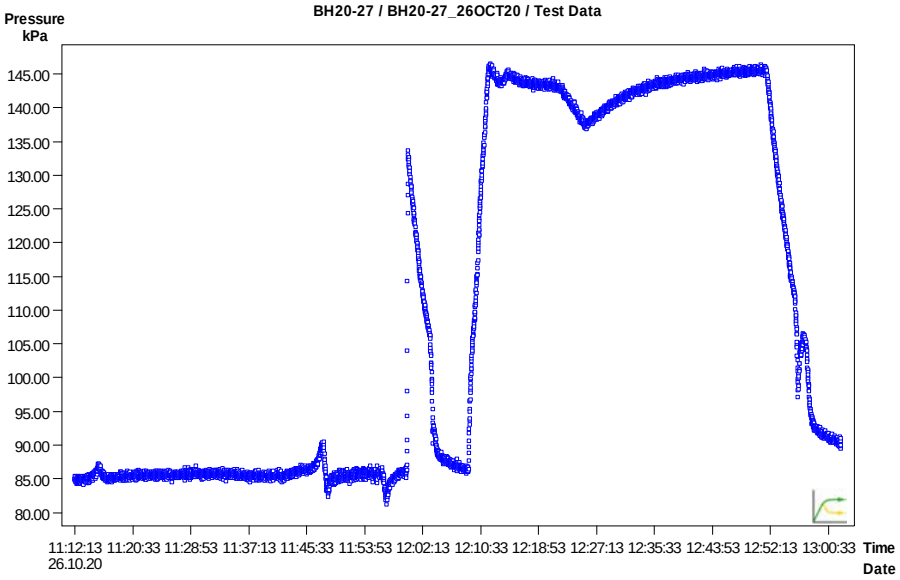
YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

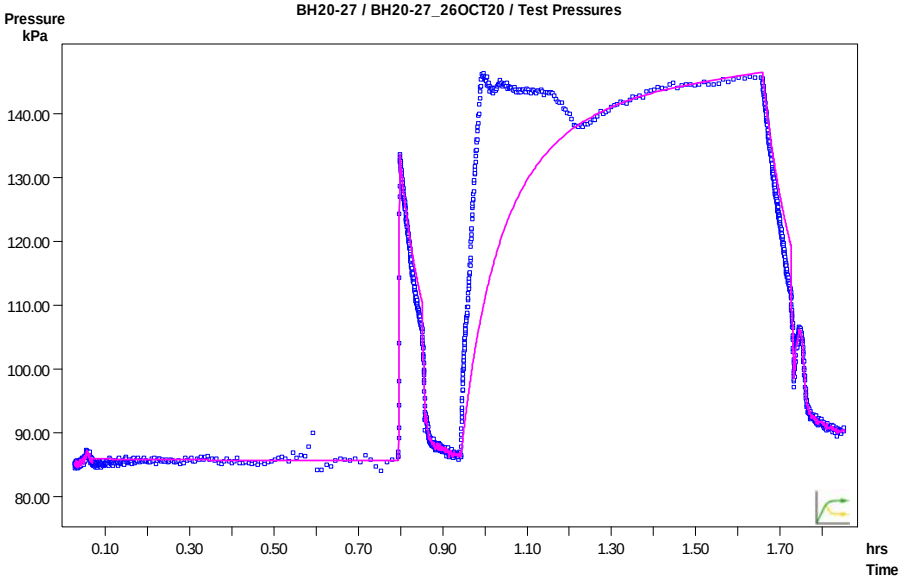
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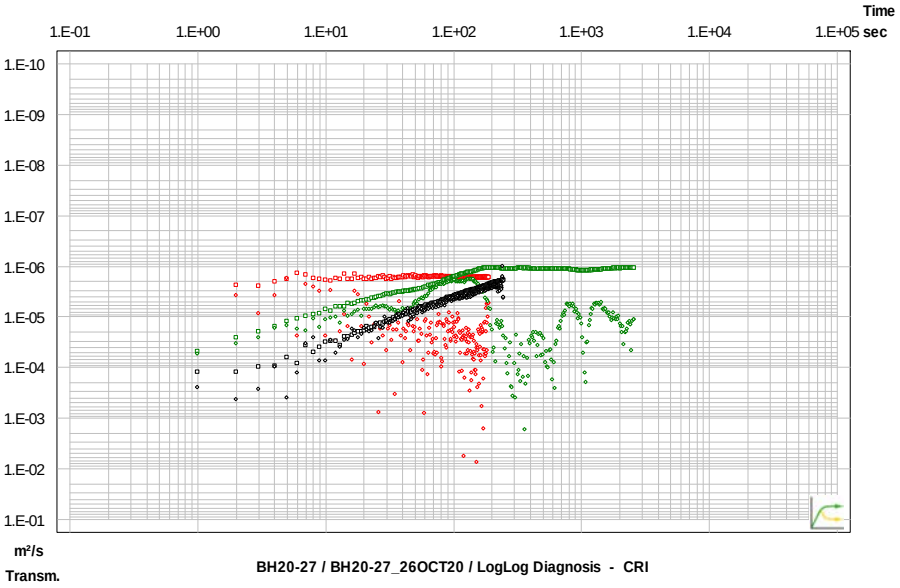
PACKER TEST RESULTS BH20-26 LOWER INTERVAL (13.6 to 20.3 mbgs)

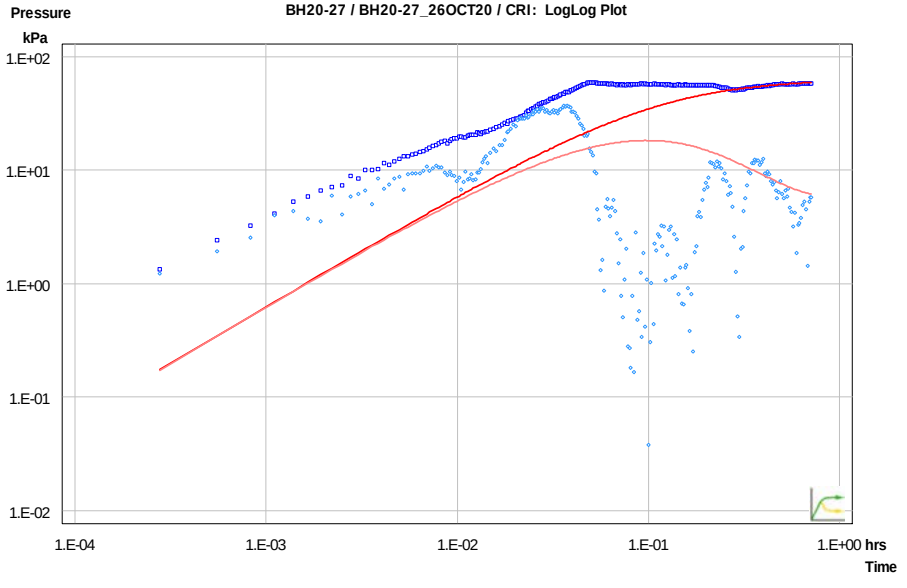
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-051

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
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CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

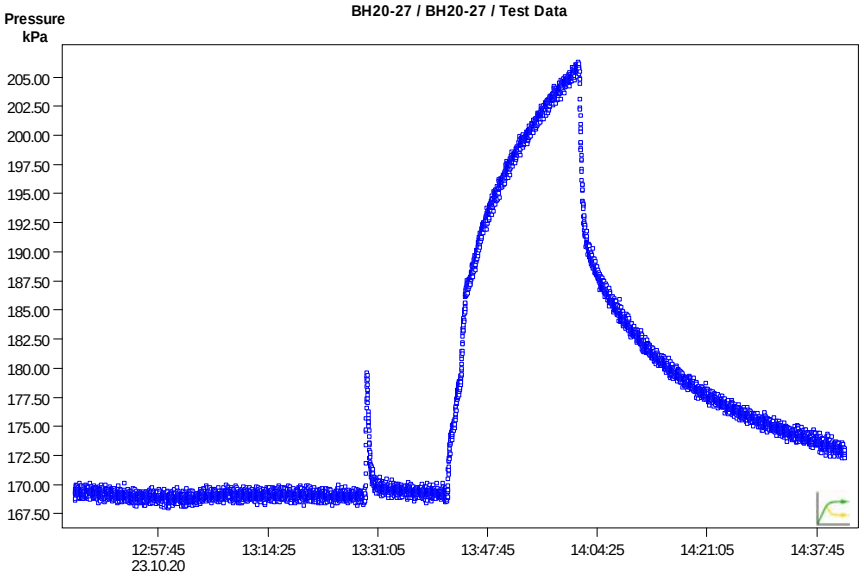
CALEDON PIT / QUARRY

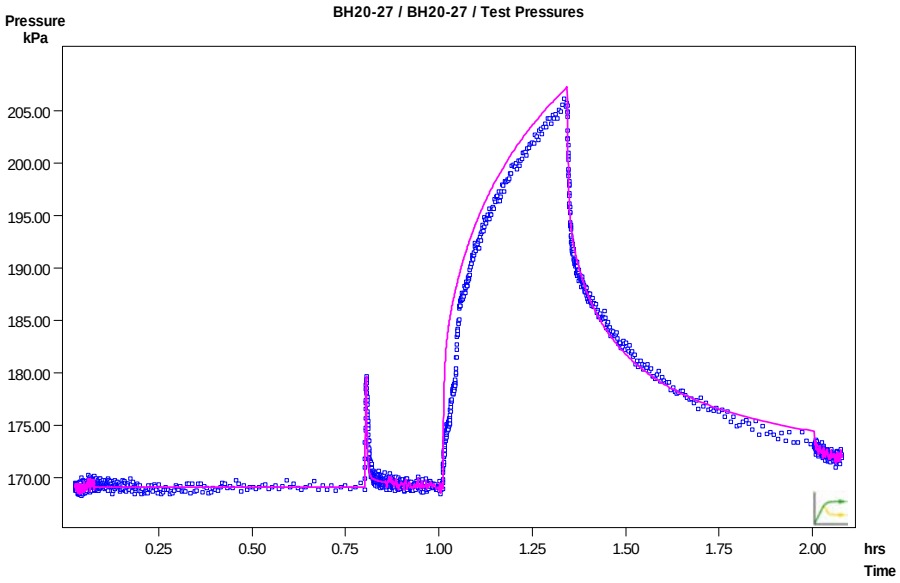
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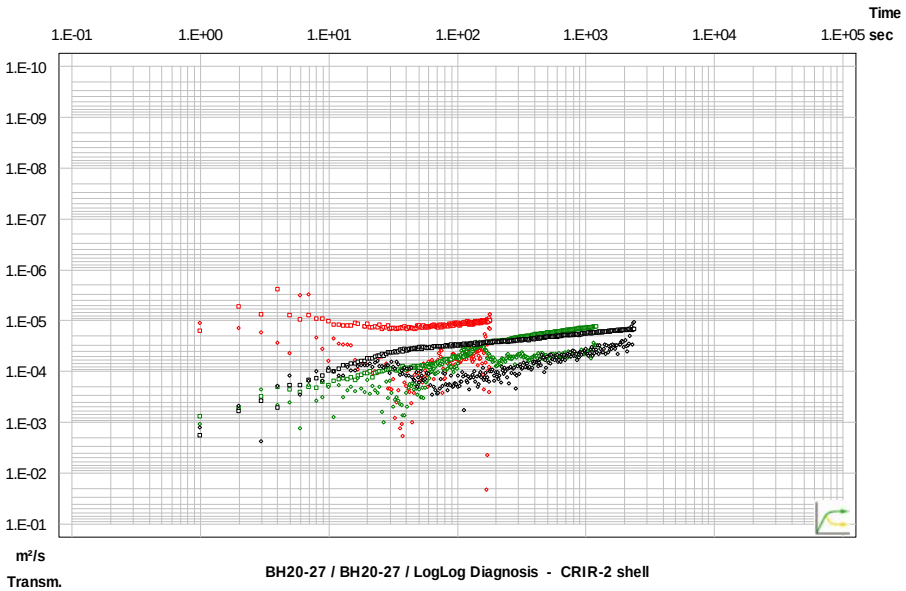
PACKER TEST RESULTS BH20-27 UPPER INTERVAL (4.4 to 14.2 mbgs)

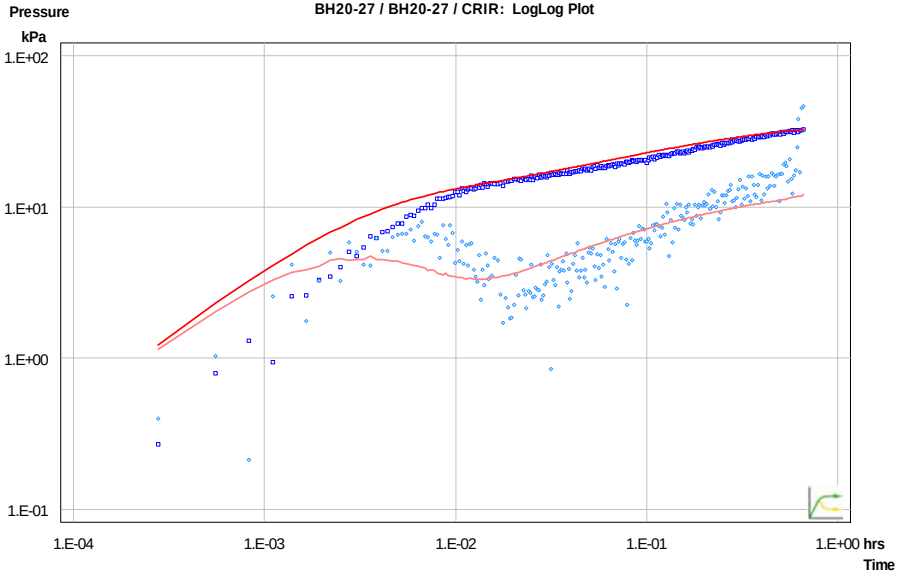
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-052

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

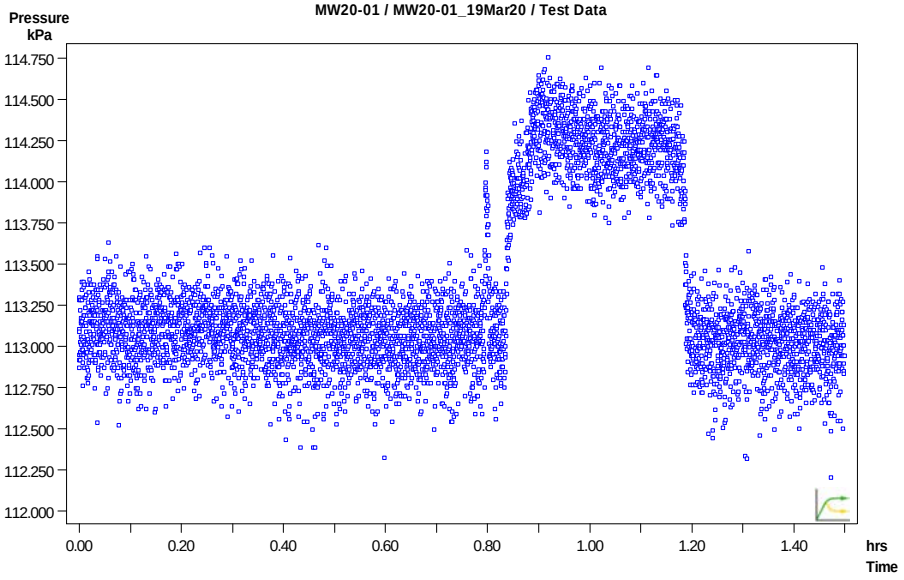
YYYY-MM-DD	2022-03-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

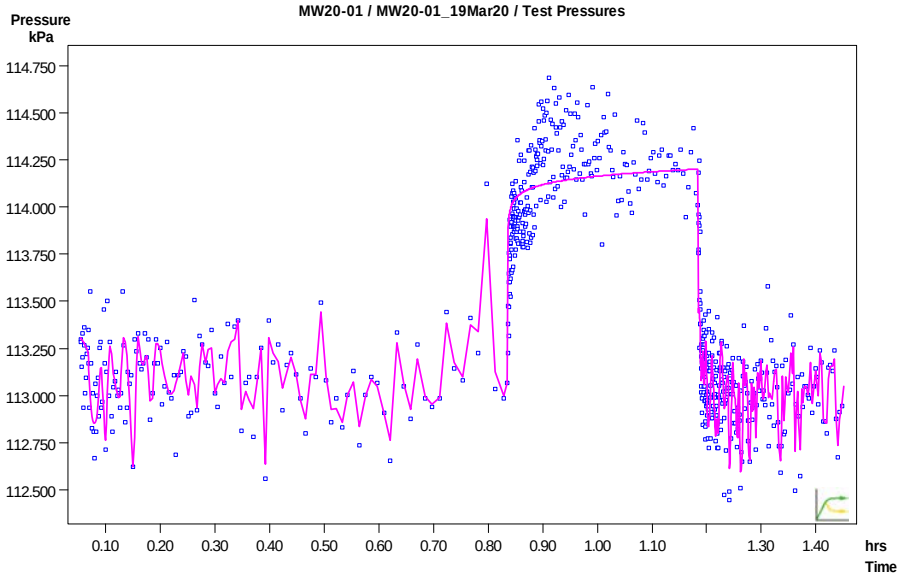
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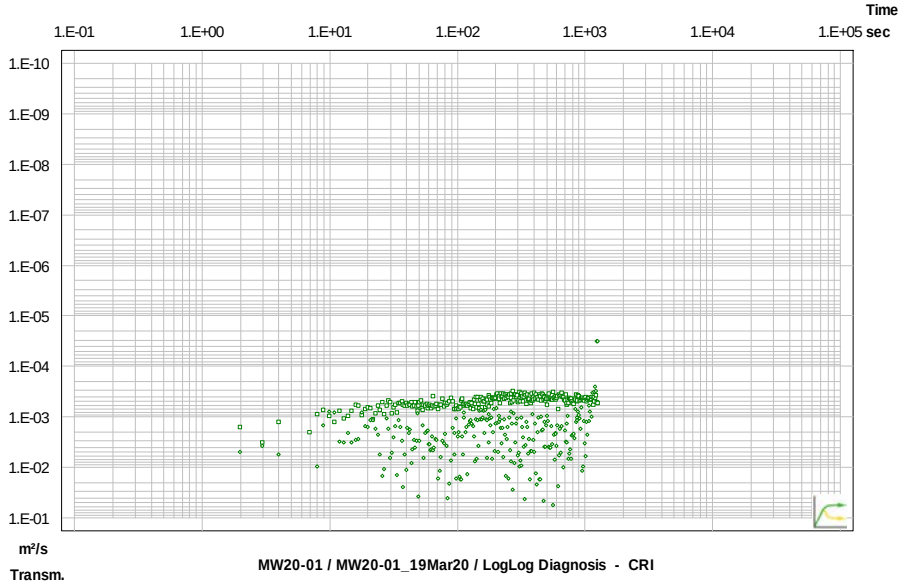
PACKER TEST RESULTS BH20-27 LOWER INTERVAL (13.8 to 23.5 mbgs)

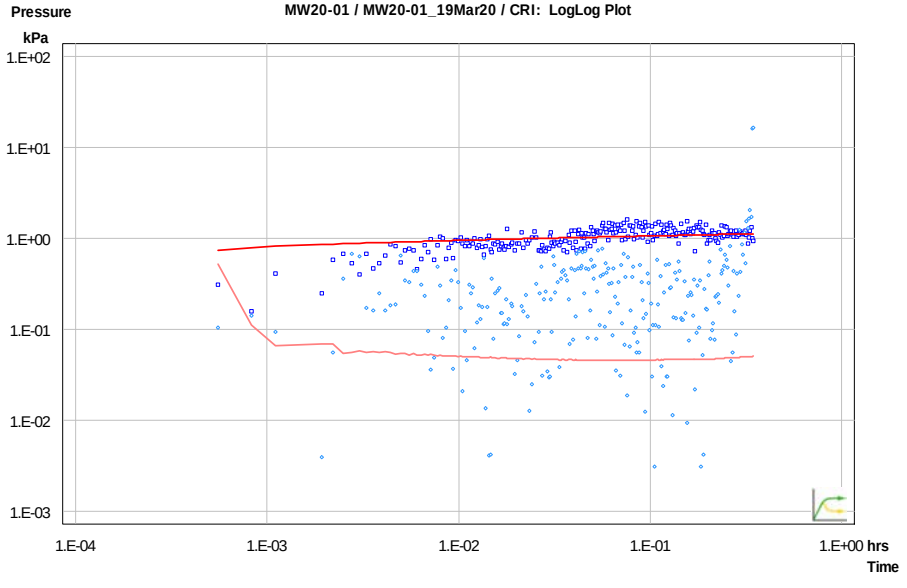
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-053

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

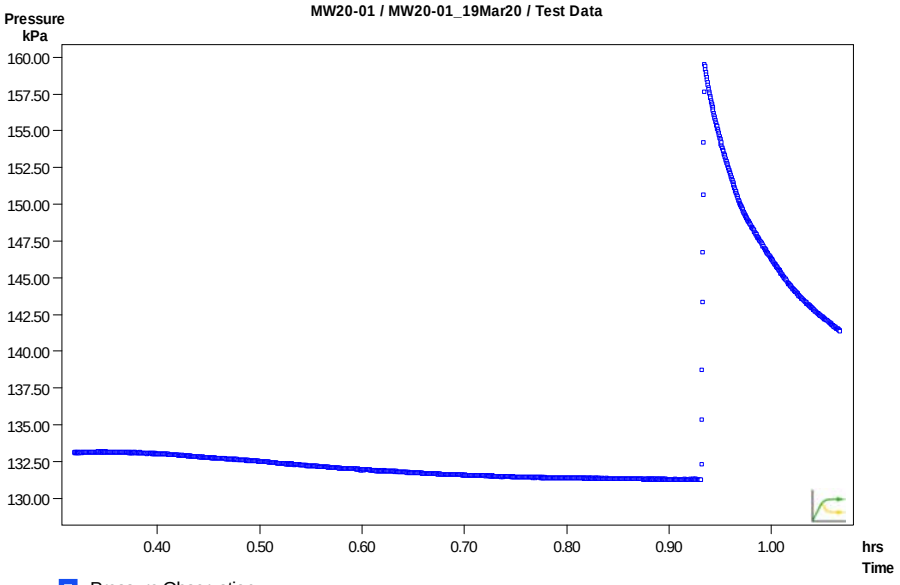
CALEDON PIT / QUARRY

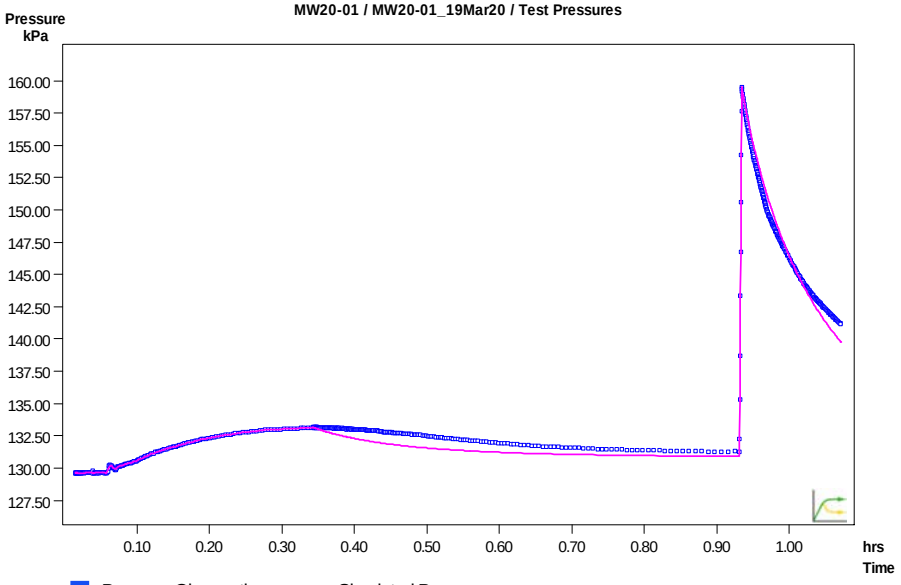
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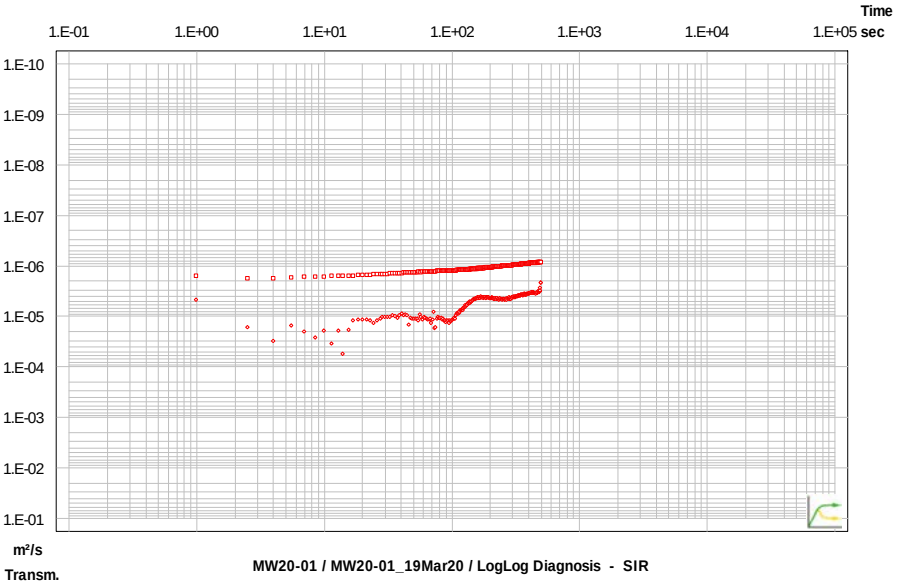
PACKER TEST RESULTS MW20-01 UPPER INTERVAL (10.9 to 14.5 mbgs)

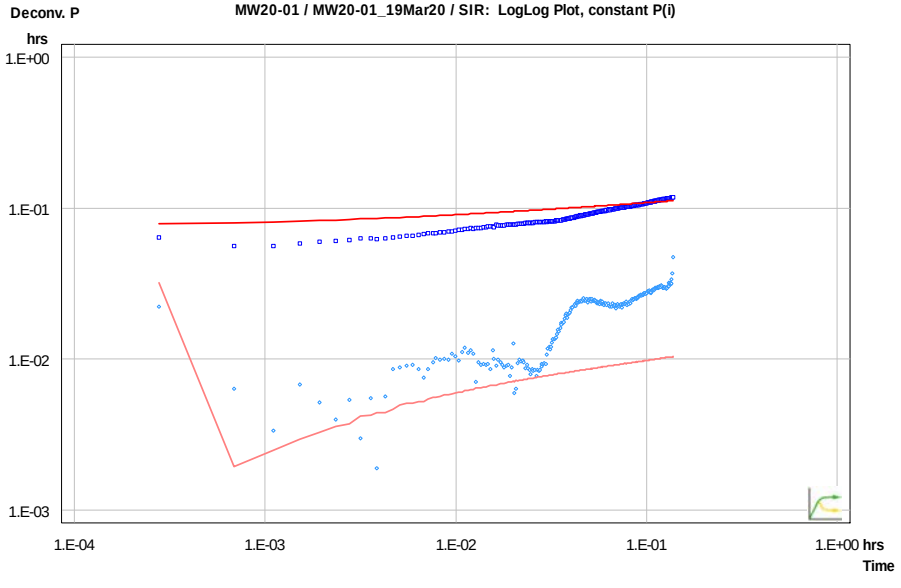
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-054

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0









CLIENT

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CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

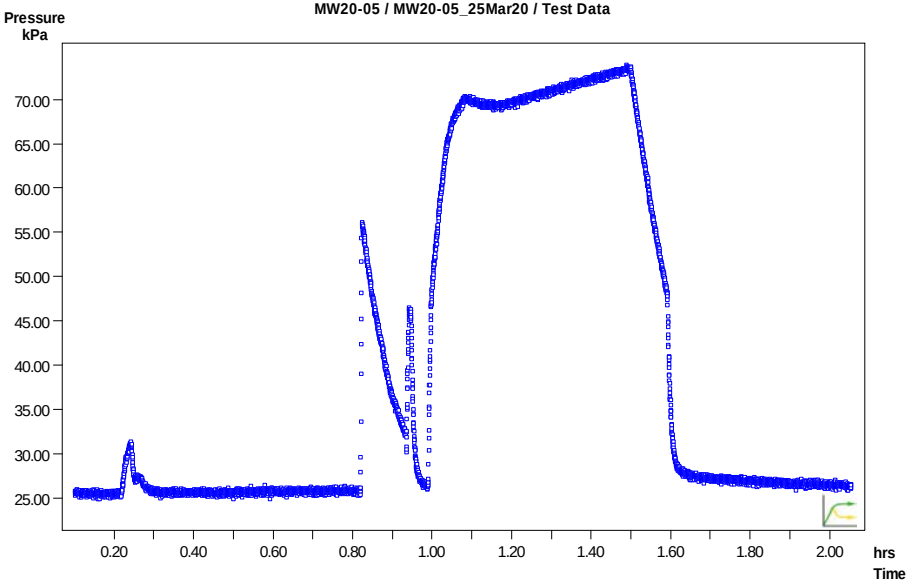
CALEDON PIT / QUARRY

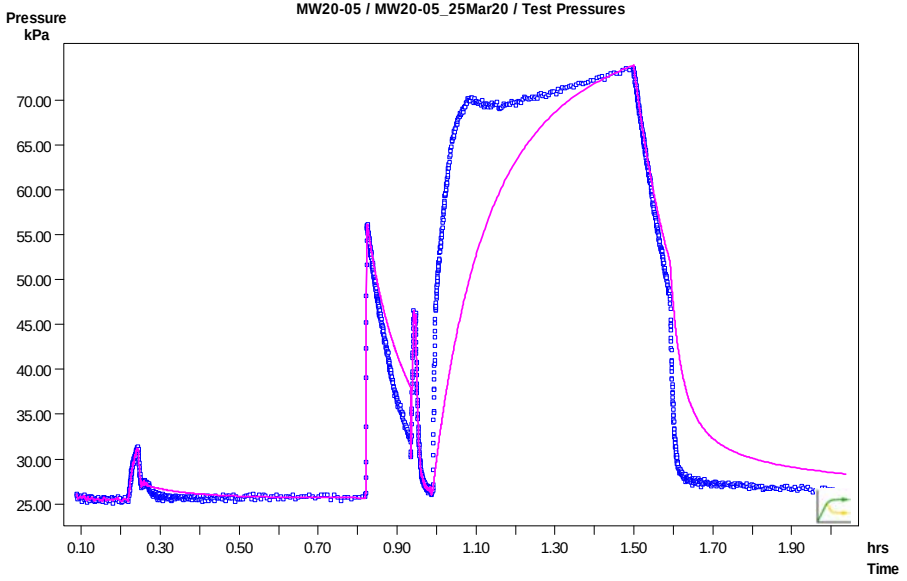
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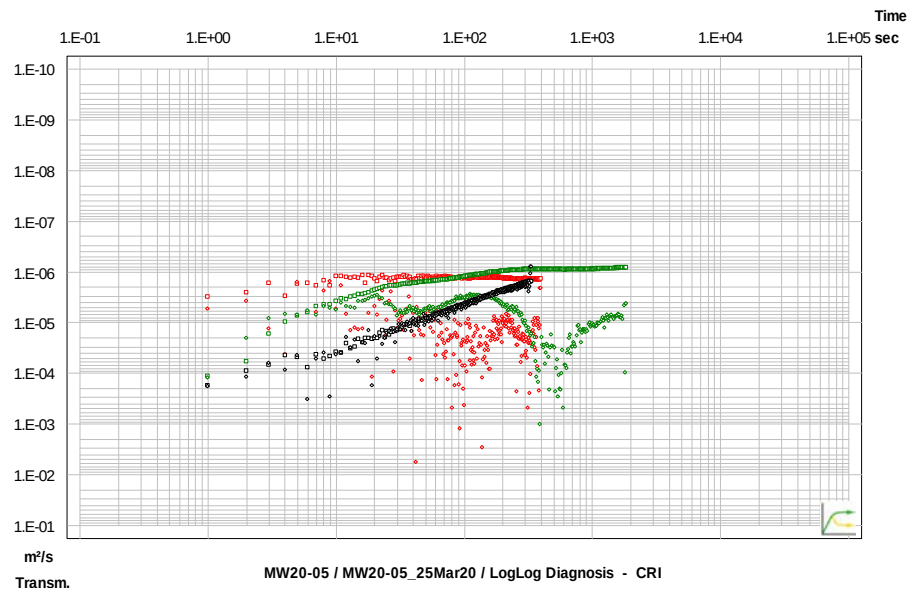
PACKER TEST RESULTS MW20-01 LOWER INTERVAL (14.9 to 19.4 mbgs)

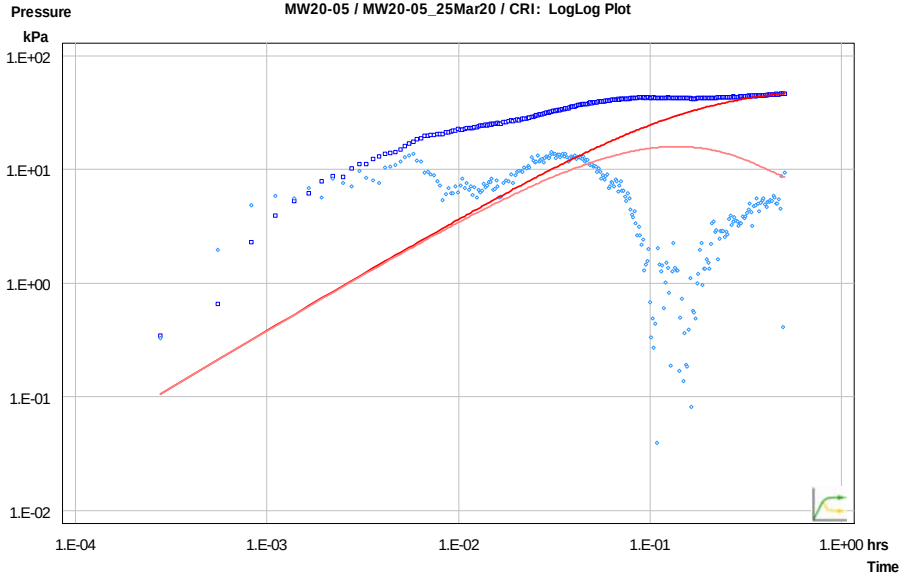
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-055

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

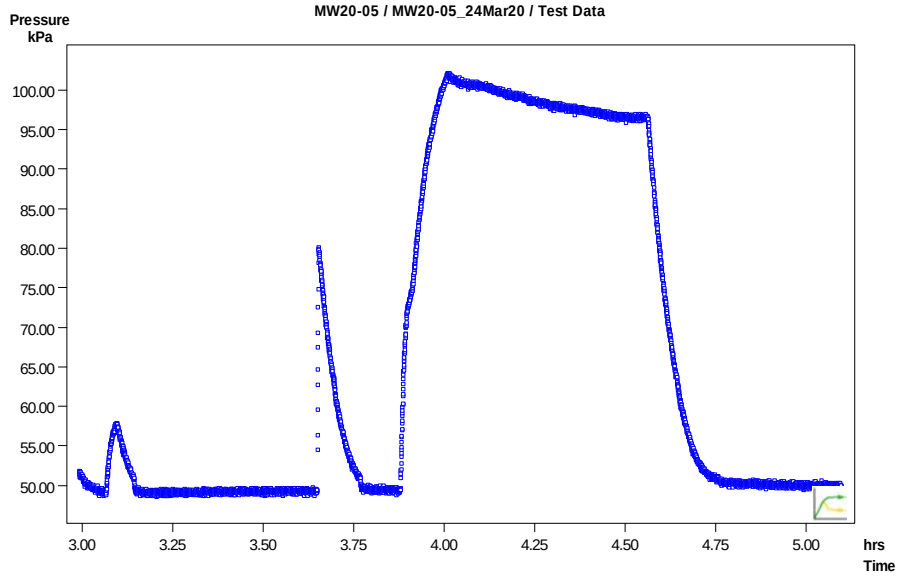
CALEDON PIT / QUARRY

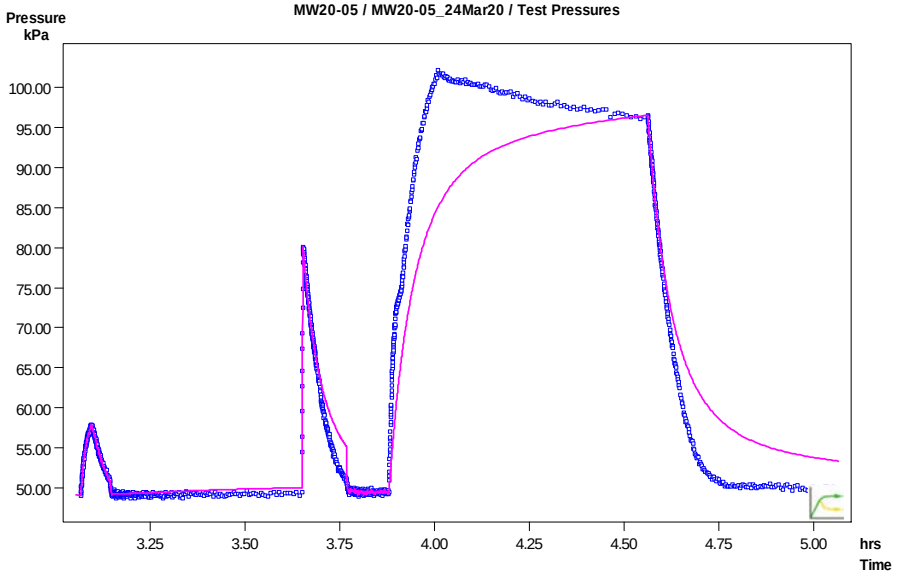
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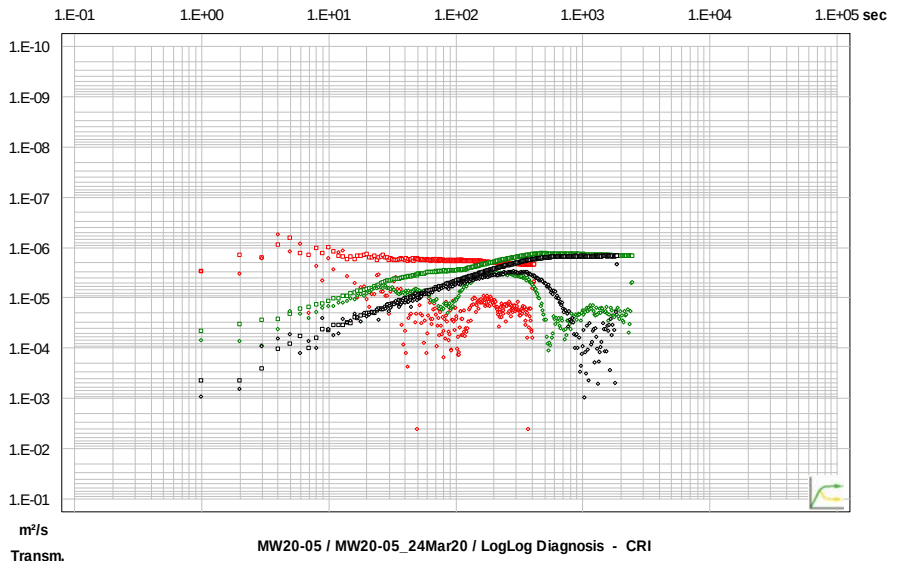
PACKER TEST RESULTS MW20-05 UPPER INTERVAL (4.7 to 8.3 mbgs)

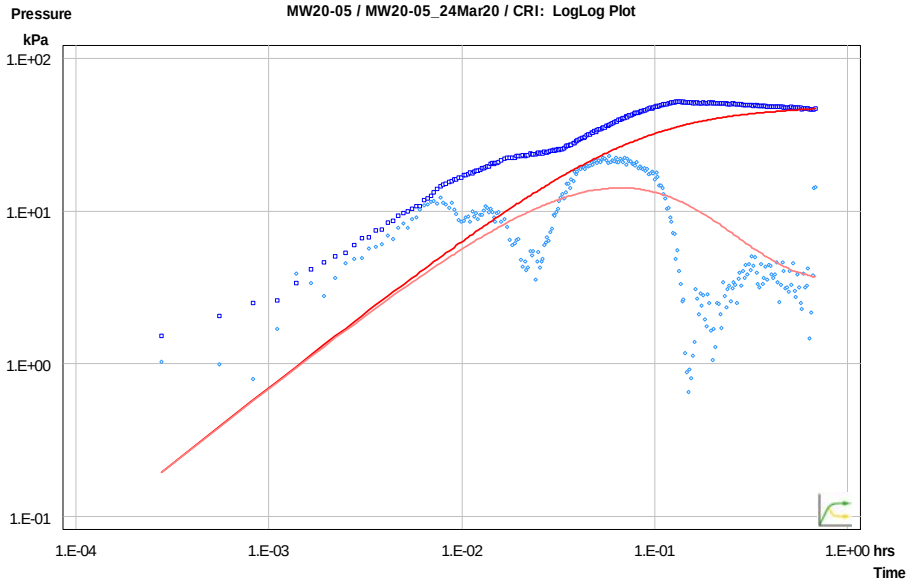
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-056

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
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Pressure Observation SI
Pressure Derivative SI
Pressure Observation CRI
Pressure Derivative CRI
Pressure Observation CRIR
Pressure Derivative CRIR

Pressure Observation Selected Phase
Pressure Derivative Selected Phase
Simulated Response
Simulated Response Derivative

CLIENT
CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT
CALEDON PIT / QUARRY

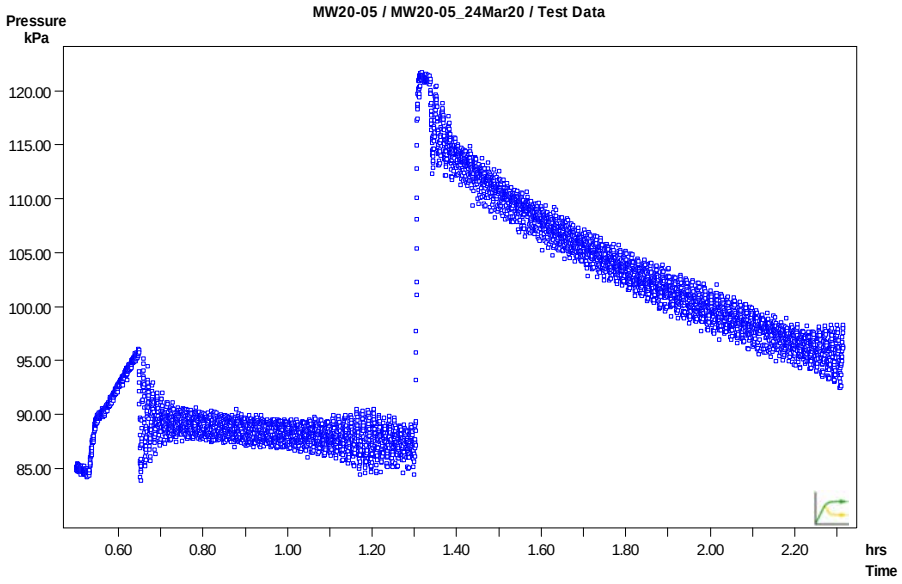
CONSULTANT
GOLDER
MEMBER OF WSP

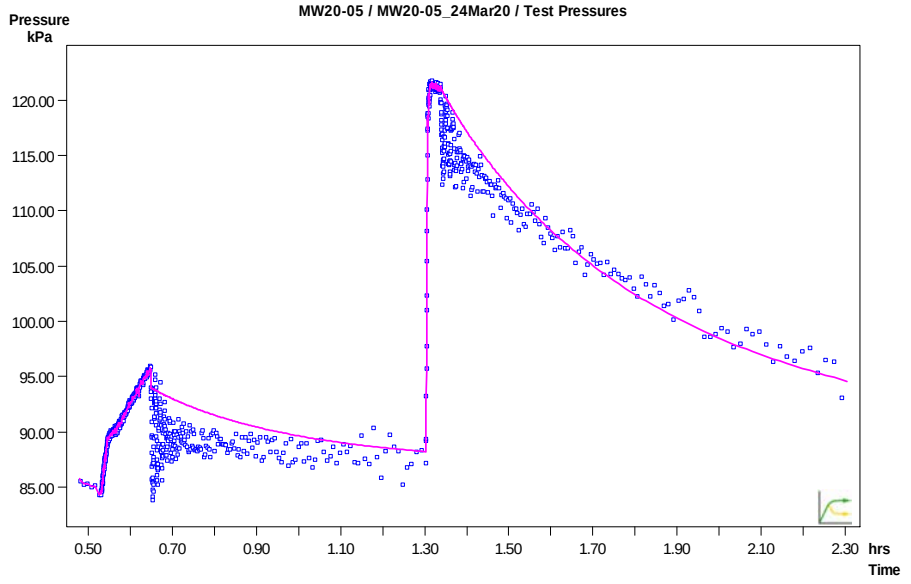
YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

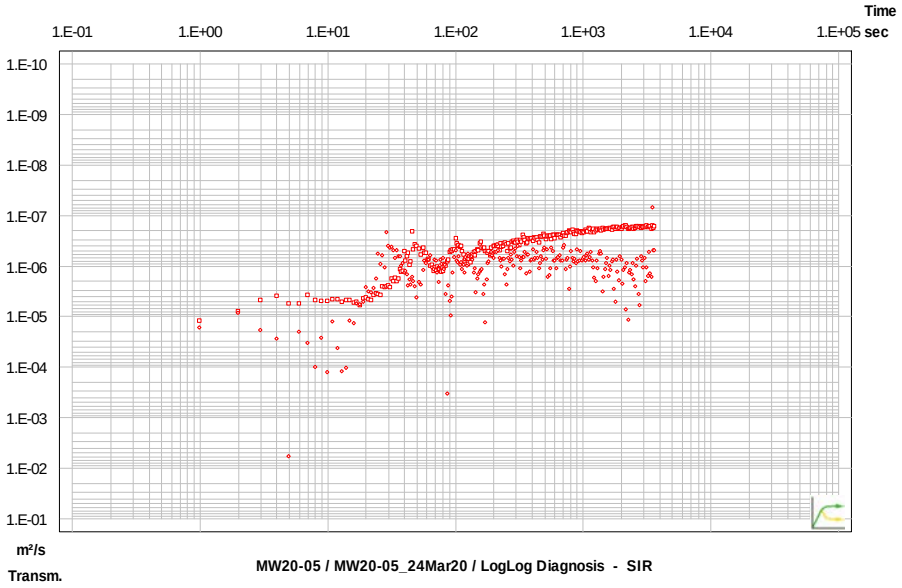
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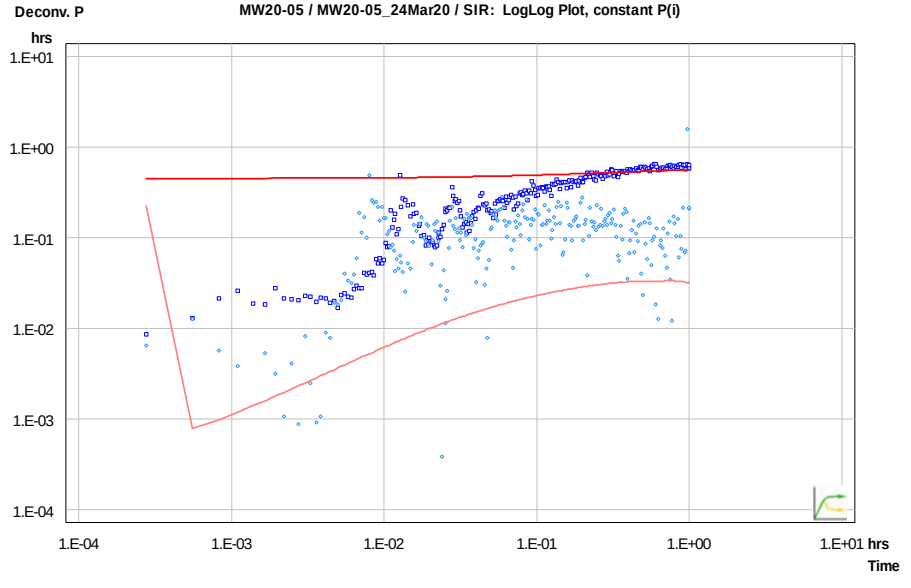
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-057

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
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CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15	
PREPARED	PGM	
DESIGN	ML	
REVIEW	###	
APPROVED		

PROJECT

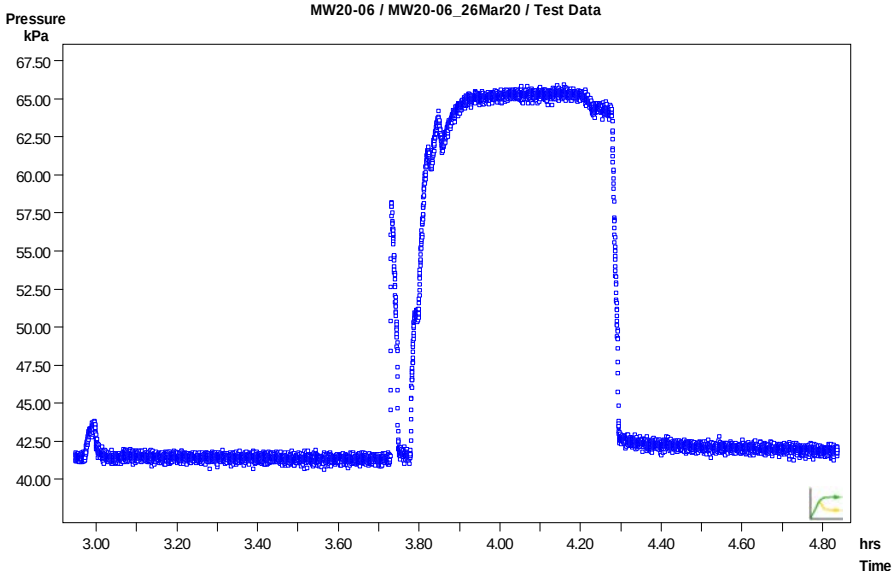
CALEDON PIT / QUARRY

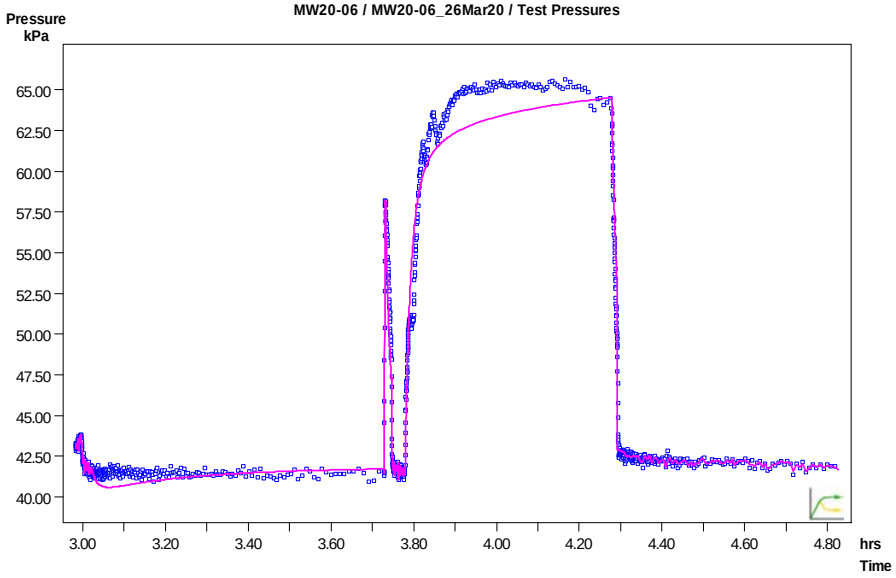
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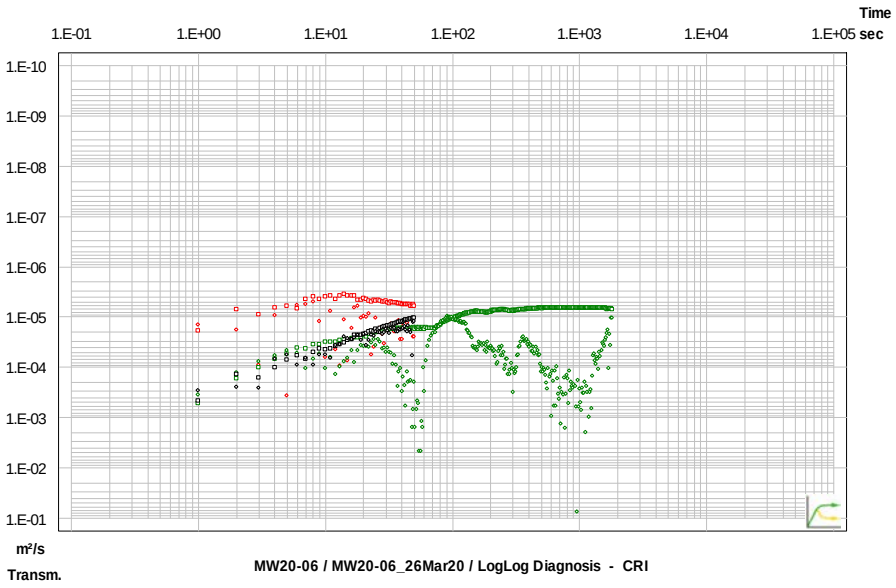
PACKER TEST RESULTS MW20-05 LOWER INTERVAL (10.6 to 14.8 mbgs)

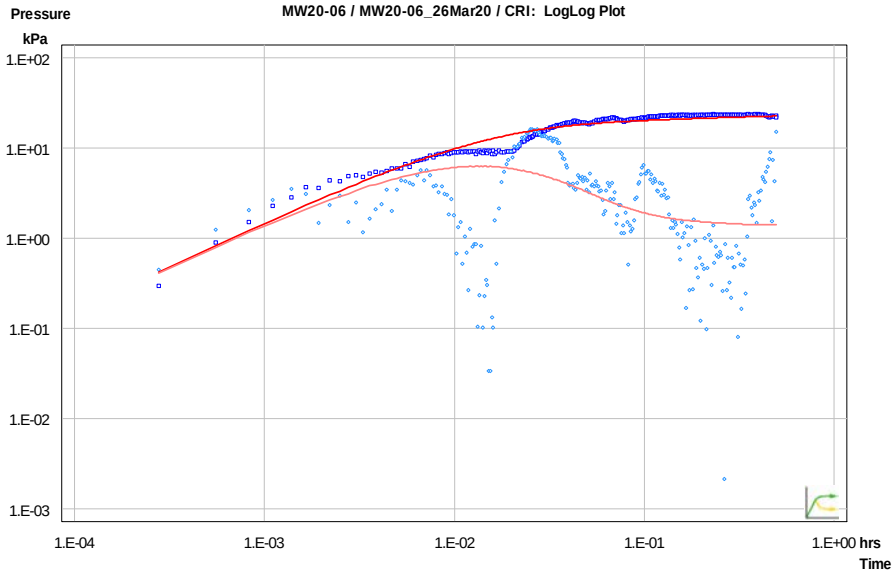
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-058

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
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CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

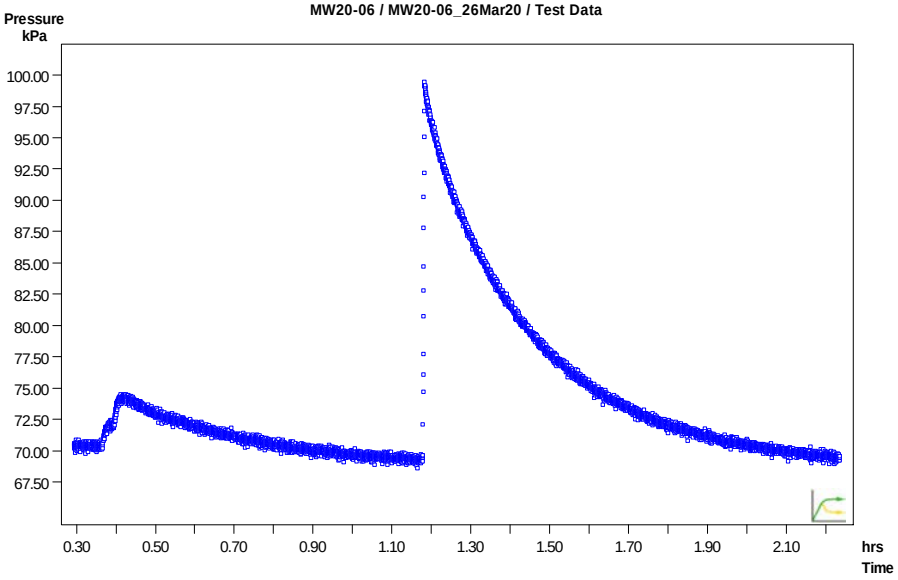
CALEDON PIT / QUARRY

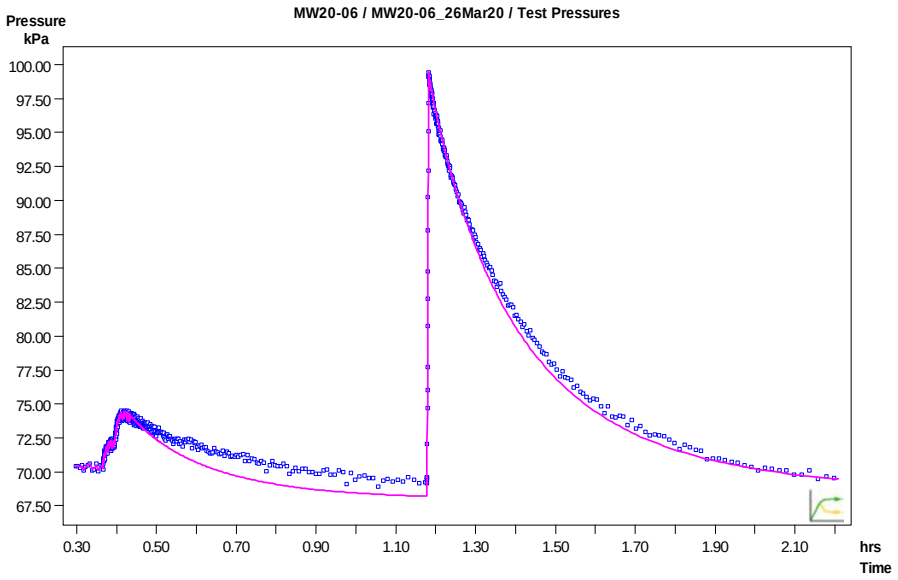
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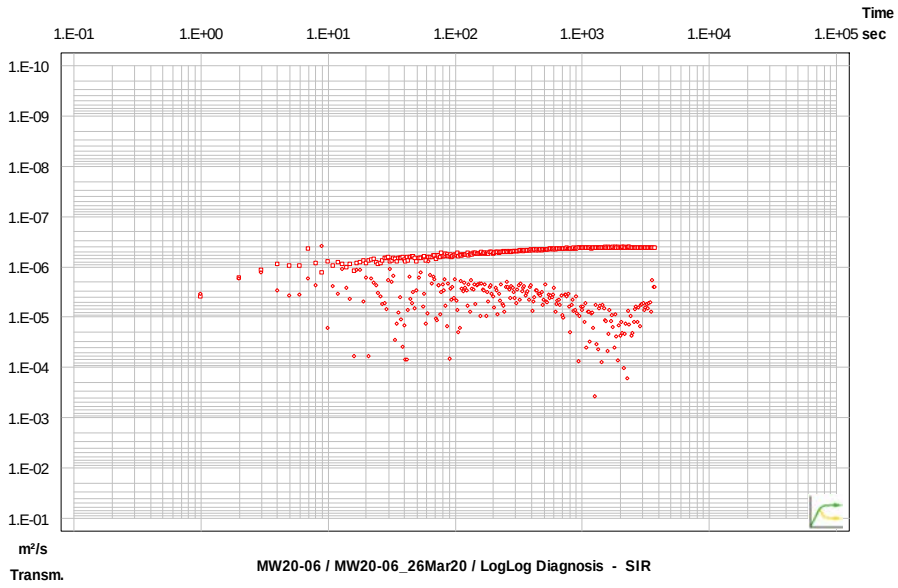
PACKER TEST RESULTS MW20-06 UPPER INTERVAL (4.3 to 7.9 mbgs)

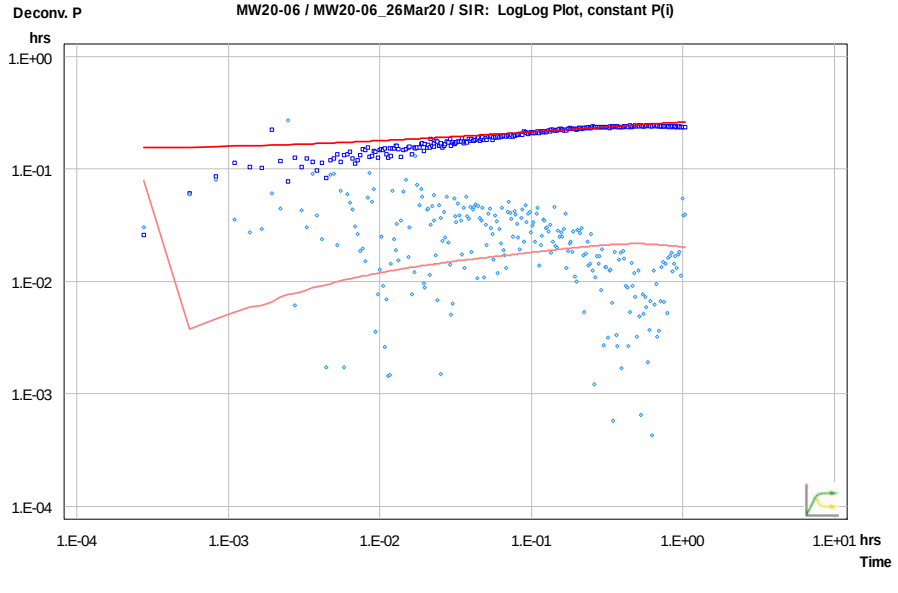
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-059

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

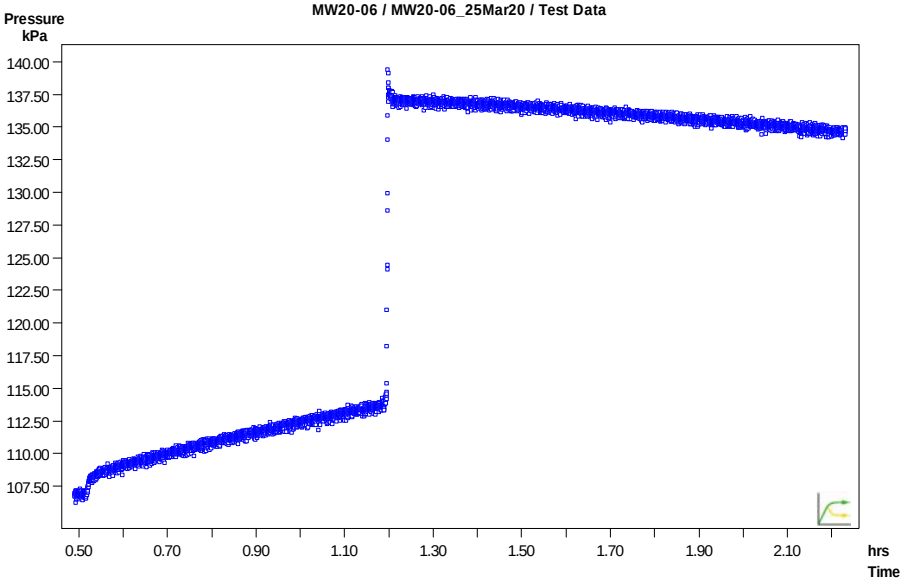
CALEDON PIT / QUARRY

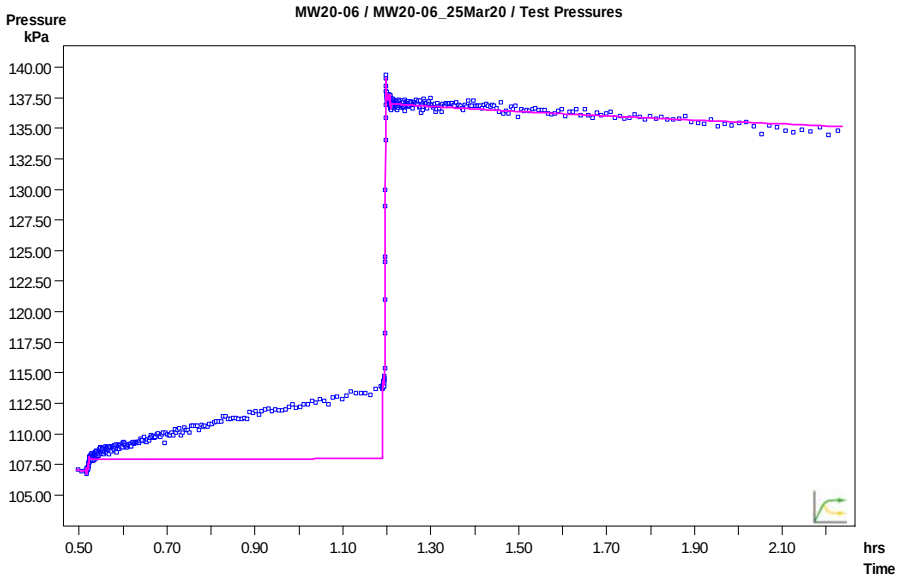
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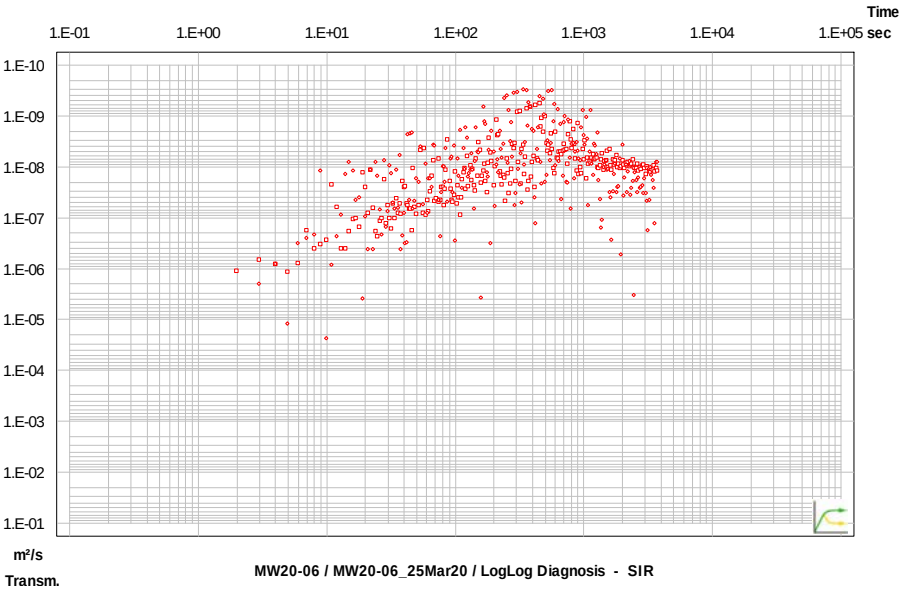
PACKER TEST RESULTS MW20-06 MIDDLE INTERVAL (7.2 to 10.8 mbgs)

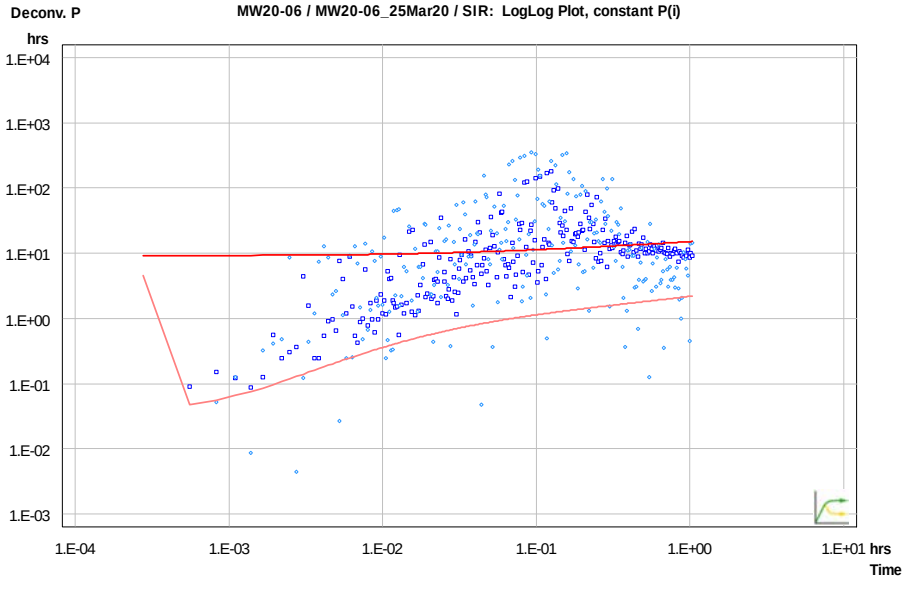
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-060

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

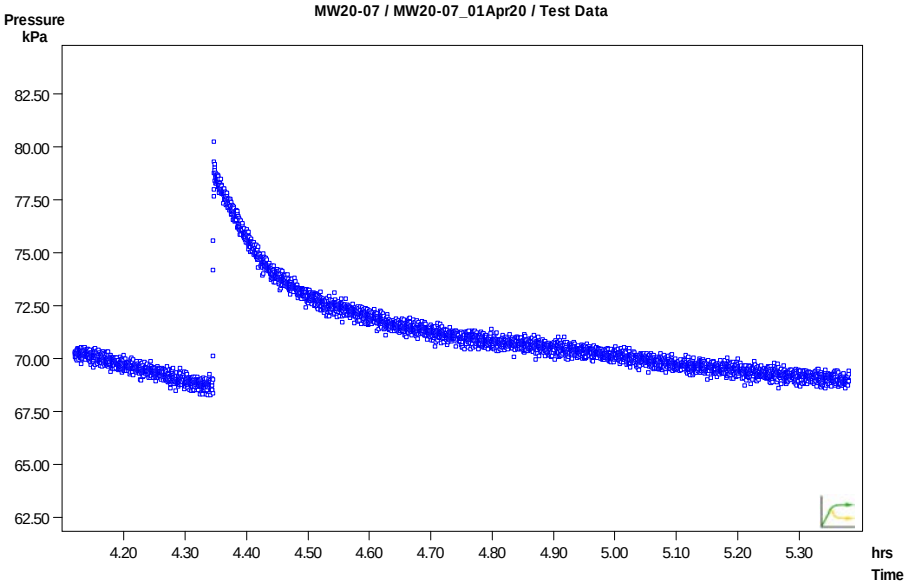
YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

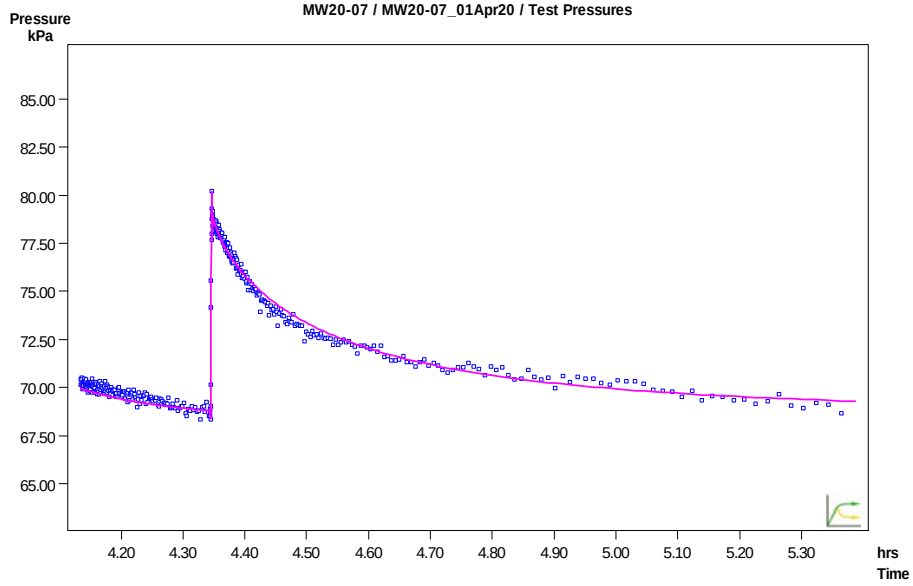
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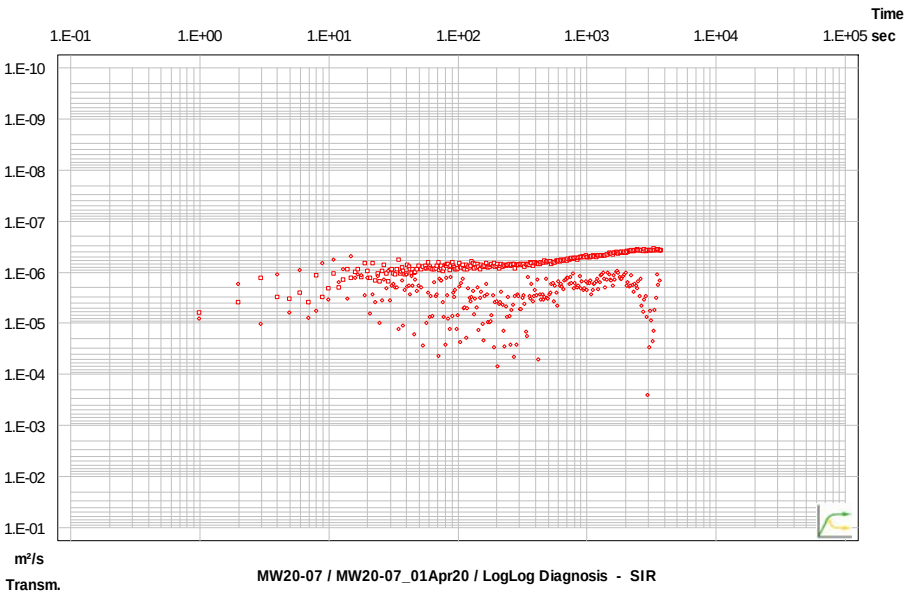
PACKER TEST RESULTS MW20-06 LOWER INTERVAL (10.9 to 16.0 mbgs)

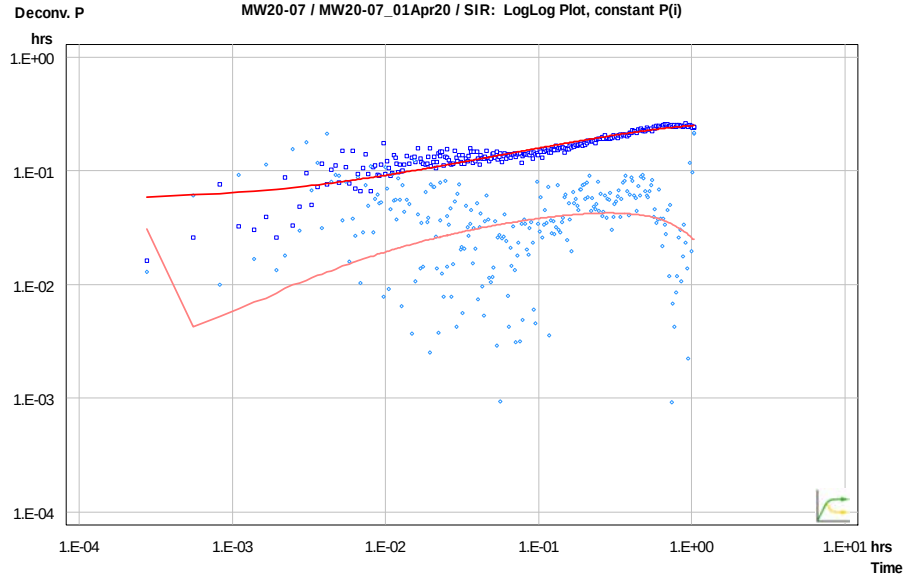
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-061

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

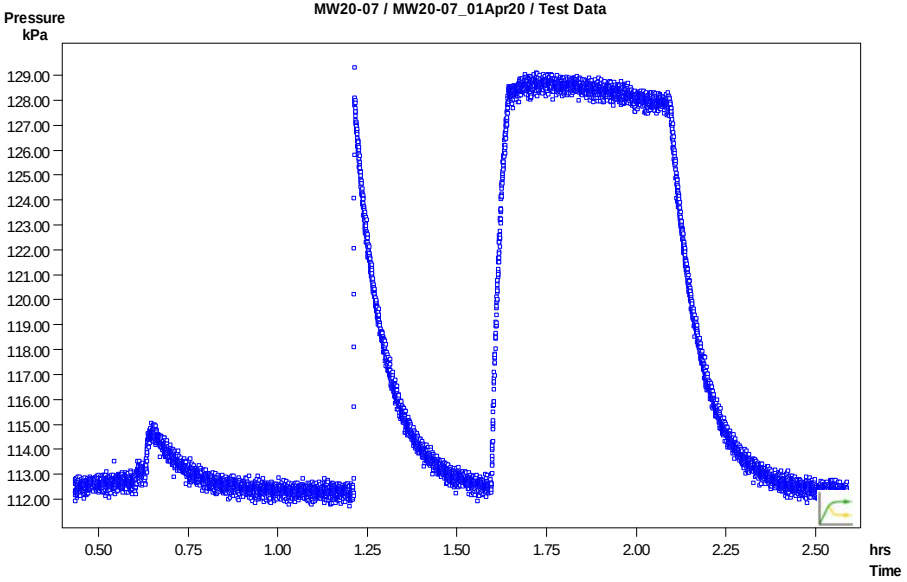
CALEDON PIT / QUARRY

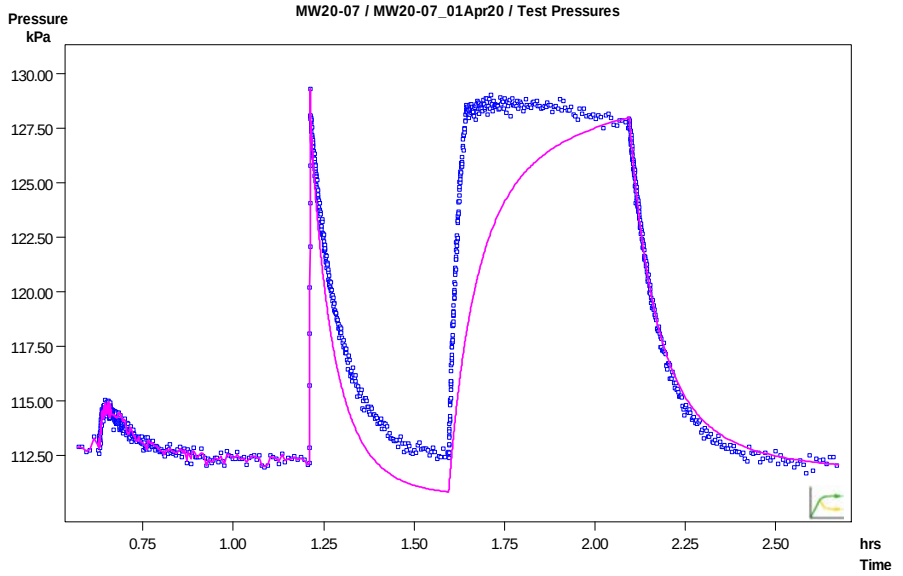
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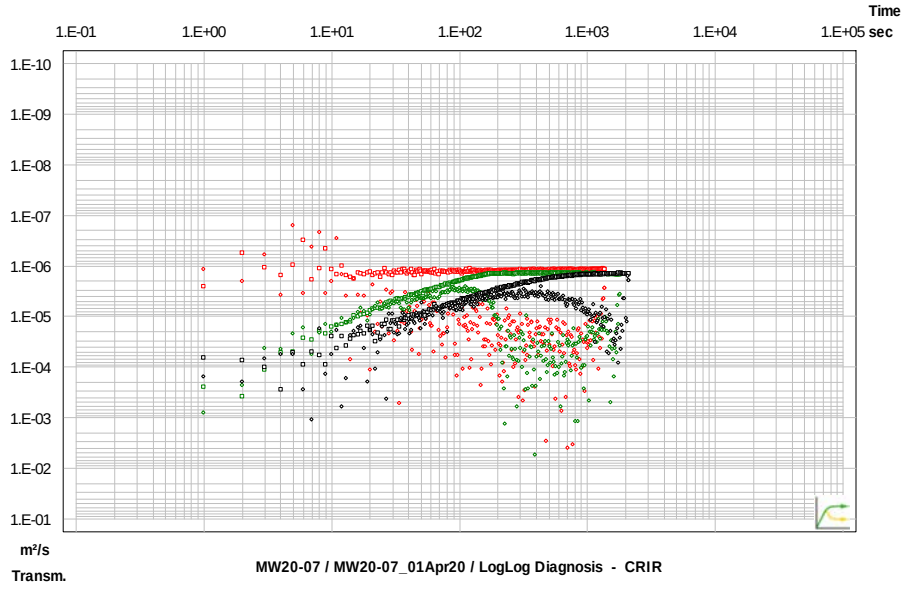
PACKER TEST RESULTS MW20-07 UPPER INTERVAL (4.6 to 8.1 mbgs)

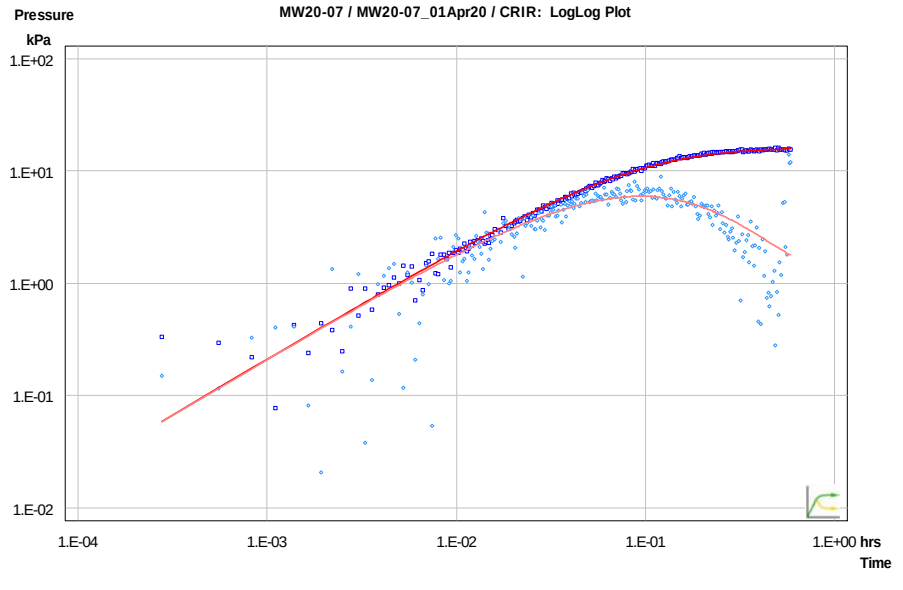
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-062

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

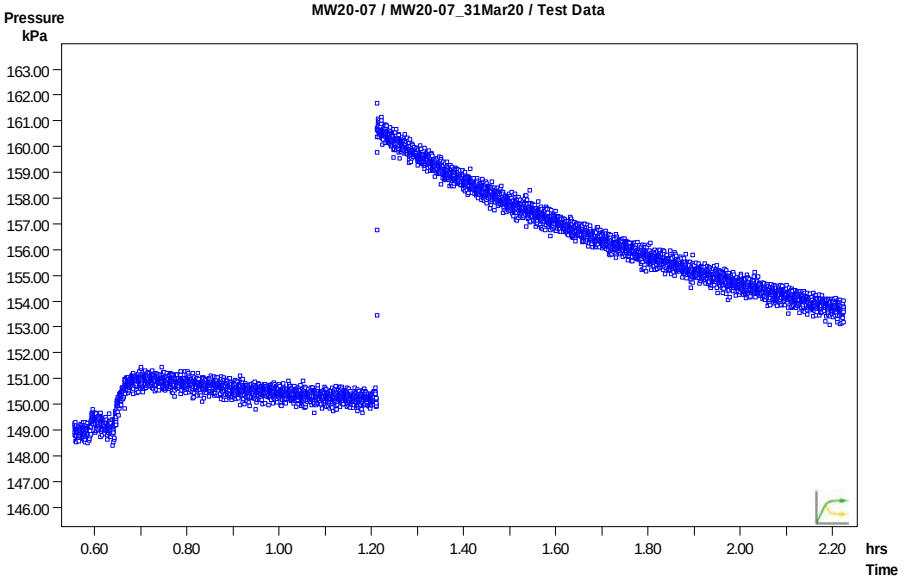
YYYY-MM-DD	2022-02-15
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

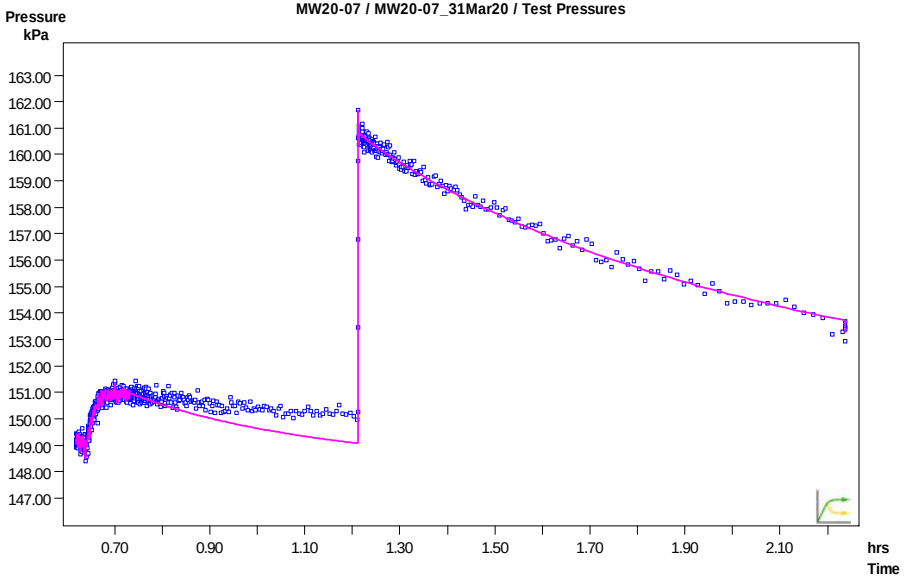
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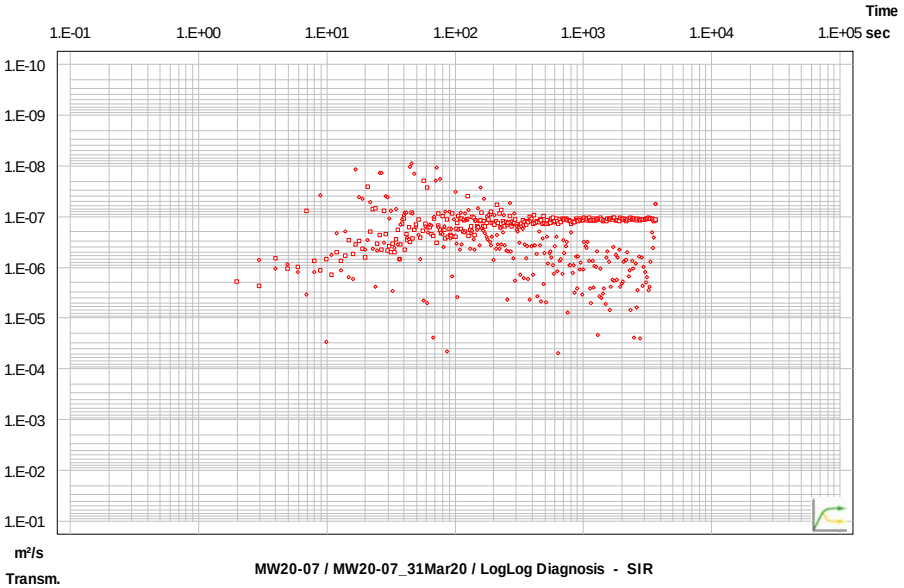
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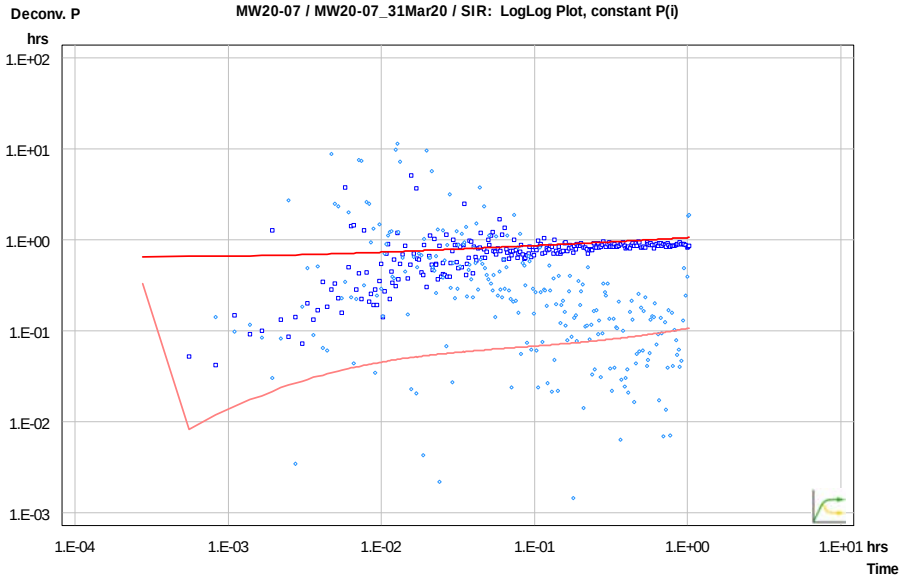
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-063

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

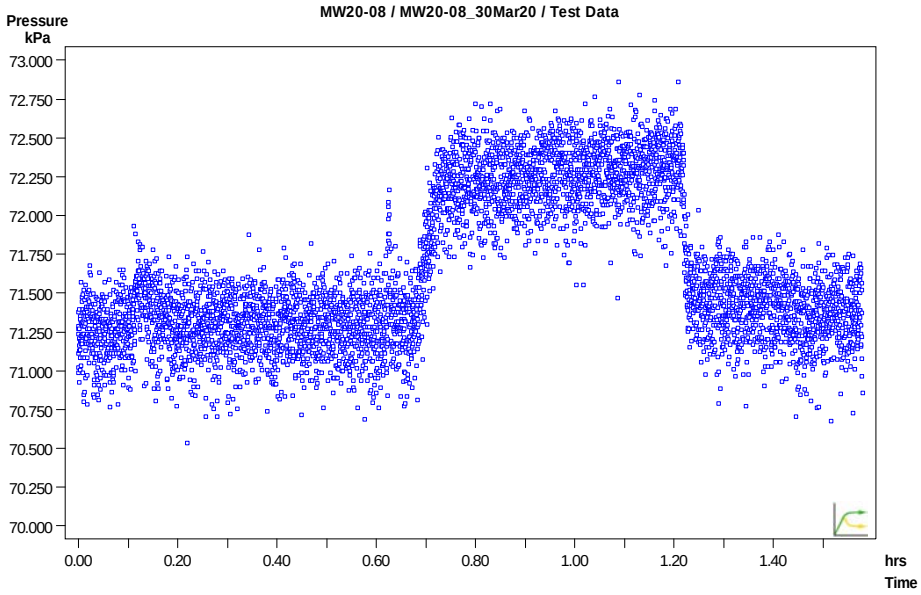
	YYYY-MM-DD	2022-02-15
PREPARED		PGM
DESIGN		ML
REVIEW		###
APPROVED		

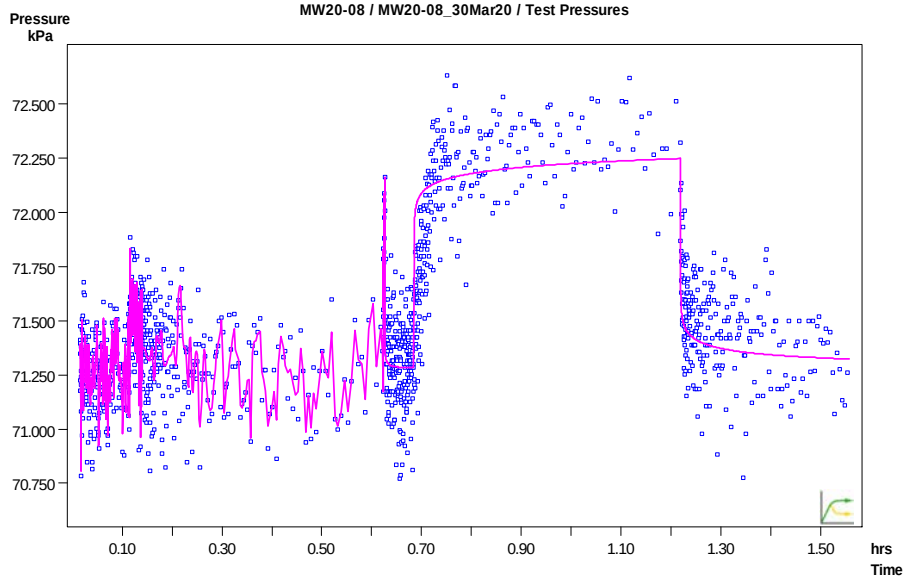
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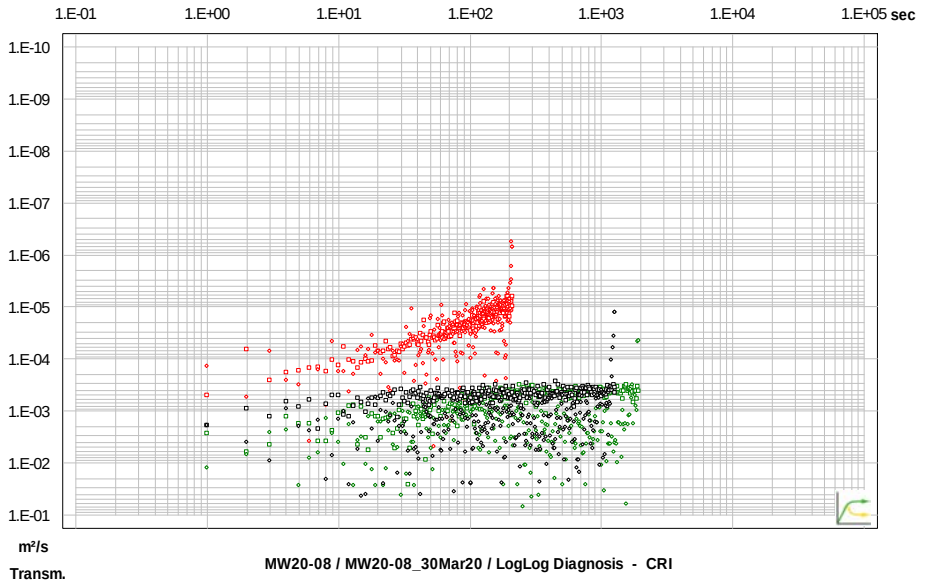
PACKER TEST RESULTS MW20-07 LOWER INTERVAL (13.2 to 16.8 mbgs)

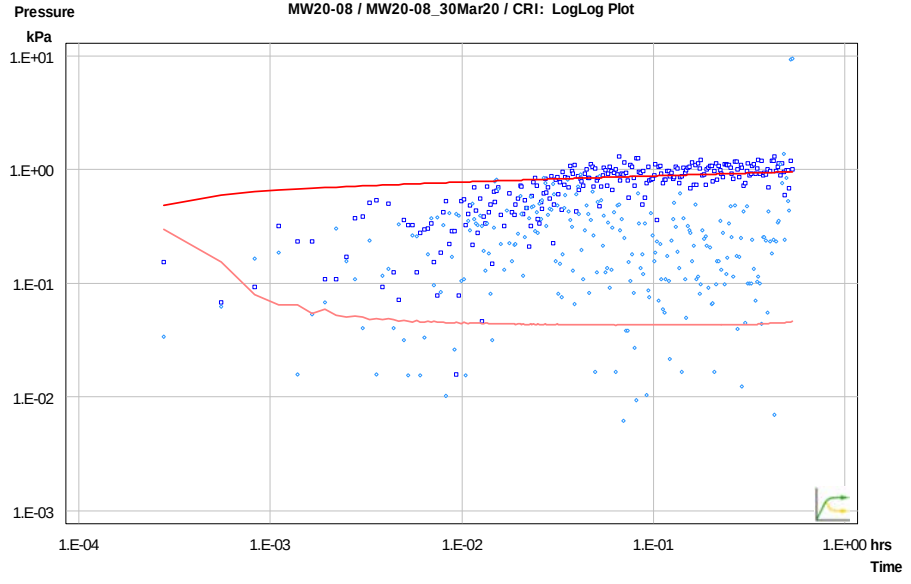
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-064

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

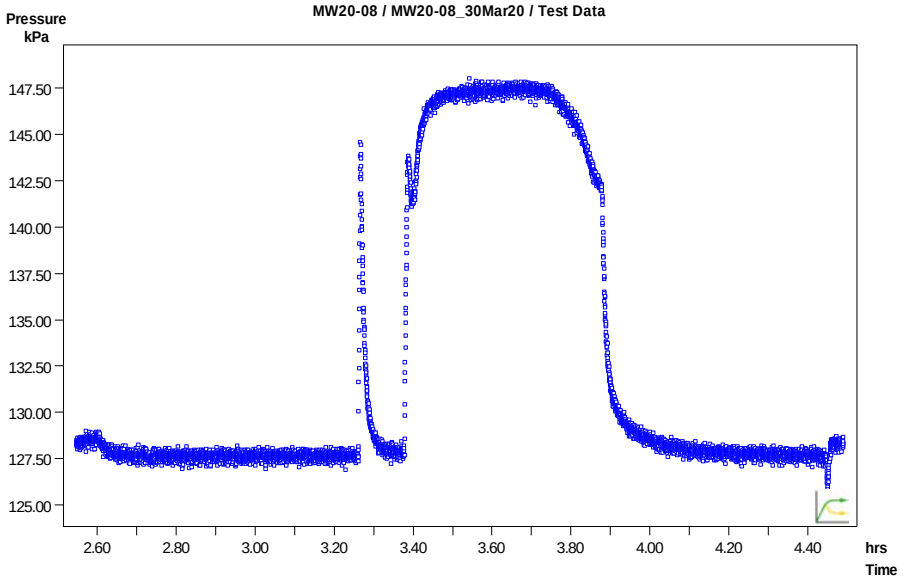
CALEDON PIT / QUARRY

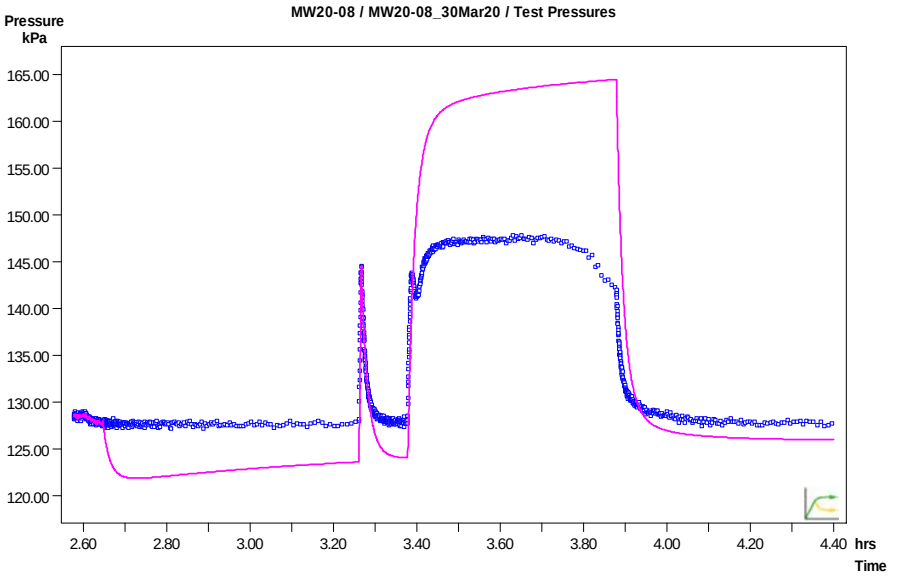
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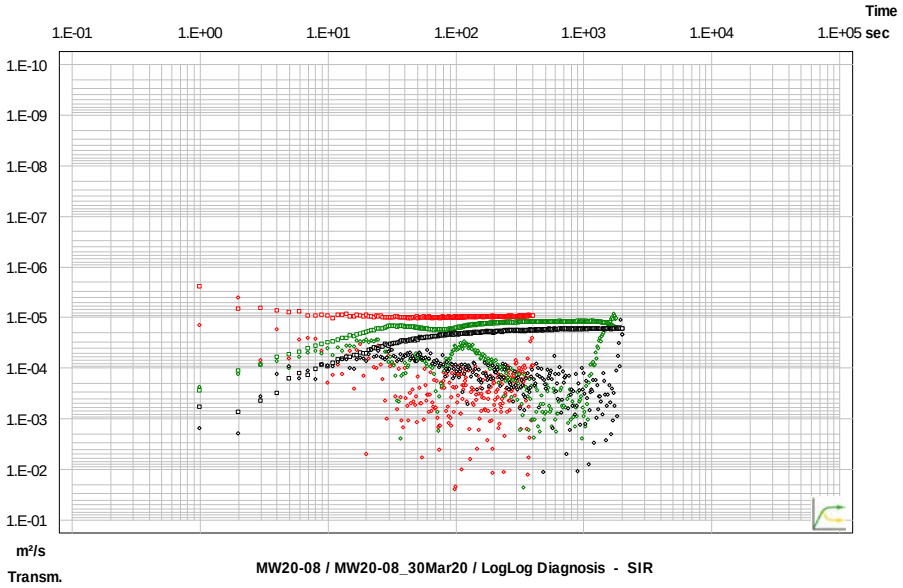
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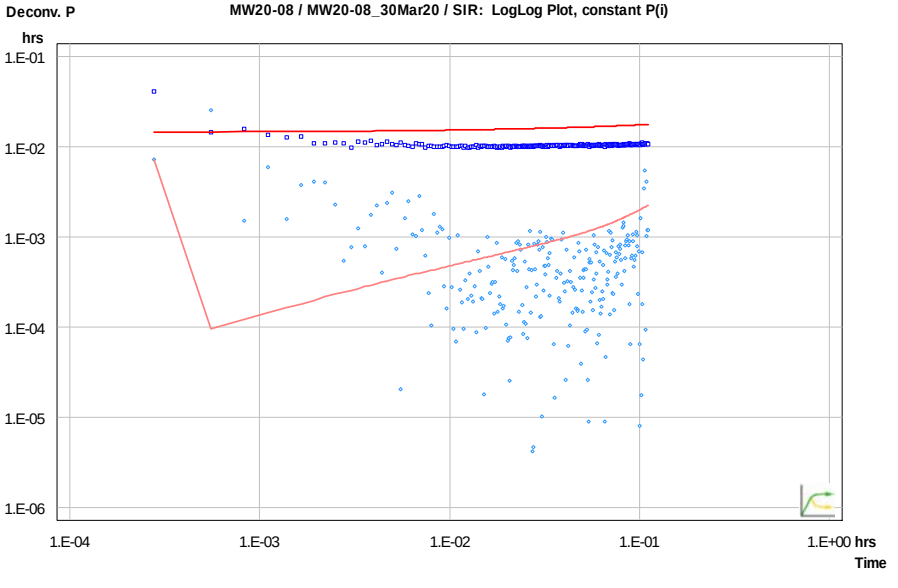
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-065

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

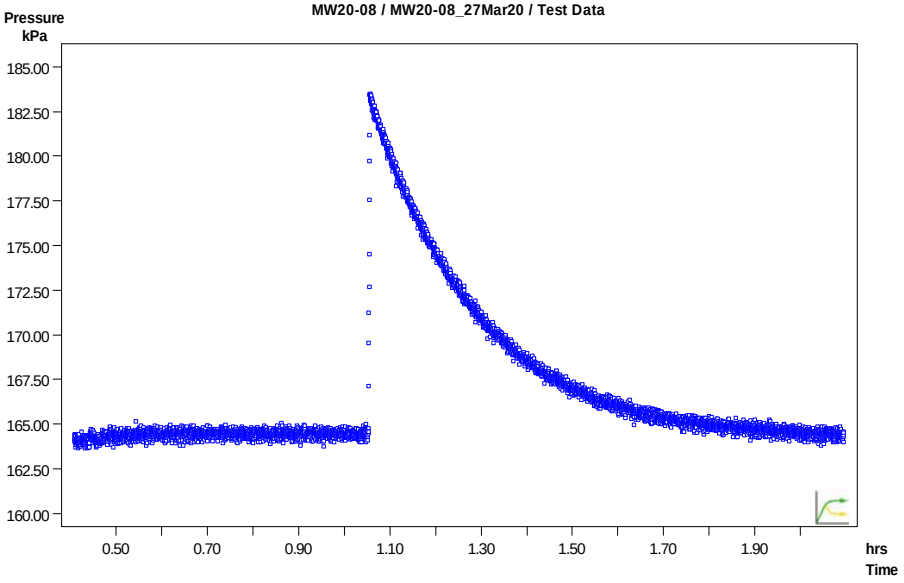
CALEDON PIT / QUARRY

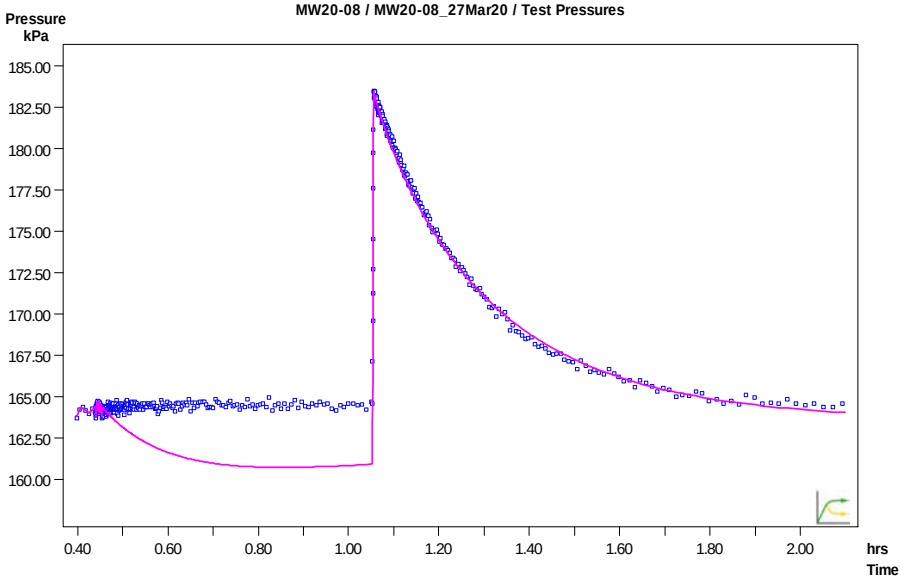
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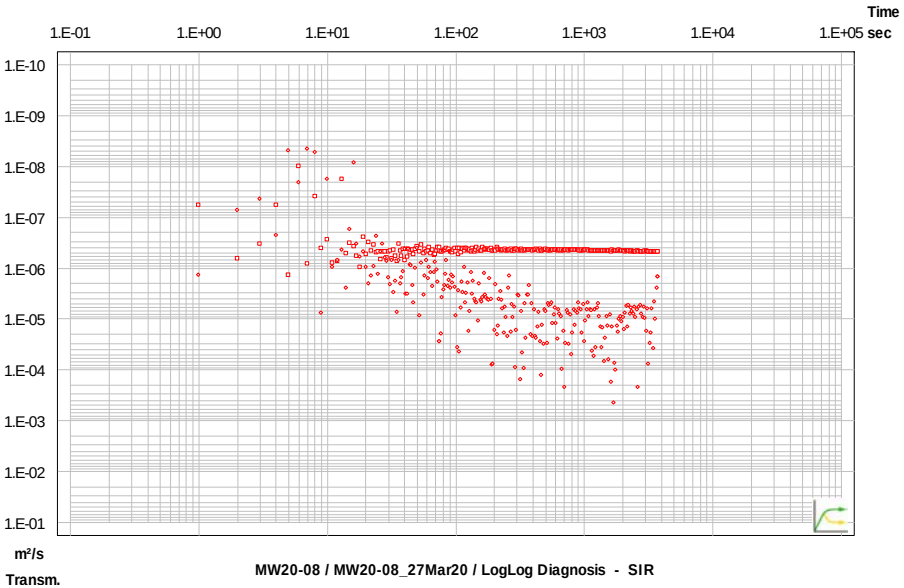
PACKER TEST RESULTS MW20-08 MIDDLE INTERVAL (8.4 to 15.1 mbgs)

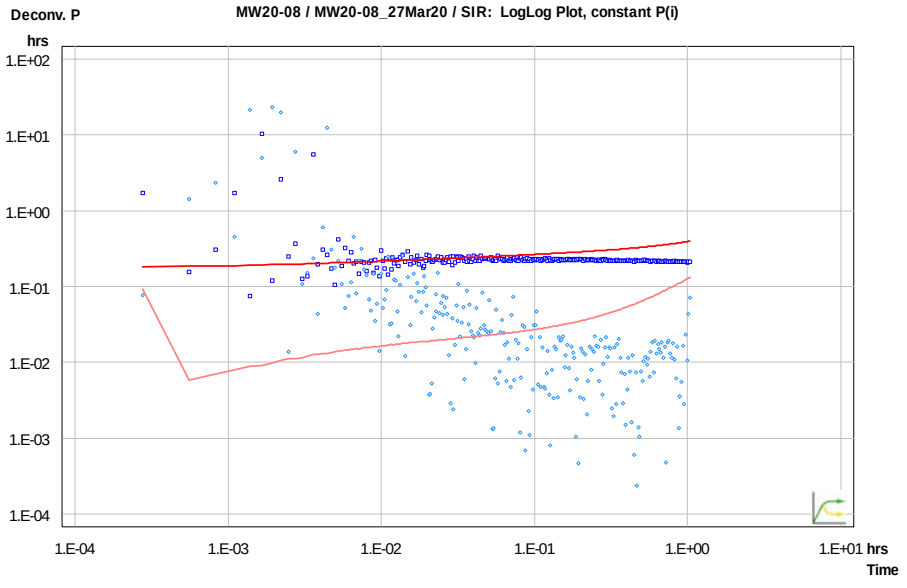
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-066

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
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CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-16	
PREPARED	PGM	
DESIGN	ML	
REVIEW	###	
APPROVED		

PROJECT

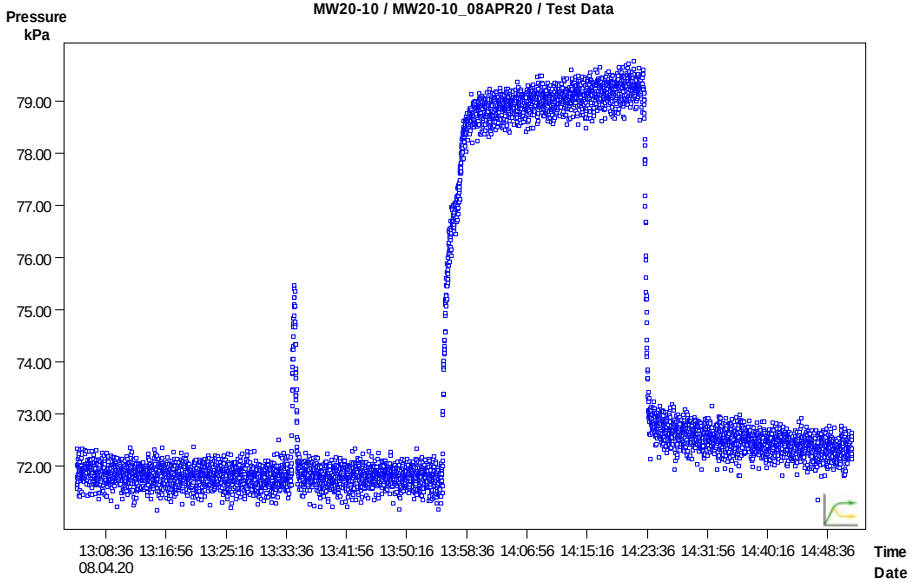
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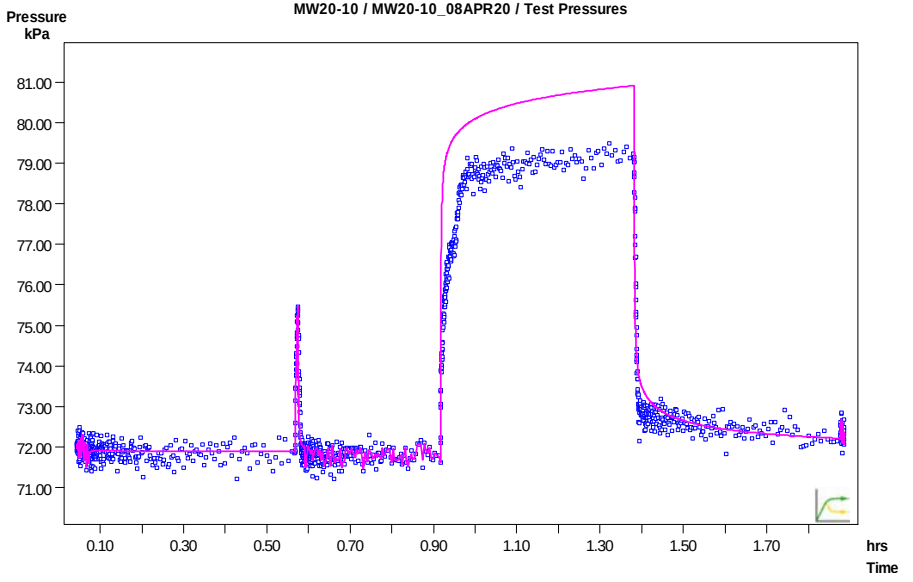
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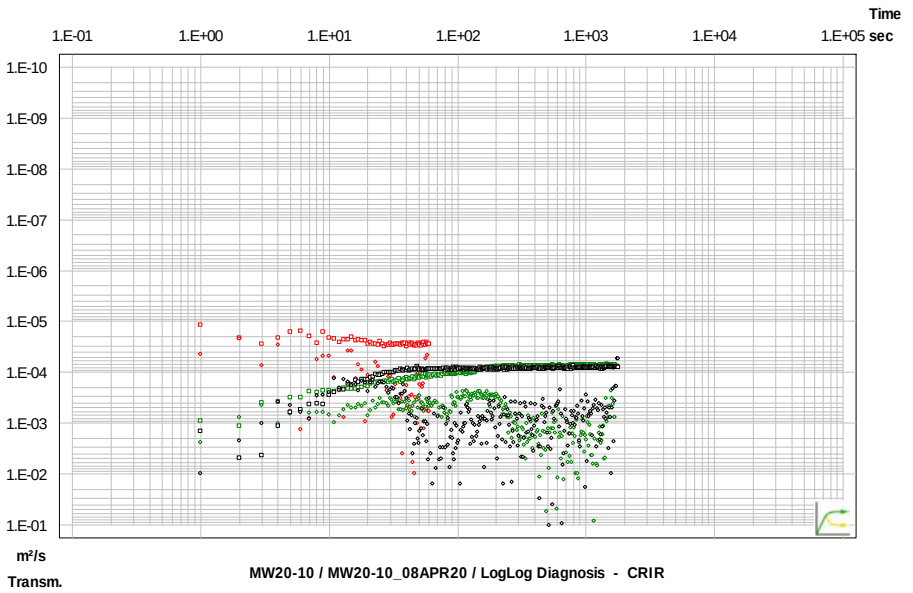
PACKER TEST RESULTS MW20-08 LOWER INTERVAL (15.2 to 18.6 mbgs)

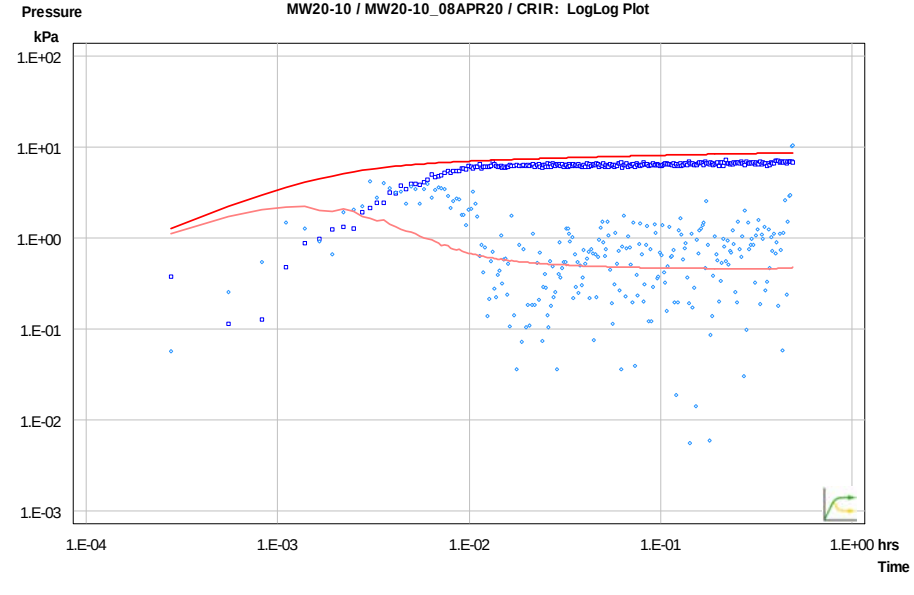
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-067

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

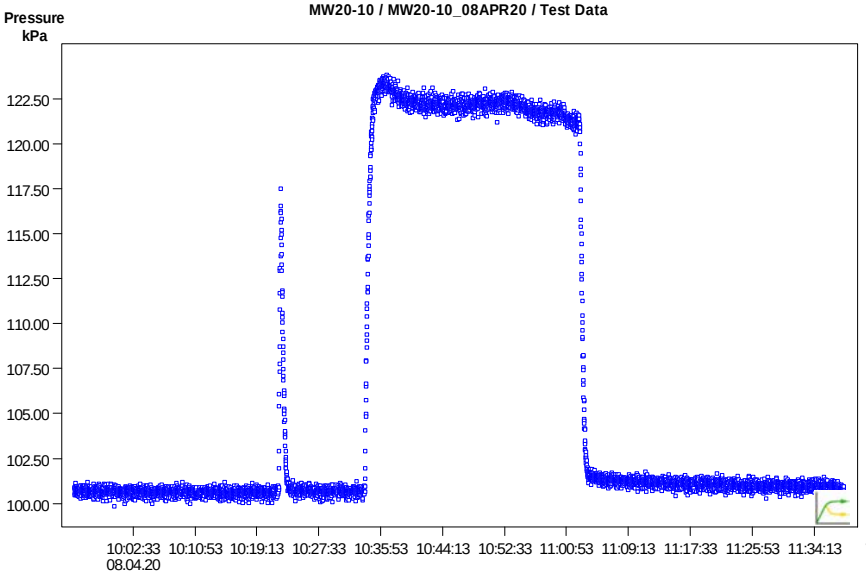
CALEDON PIT / QUARRY

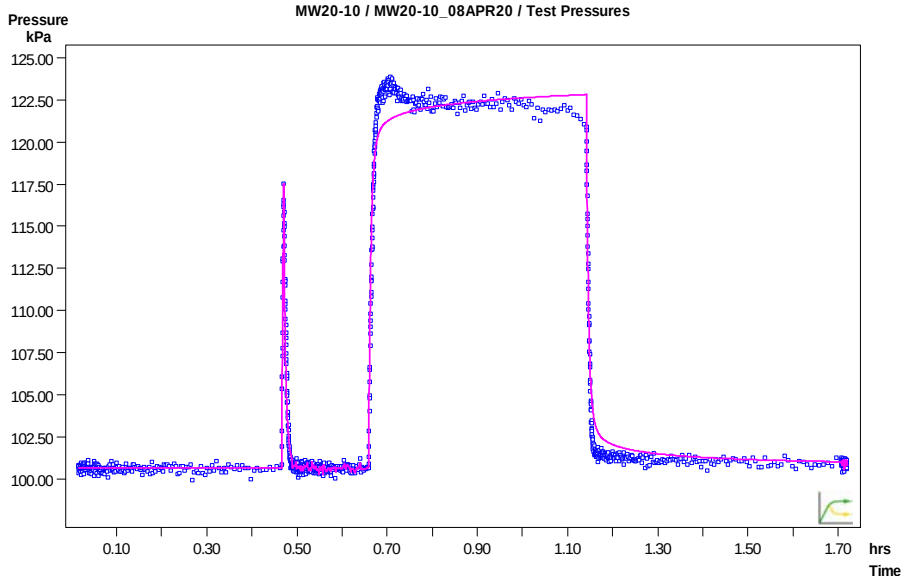
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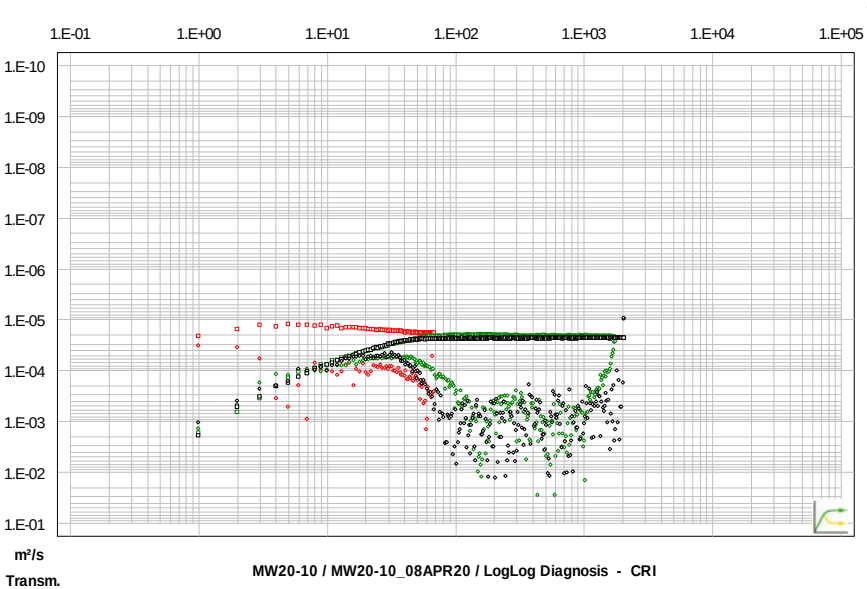
PACKER TEST RESULTS MW20-10 UPPER INTERVAL (13.3 to 17.4 mbgs)

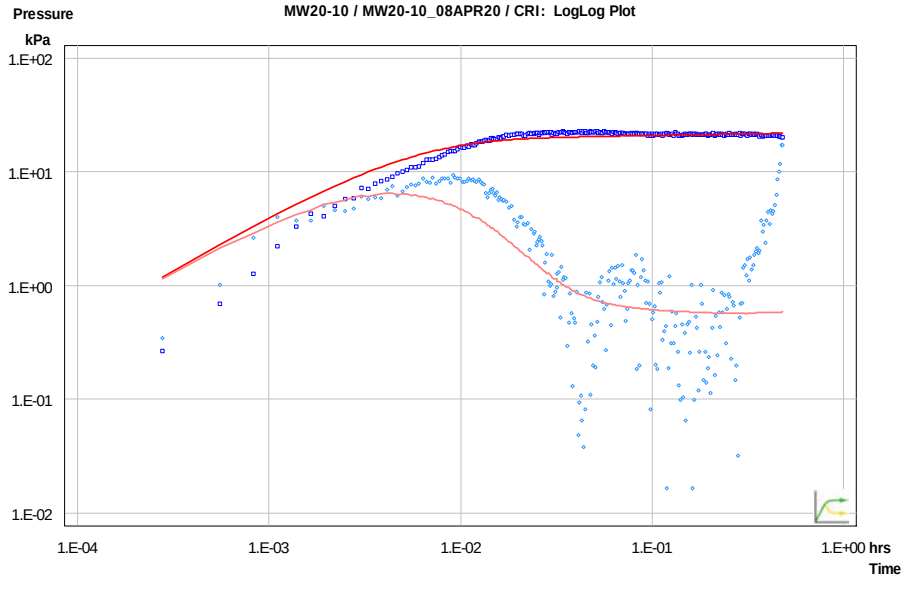
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-068

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
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CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

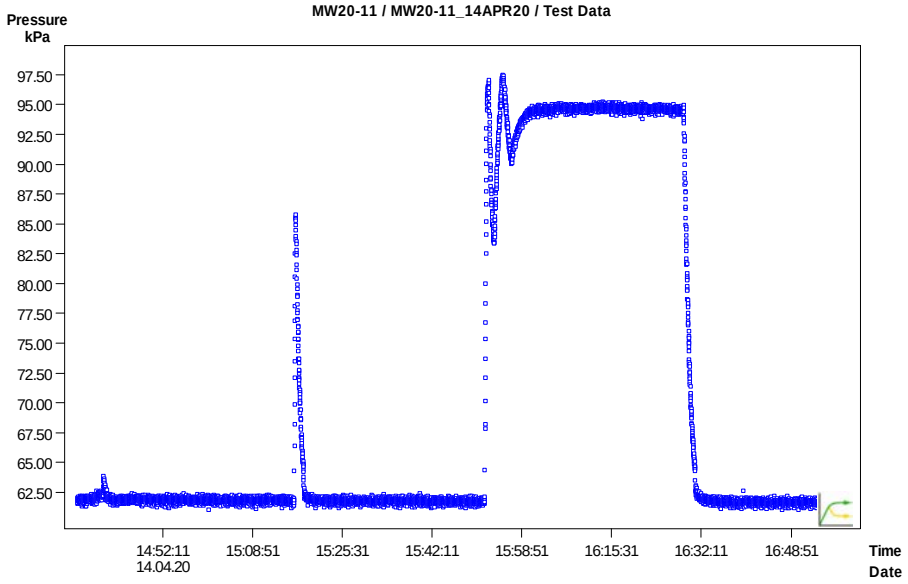
CALEDON PIT / QUARRY

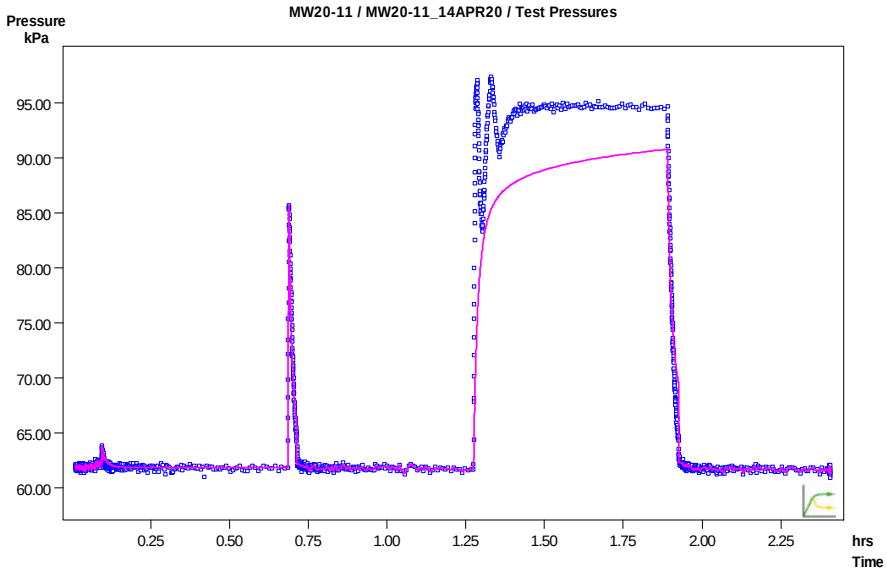
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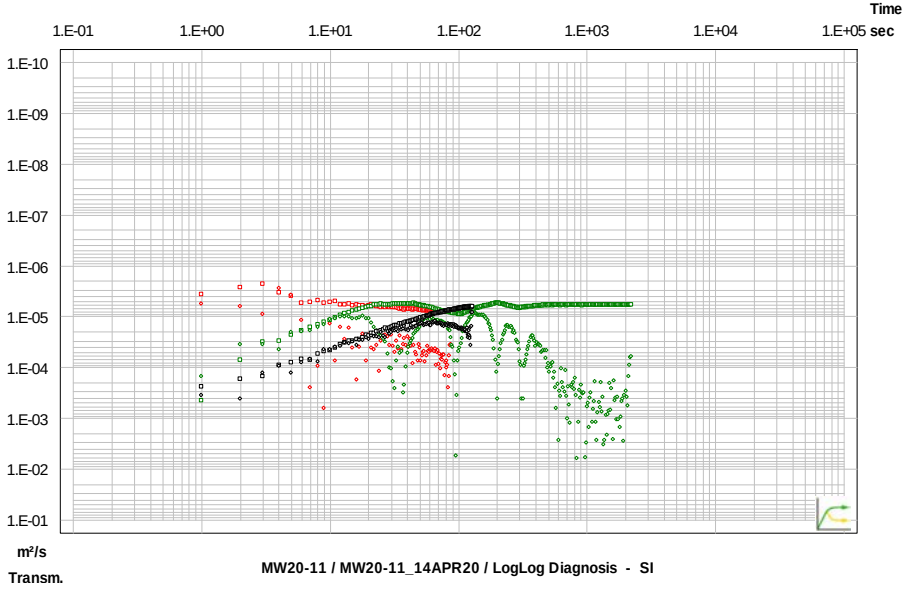
PACKER TEST RESULTS MW20-10 LOWER INTERVAL (16.9 to 21.2 mbgs)

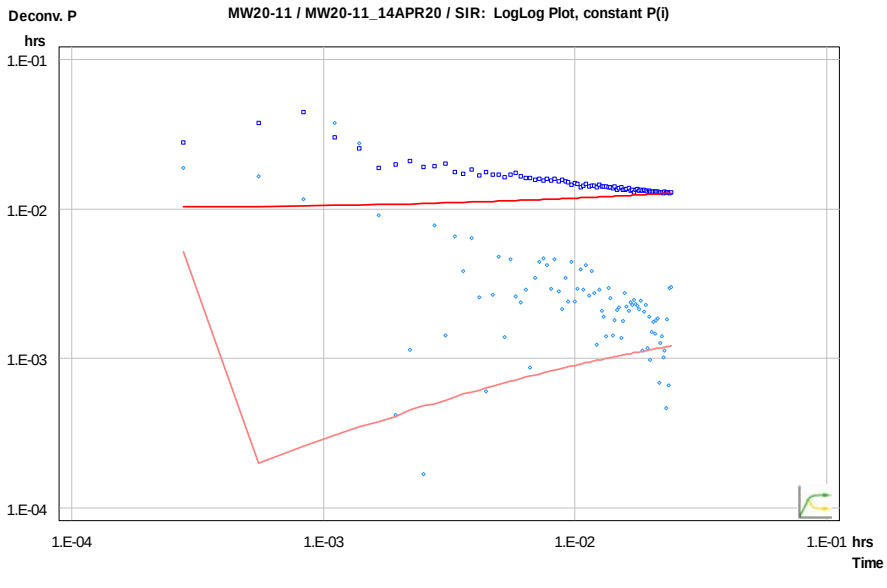
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-069

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

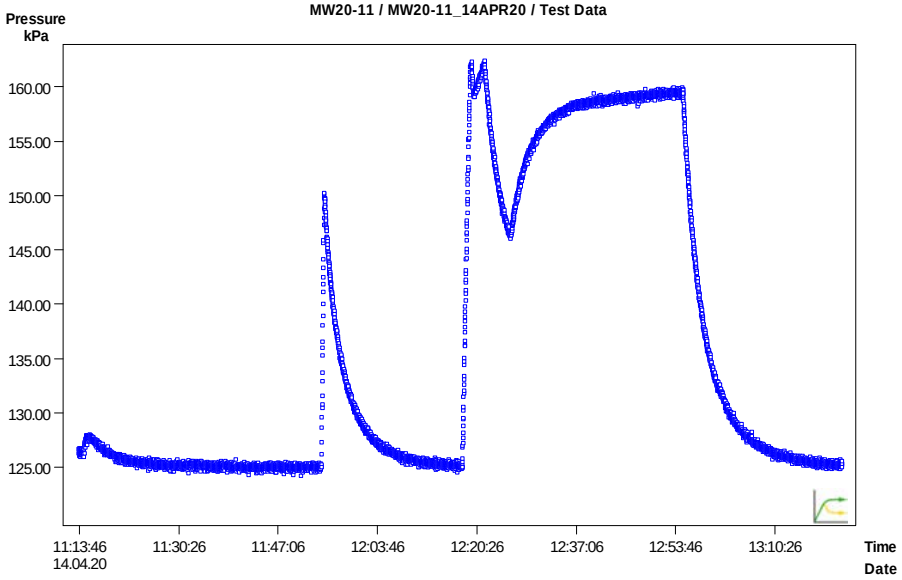
CALEDON PIT / QUARRY

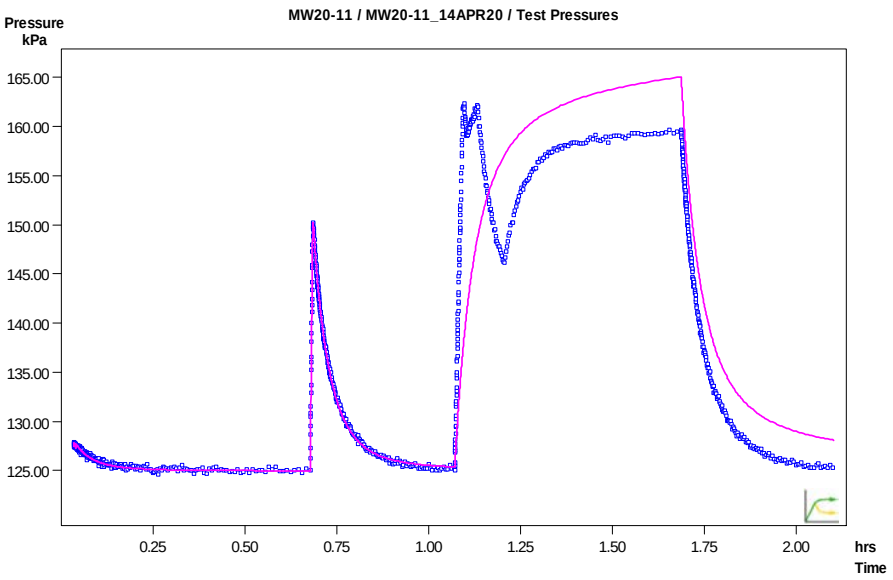
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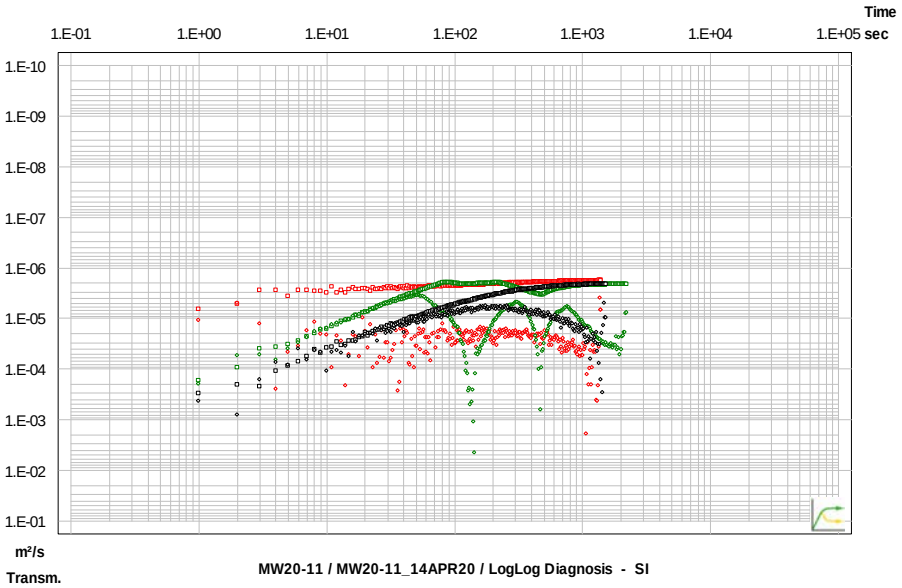
PACKER TEST RESULTS MW20-11 UPPER INTERVAL (4.8 to 10.0 mbgs)

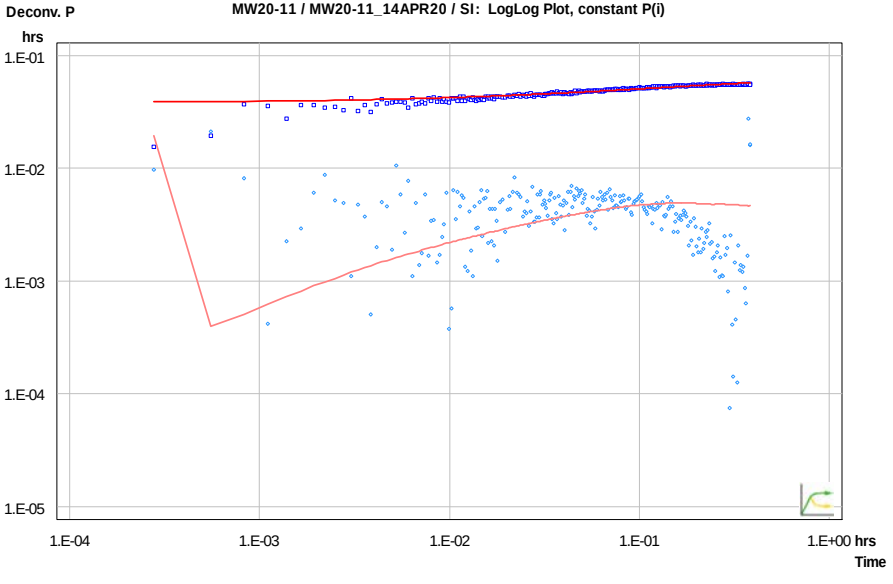
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-070

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-16	
PREPARED	PGM	
DESIGN	ML	
REVIEW	###	
APPROVED		

PROJECT

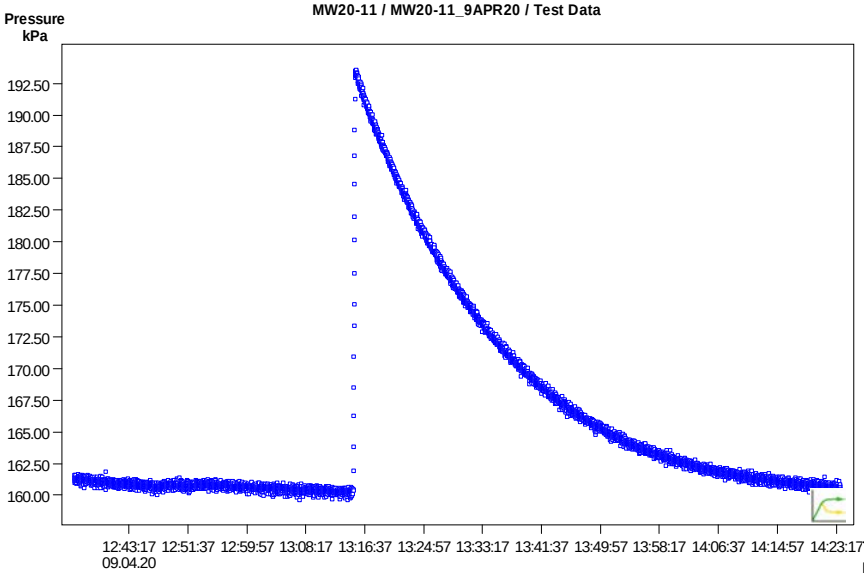
CALEDON PIT / QUARRY

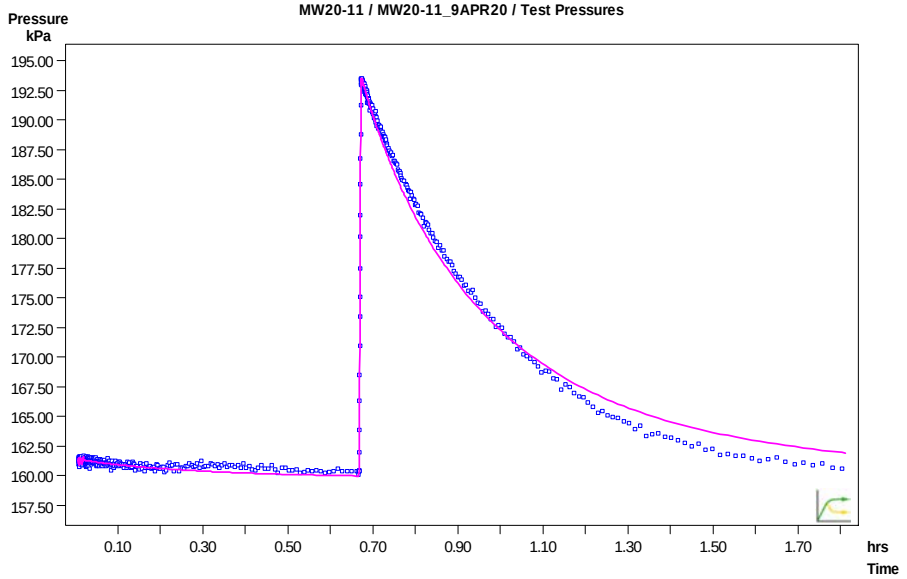
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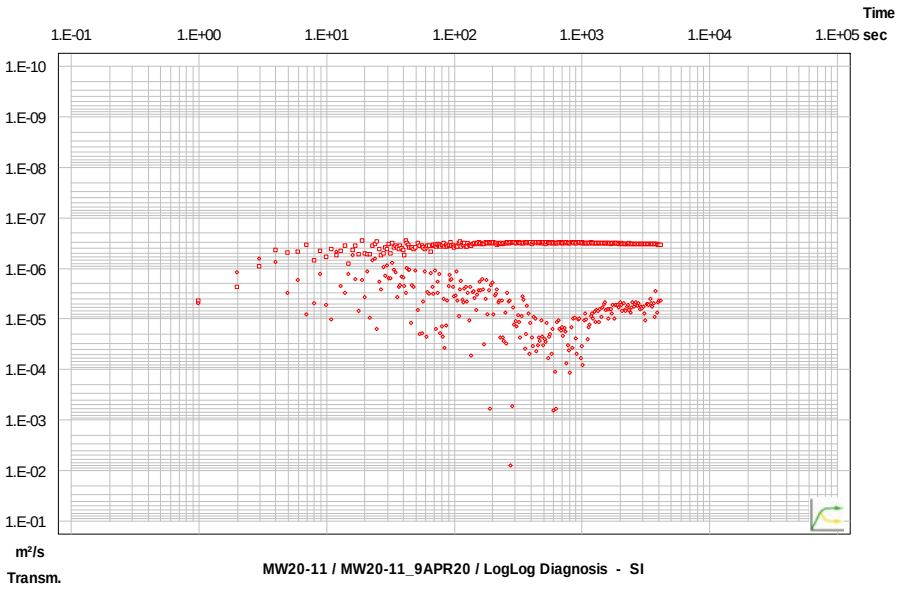
PACKER TEST RESULTS MW20-11 MIDDLE INTERVAL (9.7 to 16.4 mbgs)

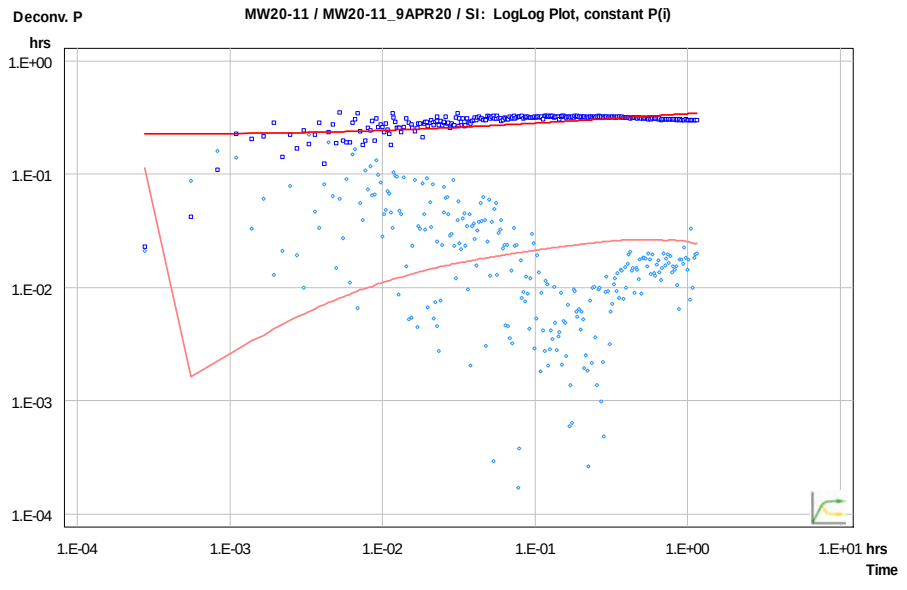
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-071

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
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GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

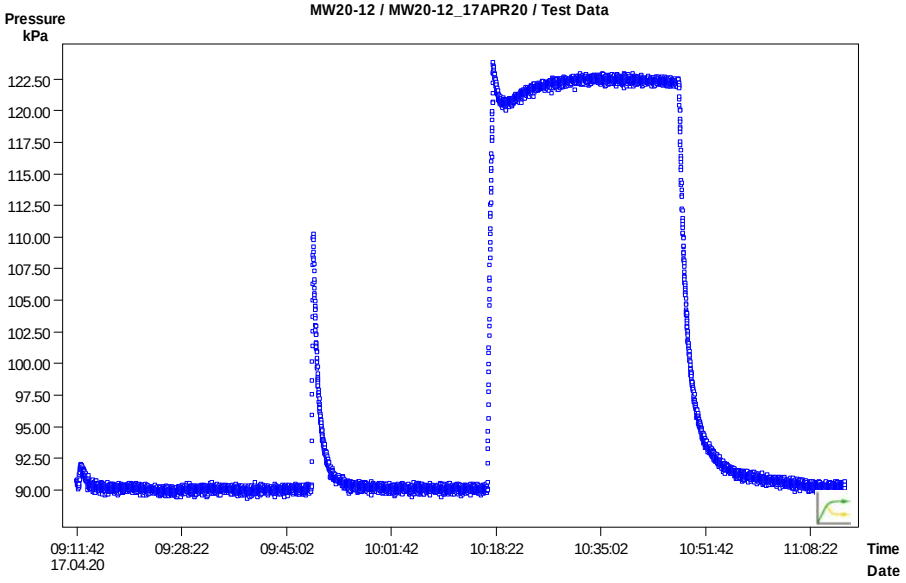
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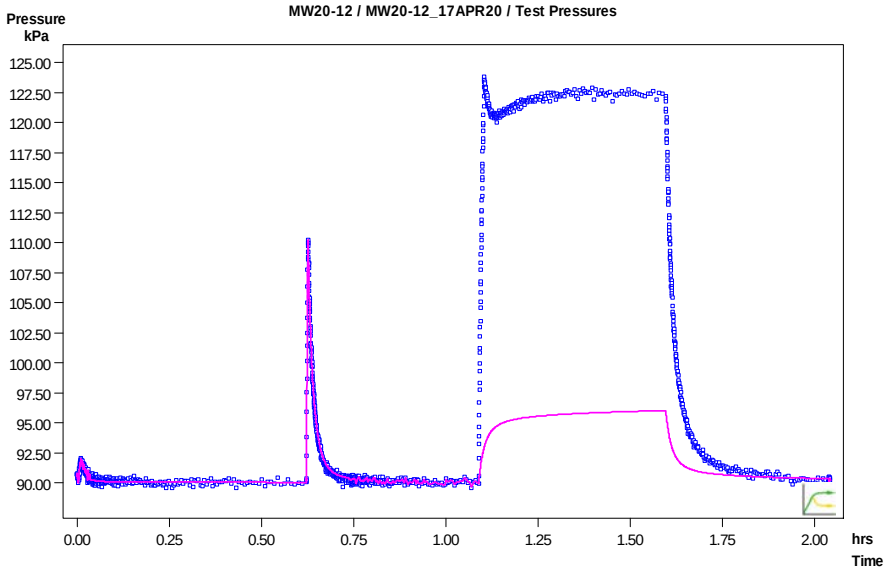
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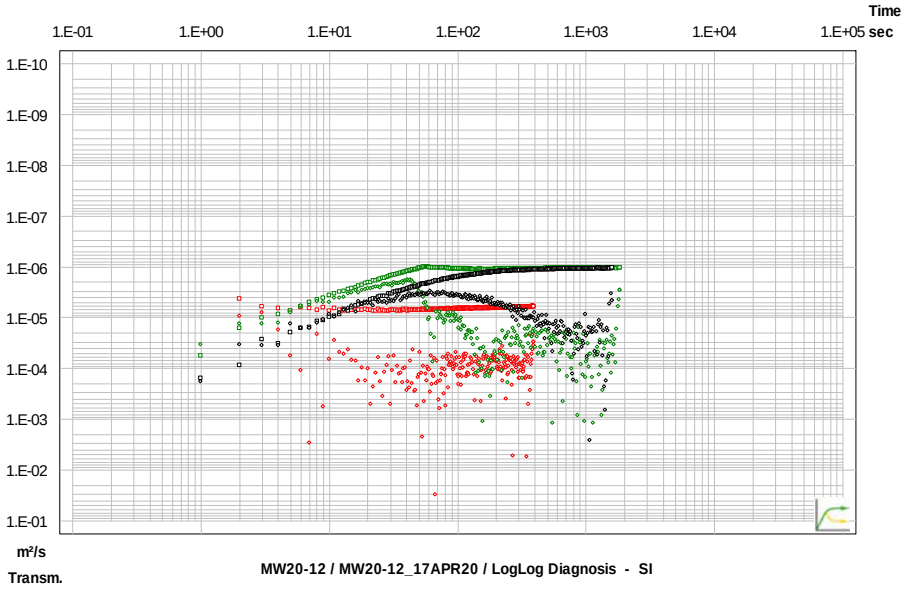
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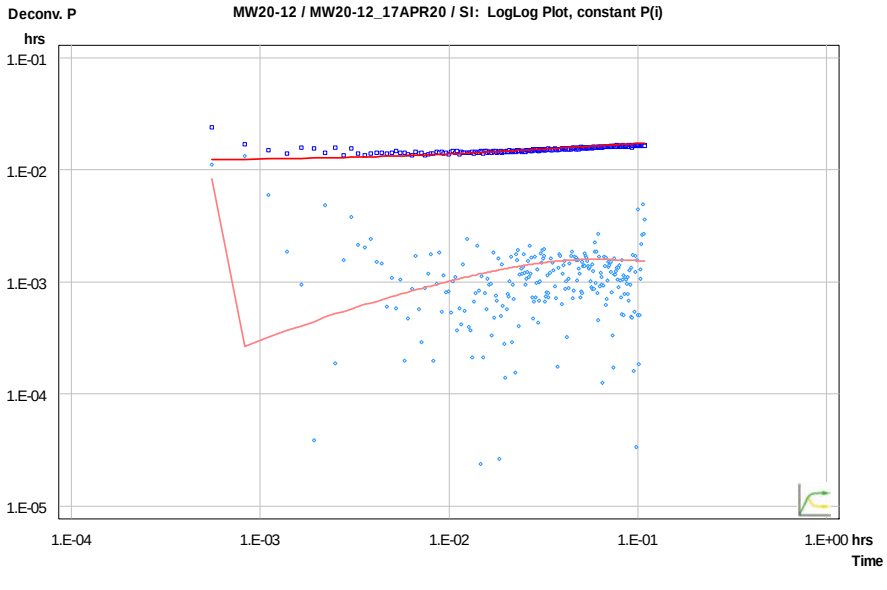
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-072

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
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PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
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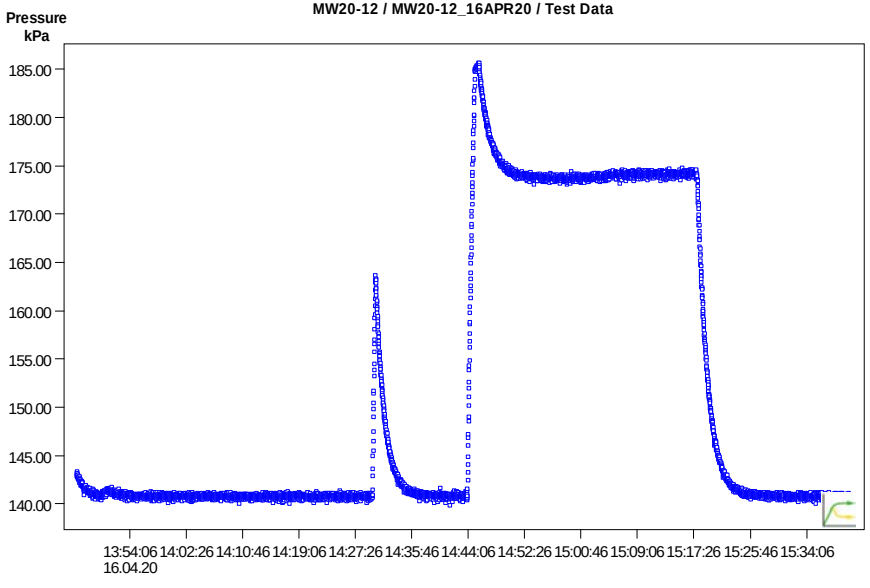
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PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

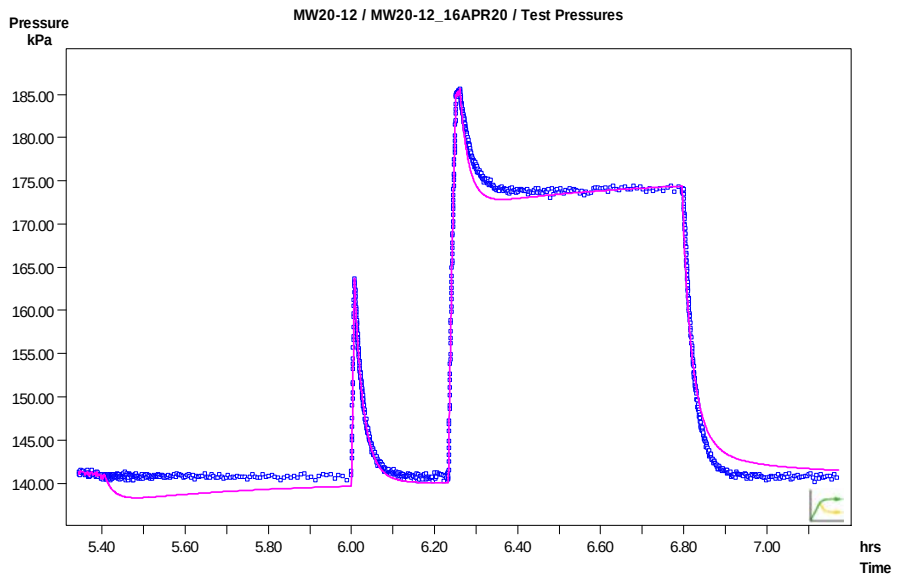
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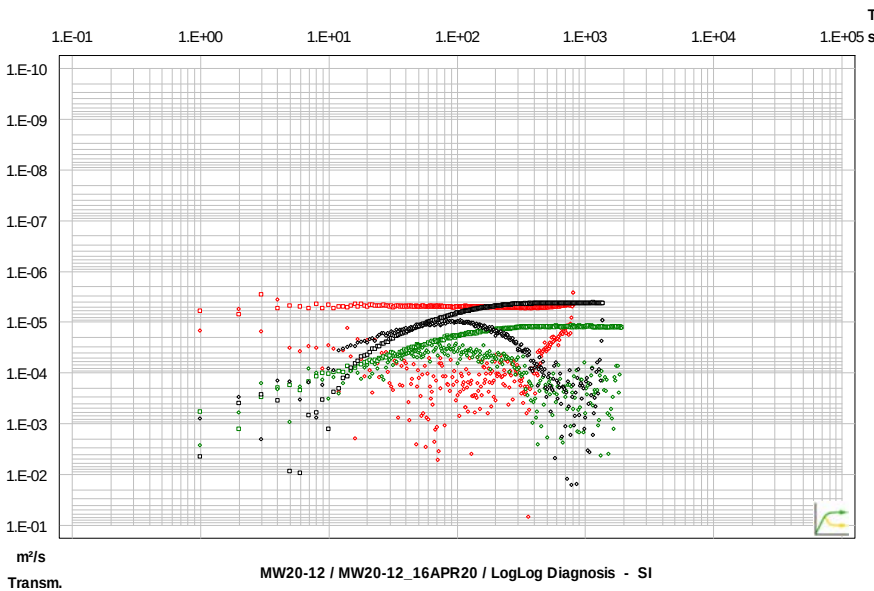
PACKER TEST RESULTS MW20-12 UPPER INTERVAL (7.5 to 14.2 mbgs)

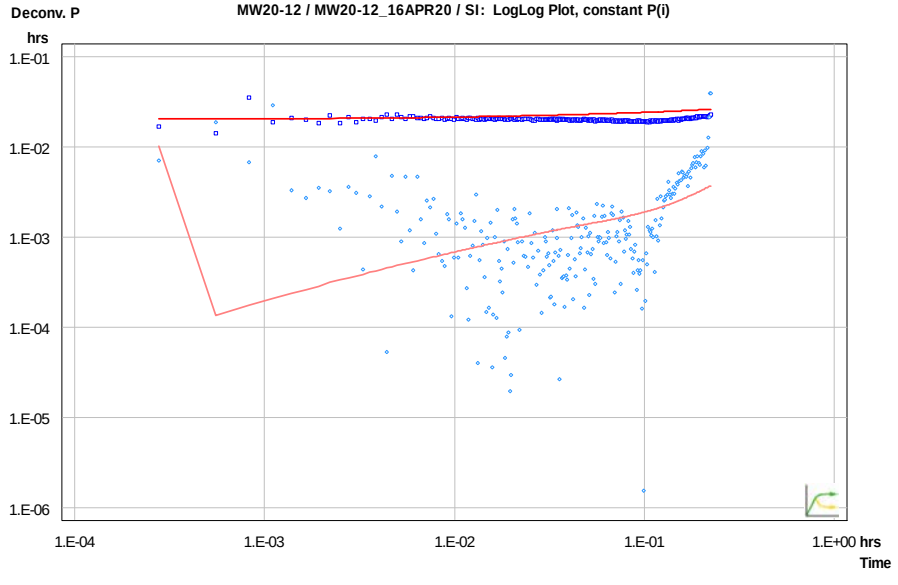
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-073

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









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YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

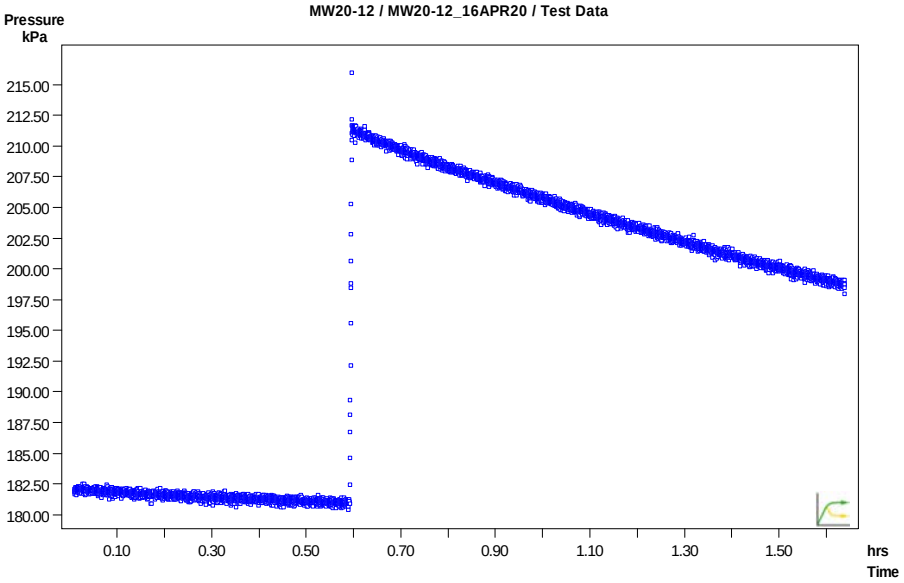
CALEDON PIT / QUARRY

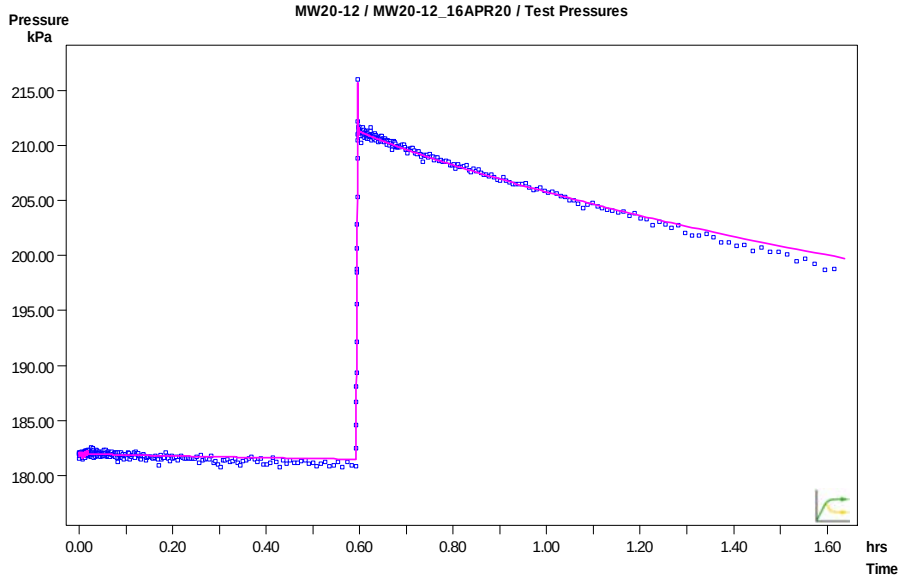
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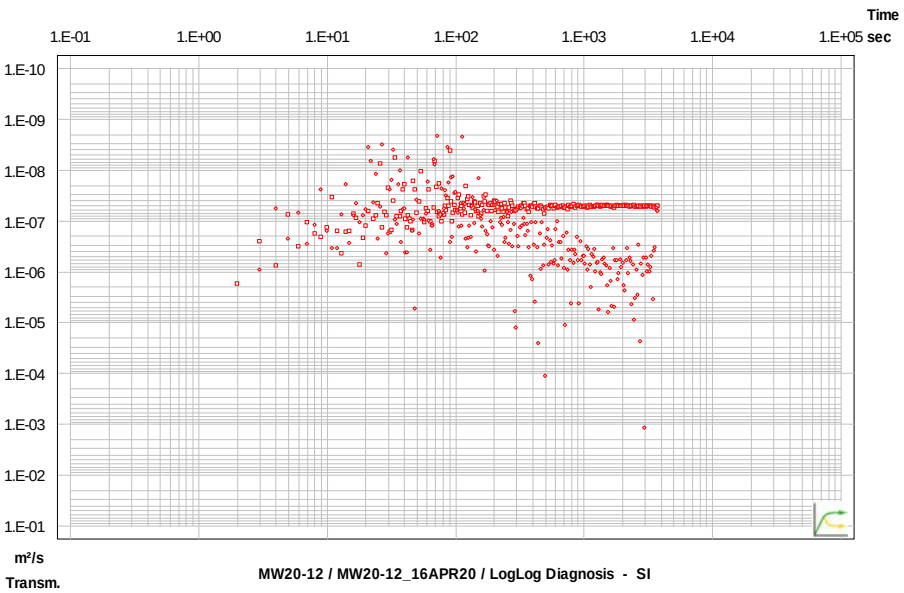
PACKER TEST RESULTS MW20-12 MIDDLE INTERVAL (14.2 to 19.3 mbgs)

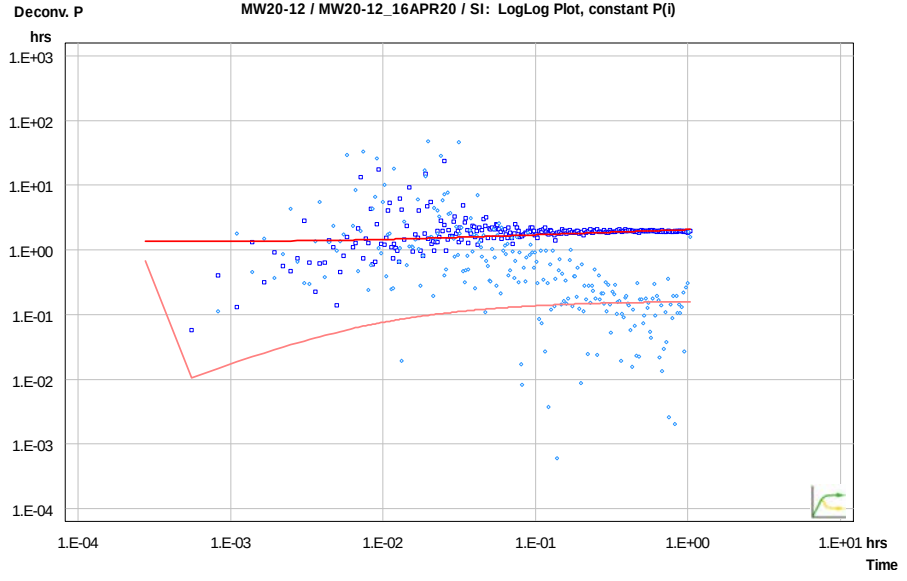
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-074

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
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MEMBER OF WSP

YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

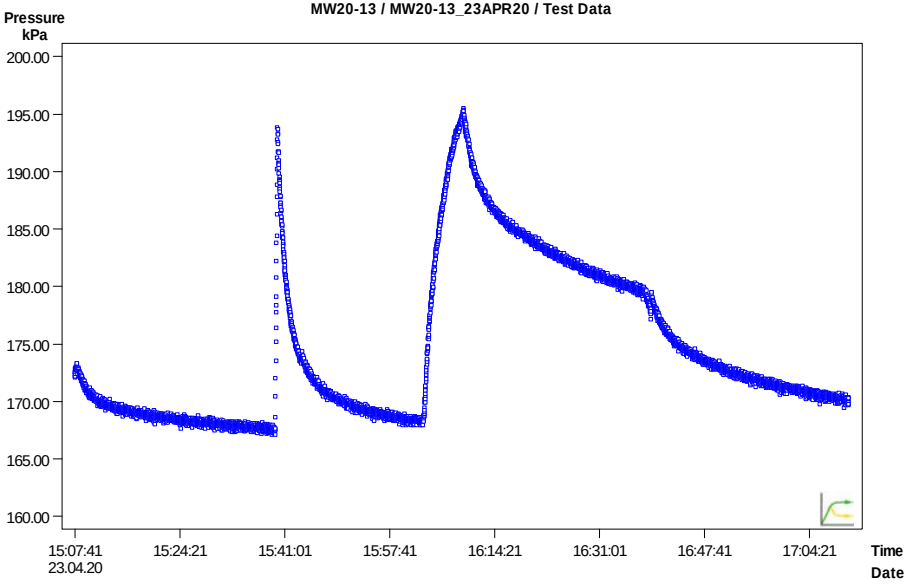
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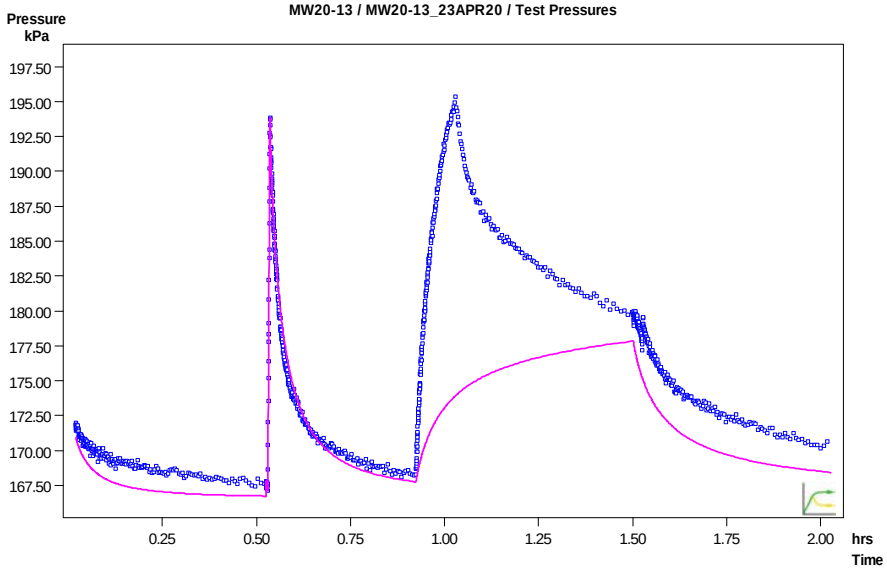
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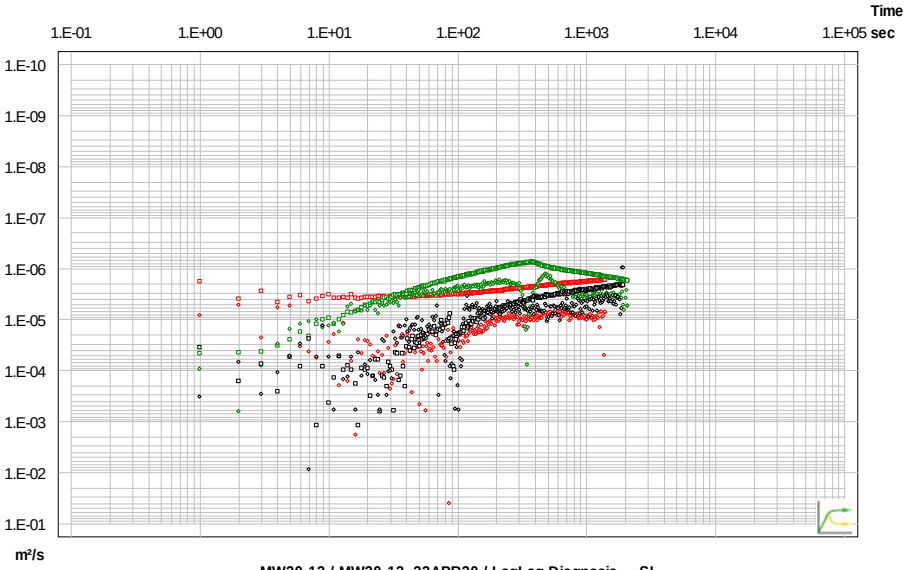
PACKER TEST RESULTS MW20-12 LOWER INTERVAL (19.8 to 22.7 mbgs)

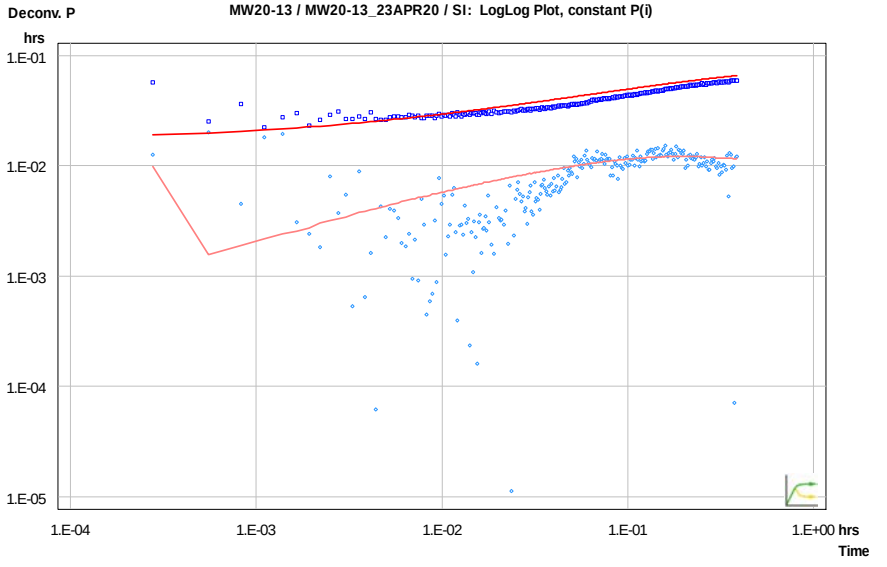
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-075

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









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PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

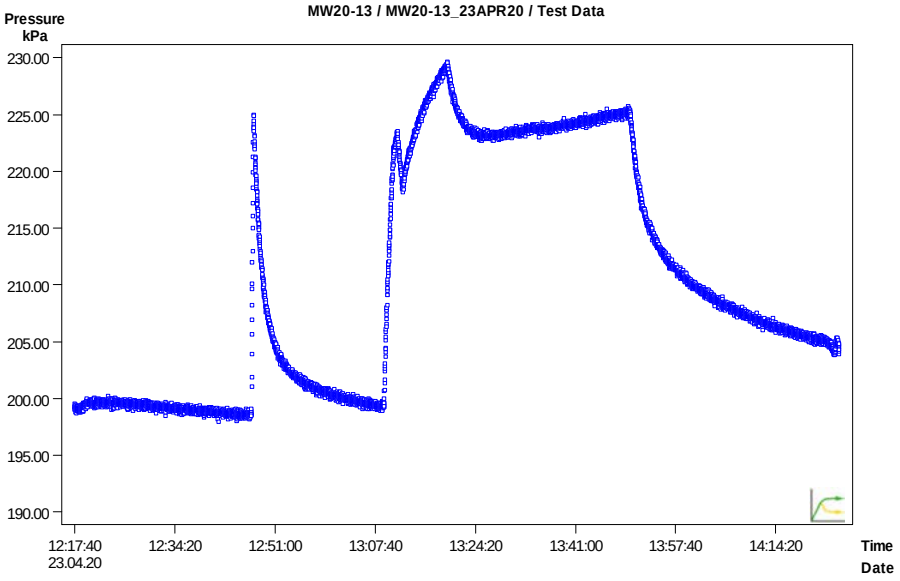
YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
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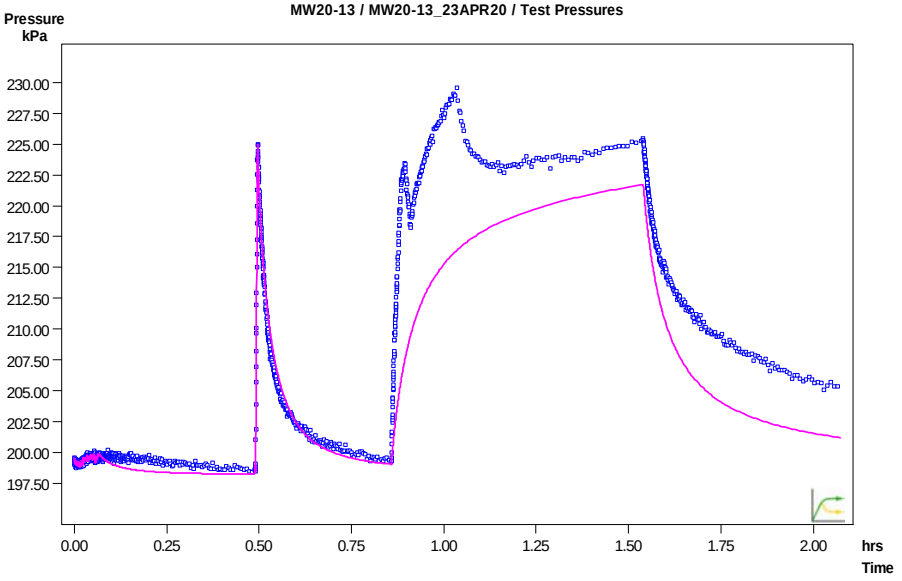
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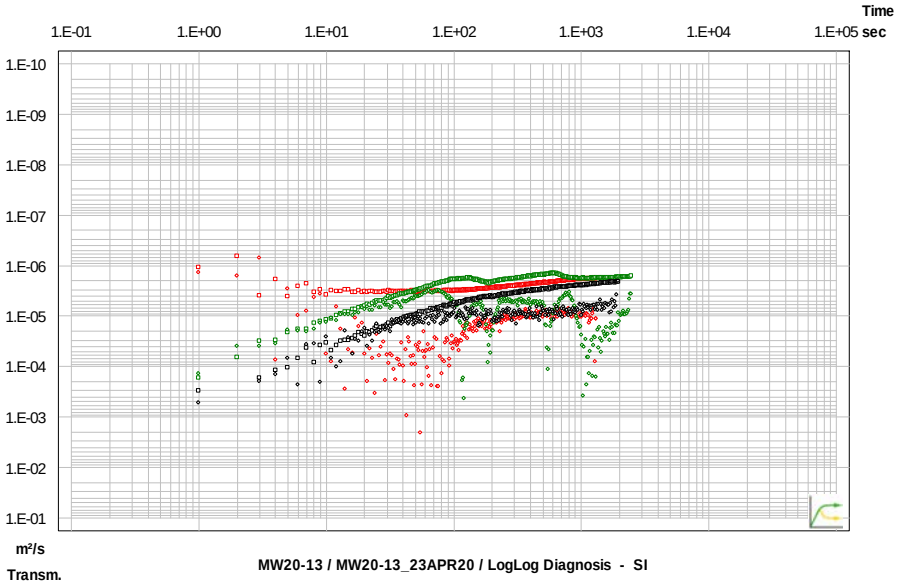
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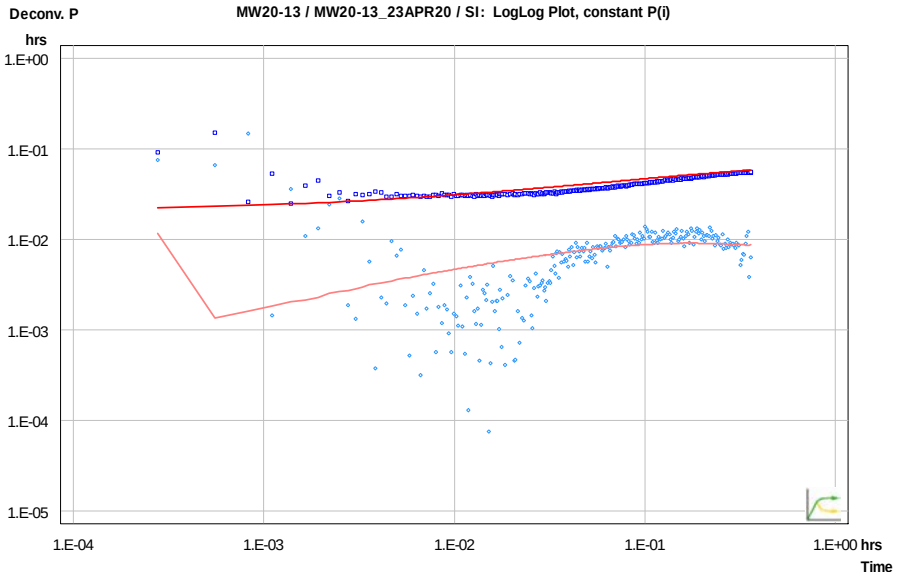
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-076

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
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PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

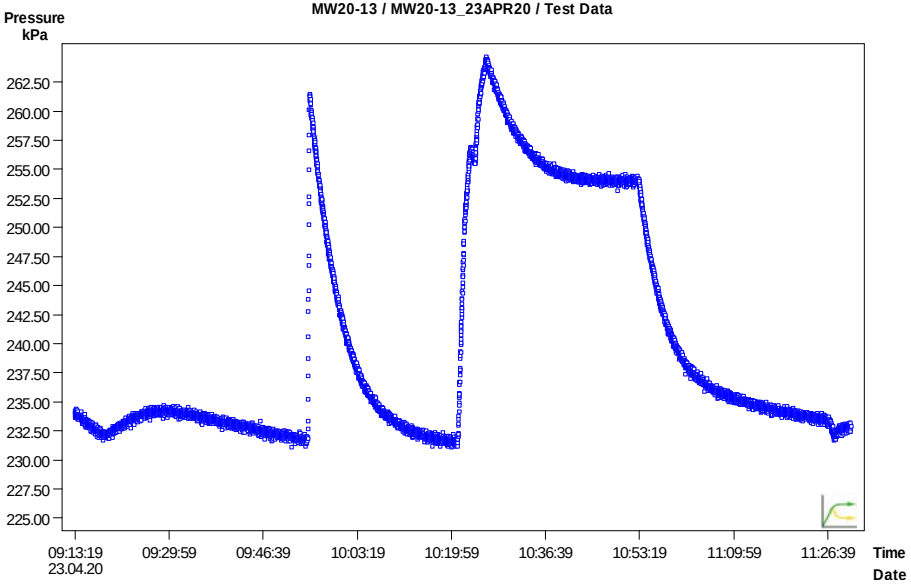
YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
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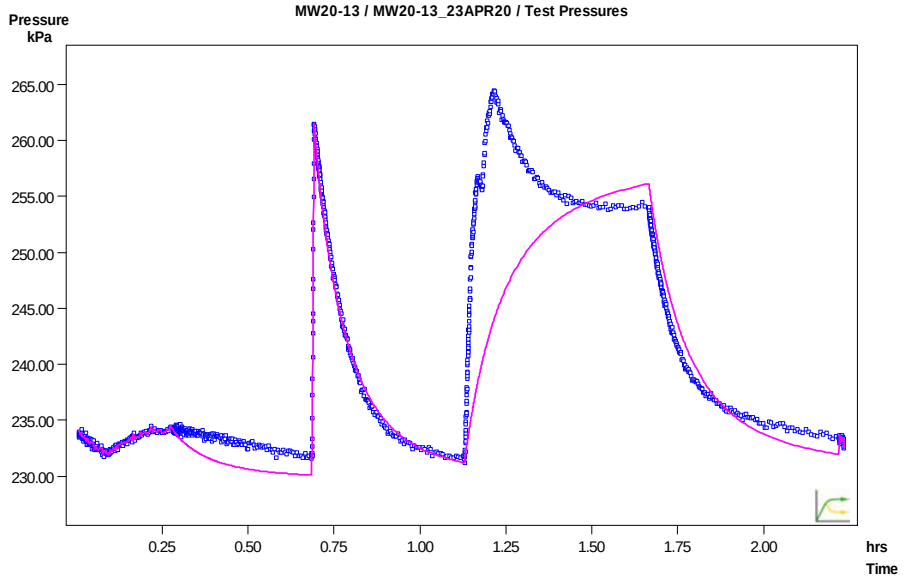
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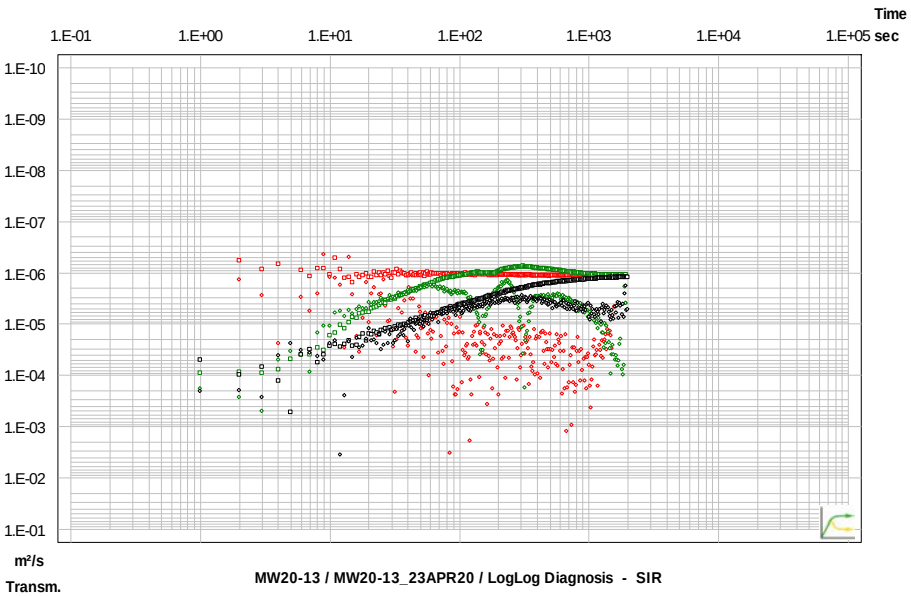
PACKER TEST RESULTS MW20-13 MIDDLE INTERVAL (20.2 to 23.9 mbgs)

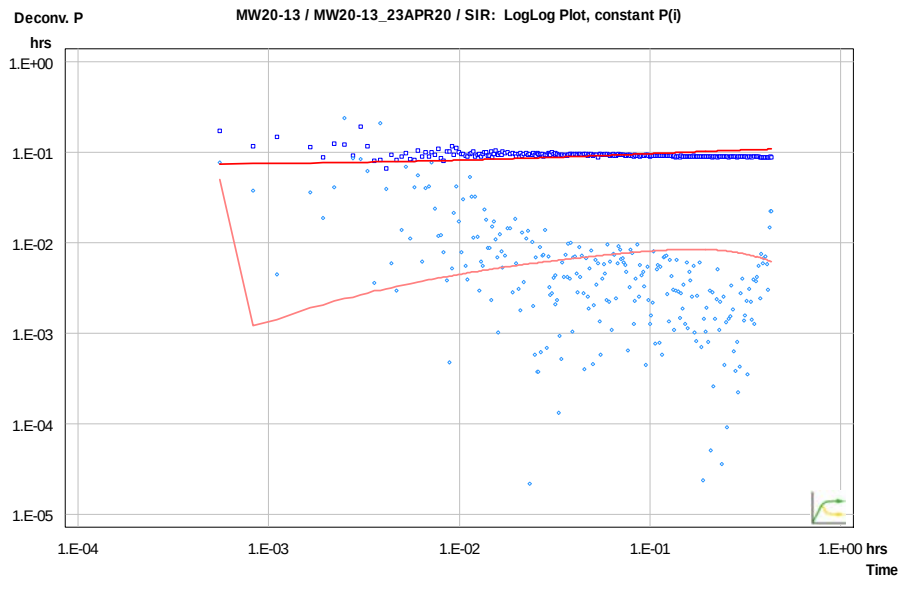
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-077

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GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

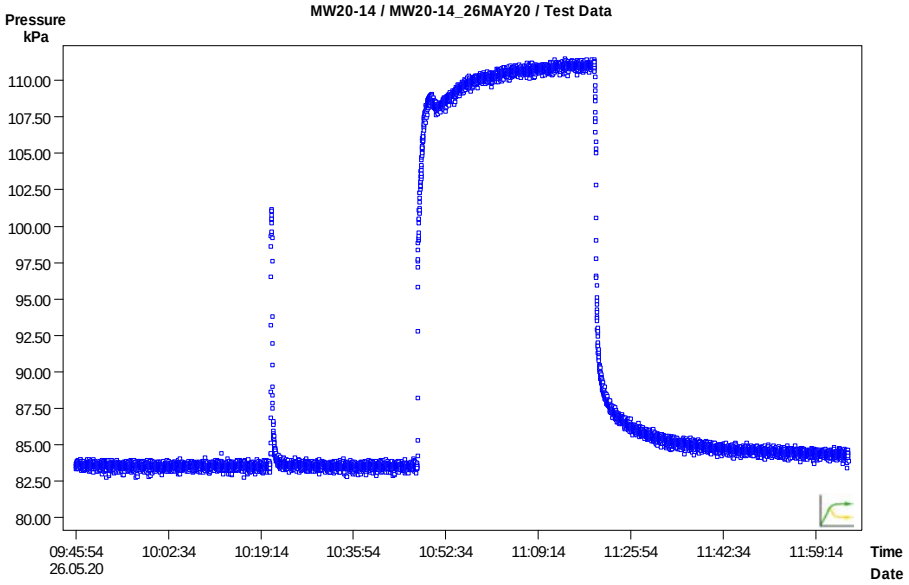
CALEDON PIT / QUARRY

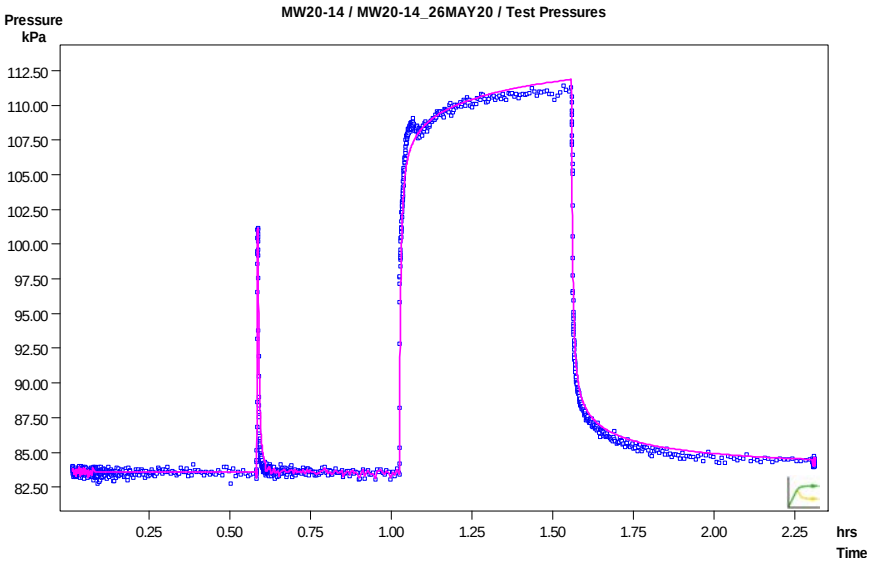
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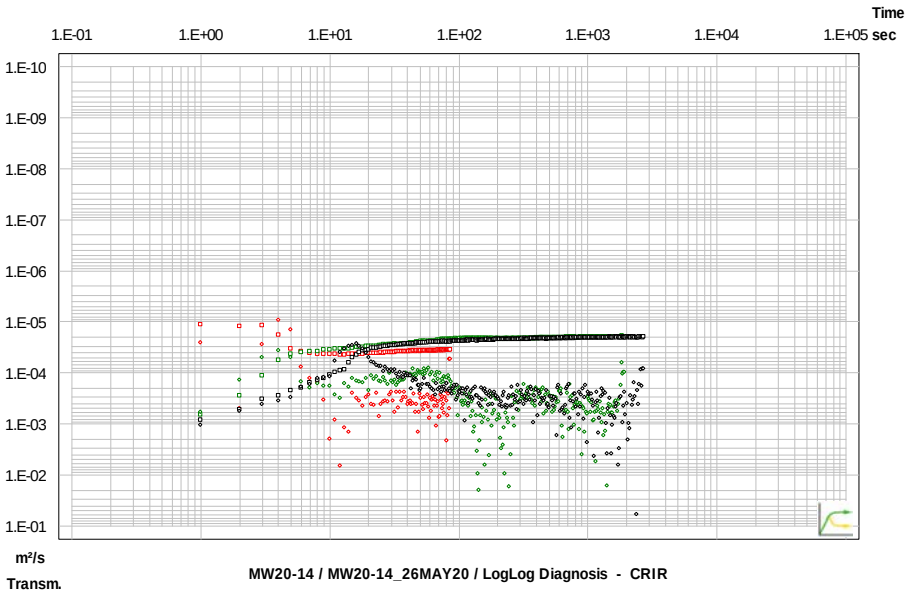
PACKER TEST RESULTS MW20-13 LOWER INTERVAL (23.9 to 28.2 mbgs)

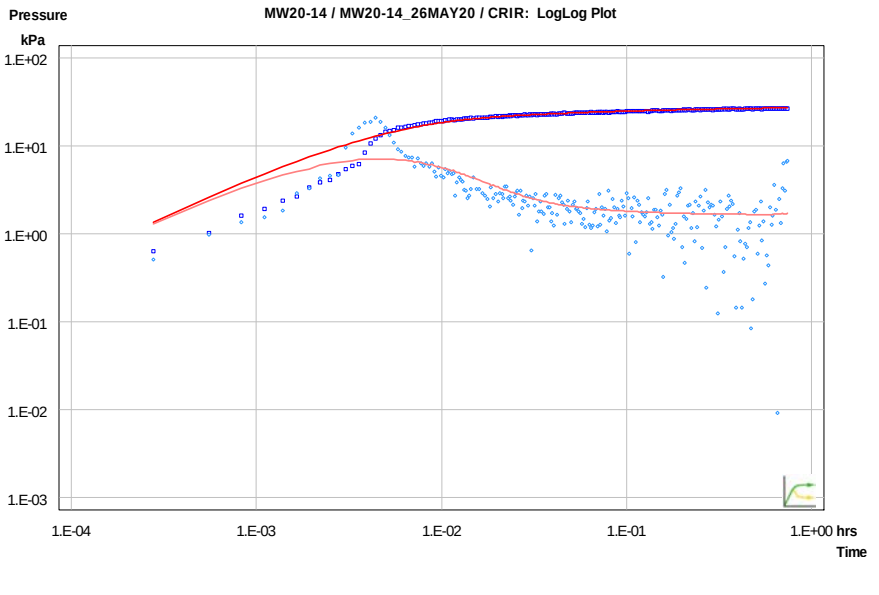
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-078

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
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CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
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PROJECT

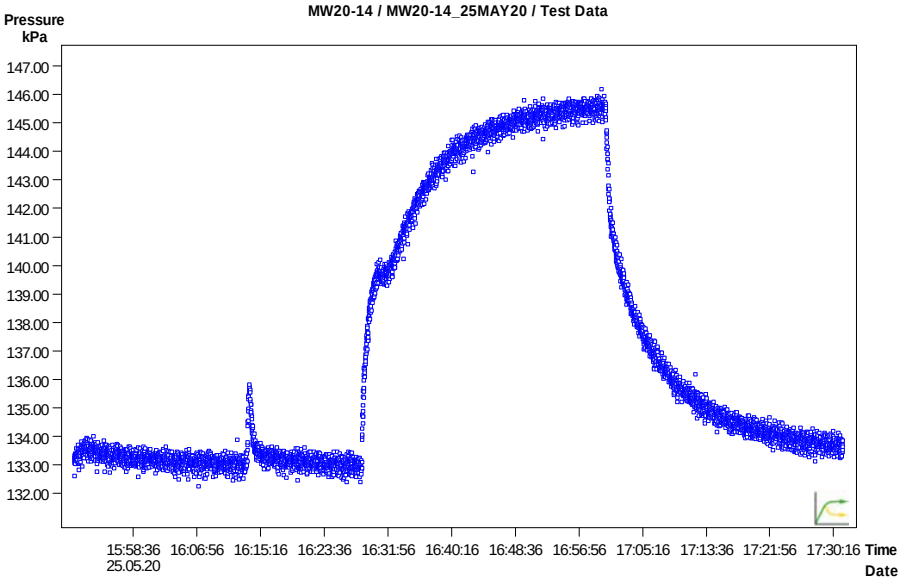
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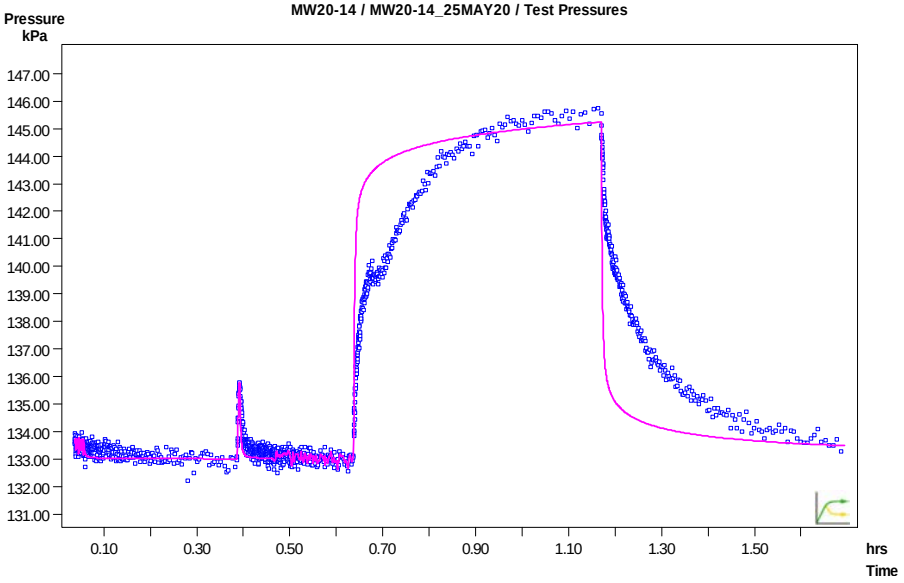
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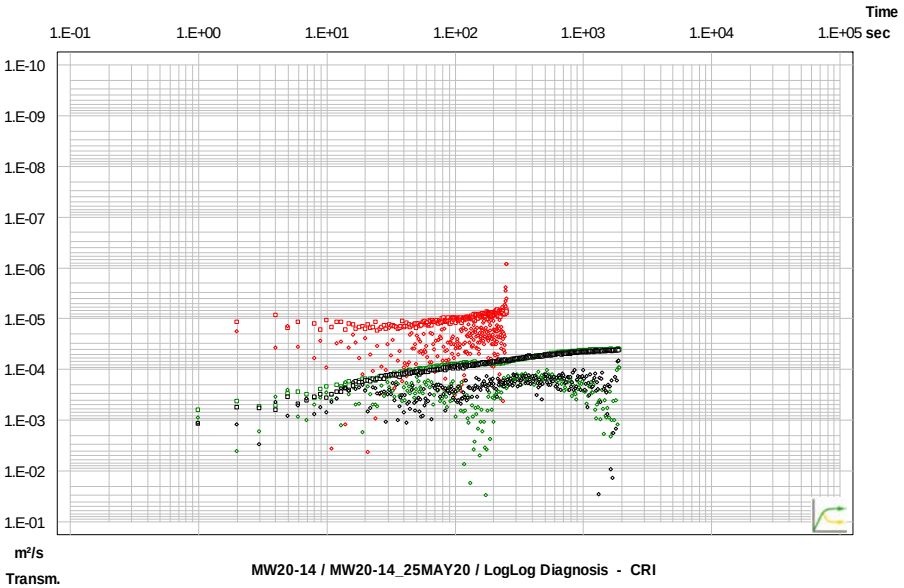
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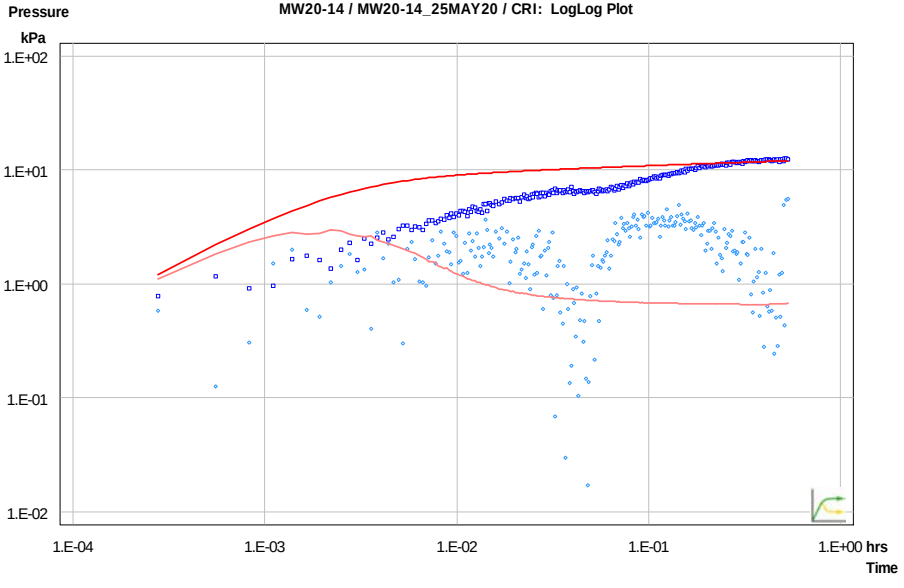
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-079

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
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CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

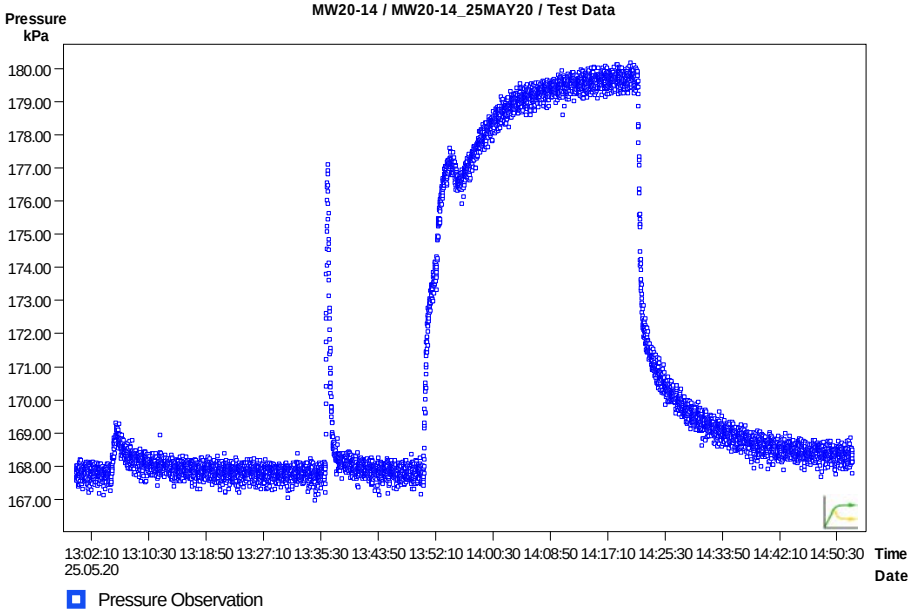
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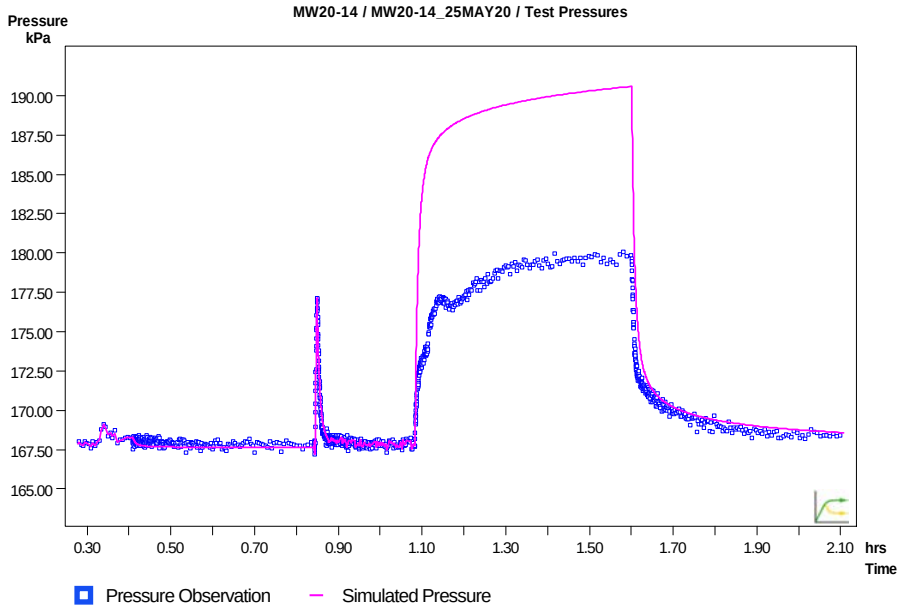
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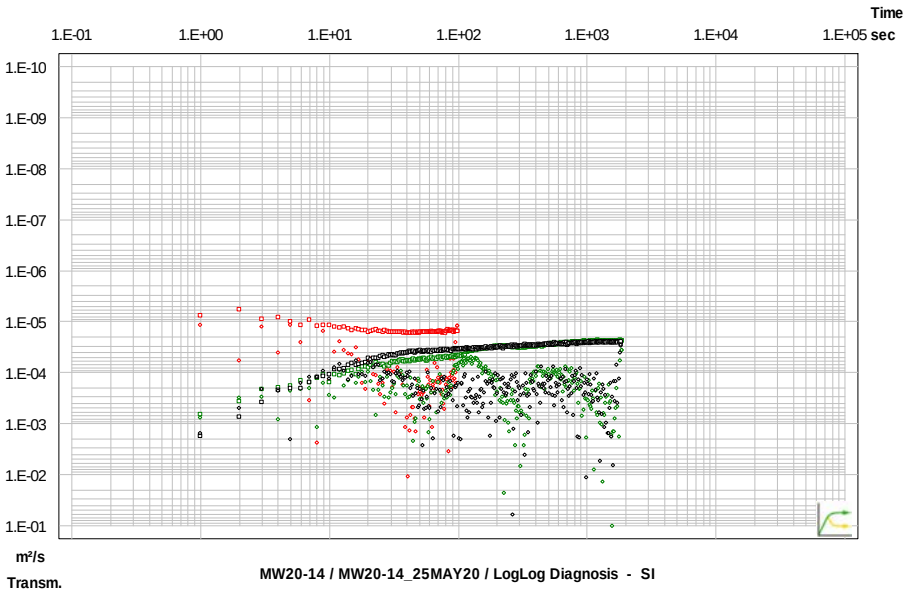
PACKER TEST RESULTS MW20-14 MIDDLE INTERVAL (14.2 to 22.4 mbgs)

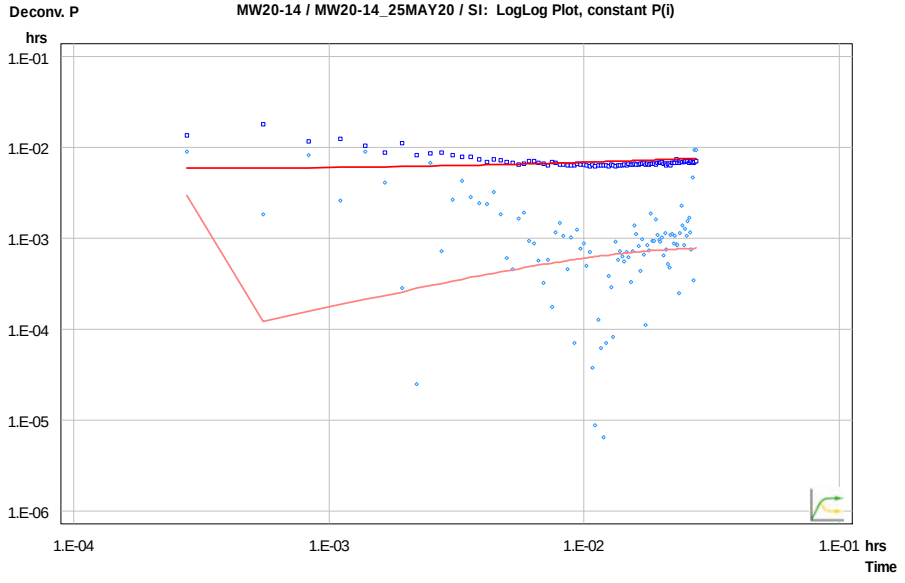
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-080

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

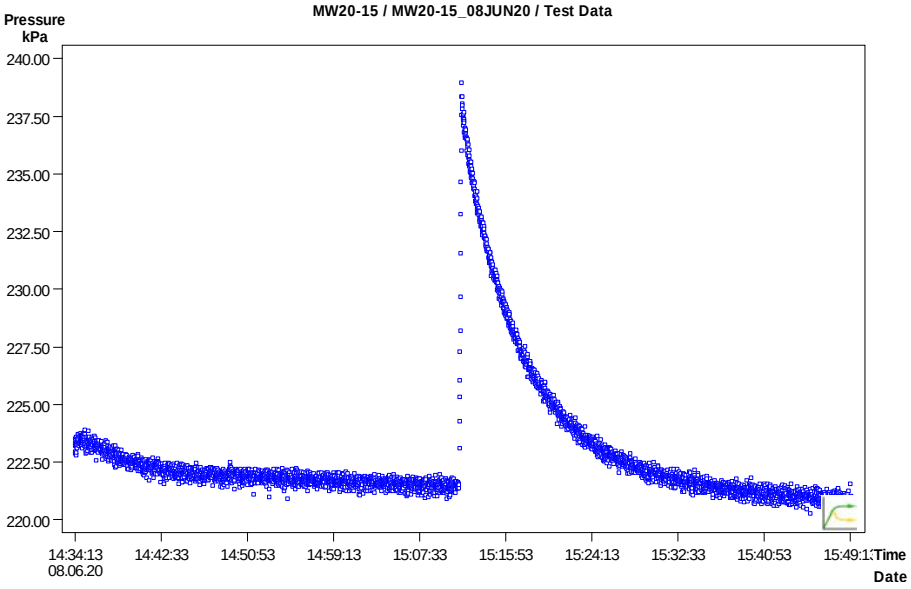
YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

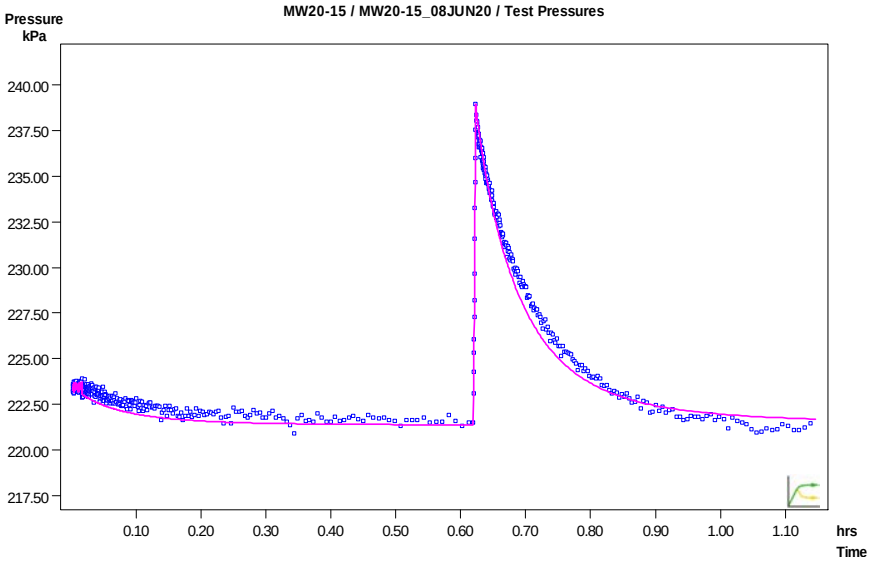
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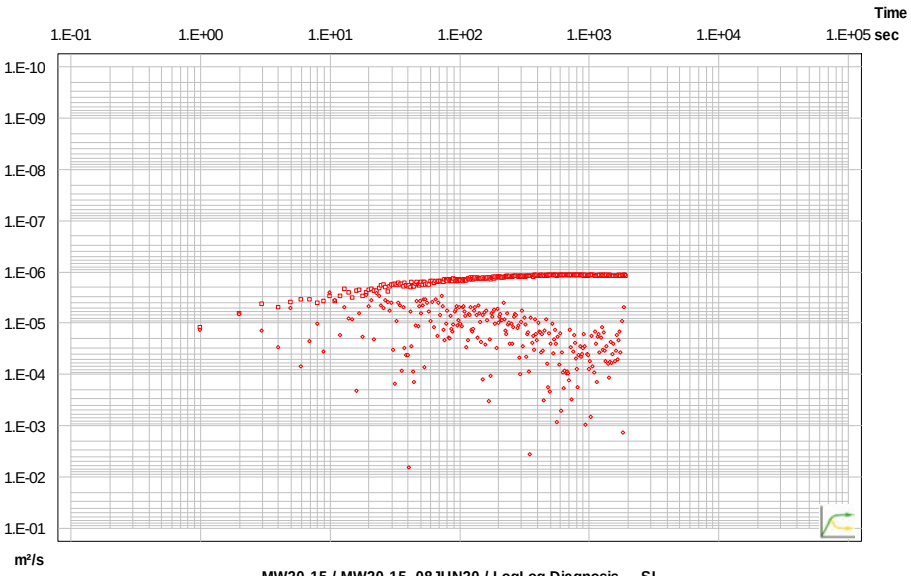
PACKER TEST RESULTS MW20-14 LOWER INTERVAL (22.4 to 26.4 mbgs)

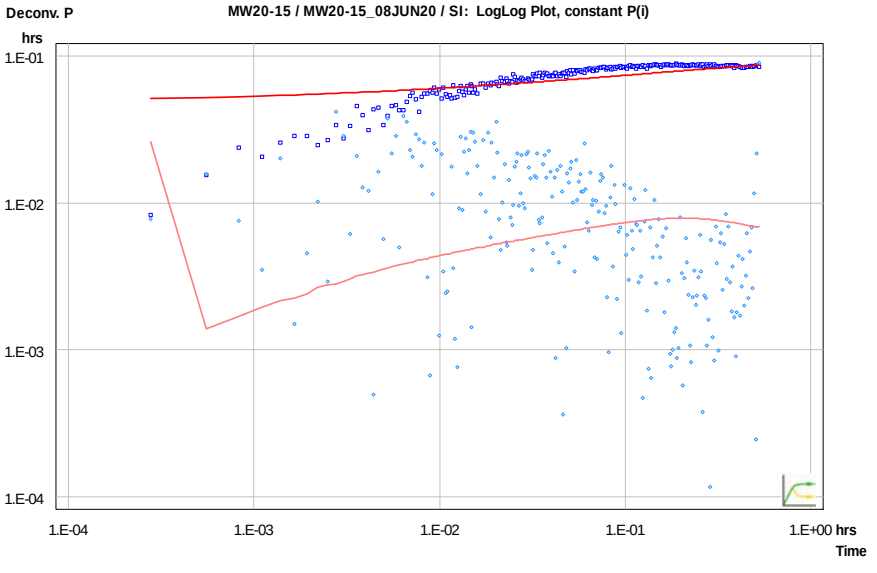
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-081

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

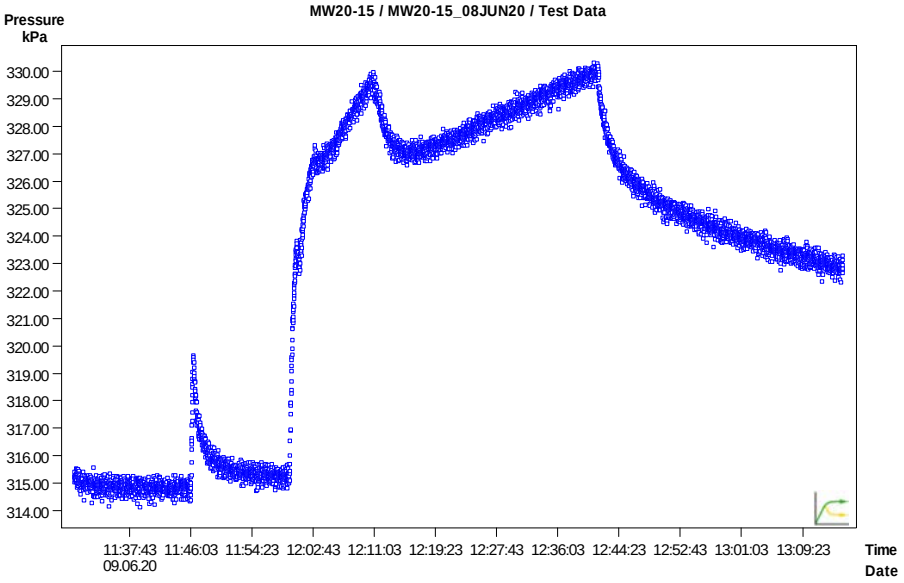
YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
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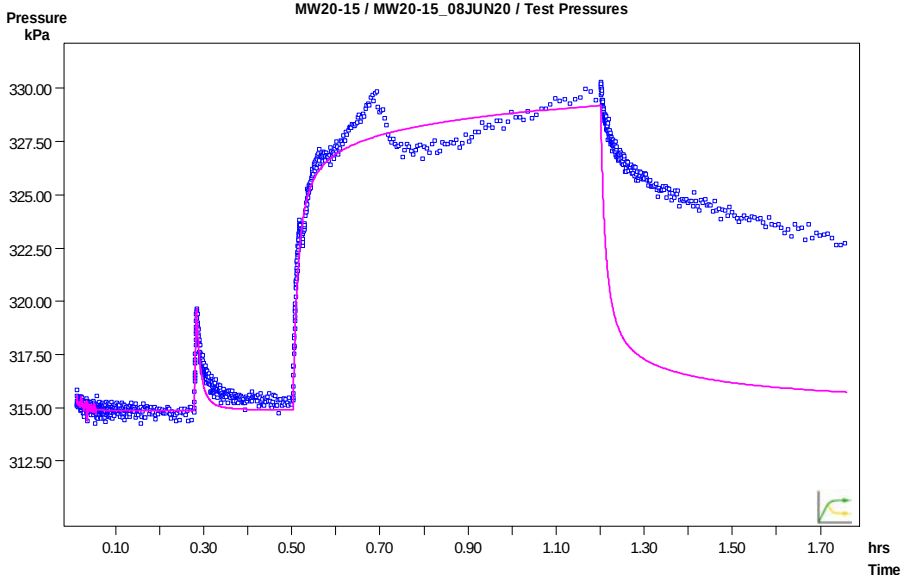
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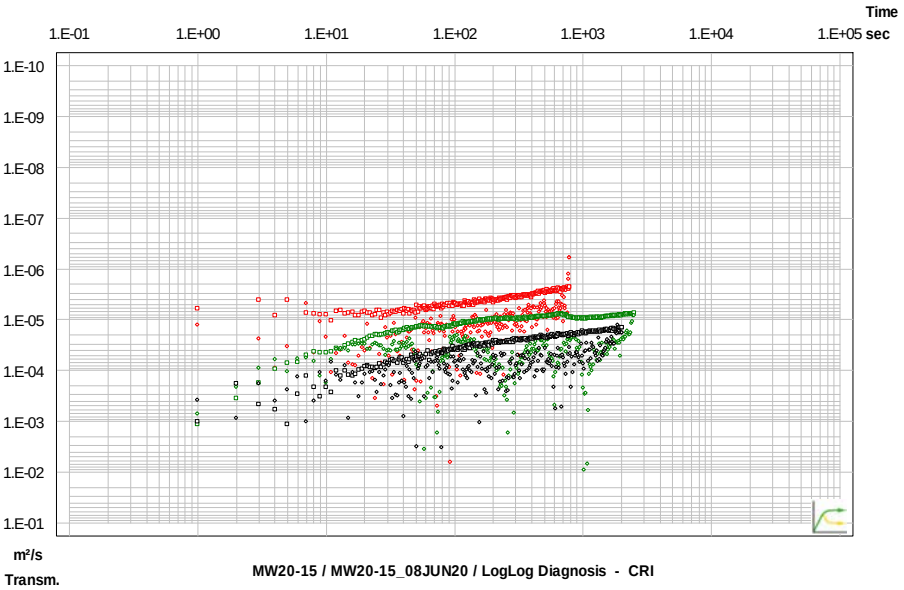
PACKER TEST RESULTS MW20-15 UPPER INTERVAL (14.3 to 24.1 mbgs)

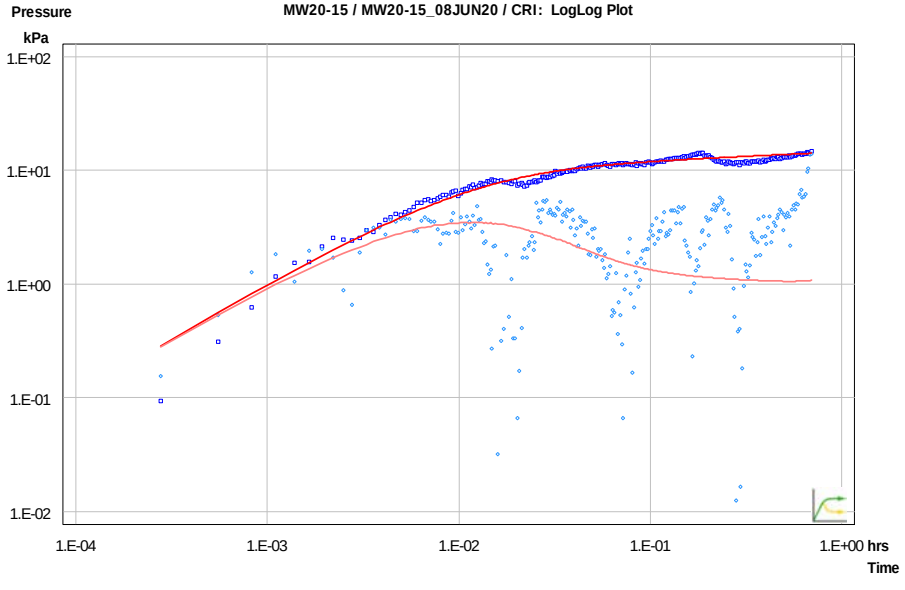
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-082

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

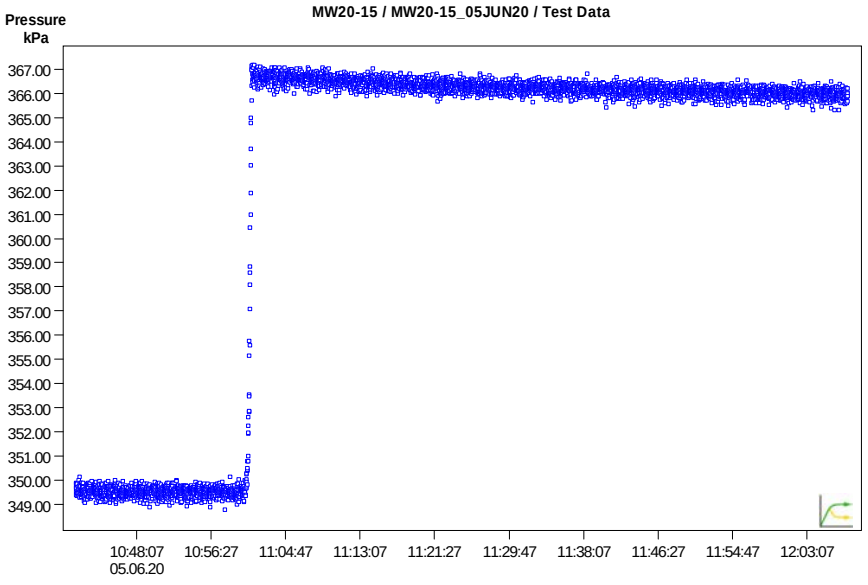
YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

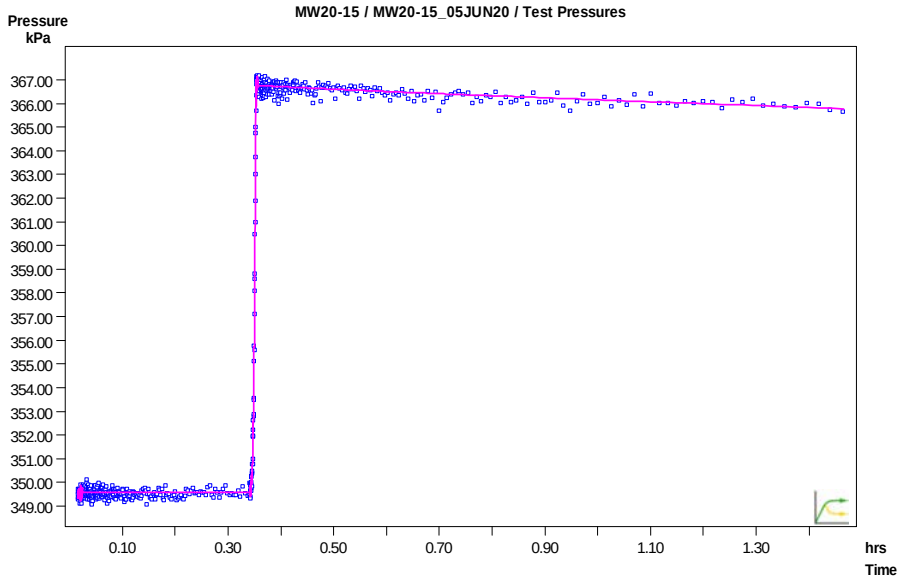
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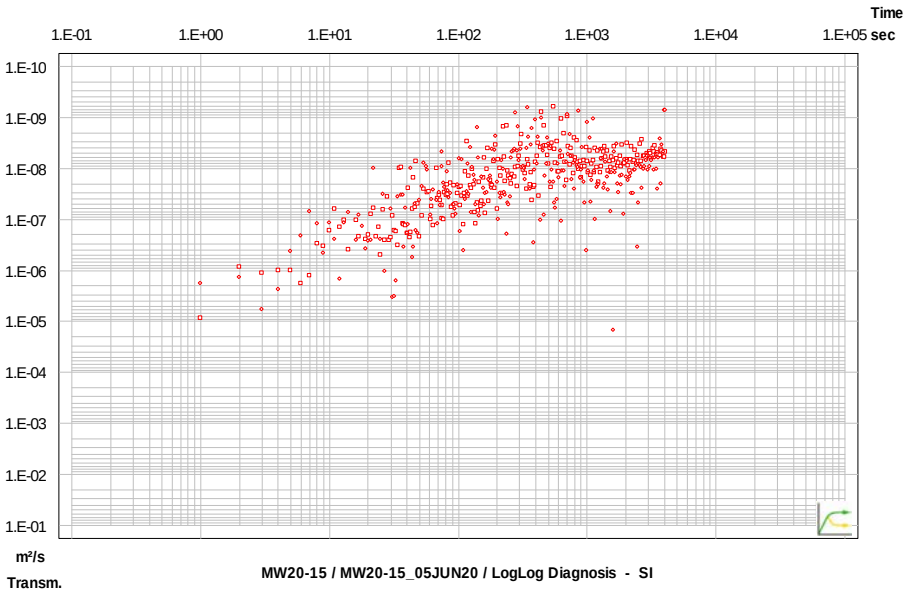
PACKER TEST RESULTS MW20-15 MIDDLE INTERVAL (24.1 to 33.8 mbgs)

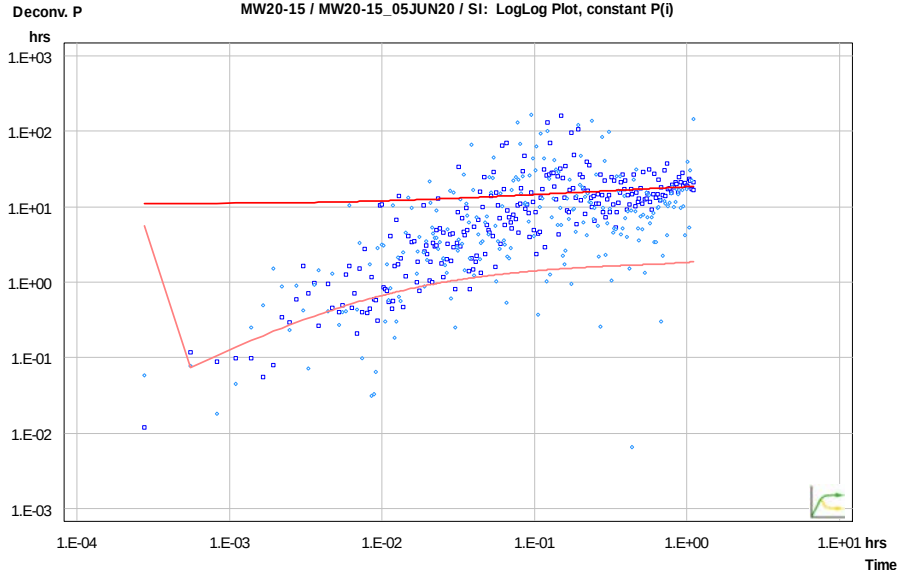
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-083

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

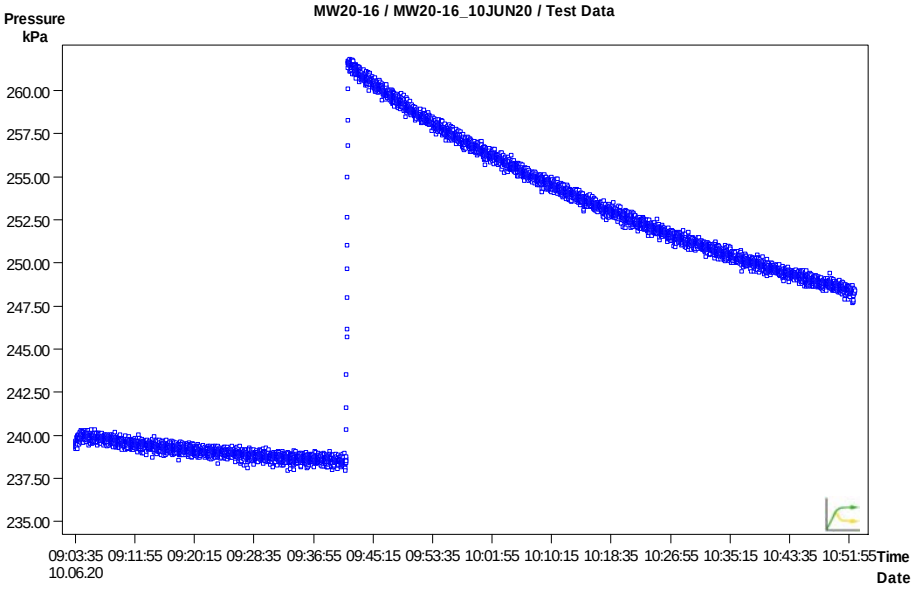
CALEDON PIT / QUARRY

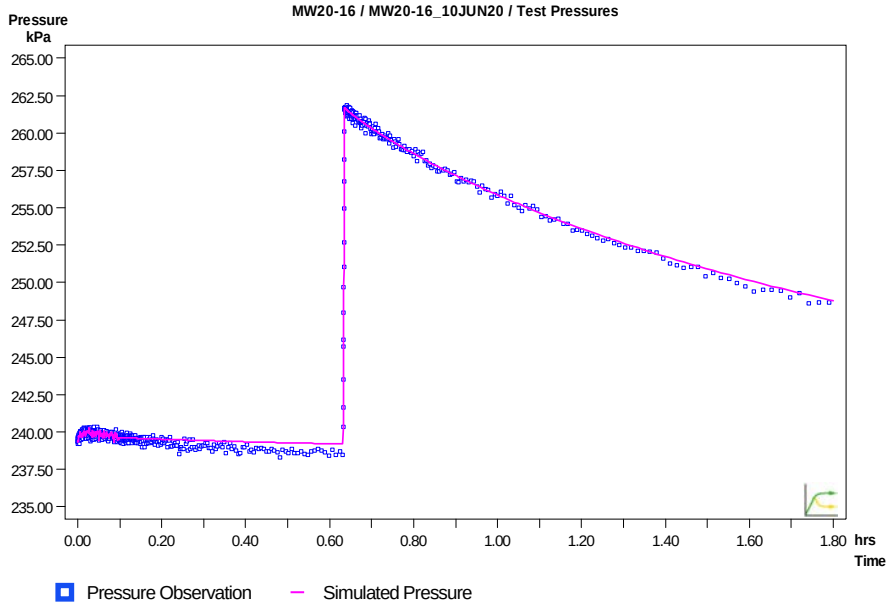
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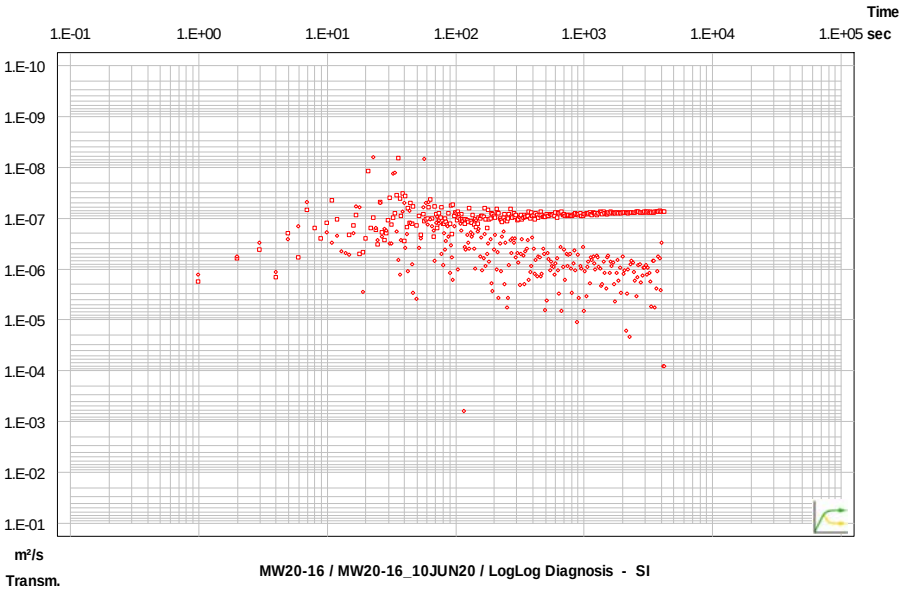
PACKER TEST RESULTS MW20-15 LOWER INTERVAL (33.8 to 37.2 mbgs)

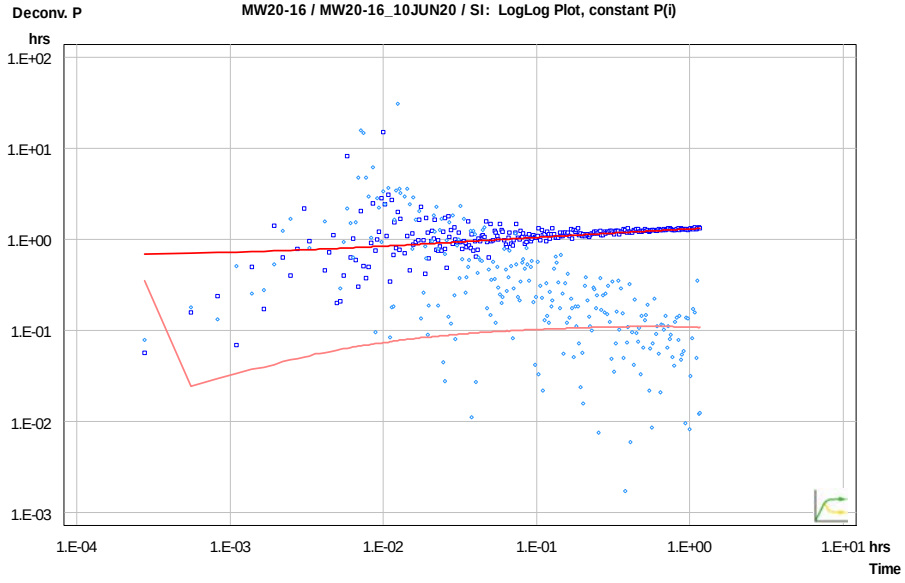
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-084

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

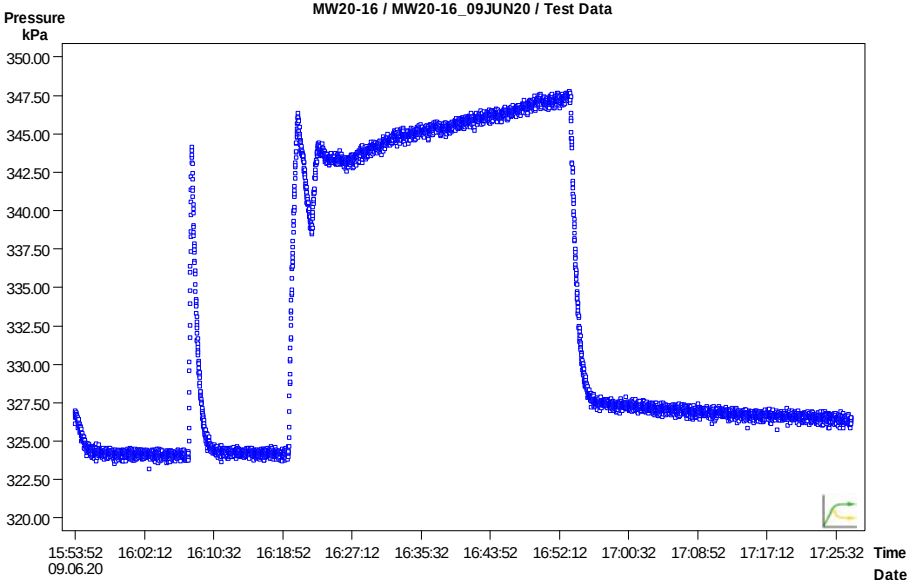
CALEDON PIT / QUARRY

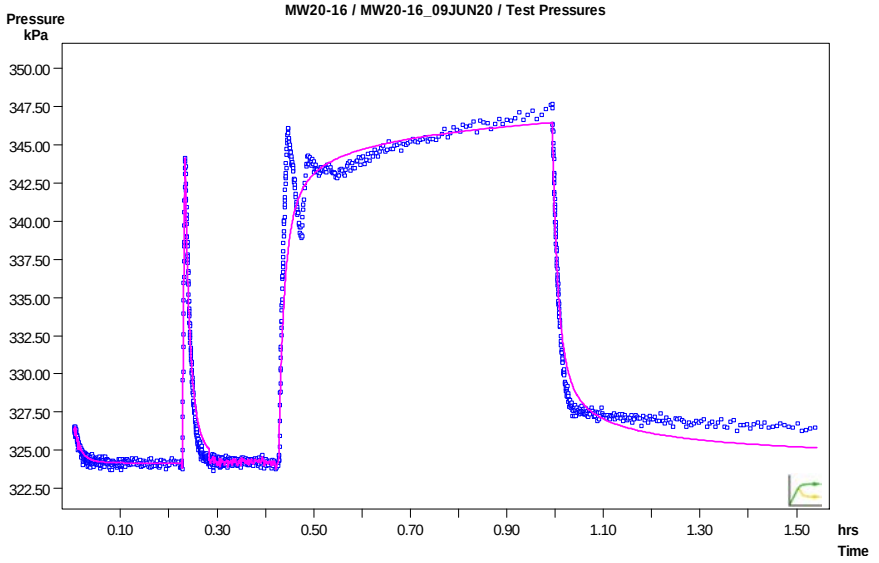
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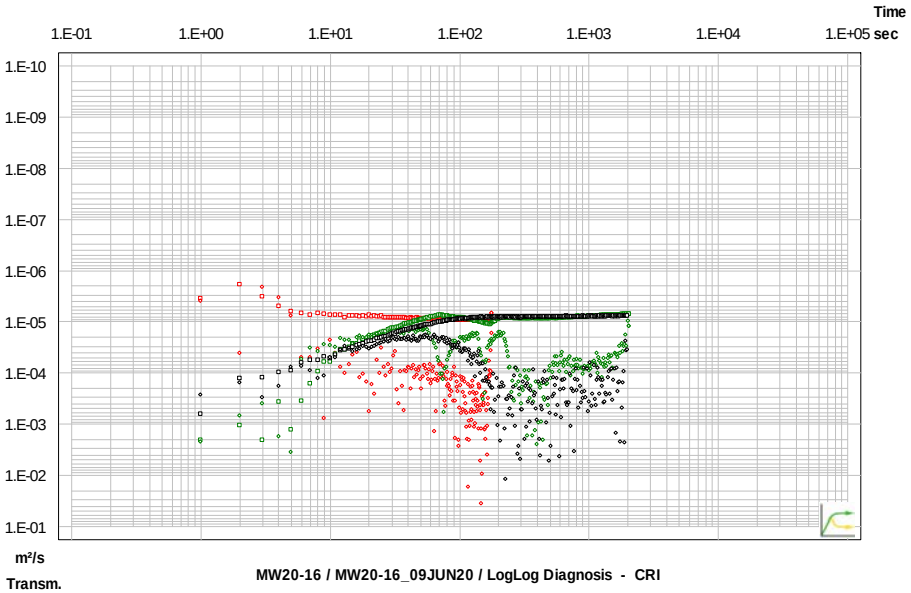
PACKER TEST RESULTS MW20-16 UPPER INTERVAL (16.9 to 26.5 mbgs)

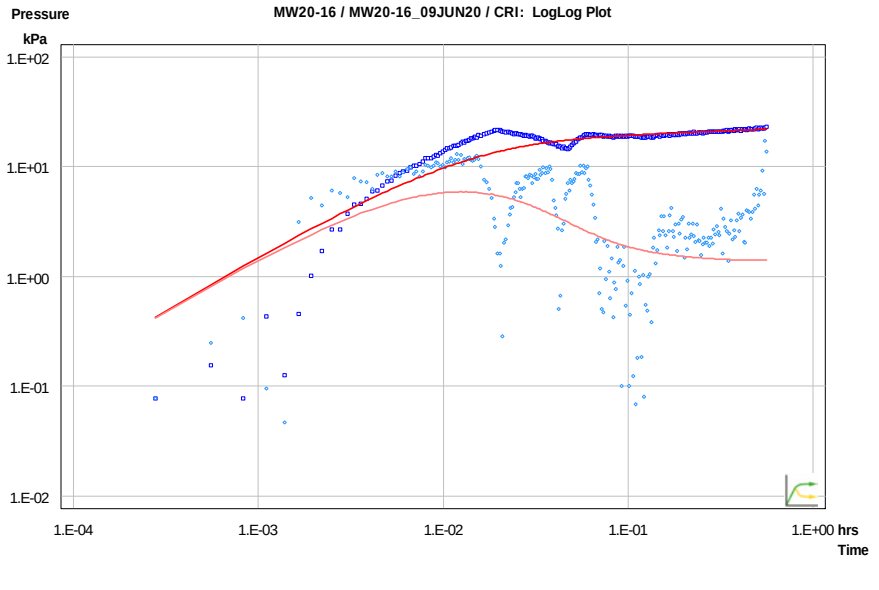
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-085

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

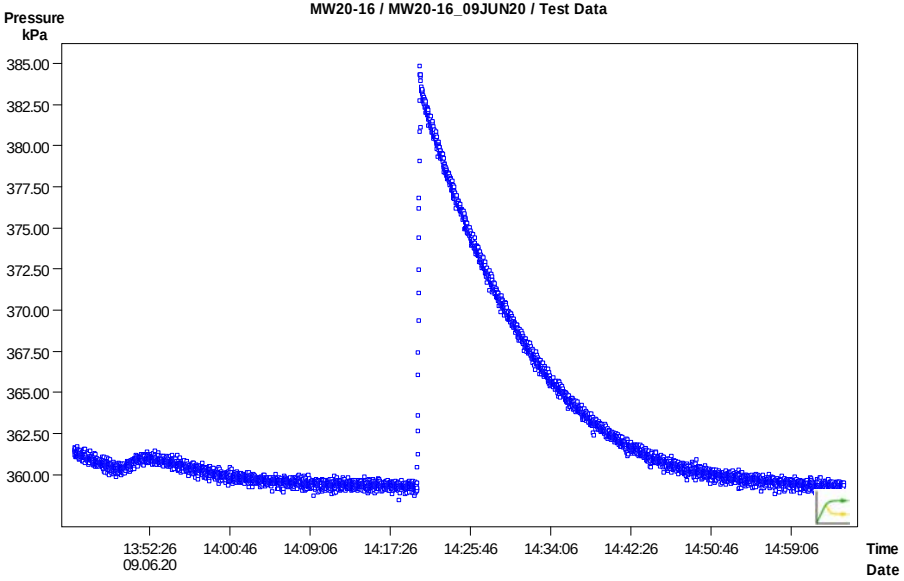
YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

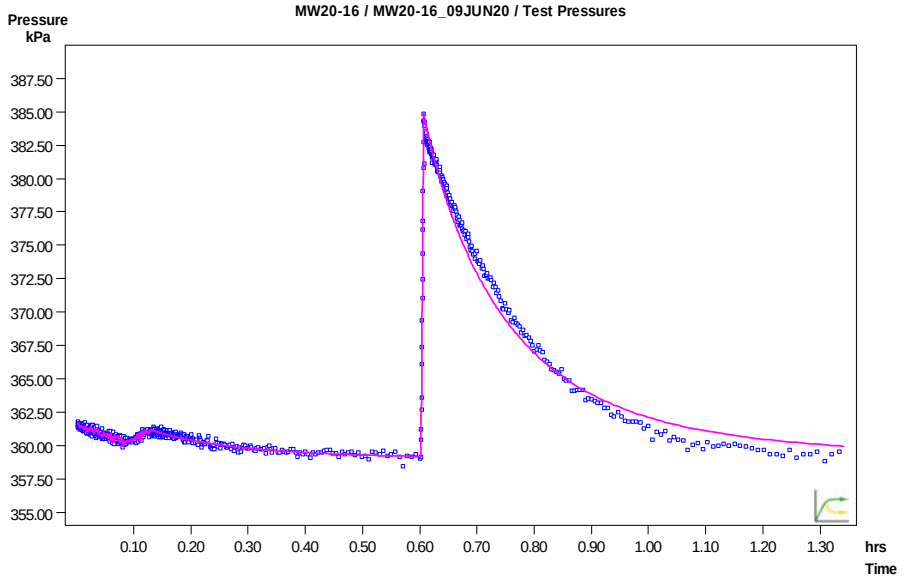
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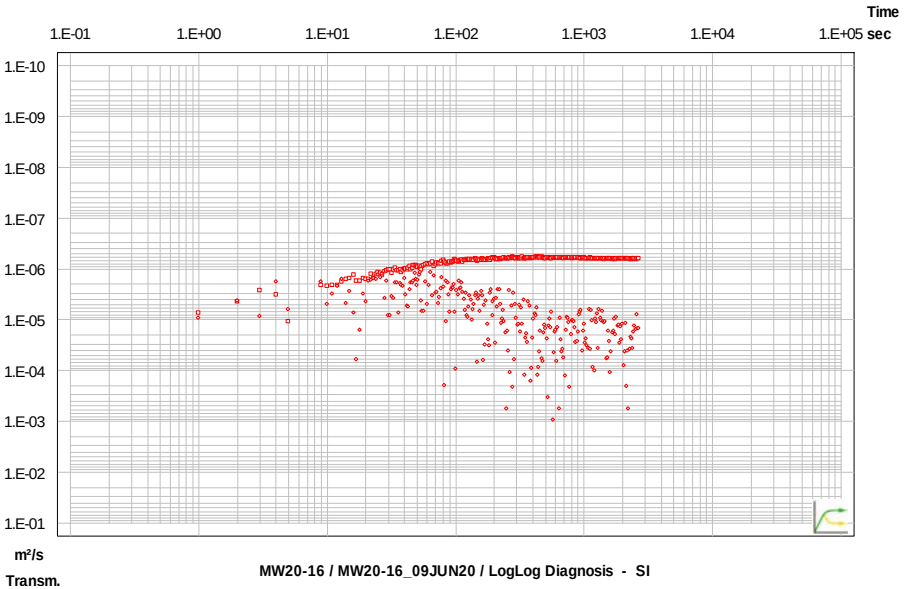
PACKER TEST RESULTS MW20-16 MIDDLE INTERVAL (25.8 to 35.4 mbgs)

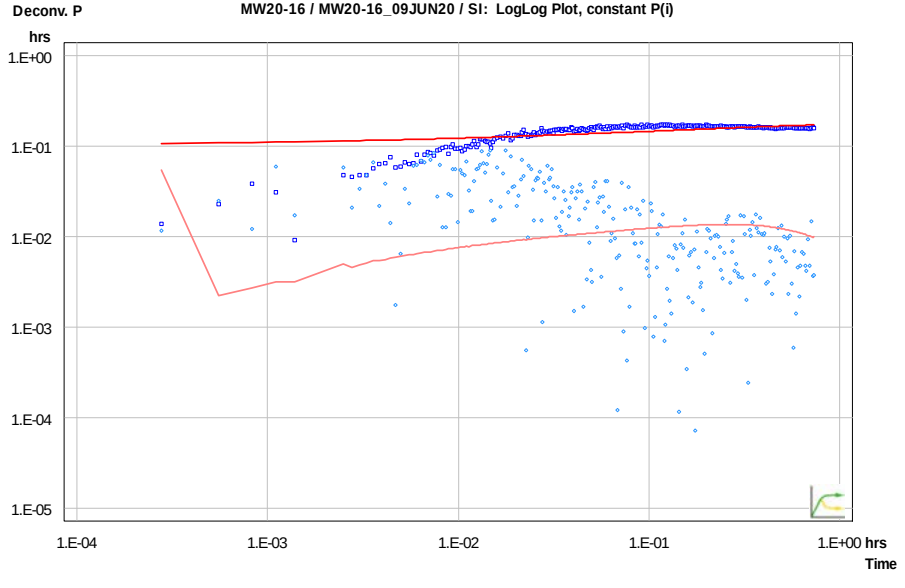
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-086

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

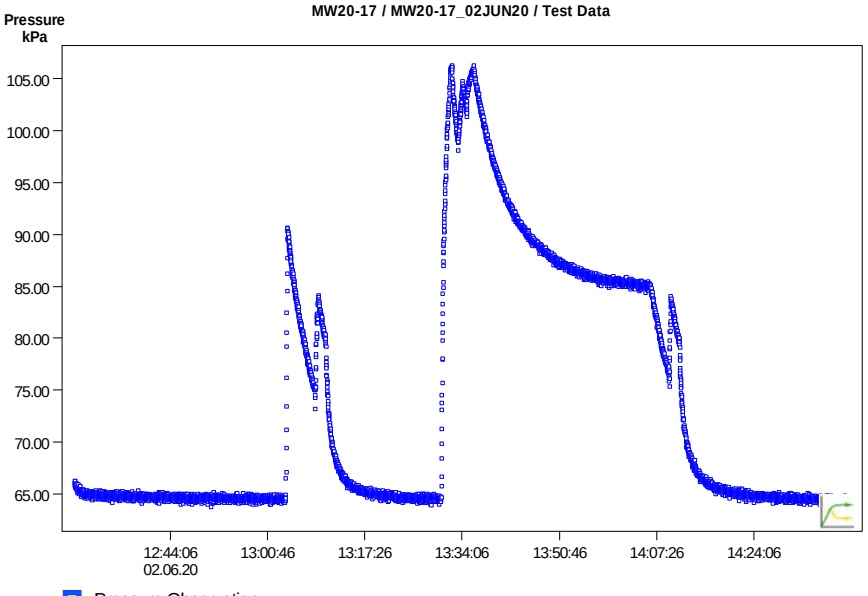
CALEDON PIT / QUARRY

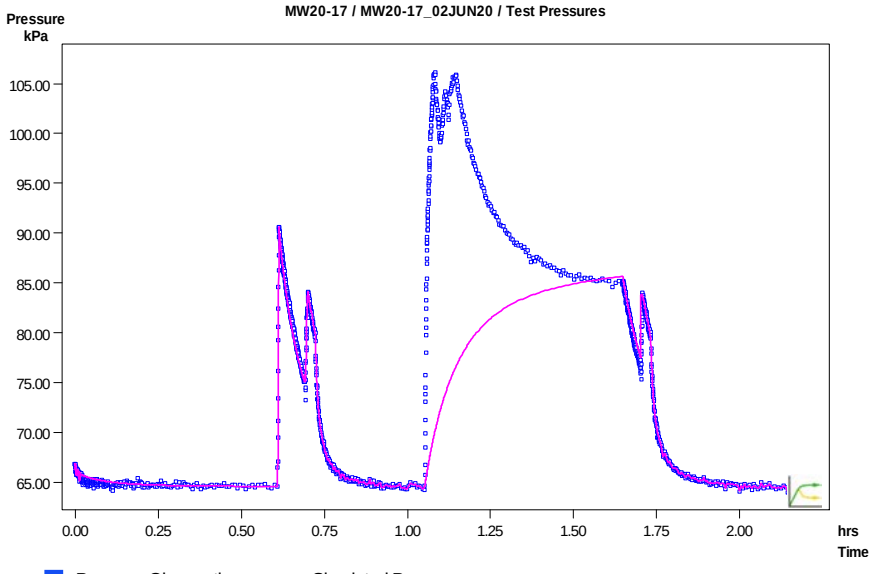
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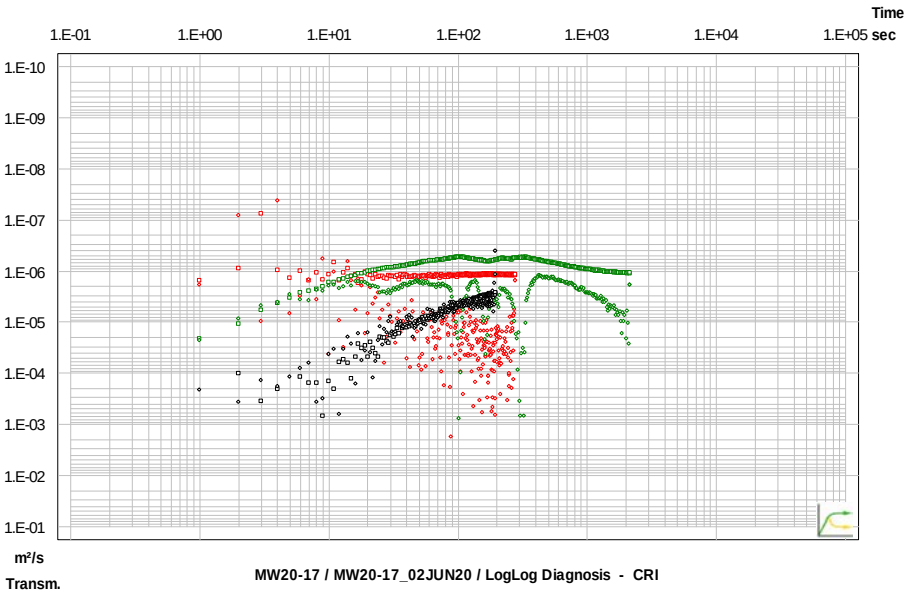
PACKER TEST RESULTS MW20-16 LOWER INTERVAL (35.5 to 39.8 mbgs)

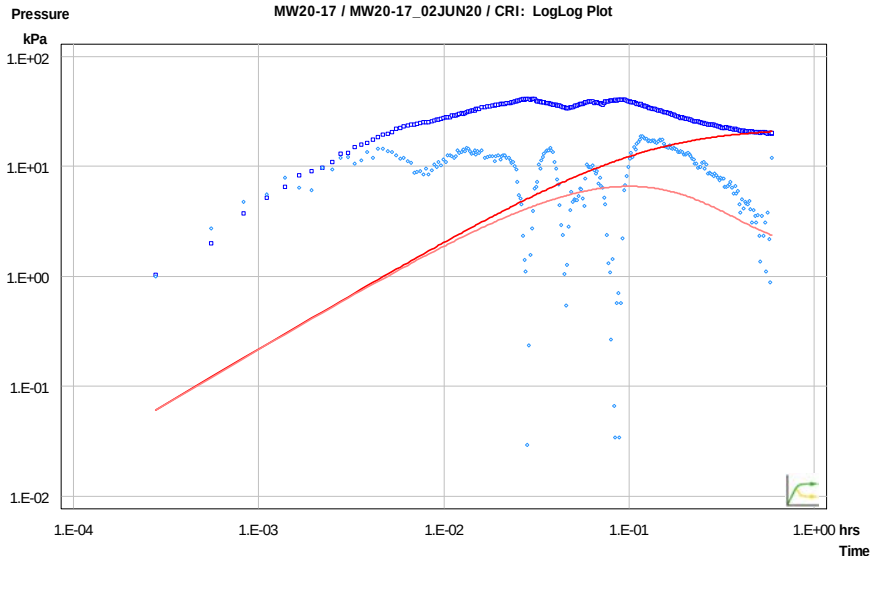
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-087

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
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CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

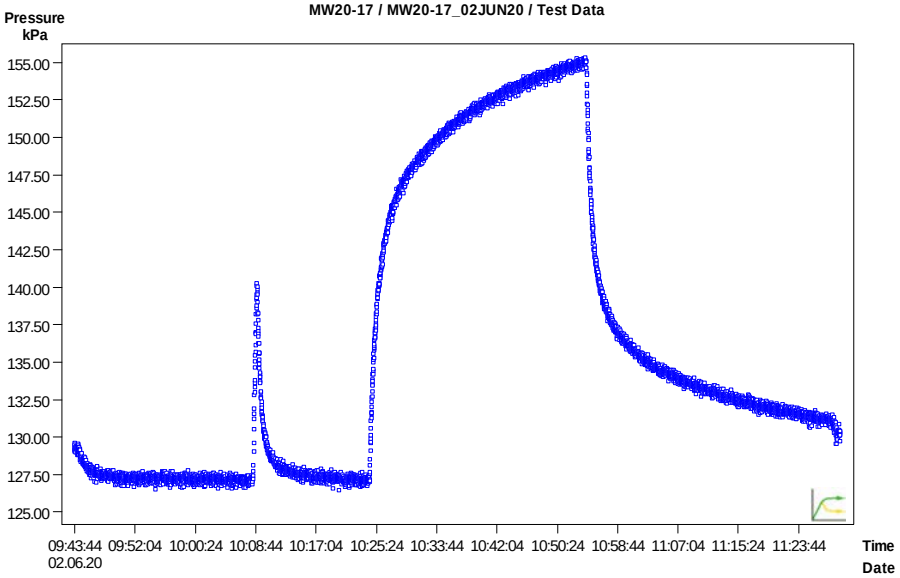
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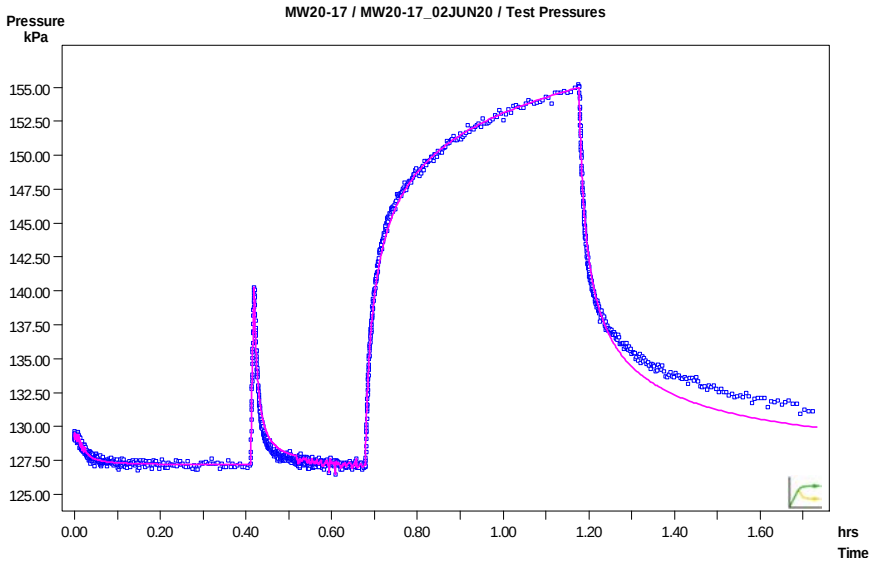
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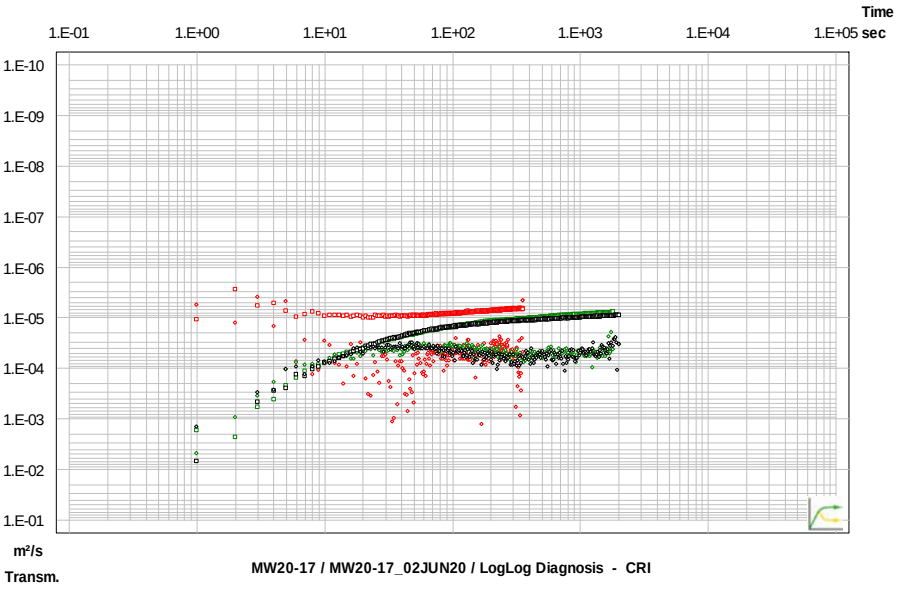
PACKER TEST RESULTS MW20-17 UPPER INTERVAL (5.0 to 11.7 mbgs)

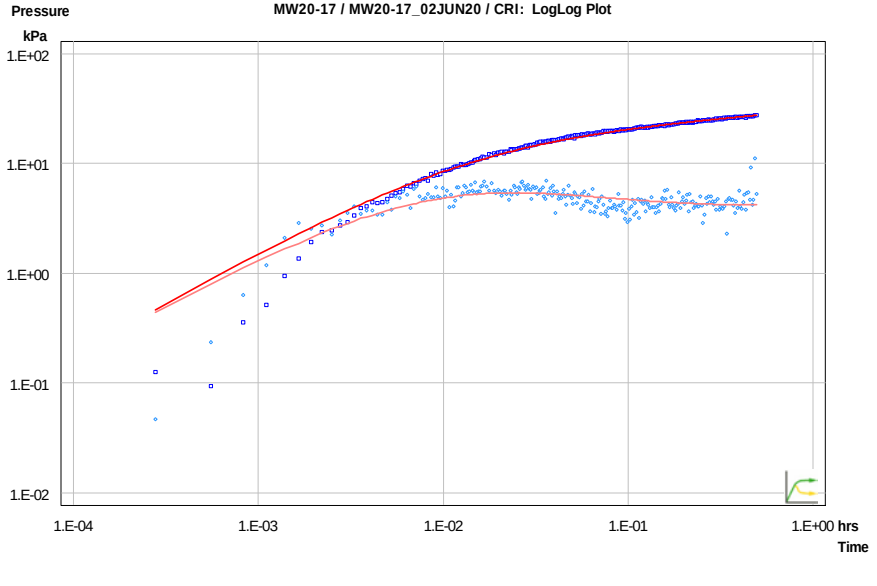
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-088

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

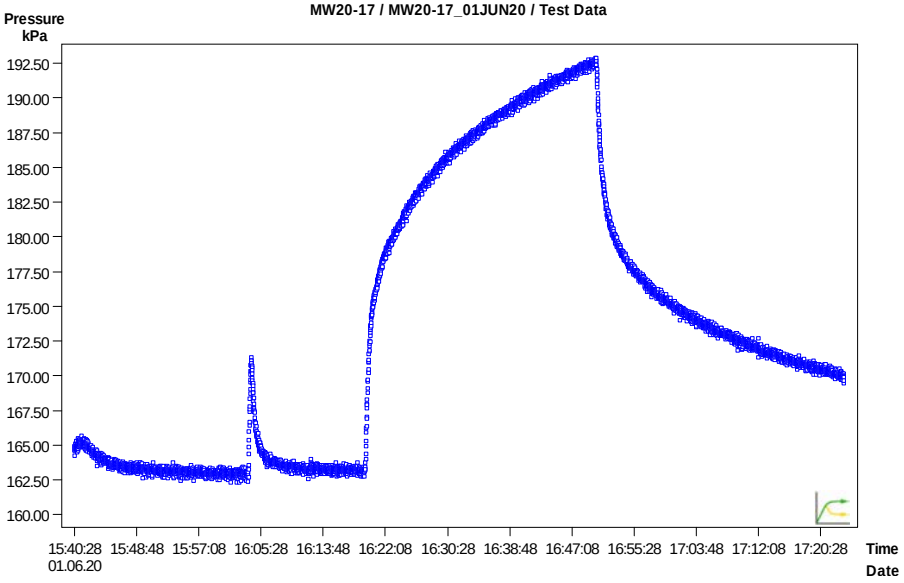
CALEDON PIT / QUARRY

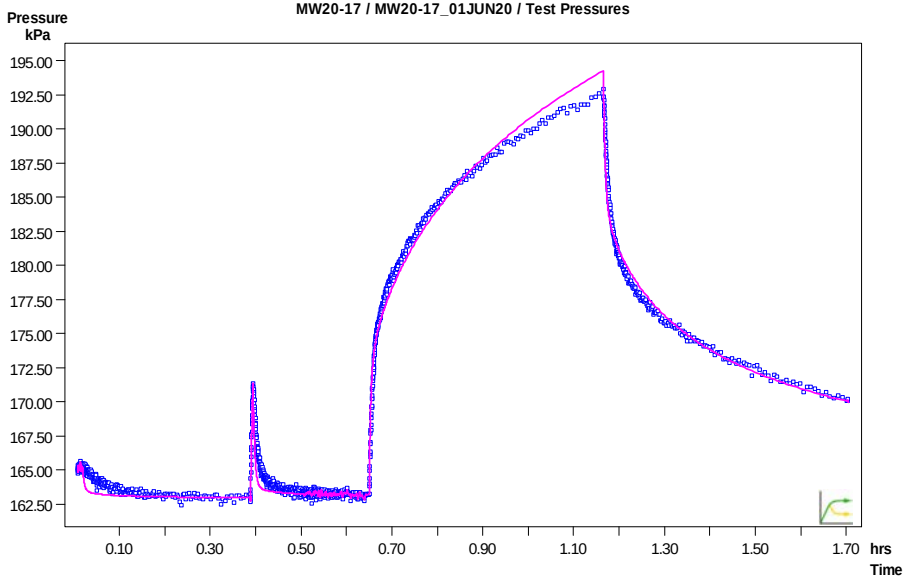
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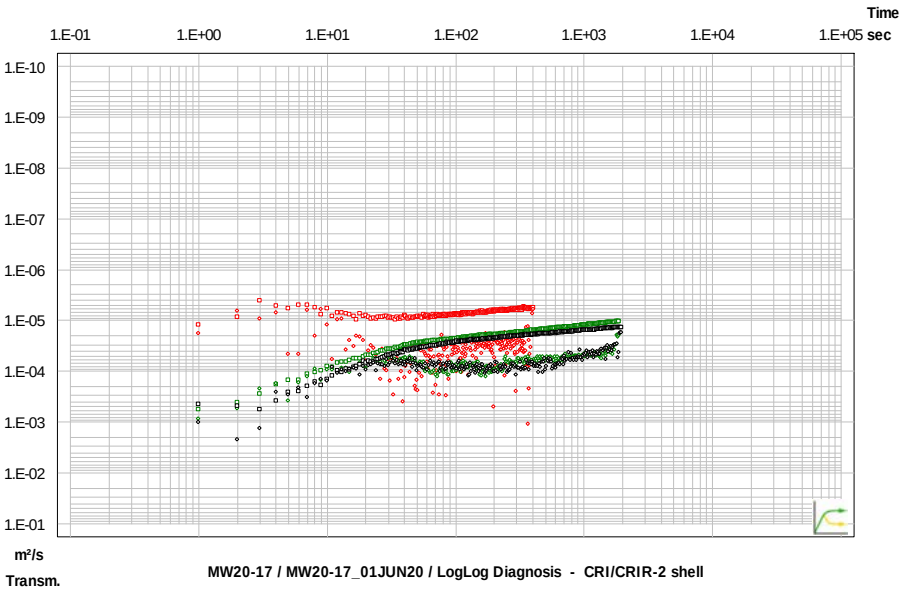
PACKER TEST RESULTS MW20-17 MIDDLE INTERVAL (11.7 to 18.4 mbgs)

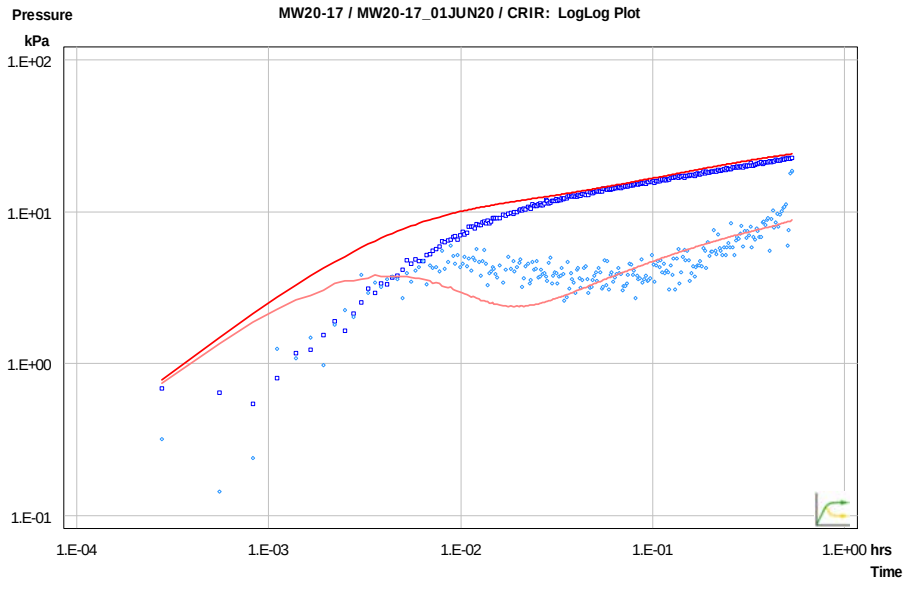
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-089

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
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CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-03-14
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

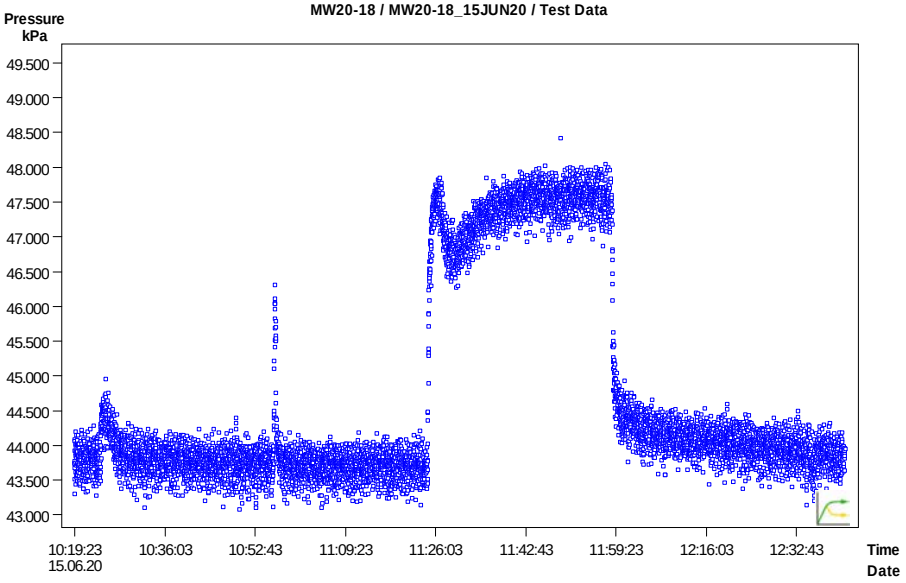
CALEDON PIT / QUARRY

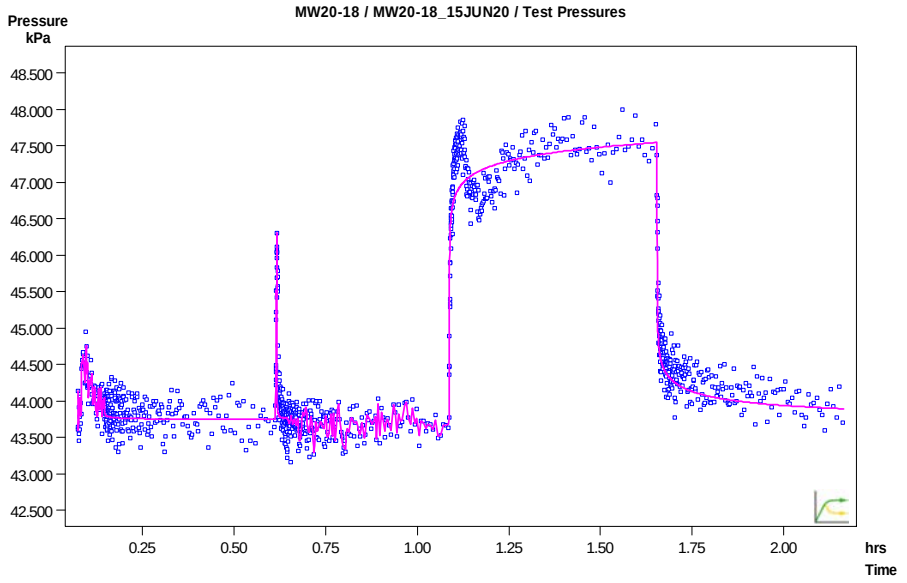
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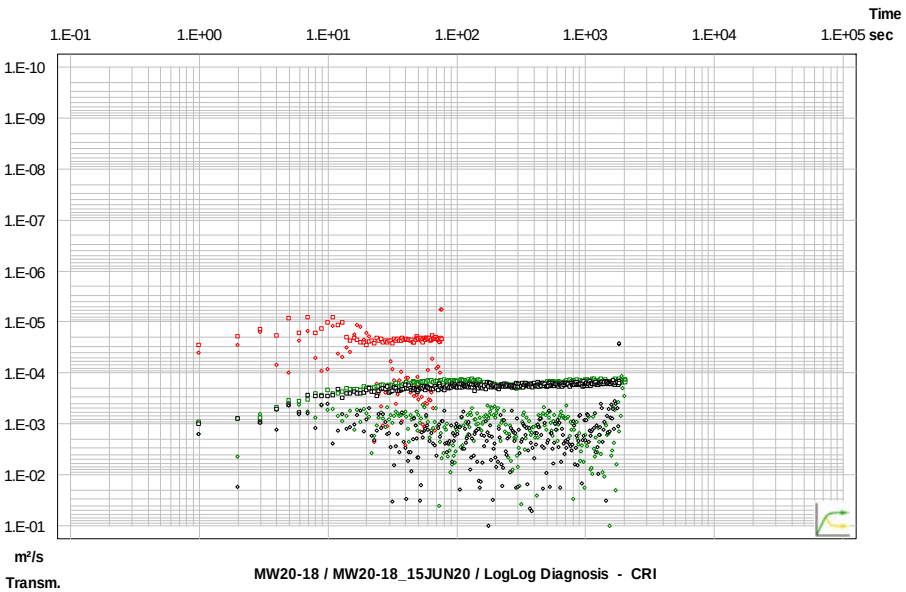
PACKER TEST RESULTS MW20-17 LOWER INTERVAL (18.4 to 27.5 mbgs)

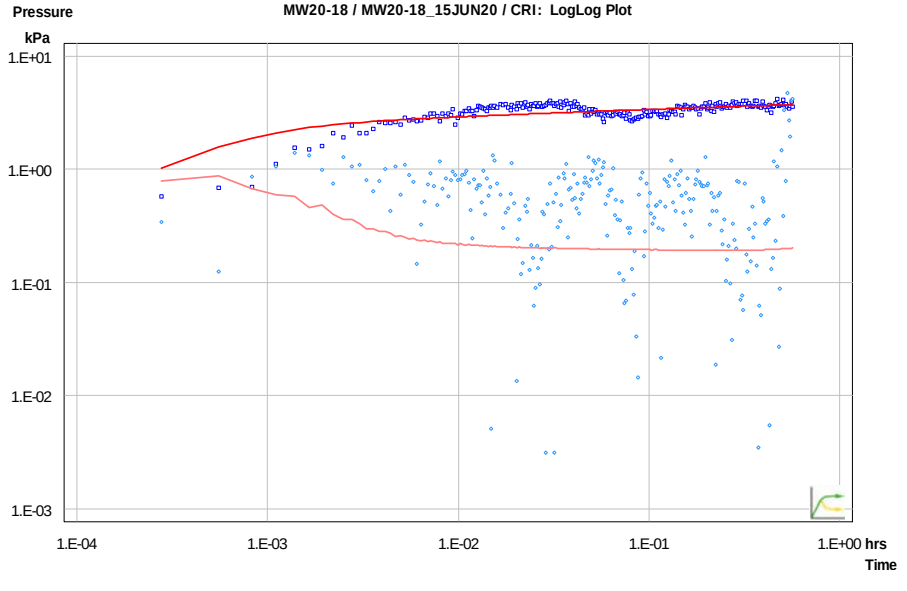
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-090

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0









CLIENT

CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-16
PREPARED	PGM
DESIGN	ML
REVIEW	###
APPROVED	

PROJECT

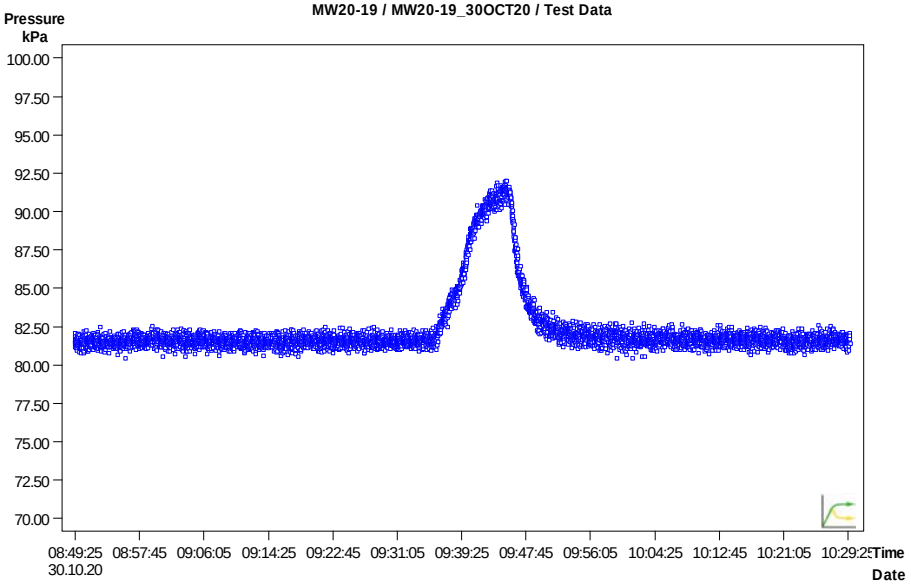
CALEDON PIT / QUARRY

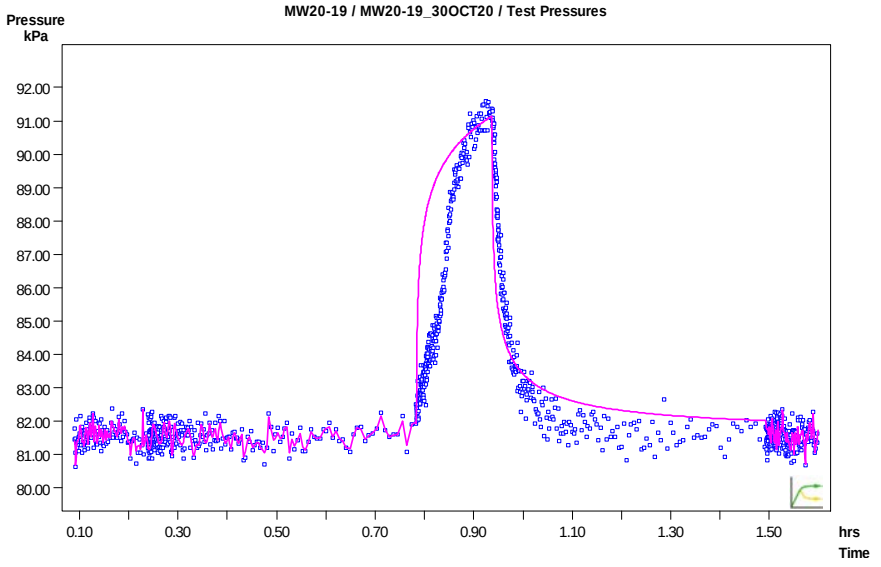
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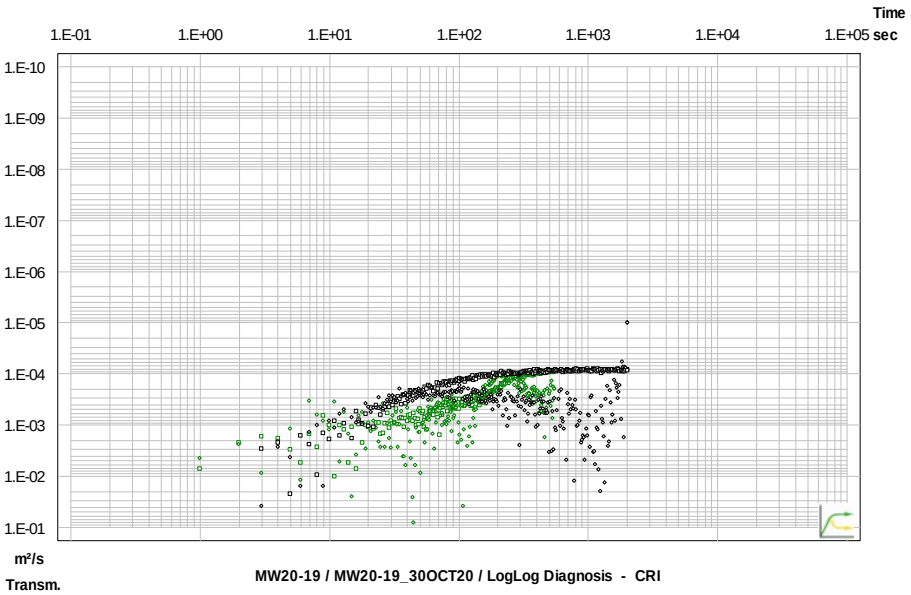
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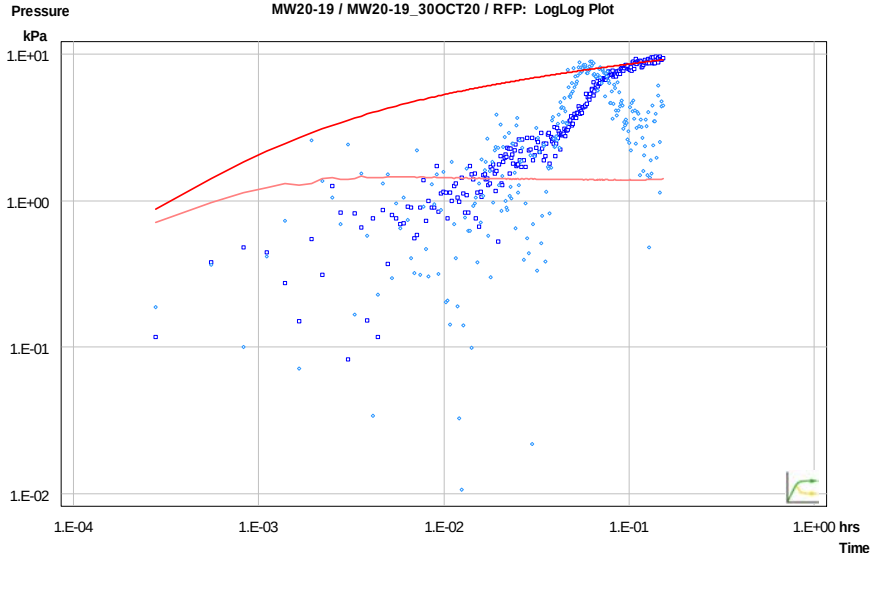
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-091

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A









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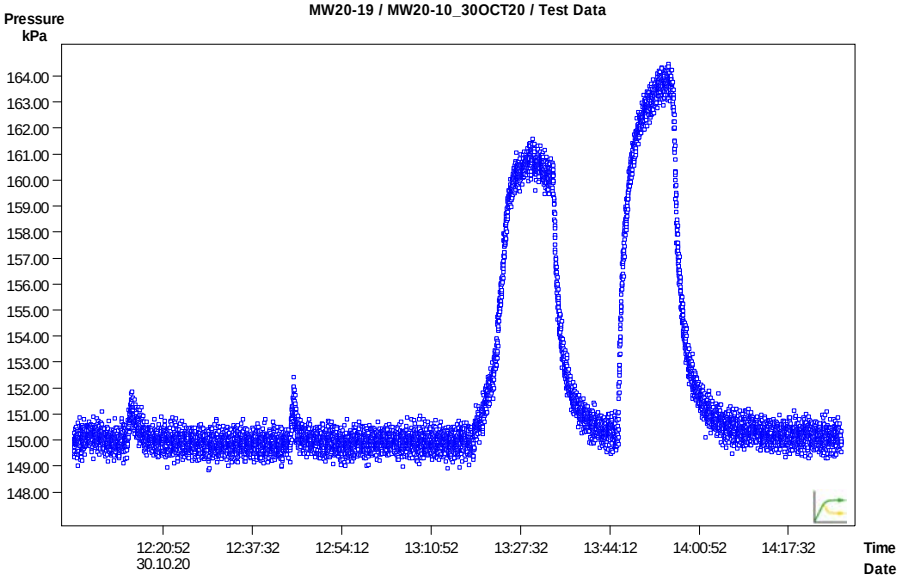
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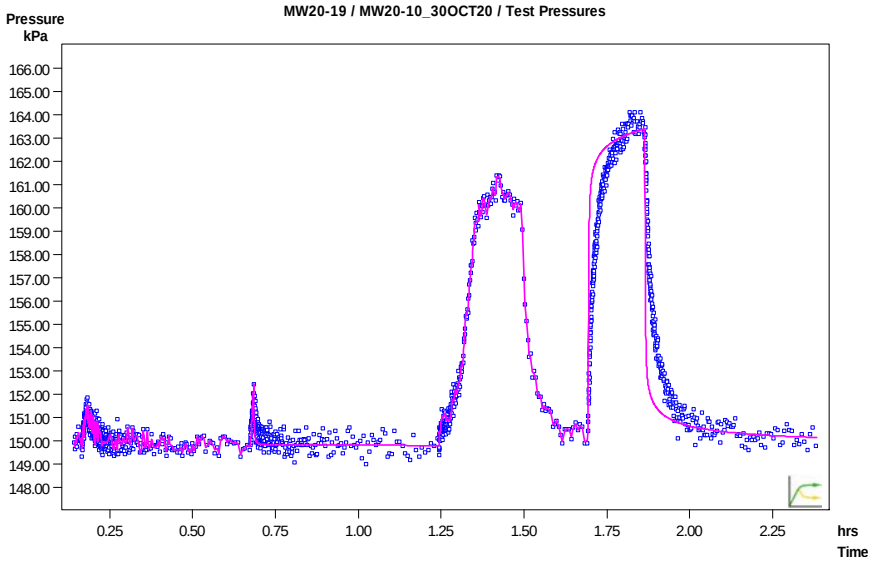
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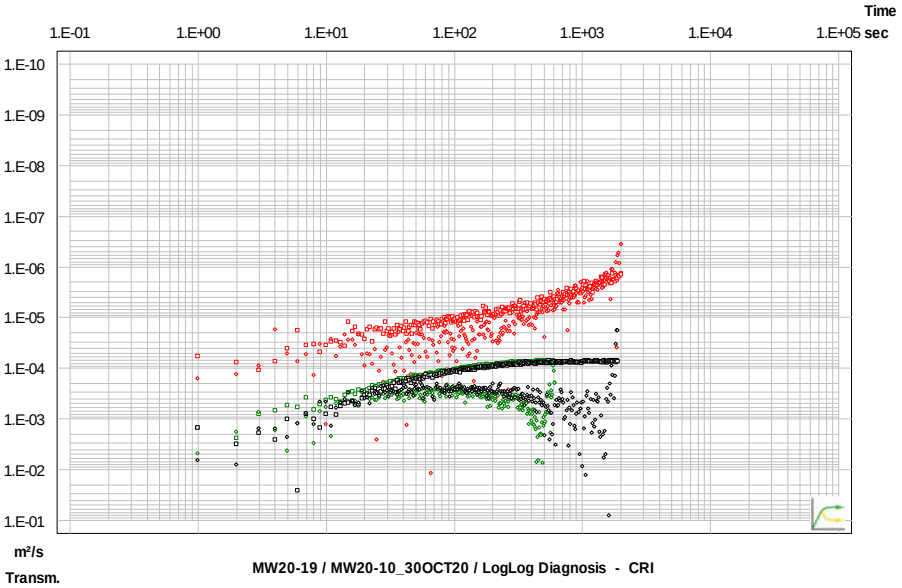
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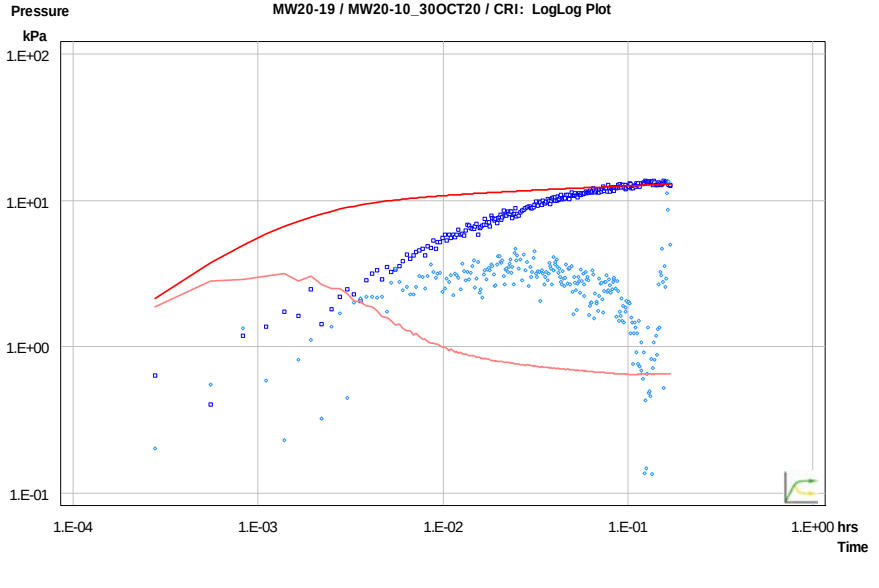
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-092

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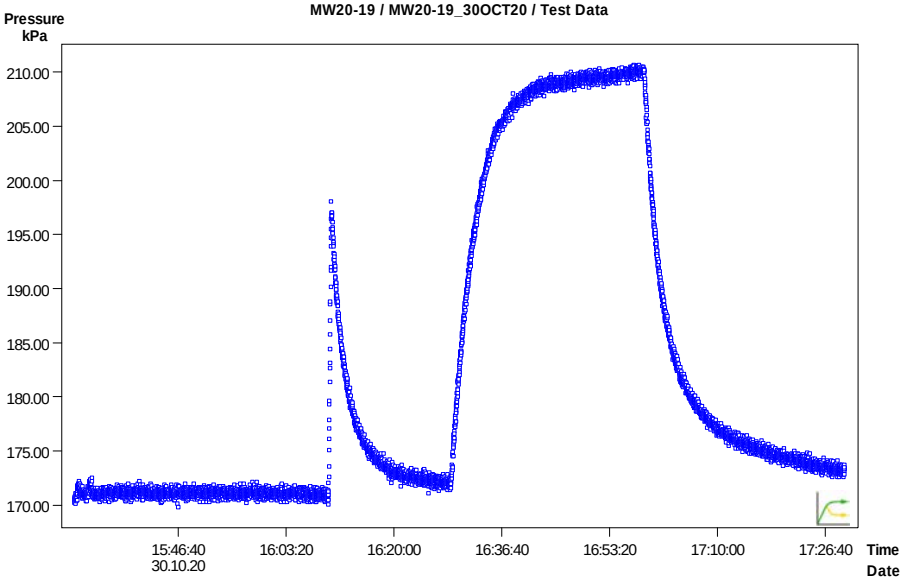
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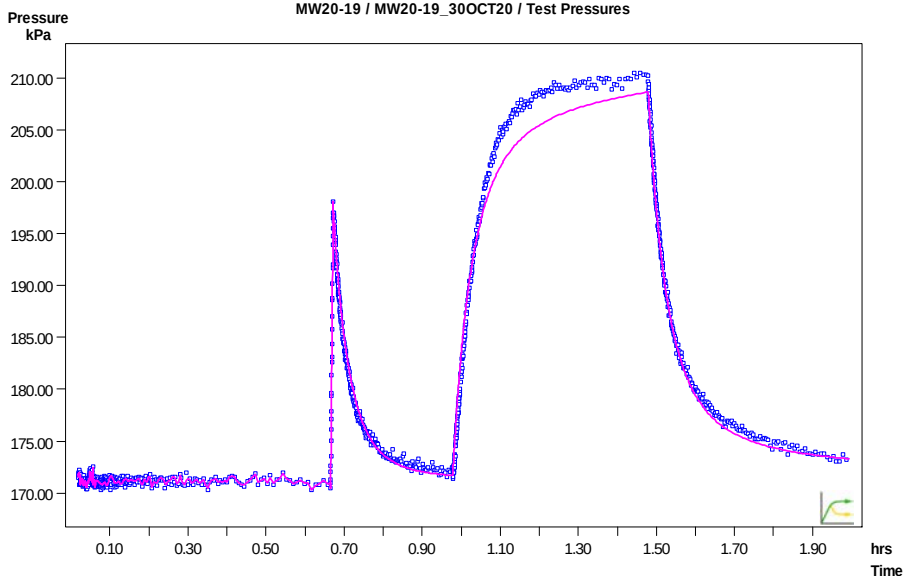
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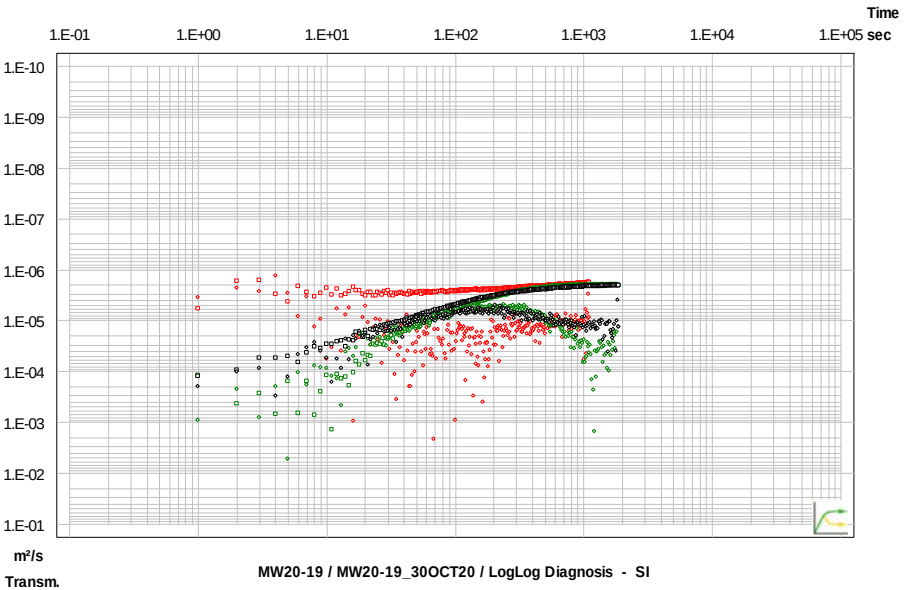
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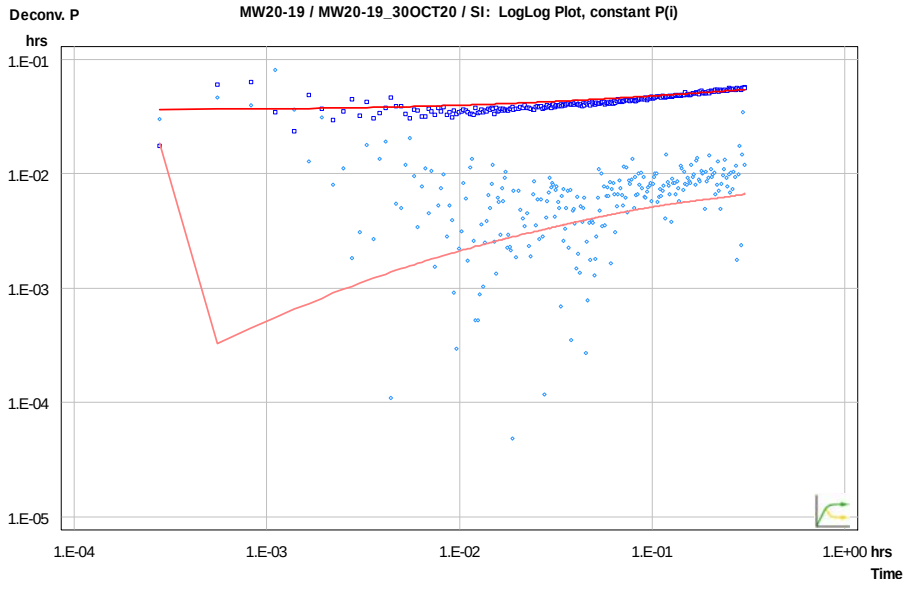
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-093

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CALEDON PIT / QUARRY

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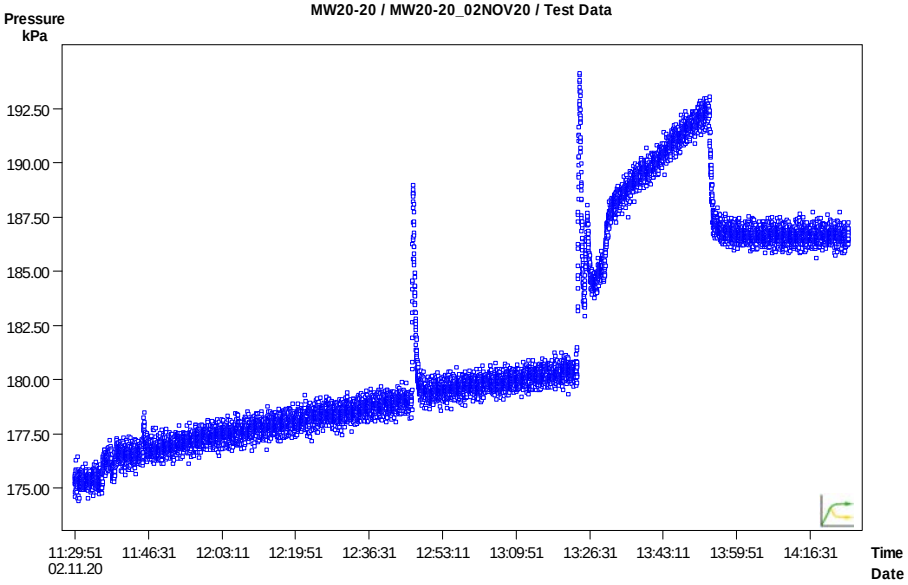
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REVIEW	###
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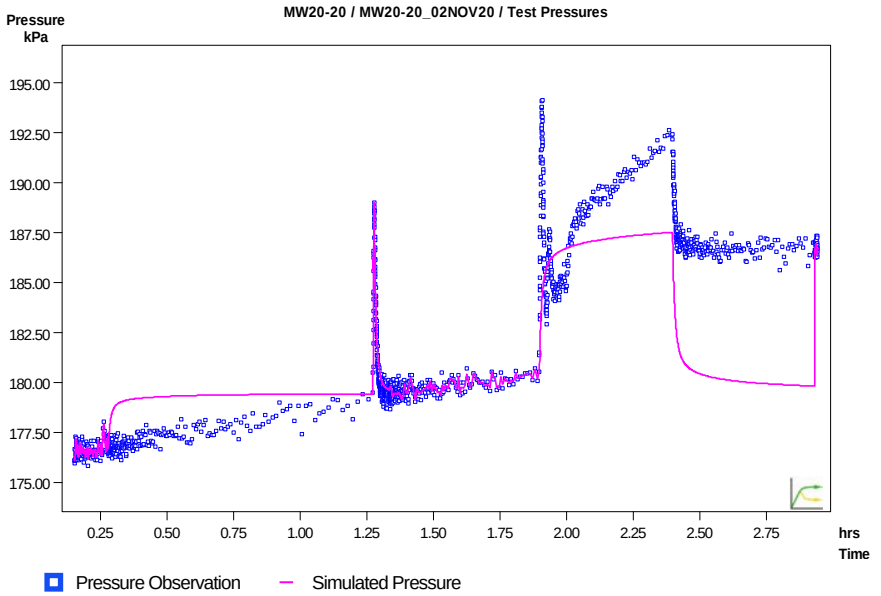
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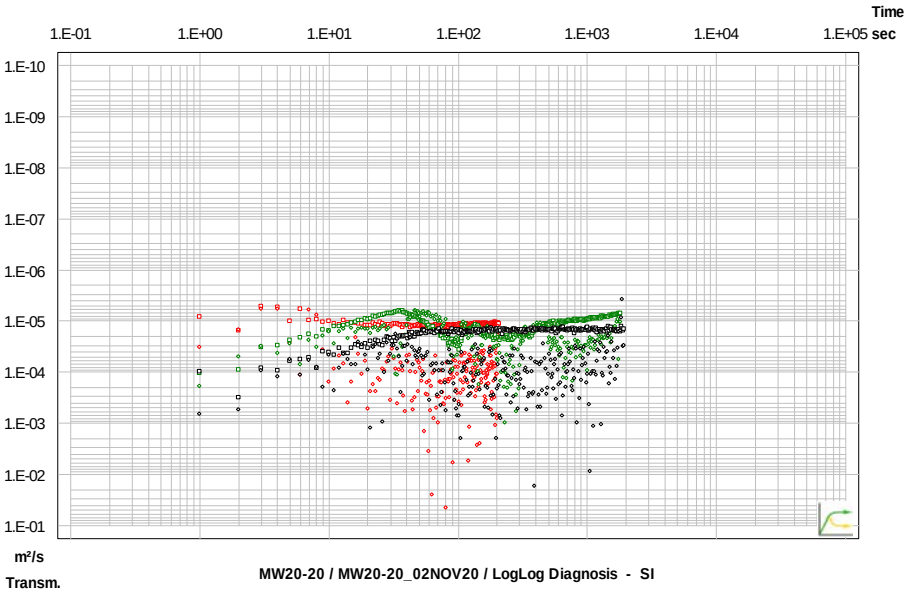
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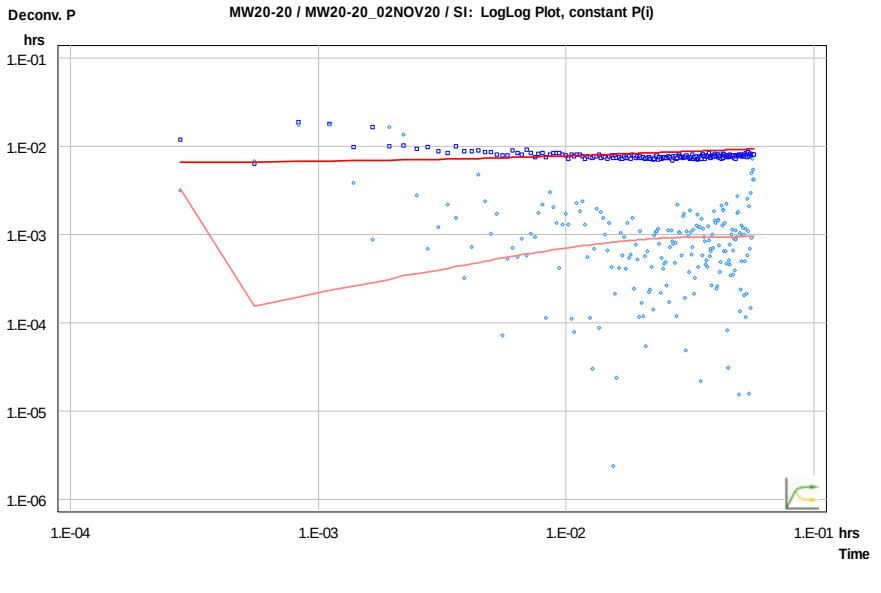
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-094

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
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YYYY-MM-DD	2022-02-16
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PROJECT

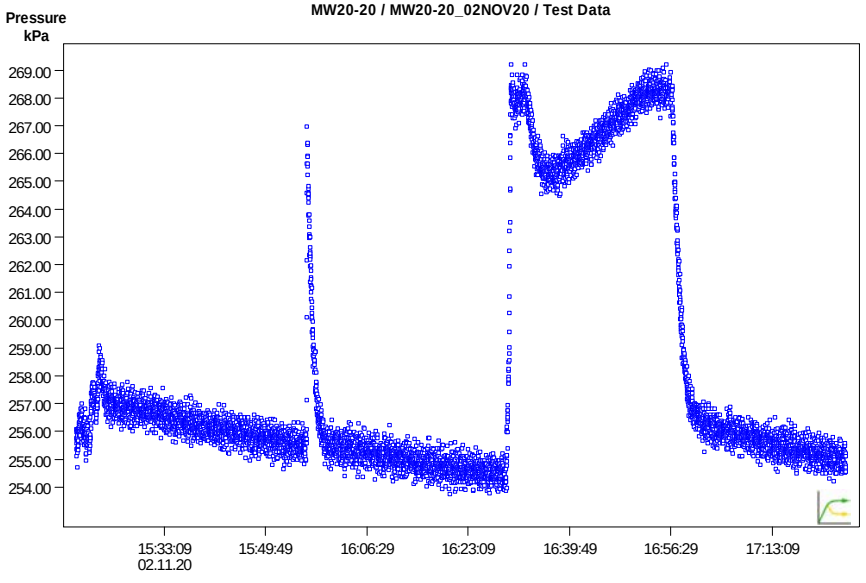
CALEDON PIT / QUARRY

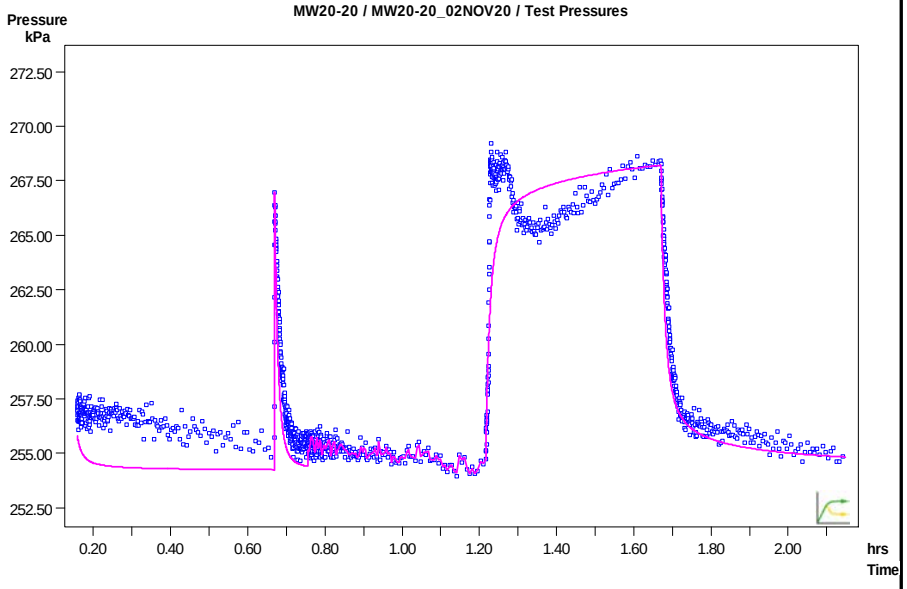
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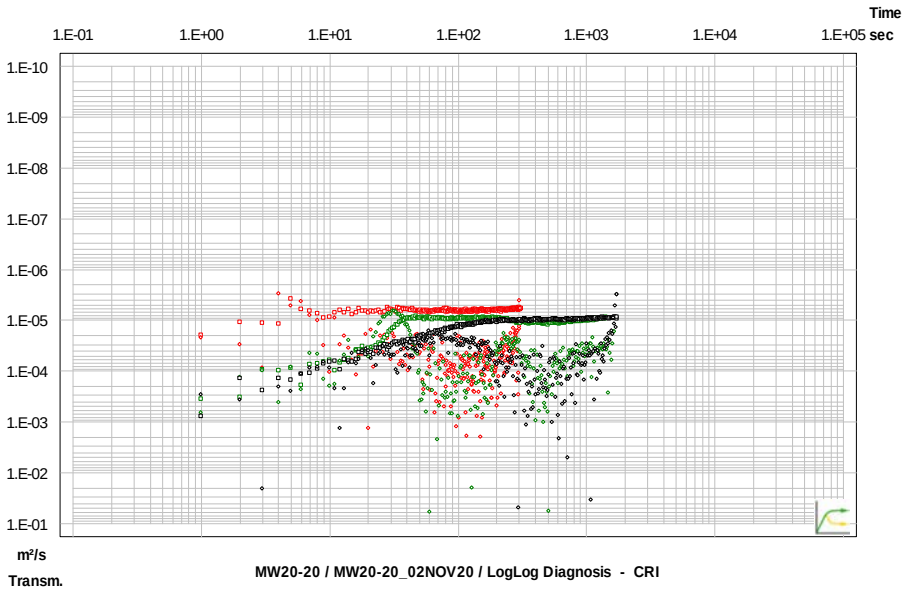
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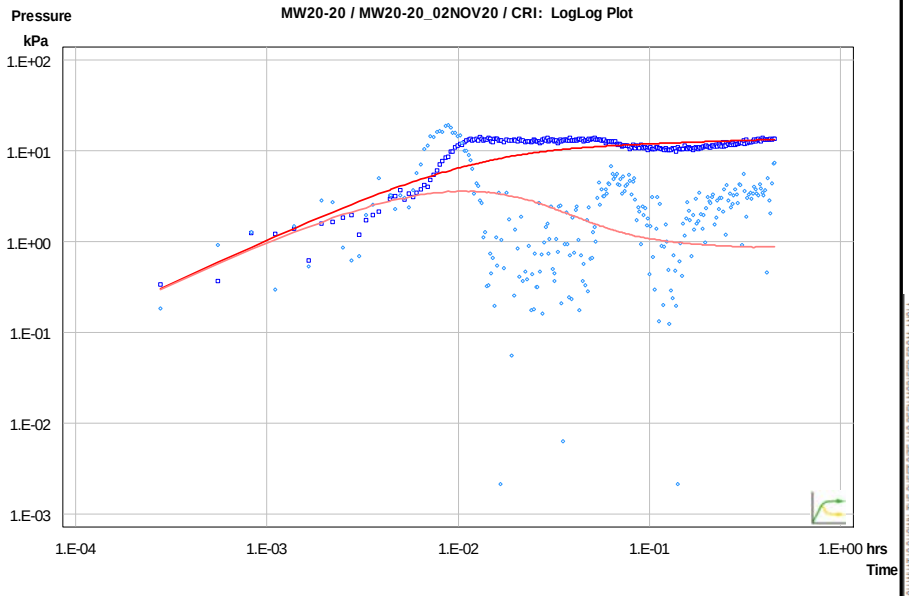
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-095

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A









MW20-20 / MW20-20_02NOV20 / LogLog Diagnosis - CRI

Pressure Observation SI
Pressure Derivative SI
Pressure Observation CRI
Pressure Derivative CRI
Pressure Observation CRIR
Pressure Derivative CRIR

Pressure Observation Selected Phase
Pressure Derivative Selected Phase
Simulated Response
Simulated Response Derivative

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CALEDON PIT / QUARRY

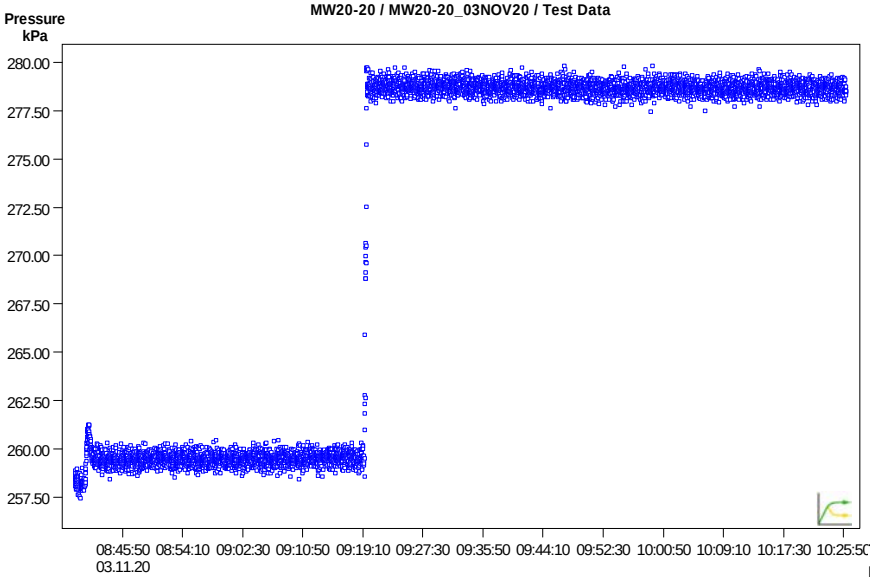
CONSULTANT
GOLDER
MEMBER OF WSP

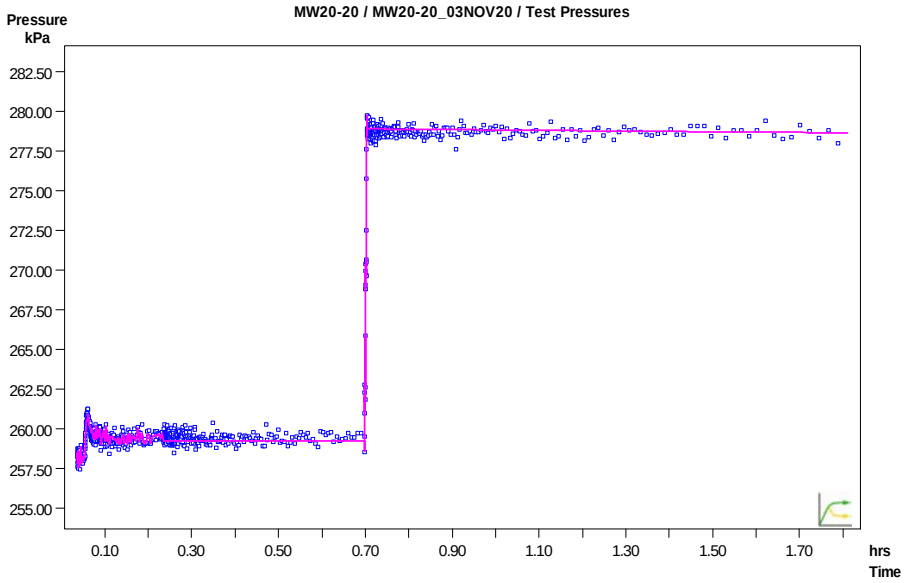
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PREPARED	PGM	
DESIGN	ML	
REVIEW	###	
APPROVED		

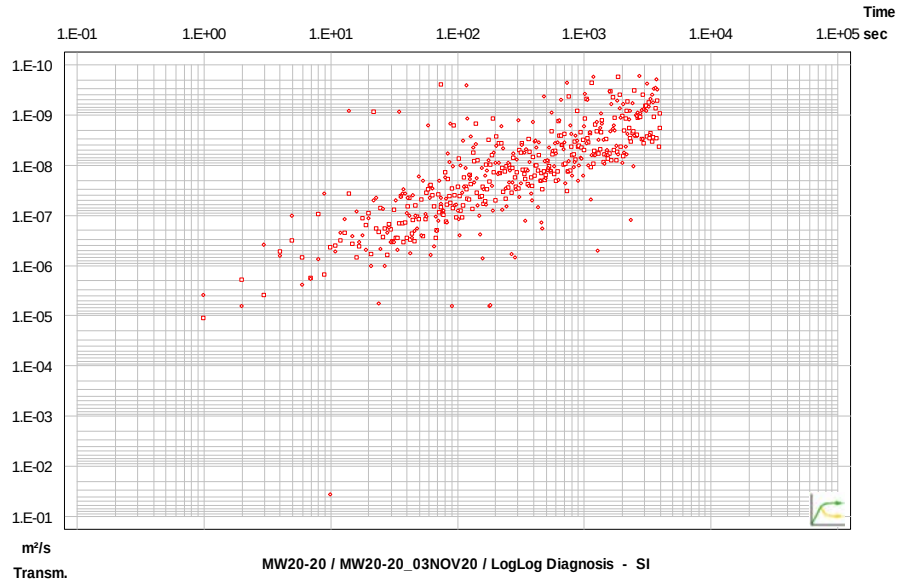
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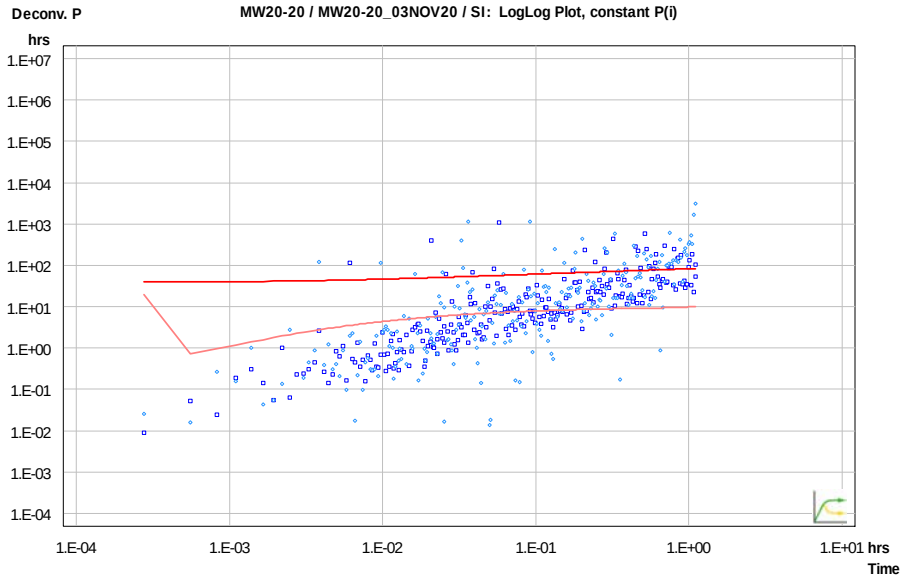
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19129150	2300	A	F-096

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Pressure Observation SI
Pressure Derivative SI
Pressure Observation CRI
Pressure Derivative CRI
Pressure Observation CRIR
Pressure Derivative CRIR

Pressure Observation Selected Phase
Pressure Derivative Selected Phase
Simulated Response
Simulated Response Derivative

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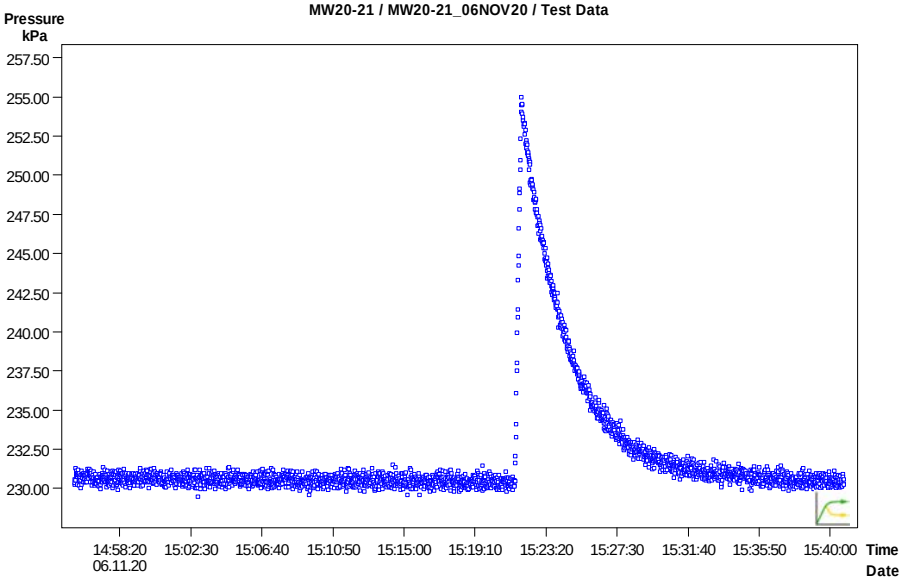
CONSULTANT
GOLDER
MEMBER OF WSP

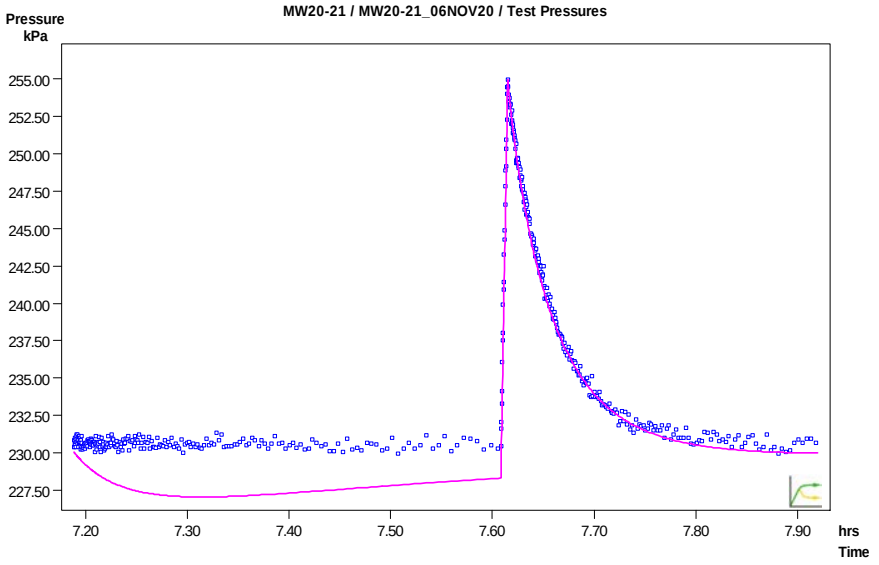
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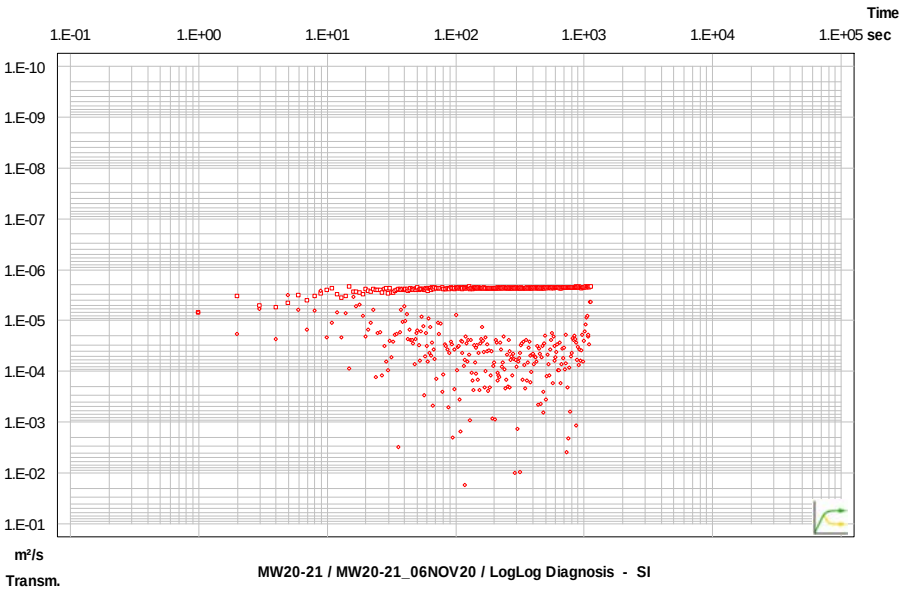
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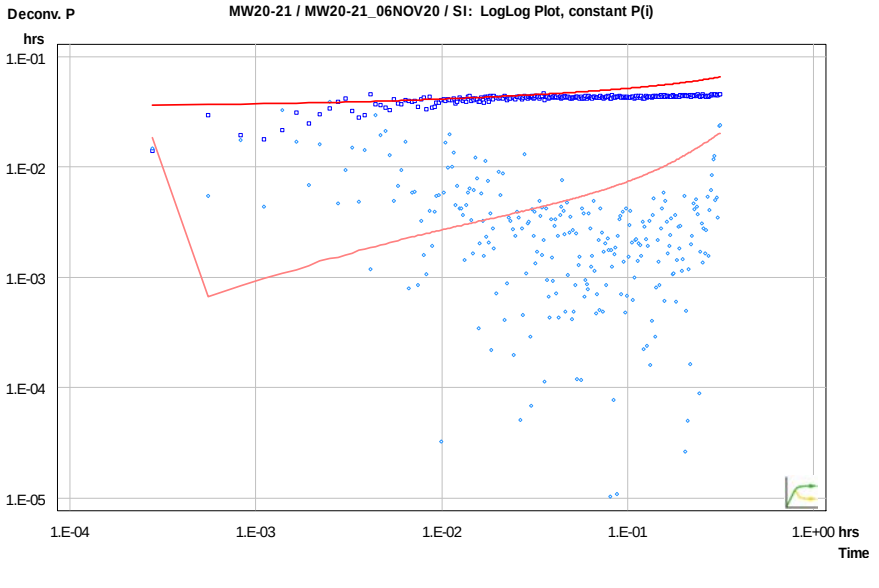
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APPROVED	

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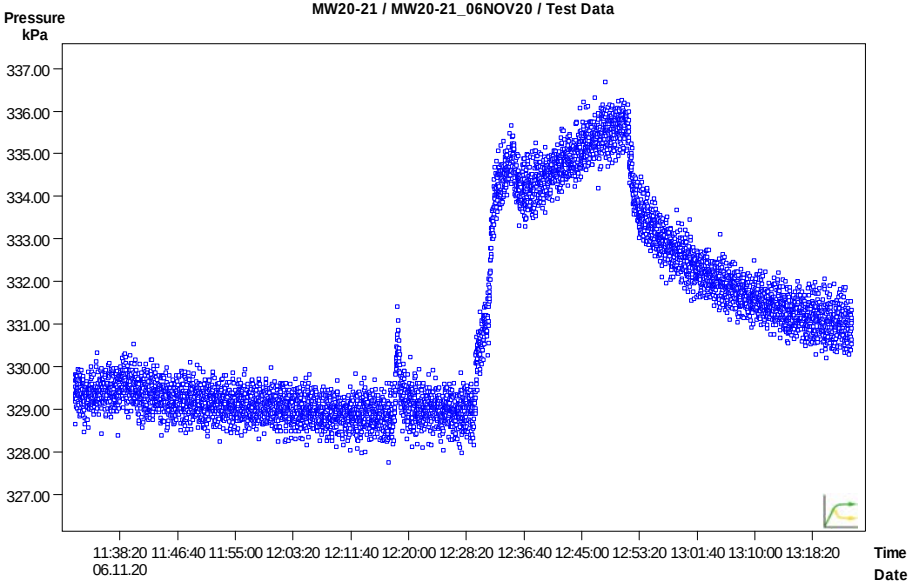
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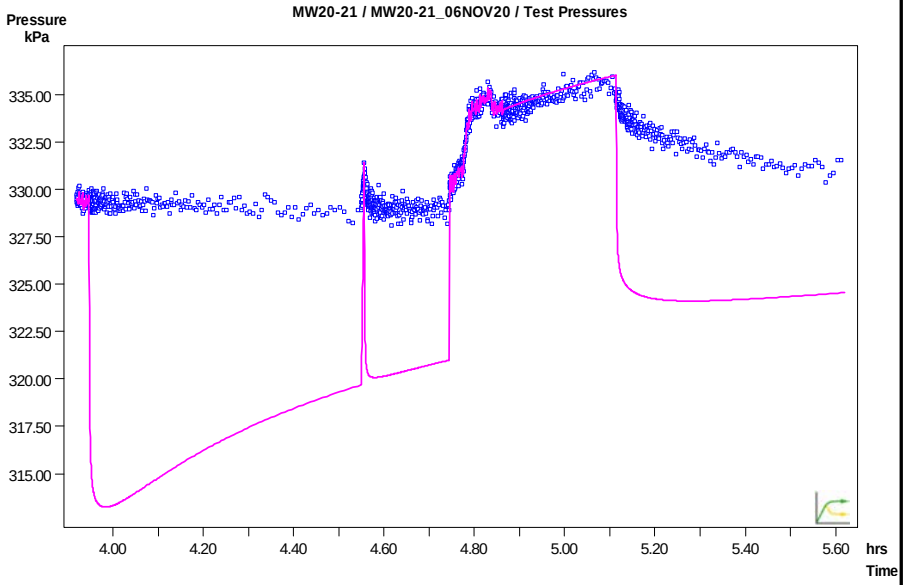
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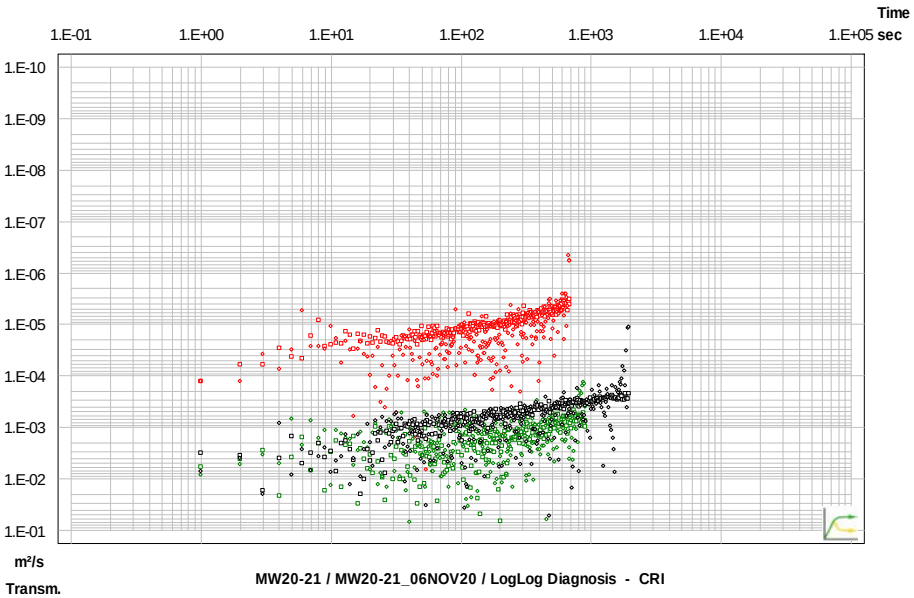
PACKER TEST RESULTS MW20-21 UPPER INTERVAL (16.9 to 26.6 mbgs)

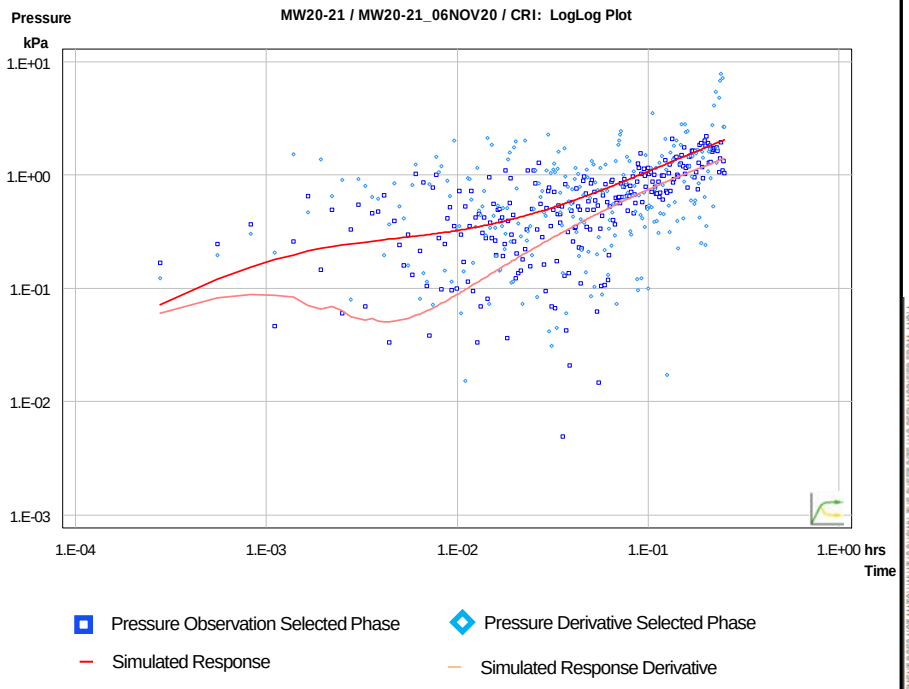
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-098

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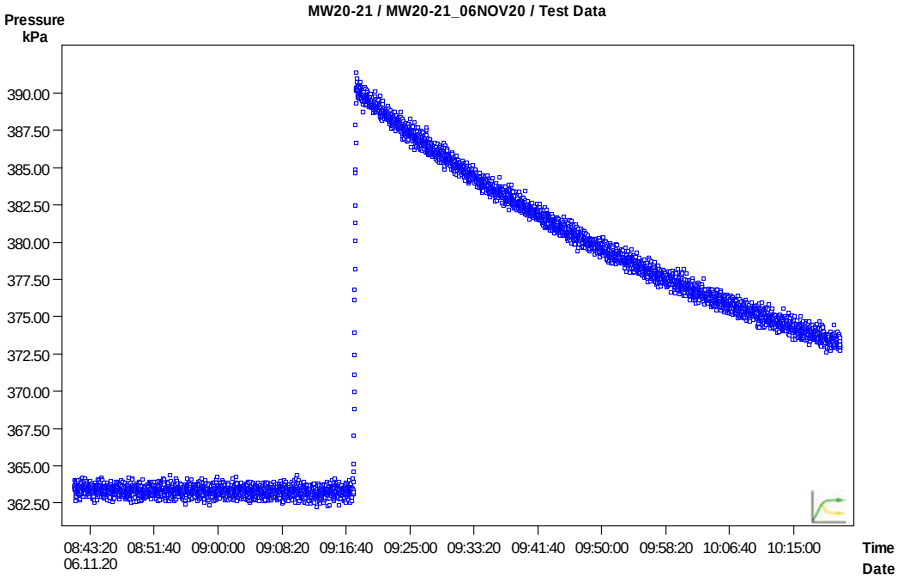
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PREPARED	PGM
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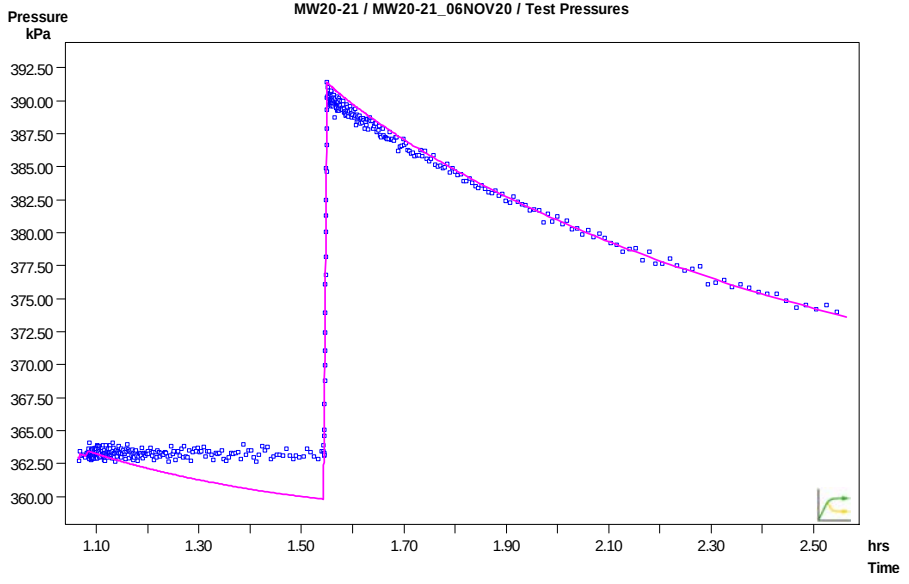
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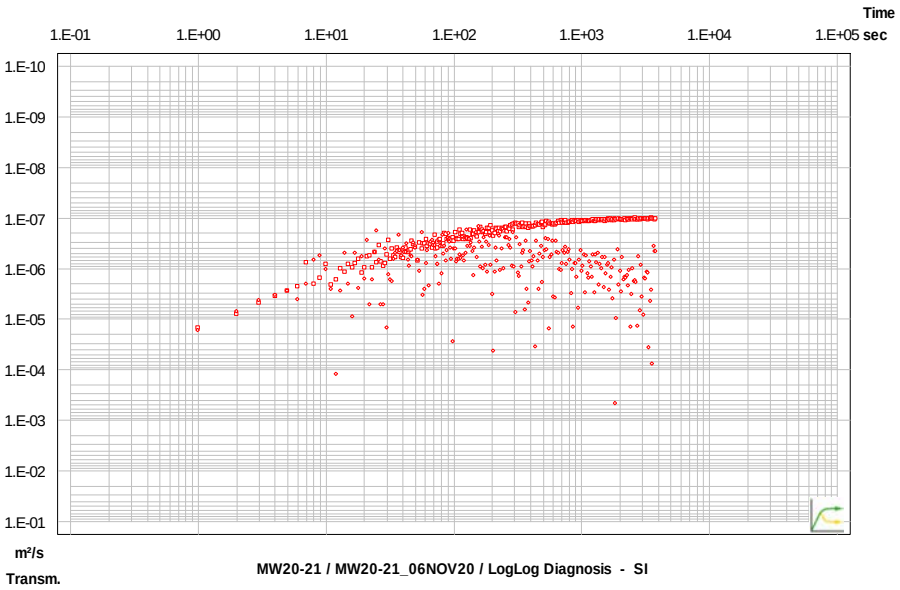
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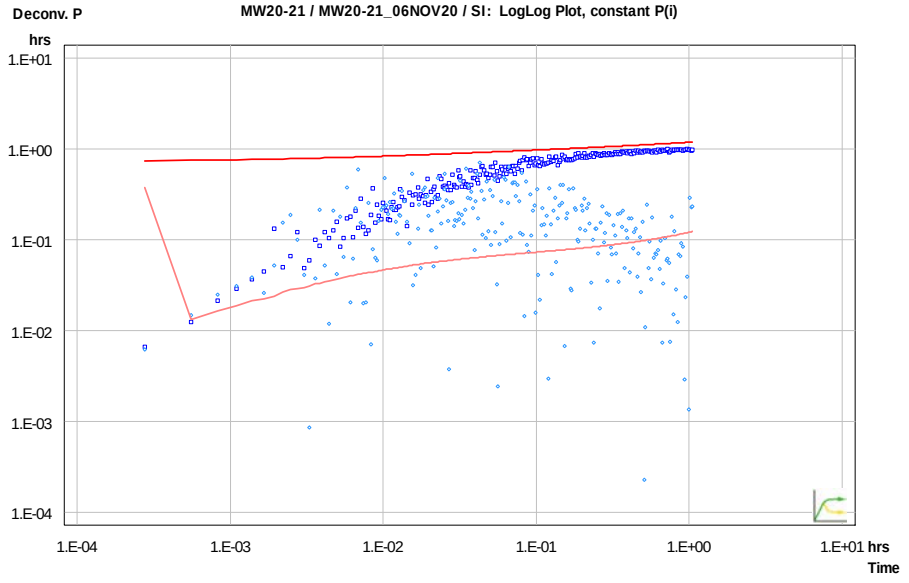
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19129150	2300	A	F-099

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PREPARED	PGM
DESIGN	ML
REVIEW	###
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TITLE

PACKER TEST RESULTS MW20-21 LOWER INTERVAL (36.7 to 39.7 mbgs)

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	F-100

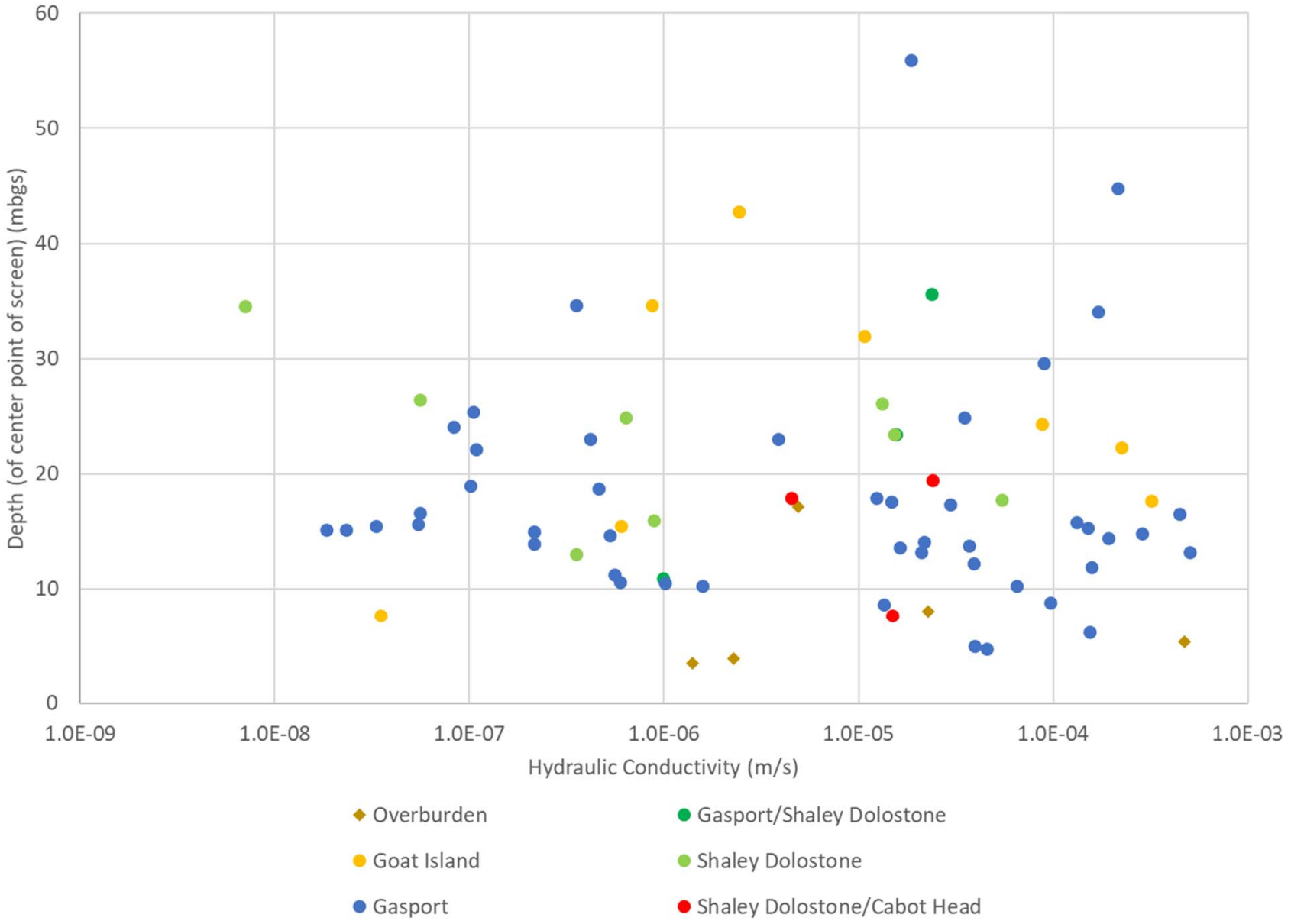
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
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APPENDIX G

Single Well Hydraulic Response Tests

Table G-1
Caledon Quarry
Single Well Response Test Summary

MW ID	Figure Number	Top of test interval (mbgs)	Bottom of test interval (mbgs)	Depth of Test (center point mbgs)	Groundsurface Elevation (masl)	Depth of Test (center point masl)	Aquifer Model	Screened Formation	Final k (m/s)
MW20-01A	A01	17.1	18.63	17.86	395.10	377.24	Unconfined	Shaley Dolostone/Cabot Head Fm	4.5E-06
MW20-01B	A02	11.1	12.62	11.86	395.10	383.24	Unconfined	Gasport Fm	1.6E-04
MW20-02	A03	16.96	18.48	17.72	399.63	381.91	Unconfined	Shaley Dolostone	5.5E-05
MW20-03	A04	15.58	18.63	17.11	390.67	373.57	Unconfined	Overburden	4.9E-06
MW20-04	A05	16.11	17.63	16.87	399.46	382.59	Unconfined	Shaley Dolostone/Cabot Head Fm	1.7E-05
MW20-05A	A06	12.246	13.77	13.01	399.63	386.63	Unconfined	Shaley Dolostone	3.6E-07
MW20-05B		4.25	5.77	5.01	399.63	394.62	NA	Gasport Fm	NA
MW20-06A	A07	10.12	11.64	10.88	400.15	389.27	Unconfined	Gasport Fm/Shaley Dolostone	9.9E-07
MW20-06B	A08	4.2	5.72	4.96	400.15	395.19	Unconfined	Gasport Fm	4.0E-05
MW20-07A	A09	15.11	16.63	15.87	404.07	388.20	Unconfined	Shaley Dolostone	8.9E-07
MW20-07B	A10	9.736	11.26	10.50	404.07	393.57	Unconfined	Gasport Fm	1.0E-06
MW20-08A	A11	13.3	14.82	14.06	406.93	392.87	Unconfined	Gasport Fm	2.2E-05
MW20-08B	A12	5.38	6.90	6.14	406.93	400.79	Unconfined	Gasport Fm	1.5E-04
MW20-09	A13	6.85	8.37	7.61	399.95	392.34	Confined	Shaley Dolostone/Cabot Head Fm	1.5E-05
MW20-10A	A14	18.62	20.14	19.38	411.32	391.94	Unconfined	Shaley Dolostone/Cabot Head Fm	2.4E-05
MW20-10B	A15	14.49	16.01	15.25	411.32	396.07	Unconfined	Gasport Fm	1.5E-04
MW20-11A	A16	13.806	15.33	14.57	409.72	395.15	Unconfined	Gasport Fm	5.3E-07
MW20-11B	A17	3.96	5.48	4.72	409.72	405.00	Unconfined	Gasport Fm	4.6E-05
MW20-12A	A18	17.09	18.62	17.85	412.43	394.58	Unconfined	Gasport Fm	1.2E-05
MW20-12B	A19	7.825	9.35	8.59	412.43	403.85	Unconfined	Gasport Fm	1.4E-05
MW20-13A	A20	24.05	25.57	24.81	415.53	390.72	Confined	Shaley Dolostone	6.4E-07
MW20-13B	A21	18.14	19.66	18.90	415.53	396.63	Confined	Gasport Fm	1.0E-07
MW20-13C	A22	3.08	4.60	3.84	415.53	411.69	Unconfined	Overburden	2.3E-06
MW20-14A	A23	22.6	24.12	23.36	406.71	383.35	Unconfined	Shaley Dolostone	1.5E-05
MW20-14B	A24	14.98	16.50	15.74	406.71	390.97	Unconfined	Gasport Fm	1.3E-04
MW20-15A	A25	33.77	35.29	34.53	417.06	382.53	Confined	Shaley Dolostone	7.1E-09
MW20-15B	A26	28.81	30.33	29.57	417.06	387.49	Confined	Gasport Fm	9.0E-05
MW20-15C	A27	2.74	4.27	3.51	417.06	413.55	Unconfined	Overburden	1.4E-06
MW20-16A	A28	34.84	36.36	35.60	421.40	385.80	Confined	Gasport Fm/Shaley Dolostone	2.4E-05
MW20-16B	A29	16.8	18.33	17.57	421.40	403.83	Confined	Gasport Fm	1.5E-05
MW20-17A	A30	25.64	27.16	26.40	406.64	380.24	Unconfined	Shaley Dolostone	5.6E-08
MW20-17B	A31	12.75	14.27	13.51	406.64	393.13	Unconfined	Gasport Fm	1.6E-05
MW20-18	A32	12.42	13.94	13.18	404.29	391.11	Unconfined	Gasport Fm	2.1E-05
MW20-19A	A33	15.75	17.27	16.51	396.98	380.47	Unconfined	Gasport Fm	4.5E-04
MW20-19B	A34	8	9.52	8.76	396.98	388.22	Unconfined	Gasport Fm	9.7E-05
MW20-20A	A35	25.33	26.85	26.09	403.00	376.91	Confined	Shaley Dolostone	1.3E-05
MW20-20B	A36	12.97	14.49	13.73	403.00	389.27	Confined	Gasport Fm	3.7E-05
MW20-20C	A37	3.24	3.95	3.60	403.00	399.41	Unconfined	Gasport Fm	5.0E-05
MW20-21A	A38	33.27	34.79	34.03	415.23	381.20	Confined	Gasport Fm	1.7E-04
MW20-21B	A39	15.77	17.29	16.53	415.23	398.70	Confined	Gasport Fm	5.6E-08
MW20-22A	A40	23.48	25.00	24.24	399.27	375.03	Confined	Goat Island Fm	8.8E-05
MW20-22B	A41	6.89	8.41	7.65	399.27	391.62	Unconfined	Goat Island Fm	3.5E-08
MW20-23A	A42	22.59	24.11	23.35	395.05	371.70	Confined	Gasport Fm/Shaley Dolostone	1.6E-05
MW20-23B	A43	14.68	16.20	15.44	395.05	379.61	Confined	Goat Island Fm	6.1E-07
MW20-23C	A44	4.57	6.09	5.33	395.00	389.67	Unconfined	Overburden	4.8E-04
MW20-24A	A45	33.81	35.33	34.57	437.75	403.18	Confined	Gasport Fm	3.6E-07
MW20-24B	A46	21.49	23.02	22.25	437.75	415.50	Confined	Goat Island Fm	2.3E-04
MW20-25A	A47	44.03	45.55	44.79	419.02	374.23	Confined	Gasport Fm	2.2E-04
MW20-25B	A48	16.84	18.36	17.60	419.02	401.42	Confined	Goat Island Fm	3.2E-04
MW20-26A	A49	55.16	56.68	55.92	438.89	382.97	Confined	Gasport Fm	1.9E-05
MW20-26B	A50	31.12	32.64	31.88	438.89	407.01	Confined	Goat Island Fm	1.1E-05
MW20-26C	A51	7.26	8.78	8.02	438.88	430.86	Unconfined	Overburden	2.3E-05
MW20-27A	A52	41.99	43.51	42.75	431.15	388.40	Confined	Goat Island Fm	2.4E-06
MW20-27B	A53	33.85	35.37	34.61	431.15	396.54	Confined	Goat Island Fm	8.7E-07
MW20-28A	A54	24.07	25.59	24.83	419.31	394.48	Confined	Gasport Fm	3.5E-05
MW20-28B	A55	16.51	18.03	17.27	419.31	402.04	Confined	Gasport Fm	3.0E-05
PW21-1	A56	12.19	38.41	25.30	418.76	393.46	Confined	Gasport Fm	1.1E-07
MW21-1-1	A57	11.6	34.40	23.00	418.94	395.94	Confined	Gasport Fm	3.9E-06
MW21-1-2	A58	13.4	34.70	24.05	420.58	396.53	Confined	Gasport Fm	8.3E-08
MW21-1-3	A59	9.1	35.10	22.10	417.51	395.41	Confined	Gasport Fm	1.1E-07
MW21-1-4	A60	13.1	32.90	23.00	417.83	394.83	Confined	Gasport Fm	4.2E-07
PW21-2	A61	12.19	25.15	18.67	413.07	394.40	Unconfined	Gasport Fm	4.7E-07
MW21-2-1	A62	6.7	22.00	14.35	413.40	399.05	Unconfined	Gasport Fm	1.9E-04
MW21-2-2	A63	7	19.20	13.10	412.64	399.54	Confined	Gasport Fm	5.1E-04
MW21-2-3	A64	6.1	18.30	12.20	410.76	398.56	Unconfined	Gasport Fm	3.9E-05
MW21-2-4	A65	6.4	23.20	14.80	413.86	399.06	Unconfined	Gasport Fm	2.9E-04
PW21-3	A66	8.84	21.34	15.09	405.45	390.36	Unconfined	Gasport Fm	1.9E-08
MW21-3-1	A67	5.8	16.50	11.15	403.69	392.54	Unconfined	Gasport Fm	5.6E-07
MW21-3-2	A68	4.9	15.50	10.20	404.87	394.67	Unconfined	Gasport Fm	1.6E-06
MW21-3-3	A69	4.9	15.50	10.20	405.12	394.92	Unconfined	Gasport Fm	6.5E-05
MW21-3-4	A70	5.2	15.80	10.50	403.16	392.66	Unconfined	Gasport Fm	6.0E-07
PW21-4	A71	9.25	21.64	15.45	415.08	399.63	Unconfined	Gasport Fm	3.3E-08
PW21-4A	A72	8.6106	21.64	15.13	415.08	399.95	Unconfined	Gasport Fm	2.3E-08
MW21-4-1	A73	10.1	17.70	13.90	415.22	401.32	Unconfined	Gasport Fm	2.2E-07
MW21-4-2	A74	11	20.10	15.55	415.07	399.52	Unconfined	Gasport Fm	5.5E-08
MW21-4-3	A75	10.4	19.50	14.95	414.78	399.83	Unconfined	Gasport Fm	2.2E-07



CLIENT
ST.MARY'S CEMENT INC. (CANADA)

PROJECT
CALEDON PIT AND QUARRY

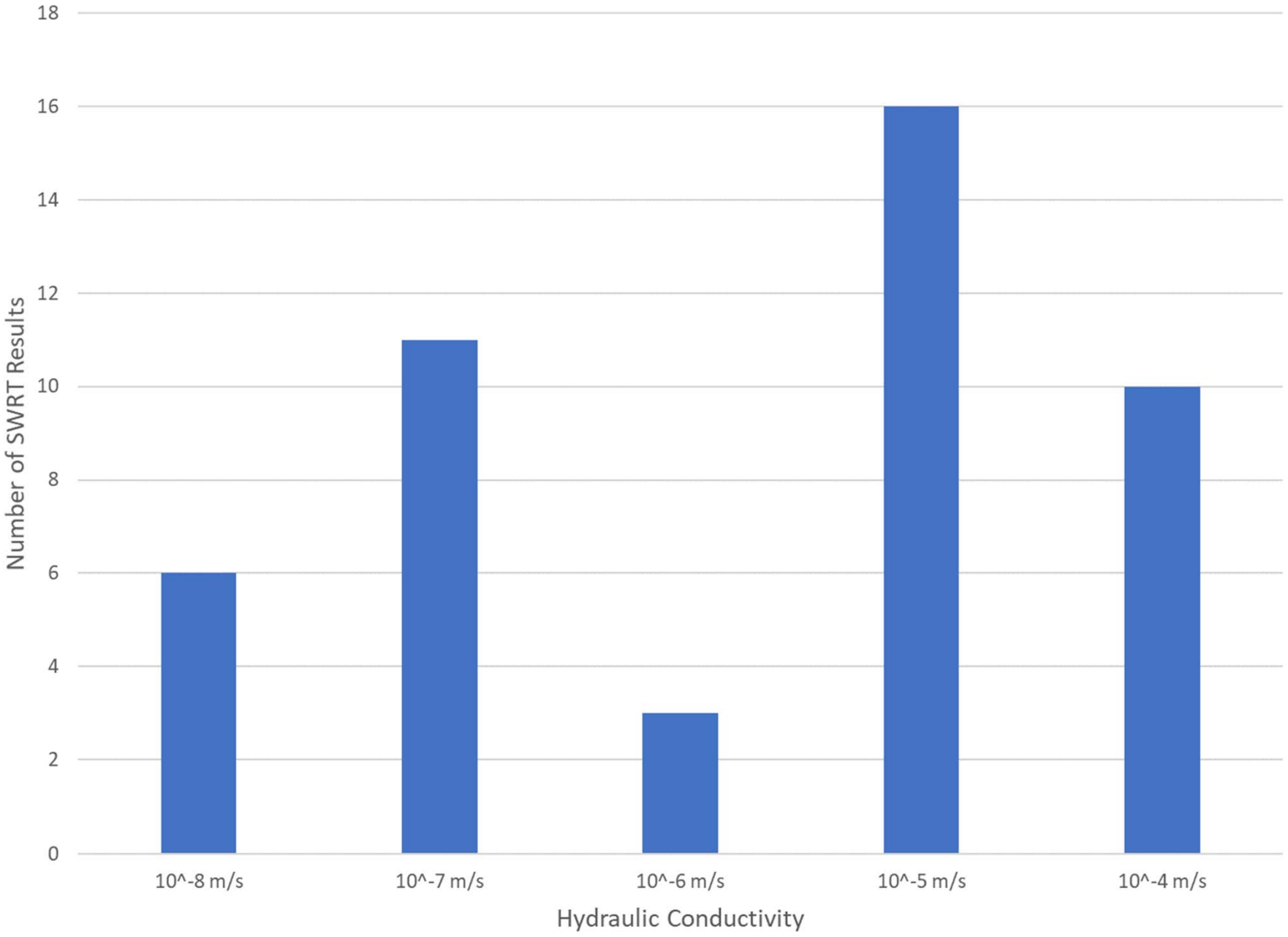
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-03-15
PREPARED	PGM
DESIGN	PGM
REVIEW	GWS
APPROVED	GWS

TITLE
SINGLE WELL RESPONSE TEST HYDRAULIC CONDUCTIVITY VERSUS DEPTH

PROJECT NO.	PHASE	Rev.	FIGURE
19129150	2300	A	G-1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0



CLIENT
ST.MARY'S CEMENT INC. (CANADA)

PROJECT
CALEDON PIT AND QUARRY

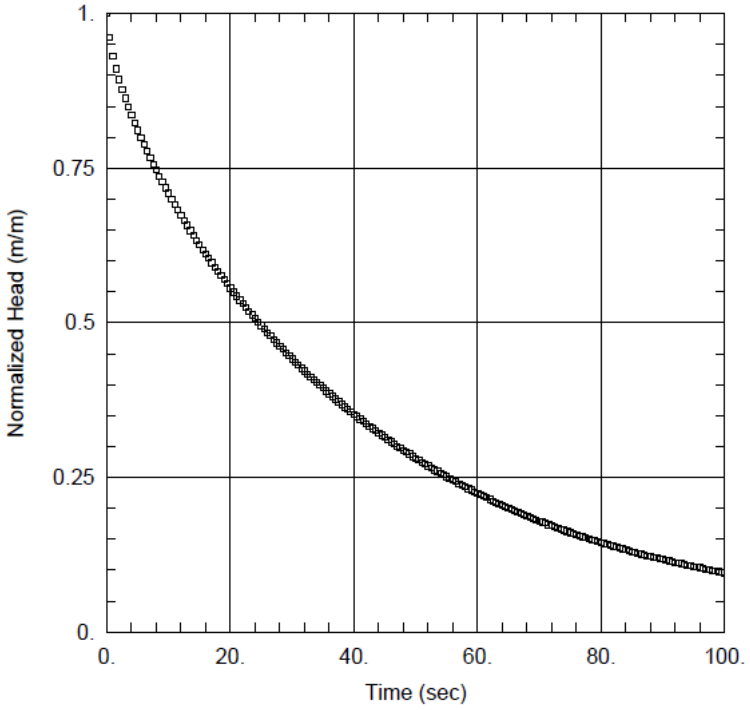
CONSULTANT
GOLDER
MEMBER OF WSP

	YYYY-MM-DD
PREPARED	2022-03-14
DESIGN	PGM
REVIEW	ML
APPROVED	GWS
	GWS

TITLE
SINGLE WELL RESPONSE TEST HYDRAULIC CONDUCTIVITY HISTOGRAM – GASPORT FORMATION

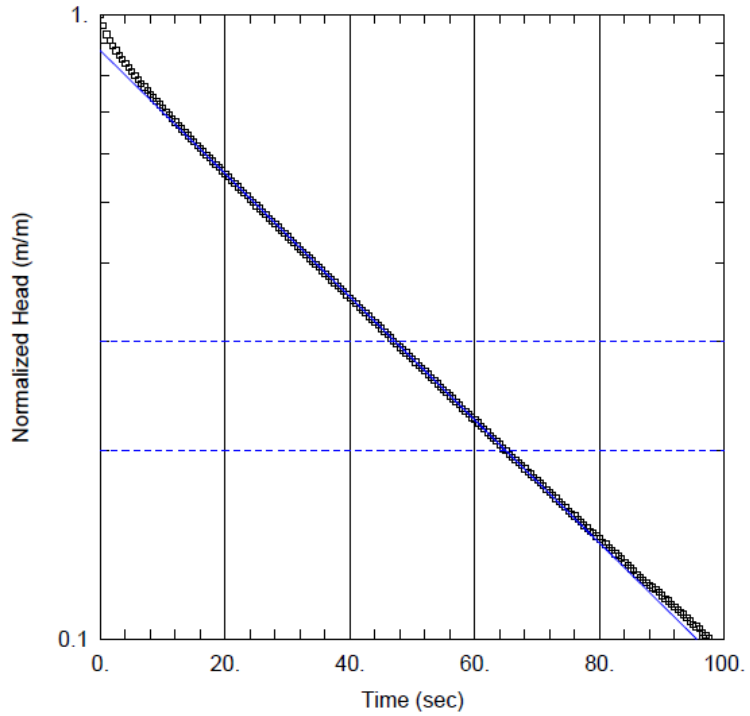
PROJECT NO.	PHASE	Rev.	FIGURE
19129150	2300	A	G-2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-01A
Date of Test:	June 2, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	3.80 mbtoc
Initial Displacement:	3.37 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	17.10 to 18.63 m
Geology:	Shaley Dolostone/Cabot Head Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

5 x 10^{-6} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

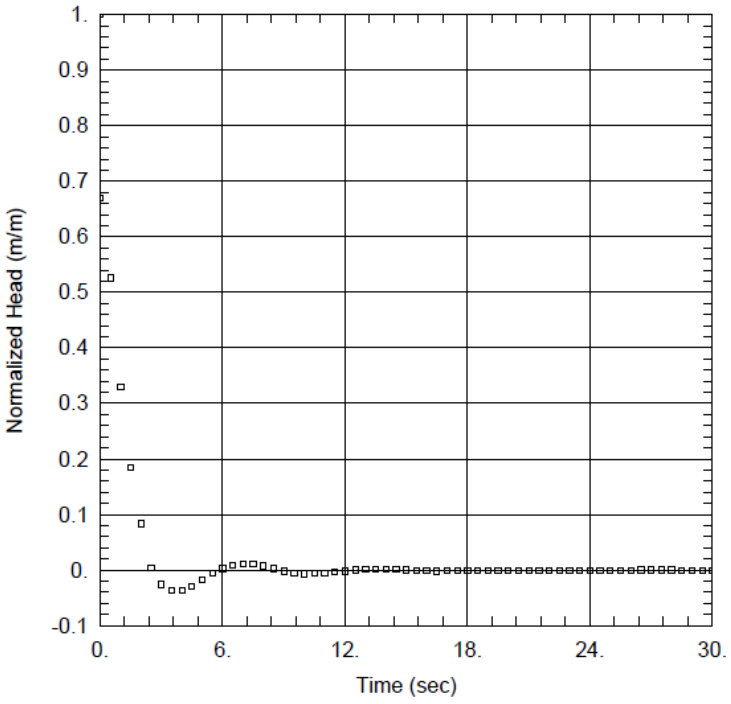
CONSULTANT
GOLDER
MEMBER OF WSP

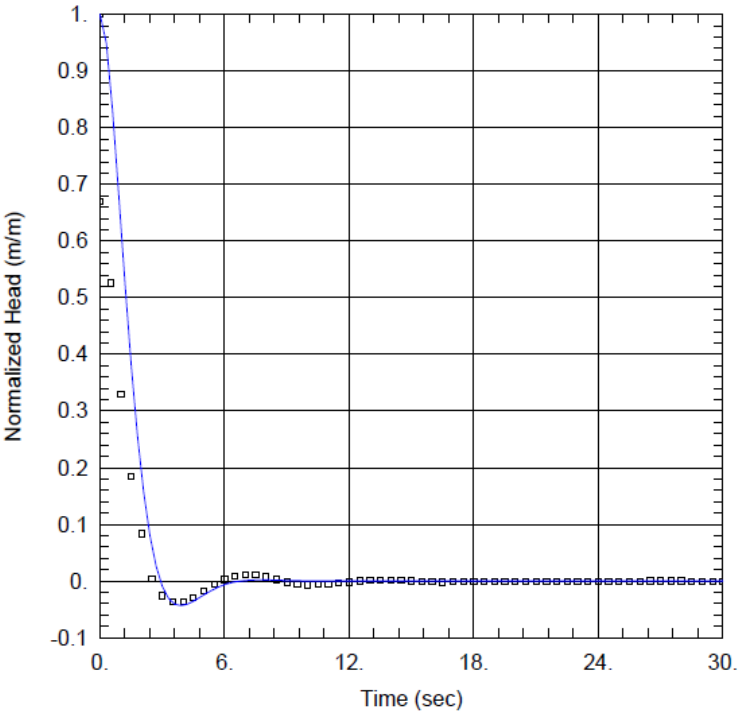
YYYY-MM-DD	2021-01-14
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-01A

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-03

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A





Water Level Measurement

Solution Match Line

TEST INFORMATION:

Test Well:	MW20-01B
Date of Test:	June 2, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	2.83 mbgs
Initial Displacement:	1.93 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	11.10 to 12.62 m
Geology:	Dolostone, Gasport Fm

SOLUTION:

Solution Method:	Springer-Gelhar
Solution Type:	Inertial
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-4} m/s

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

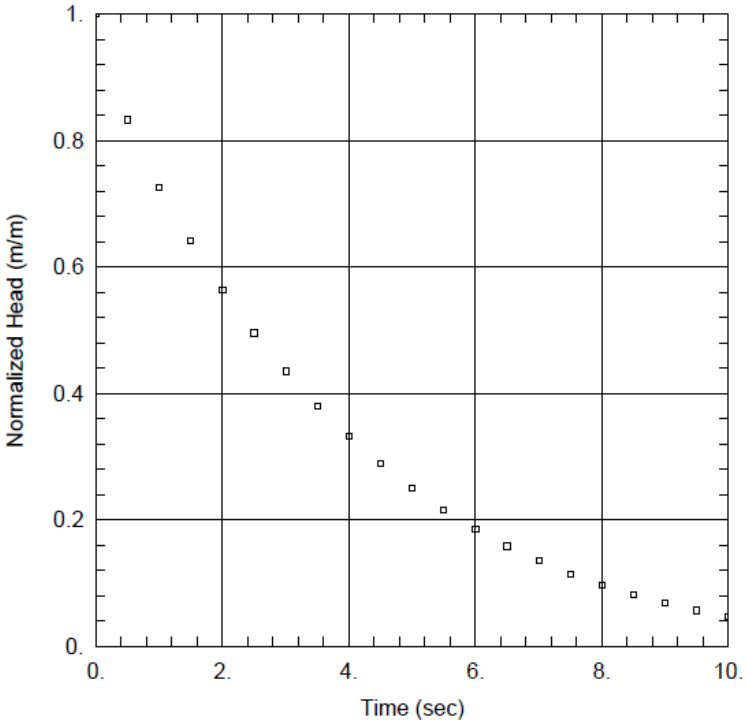
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2021-01-14
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS
MONITORING WELL MW20-01B

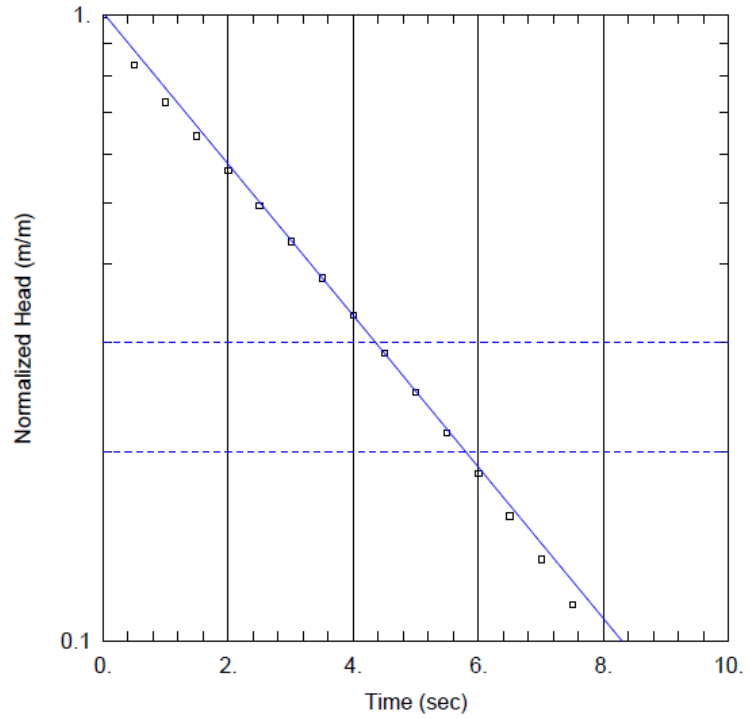
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-04

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0



TEST INFORMATION:

Test Well:	MW20-02
Date of Test:	June 1, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	8.46 mbgs
Initial Displacement:	3.01 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	16.96 m to 18.48 m
Geology:	Shaley Dolostone



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

5×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

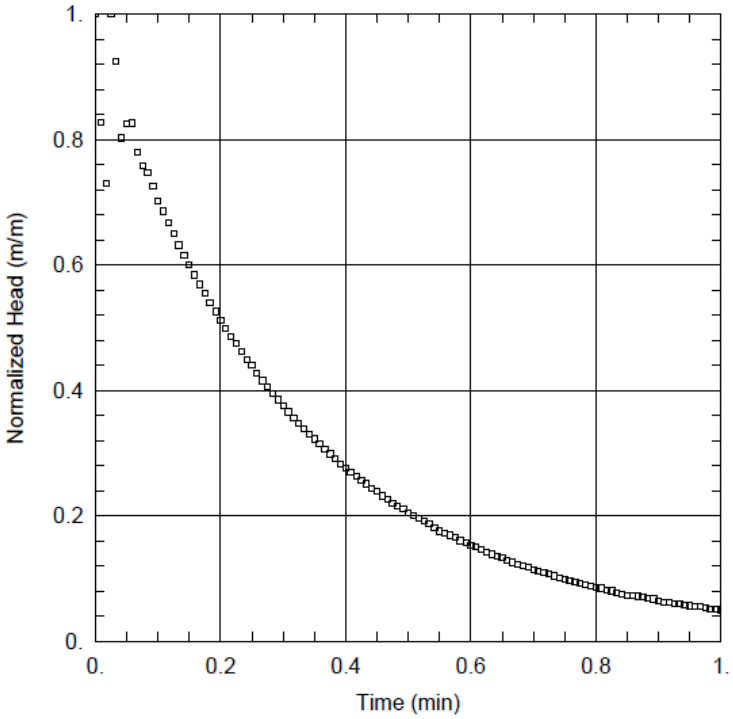
YYYY-MM-DD	2020-01-19
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-02

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-05

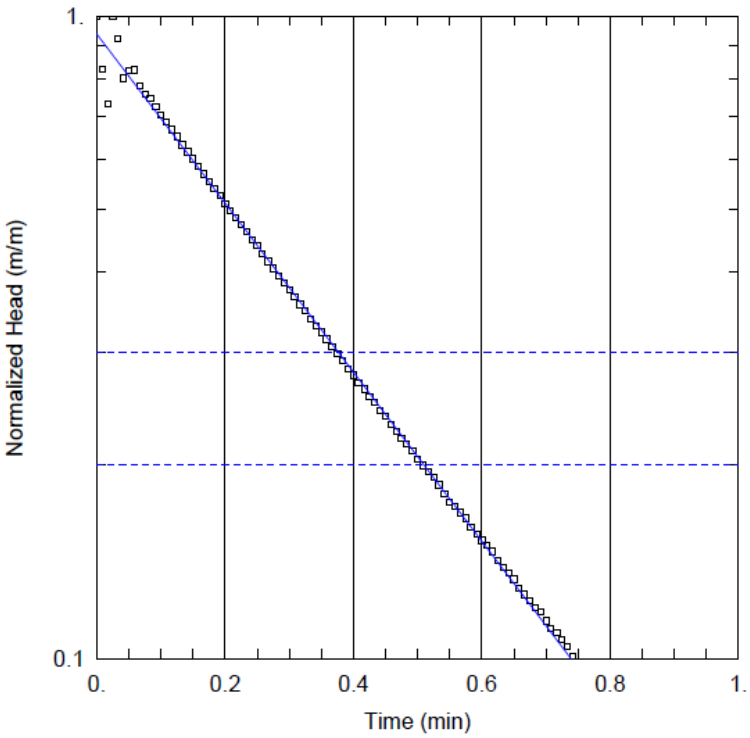
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

TEST INFORMATION:



Test Well:	MW20-03
Date of Test:	June 1, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	4.52 mbgs
Initial Displacement:	1.86 m
Casing Radius:	0.013 m
Borehole Radius:	0.083 m
Well Screen Interval:	15.58 m to 18.63 m
Geology:	Overburden, Sand, some silt

SOLUTION:



Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

5×10^{-6} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

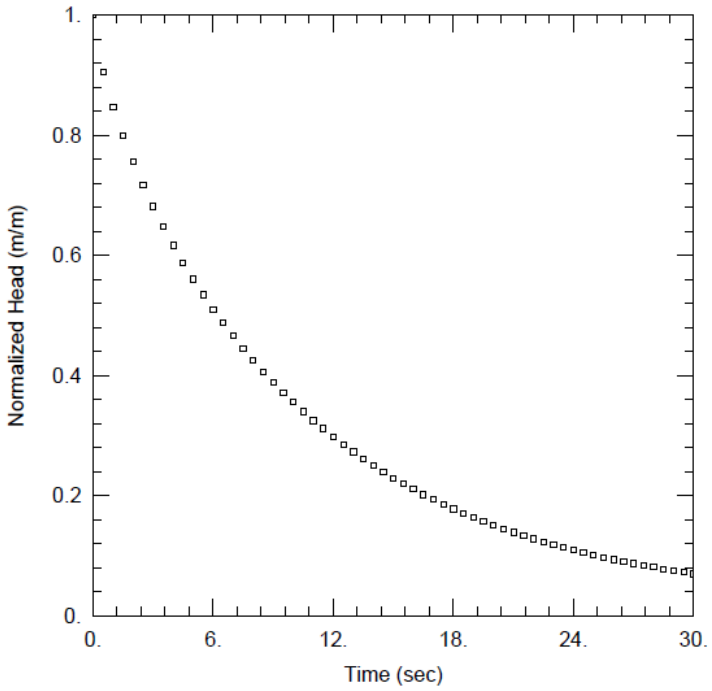
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-19
PREPARED	NU
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-03

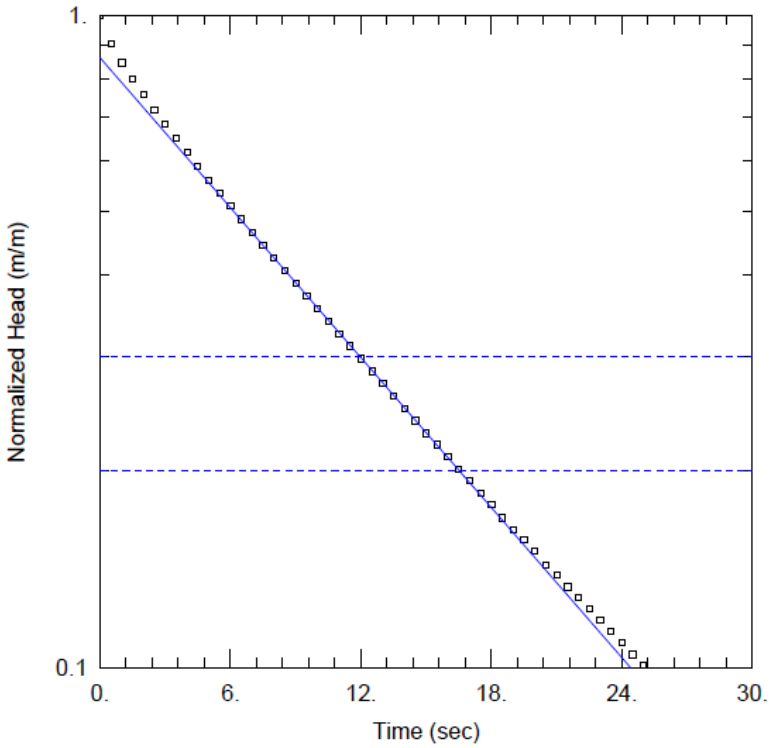
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-06

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-04
Date of Test:	June 1, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	9.40 mbgs
Initial Displacement:	2.68 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	16.11 m to 17.63 m
Geology:	Shaley Dolostone to Shale, Cabot Head Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-5} m/s

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

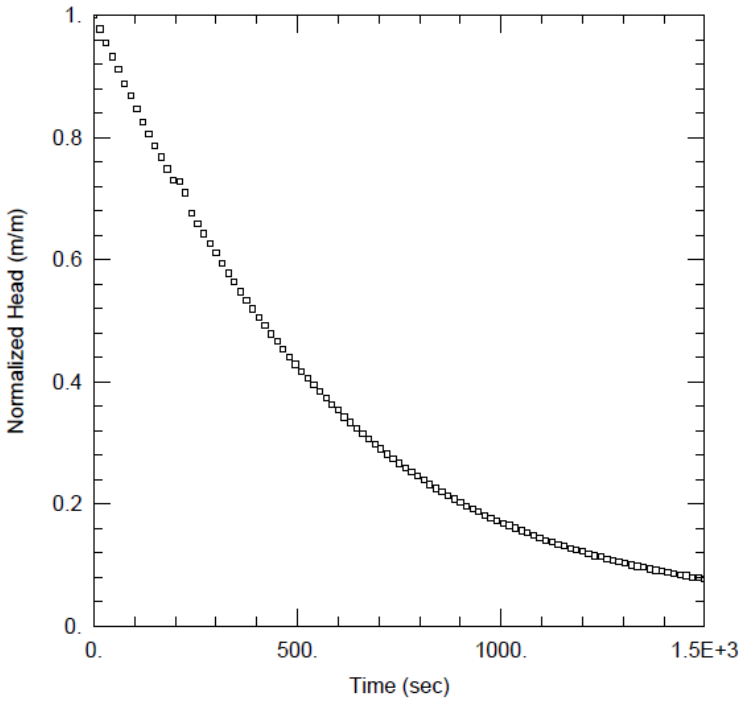
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-19
PREPARED	DB
DESIGN	DB
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-04

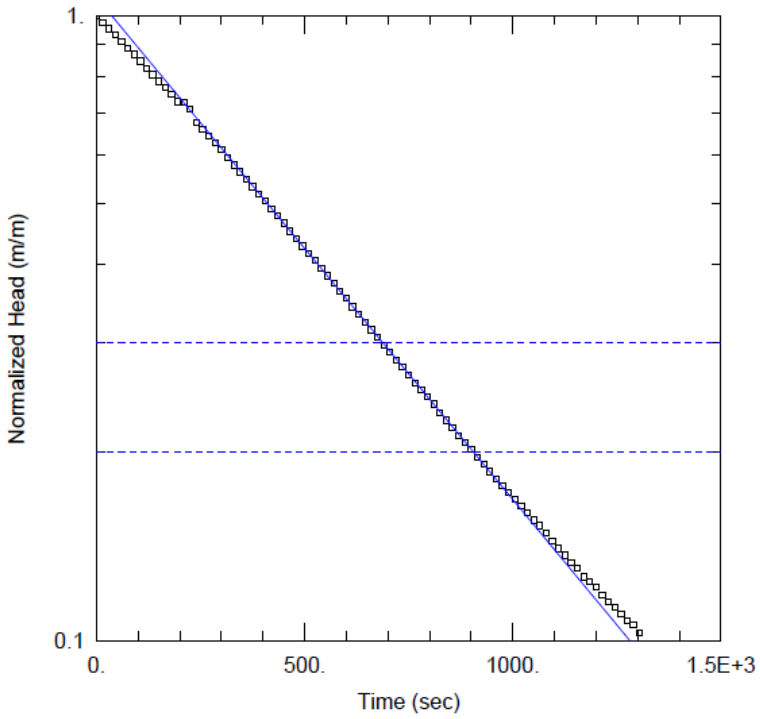
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-07

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-05A
Date of Test:	June 2, 2020
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	6.05 mbgs
Initial Displacement:	5.42 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	12.25 m to 13.77 m
Geology:	Shaley Dolostone, Cabot Head Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

4×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

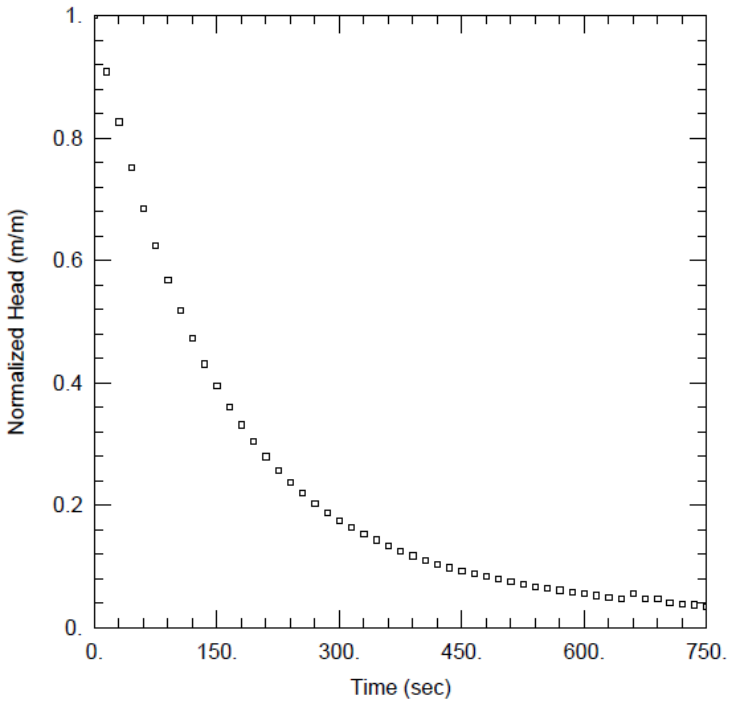
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-20
PREPARED	AIM
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REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-05A

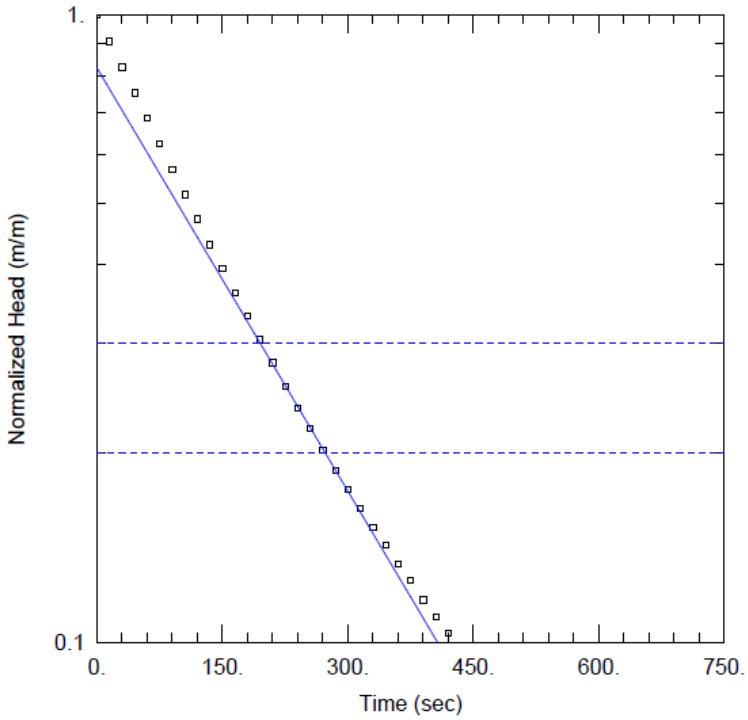
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-08

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-06A
Date of Test:	June 1, 2020
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	3.18 mbgs
Initial Displacement:	3.96 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	10.12 m to 11.64 m
Geology:	Shaley Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

1×10^{-6} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

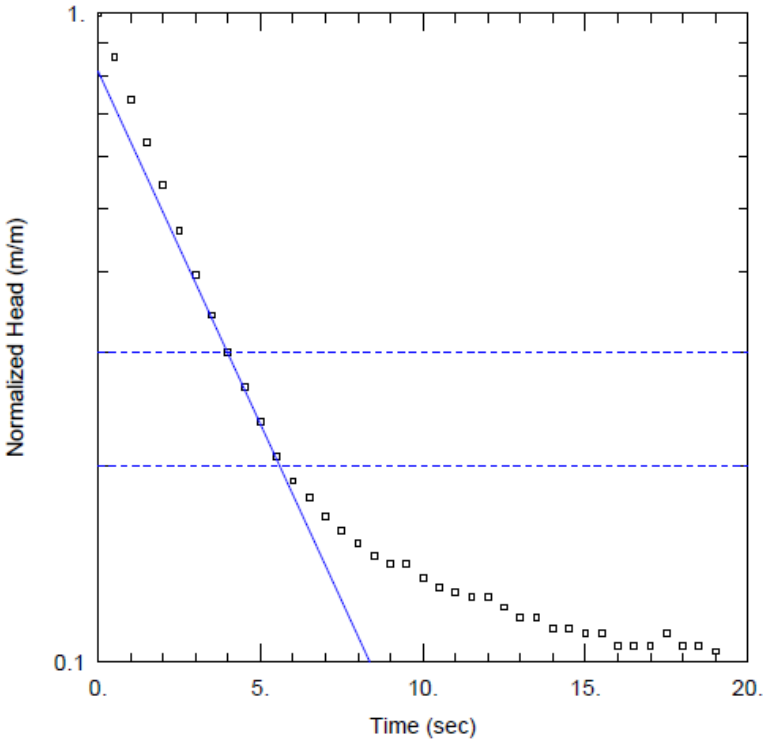
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-20
PREPARED	AIM
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REVIEW	PGM
APPROVED	###

TITLE
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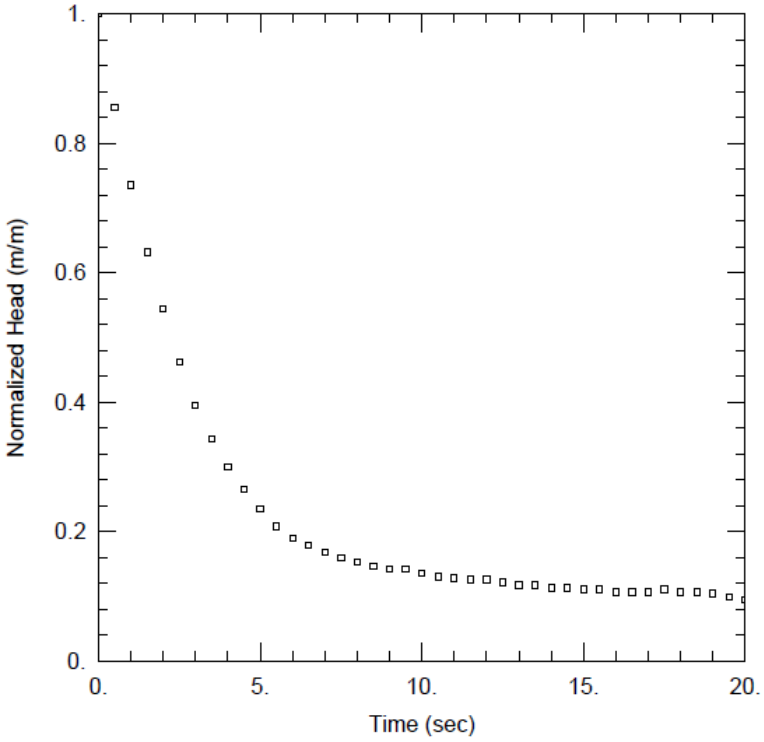
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-09

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-06B
Date of Test:	June 1, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	2.98 mbgs
Initial Displacement:	0.45 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	4.20 m to 5.72 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

4×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

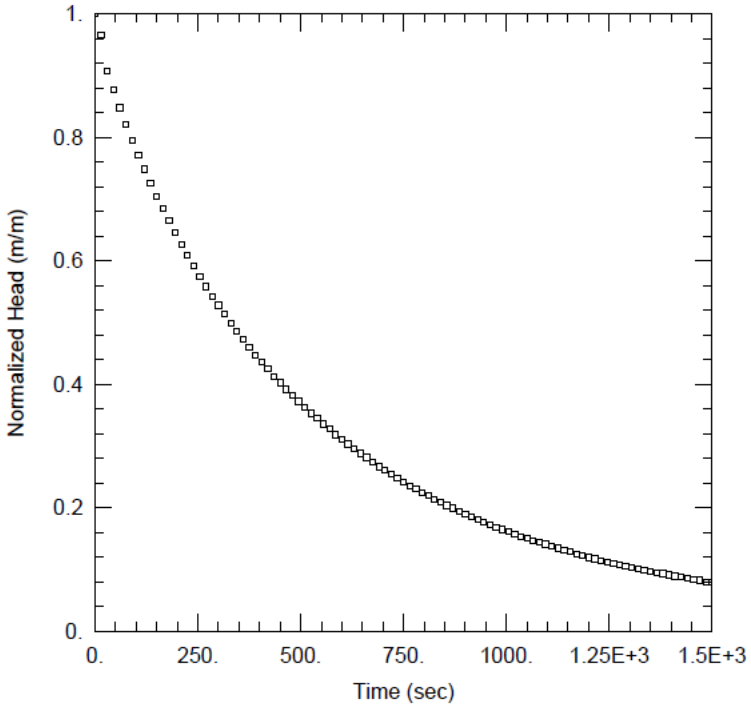
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-20
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
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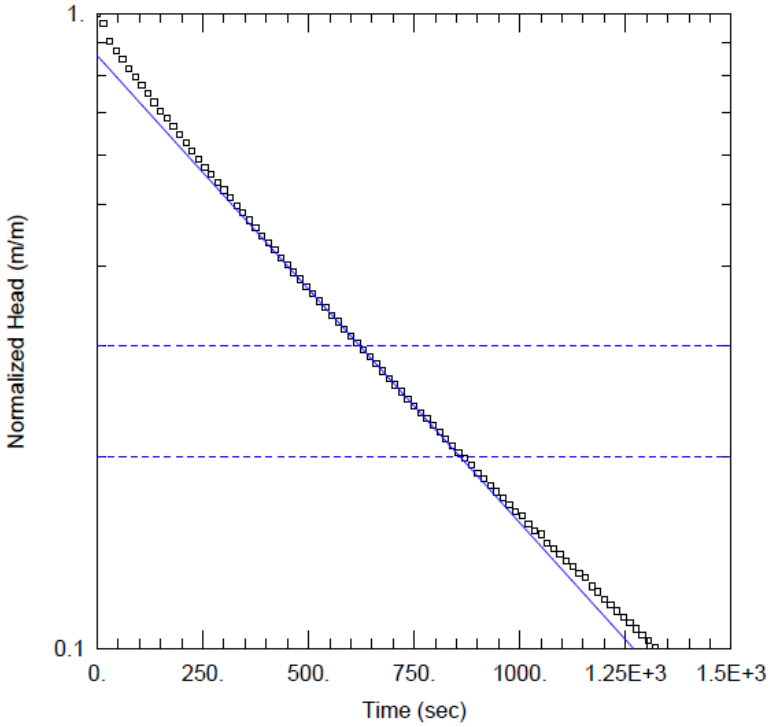
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-10

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-07A
Date of Test:	June 2, 2020
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	1.18 mbgs
Initial Displacement:	3.69 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	15.11 m to 16.63 m
Geology:	Shaley Dolostone, Cabot Head Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

9×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

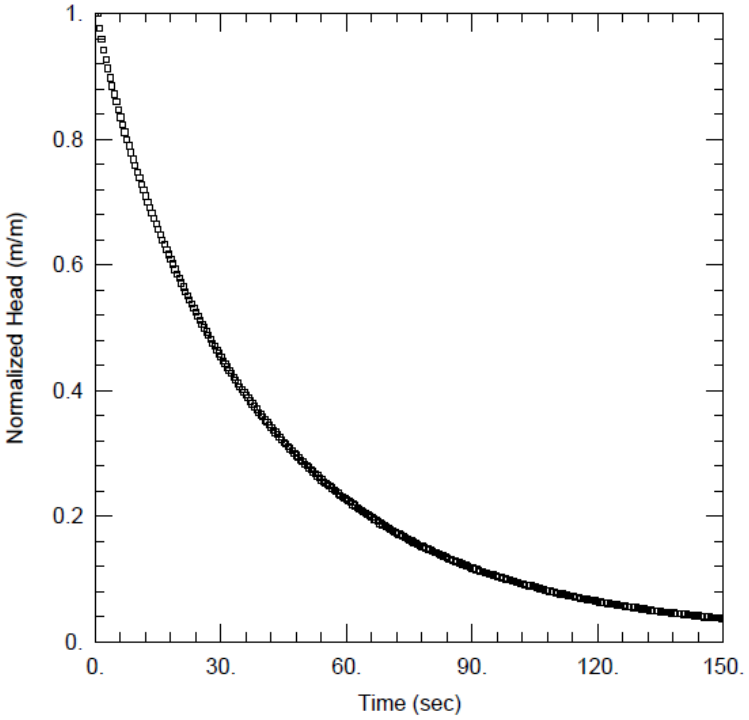
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-28
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
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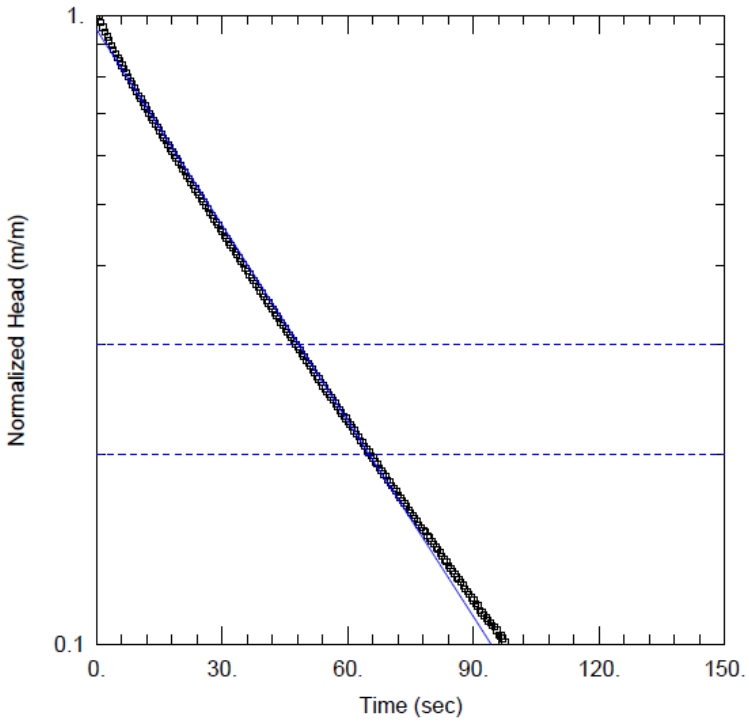
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-11

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-07B
Date of Test:	June 2, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	1.25 mbgs
Initial Displacement:	2.69 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	9.74 m to 11.26 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

1×10^{-6} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

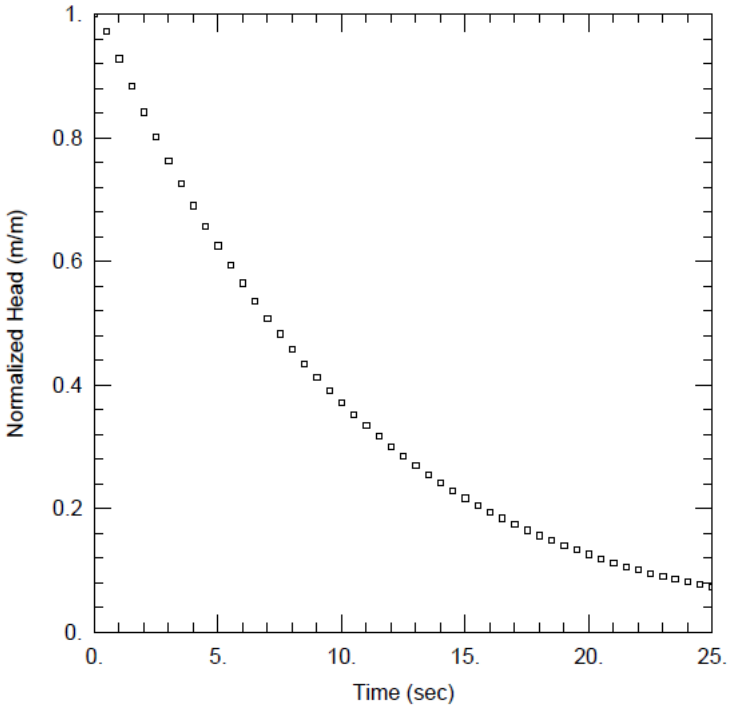
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-20
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-07B

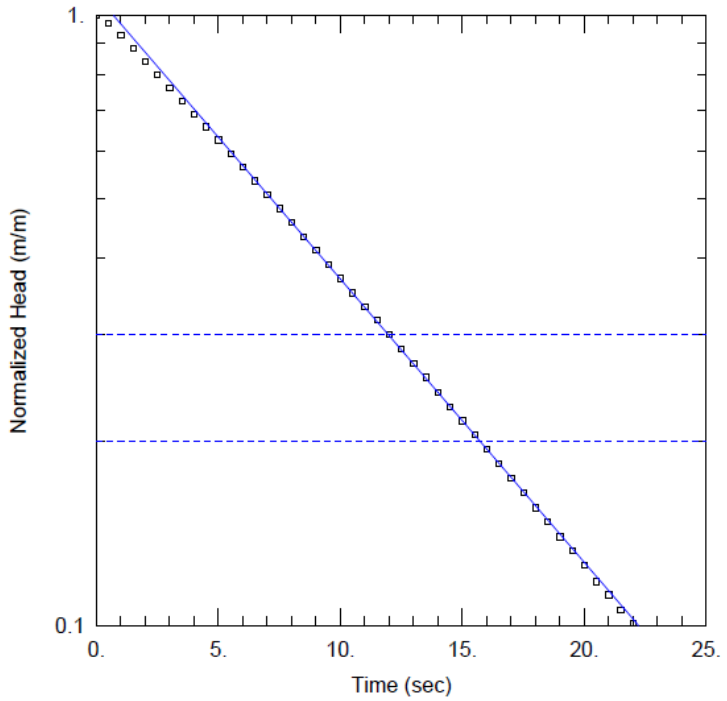
PROJECT No.	PHASE	Rev.	FIGURE
19129150	**2300**	**A**	**G-12**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-08A
Date of Test:	May 28, 2022
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	2.05 mbgs
Initial Displacement:	3.80 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	13.30 m to 14.82 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

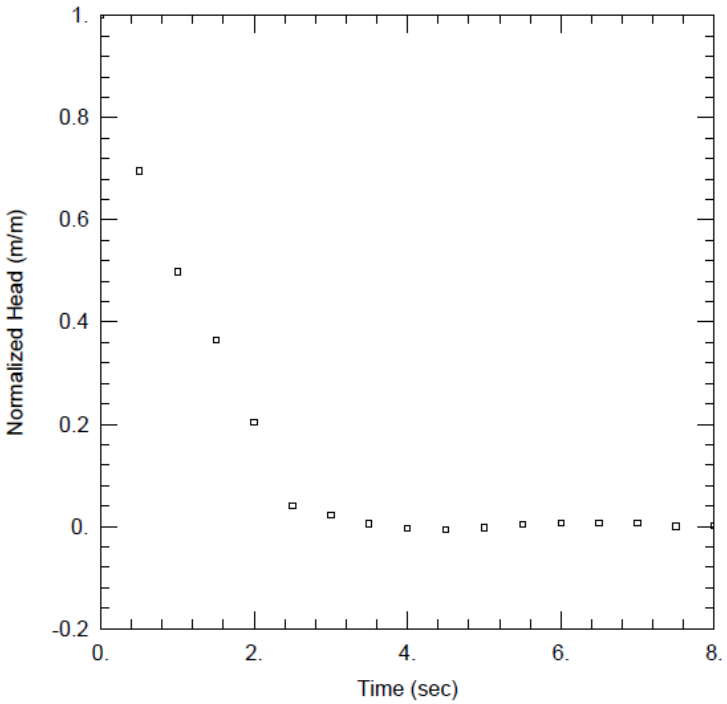
YYYY-MM-DD	2022-01-20
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-08A

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-13

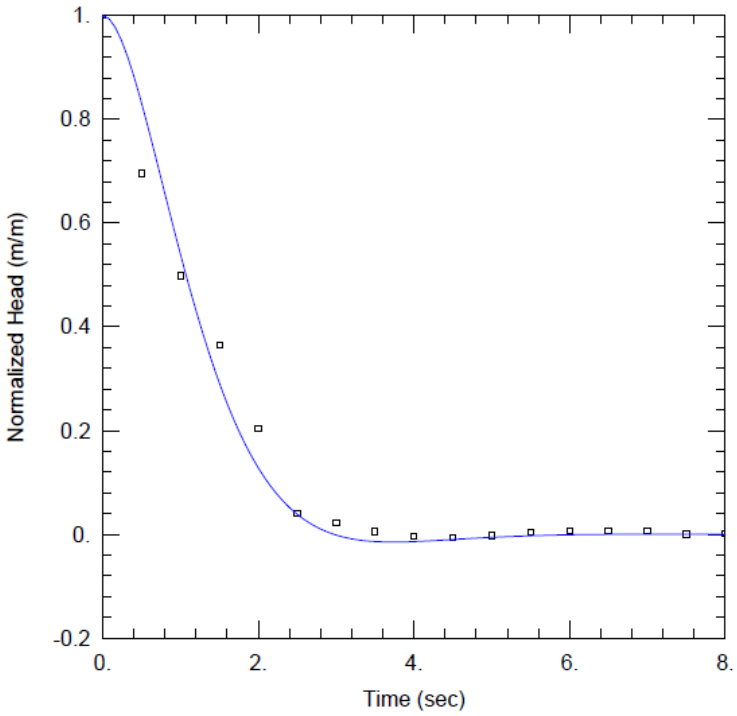
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

TEST INFORMATION:



Test Well:	MW20-08B
Date of Test:	May 28, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	1.99 mbgs
Initial Displacement:	1.21 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	5.38 m to 6.90 m
Geology:	Dolostone, Gasport Fm

SOLUTION:



Solution Method:	Springer-Gelhar
Solution Type:	Inertial
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-4} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

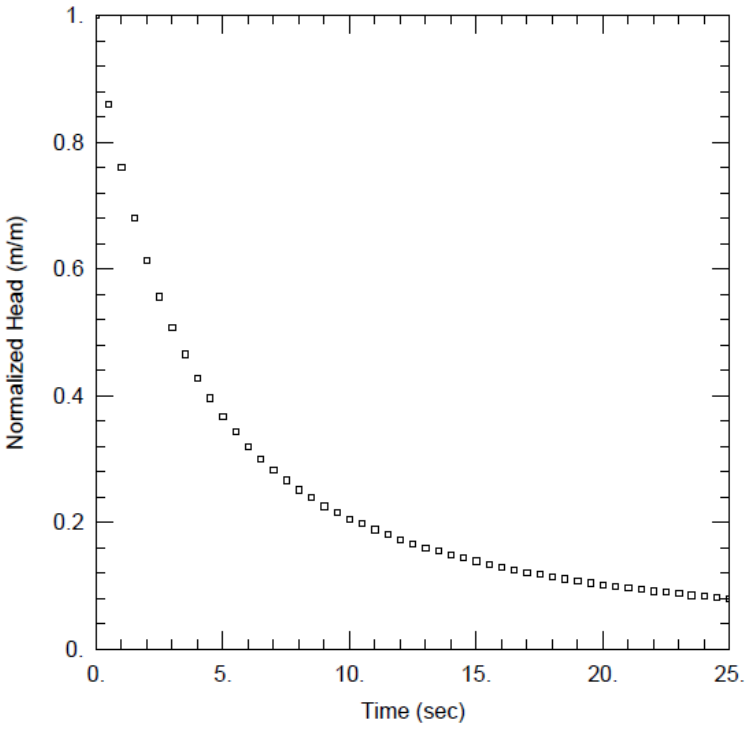
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-20
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-08B

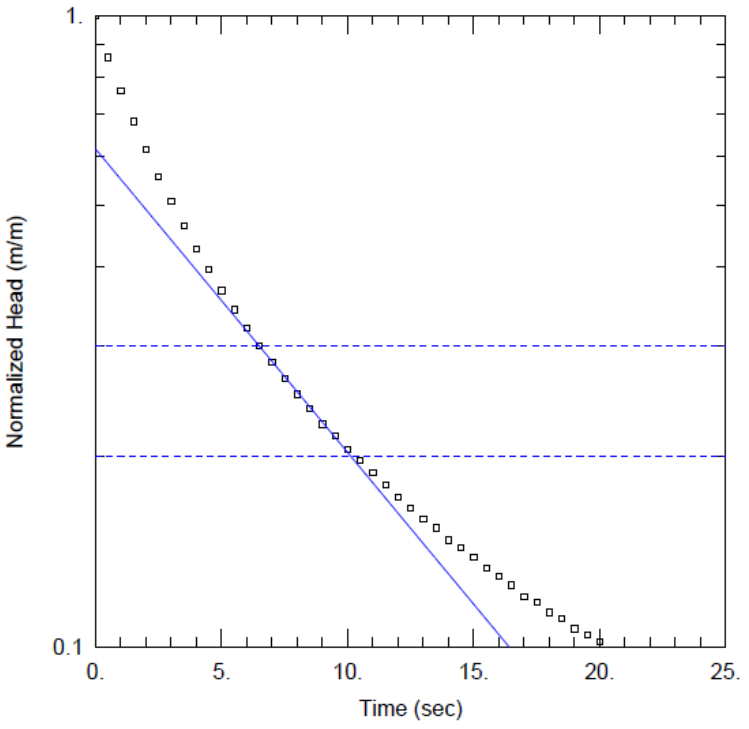
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-14

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-09
Date of Test:	June 4, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	3.37 mbgs
Initial Displacement:	1.14 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	6.85 m to 8.37 m
Geology:	Shaley Dolostone, Cabot Head Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

2×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

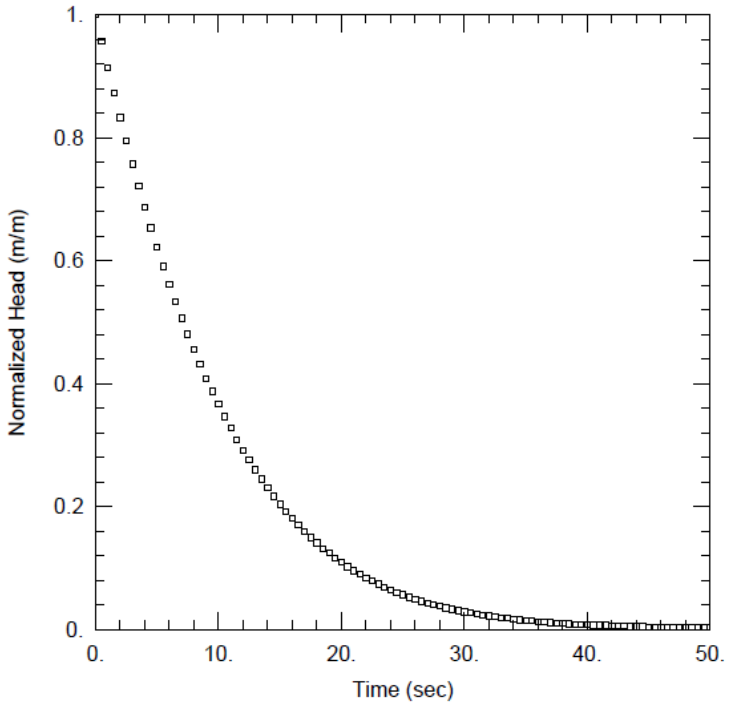
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-20
PREPARED	DB
DESIGN	DB
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-09

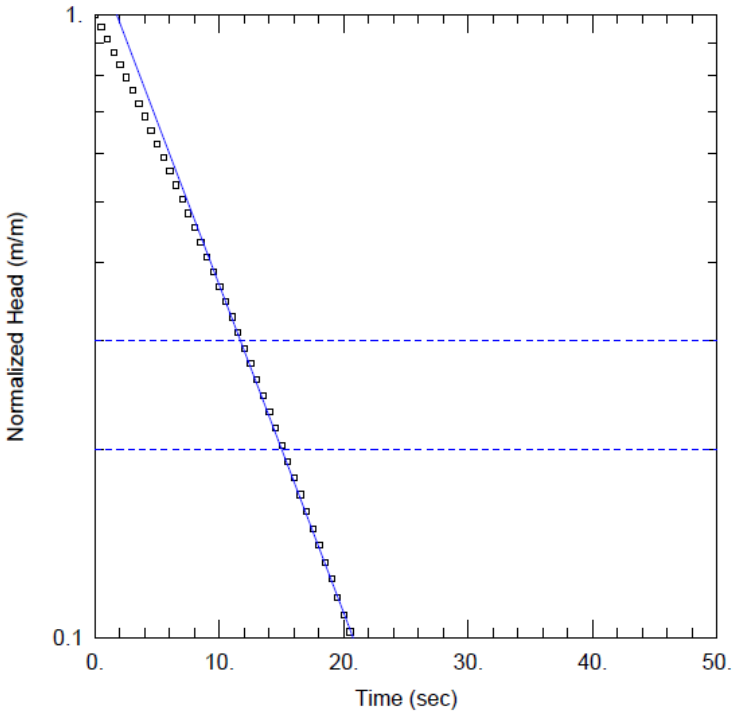
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-15

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-10A
Date of Test:	June 3, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	9.74 mbgs
Initial Displacement:	3.15 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	18.62 m to 20.14 m
Geology:	Shaley Dolostone, Cabot Head Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

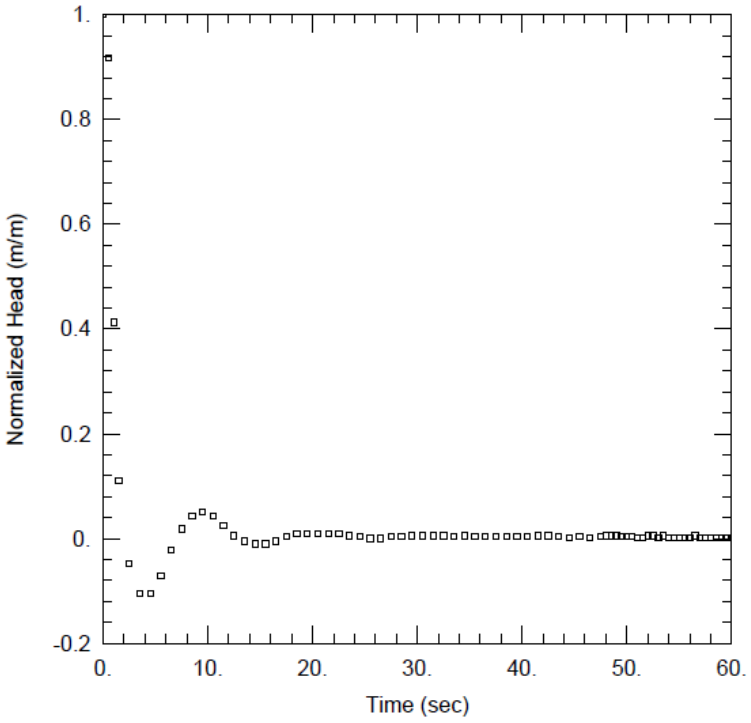
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-21
PREPARED	DB
DESIGN	DB
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-10A

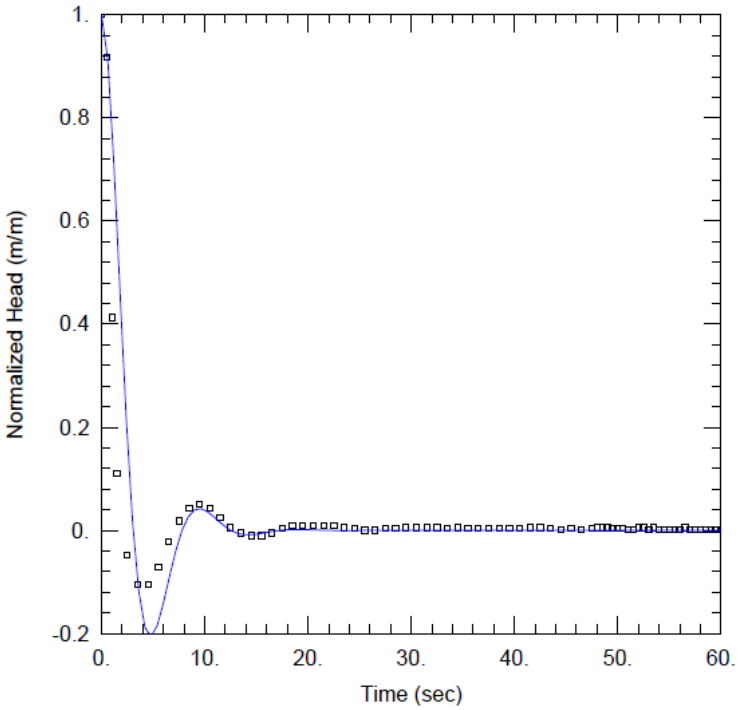
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-16

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-10B
Date of Test:	June 3, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	9.69 mbgs
Initial Displacement:	0.60 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	14.49 m to 16.01 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Springer-Gelhar
Solution Type:	Inertial
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-4} m/s

Water Level Measurement

Solution Match Line

CLIENT

CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-21
PREPARED	DB
DESIGN	DB
REVIEW	PGM
APPROVED	###

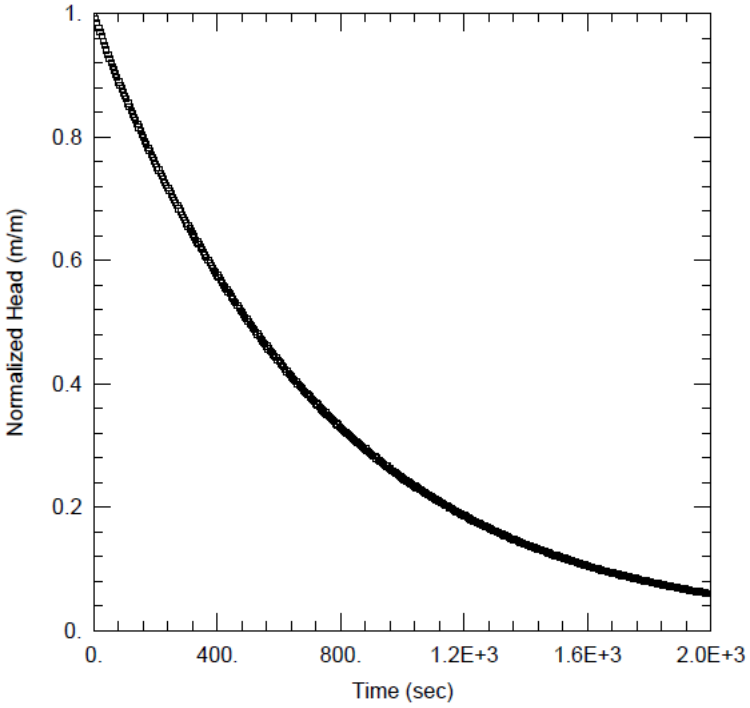
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SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-10B

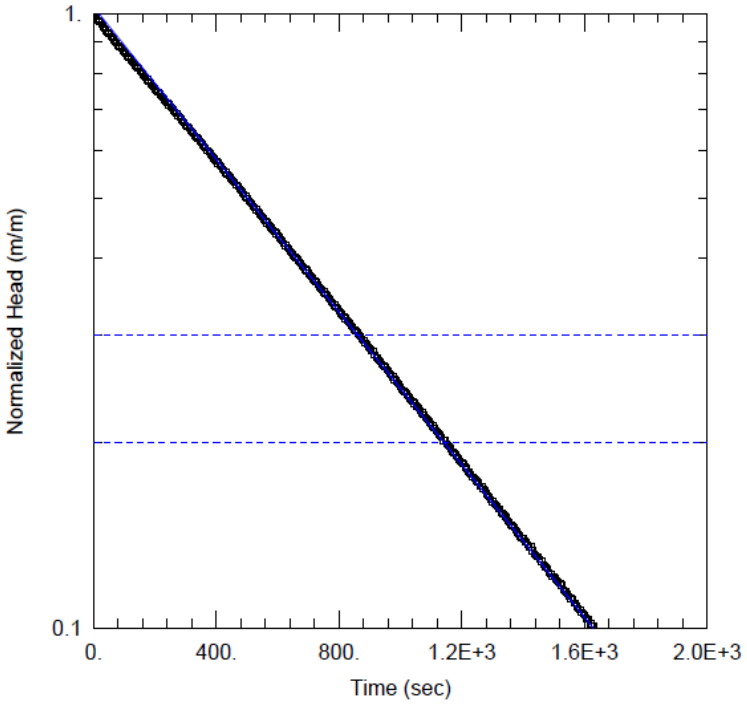
PROJECT No.	PHASE	Rev.	FIGURE
19129150	**2300**	**A**	**G-17**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

TEST INFORMATION:



Test Well:	MW20-11A
Date of Test:	June 4, 2020
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	4.69 mbgs
Initial Displacement:	3.61 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	13.81 m to 15.33 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

5×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

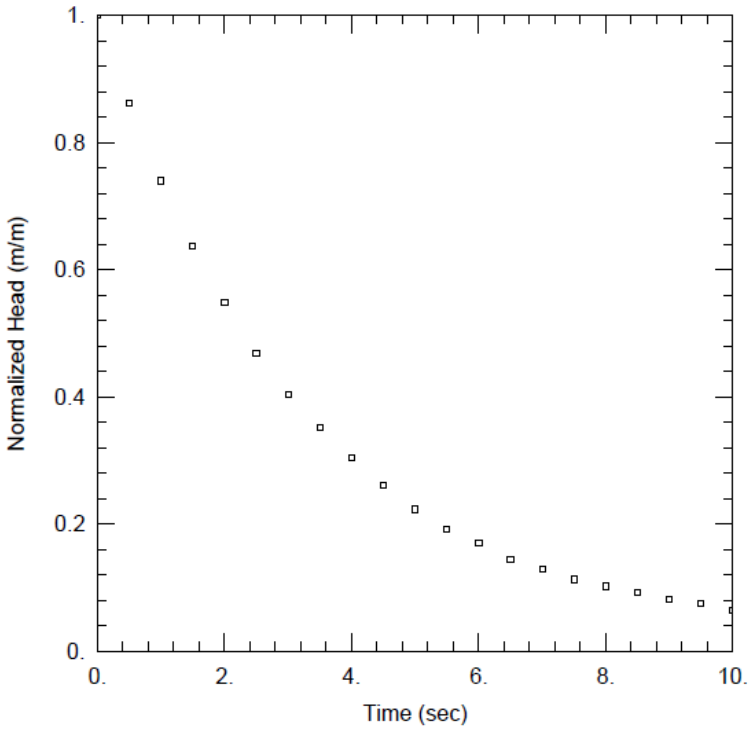
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-28
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-11A

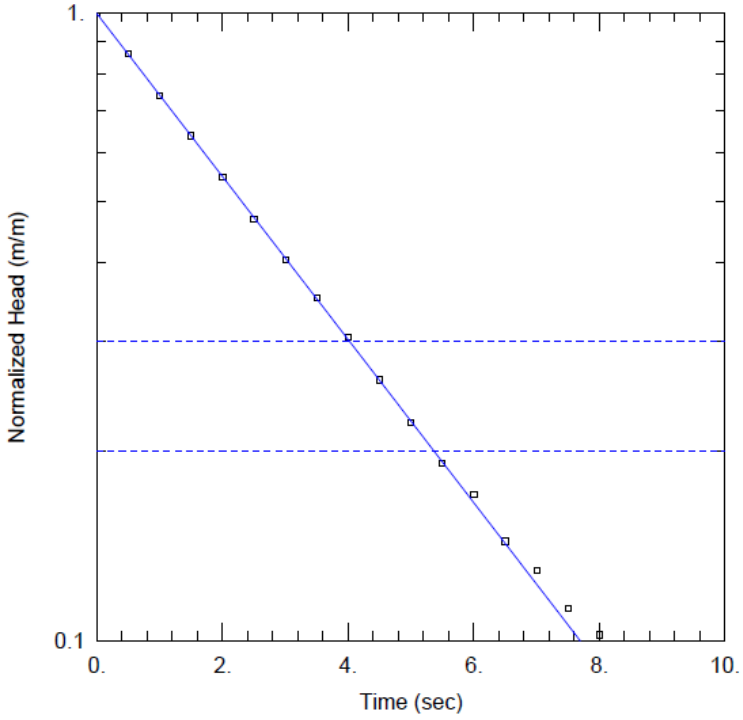
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-18

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-11B
Date of Test:	June 4, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	3.33 mbgs
Initial Displacement:	0.28 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	3.96 m to 5.48 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

5×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

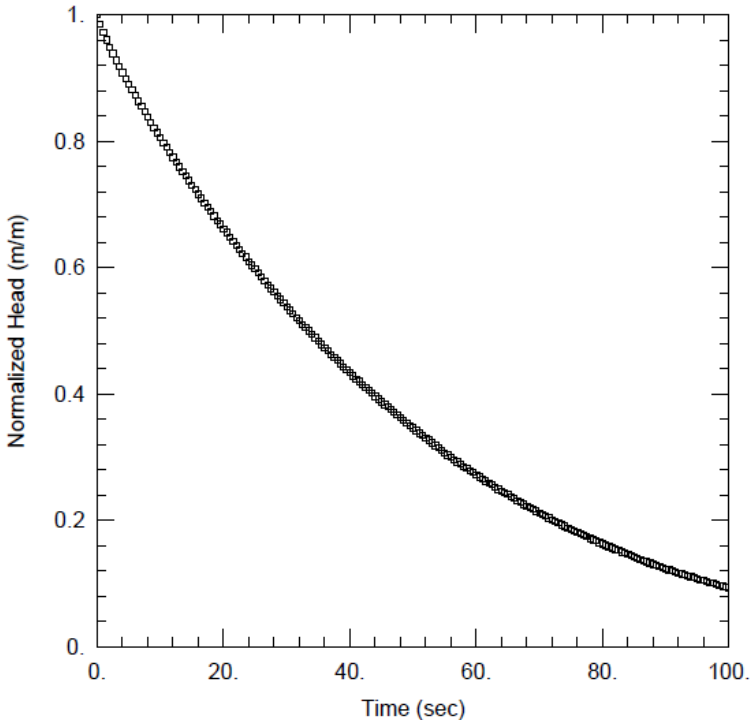
YYYY-MM-DD	2022-01-21
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-11B

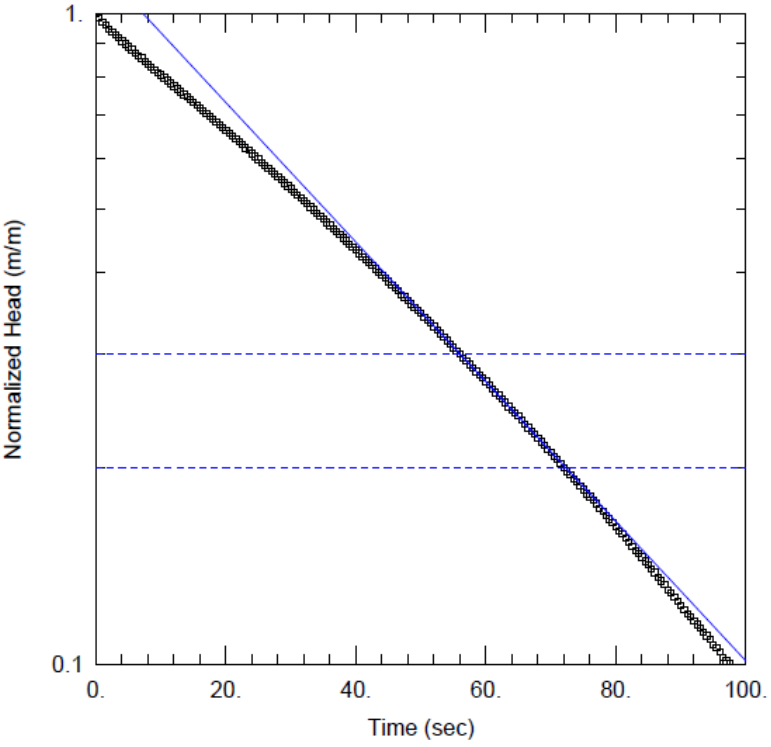
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-19

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

TEST INFORMATION:



Test Well:	MW20-12A
Date of Test:	June 3, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	4.64 mbgs
Initial Displacement:	3.26 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	17.09 m to 18.62 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

1×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

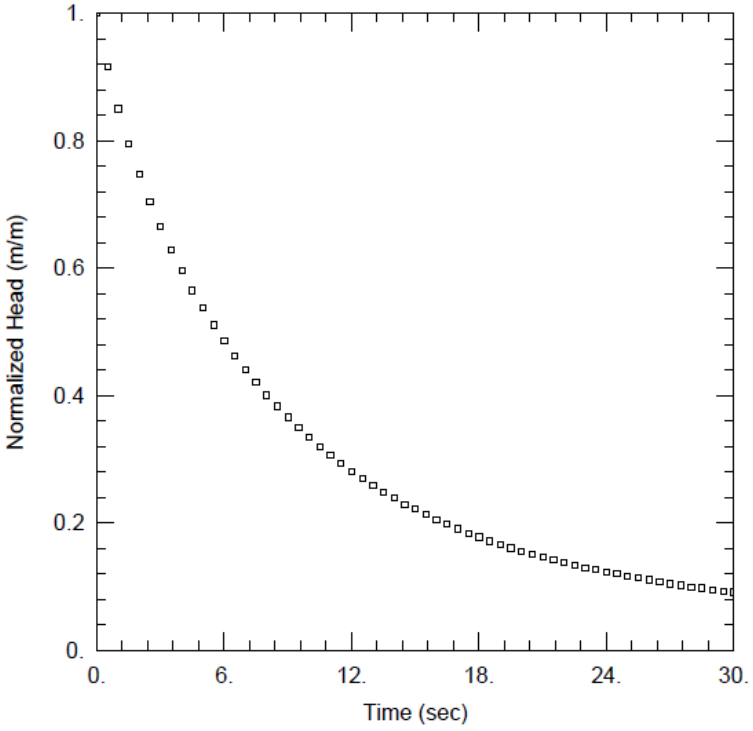
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-28
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-12A

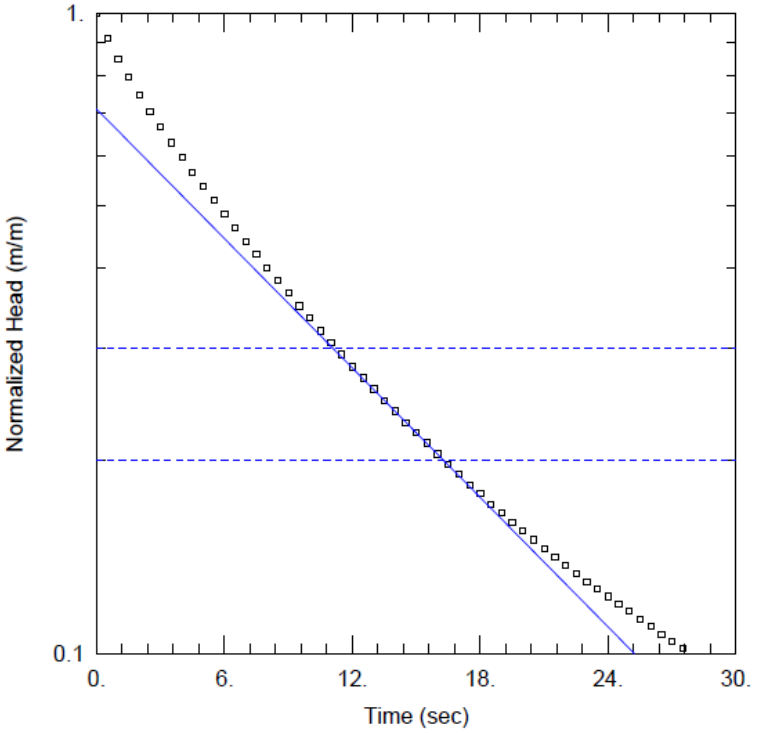
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-20

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-12B
Date of Test:	June 3, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	4.67 mbgs
Initial Displacement:	2.32 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	7.83 m to 9.35 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

1×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

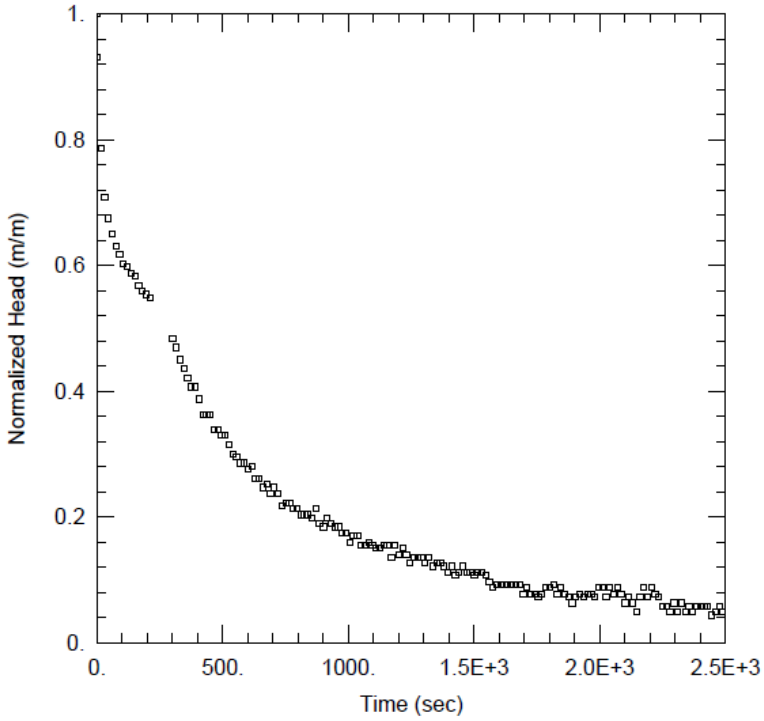
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-21
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-12B

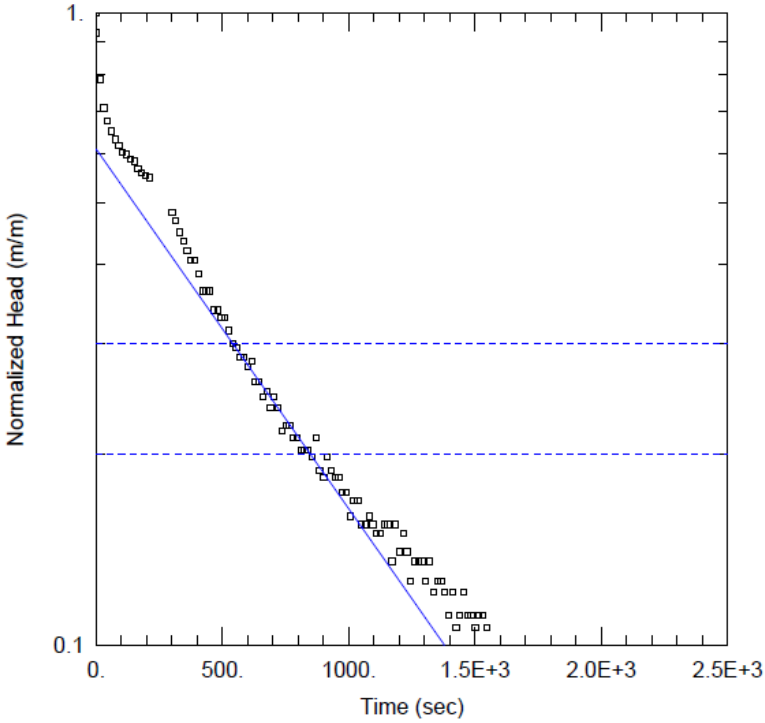
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-21

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-13A
Date of Test:	June 12, 2020
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	3.61 mbgs
Initial Displacement:	0.40 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	24.05 m to 25.57 m
Geology:	Shaley Dolostone, Cabot Head Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

6×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

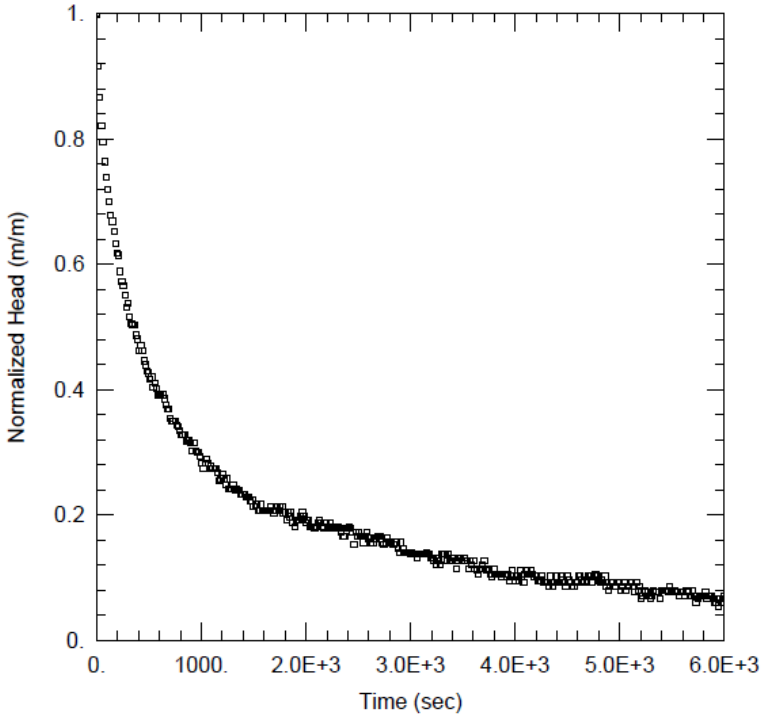
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-28
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-13A

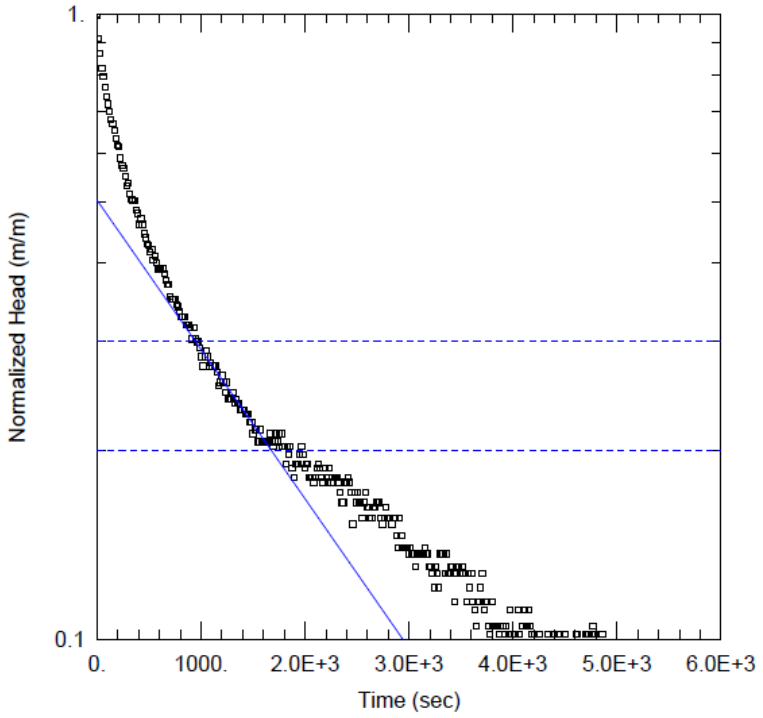
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-22

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-13B
Date of Test:	June 12, 2020
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	3.47 mbgs
Initial Displacement:	0.29 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	18.14 m to 19.66 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

1×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

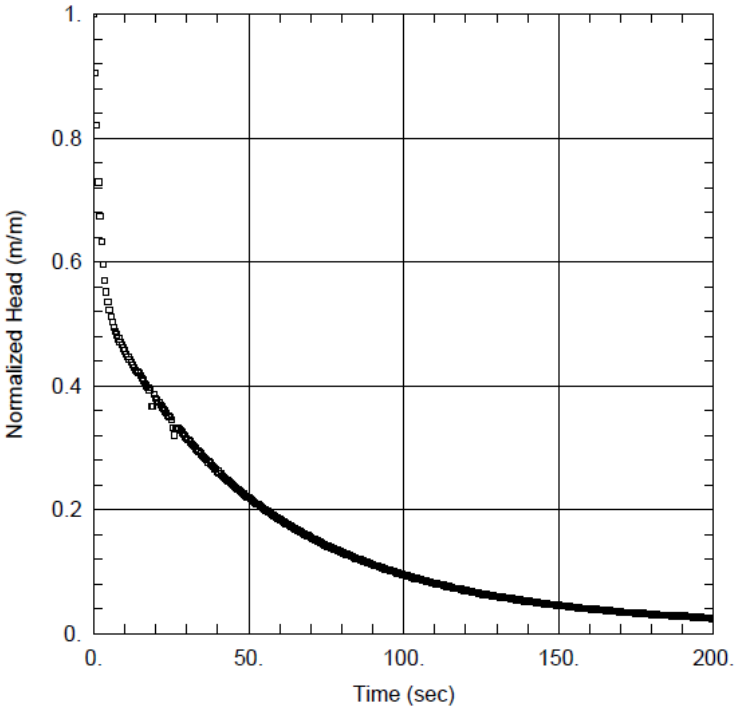
YYYY-MM-DD	2022-01-21
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-13B

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-23

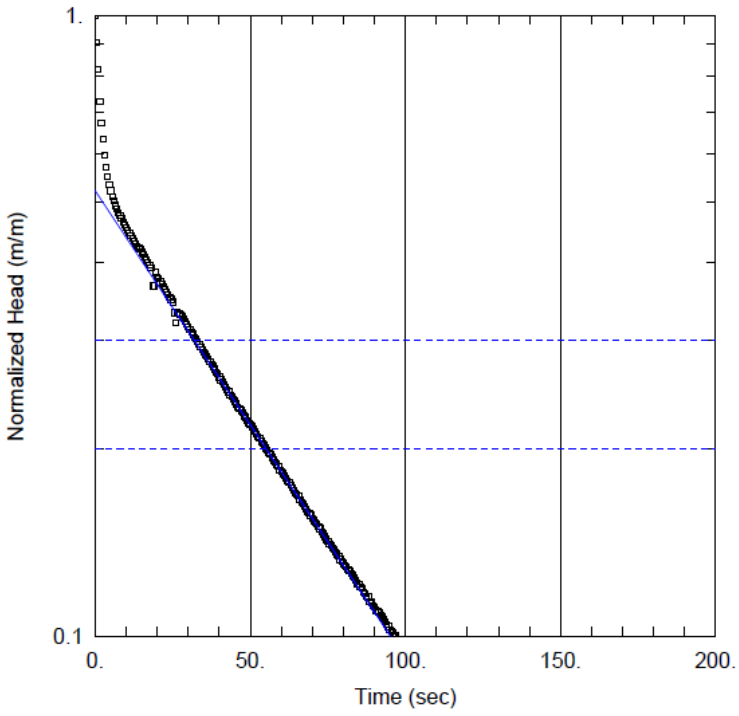
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

TEST INFORMATION:



Test Well:	MW20-13C
Date of Test:	June 8, 2020
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	1.89 mbgs
Initial Displacement:	2.34 m
Casing Radius:	0.013 m
Borehole Radius:	0.083 m
Well Screen Interval:	3.08 m to 4.60 m
Geology:	Sand, some silt

SOLUTION:



Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aiquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-6} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

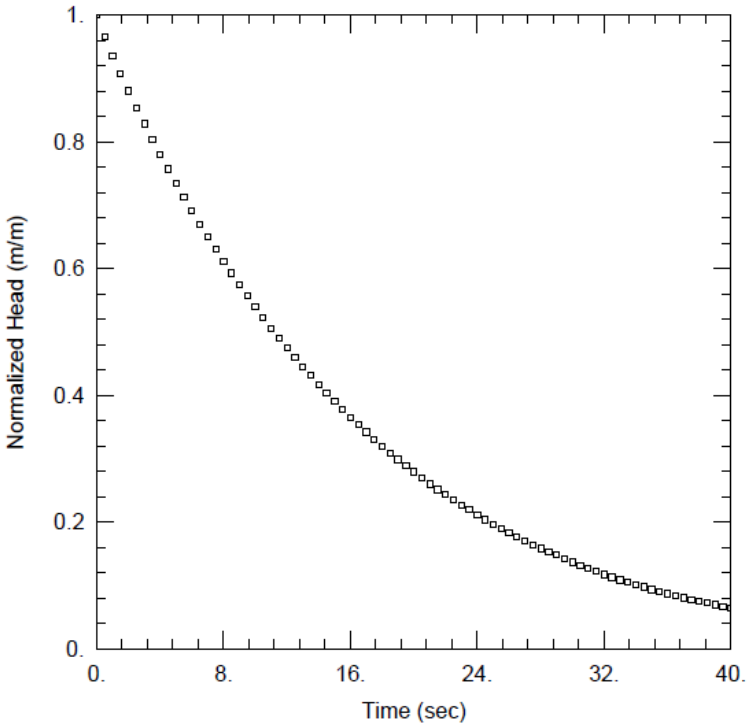
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-21
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-13C

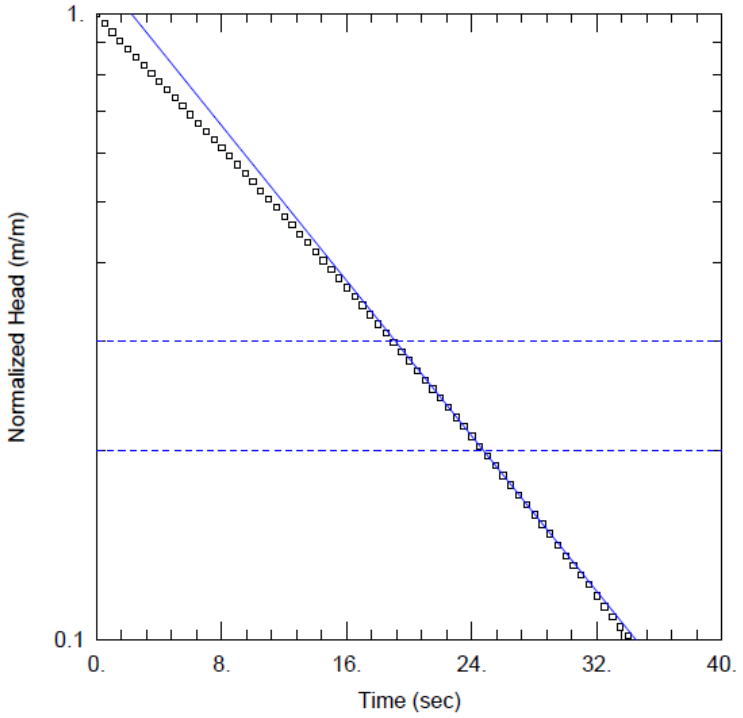
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-24

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-14A
Date of Test:	June 5, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	4.71 mbgs
Initial Displacement:	3.82 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	22.60 m to 24.12 m
Geology:	Shaley Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

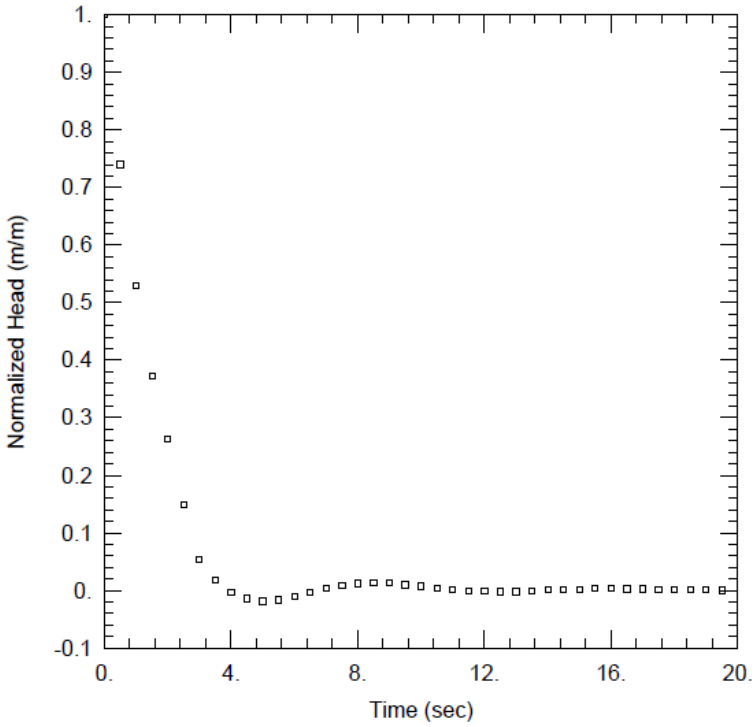
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-22
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-14A

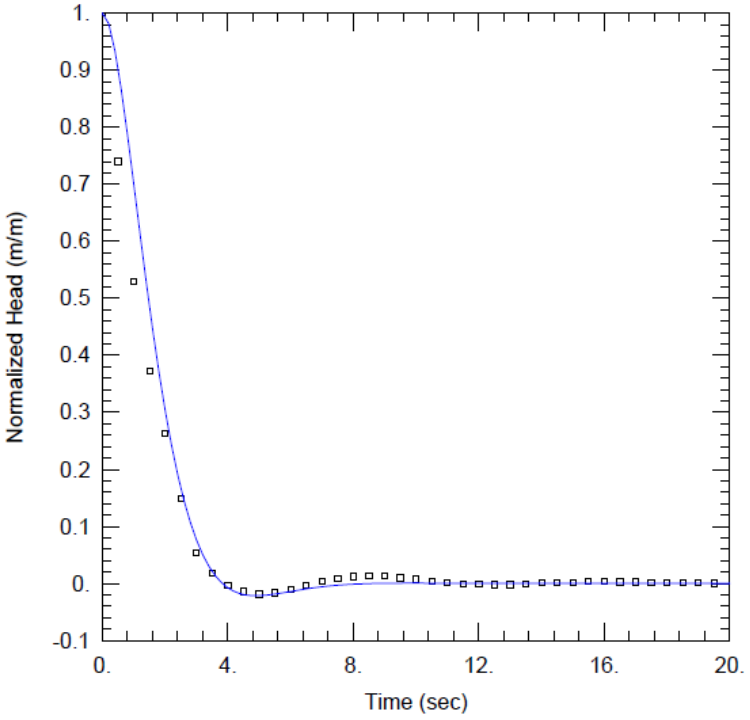
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-25

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-14B
Date of Test:	June 5, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	4.71 mbgs
Initial Displacement:	2.39 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	14.98 m to 16.50 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Springer-Gelhar
Solution Type:	Inertial
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

1×10^{-4} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

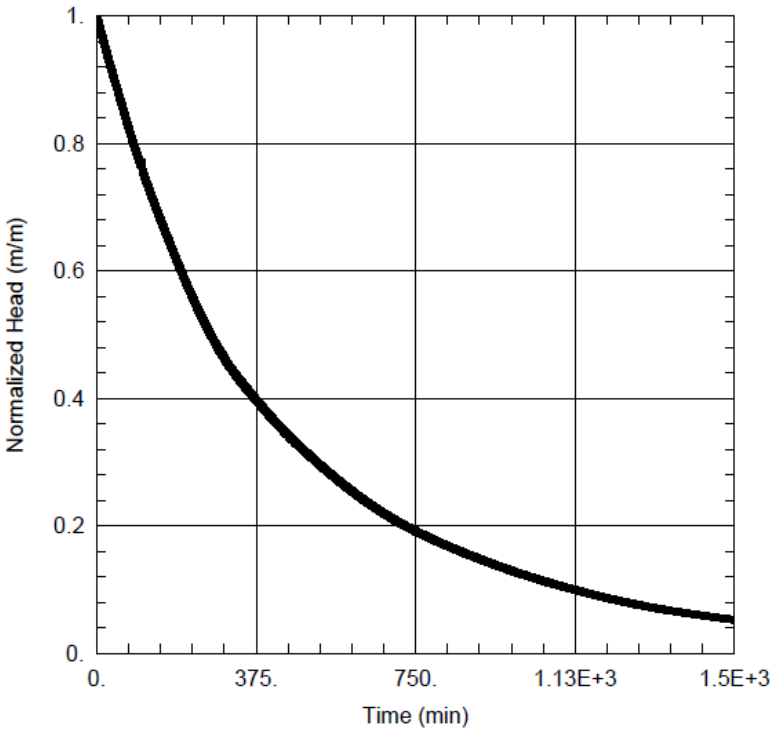
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-22
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-14B

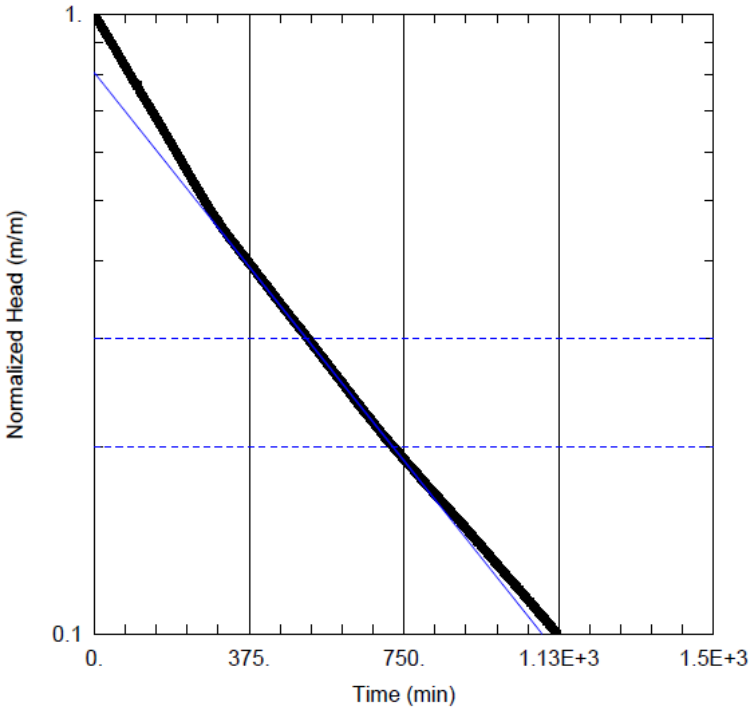
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-26

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-15A
Date of Test:	June 15, 2020
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	0.68 mbgs
Initial Displacement:	33.35 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	33.77 m to 35.29 m
Geology:	Shaley Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

7×10^{-9} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

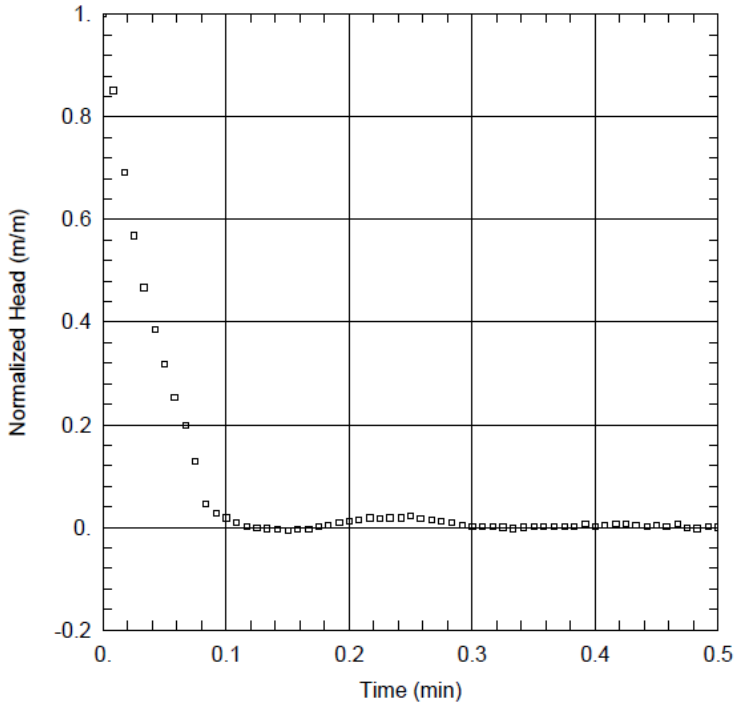
YYYY-MM-DD	2022-01-25
PREPARED	NU
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-15A

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-27

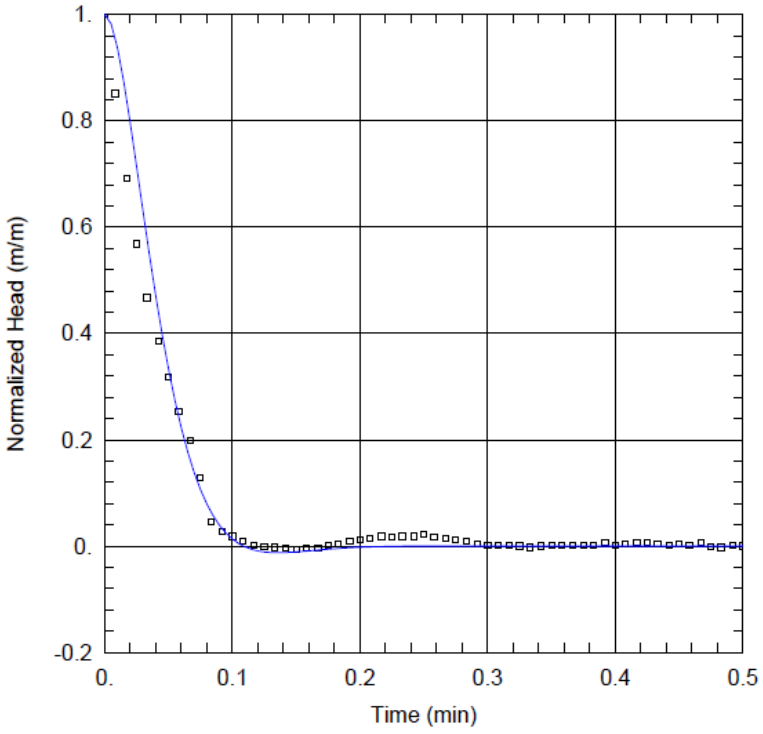
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

TEST INFORMATION:



Test Well:	MW20-15B
Date of Test:	June 19, 2022
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	0.58 mbgs
Initial Displacement:	1.68 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	28.81 m to 30.33 m
Geology:	Dolostone, Gasport Fm

SOLUTION:



Solution Method:	Butler
Solution Type:	Inertial
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

9×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

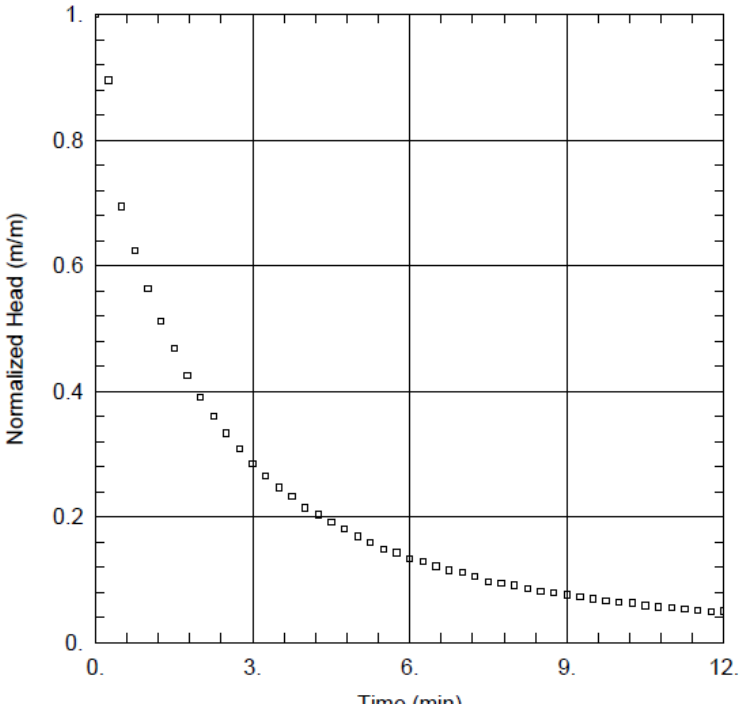
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-24
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-15B

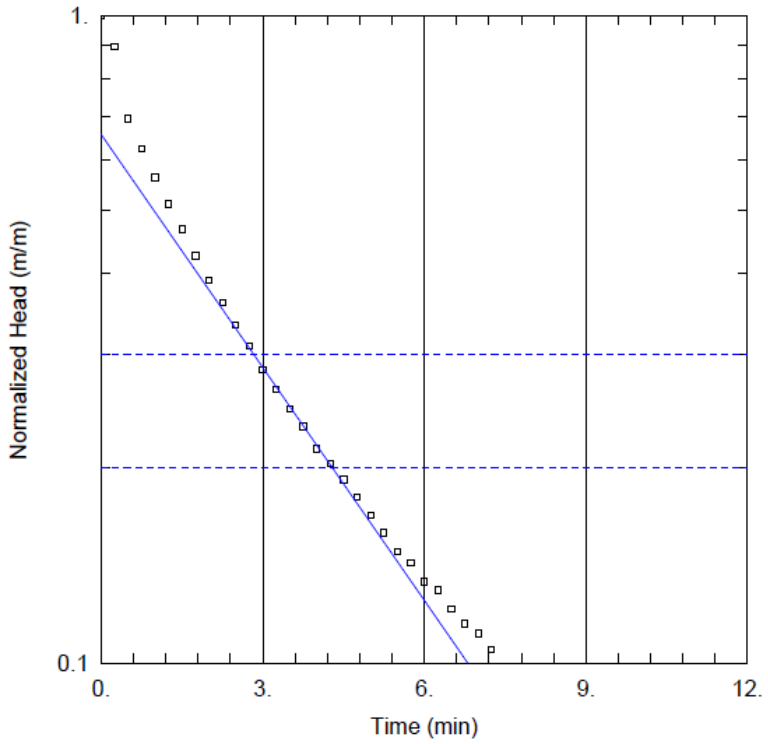
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-28

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-15C
Date of Test:	June 15, 2020
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	1.05 mbgs
Initial Displacement:	1.30 m
Casing Radius:	0.013 m
Borehole Radius:	0.083 m
Well Screen Interval:	2.74 m to 4.27 m
Geology:	Clayey Sand, Overburden



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

1×10^{-6} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

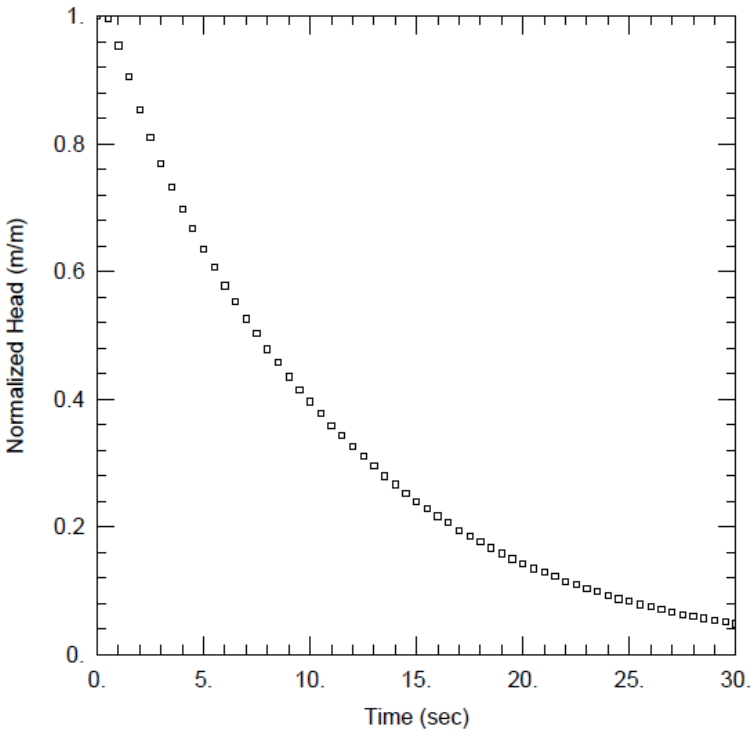
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-28
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-15C

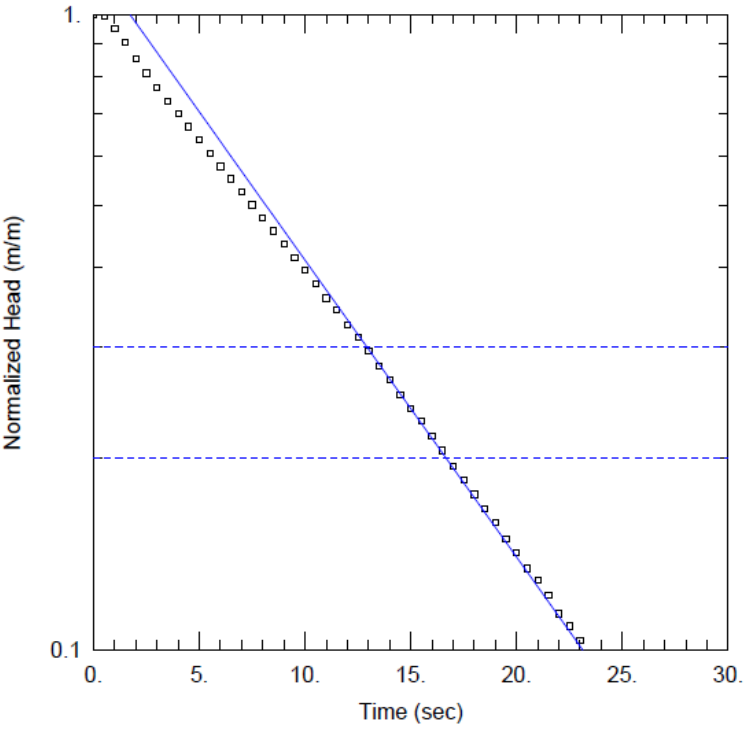
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-29

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-16A
Date of Test:	June 19, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	1.54 mbgs
Initial Displacement:	3.41 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	34.84 m to 36.36 m
Geology:	Shaley Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

2×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

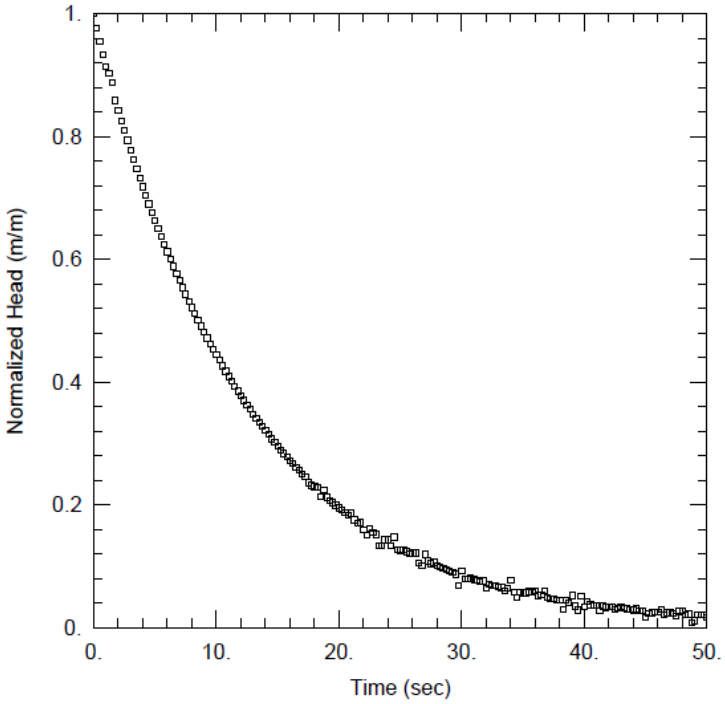
YYYY-MM-DD	2022-01-24
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-16A

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-30

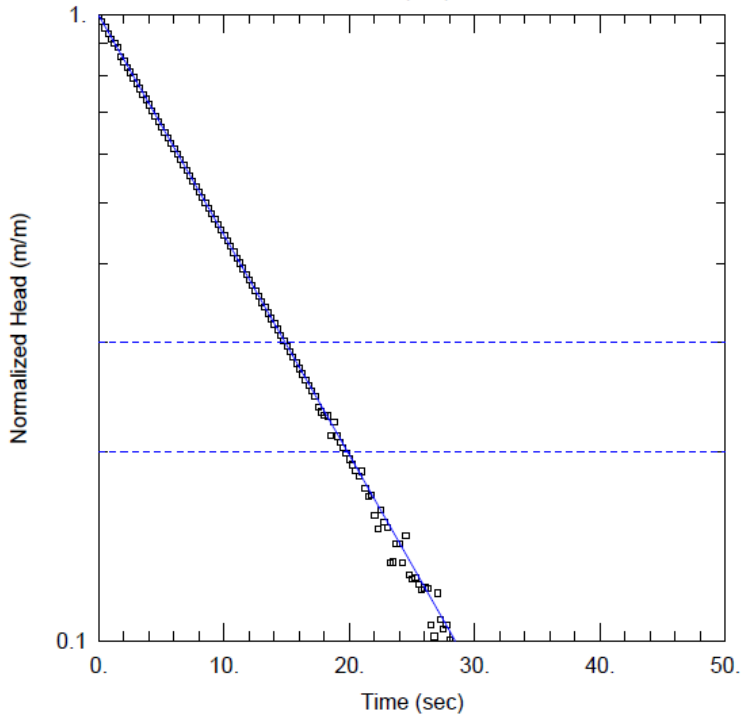
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

TEST INFORMATION:



Test Well:	MW20-16B
Date of Test:	June 19, 2020
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	1.42 mbgs
Initial Displacement:	11.30 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	16.80 m to 18.33 m
Geology:	Dolostone, Gasport Fm

SOLUTION:



Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

1×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

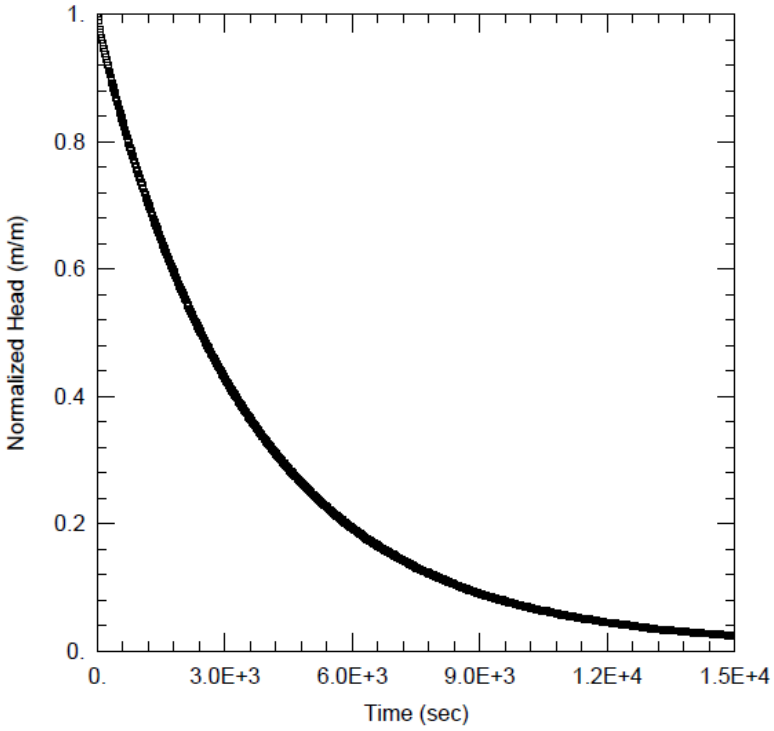
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-24
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS
MONITORING WELL MW20-16B

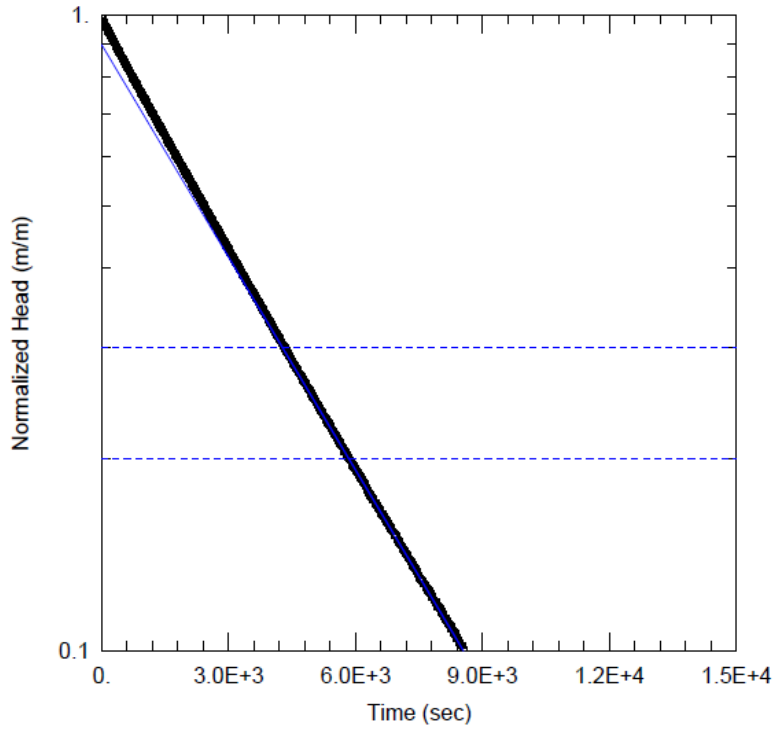
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-17A
Date of Test:	June 8, 2020
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	4.27 mbgs
Initial Displacement:	9.60 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	25.64 m to 27.16 m
Geology:	Shaley Dolostone



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

6×10^{-8} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

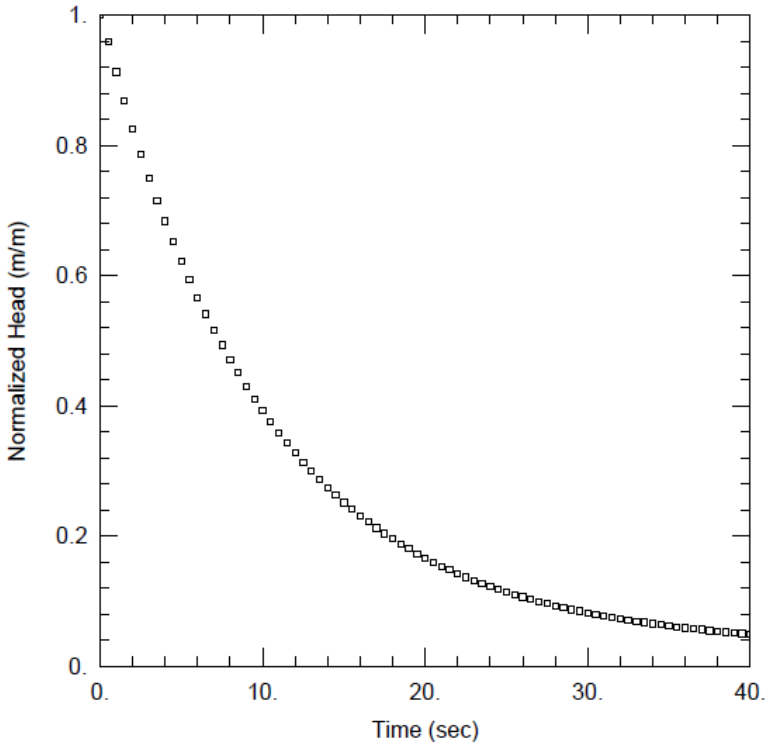
YYYY-MM-DD	2022-01-24
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-17A

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-32

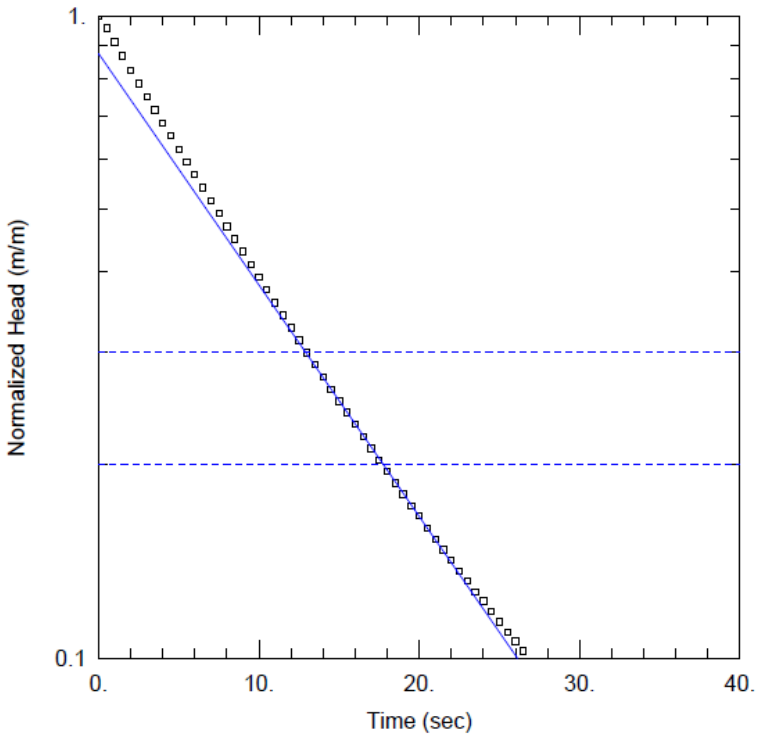
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

TEST INFORMATION:



Test Well:	MW20-17B
Date of Test:	June 5, 2020
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	4.34 mbgs
Initial Displacement:	3.77 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	12.75 m to 14.27 m
Geology:	Dolostone, Gasport Fm

SOLUTION:



Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-5} m/s

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

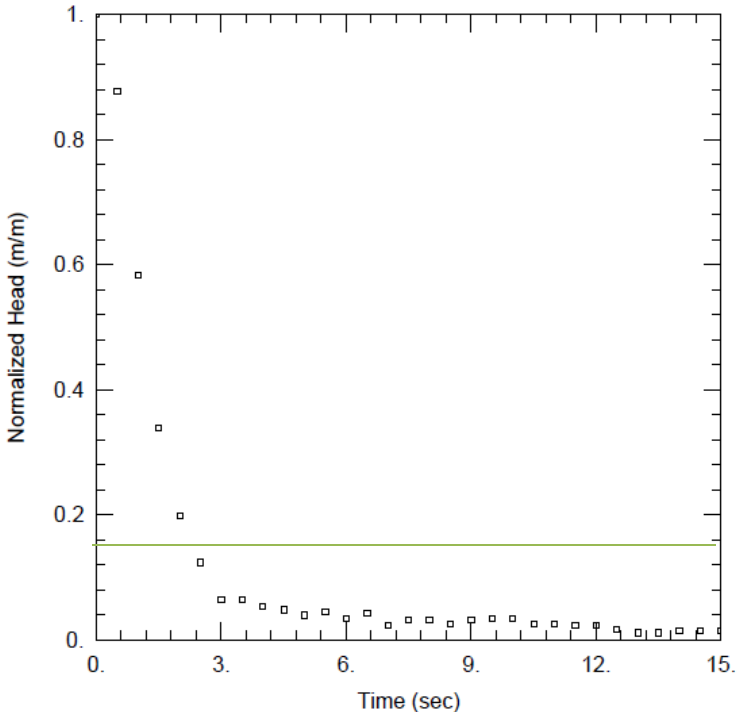
YYYY-MM-DD	2022-01-24
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS
MONITORING WELL MW20-17B

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-33

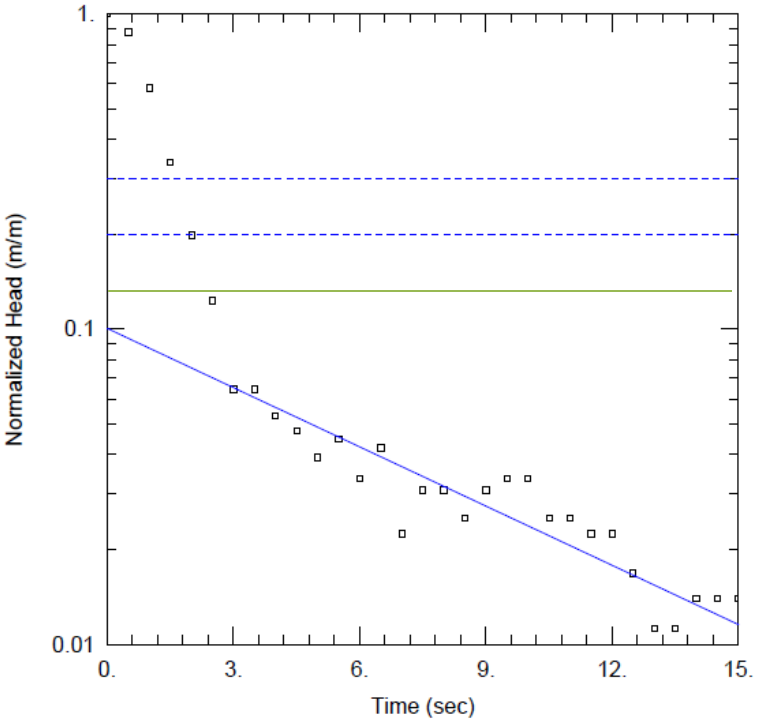
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

TEST INFORMATION:



Test Well:	MW20-18
Date of Test:	June 19, 2020
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	12.07 mbgs
Initial Displacement:	0.36 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	12.42 m to 13.94 m
Geology:	Dolostone, Gasport Fm

SOLUTION:



Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Note: Fitted to later time data when water level was above the sand pack.

Hydraulic Conductivity (K) =

2×10^{-5} m/s

Water Level Measurement

Solution Match Line

Top of Sand Pack Annotation Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

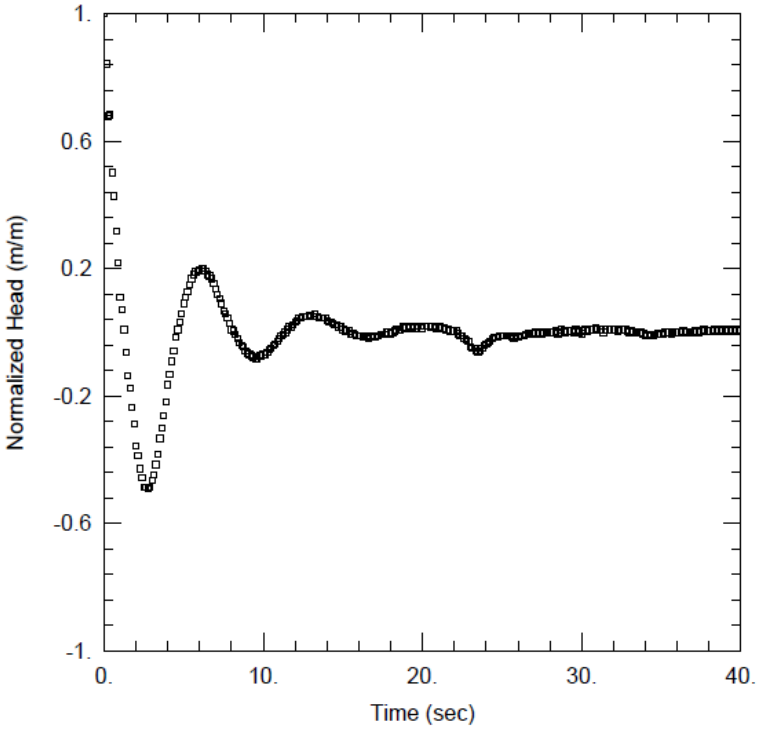
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-25
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-18

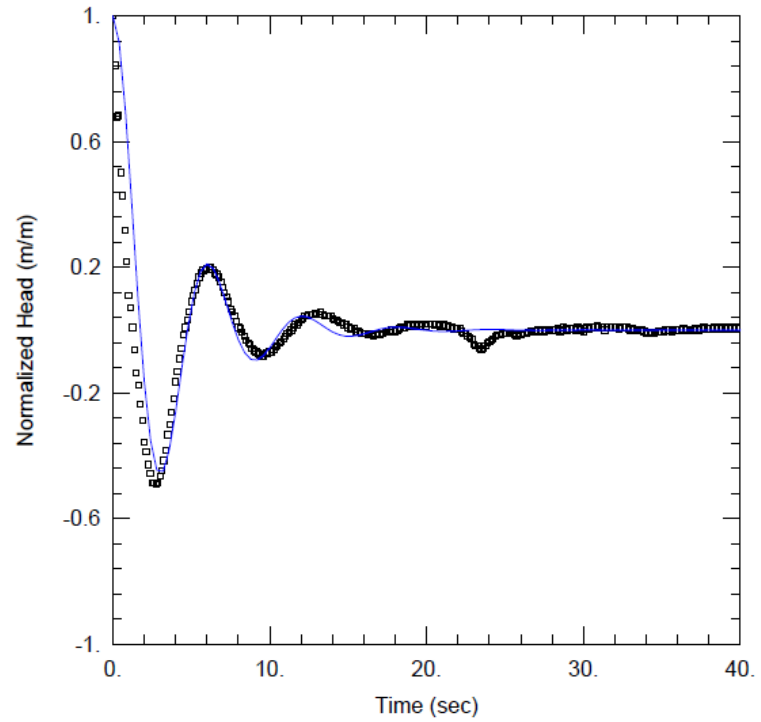
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-34

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-19A
Date of Test:	June 24, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	6.01 mbgs
Initial Displacement:	0.24 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	15.75 m to 17.27 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Springer-Gelhar
Solution Type:	Inertial
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

4×10^{-4} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

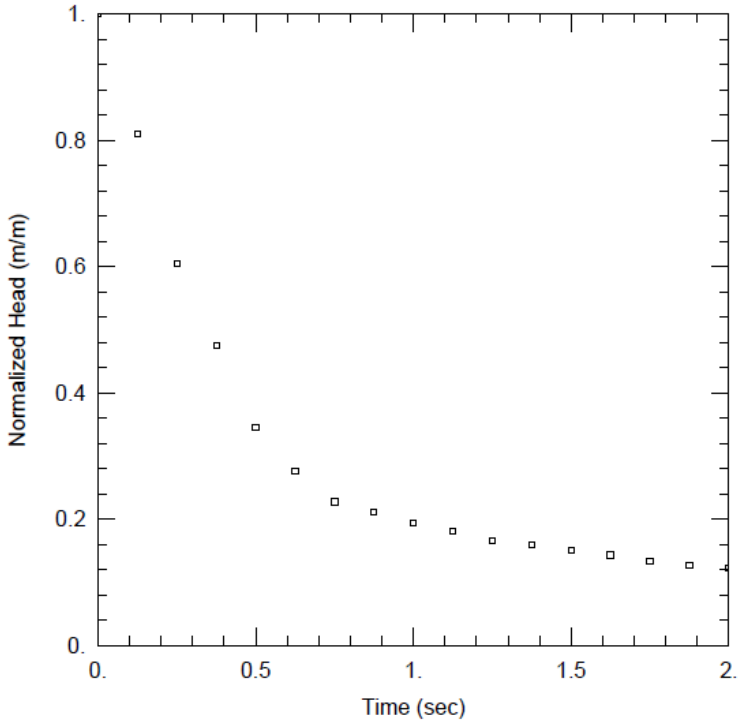
CONSULTANT
GOLDER
MEMBER OF WSP

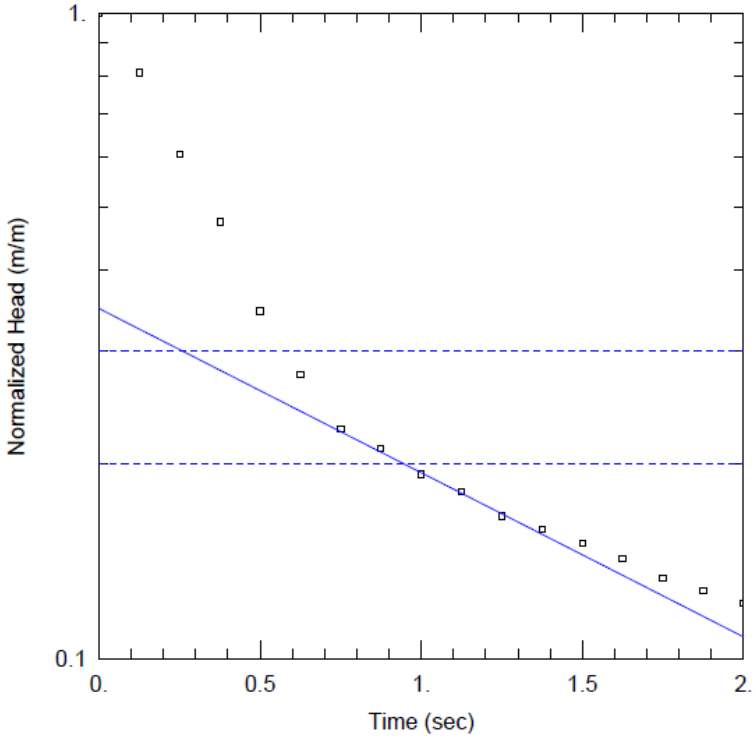
YYYY-MM-DD	2022-01-24
PREPARED	VRP
DESIGN	VRP
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-19A

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-35

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A





TEST INFORMATION:

Test Well:	MW20-19B
Date of Test:	June 24, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	6.01 mbgs
Initial Displacement:	1.04 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	8.00 m to 9.52 m
Geology:	Dolostone, Gasport Fm

SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

1×10^{-4} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

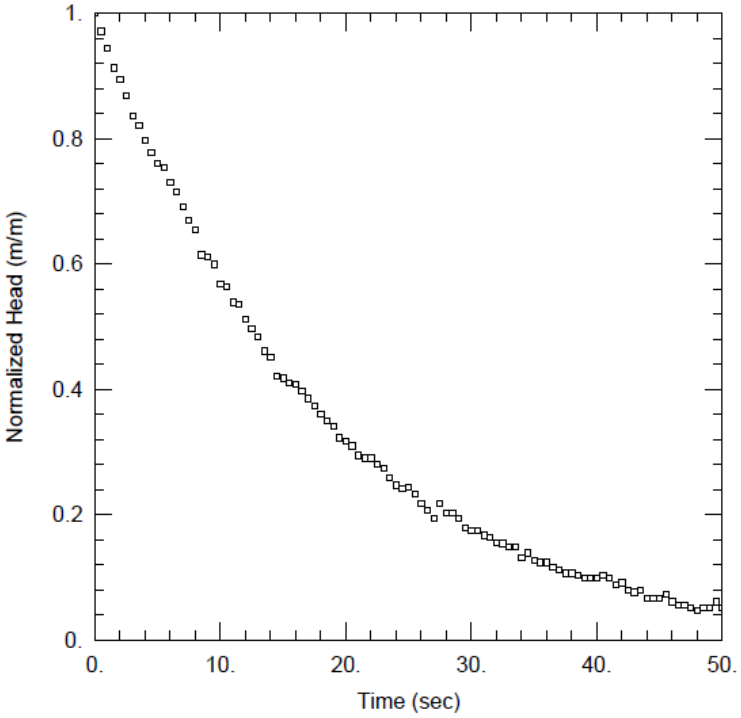
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-24
PREPARED	VRP
DESIGN	VRP
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-19B

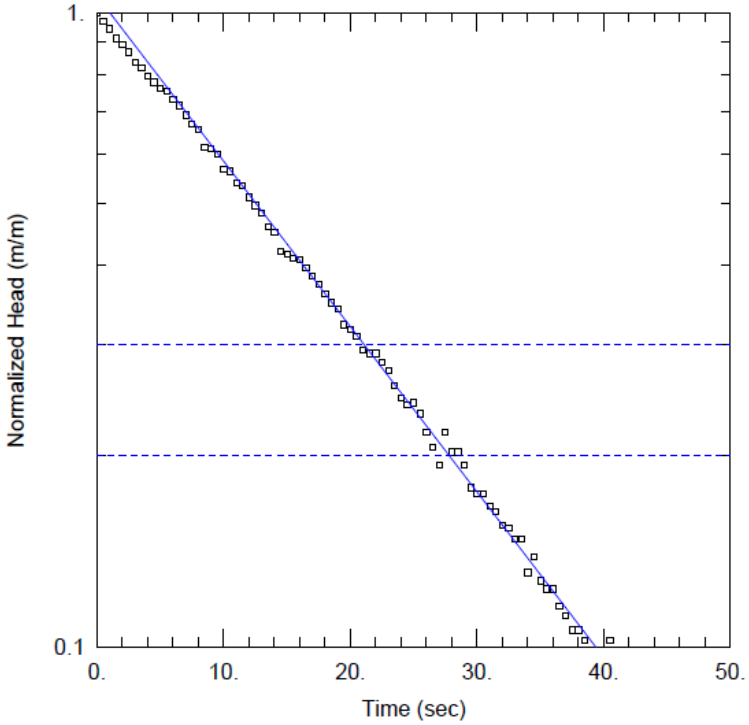
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-36

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-20A
Date of Test:	June 24, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	-0.99 mbgs
Initial Displacement:	0.53 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	25.33 m to 26.85 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

1×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

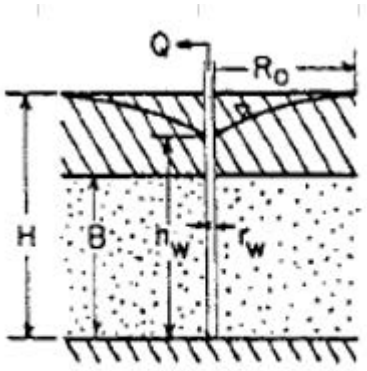
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-24
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-20A

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-37

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



Radial flow, confined aquifer

$$Q_w = \frac{2\pi KB(H - h_w)}{\ln R_0 / r_w}$$

$$R_0 = 3000(H - h)\sqrt{K}$$

Where:

K = Hydraulic conductivity (m/s)

Q = Flow rate (2.2 L/min; 3.7 x 10^{-5} m^3/s)

B = Aquifer thickness, from base of screen (12.35 m)

H = Static groundwater level, from base of screen (16.37 m)

h = Dewatering height, above the base of screen (15.62 m)

r_w = Well Radius (0.013 m)

R_o = radius of influence (4.3 m).

TEST INFORMATION:

Test Well:	MW20-20B
Date of Test:	June 24, 2021
Test Type:	Rising Head Test
Test Method:	Constant Rate
Static Water Level:	-1.88 mbgs
Displacement:	0.75 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	12.97 to 14.49 m
Geology:	Dolostone, Gasport Formation

SOLUTION:

Solution Method:	Radial Flow (Powers, 2007)
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

4 x 10^{-6} m/s

Water Level Measurement

Solution Match Line

CLIENT
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CONSULTANT
GOLDER
MEMBER OF WSP

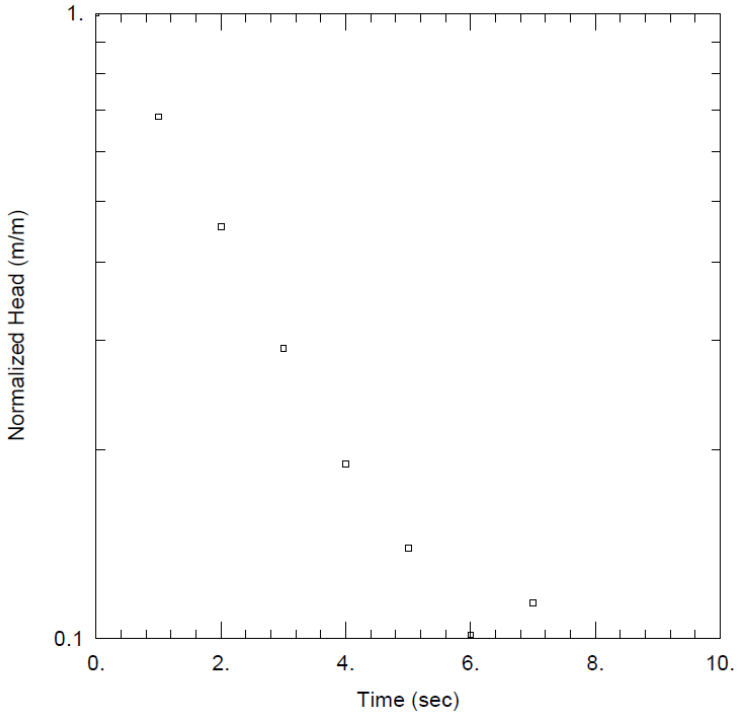
YYYY-MM-DD	2022-01-25
PREPARED	PGM
DESIGN	PGM
REVIEW	JLH
APPROVED	

PROJECT
CALEDON PIT / QUARRY

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS
MONITORING WELL MW20-20B

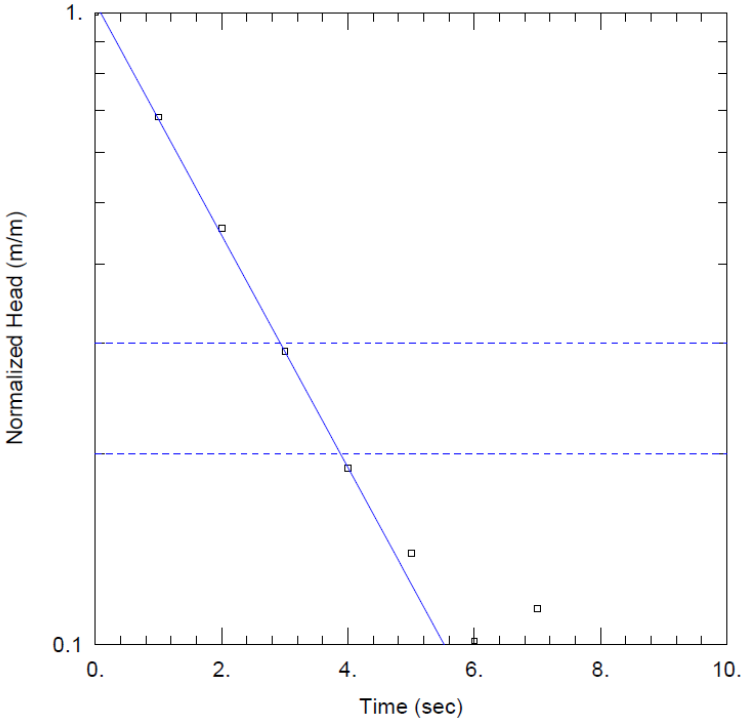
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-38

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-20C
Date of Test:	March 16, 2022
Test Type:	Rising Head Test
Test Method:	Bailer Rising Head Test
Static Water Level:	2.74 mbtoc
Initial Displacement:	0.08 m
Casing Radius:	0.013 m
Borehole Radius:	0.083 m
Well Screen Interval:	2.42 to 3.95 m
Geology:	Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

5×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

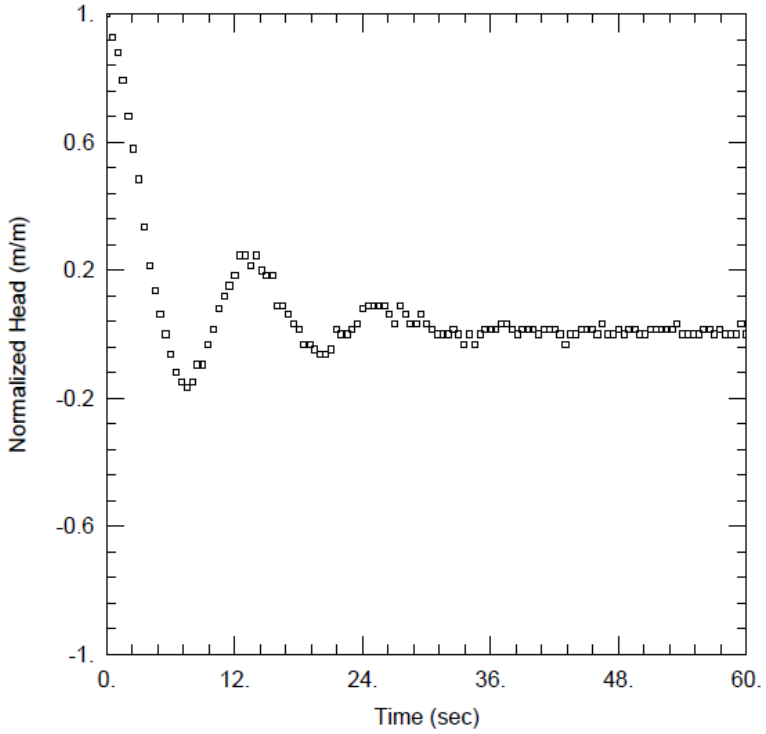
YYYY-MM-DD	2022-05-02
PREPARED	PGM
DESIGN	PGM
REVIEW	###
APPROVED	

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-20C

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-39

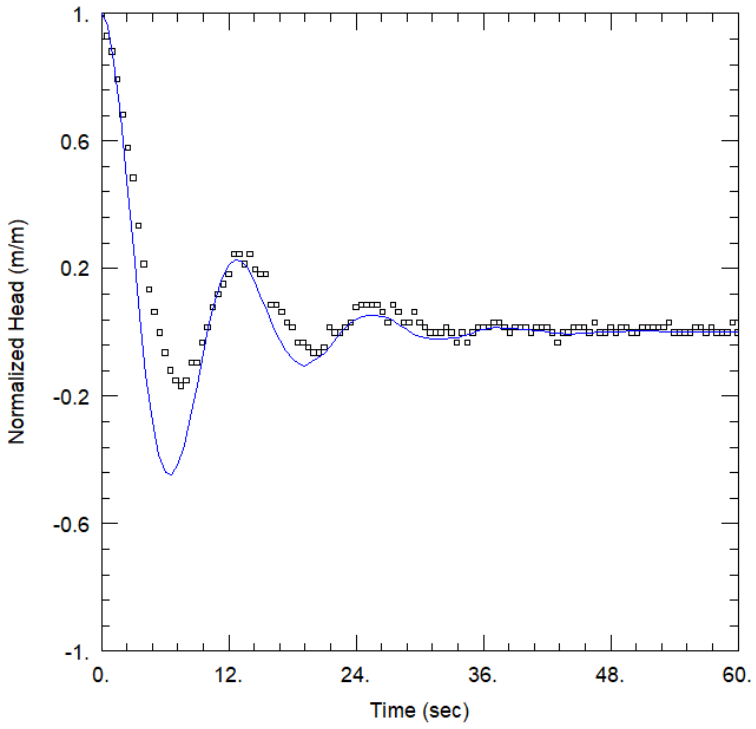
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

TEST INFORMATION:



Test Well:	MW20-21A
Date of Test:	December 17, 2021
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	0.88 mbgs
Initial Displacement:	0.13 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	33.27 to 18.63 m
Geology:	Dolostone, Gasport Fm.

SOLUTION:



Solution Method:	Butler-Zhan
Solution Type:	Inertial
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

2×10^{-4} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

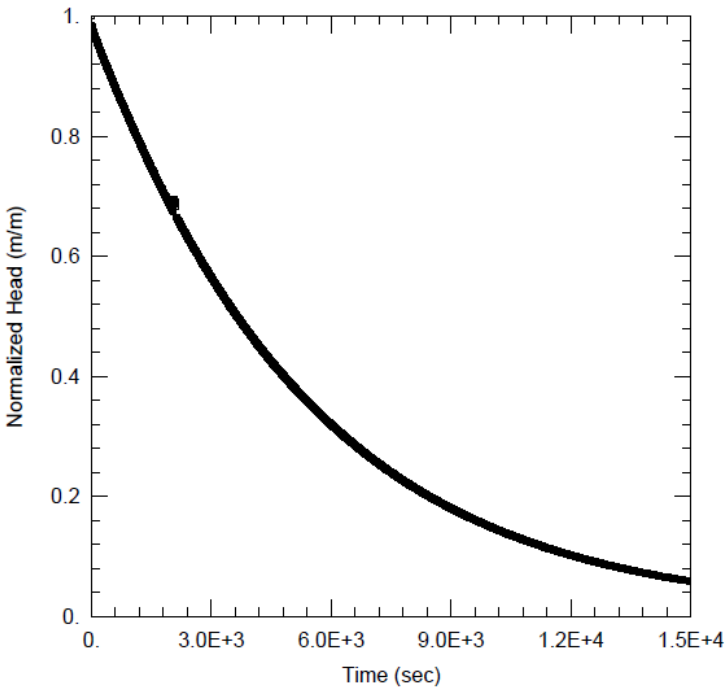
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-17
PREPARED	PGM
DESIGN	AIM
REVIEW	JLH
APPROVED	

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-21A

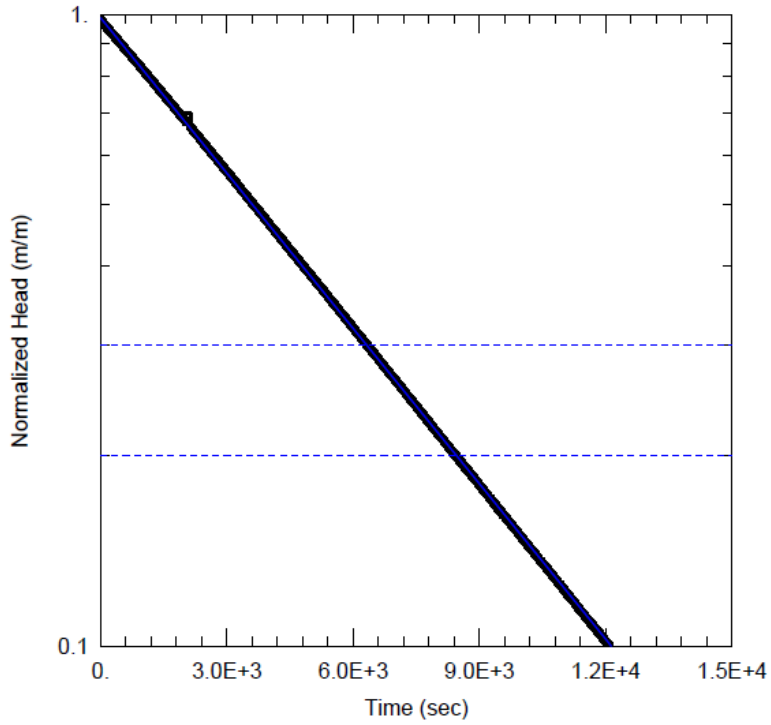
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-40

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-21B
Date of Test:	June 28, 2021
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	1.29 mbgs
Initial Displacement:	13.54 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	15.77 m to 17.29 m
Geology:	Dolostone, Gasport Fm.



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

6×10^{-8} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

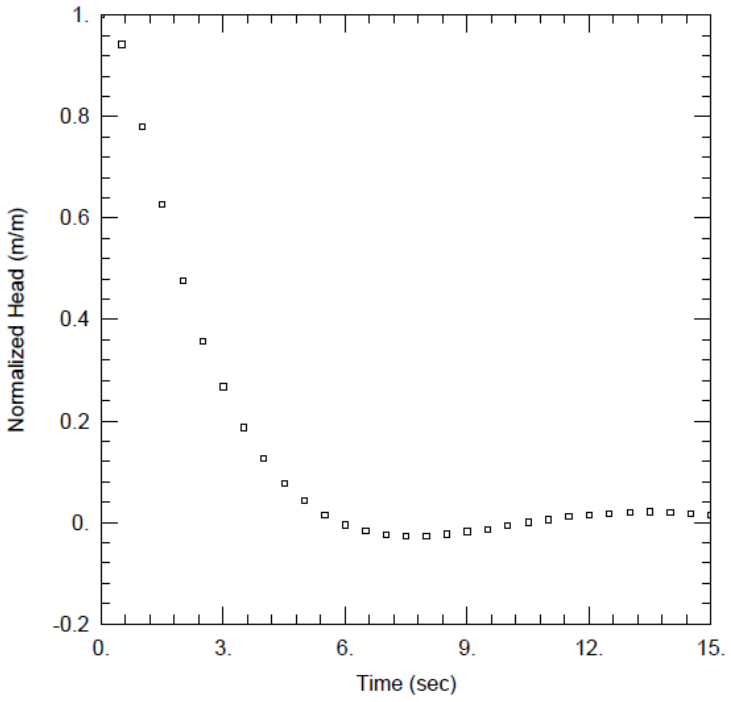
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-24
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-21B

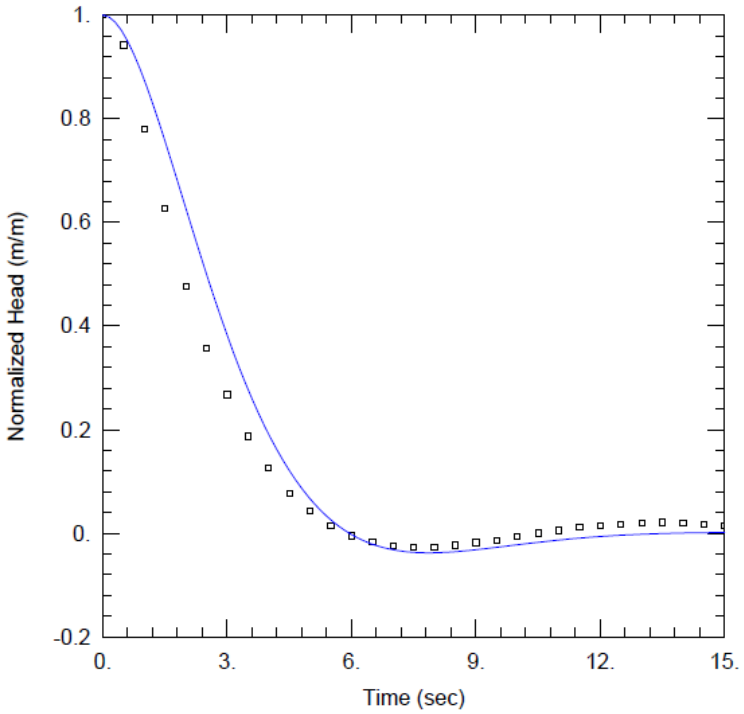
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-41

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-22A
Date of Test:	December 17, 2021
Test Type:	Rising Head Test
Test Method:	Pneumatic
Static Water Level:	-0.16 mbgs
Initial Displacement:	1.26 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	23.48 to 25.00 m
Geology:	Dolostone, Goat Island Fm



SOLUTION:

Solution Method:	Butler
Solution Type:	Inertial
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

9×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

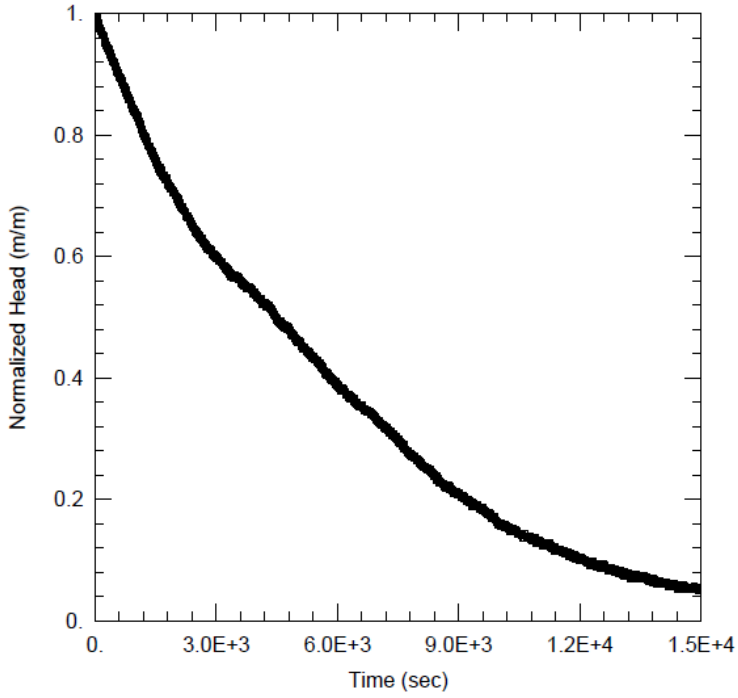
YYYY-MM-DD	2022-01-17
PREPARED	PGM
DESIGN	PGM
REVIEW	JLH
APPROVED	

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-22A

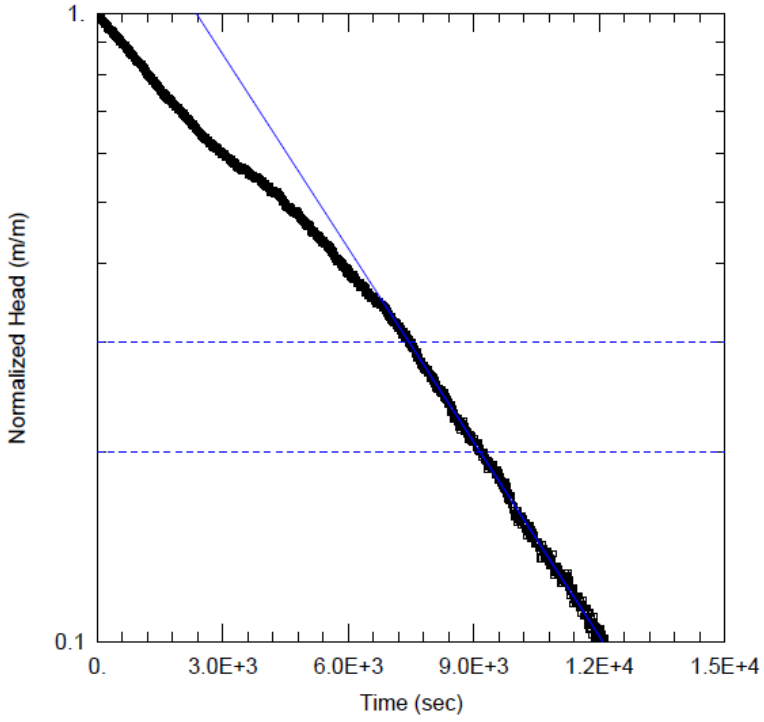
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-42

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0

TEST INFORMATION:



Test Well:	MW20-22B
Date of Test:	June 23, 2021
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	6.34 mbgs
Initial Displacement:	0.83 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	6.89 m to 8.41 m
Geology:	Dolostone, Goat Island Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

4×10^{-8} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

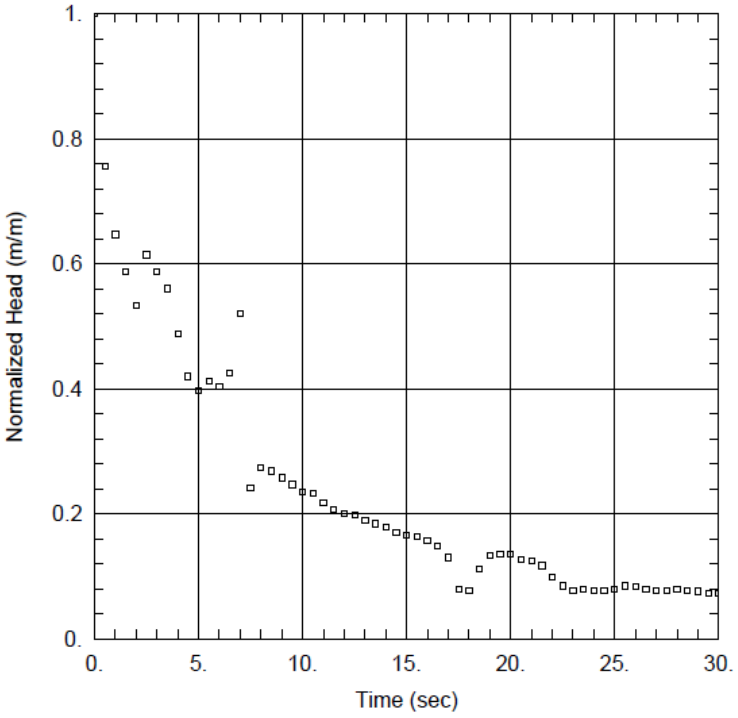
CONSULTANT
GOLDER
MEMBER OF WSP

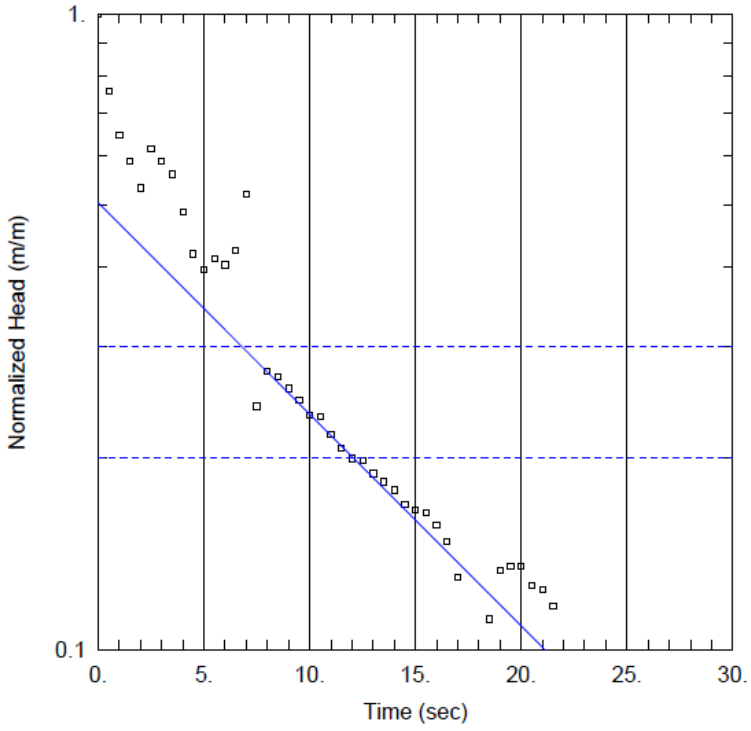
YYYY-MM-DD	2022-01-24
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-22B

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-43

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A





TEST INFORMATION:

Test Well:	MW20-23A
Date of Test:	June 23, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	3.66 mbgs
Initial Displacement:	0.56 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	22.59 m to 24.11 m
Geology:	Shaley Dolostone, Gasport Fm

SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

2×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

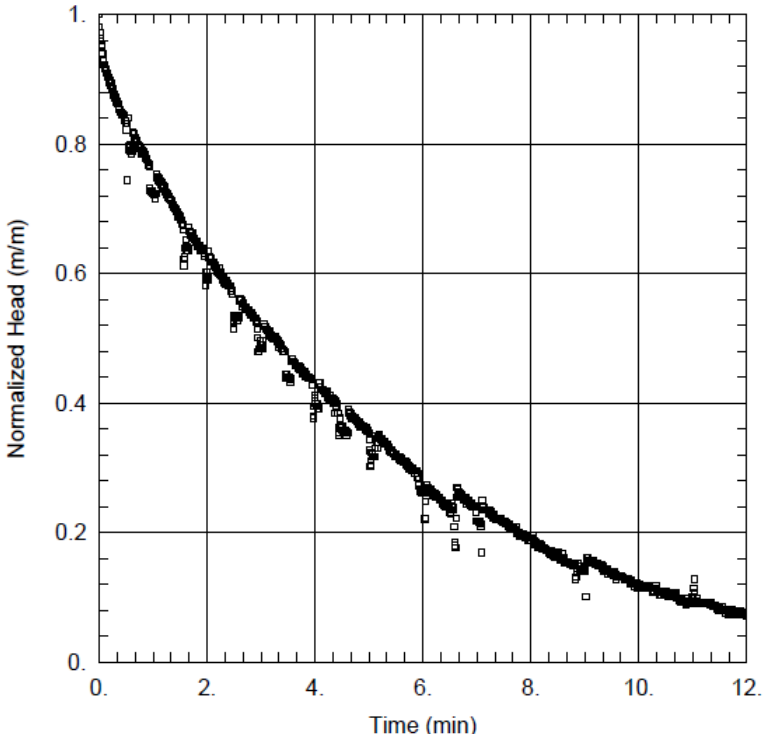
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-24
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS
MONITORING WELL MW20-23A

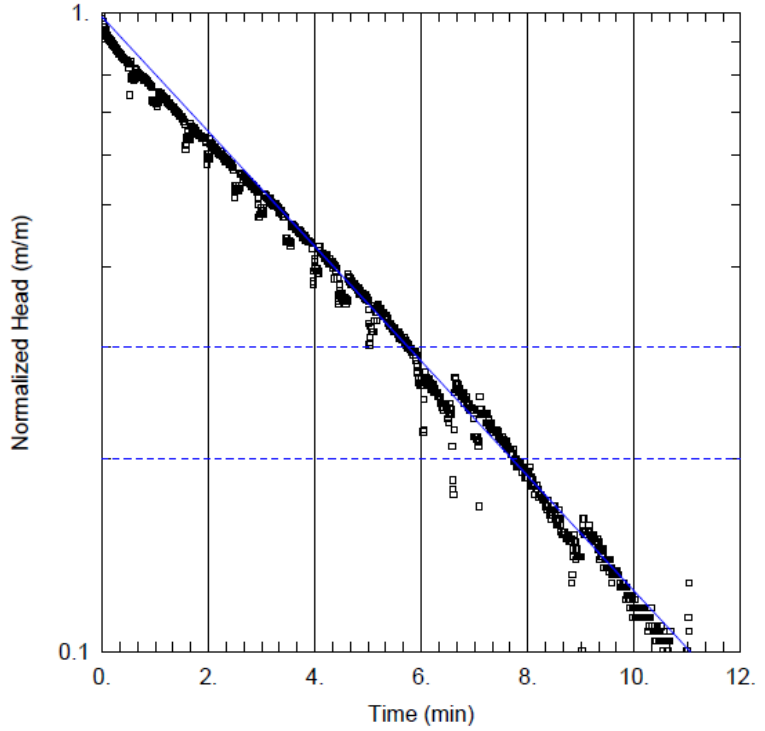
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-44

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-23B
Date of Test:	June 23, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	3.72 mbgs
Initial Displacement:	0.54 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	14.68 m to 16.20 m
Geology:	Dolostone, Goat Island Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

6×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

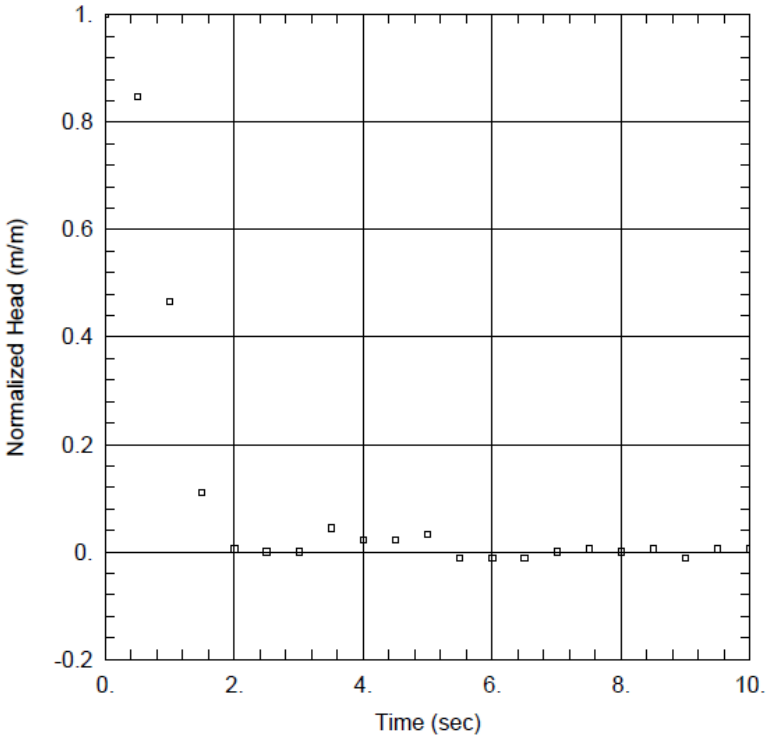
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-25
PREPARED	NU
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-23B

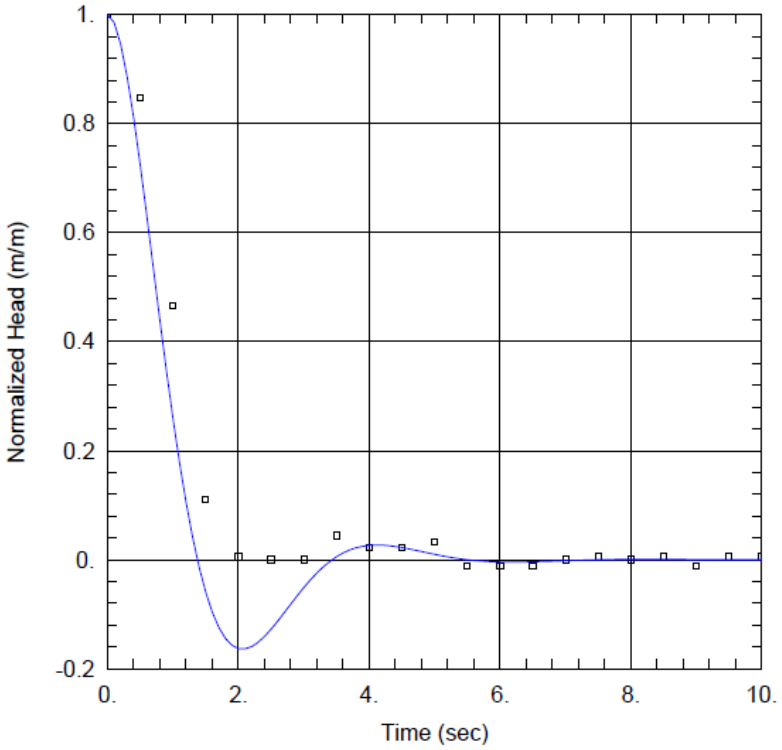
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-45

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-23C
Date of Test:	June 23, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	3.62 mbgs
Initial Displacement:	0.18 m
Casing Radius:	0.013 m
Borehole Radius:	0.083 m
Well Screen Interval:	4.57 m to 6.09 m
Geology:	Silty Sand Till and Gravel, Overburden



SOLUTION:

Solution Method:	Springer-Gelhar
Solution Type:	Inertial
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

5×10^{-4} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

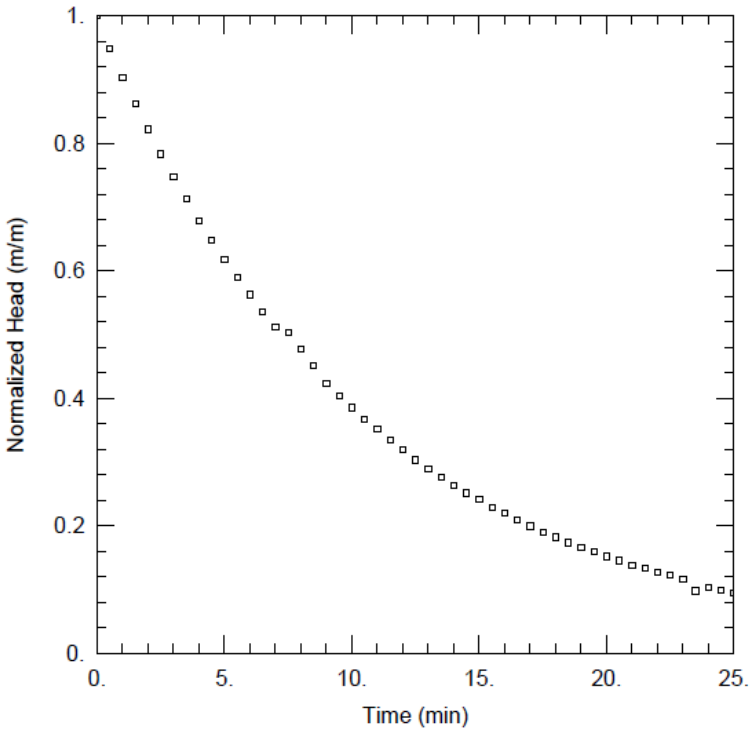
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-28
PREPARED	NU
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-23C

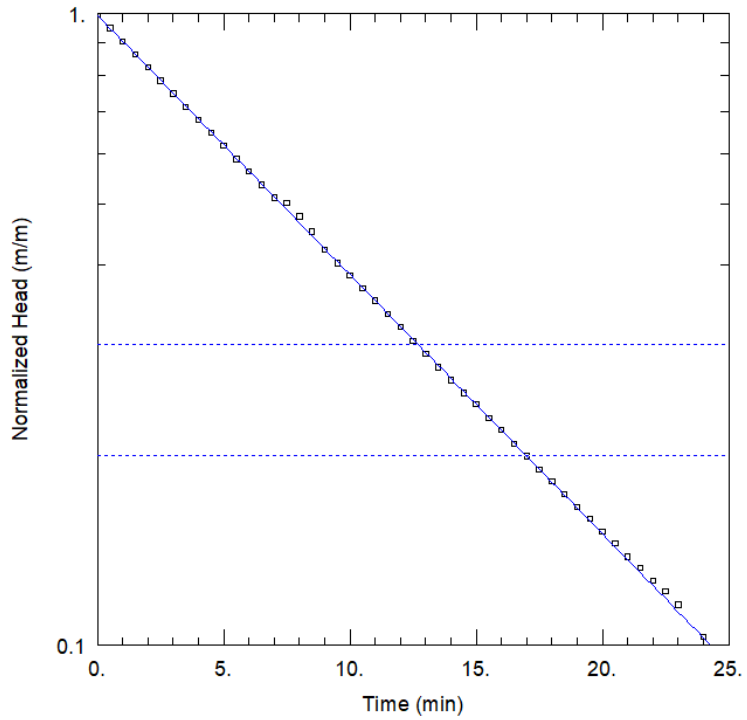
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-46

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-24A
Date of Test:	December 17, 2021
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	2.87 m
Initial Displacement:	5.09 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	33.81 to 35.33 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

4×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

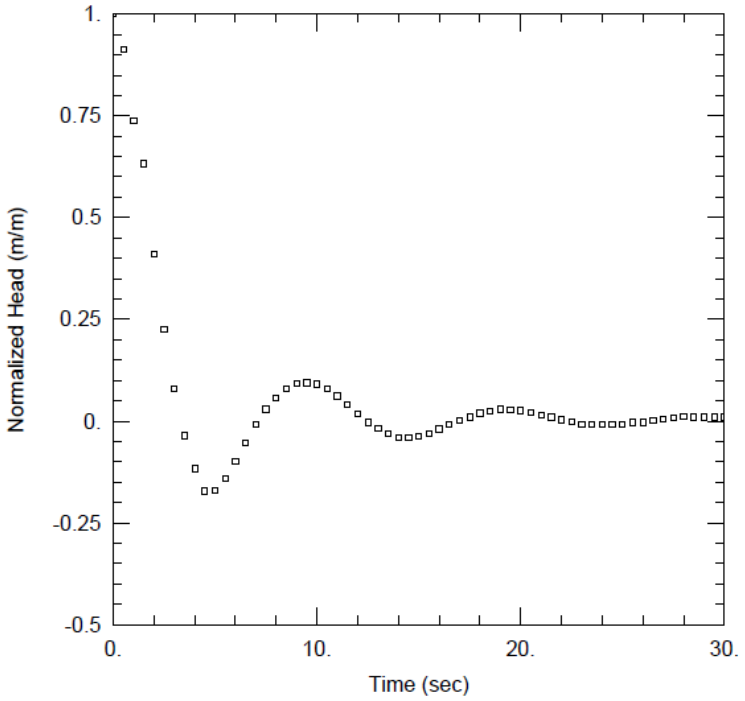
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-17
PREPARED	PGM
DESIGN	PGM
REVIEW	JLH
APPROVED	

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-24A

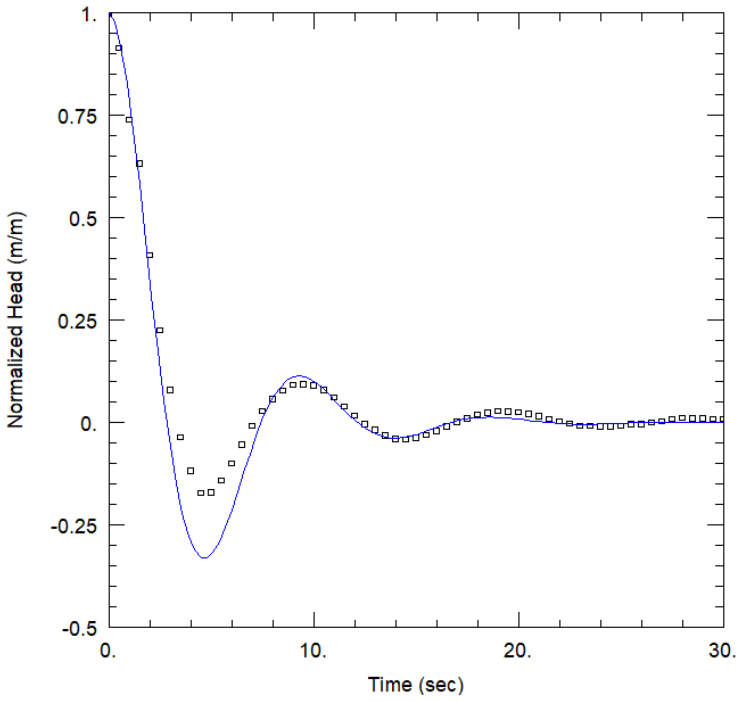
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-47

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-24B
Date of Test:	December 17, 2021
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	2.52 mbgs
Initial Displacement:	5.09 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	21.49 to 23.02 m
Geology:	Dolostone, Goat Island Fm



SOLUTION:

Solution Method:	Butler-Zhan
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

2×10^{-4} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

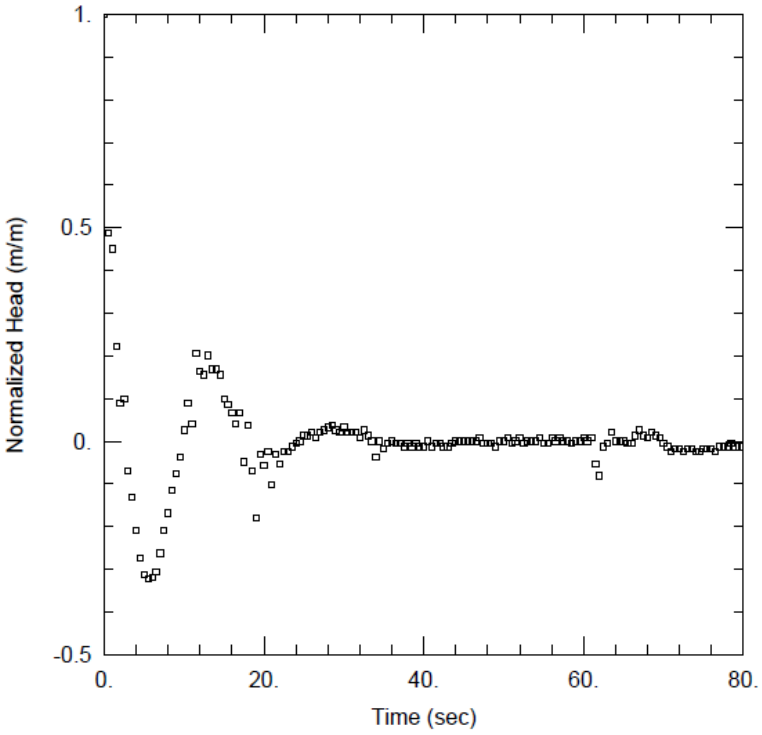
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-17
PREPARED	PGM
DESIGN	AIM
REVIEW	JLH
APPROVED	

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-24B

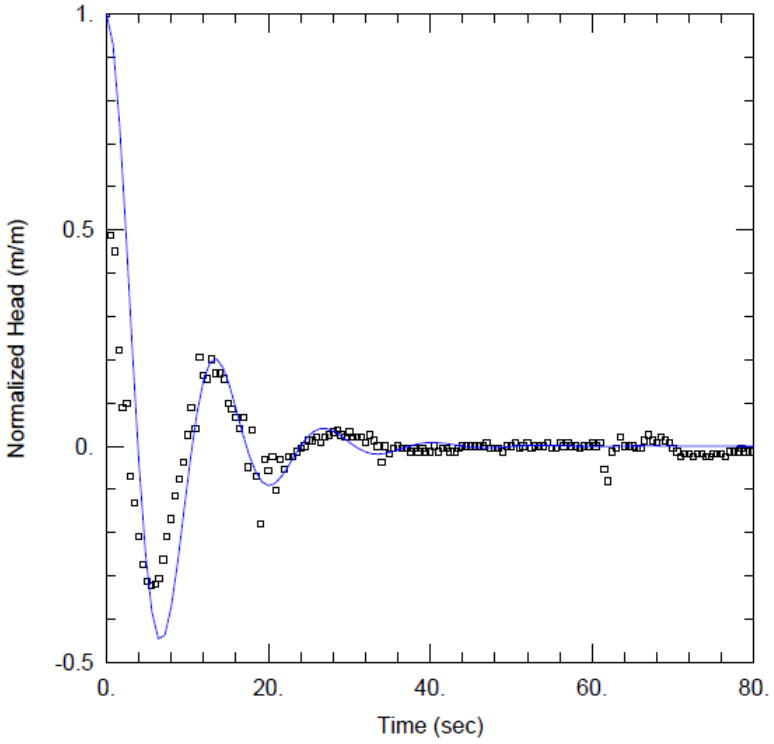
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-48

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-25A
Date of Test:	June 29, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	0.17 mbgs
Initial Displacement:	0.47 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	44.03 m to 45.55 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Inertial
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

2×10^{-4} m/s

Water Level Measurement

Solution Match Line

CLIENT

CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT

CALEDON PIT / QUARRY

CONSULTANT

GOLDER
MEMBER OF WSP

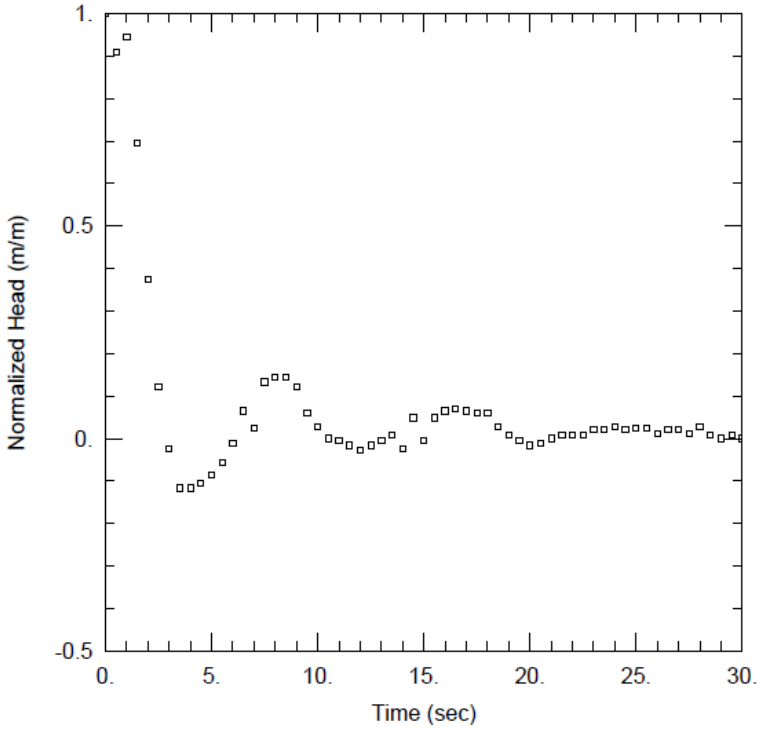
YYYY-MM-DD	2022-01-25
PREPARED	KB
DESIGN	KB
REVIEW	PGM
APPROVED	###

TITLE

SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-25A

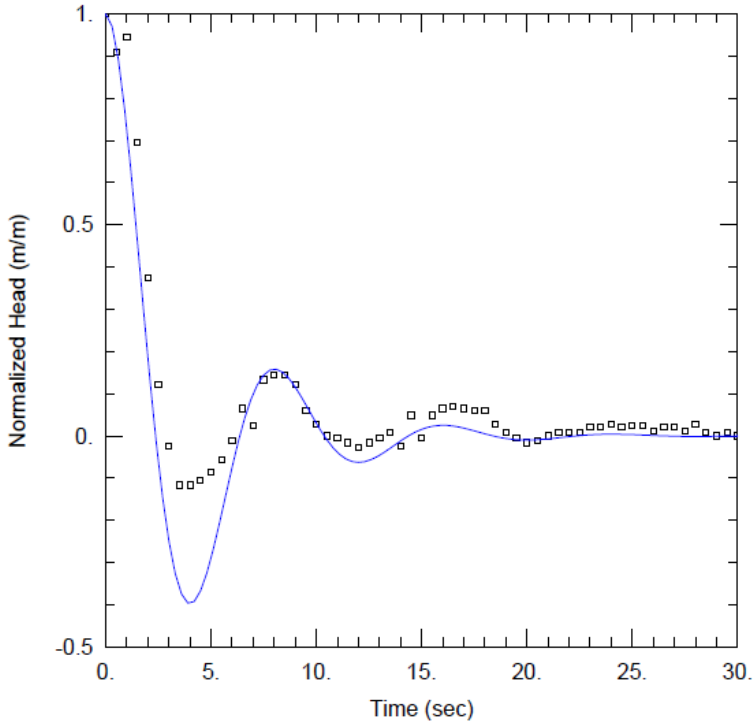
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-49

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-25B
Date of Test:	June 23, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	0.89 mbgs
Initial Displacement:	0.25 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	16.84 m to 18.36 m
Geology:	Dolostone, Goat Island Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Inertial
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

3×10^{-4} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

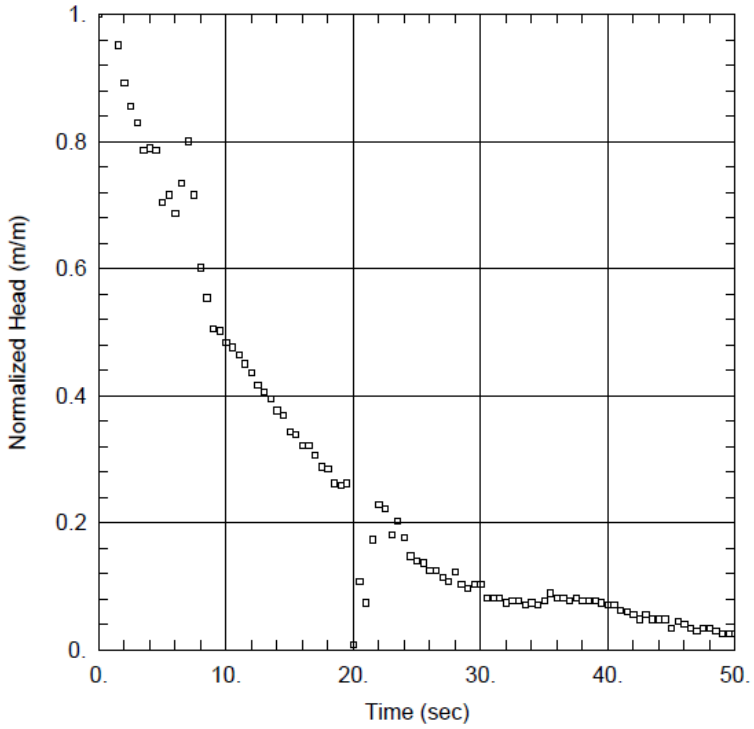
YYYY-MM-DD	2022-01-25
PREPARED	KB
DESIGN	KB
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-25B

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-50

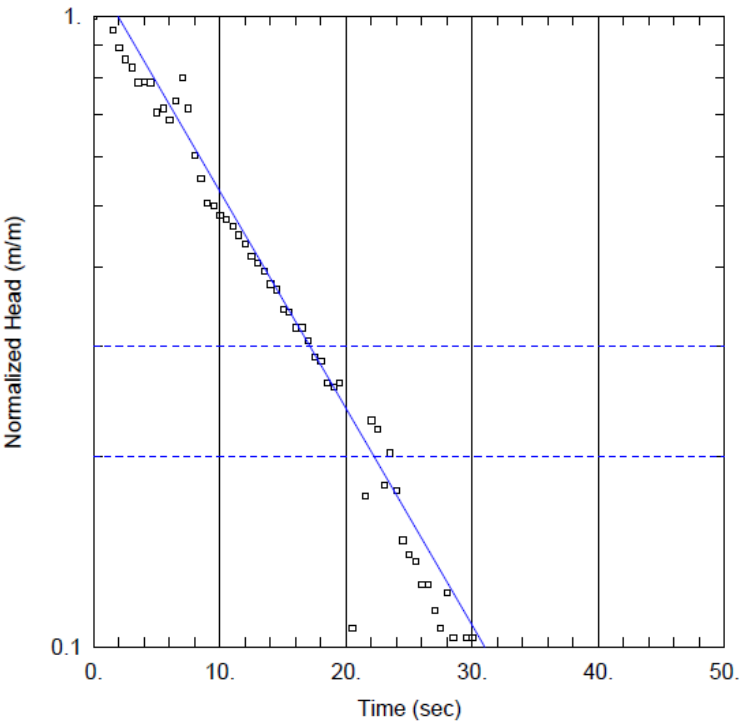
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

TEST INFORMATION:



Test Well:	MW20-26A
Date of Test:	June 28, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	5.28 mbgs
Initial Displacement:	0.52 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	55.16 m to 56.68 m
Geology:	Dolostone, Gasport Fm

SOLUTION:



Water Level Measurement

Solution Match Line

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

2×10^{-5} m/s

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

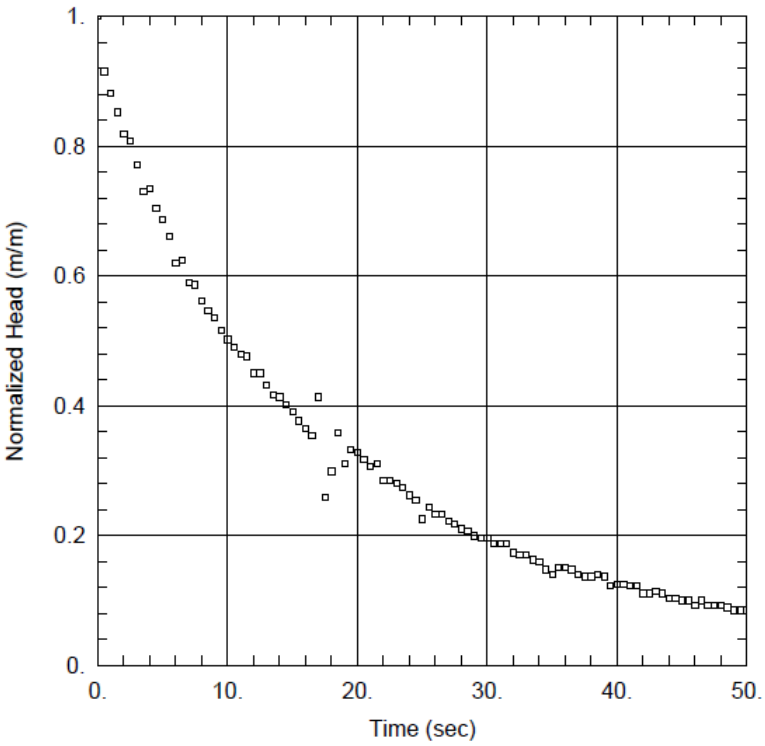
PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-28
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

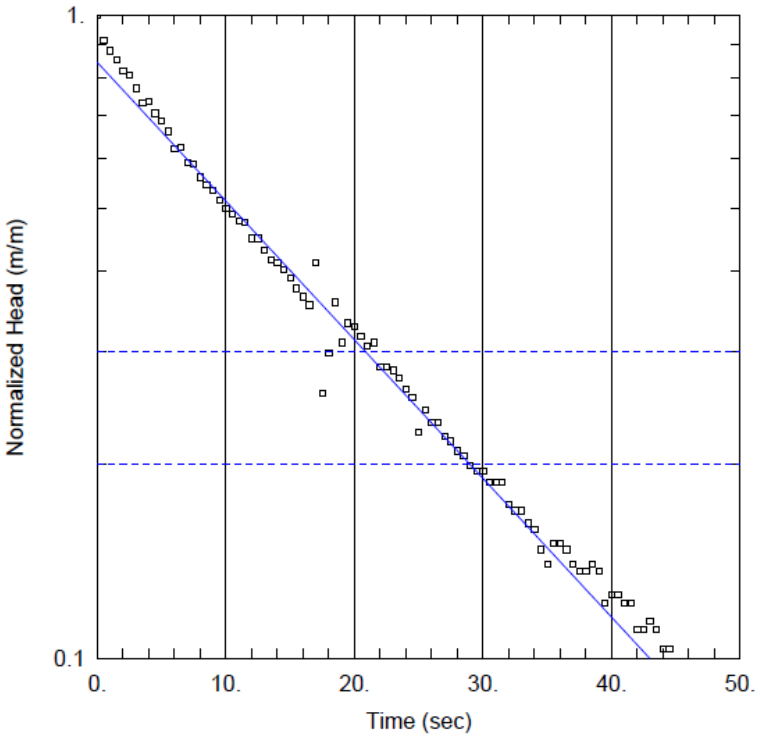
TITLE
SINGLE WELL RESPONSE TEST ANALYSIS
MONITORING WELL MW20-26A

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-51



TEST INFORMATION:

Test Well:	MW20-26B
Date of Test:	June 28, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	5.20 mbgs
Initial Displacement:	0.52 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	31.12 m to 32.64 m
Geology:	Dolostone, Goat Island Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

1×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

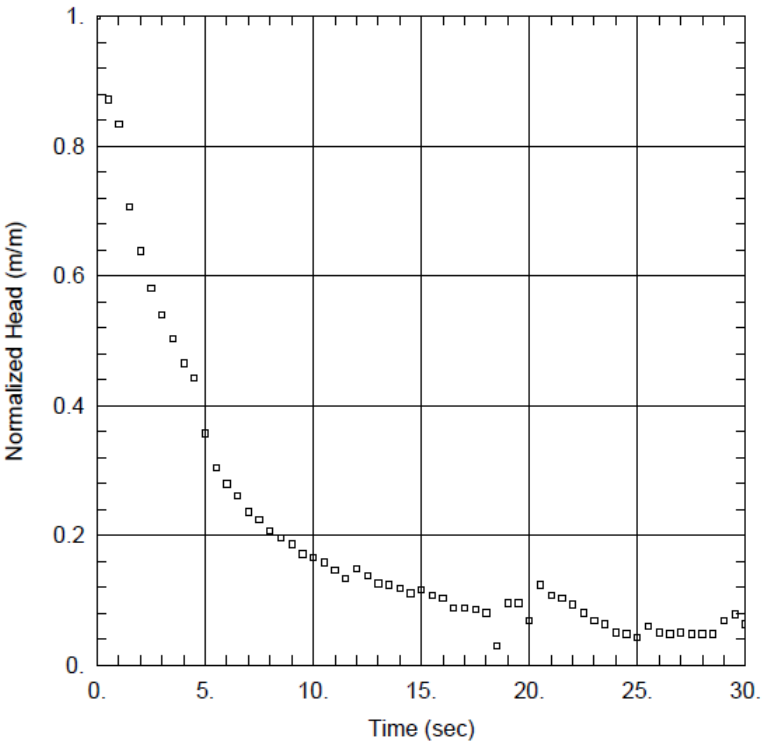
YYYY-MM-DD	2022-01-28
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-26B

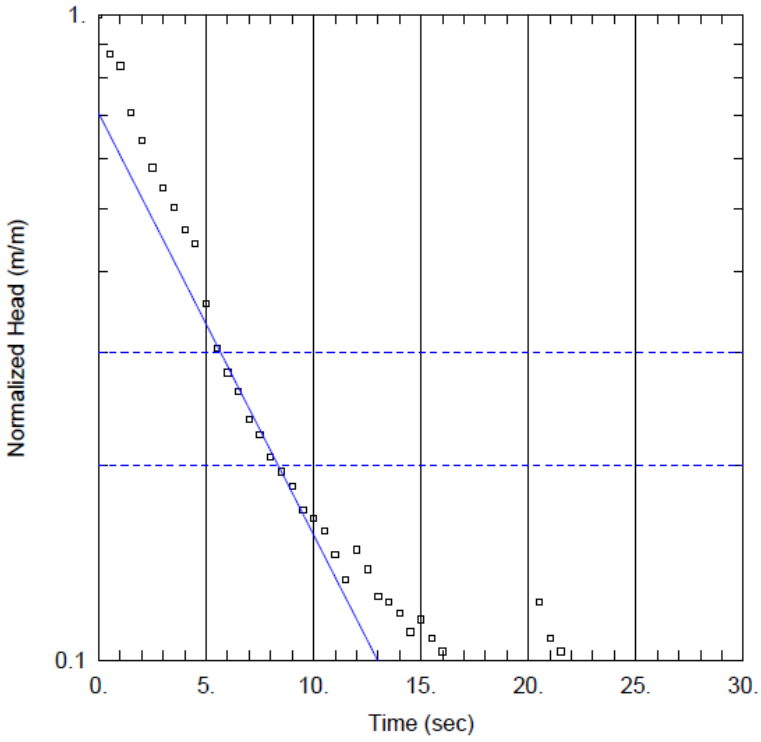
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-52

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

TEST INFORMATION:



Test Well:	MW20-26C
Date of Test:	June 28, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	3.48 mbgs
Initial Displacement:	0.40 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	7.26 m to 8.78 m
Geology:	Silty Sand Till, Overburden



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

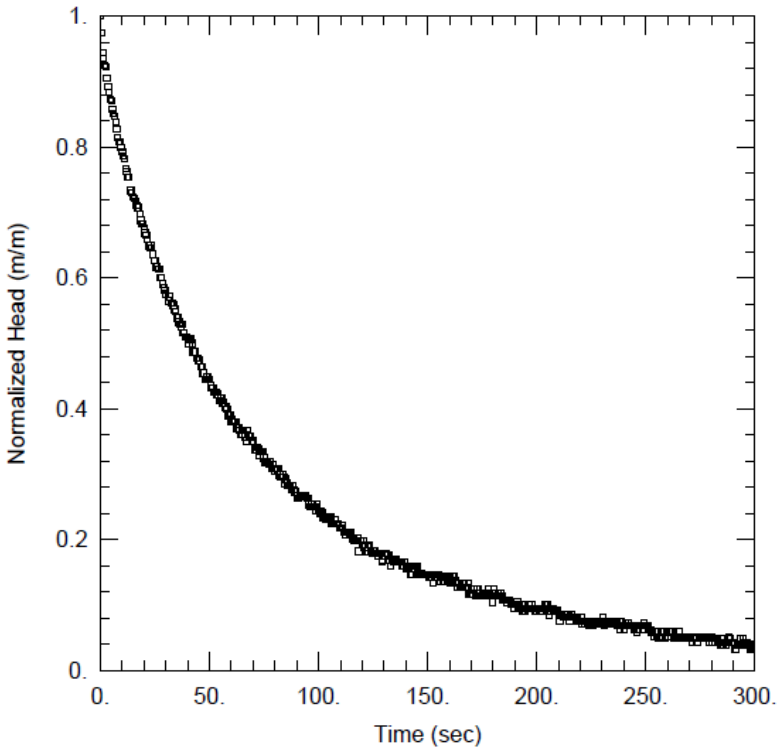
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-28
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS
MONITORING WELL MW20-26C

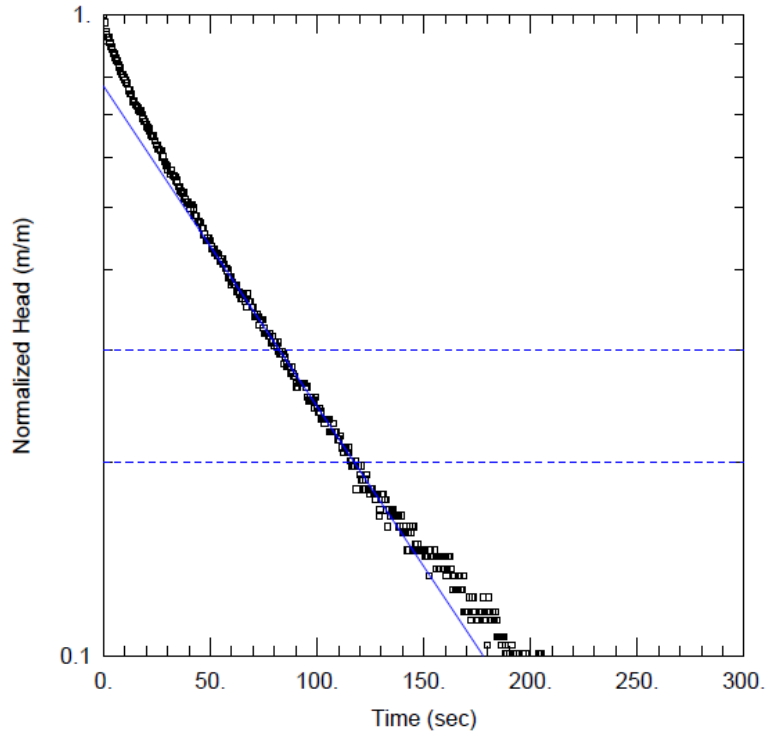
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-53

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-27A
Date of Test:	June 24, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	7.79 mbgs
Initial Displacement:	0.59 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	41.99 m to 43.51 m
Geology:	Dolostone, Goat Island Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

2×10^{-6} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

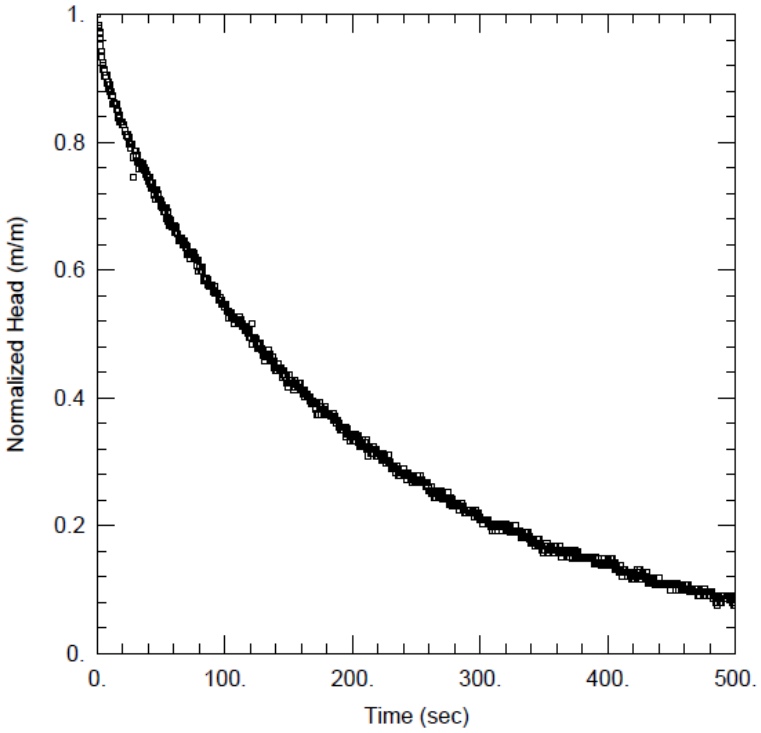
YYYY-MM-DD	2022-01-28
PREPARED	KB
DESIGN	KB
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-27A

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-54

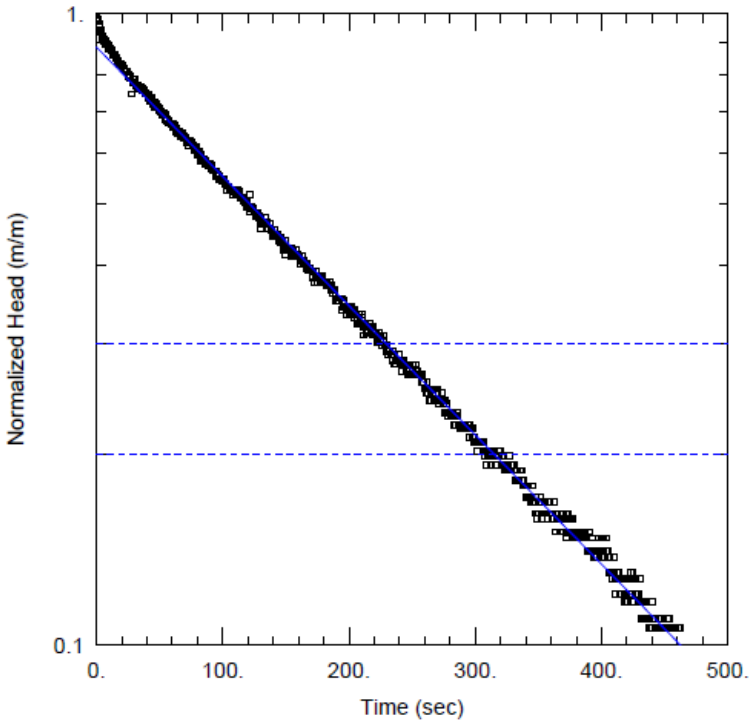
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

TEST INFORMATION:



Test Well:	MW20-27B
Date of Test:	June 24, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	7.88 mbgs
Initial Displacement:	0.56 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	33.85 m to 35.37 m
Geology:	Dolostone, Goat Island Fm

SOLUTION:



Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

9×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

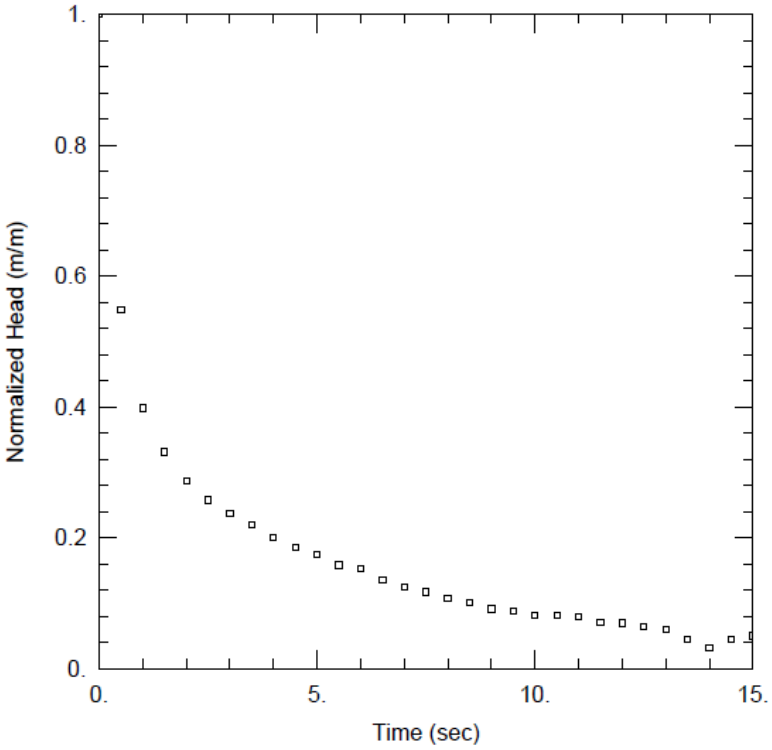
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-28
PREPARED	KB
DESIGN	KB
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS
MONITORING WELL MW20-27B

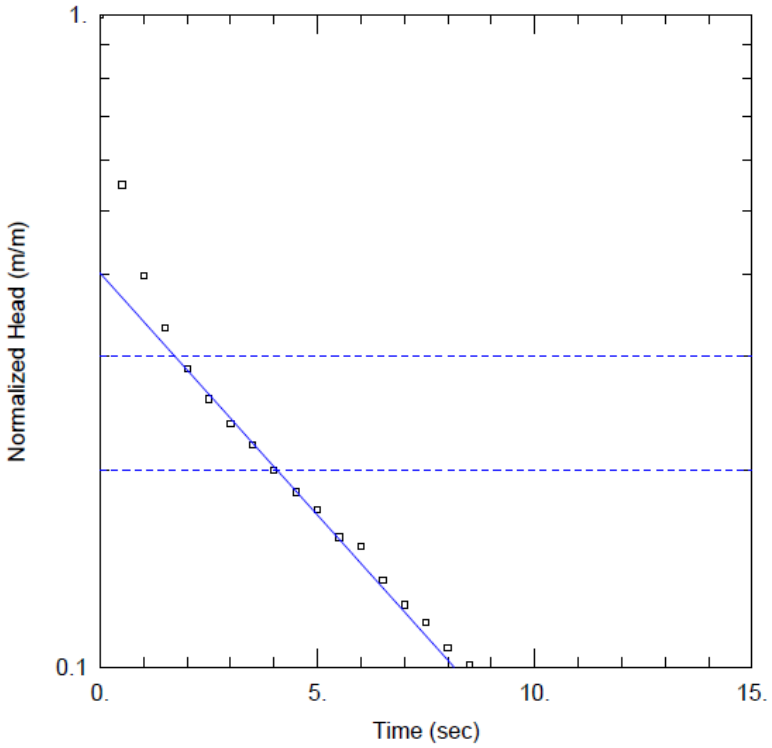
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-55

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-28A
Date of Test:	June 23, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	1.31 mbgs
Initial Displacement:	0.80 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	24.07 m to 25.59 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

3×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

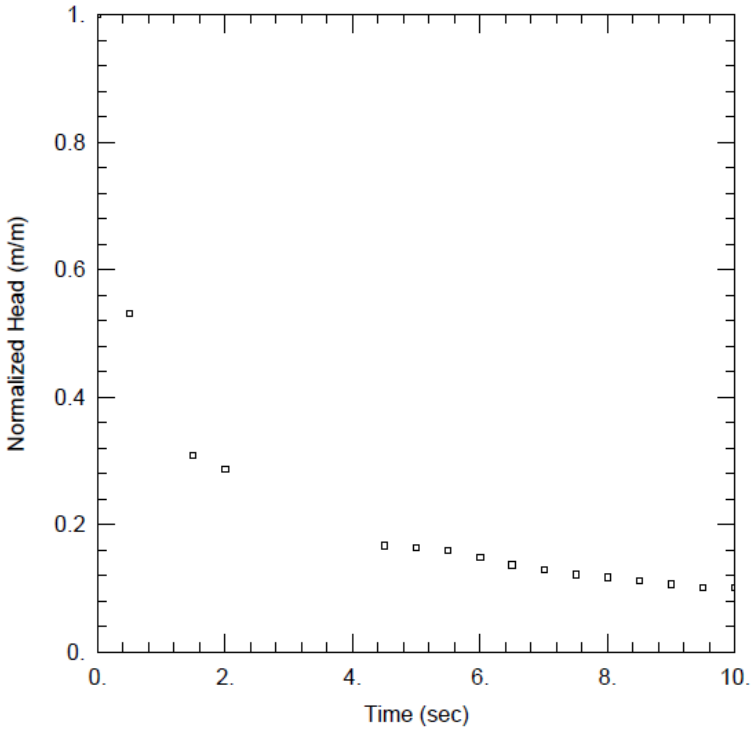
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-28
PREPARED	KB
DESIGN	KB
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-28A

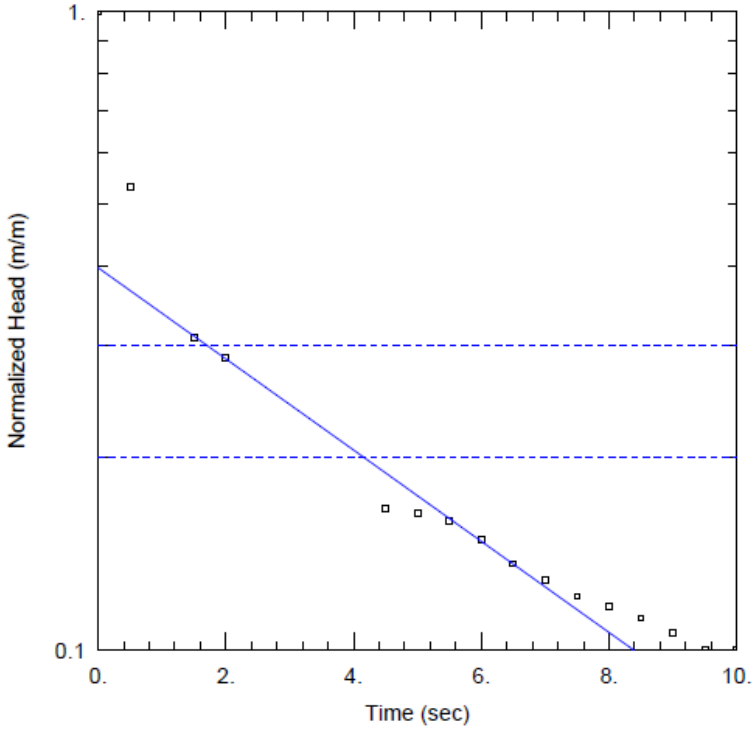
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-56

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW20-28B
Date of Test:	June 23, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	1.24 mbgs
Initial Displacement:	0.66 m
Casing Radius:	0.013 m
Borehole Radius:	0.048 m
Well Screen Interval:	16.51 m to 18.03 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

3×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

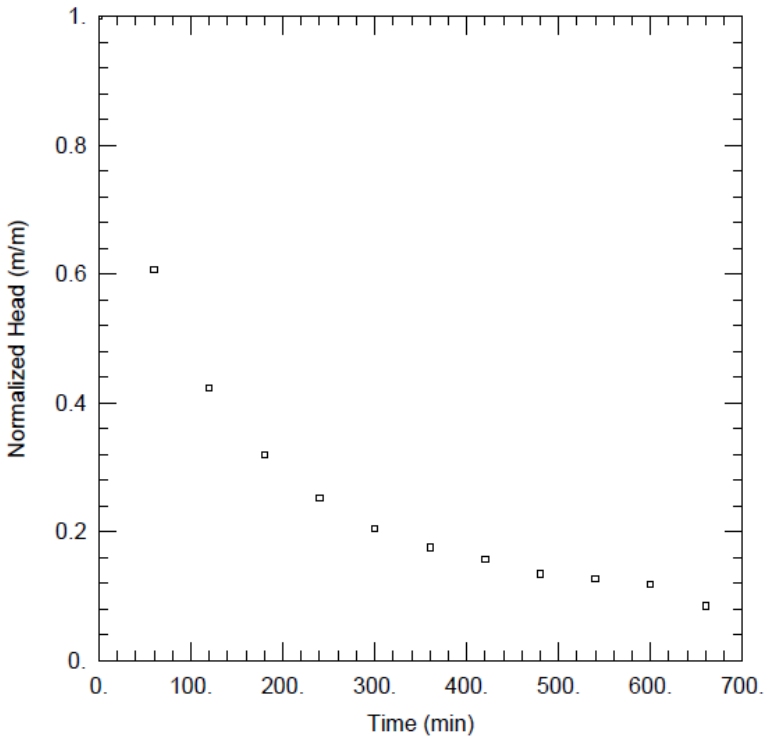
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-31
PREPARED	KB
DESIGN	KB
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW20-28B

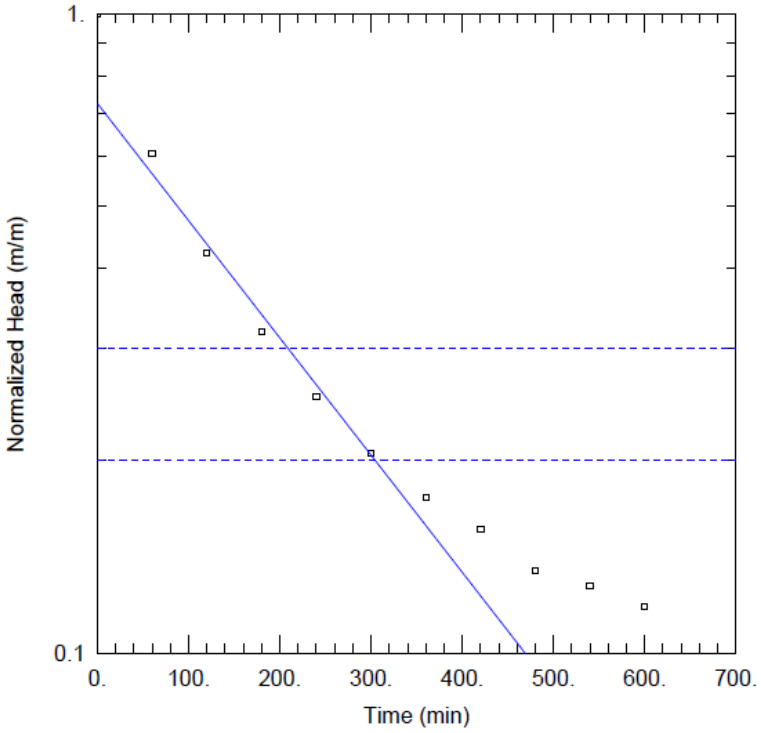
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-57

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	PW21-1
Date of Test:	September 14, 2021
Test Type:	Rising Head Test
Test Method:	Recovery following short duration pumping
Static Water Level:	2.97 mbgs
Initial Displacement:	0.92 m
Casing Radius:	0.069 m
Borehole Radius:	0.062 m
Open BH Interval:	12.19 m to 38.41 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

1×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

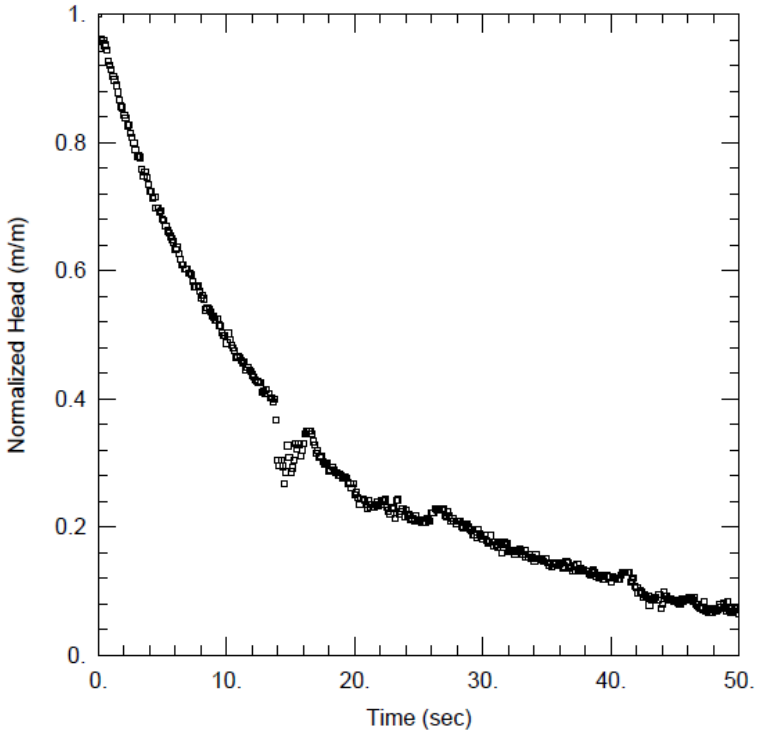
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-31
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL PW21-1

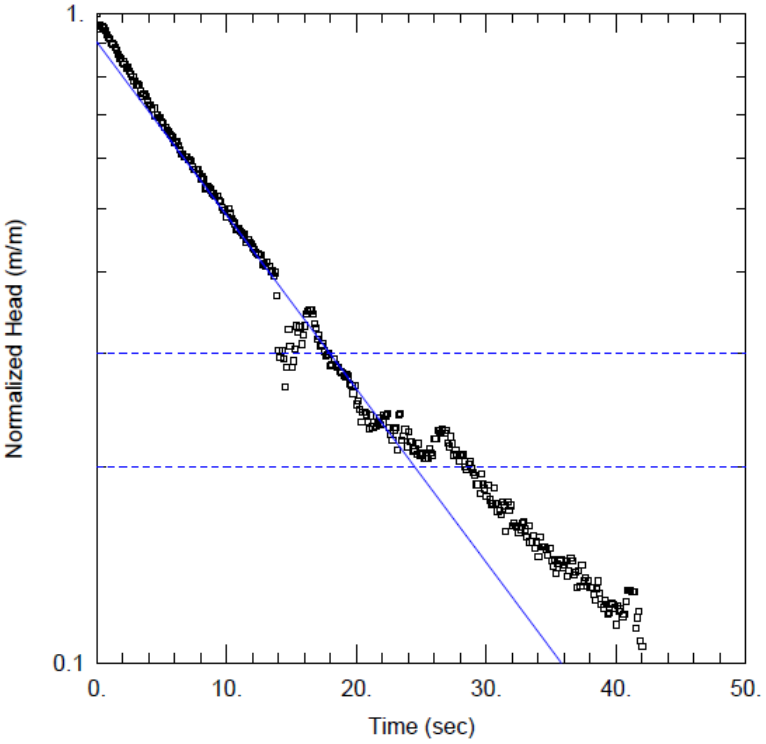
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-58

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW21-1-1
Date of Test:	August 25, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	3.20 mbgs
Initial Displacement:	0.14 m
Casing Radius:	0.025 m
Borehole Radius:	0.062 m
Well Screen Interval:	11.60 m to 34.40 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

4×10^{-6} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

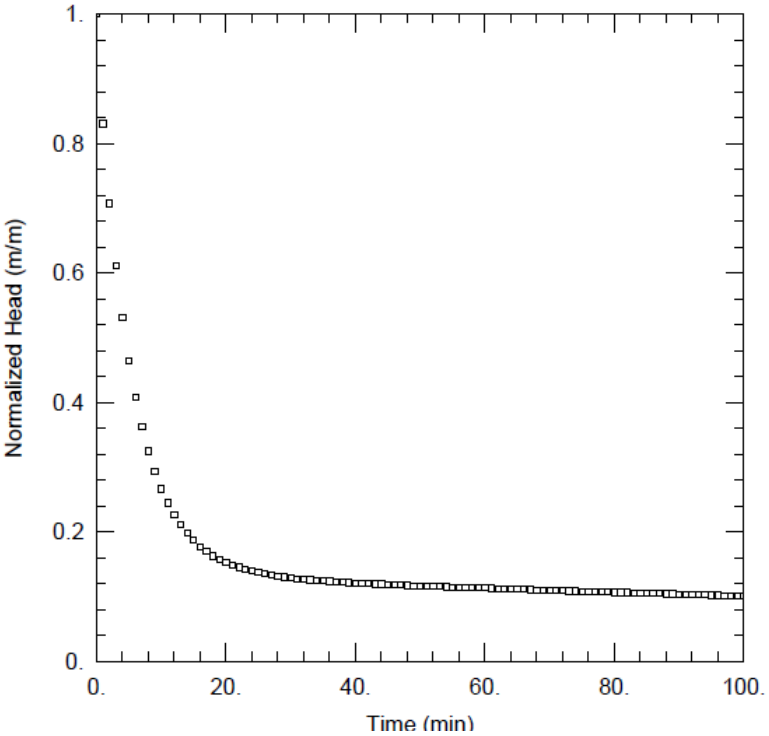
CONSULTANT
GOLDER
MEMBER OF WSP

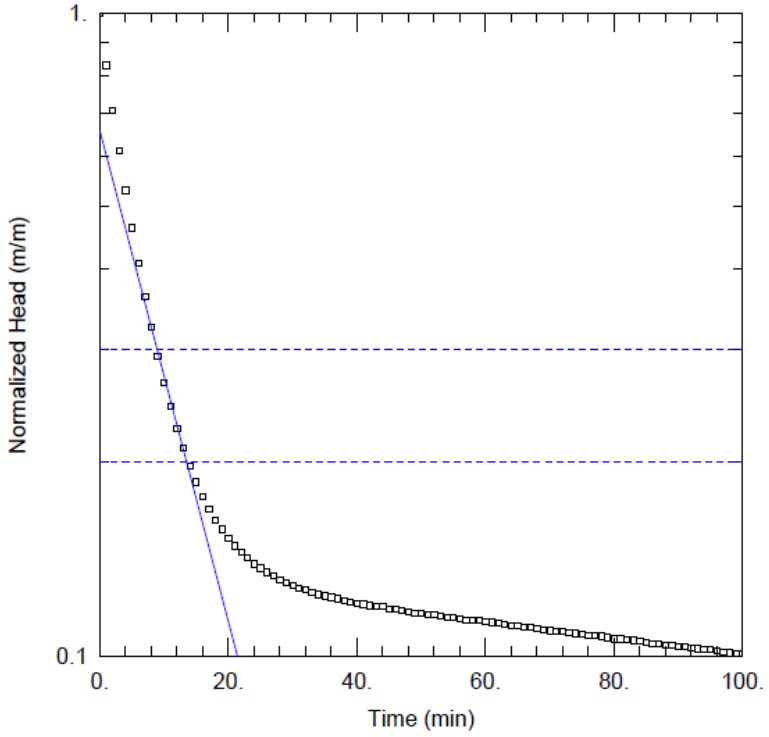
YYYY-MM-DD	2022-01-28
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW21-1-1

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-59

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A





TEST INFORMATION:

Test Well:	MW21-1-2
Date of Test:	August 26, 2021
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	7.65 mbgs
Initial Displacement:	4.45 m
Casing Radius:	0.025 m
Borehole Radius:	0.062 m
Well Screen Interval:	13.40 m to 34.70 m
Geology:	Dolostone, Gasport Fm

SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

8×10^{-8} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

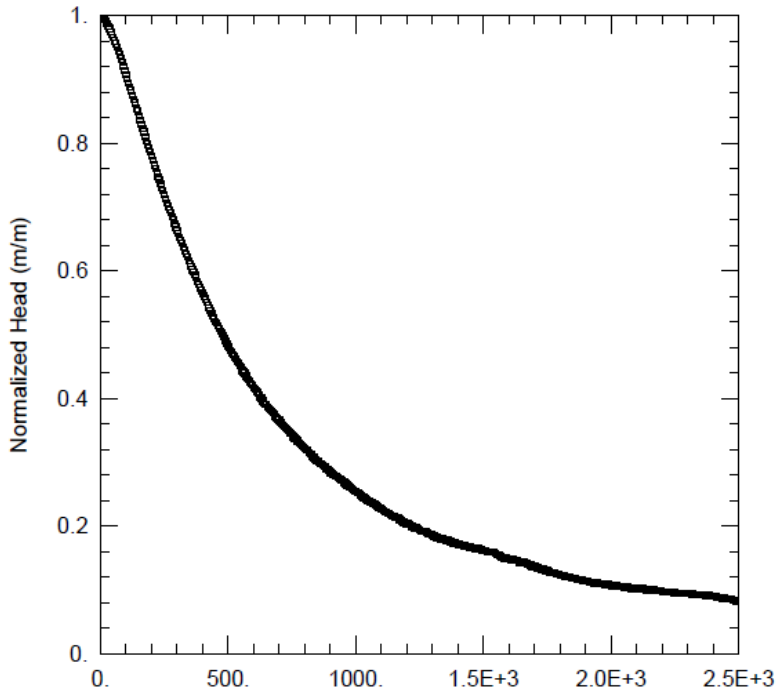
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-29
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW21-1-2

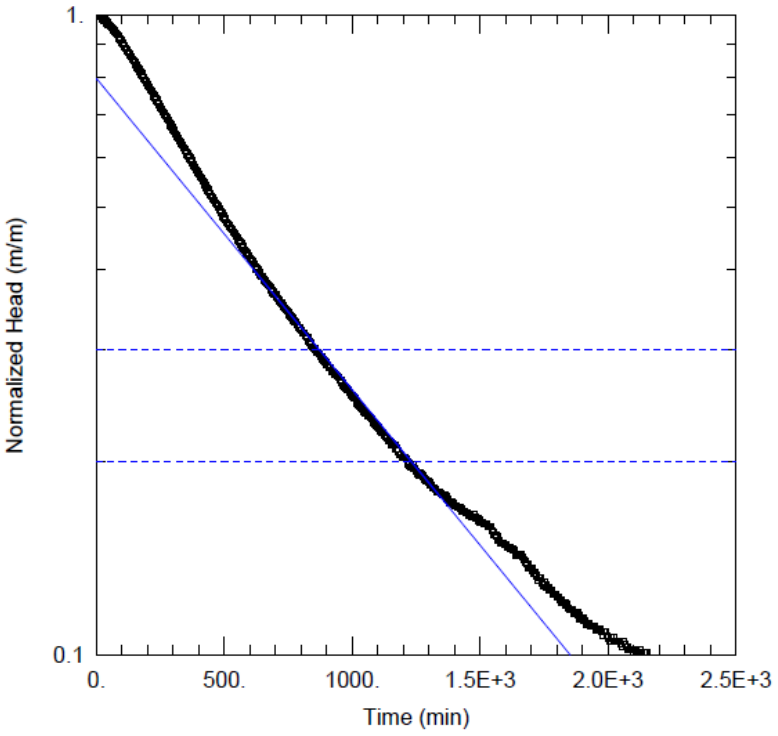
PROJECT No.	PHASE	Rev.	FIGURE
19129150	**2300**	**A**	**G-60**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW21-1-3
Date of Test:	September 24, 2021
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	6.52 mbgs
Initial Displacement:	2.85 m
Casing Radius:	0.025 m
Borehole Radius:	0.062 m
Well Screen Interval:	9.10 m to 35.10 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

1×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

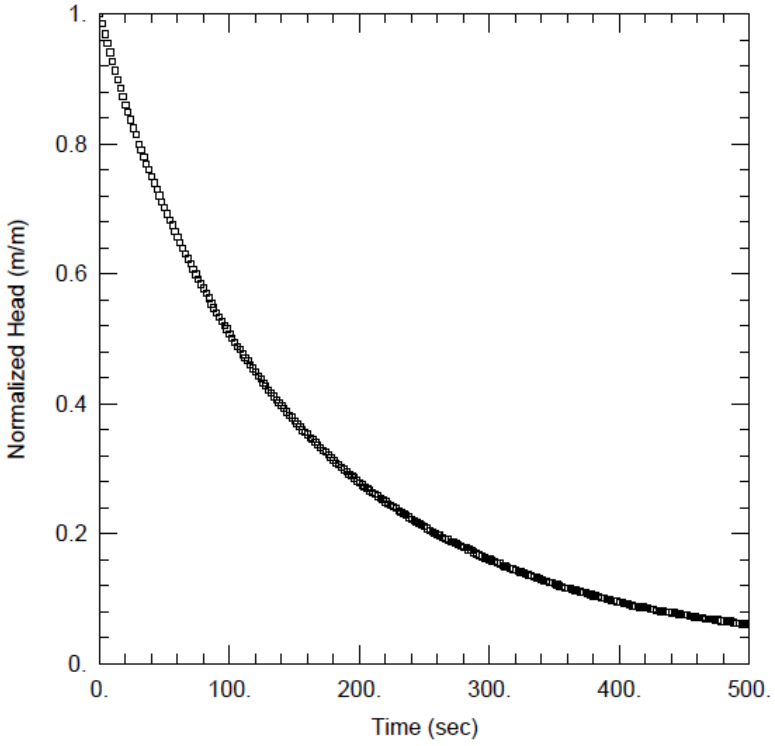
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-29
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW21-1-3

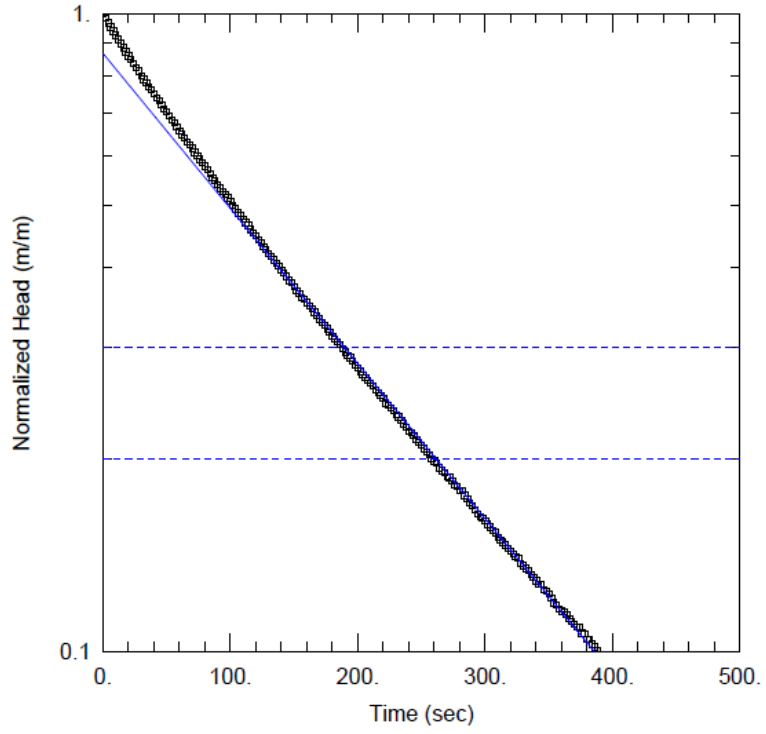
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-61

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW21-1-4
Date of Test:	September 29, 2021
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	4.78 mbgs
Initial Displacement:	2.61 m
Casing Radius:	0.025 m
Borehole Radius:	0.062 m
Well Screen Interval:	13.10 m to 32.90 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

4×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

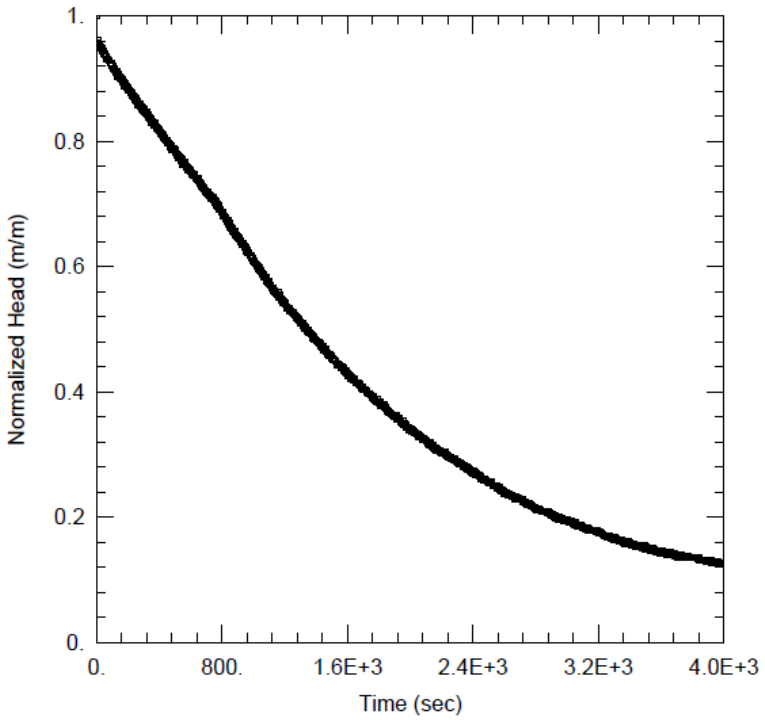
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-29
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW21-1-4

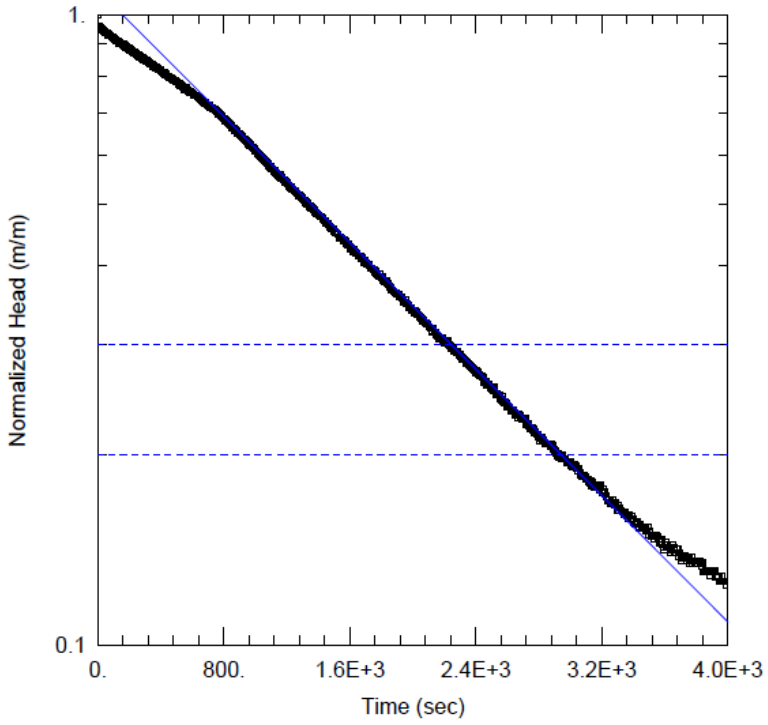
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-62

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	PW21-2
Date of Test:	September 29, 2021
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	5.52 mbgs
Initial Displacement:	1.06 m
Casing Radius:	0.069 m
Borehole Radius:	0.062 m
Open BH Interval:	12.19 m to 25.15 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

5×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

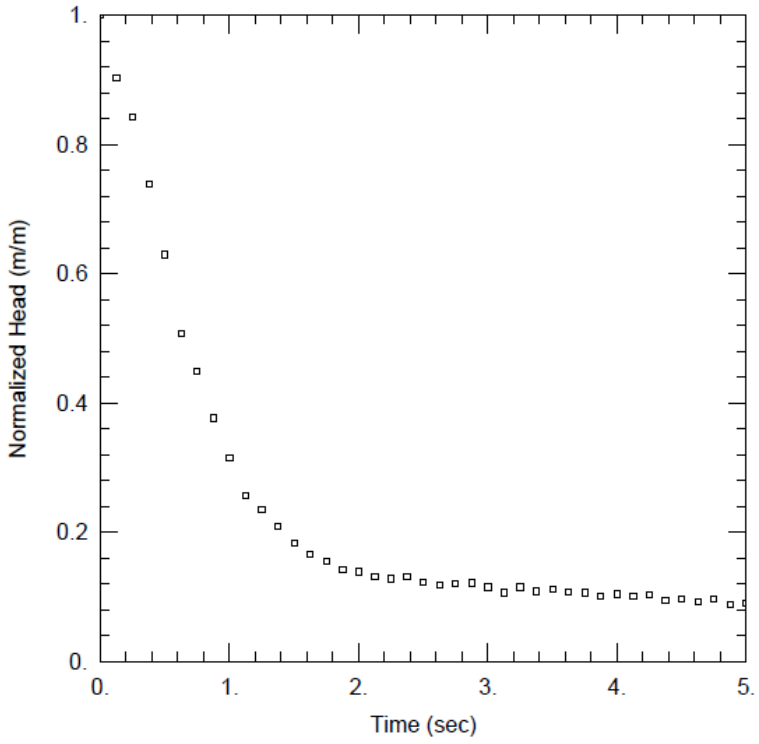
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-31
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS
MONITORING WELL PW21-2

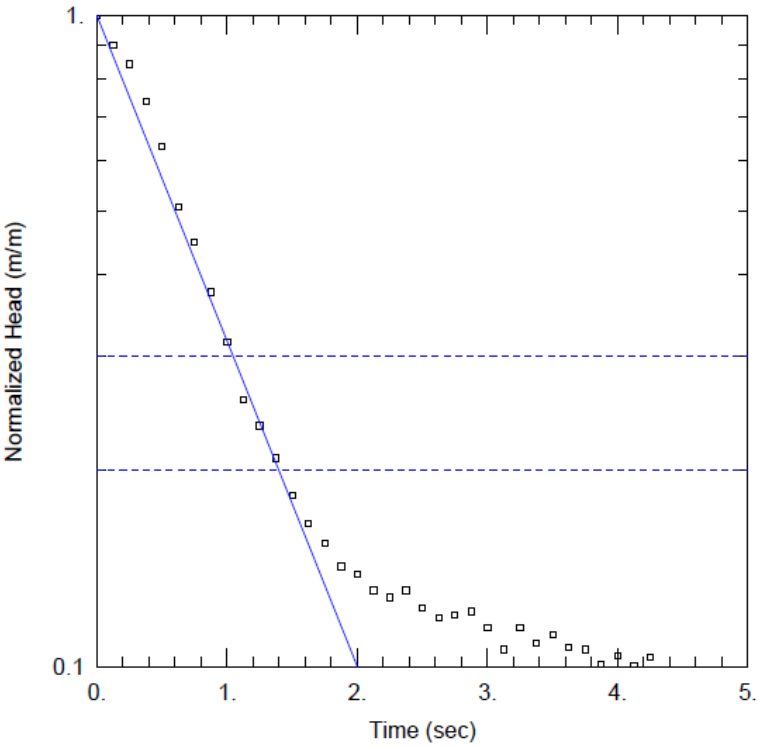
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-63

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW21-2-1
Date of Test:	August 27, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	6.20 mbgs
Initial Displacement:	0.21 m
Casing Radius:	0.025 m
Borehole Radius:	0.062 m
Well Screen Interval:	6.70 m to 22.00 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-4} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

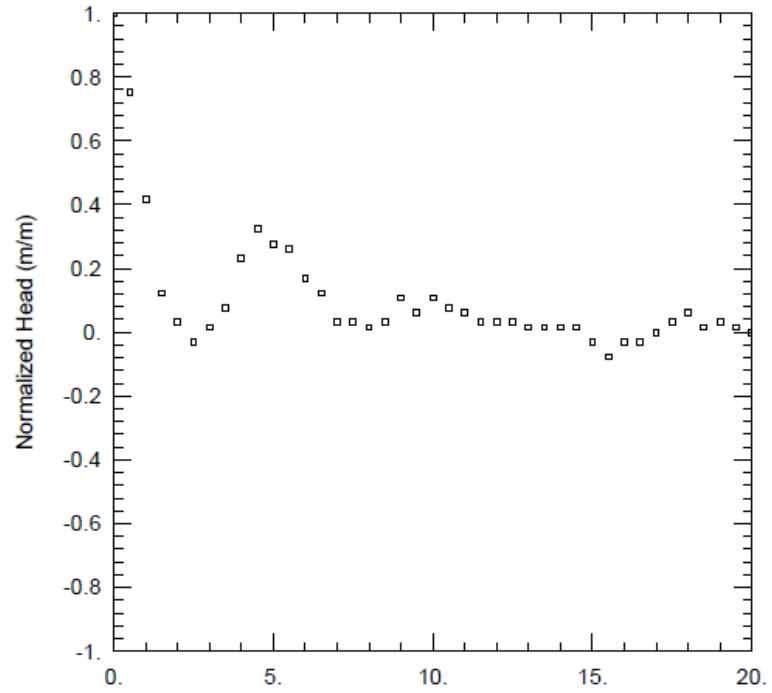
YYYY-MM-DD	2022-01-29
PREPARED	KB
DESIGN	KB
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW21-2-1

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-64

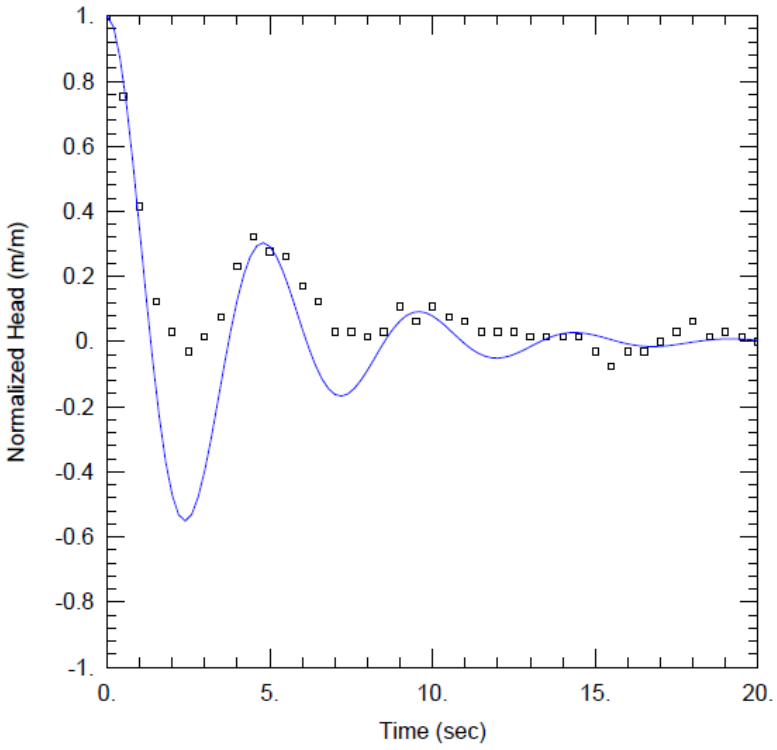
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

TEST INFORMATION:



Test Well:	MW21-2-2
Date of Test:	December 9, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	5.12 mbgs
Initial Displacement:	0.07 m
Casing Radius:	0.025 m
Borehole Radius:	0.062 m
Well Screen Interval:	7.00 m to 19.20 m
Geology:	Dolostone, Gasport Fm

SOLUTION:



Solution Method:	Butler
Solution Type:	Inertial
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

5×10^{-4} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

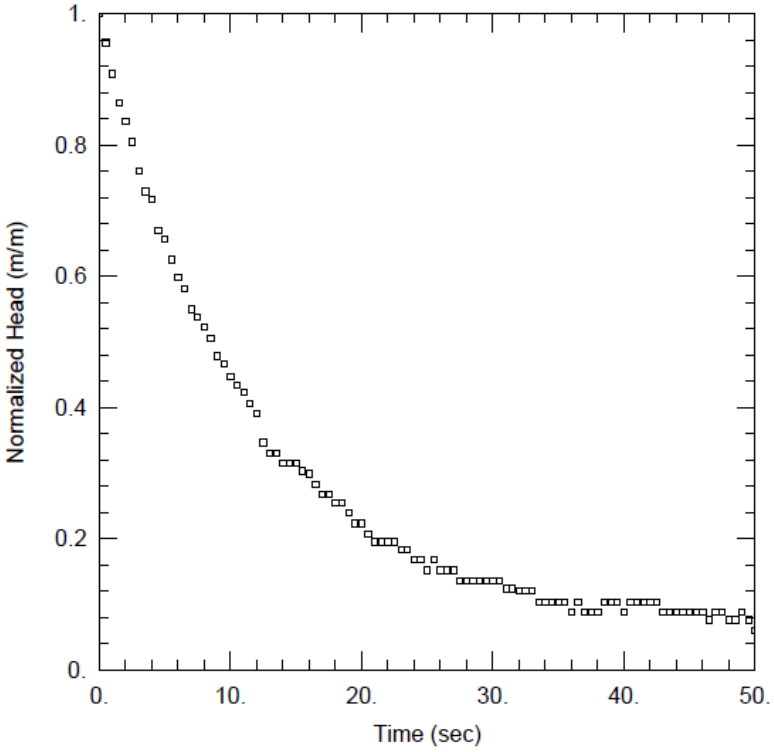
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-29
PREPARED	KB
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW21-2-2

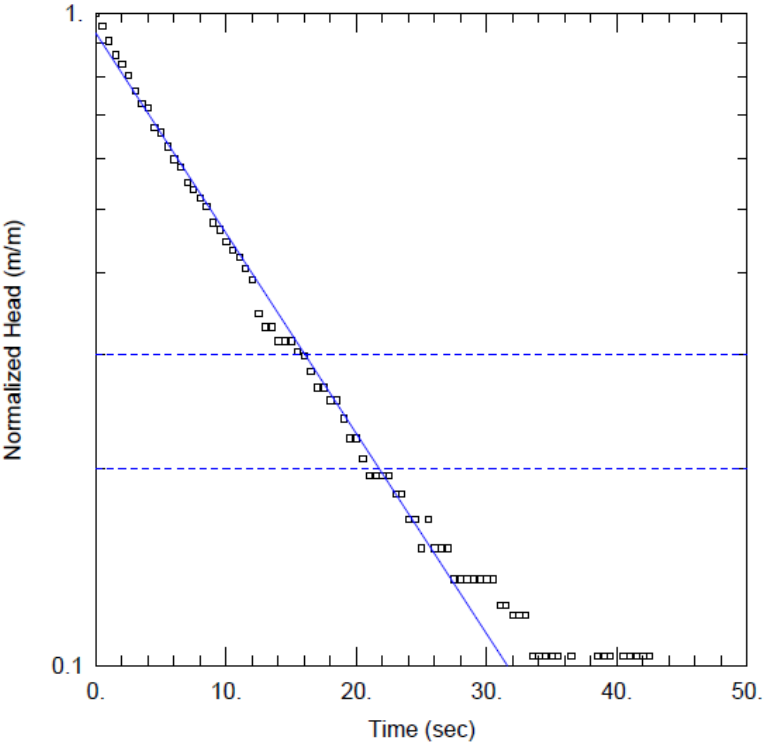
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-65

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW21-2-3
Date of Test:	August 31, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	3.33 mbgs
Initial Displacement:	0.48 m
Casing Radius:	0.025 m
Borehole Radius:	0.062 m
Well Screen Interval:	6.10 to 18.30 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

4×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

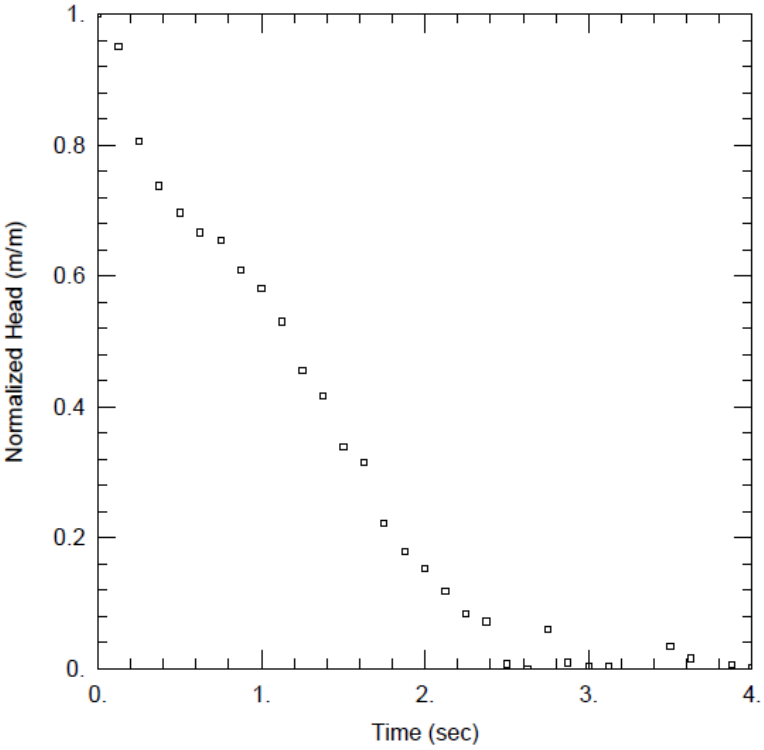
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-29
PREPARED	KB
DESIGN	KB
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW21-2-3

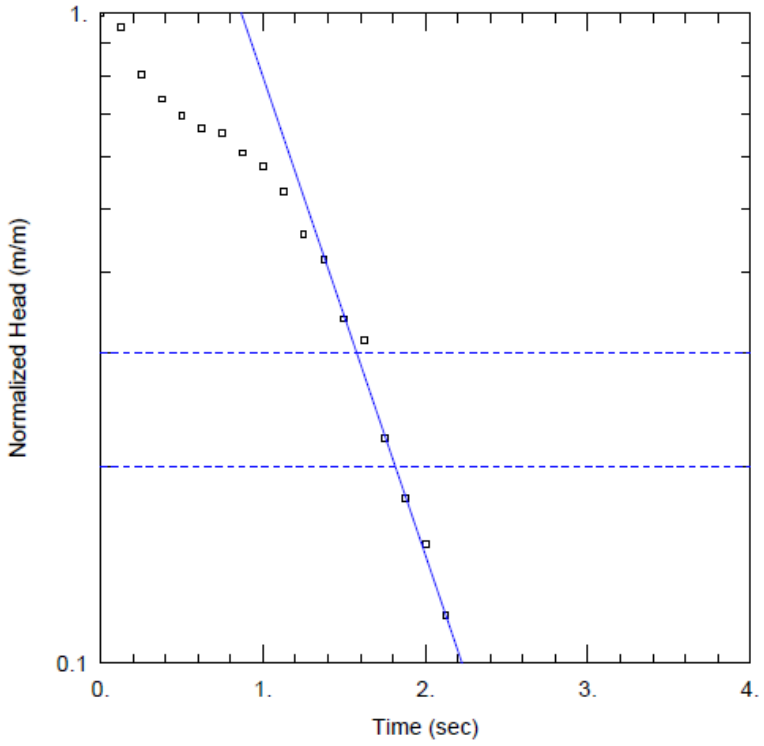
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-66

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW21-2-4
Date of Test:	August 27, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	6.66 mbgs
Initial Displacement:	0.10 m
Casing Radius:	0.025 m
Borehole Radius:	0.062 m
Well Screen Interval:	6.40 m to 23.20 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

3×10^{-4} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

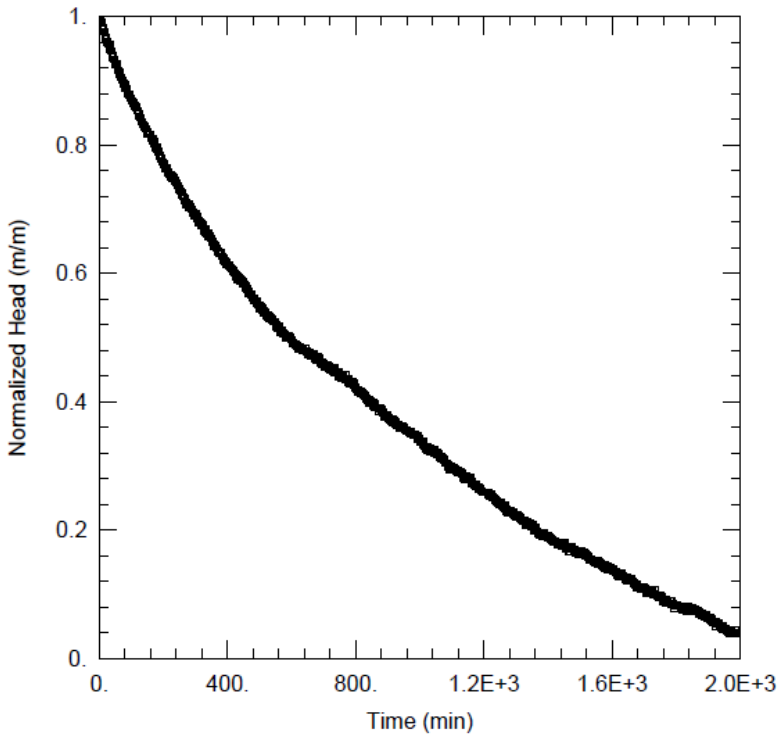
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-31
PREPARED	KB
DESIGN	KB
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW21-2-4

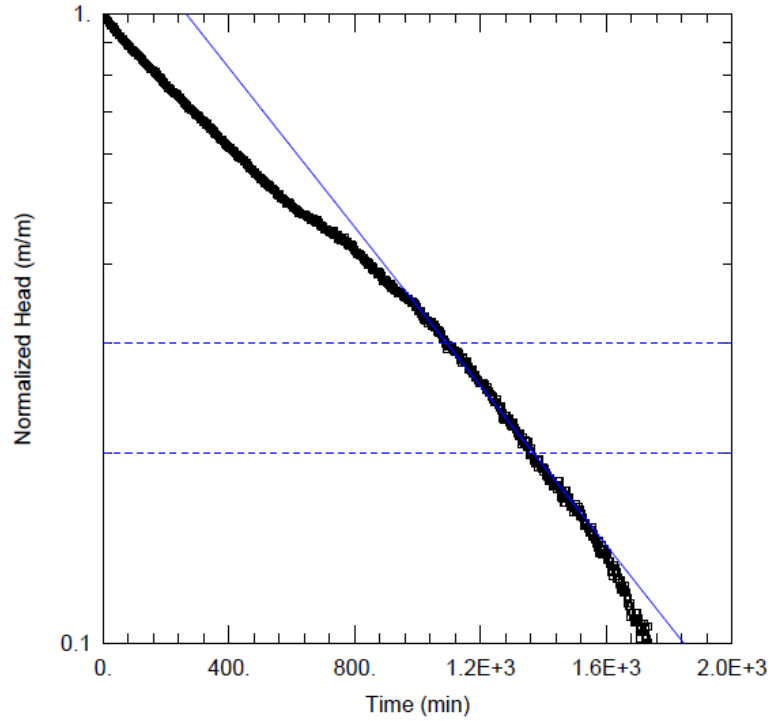
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-67

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	PW21-3
Date of Test:	September 23, 2021
Test Type:	Rising Head Test
Test Method:	Pump Down Recovery Rising Head Test
Static Water Level:	9.43 mbgs
Initial Displacement:	0.79 m
Casing Radius:	0.069 m
Borehole Radius:	0.062 m
Open BH Interval:	8.84 m to 21.34 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-8} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

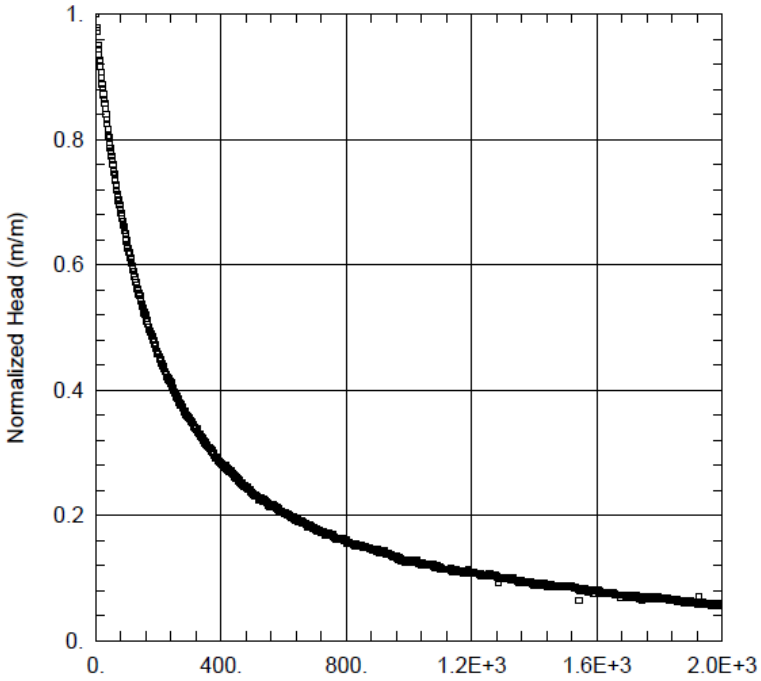
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-31
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL PW21-3

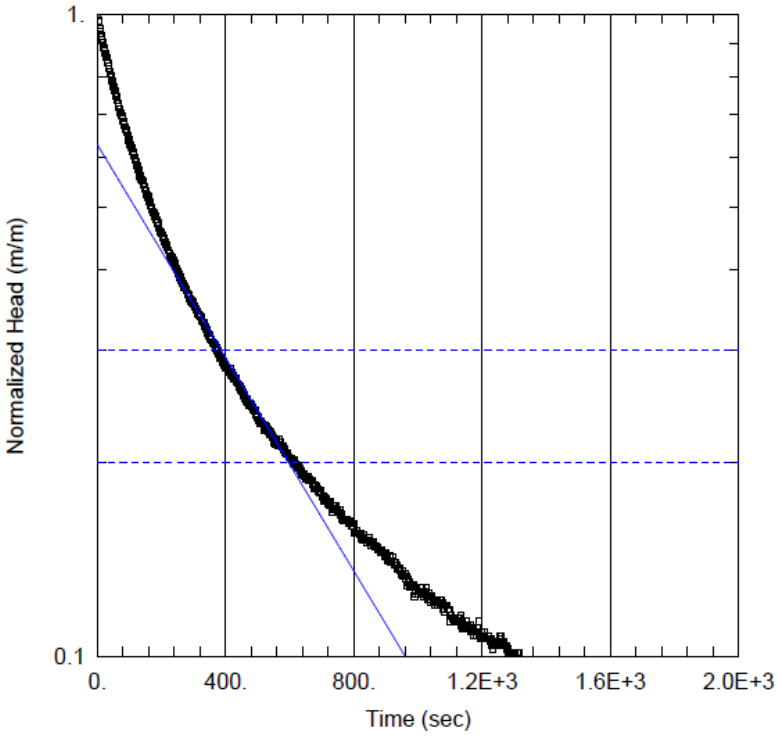
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-68

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW21-3-1
Date of Test:	September 21, 2021
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	6.83 mbgs
Initial Displacement:	1.04 m
Casing Radius:	0.025 m
Borehole Radius:	0.062 m
Well Screen Interval:	5.80 m to 16.50 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

6×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

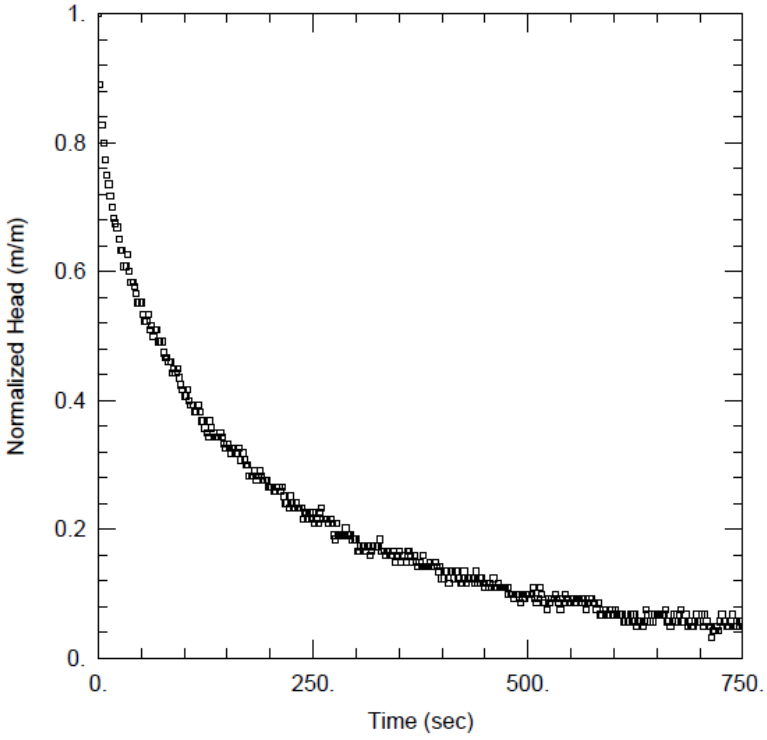
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-31
PREPARED	KB
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW21-3-1

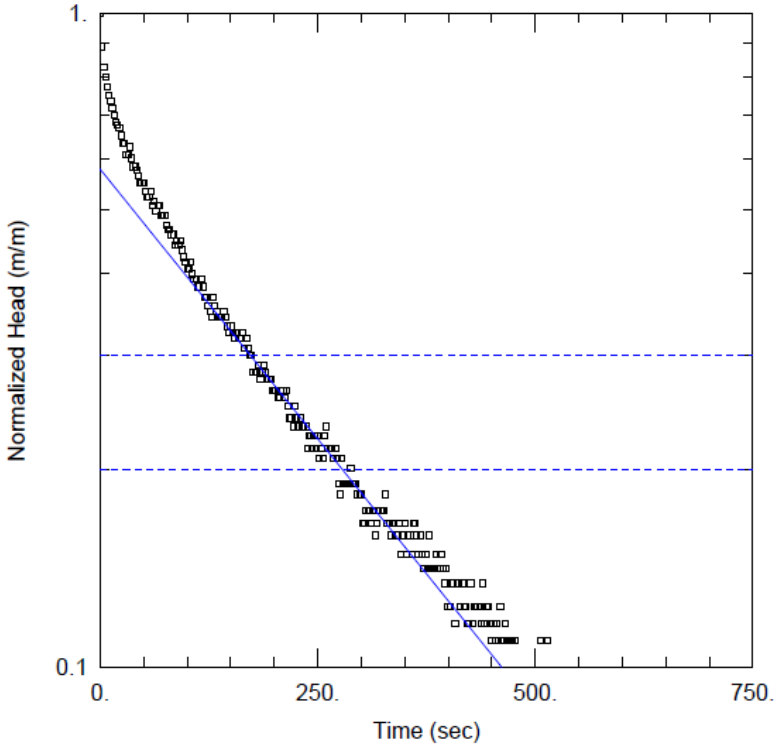
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-69

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW21-3-2
Date of Test:	September 23, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	8.32 mbgs
Initial Displacement:	0.17 m
Casing Radius:	0.025 m
Borehole Radius:	0.062 m
Well Screen Interval:	4.90 m to 15.50 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-6} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

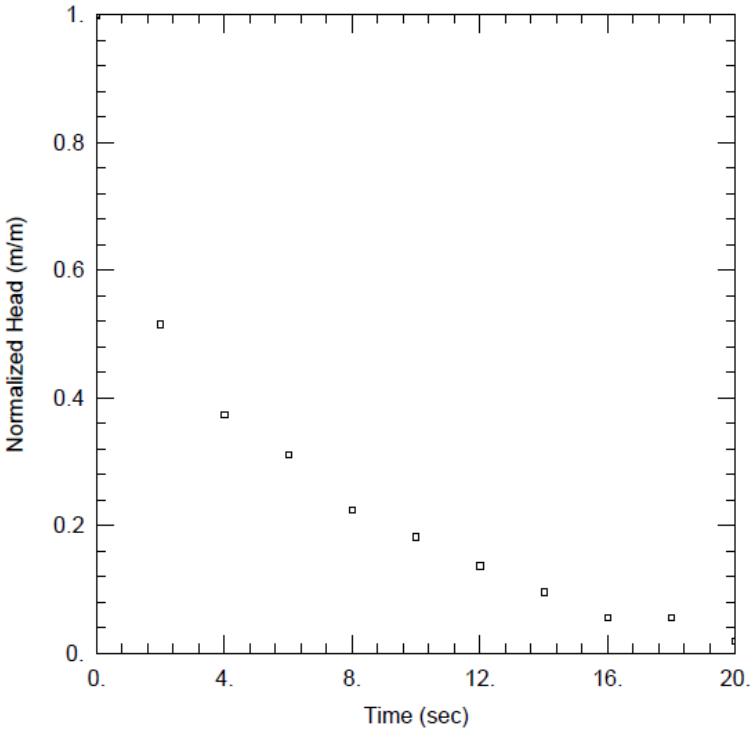
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-31
PREPARED	KB
DESIGN	KB
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW21-3-2

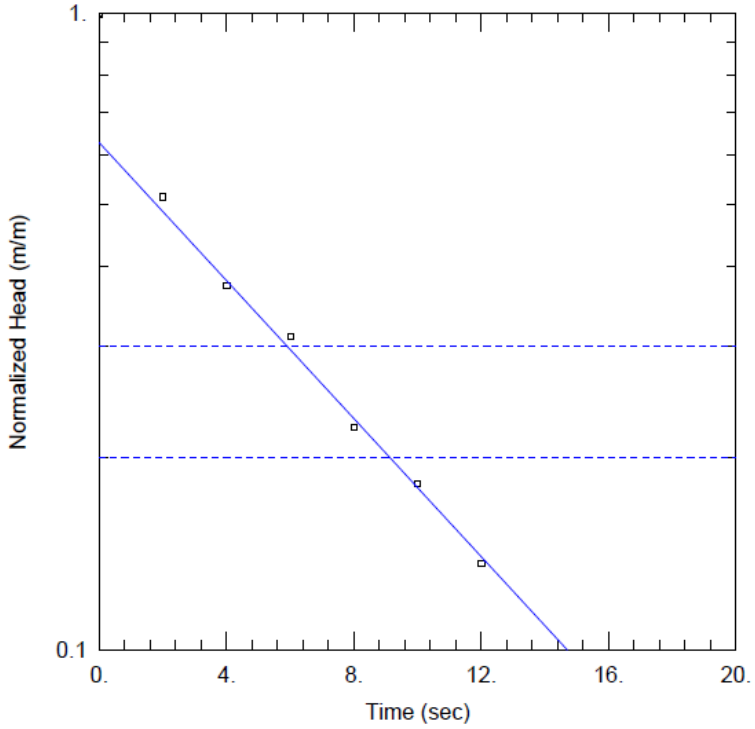
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-70

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW21-3-3
Date of Test:	September 29, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	12.46 mbgs
Initial Displacement:	0.13 m
Casing Radius:	0.025 m
Borehole Radius:	0.062 m
Well Screen Interval:	9.10 m to 18.30 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

7×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

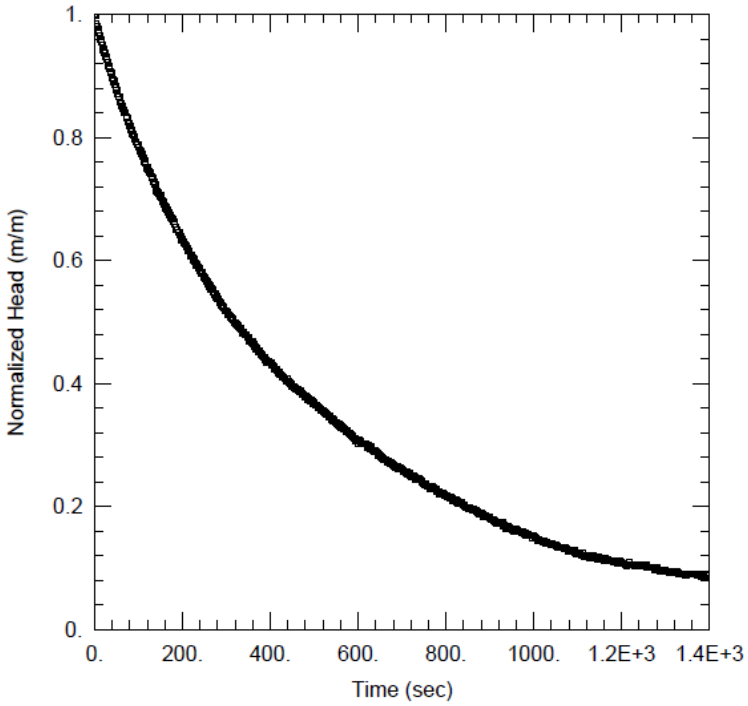
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-31
PREPARED	KB
DESIGN	KB
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW21-3-3

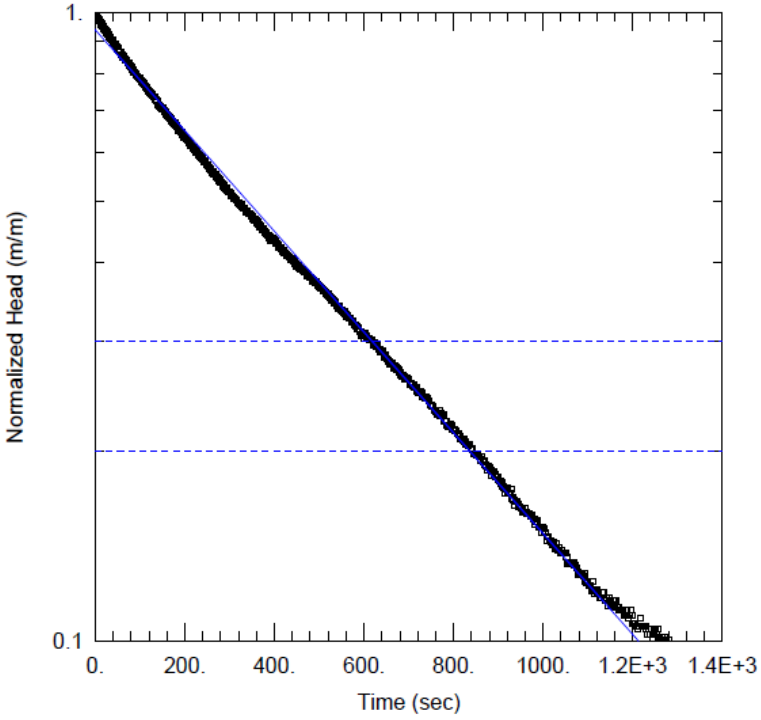
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-71

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW21-3-4
Date of Test:	September 23, 2021
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	6.05 mbgs
Initial Displacement:	0.95 m
Casing Radius:	0.025 m
Borehole Radius:	0.062 m
Well Screen Interval:	5.20 m to 15.80 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

6×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

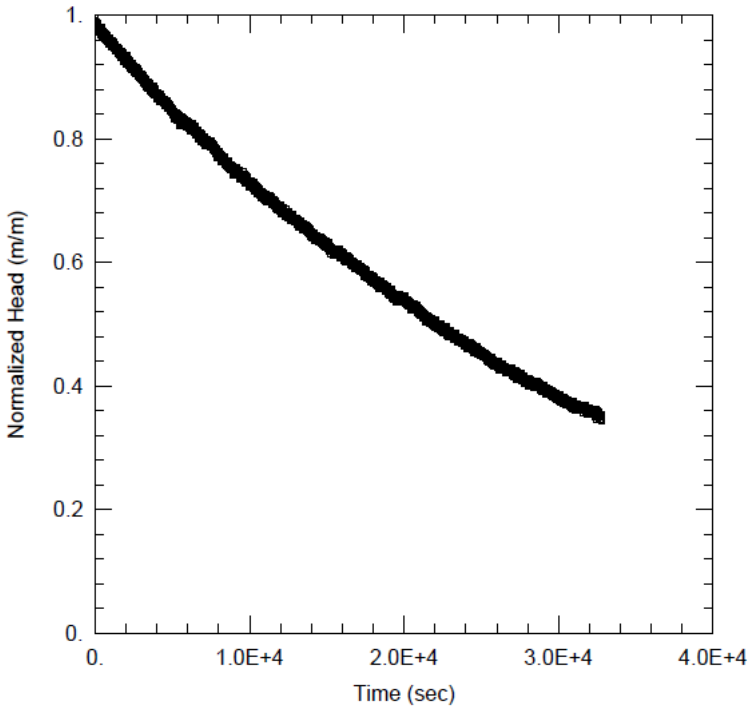
YYYY-MM-DD	2022-01-31
PREPARED	KB
DESIGN	KB
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW21-3-4

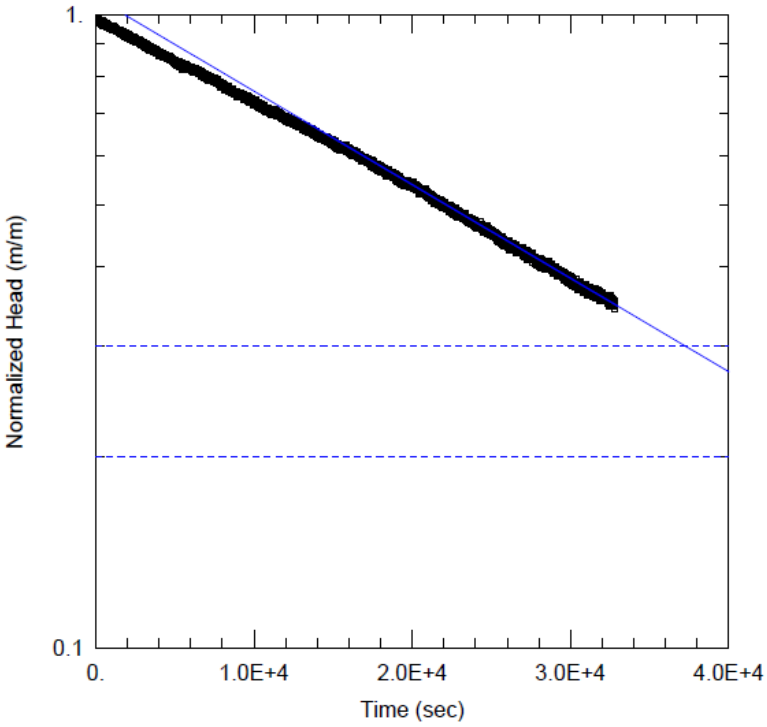
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-72

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

TEST INFORMATION:



Test Well:	PW21-4
Date of Test:	September 1, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	12.82 mbgs
Initial Displacement:	0.70 m
Casing Radius:	0.069 m
Borehole Radius:	0.062 m
Open BH Interval:	9.25 m to 21.64 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

3×10^{-8} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

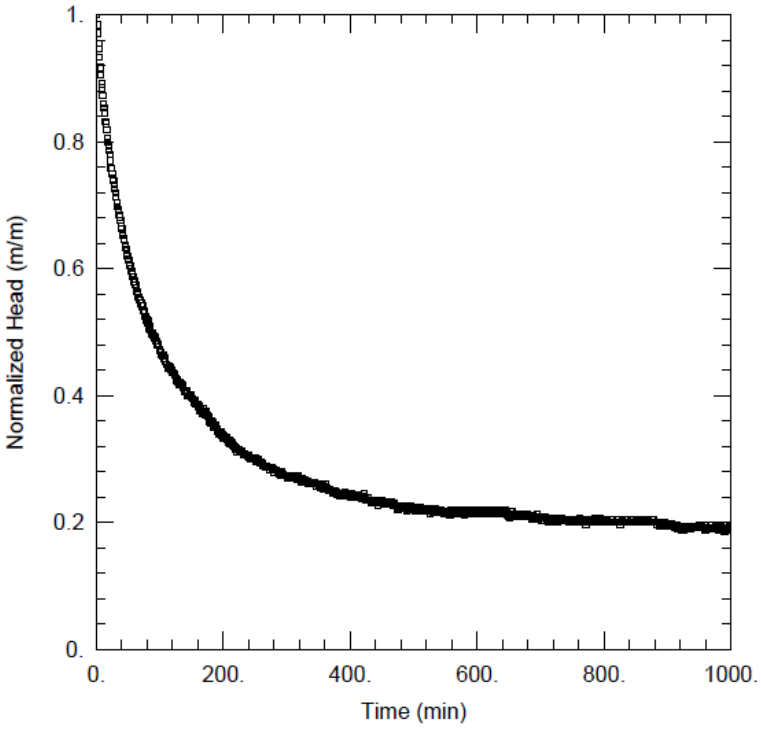
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-31
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL PW21-4

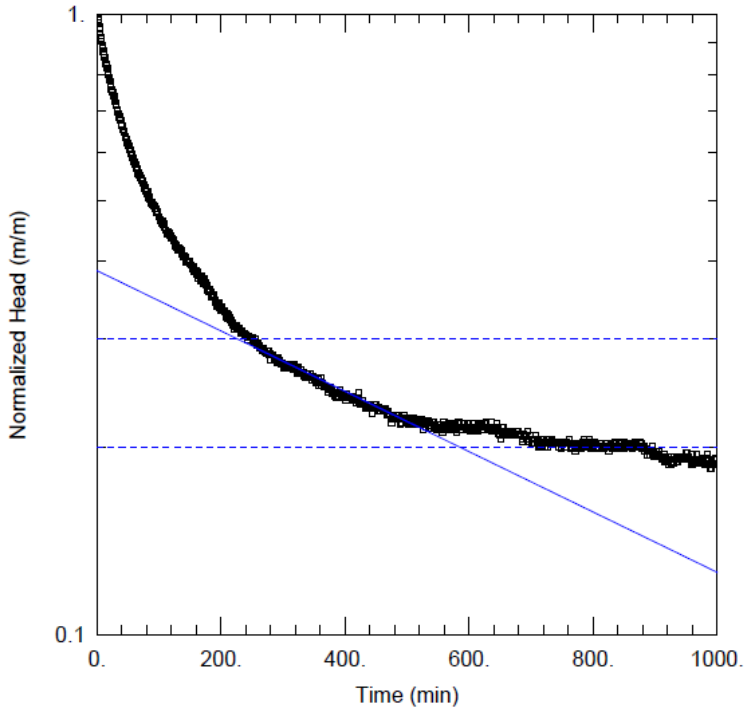
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-73

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	PW21-4A
Date of Test:	October 15, 2021
Test Type:	Rising Head Test
Test Method:	Development Recovery Rising Head Test
Static Water Level:	13.24 mbgs
Initial Displacement:	0.77 m
Casing Radius:	0.083 m
Borehole Radius:	0.076 m
Open BH Interval:	8.61 m to 21.64 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-8} m/s

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

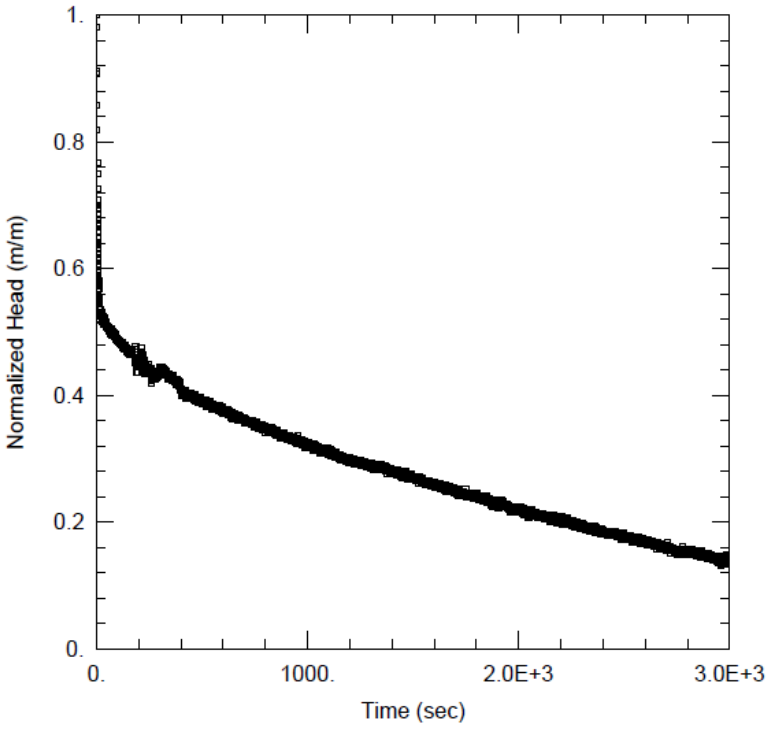
PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-31
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

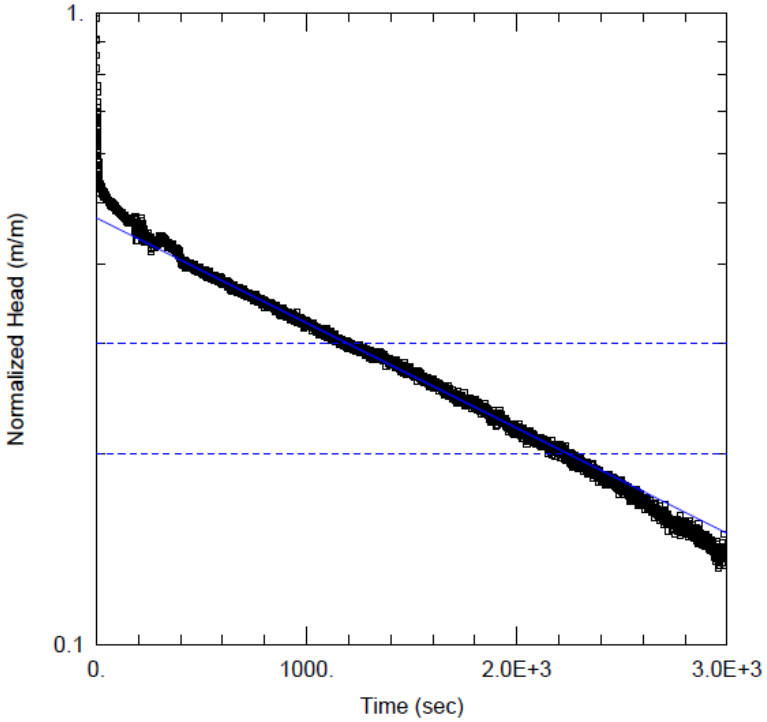
TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL PW21-4A

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-74



TEST INFORMATION:

Test Well:	MW21-4-1
Date of Test:	September 1, 2021
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	12.96 mbgs
Initial Displacement:	0.24 m
Casing Radius:	0.025 m
Borehole Radius:	0.062 m
Well Screen Interval:	10.10 m to 17.70 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

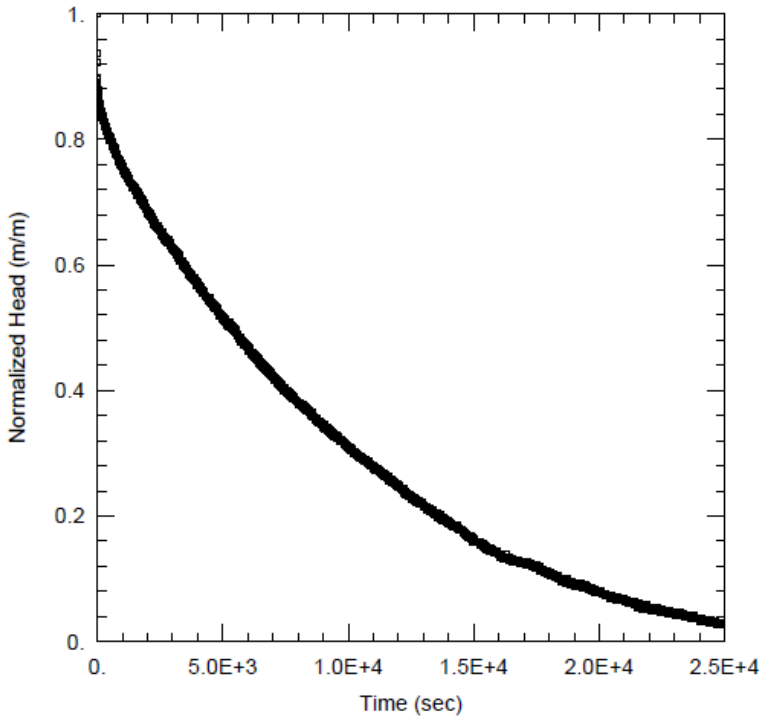
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-01
PREPARED	KB
DESIGN	KB
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW21-4-1

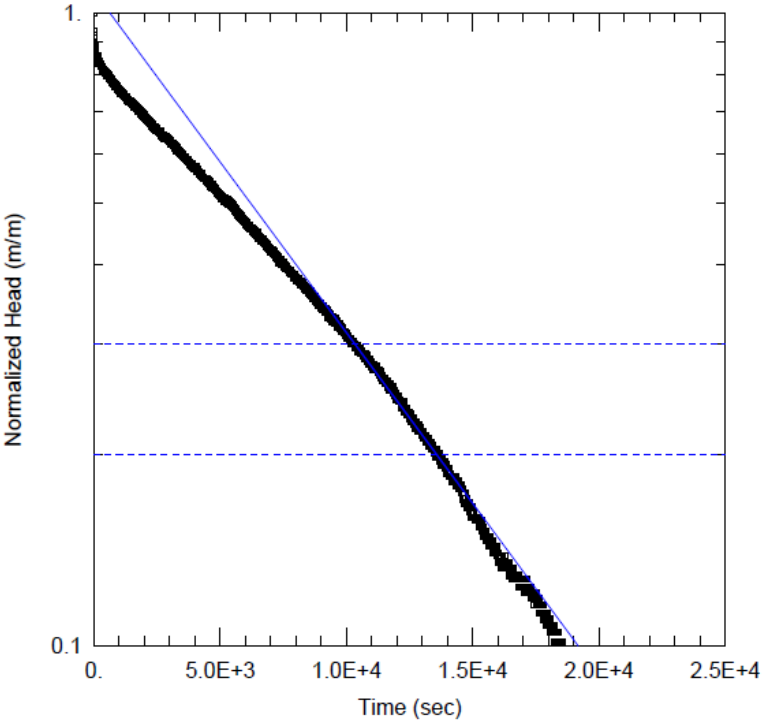
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-75

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW21-4-2
Date of Test:	September 1, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	13.52 mbgs
Initial Displacement:	1.16 m
Casing Radius:	0.025 m
Borehole Radius:	0.062 m
Well Screen Interval:	11.00 m to 20.10 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

5×10^{-8} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

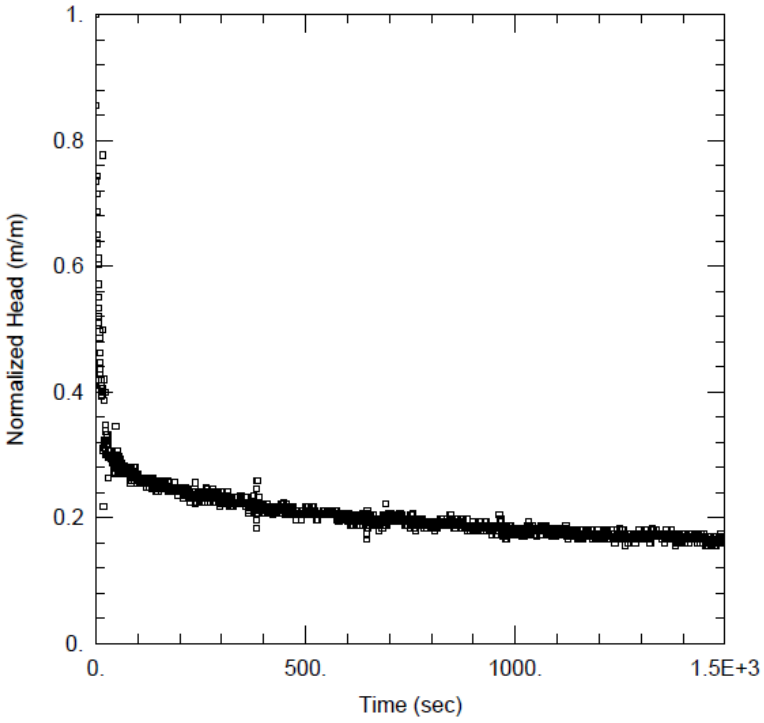
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-01
PREPARED	KB
DESIGN	KB
REVIEW	PGM
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW21-4-2

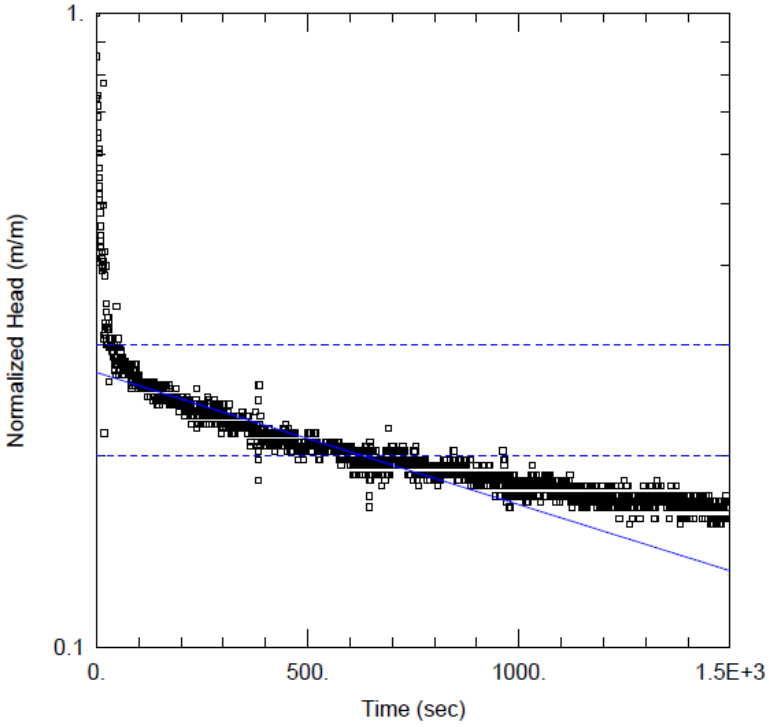
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-76

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW21-4-3
Date of Test:	December 9, 2021
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	11.61 mbgs
Initial Displacement:	0.27 m
Casing Radius:	0.025 m
Borehole Radius:	0.062 m
Well Screen Interval:	10.40 m to 19.50 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-31
PREPARED	AIM
DESIGN	AIM
REVIEW	PGM
APPROVED	###

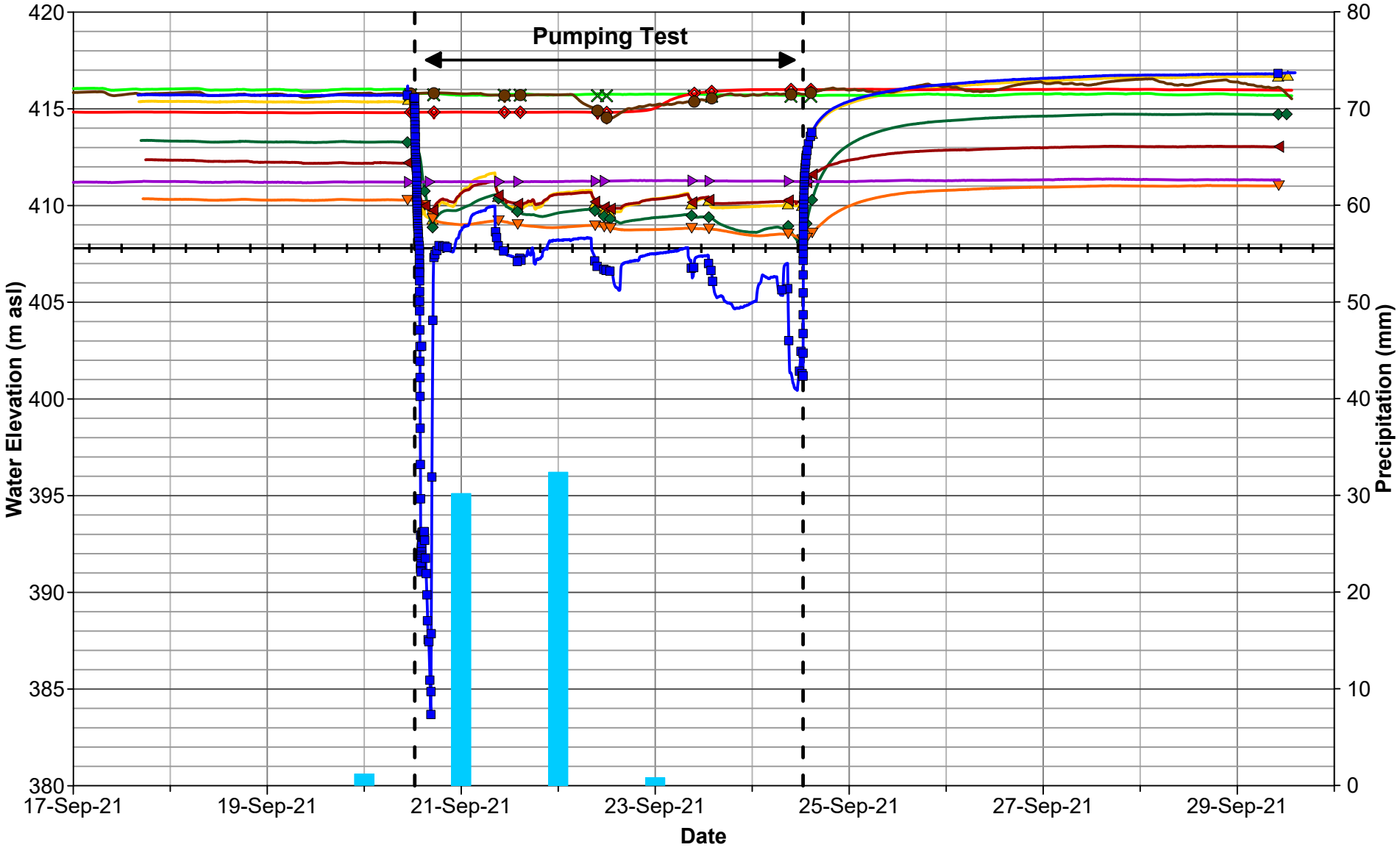
TITLE
SINGLE WELL RESPONSE TEST ANALYSIS
MONITORING WELL MW21-4-3

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	G-77

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

APPENDIX H

Pumping Tests



PW21-1
MW21-1-1
MW21-1-2
MW21-1-3
MW21-1-4
BH2
MW20-15A
MW20-15B
MW20-15C
Precipitation (mm)
Bedrock Elevation

NOTE

Average pumping rate = 21.7 L/min
Top of rock as observed at PW21-1
Precipitation observed at Georgetown WWTP meteorological station (ID:6152695)

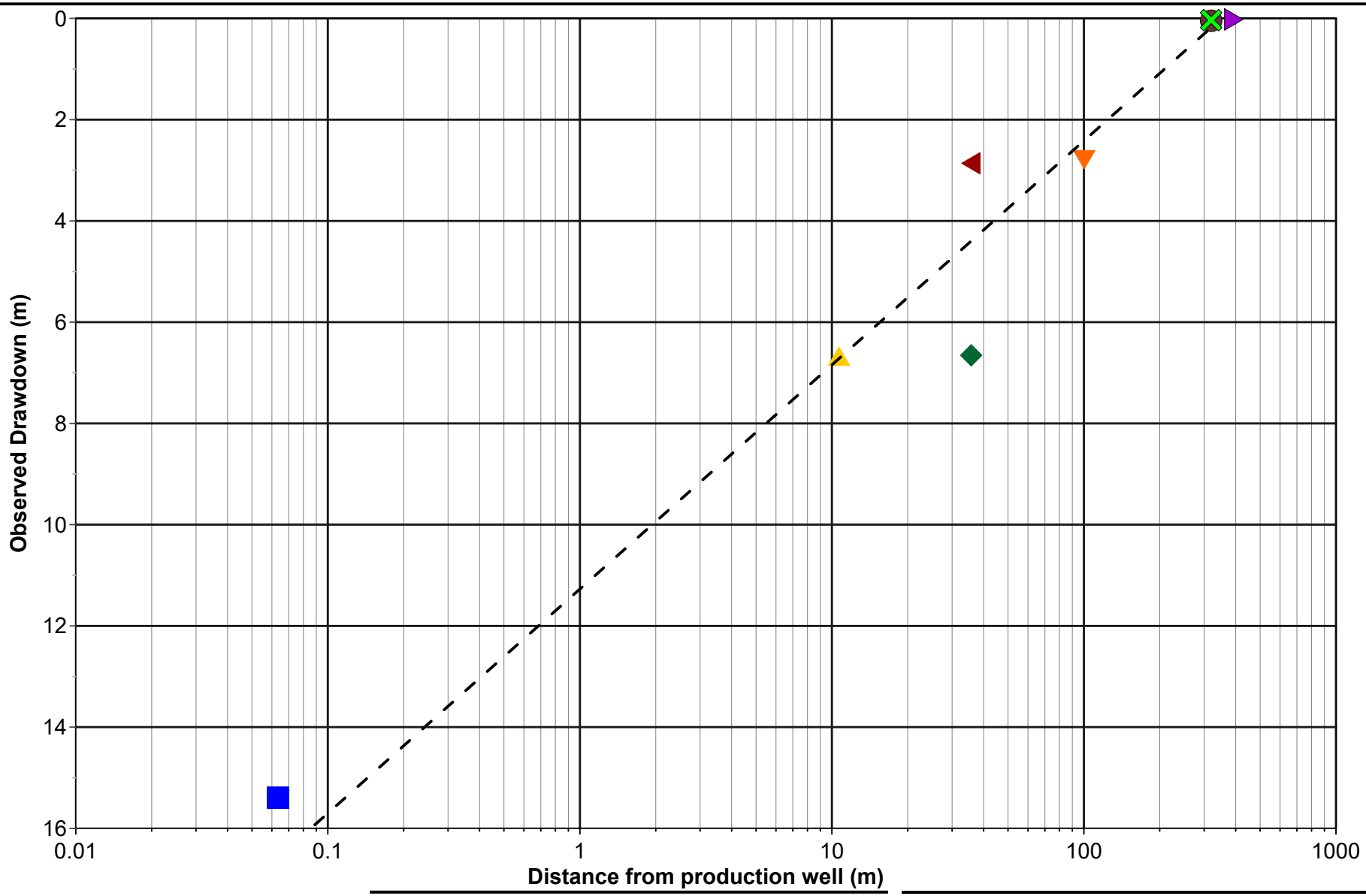
GOLDER
MEMBER OF WSP

DATE	March 2022
DESIGN	VRP
REVIEW	PGM/GRP
APPROVED	--

PROJECT CALEDON QUARRY

TITLE PW21-1 CONSTANT RATE TEST GROUNDWATER ELEVATION MONITORING

PROJECT NO.	REV	FIGURE
19129150	A	H-1



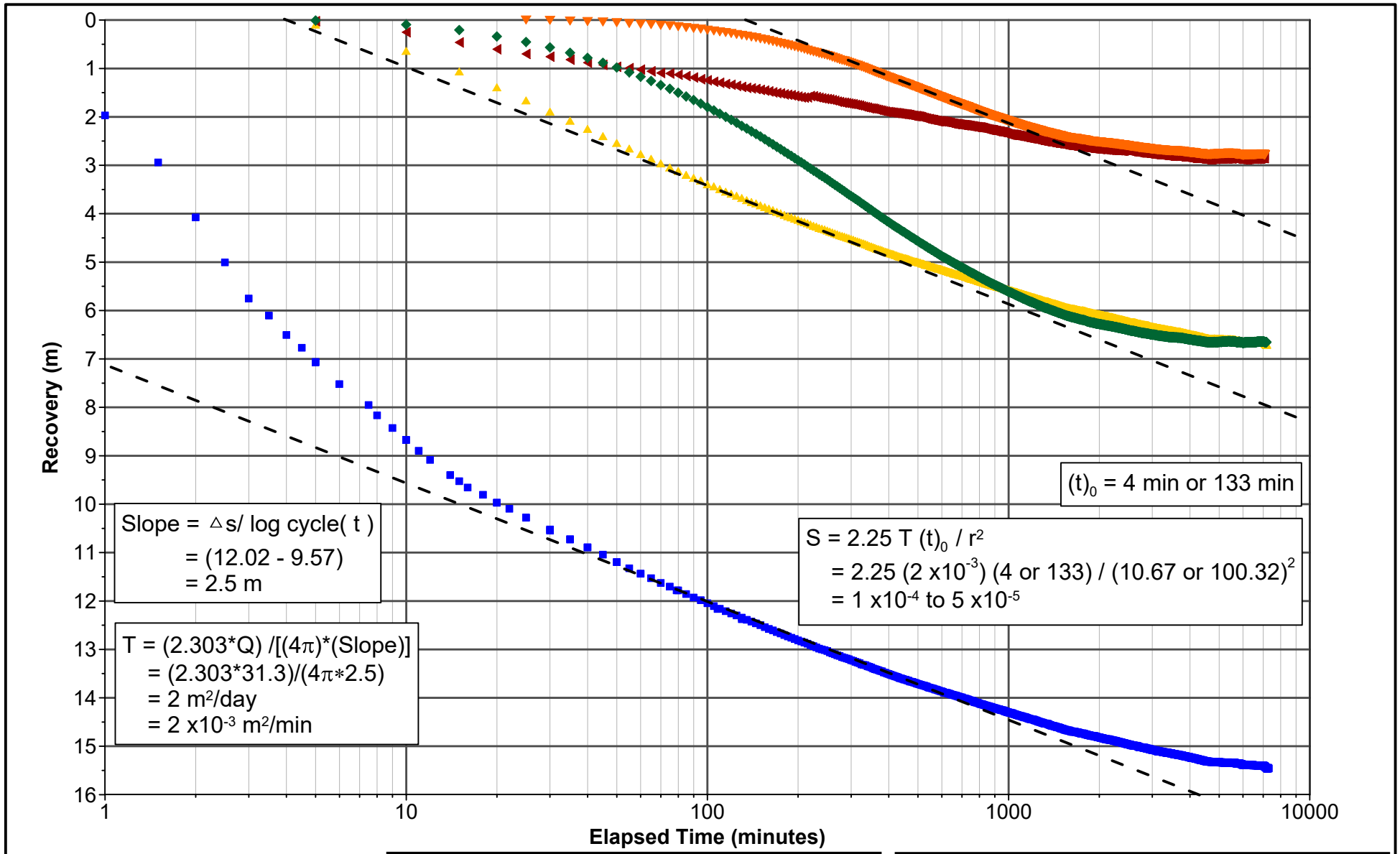
PROJECT **CBM CALEDON QUARRY**

TITLE **PW21-1 PUMPING TEST**
DRAWDOWN VERSUS DISTANCE

GOLDER
MEMBER OF WSP

DATE	December 2022
DESIGN	VRP
REVIEW	PGM
APPROVED	--

PROJECT NO.	REV	FIGURE
19129150	A	H-2



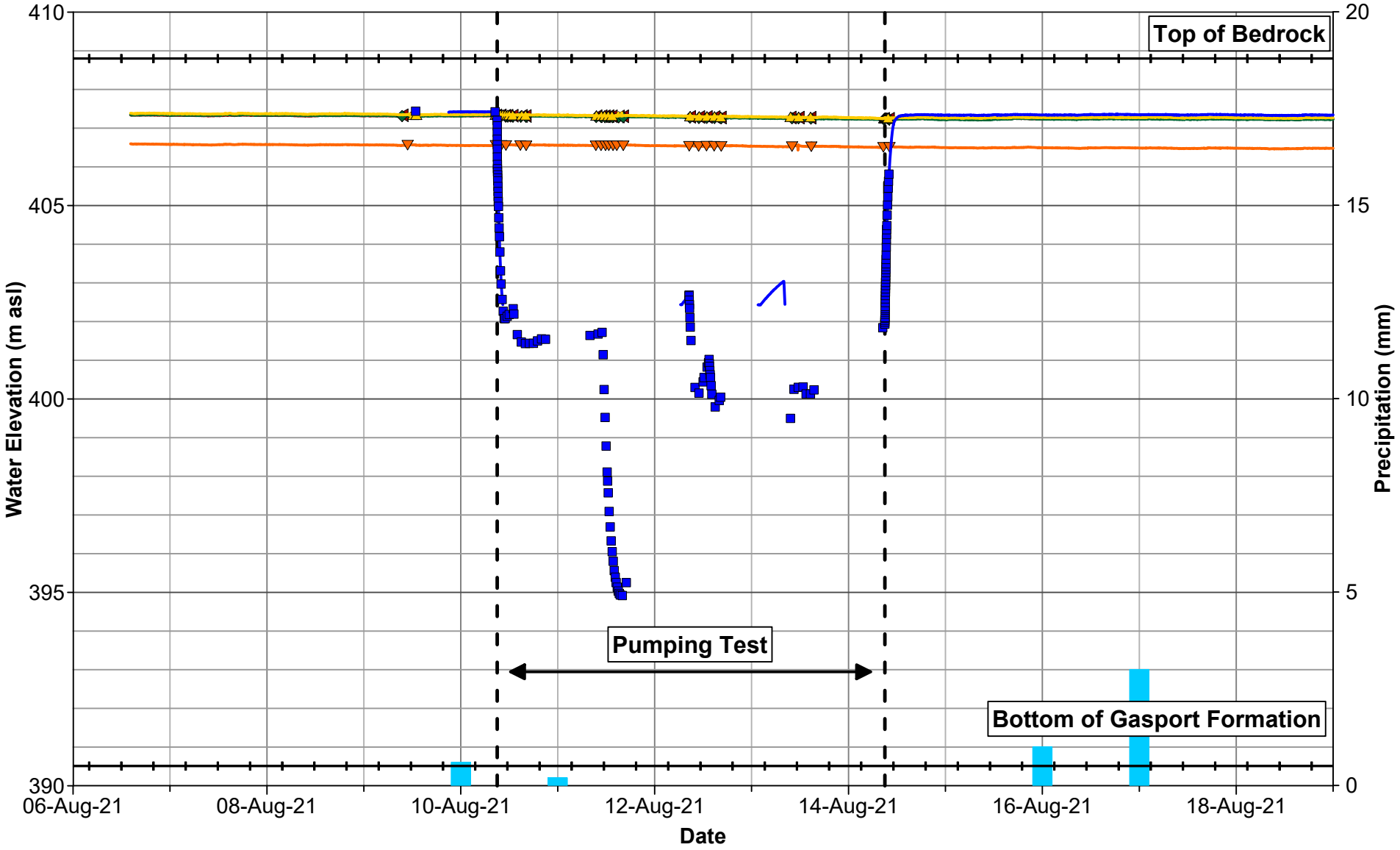
PROJECT **CALEDON QUARRY**

TITLE **PW21-1 CONSTANT RATE TEST RECOVERY VERSUS LOG TIME**

GOLDER
MEMBER OF WSP

DATE	March 2022
DESIGN	VRP
REVIEW	PGM/GRP
APPROVED	--

PROJECT NO.	REV	FIGURE
19129150	A	H-3



PW21-2
MW21-2-1
MW21-2-2
MW21-2-3
MW21-2-4
Precipitation (mm)
Bedrock Annotation

NOTE Average pumping rate = 2.2 L/min
Top of rock as observed at PW21-2
Precipitation observed at Georgetown WWTP meteorological station (ID:6152695)
PW21-2 transducer data discontinuous when elevation <402.4 masl

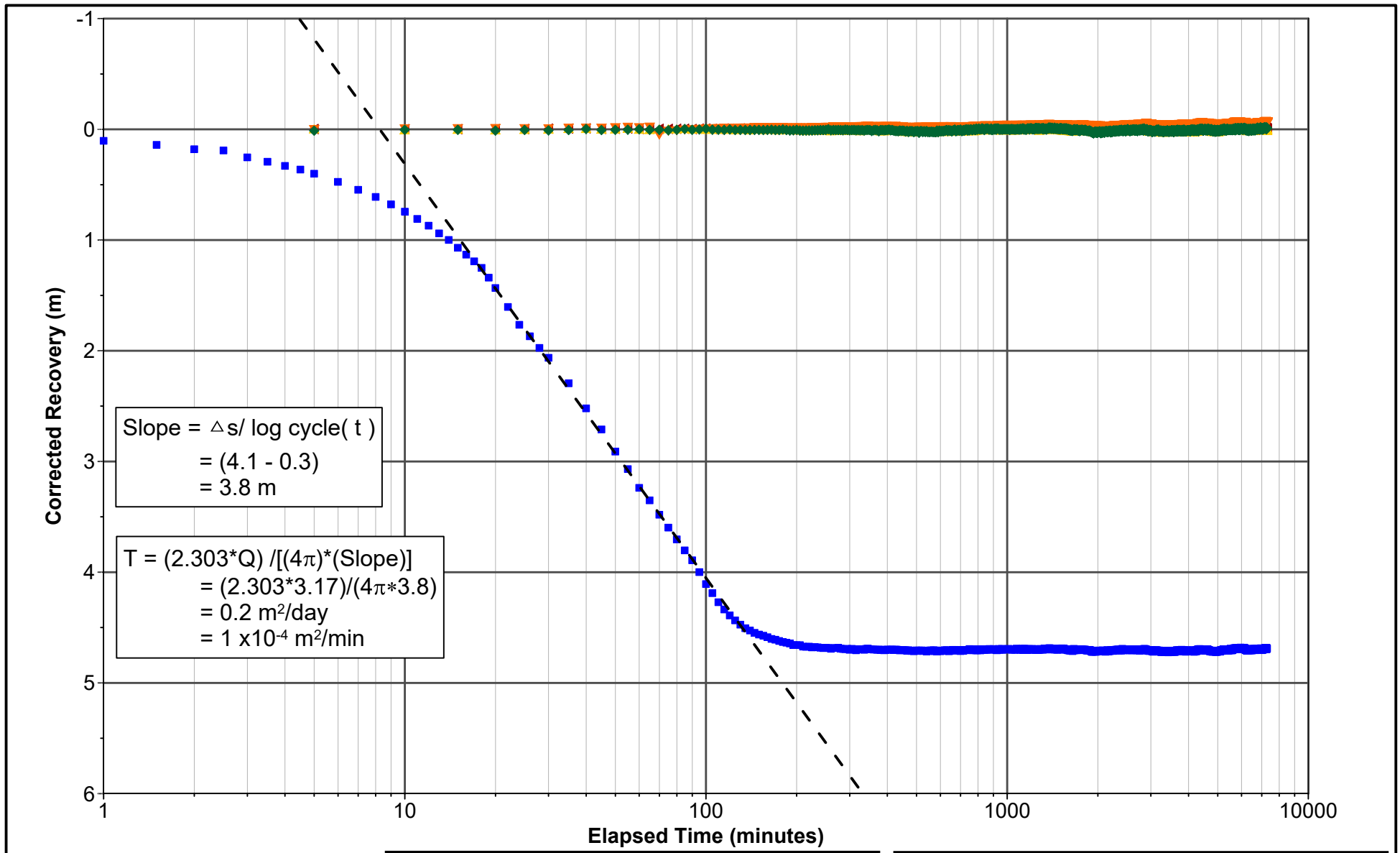
GOLDER
MEMBER OF WSP

DATE	November 2022
DESIGN	VRP
REVIEW	PGM/GRP
APPROVED	--

PROJECT CALEDON QUARRY

TITLE PW21-2 CONSTANT RATE TEST GROUNDWATER ELEVATION MONITORING

PROJECT NO.	REV	FIGURE
19129150	A	H-4



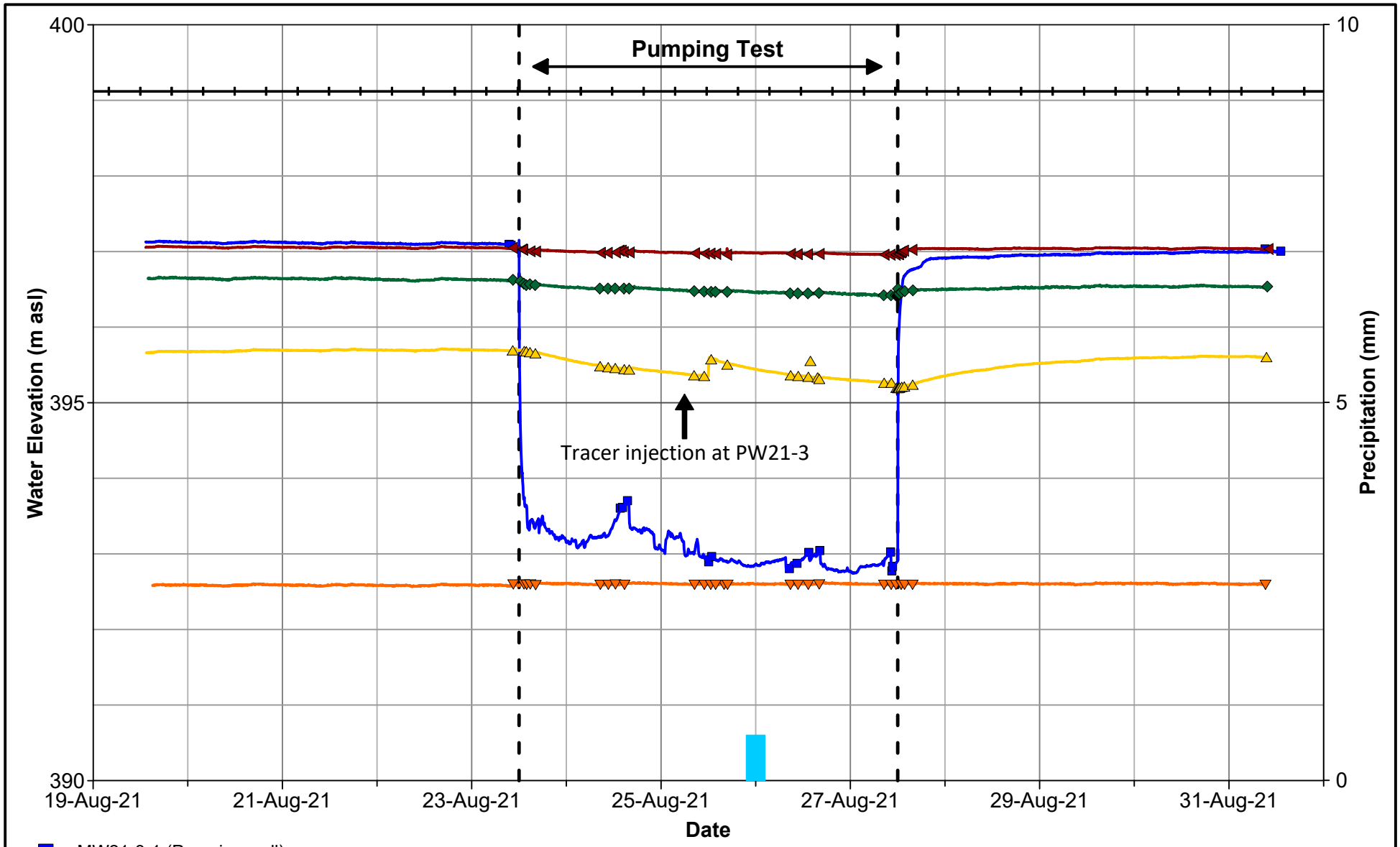
PROJECT **CALEDON QUARRY**

TITLE **PW21-2 CONSTANT RATE TEST**
CORRECTED RECOVERY VERSUS LOG TIME

GOLDER
MEMBER OF WSP

DATE	November 2022
DESIGN	VRP
REVIEW	PGM/GRP
APPROVED	--

PROJECT NO.	REV	FIGURE
19129150	A	H-5



NOTE

Average pumping rate = 1.7 L/min
Top of rock as observed at MW21-3-1
Precipitation observed at Georgetown WWTP meteorological station (ID:6152695)

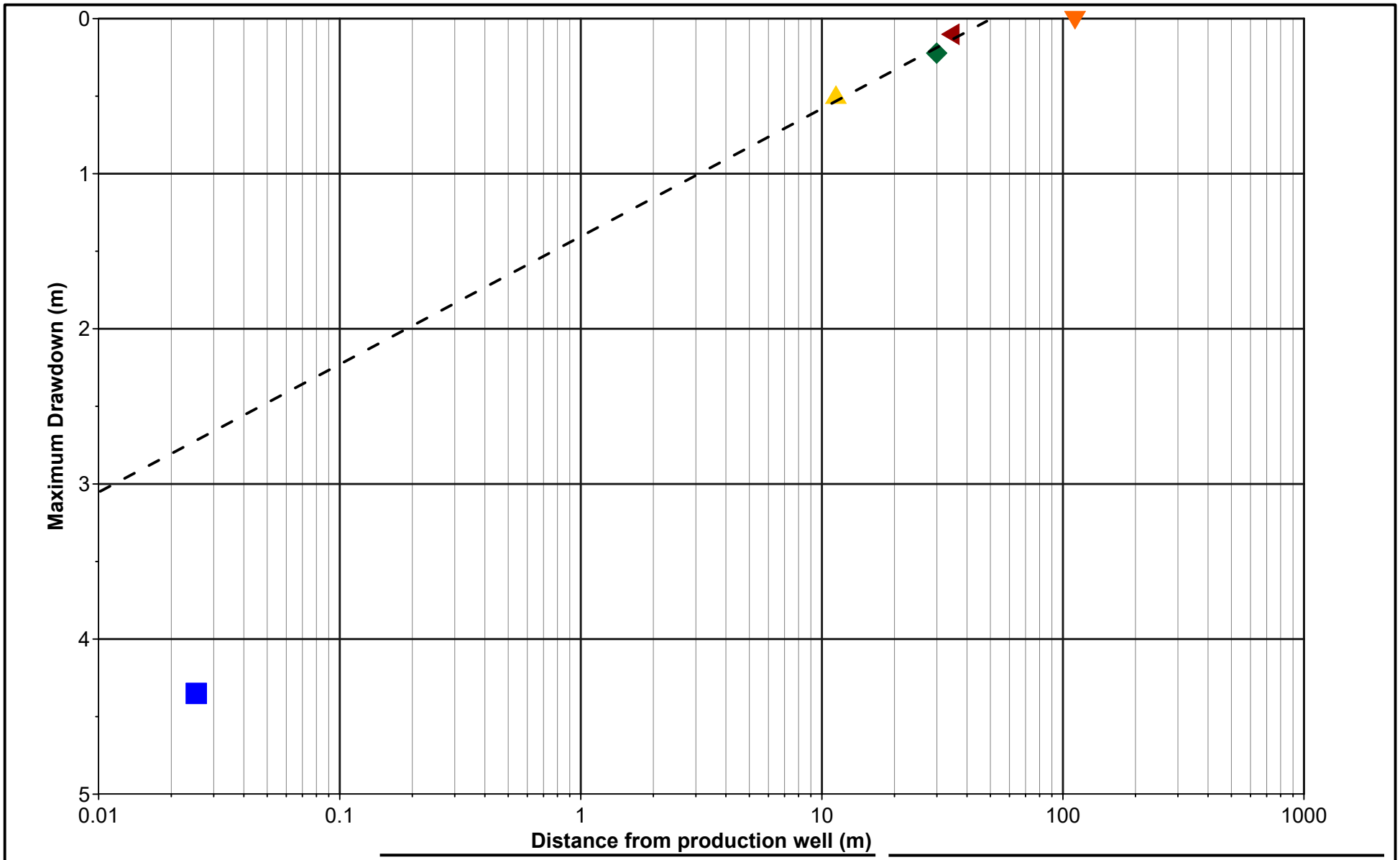
GOLDER
MEMBER OF WSP

DATE	November 2022
DESIGN	VRP
REVIEW	PGM/GRP
APPROVED	--

PROJECT CALEDON QUARRY

TITLE MW21-3-1 CONSTANT RATE TEST GROUNDWATER ELEVATION MONITORING

PROJECT NO.	REV	FIGURE
19129150	A	H-6



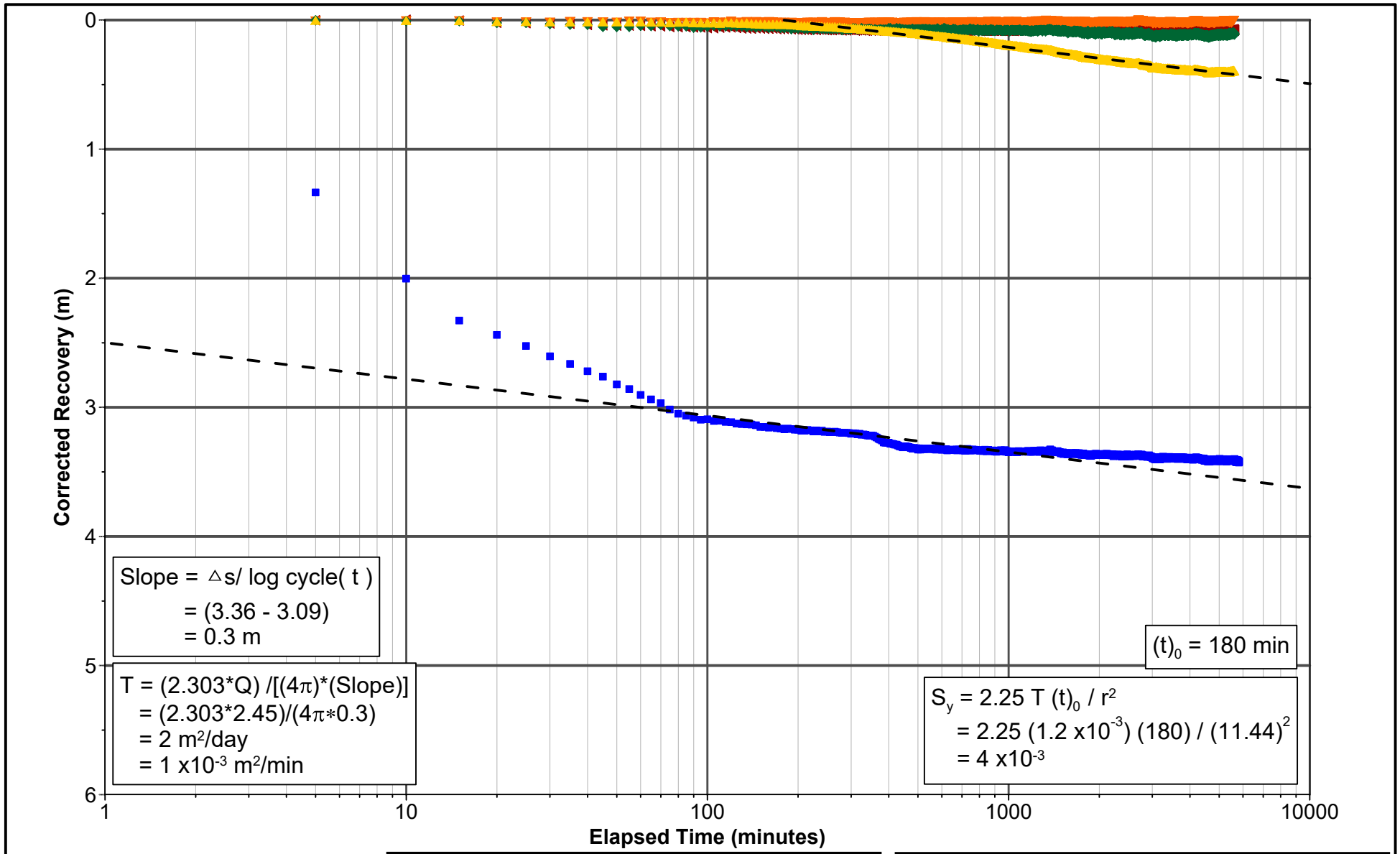
PROJECT **CALEDON QUARRY**

TITLE **MW21-3-1 CONSTANT RATE TEST DRAWDOWN VERSUS DISTANCE**

GOLDER
MEMBER OF WSP

DATE	November 2022
DESIGN	VRP
REVIEW	PGM/GRP
APPROVED	--

PROJECT NO.	REV	FIGURE
19129150	A	H-7



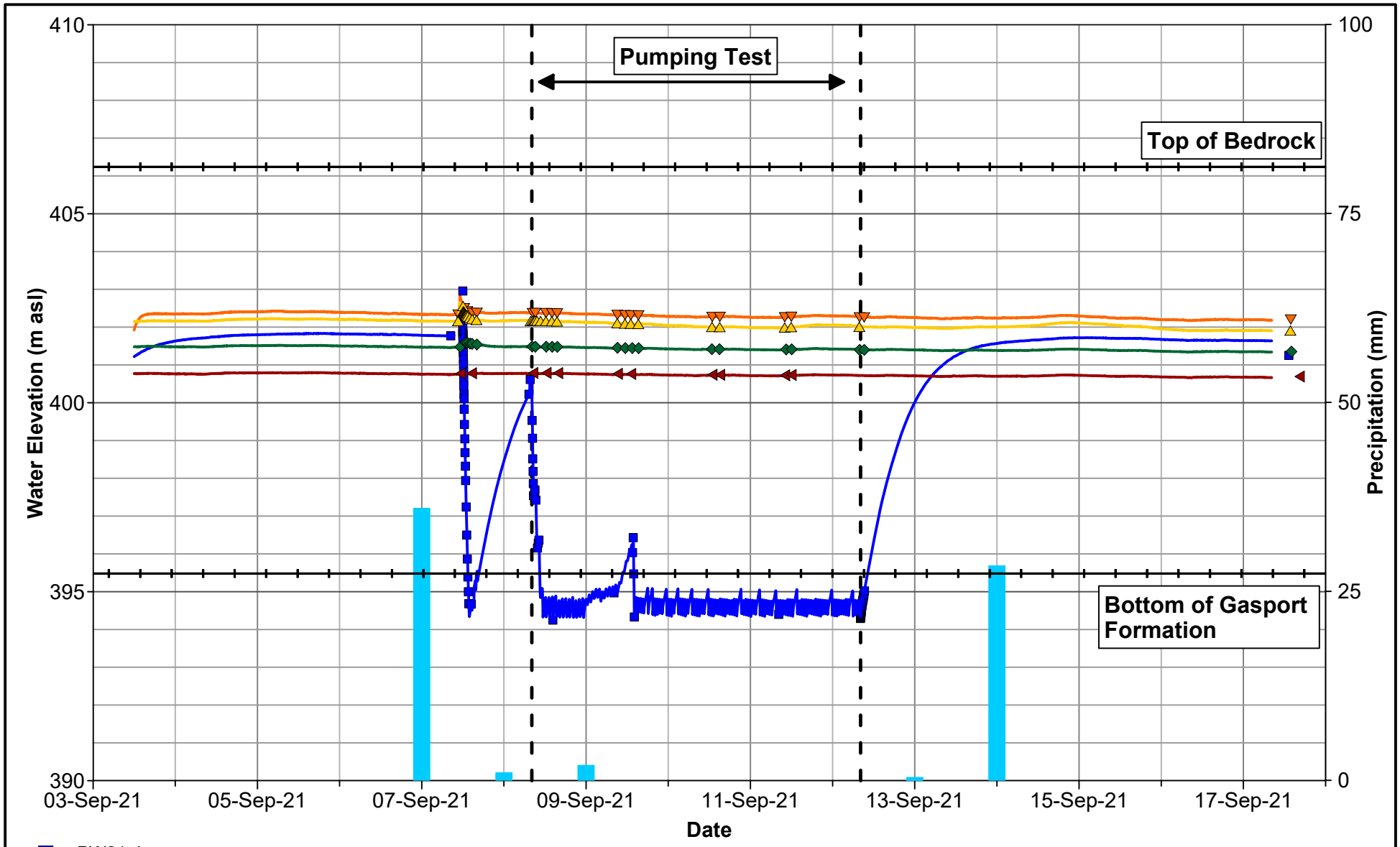
PROJECT **CALEDON QUARRY**

TITLE **MW21-3-1 CONSTANT RATE TEST**
CORRECTED RECOVERY VERSUS LOG TIME

GOLDER
MEMBER OF WSP

DATE	November 2022
DESIGN	VRP
REVIEW	PGM/GRP
APPROVED	--

PROJECT NO.	REV	FIGURE
19129150	A	H-8



NOTE

Average pumping rate = 0.12 L/min
Top of rock as observed at PW21-4
Precipitation observed at Georgetown WWTP meteorological station (ID:6152695)

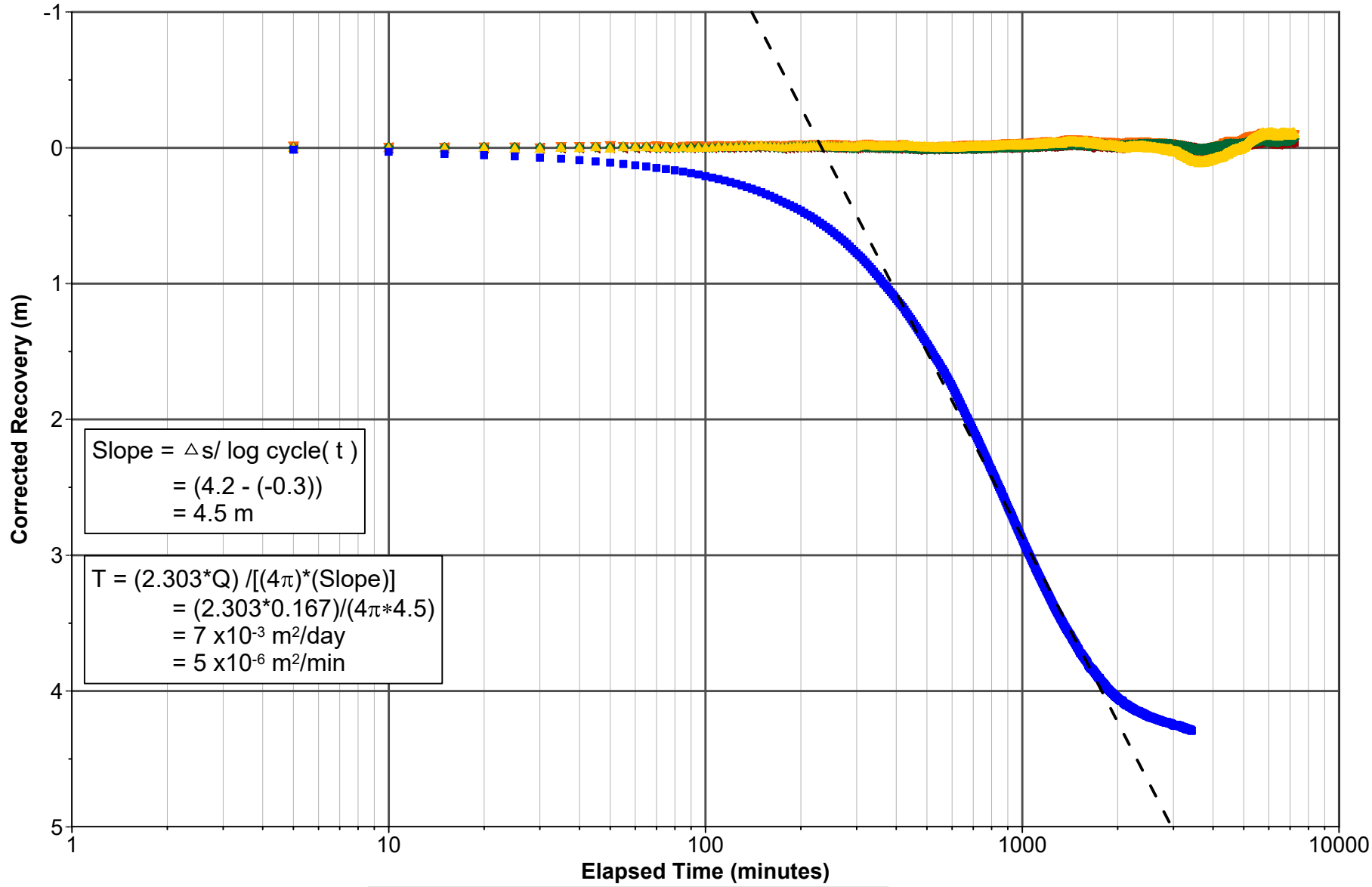
GOLDER
MEMBER OF WSP

DATE	November 2022
DESIGN	VRP
REVIEW	PGM/GRP
APPROVED	--

PROJECT CALEDON QUARRY

TITLE PW21-4 CONSTANT RATE TEST GROUNDWATER ELEVATION MONITORING

PROJECT NO.	REV	FIGURE
19129150	A	H-9



PROJECT **CALEDON QUARRY**

TITLE **PW21-4 CONSTANT RATE TEST**
CORRECTED RECOVERY VERSUS LOG TIME

GOLDER
MEMBER OF WSP

DATE	November 2022
DESIGN	VRP
REVIEW	PGM/GRP
APPROVED	--

PROJECT NO.	REV	FIGURE
19129150	A	H-10

APPENDIX I

Groundwater Quality

TABLE I-1
SUMMARY OF GROUNDWATER QUALITY RESULTS
CALEDON PIT / QUARRY

	Units	PWQO	ODWS				MECP	MW20-01 A	MW20-01B	MW20-02	MW20-03	MW20-04	MW20-05A	MW20-06A	MW20-06B	MW20-07A	MW20-07B	MW20-08A	MW20-08B	MW20-09	MW20-10A	MW20-10B
			MAC	IMAC	AO	OG	Table 2	22-Jun-21	22-Jun-21	22-Jun-21	22-Jun-21	22-Jun-21	22-Jun-21	22-Jun-21	22-Jun-21	21-Jun-21	21-Jun-21	21-Jun-21	21-Jun-21	23-Jun-21	24-Jul-21	24-Jul-21
Physical Tests (Water)																						
Anion Sum	me/L							11.0	8.68	7.55	7.21	8.34	7.09	8.04	6.89	7.85	9.08	9.16	13.1	6.84	8.43	8.14
Bicarb. Alkalinity (calc. as CaCO3)	mg/L							200	250	240	270	230	230	260	230	250	260	270	280	270	290	280
Calculated TDS	mg/L				500			690	460	410	380	460	380	440	370	410	500	490	720	360	460	450
Carb. Alkalinity (calc. as CaCO3)	mg/L							1.3	1.7	1.7	2.3	2.0	2.0	2.3	1.9	2.7	3.1	2.9	2.8	2.0	3.0	2.7
Cation Sum	me/L							11.7	8.24	7.40	7.18	8.38	6.94	8.20	6.82	7.75	9.08	9.23	13.2	6.73	8.45	8.41
Hardness (CaCO3)	mg/L					80-100		470	300	300	300	310	310	340	300	330	270	330	320	320	370	370
Ion Balance (% Difference)	%							2.81	2.62	1.00	0.190	0.210	1.11	1.02	0.520	0.610	0.00	0.400	0.690	0.850	0.0900	1.64
Langelier Index (@ 20C)	N/A							0.825	0.753	0.762	0.888	0.819	0.837	0.903	0.820	0.928	0.901	0.947	0.925	0.833	1.05	0.994
Langelier Index (@ 4C)	N/A							0.578	0.505	0.514	0.640	0.571	0.589	0.655	0.572	0.679	0.653	0.699	0.679	0.584	0.797	0.746
Saturation pH (@ 20C)	N/A							7.02	7.11	7.13	7.06	7.14	7.13	7.07	7.12	7.13	7.19	7.12	7.10	7.06	7.01	7.02
Saturation pH (@ 4C)	N/A							7.27	7.36	7.38	7.30	7.39	7.38	7.32	7.37	7.38	7.44	7.37	7.35	7.30	7.25	7.26
Inorganics																						
Total Ammonia-N	mg/L							0.90	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.28	0.10	<0.050	<0.050	0.081	<0.050
Unionized Ammonia	mg/L	20						<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
Conductivity	umho/cm							1000	840	730	680	810	680	760	670	740	870	900	1400	610	720	670
Dissolved Organic Carbon	mg/L				5			1.2	1.2	1.5	3.0	0.86	0.70	0.40	0.81	0.55	0.88	0.45	1.2	0.70	0.80	0.69
Orthophosphate (P)	mg/L							<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
pH	pH	6.5-8.5				6.5-8.5		7.85	7.87	7.89	7.94	7.96	7.97	7.97	7.94	8.06	8.09	8.07	8.03	7.89	8.05	8.01
Dissolved Sulphate (SO4)	mg/L				500			310	24	33	22	20	39	26	16	40	20	22	17	16	22	18
Alkalinity (Total as CaCO3)[2]	mg/L					30-500		200	250	240	280	240	240	260	240	250	270	270	280	270	290	280
Dissolved Chloride (Cl-)	mg/L				250		790000	23	100	64	40	97	39	66	45	68	100	110	240	18	43	44
Nitrite (N)	mg/L		1.0					<0.010	<0.010	<0.010	0.016	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	<0.010
Nitrate (N)	mg/L		10.0					<0.10	3.87	3.85	1.85	6.24	6.28	6.44	8.03	0.73	5.20	3.65	4.31	7.61	13.0	13.1
Nitrate + Nitrite (N)	mg/L							<0.10	3.87	3.85	1.86	6.24	6.28	6.44	8.03	0.73	5.20	3.65	4.31	7.61	13.0	13.1
Metals[1]																						
Dissolved Aluminum (Al)	ug/L	75				100		**300**	17	<4.9	40	30	27	**230**	63	53	**92**	**120**	6.5	8.2	**150**	7.8
Dissolved Antimony (Sb)	ug/L	20		6			6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Arsenic (As)	ug/L	100		10			25	9.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.9	<1.0	<1.0	<1.0	<1.0	1.4	<1.0
Dissolved Barium (Ba)	ug/L		1000				1000	15	42	55	75	41	110	30	19	56	34	41	31	19	46	25
Dissolved Beryllium (Be)	ug/L	1100					4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Dissolved Boron (B)	ug/L	200		5000			5000	**680**	17	12	14	11	11	12	11	23	19	<10	<10	<10	11	10
Dissolved Cadmium (Cd)	ug/L	0.2	5				2.7	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Dissolved Calcium (Ca)	ug/L							150000	88000	87000	88000	88000	86000	94000	88000	81000	71000	82000	92000	88000	98000	99000
Dissolved Chromium (Cr)	ug/L	1[3]	50				50	<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
Dissolved Cobalt (Co)	ug/L	1					3.8	0.56	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Copper (Cu)	ug/L	5			1000		87	<0.90	1.0	<0.90	<0.90	1.6	2.1	1.0	1.2	<0.90	2.8	**5.7**	1.6	1.1	1.2	<0.90
Dissolved Iron (Fe)	ug/L	300			300			**940**	<100	<100	<100	110	<100	**400**	<100	<100	<100	200	<100	<100	240	<100
Dissolved Lead (Pb)	ug/L	5	10				10	0.92	<0.50	<0.50	<0.50	0.63	<0.50	2.3	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	1.2	<0.50
Dissolved Magnesium (Mg)	ug/L							22000	19000	20000	19000	21000	22000	27000	19000	30000	22000	30000	22000	25000	30000	29000
Dissolved Manganese (Mn)	ug/L				50			62	2.2	4.4	120	5.9	3.9	36	3.9	26	46	15	<2.0	<2.0	17	<2.0
Dissolved Molybdenum (Mo)	ug/L	40					70	1.6	<0.50	0.87	7.3	<0.50	<0.50	<0.50	<0.50	1.5	5.5	0.56	<0.50	<0.50	0.64	<0.50
Dissolved Nickel (Ni)	ug/L	25					100	2.2	<1.0	1.8	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	2.8	<1.0	<1.0	<1.0	<1.0	<1.0
Dissolved Phosphorus (P)	ug/L	30						<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Dissolved Potassium (K)	ug/L							11000	1300	1700	2100	1600	1500	2000	1200	2400	1500	880	920	1100	1200	1100
Dissolved Selenium (Se)	ug/L	100	50				10	<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
Dissolved Silicon (Si)	ug/L							4200	2700	3100	4100	2900	2600	3500	2300	3900	3700	3900	2700	4300	4800	4700
Dissolved Silver (Ag)	ug/L	0.1					1.5	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Dissolved Sodium (Na)	ug/L				200000		490000	42000	52000	32000	26000	51000	17000	29000	20000	26000	83000	61000	160000	6400	25000	24000
Dissolved Strontium (Sr)	ug/L							5800	160	220	190	180	1400	320	100	2600	220	230	160	140	960	150
Dissolved Thallium (Tl)	ug/L	0.3					2	<0.050	<0.050	<0.050	<0.050	<0.050	0.065	<0.050	<0.050	0.056	0.079	<0.050	<0.050	<0.050	<0.050	<0.050
Dissolved Titanium (Ti)	ug/L							7.7	<5.0	<5.0	7.3	<5.0	<5.0	11	<5.0	<5.0	<5.0	6.8	<5.0	<5.0	7.0	<5.0
Dissolved Uranium (U)	ug/L	5	20				20	0.23	0.33	0.57	0.77	0.22	0.23	0.25	0.13	0.53	1.2	0.88	0.21	0.14	0.98	0.14
Dissolved Vanadium (V)	ug/L	6					6.2	0.55	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Zinc (Zn)	ug/L	20			5000		1100	<5.0	<5.0	<5.0	<5.0	<5.0	5.5	10	<5.0	<5.0	9.5	9.3	<5.0	<5.0	<5.0	<5.0
BTEX & F1 Hydrocarbons																						
Benzene	ug/L	100	1				5		<0.20	<0.20	<0.20	<0.20			<0.20		<0.20		<0.20	<0.20		<0.20
Toluene	ug/L	1	60		24		24		<0.20	<0.20	<0.20	<0.20			<0.20		<0.20		<0.20	<0.20		<0.20
Ethylbenzene	ug/L	8	140		1.6		2.4		<0.20	<0.20	<0.20	<0.20			<0.20		<0.20		<0.20	<0.20		<0.20
o-Xylene	ug/L	40							<0.20	<0.20	<0.20	<0.20			<0.20		<0.20		<0.20	<0.20		<0.20
p+m-Xylene	ug/L	32[4]							<0.40	<0.40	<0.40	<0.40			<0.40		<0.40		<0.40	<0.40		<0.40
Total Xylenes	ug/L		90		20		300		<0.40	<0.40	<0.40	<0.40			<0.40		<0.40		<0.40	<0.40		<0.40
F1 (C6-C10)	ug/L								<25	<25	<25	<25			<25		<25		<25	<25		<25
F1 (C6-C10) - BTEX	ug/L						750		<25	<25	<25	<25			<25		<25		<25	<25		<25
F2-F4 Hydrocarbons																						
F2 (C10-C16 Hydrocarbons)	ug/L						150		<100	<100	<100	<100			<100		<100		<100	<100		<100
F3 (C16-C34 Hydrocarbons)	ug/L						500		<200	<200	<200	<200			<200		360		<200	<200		<200
F4 (C34-C50 Hydrocarbons)	ug/L						500		<200	<200	<200	<200			<200		<200		<200	<200		<200

Exceedance of PWQO Criteria	**620**
Exceedance of ODWS Criteria	310
Exceedance of MECP Table 2 Criteria	500

1) PWQO metals standards apply to unfiltered surface water samples. Included here for comparison to filtered groundwater samples.
2) Alkalinity should not be decreased by more than 25% of the natural concentration
3) 1 CrVI or 8.9 CrIII
4) 2-m and 30-p Xylenes

TABLE I-1
SUMMARY OF GROUNDWATER QUALITY RESULTS
CALEDON PIT / QUARRY

	Units	PWQO	ODWS				MECP	MW20-11A	MW20-11B	MW20-12A	MW20-12B	MW20-13A	MW20-13B	MW20-13C	MW20-14A	MW20-14B	MW20-15A	MW20-15B	MW20-15C	MW20-16A	MW20-16B	MW20-17A
			MAC	IMAC	AO	OG	Table 2	24-Jul-21	24-Jul-21	24-Jul-21	24-Jul-21	24-Jul-21	24-Jul-21	24-Jul-21	17-Feb-21	17-Feb-21	25-Jun-21	25-Jun-21	25-Jun-21	28-Jun-21	28-Jun-21	22-Jun-21
Physical Tests (Water)																						
Anion Sum	me/L							6.95	18.3	6.36	6.65	4.60	4.56	6.69	15.6	6.52	28.8	6.49	6.46	5.57	6.43	9.25
Bicarb. Alkalinity (calc. as CaCO3)	mg/L							250	380	260	260	190	190	280	200	240	190	210	290	200	240	210
Calculated TDS	mg/L				500			370	1000	340	350	240	240	340	980	340	1900	370	360	290	350	560
Carb. Alkalinity (calc. as CaCO3)	mg/L							4.7	3.6	2.9	2.9	2.7	3.6	5.0	2.3	3.2	1.2	2.0	2.7	3.2	5.2	2.4
Cation Sum	me/L							6.91	19.2	6.36	6.78	4.45	4.54	6.72	15.3	6.35	30.6	6.63	8.40	5.04	6.56	9.80
Hardness (CaCO3)	mg/L					80-100		230	430	300	300	200	200	320	630	300	1000	320	400	230	180	440
Ion Balance (% Difference)	%							0.290	2.27	0.0300	0.920	1.66	0.250	0.160	1.11	1.28	3.06	1.11	13.0	4.96	1.02	2.89
Langelier Index (@ 20C)	N/A							0.959	1.11	0.942	0.960	0.693	0.806	1.12	1.11	0.957	0.996	0.803	0.985	0.842	0.822	1.05
Langelier Index (@ 4C)	N/A							0.710	0.868	0.693	0.712	0.444	0.556	0.874	0.864	0.708	0.753	0.555	0.736	0.593	0.573	0.797
Saturation pH (@ 20C)	N/A							7.34	6.89	7.14	7.11	7.49	7.50	7.15	6.96	7.19	6.86	7.21	7.01	7.38	7.54	7.05
Saturation pH (@ 4C)	N/A							7.59	7.14	7.39	7.36	7.74	7.75	7.40	7.20	7.44	7.10	7.45	7.26	7.63	7.78	7.30
Inorganics																						
Total Ammonia-N	mg/L							0.081	<0.050	<0.050	<0.050	0.21	<0.050	0.11	1.2	<0.050	1.5	0.052	<0.050	0.063	0.23	0.19
Unionized Ammonia	mg/L	20						<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
Conductivity	umho/cm							670	1800	550	600	410	410	580	1300	600	2500	630	600	520	590	850
Dissolved Organic Carbon	mg/L				5			0.61	1.0	<0.40	0.68	<0.40	<0.40	1.3	0.52	0.65	1.7	0.46	0.52	0.66	2.5	1.9
Orthophosphate (P)	mg/L							<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
pH	pH	6.5-8.5				6.5-8.5		8.30	8.01	8.08	8.07	8.18	8.30	8.27	8.07	8.14	7.85	8.01	7.99	8.22	8.36	8.09
Dissolved Sulphate (SO4)	mg/L				500			42	37	26	13	37	31	33	540	33	1200	110	25	58	29	230
Alkalinity (Total as CaCO3)[2]	mg/L					30-500		250	380	260	260	190	190	290	210	240	190	210	290	210	250	210
Dissolved Chloride (Cl-)	mg/L				250		790000	35	350	7.4	35	1.4	1.1	3.0	6.4	15	11	2.1	3.4	8.5	32	9.5
Nitrite (N)	mg/L		1.0					0.013	<0.010	<0.010	<0.010	<0.010	<0.010	0.133	0.027	<0.010	0.039	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate (N)	mg/L		10.0					0.18	2.73	4.91	2.45	<0.10	<0.10	1.76	0.21	7.35	0.31	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrate + Nitrite (N)	mg/L							0.19	2.73	4.91	2.45	<0.10	<0.10	1.89	0.23	7.35	0.35	<0.10	<0.10	<0.10	<0.10	<0.10
Metals[1]																						
Dissolved Aluminum (Al)	ug/L	75				100		28	**520**	<4.9	6.1	12	5.9	7.7	18	5.8	**200**	<4.9	**600**	5.8	6.6	**80**
Dissolved Antimony (Sb)	ug/L	20		6			6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.2	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Arsenic (As)	ug/L	100		10			25	5.9	<1.0	<1.0	<1.0	2.7	2.6	<1.0	3.0	<1.0	23	2.0	7.3	8.2	5.8	33
Dissolved Barium (Ba)	ug/L		1000				1000	96	61	52	30	43	57	37	30	38	24	19	170	42	73	31
Dissolved Beryllium (Be)	ug/L	1100					4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Dissolved Boron (B)	ug/L	200		5000			5000	46	15	12	<10	67	56	27	**640**	<10	**720**	60	31	53	53	160
Dissolved Cadmium (Cd)	ug/L	0.2	5				2.7	<0.090	**0.25**	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Dissolved Calcium (Ca)	ug/L							49000	120000	74000	80000	43000	41000	66000	190000	72000	330000	81000	92000	53000	32000	130000
Dissolved Chromium (Cr)	ug/L	1[3]	50				50	<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
Dissolved Cobalt (Co)	ug/L	1					3.8	0.63	**1.2**	<0.50	<0.50	<0.50	<0.50	0.89	<0.50	<0.50	0.60	<0.50	**1.4**	<0.50	<0.50	**1.1**
Dissolved Copper (Cu)	ug/L	5			1000		87	<0.90	**5.3**	<0.90	<0.90	2.1	<0.90	<0.90	**6.9**	1.5	1.3	<0.90	4.7	<0.90	<0.90	3.4
Dissolved Iron (Fe)	ug/L	300			300			<100	**590**	<100	<100	<100	110	<100	**380**	<100	210	<100	**1200**	110	<100	**900**
Dissolved Lead (Pb)	ug/L	5	10				10	<0.50	**5.2**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	3.2	<0.50	<0.50	<0.50
Dissolved Magnesium (Mg)	ug/L							26000	33000	28000	23000	22000	25000	38000	39000	30000	51000	27000	42000	23000	24000	30000
Dissolved Manganese (Mn)	ug/L				50			180	370	16	7.4	31	21	220	120	<2.0	54	16	130	11	21	61
Dissolved Molybdenum (Mo)	ug/L	40					70	15	<0.50	0.77	<0.50	2.8	2.5	15	3.0	0.55	**150**	2.2	1.4	4.6	35	8.1
Dissolved Nickel (Ni)	ug/L	25					100	4.3	4.2	<1.0	<1.0	<1.0	<1.0	1.6	2.9	<1.0	2.0	<1.0	2.1	<1.0	4.1	23
Dissolved Phosphorus (P)	ug/L	30						<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**130**	<100	<100	<100
Dissolved Potassium (K)	ug/L							1600	1300	3400	1600	2100	1700	1200	11000	740	12000	1600	1700	2100	1600	5300
Dissolved Selenium (Se)	ug/L	100	50				10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.8	<2.0	<2.0	<2.0	<2.0	<2.0
Dissolved Silicon (Si)	ug/L							4300	5200	4800	4000	6200	6400	3300	4200	3200	5500	6800	8500	5800	5200	4900
Dissolved Silver (Ag)	ug/L	0.1					1.5	<0.090	**0.19**	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Dissolved Sodium (Na)	ug/L				200000		490000	51000	240000	6200	19000	10000	9700	6100	54000	6500	220000	6500	5100	11000	67000	17000
Dissolved Strontium (Sr)	ug/L							1100	200	330	110	1700	960	250	5000	91	4700	1700	430	1000	210	3800
Dissolved Thallium (Tl)	ug/L	0.3					2	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.052	<0.050	<0.050	<0.050	<0.050	<0.050
Dissolved Titanium (Ti)	ug/L							<5.0	16	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	7.7	<5.0	18	<5.0	<5.0	<5.0
Dissolved Uranium (U)	ug/L	5	20				20	3.9	1.1	0.47	0.24	0.29	0.28	1.2	0.45	0.31	**21**	0.25	1.2	0.67	2.8	0.87
Dissolved Vanadium (V)	ug/L	6					6.2	0.77	0.87	<0.50	<0.50	<0.50	<0.50	0.55	<0.50	<0.50	0.78	<0.50	1.7	<0.50	<0.50	<0.50
Dissolved Zinc (Zn)	ug/L	20			5000		1100	<5.0	**29**	<5.0	<5.0	<5.0	<5.0	<5.0	5.9	<5.0	8.9	<5.0	13	<5.0	<5.0	8.6
BTEX & F1 Hydrocarbons																						
Benzene	ug/L	100	1				5		<0.20		<0.20		<0.20		<0.20	<0.20		<0.20			<0.20	
Toluene	ug/L	1	60		24		24		<0.20		<0.20		0.29		<0.20	0.23		<0.20			0.21	
Ethylbenzene	ug/L	8	140		1.6		2.4		<0.20		<0.20		<0.20		<0.20	<0.20		<0.20			<0.20	
o-Xylene	ug/L	40							<0.20		<0.20		<0.20		<0.20	<0.20		<0.20			<0.20	
p+m-Xylene	ug/L	32[4]							<0.40		<0.40		<0.40		<0.40	<0.40		<0.40			<0.40	
Total Xylenes	ug/L		90		20		300		<0.40		<0.40		<0.40		<0.40	<0.40		<0.40			<0.40	
F1 (C6-C10)	ug/L								<25		<25		<25		<25	<25		<25			86	
F1 (C6-C10) - BTEX	ug/L						750		<25		<25		<25		<25	<25		<25			86	
F2-F4 Hydrocarbons																						
F2 (C10-C16 Hydrocarbons)	ug/L						150		<100		<100		<100		<100	<100		<100			<100	
F3 (C16-C34 Hydrocarbons)	ug/L						500		<200		<200		<200		<200	<200		<200			<200	
F4 (C34-C50 Hydrocarbons)	ug/L						500		<200		<200		<200		<200	<200		<200			<200	

Exceedance of PWQO Criteria	**620**
Exceedance of ODWS Criteria	310
Exceedance of MECP Table 2 Criteria	500

1) PWQO metals standards apply to unfiltered surface water samples. Included here for comparison to filtered groundwater samples.
2) Alkalinity should not be decreased by more than 25% of the natural concentration
3) 1 CrVI or 8.9 CrIII
4) 2-m and 30-p Xylenes

TABLE I-1
SUMMARY OF GROUNDWATER QUALITY RESULTS
CALEDON PIT / QUARRY

	Units	PWQO	ODWS				MECP	MW20-17B	MW20-18	MW20-19A	MW20-19B	MW20-20A	MW20-20B	MW20-20C	MW20-21A	MW20-21B	MW20-22A	MW20-22B	MW20-23A	MW20-23B	MW20-23C	MW20-24A
			MAC	IMAC	AO	OG	Table 2	22-Jun-21	22-Jun-21	23-Jun-21	23-Jun-21	23-Jun-21	23-Jun-21	23-Jun-21	28-Jun-21	28-Jun-21	23-Jun-21	23-Jun-21	22-Jun-21	22-Jun-21	22-Jun-21	25-Jun-21
Physical Tests (Water)																						
Anion Sum	me/L							7.43	12.0	9.06	7.25	26.3	8.64	7.54	27.5	7.21	27.0	18.7	28.0	20.9	6.46	7.93
Bicarb. Alkalinity (calc. as CaCO3)	mg/L							240	260	240	260	180	200	310	200	290	200	220	190	210	240	270
Calculated TDS	mg/L				500			410	660	490	370	1700	500	380	1800	410	1700	1200	1900	1300	340	430
Carb. Alkalinity (calc. as CaCO3)	mg/L							2.1	2.2	2.1	2.4	<1.0	1.3	2.2	1.9	4.7	<1.0	1.9	1.4	1.1	2.5	2.0
Cation Sum	me/L							8.14	12.1	8.56	6.66	26.3	8.13	7.34	28.6	8.22	25.7	18.9	31.2	21.0	6.53	8.48
Hardness (CaCO3)	mg/L					80-100		340	390	420	310	1300	400	340	1400	350	1300	870	1500	990	280	350
Ion Balance (% Difference)	%							4.54	0.780	2.85	4.22	0.00	3.03	1.38	2.00	6.59	2.53	0.680	5.49	0.200	0.480	3.36
Langelier Index (@ 20C)	N/A							0.874	0.938	0.806	0.859	0.952	0.715	0.904	1.27	1.22	0.961	1.15	1.22	0.979	0.921	0.780
Langelier Index (@ 4C)	N/A							0.626	0.691	0.558	0.611	0.708	0.467	0.655	1.02	0.970	0.717	0.902	0.971	0.734	0.672	0.532
Saturation pH (@ 20C)	N/A							7.09	7.01	7.16	7.14	6.74	7.13	6.97	6.73	7.01	6.73	6.81	6.67	6.76	7.14	7.12
Saturation pH (@ 4C)	N/A							7.34	7.26	7.40	7.39	6.98	7.38	7.22	6.98	7.26	6.98	7.05	6.91	7.00	7.39	7.37
Inorganics																						
Total Ammonia-N	mg/L							<0.050	<0.050	<0.050	<0.050	0.22	<0.050	<0.050	0.085	0.61	0.070	0.15	0.23	0.20	<0.050	0.094
Unionized Ammonia	mg/L	20						<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
Conductivity	umho/cm							730	1300	780	640	2000	740	660	2100	640	2000	1500	2300	1700	630	770
Dissolved Organic Carbon	mg/L				5			0.67	1.6	1.1	0.62	<0.40	<0.40	4.6	0.92	5.5	1.2	0.85	0.68	0.69	1.6	2.4
Orthophosphate (P)	mg/L							<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
pH	pH	6.5-8.5				6.5-8.5		7.97	7.95	7.96	8.00	7.69	7.85	7.88	8.00	8.23	7.69	7.95	7.88	7.74	8.06	7.90
Dissolved Sulphate (SO4)	mg/L				500			54	23	190	76	1100	220	15	1100	56	1100	650	1100	770	23	79
Alkalinity (Total as CaCO3)[2]	mg/L					30-500		250	260	250	260	180	200	310	200	300	200	230	190	210	240	270
Dissolved Chloride (Cl-)	mg/L				250		790000	47	210	7.1	18	4.2	4.5	35	15	3.1	7.2	24	13	23	39	31
Nitrite (N)	mg/L		1.0					<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	<0.010	<0.010	<0.010	<0.010
Nitrate (N)	mg/L		10.0					0.74	3.04	<0.10	<0.10	<0.10	<0.10	0.13	<0.10	<0.10	<0.10	0.25	<0.10	<0.10	1.39	<0.10
Nitrate + Nitrite (N)	mg/L							0.74	3.04	<0.10	<0.10	<0.10	<0.10	0.13	<0.10	<0.10	<0.10	0.26	<0.10	<0.10	1.39	<0.10
Metals[1]																						
Dissolved Aluminum (Al)	ug/L	75				100		44	15	46	6.5	26	<4.9	**80**	7.4	**500**	9.4	9.7	**79**	64	<4.9	**79**
Dissolved Antimony (Sb)	ug/L	20		6			6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	<0.50	<0.50	<0.50	<0.50
Dissolved Arsenic (As)	ug/L	100		10			25	3.8	<1.0	1.3	4.3	4.8	5.5	<1.0	14	9.3	2.8	11	5.5	10	<1.0	<1.0
Dissolved Barium (Ba)	ug/L		1000				1000	55	87	22	35	8.1	14	33	17	130	7.7	13	14	14	40	56
Dissolved Beryllium (Be)	ug/L	1100					4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Dissolved Boron (B)	ug/L	200		5000			5000	26	14	35	12	54	13	16	110	47	71	54	130	48	10	31
Dissolved Cadmium (Cd)	ug/L	0.2	5				2.7	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	0.20	<0.090	<0.090	<0.090
Dissolved Calcium (Ca)	ug/L							92000	120000	83000	77000	430000	110000	95000	390000	91000	400000	260000	480000	320000	82000	79000
Dissolved Chromium (Cr)	ug/L	1[3]	50				50	<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
Dissolved Cobalt (Co)	ug/L	1					3.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.52	<0.50	<0.50	<0.50
Dissolved Copper (Cu)	ug/L	5			1000		87	<0.90	**7.4**	<0.90	<0.90	<0.90	<0.90	2.0	<0.90	3.1	<0.90	1.0	3.5	2.6	3.2	**5.4**
Dissolved Iron (Fe)	ug/L	300			300			<100	<100	**310**	**380**	**620**	180	110	**810**	**1100**	**350**	<100	**340**	**1000**	<100	**640**
Dissolved Lead (Pb)	ug/L	5	10				10	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.1	<0.50	<0.50	0.85	<0.50	<0.50	0.72
Dissolved Magnesium (Mg)	ug/L							27000	23000	50000	29000	54000	30000	26000	94000	30000	62000	57000	71000	46000	19000	38000
Dissolved Manganese (Mn)	ug/L				50			35	16	7.0	48	41	6.7	6.0	21	41	39	34	62	47	<2.0	27
Dissolved Molybdenum (Mo)	ug/L	40					70	1.2	1.4	1.6	3.4	2.0	2.1	<0.50	4.0	5.1	2.9	24	5.4	7.1	0.61	20
Dissolved Nickel (Ni)	ug/L	25					100	1.9	3.3	<1.0	2.2	<1.0	<1.0	<1.0	<1.0	5.2	3.9	5.9	5.7	4.0	<1.0	1.7
Dissolved Phosphorus (P)	ug/L	30						<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Dissolved Potassium (K)	ug/L							1400	1800	1700	730	1600	820	1100	3200	1100	2200	2000	3600	820	2600	1700
Dissolved Selenium (Se)	ug/L	100	50				10	<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
Dissolved Silicon (Si)	ug/L							5300	3200	3900	2900	6700	7300	4700	6600	10000	5600	4700	6100	5700	2900	5200
Dissolved Silver (Ag)	ug/L	0.1					1.5	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	**0.11**	<0.090	<0.090	<0.090
Dissolved Sodium (Na)	ug/L				200000		490000	29000	100000	4400	8800	7100	3300	11000	33000	25000	14000	32000	29000	23000	19000	31000
Dissolved Strontium (Sr)	ug/L							750	200	1500	610	8600	2700	150	7100	1200	7200	4700	7900	5300	150	130
Dissolved Thallium (Tl)	ug/L	0.3					2	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dissolved Titanium (Ti)	ug/L							<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	23	<5.0	<5.0	<5.0	8.8	<5.0	<5.0
Dissolved Uranium (U)	ug/L	5	20				20	0.61	0.82	0.12	0.13	0.17	<0.10	0.80	0.20	1.8	0.22	1.4	0.20	0.93	0.71	0.20
Dissolved Vanadium (V)	ug/L	6					6.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	1.2	<0.50	<0.50	<0.50	<0.50
Dissolved Zinc (Zn)	ug/L	20			5000		1100	<5.0	8.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	9.8	<5.0	<5.0	<5.0	<5.0	8.9	7.6
BTEX & F1 Hydrocarbons																						
Benzene	ug/L	100	1				5	<0.20	<0.20		<0.20		<0.20			<0.20		<0.20		<0.20		
Toluene	ug/L	1	60		24		24	<0.20	<0.20		<0.20		<0.20			<0.20		0.27		<0.20		
Ethylbenzene	ug/L	8	140		1.6		2.4	<0.20	<0.20		<0.20		<0.20			<0.20		<0.20		<0.20		
o-Xylene	ug/L	40						<0.20	<0.20		<0.20		<0.20			<0.20		<0.20		<0.20		
p+m-Xylene	ug/L	32[4]						<0.40	<0.40		<0.40		<0.40			<0.40		<0.40		<0.40		
Total Xylenes	ug/L		90		20		300	<0.40	<0.40		<0.40		<0.40			<0.40		<0.40		<0.40		
F1 (C6-C10)	ug/L							<25	<25		<25		<25			<25		<25		<25		
F1 (C6-C10) - BTEX	ug/L						750	<25	<25		<25		<25			<25		<25		<25		
F2-F4 Hydrocarbons																						
F2 (C10-C16 Hydrocarbons)	ug/L						150	<100	<100		<100		<100			<100		<100		<100		
F3 (C16-C34 Hydrocarbons)	ug/L						500	520	<200		1100		330			<200		<200		<200		
F4 (C34-C50 Hydrocarbons)	ug/L						500	420	<200		810		<200			<200		<200		<200		

Exceedance of PWQO Criteria	**620**
Exceedance of ODWS Criteria	310
Exceedance of MECP Table 2 Criteria	500

1) PWQO metals standards apply to unfiltered surface water samples. Included here for comparison to filtered groundwater samples.
2) Alkalinity should not be decreased by more than 25% of the natural concentration
3) 1 CrVI or 8.9 CrIII
4) 2-m and 30-p Xylenes

TABLE I-1
SUMMARY OF GROUNDWATER QUALITY RESULTS
CALEDON PIT / QUARRY

	Units	PWQO	ODWS				MECP	MW20-24B	MW20-25A	MW20-25B	MW20-26A	MW20-26B	MW20-26C	MW20-27A	MW20-27B	MW20-28A	MW20-28B	DUP1	DUP2	DUP3	DUP4	DUP5	DUP6
			MAC	IMAC	AO	OG	Table 2	25-Jun-21	25-Jun-21	25-Jun-21	24-Jun-21	24-Jun-21	24-Jun-21	24-Jun-21	24-Jun-21	24-Jun-21	24-Jun-21	22-Jun-21	23-Jun-21	24-Jun-21	24-Jun-21	24-Jun-21	25-Jun-21
Physical Tests (Water)																							
Anion Sum	me/L							11.5	29.8	15.5	22.9	11.2	18.7	22.8	8.56	4.78	4.78	7.46	6.82	4.74	6.65	11.2	15.8
Bicarb. Alkalinity (calc. as CaCO3)	mg/L							290	180	180	180	200	230	190	210	200	200	250	270	200	260	200	180
Calculated TDS	mg/L				500			620	2000	1000	1500	680	1000	1500	490	250	250	400	360	250	350	680	1000
Carb. Alkalinity (calc. as CaCO3)	mg/L							1.9	<1.0	1.1	1.4	2.2	1.3	1.8	2.6	3.4	3.1	2.1	1.9	3.2	2.9	2.1	1.0
Cation Sum	me/L							11.9	31.6	16.8	23.0	11.6	18.7	22.3	8.18	4.66	4.67	7.45	6.57	4.67	6.74	11.4	16.9
Hardness (CaCO3)	mg/L					80-100		500	1500	810	1100	540	840	1100	370	220	220	320	310	220	290	530	820
Ion Balance (% Difference)	%							1.67	3.01	3.97	0.160	1.84	0.110	1.09	2.27	1.31	1.20	0.0500	1.87	0.820	0.660	1.24	3.44
Langelier Index (@ 20C)	N/A							0.916	1.06	0.909	1.10	1.04	0.936	1.24	0.956	0.853	0.824	0.847	0.807	0.833	0.954	1.02	0.871
Langelier Index (@ 4C)	N/A							0.669	0.821	0.663	0.850	0.788	0.690	0.991	0.708	0.604	0.575	0.598	0.558	0.583	0.705	0.772	0.625
Saturation pH (@ 20C)	N/A							6.93	6.70	6.91	6.84	7.03	6.86	6.77	7.17	7.39	7.39	7.11	7.07	7.39	7.13	7.04	6.91
Saturation pH (@ 4C)	N/A							7.17	6.95	7.15	7.08	7.28	7.11	7.02	7.42	7.64	7.64	7.36	7.32	7.64	7.38	7.28	7.16
Inorganics																							
Total Ammonia-N	mg/L							<0.050	0.11	0.064	0.090	<0.050	<0.050	0.081	0.10	<0.050	0.051	<0.050	<0.050	0.053	<0.050	0.071	0.078
Unionized Ammonia	mg/L	20						<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
Conductivity	umho/cm							1200	2400	1400	1900	1000	2000	1800	750	450	430	730	610	430	590	1000	1400
Dissolved Organic Carbon	mg/L				5			0.63	1.1	0.67	1.7	1.4	<0.40	0.68	0.66	<0.40	<0.40	0.68	0.65	<0.40	0.63	1.4	0.66
Orthophosphate (P)	mg/L							<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
pH	pH	6.5-8.5				6.5-8.5		7.84	7.77	7.82	7.93	8.07	7.80	8.01	8.13	8.25	8.21	7.96	7.88	8.22	8.08	8.05	7.78
Dissolved Sulphate (SO4)	mg/L				500			36	1300	570	920	340	24	910	200	29	29	53	16	29	13	340	580
Alkalinity (Total as CaCO3)[2]	mg/L					30-500		290	180	180	180	200	230	190	210	210	210	250	270	210	260	200	180
Dissolved Chloride (Cl-)	mg/L				250		790000	170	3.9	2.0	8.0	5.0	490	2.1	6.2	1.0	1.0	47	20	<1.0	36	4.2	1.5
Nitrite (N)	mg/L		1.0					<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate (N)	mg/L		10.0					0.98	<0.10	<0.10	<0.10	<0.10	0.12	<0.10	<0.10	<0.10	<0.10	0.74	7.76	<0.10	2.42	<0.10	<0.10
Nitrate + Nitrite (N)	mg/L							0.98	<0.10	<0.10	<0.10	<0.10	0.12	<0.10	<0.10	<0.10	<0.10	0.74	7.76	<0.10	2.42	<0.10	<0.10
Metals[1]																							
Dissolved Aluminum (Al)	ug/L	75				100		<4.9	<4.9	<4.9	14	7.6	6.9	<4.9	<4.9	20	5.8	32	7.1	7.8	<4.9	<4.9	<4.9
Dissolved Antimony (Sb)	ug/L	20		6			6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Arsenic (As)	ug/L	100		10			25	<1.0	9.6	<1.0	8.7	2.9	<1.0	5.4	1.9	<1.0	<1.0	3.8	<1.0	<1.0	<1.0	2.9	<1.0
Dissolved Barium (Ba)	ug/L		1000				1000	120	10	6.6	12	20	110	18	26	12	11	52	19	10	29	21	6.9
Dissolved Beryllium (Be)	ug/L	1100					4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Dissolved Boron (B)	ug/L	200		5000			5000	24	89	58	53	30	<10	42	24	23	22	25	<10	21	<10	32	47
Dissolved Cadmium (Cd)	ug/L	0.2	5				2.7	**0.29**	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Dissolved Calcium (Ca)	ug/L							130000	490000	240000	330000	150000	210000	360000	93000	49000	50000	87000	86000	50000	78000	150000	240000
Dissolved Chromium (Cr)	ug/L	1[3]	50				50	<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
Dissolved Cobalt (Co)	ug/L	1					3.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Copper (Cu)	ug/L	5			1000		87	2.1	<0.90	<0.90	<0.90	<0.90	1.0	<0.90	<0.90	<0.90	1.6	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90
Dissolved Iron (Fe)	ug/L	300			300			**460**	**460**	**330**	**590**	150	<100	**690**	**430**	<100	<100	<100	<100	<100	<100	150	**330**
Dissolved Lead (Pb)	ug/L	5	10				10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.0	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Magnesium (Mg)	ug/L							45000	77000	53000	70000	42000	74000	49000	33000	23000	23000	24000	24000	23000	24000	40000	53000
Dissolved Manganese (Mn)	ug/L				50			20	36	20	43	26	13	34	25	93	98	32	<2.0	100	7.2	26	21
Dissolved Molybdenum (Mo)	ug/L	40					70	1.7	8.7	9.0	8.6	8.1	0.55	3.0	11	2.4	1.9	1.2	<0.50	1.9	<0.50	8.1	8.8
Dissolved Nickel (Ni)	ug/L	25					100	2.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	<1.0	<1.0	<1.0	<1.0
Dissolved Phosphorus (P)	ug/L	30						<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Dissolved Potassium (K)	ug/L							1300	2700	1800	2300	1600	1100	1700	820	1300	1200	1300	1100	1200	1700	1500	1800
Dissolved Selenium (Se)	ug/L	100	50				10	<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
Dissolved Silicon (Si)	ug/L							6600	5400	5400	5100	5600	6900	5500	5500	6300	6600	4900	4000	6700	3900	5500	5400
Dissolved Silver (Ag)	ug/L	0.1					1.5	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Dissolved Sodium (Na)	ug/L				200000		490000	41000	18000	11000	18000	17000	45000	10000	18000	5700	6000	25000	6200	6000	19000	17000	11000
Dissolved Strontium (Sr)	ug/L							170	8100	4400	5700	2400	320	9800	3000	460	420	740	140	420	110	2300	4600
Dissolved Thallium (Tl)	ug/L	0.3					2	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dissolved Titanium (Ti)	ug/L							<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
Dissolved Uranium (U)	ug/L	5	20				20	0.70	<0.10	<0.10	0.27	0.86	0.52	0.47	1.6	0.38	0.44	0.58	0.14	0.43	0.23	0.87	<0.10
Dissolved Vanadium (V)	ug/L	6					6.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Zinc (Zn)	ug/L	20			5000		1100	**180**	<5.0	<5.0	14	<5.0	<5.0	<5.0	<5.0	5.4	11	<5.0	<5.0	8.1	<5.0	<5.0	<5.0
BTEX & F1 Hydrocarbons																							
Benzene	ug/L	100	1				5	<0.20		<0.20		<0.20			<0.20		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	ug/L	1	60		24		24	<0.20		<0.20		<0.20			<0.20		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	ug/L	8	140		1.6		2.4	<0.20		<0.20		<0.20			<0.20		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	ug/L	40						<0.20		<0.20		<0.20			<0.20		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	ug/L	32[4]						<0.40		<0.40		<0.40			<0.40		<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Total Xylenes	ug/L		90		20		300	<0.40		<0.40		<0.40			<0.40		<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
F1 (C6-C10)	ug/L							<25		<25		<25			<25		<25	<25	<25	<25	<25	<25	<25
F1 (C6-C10) - BTEX	ug/L						750	<25		<25		<25			<25		<25	<25	<25	<25	<25	<25	<25
F2-F4 Hydrocarbons																							
F2 (C10-C16 Hydrocarbons)	ug/L						150	<100		<100		<100			<100		<100	<100	<100	<100	<100	<100	<100
F3 (C16-C34 Hydrocarbons)	ug/L						500	<200		<200		<200			<200		<200	410	<200	<200	<200	<200	<200
F4 (C34-C50 Hydrocarbons)	ug/L						500	<200		<200		<200			<200		<200	300	<200	<200	<200	<200	<200

Exceedance of PWQO Criteria	**620**
Exceedance of ODWS Criteria	310
Exceedance of MECP Table 2 Criteria	500

1) PWQO metals standards apply to unfiltered surface water samples. Included here for comparison to filtered groundwater samples.
2) Alkalinity should not be decreased by more than 25% of the natural concentration
3) 1 CrVI or 8.9 CrIII
4) 2-m and 30-p Xylenes

Your Project #: 19129150
Your C.O.C. #: 813833-01-01

Attention: Gregory Padusenko

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/02/24
Report #: R6531316
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C145866
Received: 2021/02/19, 07:34

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	2	N/A	2021/02/22	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	2	N/A	2021/02/23	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	1	N/A	2021/02/22	CAM SOP-00463	SM 23 4500-Cl E m
Chloride by Automated Colourimetry	1	N/A	2021/02/24	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity	2	N/A	2021/02/22	CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (1)	2	N/A	2021/02/22	CAM SOP-00446	SM 23 5310 B m
Petroleum Hydro. CCME F1 & BTEX in Water	2	N/A	2021/02/22	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (2)	2	2021/02/22	2021/02/23	CAM SOP-00316	CCME PHC-CWS m
Hardness (calculated as CaCO3)	2	N/A	2021/02/23	CAM SOP 00102/00408/00447	SM 2340 B
Dissolved Metals by ICPMS	1	N/A	2021/02/22	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	1	N/A	2021/02/23	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	1	N/A	2021/02/23		
Ion Balance (% Difference)	1	N/A	2021/02/24		
Anion and Cation Sum	2	N/A	2021/02/23		
Total Ammonia-N	2	N/A	2021/02/22	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (3)	2	N/A	2021/02/22	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	2	2021/02/20	2021/02/22	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	1	N/A	2021/02/22	CAM SOP-00461	EPA 365.1 m
Orthophosphate	1	N/A	2021/02/23	CAM SOP-00461	EPA 365.1 m
Sat. pH and Langelier Index (@ 20C)	1	N/A	2021/02/23		Auto Calc
Sat. pH and Langelier Index (@ 20C)	1	N/A	2021/02/24		Auto Calc
Sat. pH and Langelier Index (@ 4C)	1	N/A	2021/02/23		Auto Calc
Sat. pH and Langelier Index (@ 4C)	1	N/A	2021/02/24		Auto Calc
Sulphate by Automated Colourimetry	1	N/A	2021/02/22	CAM SOP-00464	EPA 375.4 m
Sulphate by Automated Colourimetry	1	N/A	2021/02/24	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (TDS calc)	1	N/A	2021/02/23		Auto Calc
Total Dissolved Solids (TDS calc)	1	N/A	2021/02/24		Auto Calc

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau

Your Project #: 19129150
Your C.O.C. #: 813833-01-01

Attention: Gregory Padusenko

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/02/24
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CERTIFICATE OF ANALYSIS

BV LABS JOB #: C145866
Received: 2021/02/19, 07:34

Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
(3) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: emese.gitej@bureauveritas.com
Phone# (905)817-5829

==========

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C145866
Report Date: 2021/02/24

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: AL

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		OWT911			OWT912			OWT912		
Sampling Date		2021/02/17 11:00			2021/02/17 10:15			2021/02/17 10:15		
COC Number		813833-01-01			813833-01-01			813833-01-01		
	UNITS	MW20-14A	RDL	QC Batch	MW20-14B	RDL	QC Batch	MW20-14B Lab-Dup	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	15.6	N/A	7209514	6.52	N/A	7209514			
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	200	1.0	7208473	240	1.0	7208473			
Calculated TDS	mg/L	980	1.0	7209509	340	1.0	7209509			
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.3	1.0	7208473	3.2	1.0	7208473			
Cation Sum	me/L	15.3	N/A	7209514	6.35	N/A	7209514			
Hardness (CaCO3)	mg/L	630	1.0	7208484	300	1.0	7208484			
Ion Balance (% Difference)	%	1.11	N/A	7209339	1.28	N/A	7209339			
Langelier Index (@ 20C)	N/A	1.11		7209510	0.957		7209510			
Langelier Index (@ 4C)	N/A	0.864		7209511	0.708		7209511			
Saturation pH (@ 20C)	N/A	6.96		7209510	7.19		7209510			
Saturation pH (@ 4C)	N/A	7.20		7209511	7.44		7209511			
Inorganics										
Total Ammonia-N	mg/L	1.2	0.050	7210859	<0.050	0.050	7210859			
Conductivity	umho/cm	1300	1.0	7210025	600	1.0	7210025			
Dissolved Organic Carbon	mg/L	0.52	0.40	7211055	0.65	0.40	7211055	0.65	0.40	7211055
Orthophosphate (P)	mg/L	<0.010	0.010	7210038	<0.010	0.010	7211780	<0.010	0.010	7211780
pH	pH	8.07		7210026	8.14		7210026			
Dissolved Sulphate (SO4)	mg/L	540	5.0	7210034	33	1.0	7211777	33	1.0	7211777
Alkalinity (Total as CaCO3)	mg/L	210	1.0	7210029	240	1.0	7210029			
Dissolved Chloride (Cl-)	mg/L	6.4	1.0	7210032	15	1.0	7211766	15	1.0	7211766
Nitrite (N)	mg/L	0.027	0.010	7210069	<0.010	0.010	7210049			
Nitrate (N)	mg/L	0.21	0.10	7210069	7.35	0.10	7210049			
Nitrate + Nitrite (N)	mg/L	0.23	0.10	7210069	7.35	0.10	7210049			
Metals										
Dissolved Aluminum (Al)	ug/L	18	4.9	7210321	5.8	4.9	7210328			
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	7210321	<0.50	0.50	7210328			
Dissolved Arsenic (As)	ug/L	3.0	1.0	7210321	<1.0	1.0	7210328			
Dissolved Barium (Ba)	ug/L	30	2.0	7210321	38	2.0	7210328			
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7210321	<0.40	0.40	7210328			
Dissolved Boron (B)	ug/L	640	10	7210321	<10	10	7210328			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		OWT911			OWT912			OWT912		
Sampling Date		2021/02/17 11:00			2021/02/17 10:15			2021/02/17 10:15		
COC Number		813833-01-01			813833-01-01			813833-01-01		
	UNITS	MW20-14A	RDL	QC Batch	MW20-14B	RDL	QC Batch	MW20-14B Lab-Dup	RDL	QC Batch
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	7210321	<0.090	0.090	7210328			
Dissolved Calcium (Ca)	ug/L	190000	200	7210321	72000	200	7210328			
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7210321	<5.0	5.0	7210328			
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	7210321	<0.50	0.50	7210328			
Dissolved Copper (Cu)	ug/L	6.9	0.90	7210321	1.5	0.90	7210328			
Dissolved Iron (Fe)	ug/L	380	100	7210321	<100	100	7210328			
Dissolved Lead (Pb)	ug/L	<0.50	0.50	7210321	<0.50	0.50	7210328			
Dissolved Magnesium (Mg)	ug/L	39000	50	7210321	30000	50	7210328			
Dissolved Manganese (Mn)	ug/L	120	2.0	7210321	<2.0	2.0	7210328			
Dissolved Molybdenum (Mo)	ug/L	3.0	0.50	7210321	0.55	0.50	7210328			
Dissolved Nickel (Ni)	ug/L	2.9	1.0	7210321	<1.0	1.0	7210328			
Dissolved Phosphorus (P)	ug/L	<100	100	7210321	<100	100	7210328			
Dissolved Potassium (K)	ug/L	11000	200	7210321	740	200	7210328			
Dissolved Selenium (Se)	ug/L	<2.0	2.0	7210321	<2.0	2.0	7210328			
Dissolved Silicon (Si)	ug/L	4200	50	7210321	3200	50	7210328			
Dissolved Silver (Ag)	ug/L	<0.090	0.090	7210321	<0.090	0.090	7210328			
Dissolved Sodium (Na)	ug/L	54000	100	7210321	6500	100	7210328			
Dissolved Strontium (Sr)	ug/L	5000	1.0	7210321	91	1.0	7210328			
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	7210321	<0.050	0.050	7210328			
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	7210321	<5.0	5.0	7210328			
Dissolved Uranium (U)	ug/L	0.45	0.10	7210321	0.31	0.10	7210328			
Dissolved Vanadium (V)	ug/L	<0.50	0.50	7210321	<0.50	0.50	7210328			
Dissolved Zinc (Zn)	ug/L	5.9	5.0	7210321	<5.0	5.0	7210328			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		OWT911	OWT912		
Sampling Date		2021/02/17 11:00	2021/02/17 10:15		
COC Number		813833-01-01	813833-01-01		
	UNITS	MW20-14A	MW20-14B	RDL	QC Batch
BTEX & F1 Hydrocarbons					
Benzene	ug/L	<0.20	<0.20	0.20	7210596
Toluene	ug/L	<0.20	0.23	0.20	7210596
Ethylbenzene	ug/L	<0.20	<0.20	0.20	7210596
o-Xylene	ug/L	<0.20	<0.20	0.20	7210596
p+m-Xylene	ug/L	<0.40	<0.40	0.40	7210596
Total Xylenes	ug/L	<0.40	<0.40	0.40	7210596
F1 (C6-C10)	ug/L	<25	<25	25	7210596
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	7210596
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	7212293
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	200	7212293
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	7212293
Reached Baseline at C50	ug/L	Yes	Yes		7212293
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	105	105		7210596
4-Bromofluorobenzene	%	90	93		7210596
D10-o-Xylene	%	98	103		7210596
D4-1,2-Dichloroethane	%	118	115		7210596
o-Terphenyl	%	97	99		7212293

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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BV Labs Job #: C145866
Report Date: 2021/02/24

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: AL

TEST SUMMARY

BV Labs ID: OWT911
Sample ID: MW20-14A
Matrix: Water

Collected: 2021/02/17
Shipped:
Received: 2021/02/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7210029	N/A	2021/02/22	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	7208473	N/A	2021/02/23	Automated Statchk
Chloride by Automated Colourimetry	KONE	7210032	N/A	2021/02/22	Deonarine Ramnarine
Conductivity	AT	7210025	N/A	2021/02/22	Yogesh Patel
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7211055	N/A	2021/02/22	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7210596	N/A	2021/02/22	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7212293	2021/02/22	2021/02/23	Prabhjot Gulati
Hardness (calculated as CaCO3)		7208484	N/A	2021/02/23	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7210321	N/A	2021/02/22	Arefa Dabhad
Ion Balance (% Difference)	CALC	7209339	N/A	2021/02/23	Automated Statchk
Anion and Cation Sum	CALC	7209514	N/A	2021/02/23	Automated Statchk
Total Ammonia-N	LACH/NH4	7210859	N/A	2021/02/22	Alina Dobreanu
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7210069	N/A	2021/02/22	Chandra Nandlal
pH	AT	7210026	2021/02/20	2021/02/22	Yogesh Patel
Orthophosphate	KONE	7210038	N/A	2021/02/22	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7209510	N/A	2021/02/23	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7209511	N/A	2021/02/23	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7210034	N/A	2021/02/22	Avneet Kour Sudan
Total Dissolved Solids (TDS calc)	CALC	7209509	N/A	2021/02/23	Automated Statchk

BV Labs ID: OWT912
Sample ID: MW20-14B
Matrix: Water

Collected: 2021/02/17
Shipped:
Received: 2021/02/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7210029	N/A	2021/02/22	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	7208473	N/A	2021/02/23	Automated Statchk
Chloride by Automated Colourimetry	KONE	7211766	N/A	2021/02/24	Deonarine Ramnarine
Conductivity	AT	7210025	N/A	2021/02/22	Yogesh Patel
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7211055	N/A	2021/02/22	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7210596	N/A	2021/02/22	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7212293	2021/02/22	2021/02/23	Prabhjot Gulati
Hardness (calculated as CaCO3)		7208484	N/A	2021/02/23	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7210328	N/A	2021/02/23	Arefa Dabhad
Ion Balance (% Difference)	CALC	7209339	N/A	2021/02/24	Automated Statchk
Anion and Cation Sum	CALC	7209514	N/A	2021/02/23	Automated Statchk
Total Ammonia-N	LACH/NH4	7210859	N/A	2021/02/22	Alina Dobreanu
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7210049	N/A	2021/02/22	Chandra Nandlal
pH	AT	7210026	2021/02/20	2021/02/22	Yogesh Patel
Orthophosphate	KONE	7211780	N/A	2021/02/23	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7209510	N/A	2021/02/24	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7209511	N/A	2021/02/24	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7211777	N/A	2021/02/24	Deonarine Ramnarine
Total Dissolved Solids (TDS calc)	CALC	7209509	N/A	2021/02/24	Automated Statchk

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BV Labs Job #: C145866
Report Date: 2021/02/24

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: AL

TEST SUMMARY

BV Labs ID: OWT912 Dup
Sample ID: MW20-14B
Matrix: Water

Collected: 2021/02/17
Shipped:
Received: 2021/02/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	7211766	N/A	2021/02/24	Deonarine Ramnarine
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7211055	N/A	2021/02/22	Nimarta Singh
Orthophosphate	KONE	7211780	N/A	2021/02/23	Avneet Kour Sudan
Sulphate by Automated Colourimetry	KONE	7211777	N/A	2021/02/24	Deonarine Ramnarine

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.0°C

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7210596	1,4-Difluorobenzene	2021/02/22	98	70 - 130	101	70 - 130	104	%		
7210596	4-Bromofluorobenzene	2021/02/22	101	70 - 130	102	70 - 130	94	%		
7210596	D10-o-Xylene	2021/02/22	96	70 - 130	122	70 - 130	102	%		
7210596	D4-1,2-Dichloroethane	2021/02/22	108	70 - 130	97	70 - 130	110	%		
7212293	o-Terphenyl	2021/02/22	100	60 - 130	100	60 - 130	99	%		
7210025	Conductivity	2021/02/22			101	85 - 115	<1.0	umho/cm	0.25	25
7210026	pH	2021/02/22			102	98 - 103			0.47	N/A
7210029	Alkalinity (Total as CaCO3)	2021/02/22			96	85 - 115	<1.0	mg/L	0.15	20
7210032	Dissolved Chloride (Cl-)	2021/02/22	103	80 - 120	102	80 - 120	<1.0	mg/L	NC	20
7210034	Dissolved Sulphate (SO4)	2021/02/22	121 (1)	75 - 125	107	80 - 120	<1.0	mg/L	0.84	20
7210038	Orthophosphate (P)	2021/02/22	110	75 - 125	100	80 - 120	<0.010	mg/L	NC	25
7210049	Nitrate (N)	2021/02/22	NC	80 - 120	99	80 - 120	<0.10	mg/L	2.8	20
7210049	Nitrite (N)	2021/02/22	NC	80 - 120	108	80 - 120	<0.010	mg/L		
7210069	Nitrate (N)	2021/02/22	99	80 - 120	100	80 - 120	<0.10	mg/L	5.4	20
7210069	Nitrite (N)	2021/02/22	100	80 - 120	107	80 - 120	<0.010	mg/L		
7210321	Dissolved Aluminum (Al)	2021/02/22	111	80 - 120	104	80 - 120	<4.9	ug/L		
7210321	Dissolved Antimony (Sb)	2021/02/22	113	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
7210321	Dissolved Arsenic (As)	2021/02/22	107	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
7210321	Dissolved Barium (Ba)	2021/02/22	107	80 - 120	103	80 - 120	<2.0	ug/L	0.44	20
7210321	Dissolved Beryllium (Be)	2021/02/22	102	80 - 120	97	80 - 120	<0.40	ug/L	NC	20
7210321	Dissolved Boron (B)	2021/02/22	100	80 - 120	97	80 - 120	<10	ug/L	1.9	20
7210321	Dissolved Cadmium (Cd)	2021/02/22	107	80 - 120	100	80 - 120	<0.090	ug/L	NC	20
7210321	Dissolved Calcium (Ca)	2021/02/22	NC	80 - 120	100	80 - 120	<200	ug/L		
7210321	Dissolved Chromium (Cr)	2021/02/22	100	80 - 120	95	80 - 120	<5.0	ug/L	NC	20
7210321	Dissolved Cobalt (Co)	2021/02/22	102	80 - 120	98	80 - 120	<0.50	ug/L	4.5	20
7210321	Dissolved Copper (Cu)	2021/02/22	102	80 - 120	96	80 - 120	<0.90	ug/L	3.0	20
7210321	Dissolved Iron (Fe)	2021/02/22	104	80 - 120	99	80 - 120	<100	ug/L		
7210321	Dissolved Lead (Pb)	2021/02/22	102	80 - 120	96	80 - 120	<0.50	ug/L	NC	20
7210321	Dissolved Magnesium (Mg)	2021/02/22	NC	80 - 120	101	80 - 120	<50	ug/L		
7210321	Dissolved Manganese (Mn)	2021/02/22	104	80 - 120	98	80 - 120	<2.0	ug/L		
7210321	Dissolved Molybdenum (Mo)	2021/02/22	109	80 - 120	98	80 - 120	<0.50	ug/L	5.1	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7210321	Dissolved Nickel (Ni)	2021/02/22	99	80 - 120	95	80 - 120	<1.0	ug/L	1.8	20
7210321	Dissolved Phosphorus (P)	2021/02/22	109	80 - 120	110	80 - 120	<100	ug/L		
7210321	Dissolved Potassium (K)	2021/02/22	109	80 - 120	102	80 - 120	<200	ug/L		
7210321	Dissolved Selenium (Se)	2021/02/22	107	80 - 120	103	80 - 120	<2.0	ug/L	NC	20
7210321	Dissolved Silicon (Si)	2021/02/22	106	80 - 120	100	80 - 120	<50	ug/L		
7210321	Dissolved Silver (Ag)	2021/02/22	102	80 - 120	94	80 - 120	<0.090	ug/L	NC	20
7210321	Dissolved Sodium (Na)	2021/02/22	NC	80 - 120	99	80 - 120	<100	ug/L	1.6	20
7210321	Dissolved Strontium (Sr)	2021/02/22	NC	80 - 120	98	80 - 120	<1.0	ug/L		
7210321	Dissolved Thallium (Tl)	2021/02/22	99	80 - 120	94	80 - 120	<0.050	ug/L	NC	20
7210321	Dissolved Titanium (Ti)	2021/02/22	107	80 - 120	98	80 - 120	<5.0	ug/L		
7210321	Dissolved Uranium (U)	2021/02/22	108	80 - 120	100	80 - 120	<0.10	ug/L	4.5	20
7210321	Dissolved Vanadium (V)	2021/02/22	105	80 - 120	97	80 - 120	<0.50	ug/L	NC	20
7210321	Dissolved Zinc (Zn)	2021/02/22	102	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
7210328	Dissolved Aluminum (Al)	2021/02/23	108	80 - 120	101	80 - 120	<4.9	ug/L		
7210328	Dissolved Antimony (Sb)	2021/02/23	111	80 - 120	101	80 - 120	<0.50	ug/L	7.3	20
7210328	Dissolved Arsenic (As)	2021/02/23	106	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
7210328	Dissolved Barium (Ba)	2021/02/23	107	80 - 120	102	80 - 120	<2.0	ug/L	0.50	20
7210328	Dissolved Beryllium (Be)	2021/02/23	106	80 - 120	98	80 - 120	<0.40	ug/L	NC	20
7210328	Dissolved Boron (B)	2021/02/23	102	80 - 120	95	80 - 120	<10	ug/L	0.35	20
7210328	Dissolved Cadmium (Cd)	2021/02/23	105	80 - 120	99	80 - 120	<0.090	ug/L	NC	20
7210328	Dissolved Calcium (Ca)	2021/02/23	NC	80 - 120	100	80 - 120	<200	ug/L		
7210328	Dissolved Chromium (Cr)	2021/02/23	101	80 - 120	95	80 - 120	<5.0	ug/L	NC	20
7210328	Dissolved Cobalt (Co)	2021/02/23	103	80 - 120	97	80 - 120	<0.50	ug/L	NC	20
7210328	Dissolved Copper (Cu)	2021/02/23	102	80 - 120	98	80 - 120	<0.90	ug/L	0.88	20
7210328	Dissolved Iron (Fe)	2021/02/23	104	80 - 120	97	80 - 120	<100	ug/L		
7210328	Dissolved Lead (Pb)	2021/02/23	104	80 - 120	96	80 - 120	<0.50	ug/L	NC	20
7210328	Dissolved Magnesium (Mg)	2021/02/23	NC	80 - 120	98	80 - 120	<50	ug/L		
7210328	Dissolved Manganese (Mn)	2021/02/23	103	80 - 120	96	80 - 120	<2.0	ug/L		
7210328	Dissolved Molybdenum (Mo)	2021/02/23	109	80 - 120	98	80 - 120	<0.50	ug/L	1.8	20
7210328	Dissolved Nickel (Ni)	2021/02/23	101	80 - 120	97	80 - 120	<1.0	ug/L	5.9	20
7210328	Dissolved Phosphorus (P)	2021/02/23	108	80 - 120	110	80 - 120	<100	ug/L		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7210328	Dissolved Potassium (K)	2021/02/23	107	80 - 120	101	80 - 120	<200	ug/L		
7210328	Dissolved Selenium (Se)	2021/02/23	107	80 - 120	101	80 - 120	<2.0	ug/L	1.7	20
7210328	Dissolved Silicon (Si)	2021/02/23	108	80 - 120	101	80 - 120	<50	ug/L		
7210328	Dissolved Silver (Ag)	2021/02/23	84	80 - 120	97	80 - 120	<0.090	ug/L	NC	20
7210328	Dissolved Sodium (Na)	2021/02/23	NC	80 - 120	97	80 - 120	<100	ug/L		
7210328	Dissolved Strontium (Sr)	2021/02/23	NC	80 - 120	97	80 - 120	<1.0	ug/L		
7210328	Dissolved Thallium (Tl)	2021/02/23	100	80 - 120	97	80 - 120	<0.050	ug/L	NC	20
7210328	Dissolved Titanium (Ti)	2021/02/23	105	80 - 120	97	80 - 120	<5.0	ug/L		
7210328	Dissolved Uranium (U)	2021/02/23	110	80 - 120	101	80 - 120	<0.10	ug/L	2.0	20
7210328	Dissolved Vanadium (V)	2021/02/23	105	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
7210328	Dissolved Zinc (Zn)	2021/02/23	100	80 - 120	97	80 - 120	<5.0	ug/L	0.33	20
7210596	Benzene	2021/02/22	101	50 - 140	105	50 - 140	<0.20	ug/L	NC	30
7210596	Ethylbenzene	2021/02/22	110	50 - 140	116	50 - 140	<0.20	ug/L	NC	30
7210596	F1 (C6-C10) - BTEX	2021/02/22					<25	ug/L	NC	30
7210596	F1 (C6-C10)	2021/02/22	91	60 - 140	102	60 - 140	<25	ug/L	NC	30
7210596	o-Xylene	2021/02/22	110	50 - 140	111	50 - 140	<0.20	ug/L	NC	30
7210596	p+m-Xylene	2021/02/22	110	50 - 140	116	50 - 140	<0.40	ug/L	NC	30
7210596	Toluene	2021/02/22	101	50 - 140	105	50 - 140	<0.20	ug/L	NC	30
7210596	Total Xylenes	2021/02/22					<0.40	ug/L	NC	30
7210859	Total Ammonia-N	2021/02/22	89	75 - 125	99	80 - 120	<0.050	mg/L	12	20
7211055	Dissolved Organic Carbon	2021/02/22	92	80 - 120	95	80 - 120	<0.40	mg/L	0.11	20
7211766	Dissolved Chloride (Cl-)	2021/02/24	106	80 - 120	102	80 - 120	<1.0	mg/L	0.084	20
7211777	Dissolved Sulphate (SO4)	2021/02/24	NC	75 - 125	100	80 - 120	<1.0	mg/L	0.45	20
7211780	Orthophosphate (P)	2021/02/23	103	75 - 125	102	80 - 120	<0.010	mg/L	NC	25
7212293	F2 (C10-C16 Hydrocarbons)	2021/02/23	103	60 - 130	105	60 - 130	<100	ug/L	NC	30
7212293	F3 (C16-C34 Hydrocarbons)	2021/02/23	107	60 - 130	110	60 - 130	<200	ug/L	NC	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7212293	F4 (C34-C50 Hydrocarbons)	2021/02/23	106	60 - 130	108	60 - 130	<200	ug/L	NC	30

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

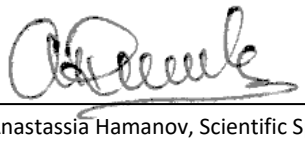
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anastassia Hamanov, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Bureau Veritas Laboratories
109 & 110, 4023 Meadowbrook Drive, London, Ontario Canada N6L 1E7 Tel:(519) 652-9444 Toll-free:800-563-6266 Fax:(519) 652-8189 www.bvlabs.com

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#21375 Golder Associates Ltd	Company Name:		Quotation #:	B80683	BV Labs Job #:	Bottle Order #: 813833
Attention:	Accounts Payable	Attention:	Gregory Padusenko	P.O. #:			
Address:	210 Sheldon Drive Cambridge ON N1T 1A8	Address:		Project:	19129150		
Tel:	(519) 620-8182 Fax:	Tel:	(519) 620-8182 Ext: 6509 Fax: (519) 620-9878	Project Name:		COC #: C#813833-01-01	Project Manager: Ema Gitej
Email:	CanadaAccountsPayableInvoices@golder.com	Email:	Gregory_Padusenko@golder.com	Site #:			
				Sampled By:	AL		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ☐ PWQO ☐ Reg 406 Table ☐ Other

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	ANALYSIS REQUESTED (PLEASE BE SPECIFIC): RCAp - Comprehensive	O.Reg 153 PHCs, BTEX/F1-F4	# of Bottles	Comments
1		MW20-14A	21/2/17	11-	GW	X	X	X	8	
2		MW20-14B	21/2/17	10:15	GW	X	X	X	8	
3										
4										19-Feb-21 07:34
5										Ema Gitej
6										C145866
7										NP4 ENV-511
8										REC'D IN WATERLOO
9										
10										NO ICE

REC'D IN WATERLOO

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Autumn Lindsay / A. Linklater	21/02/17	17:50		2021/02/19	07:24	
K. EASTON	21/02/18	18:15				

Laboratory Use Only: Time Sensitive | Temperature (°C) on Recei 1 / 1 / 1°C | Custody Seal Present ☐ Yes ☐ No | Intact ☐

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

010/0

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

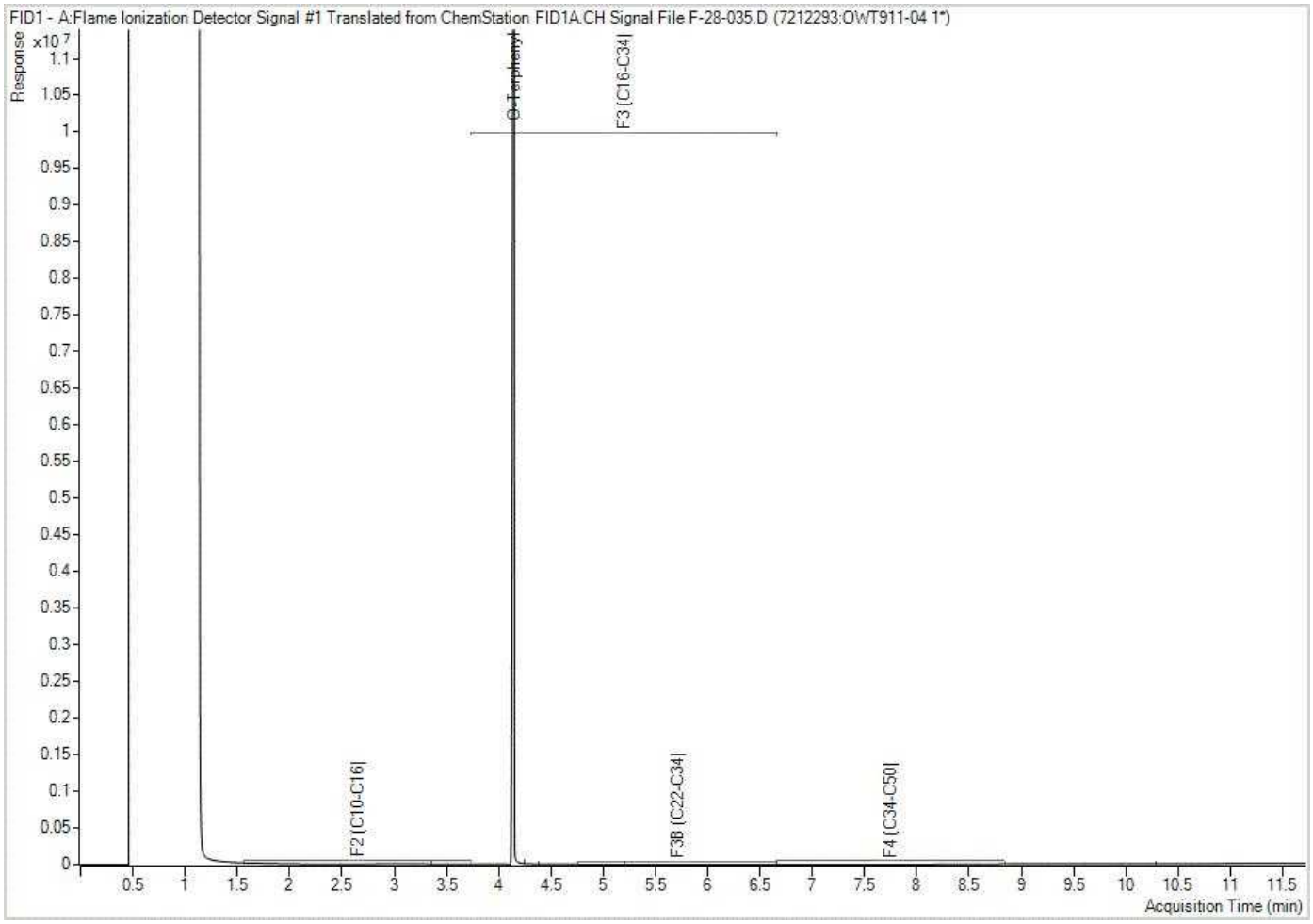
White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

BV Labs Job #: C145866
Report Date: 2021/02/24
BV Labs Sample: OWT911

Golder Associates Ltd
Client Project #: 19129150
Client ID: MW20-14A

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

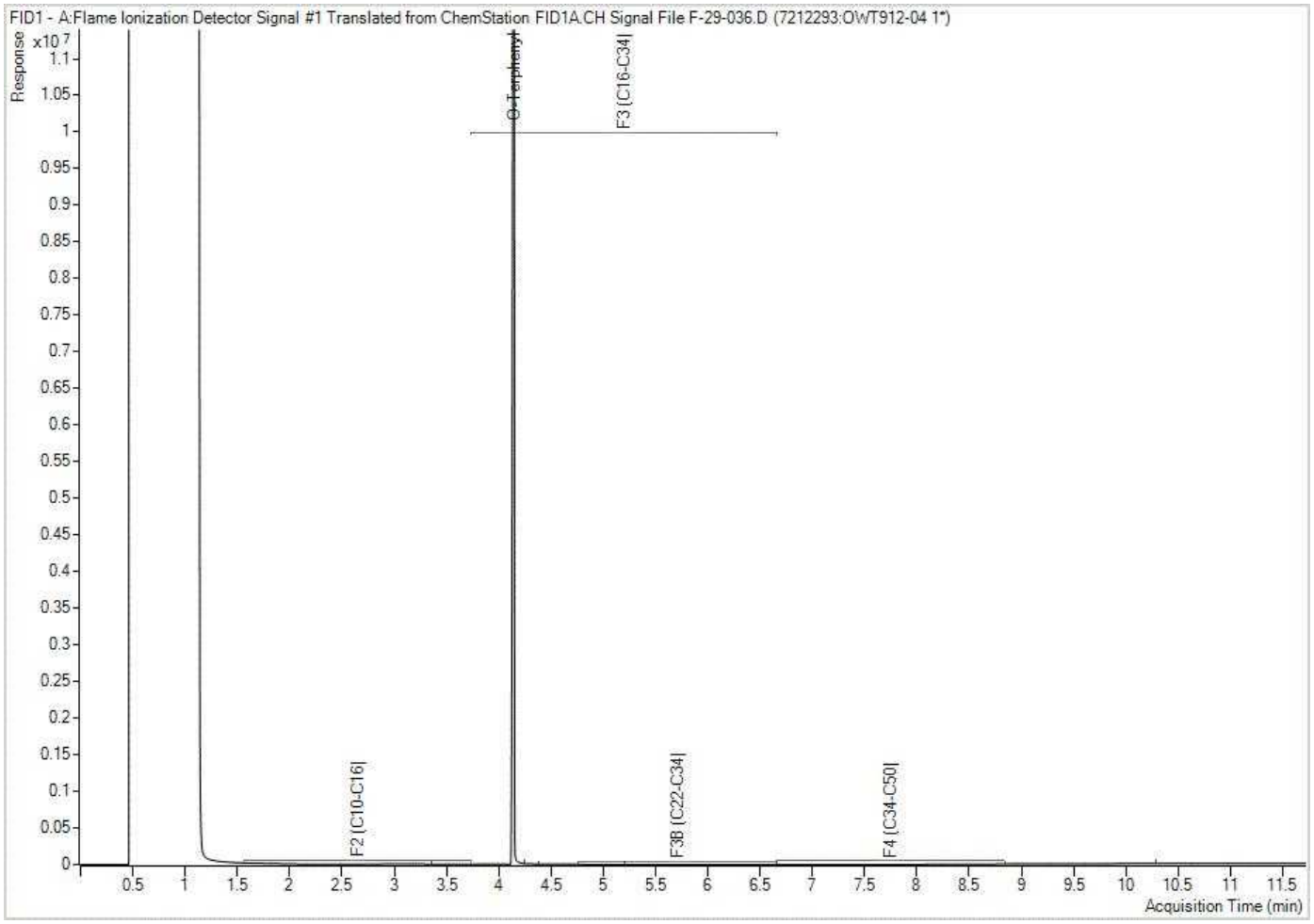


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C145866
Report Date: 2021/02/24
BV Labs Sample: OWT912

Golder Associates Ltd
Client Project #: 19129150
Client ID: MW20-14B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: 19129150 (2300)
Your C.O.C. #: 831949-01-01

Attention: Gregory Padusenko

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/06/29
Report #: R6697111
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1H0819
Received: 2021/06/21, 18:30

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	3	N/A	2021/06/23	CAM SOP-00448	SM 23 2320 B m
Alkalinity	1	N/A	2021/06/24	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	4	N/A	2021/06/24	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	4	N/A	2021/06/23	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity	3	N/A	2021/06/23	CAM SOP-00414	SM 23 2510 m
Conductivity	1	N/A	2021/06/24	CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (1)	3	N/A	2021/06/24	CAM SOP-00446	SM 23 5310 B m
Dissolved Organic Carbon (DOC) (1)	1	N/A	2021/06/25	CAM SOP-00446	SM 23 5310 B m
Petroleum Hydro. CCME F1 & BTEX in Water	2	N/A	2021/06/25	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (2)	2	2021/06/25	2021/06/27	CAM SOP-00316	CCME PHC-CWS m
Hardness (calculated as CaCO3)	4	N/A	2021/06/24	CAM SOP 00102/00408/00447	SM 2340 B
Dissolved Metals by ICPMS	4	N/A	2021/06/24	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	4	N/A	2021/06/24		
Anion and Cation Sum	4	N/A	2021/06/24		
Total Ammonia-N	4	N/A	2021/06/28	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (3)	4	N/A	2021/06/24	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	3	2021/06/22	2021/06/23	CAM SOP-00413	SM 4500H+ B m
pH	1	2021/06/22	2021/06/24	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	4	N/A	2021/06/23	CAM SOP-00461	EPA 365.1 m
Sat. pH and Langelier Index (@ 20C)	4	N/A	2021/06/24		Auto Calc
Sat. pH and Langelier Index (@ 4C)	4	N/A	2021/06/24		Auto Calc
Sulphate by Automated Colourimetry	4	N/A	2021/06/24	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (TDS calc)	4	N/A	2021/06/24		Auto Calc

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are

Your Project #: 19129150 (2300)
Your C.O.C. #: 831949-01-01

Attention: Gregory Padusenko

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/06/29
Report #: R6697111
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1H0819
Received: 2021/06/21, 18:30

reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(3) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: emese.gitej@bureauveritas.com
Phone# (905)817-5829

==========

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C1H0819
Report Date: 2021/06/29

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: VP

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PWX685			PWX685			PWX686		
Sampling Date		2021/06/21 15:30			2021/06/21 15:30			2021/06/21 15:30		
COC Number		831949-01-01			831949-01-01			831949-01-01		
	UNITS	MW20-08 A	RDL	QC Batch	MW20-08 A Lab-Dup	RDL	QC Batch	MW20-08 B	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	9.16	N/A	7421638				13.1	N/A	7421638
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	270	1.0	7421635				280	1.0	7421635
Calculated TDS	mg/L	490	1.0	7421642				720	1.0	7421642
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.9	1.0	7421635				2.8	1.0	7421635
Cation Sum	me/L	9.23	N/A	7421638				13.2	N/A	7421638
Hardness (CaCO3)	mg/L	330	1.0	7421636				320	1.0	7421636
Ion Balance (% Difference)	%	0.400	N/A	7421637				0.690	N/A	7421637
Langelier Index (@ 20C)	N/A	0.947		7421639				0.925		7421639
Langelier Index (@ 4C)	N/A	0.699		7421640				0.679		7421640
Saturation pH (@ 20C)	N/A	7.12		7421639				7.10		7421639
Saturation pH (@ 4C)	N/A	7.37		7421640				7.35		7421640
Inorganics										
Total Ammonia-N	mg/L	0.10	0.050	7430355				<0.050	0.050	7430355
Conductivity	umho/cm	900	1.0	7422524				1400	1.0	7422524
Dissolved Organic Carbon	mg/L	0.45	0.40	7427516				1.2	0.40	7428766
Orthophosphate (P)	mg/L	<0.010	0.010	7422545	<0.010	0.010	7422545	<0.010	0.010	7422545
pH	pH	8.07		7422527				8.03		7422527
Dissolved Sulphate (SO4)	mg/L	22	1.0	7422560	21	1.0	7422560	17	1.0	7422560
Alkalinity (Total as CaCO3)	mg/L	270	1.0	7422513				280	1.0	7422513
Dissolved Chloride (Cl-)	mg/L	110	1.0	7422556	110	1.0	7422556	240	3.0	7422556
Nitrite (N)	mg/L	<0.010	0.010	7423349				<0.010	0.010	7423349
Nitrate (N)	mg/L	3.65	0.10	7423349				4.31	0.10	7423349
Nitrate + Nitrite (N)	mg/L	3.65	0.10	7423349				4.31	0.10	7423349
Metals										
Dissolved Aluminum (Al)	ug/L	120	4.9	7423183				6.5	4.9	7423183
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	7423183				<0.50	0.50	7423183
Dissolved Arsenic (As)	ug/L	<1.0	1.0	7423183				<1.0	1.0	7423183
Dissolved Barium (Ba)	ug/L	41	2.0	7423183				31	2.0	7423183
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7423183				<0.40	0.40	7423183

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PWX685			PWX685			PWX686		
Sampling Date		2021/06/21 15:30			2021/06/21 15:30			2021/06/21 15:30		
COC Number		831949-01-01			831949-01-01			831949-01-01		
	UNITS	MW20-08 A	RDL	QC Batch	MW20-08 A Lab-Dup	RDL	QC Batch	MW20-08 B	RDL	QC Batch
Dissolved Boron (B)	ug/L	<10	10	7423183				<10	10	7423183
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	7423183				<0.090	0.090	7423183
Dissolved Calcium (Ca)	ug/L	82000	200	7423183				92000	200	7423183
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7423183				<5.0	5.0	7423183
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	7423183				<0.50	0.50	7423183
Dissolved Copper (Cu)	ug/L	5.7	0.90	7423183				1.6	0.90	7423183
Dissolved Iron (Fe)	ug/L	200	100	7423183				<100	100	7423183
Dissolved Lead (Pb)	ug/L	1.1	0.50	7423183				<0.50	0.50	7423183
Dissolved Magnesium (Mg)	ug/L	30000	50	7423183				22000	50	7423183
Dissolved Manganese (Mn)	ug/L	15	2.0	7423183				<2.0	2.0	7423183
Dissolved Molybdenum (Mo)	ug/L	0.56	0.50	7423183				<0.50	0.50	7423183
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	7423183				<1.0	1.0	7423183
Dissolved Phosphorus (P)	ug/L	<100	100	7423183				<100	100	7423183
Dissolved Potassium (K)	ug/L	880	200	7423183				920	200	7423183
Dissolved Selenium (Se)	ug/L	<2.0	2.0	7423183				<2.0	2.0	7423183
Dissolved Silicon (Si)	ug/L	3900	50	7423183				2700	50	7423183
Dissolved Silver (Ag)	ug/L	<0.090	0.090	7423183				<0.090	0.090	7423183
Dissolved Sodium (Na)	ug/L	61000	100	7423183				160000	100	7423183
Dissolved Strontium (Sr)	ug/L	230	1.0	7423183				160	1.0	7423183
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	7423183				<0.050	0.050	7423183
Dissolved Titanium (Ti)	ug/L	6.8	5.0	7423183				<5.0	5.0	7423183
Dissolved Uranium (U)	ug/L	0.88	0.10	7423183				0.21	0.10	7423183
Dissolved Vanadium (V)	ug/L	<0.50	0.50	7423183				<0.50	0.50	7423183
Dissolved Zinc (Zn)	ug/L	9.3	5.0	7423183				<5.0	5.0	7423183

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Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PWX686			PWX687	PWX688		
Sampling Date		2021/06/21 15:30			2021/06/21 16:45	2021/06/21 16:45		
COC Number		831949-01-01			831949-01-01	831949-01-01		
	UNITS	MW20-08 B Lab-Dup	RDL	QC Batch	MW20-07 A	MW20-07 B	RDL	QC Batch
Calculated Parameters								
Anion Sum	me/L				7.85	9.08	N/A	7421638
Bicarb. Alkalinity (calc. as CaCO3)	mg/L				250	260	1.0	7421635
Calculated TDS	mg/L				410	500	1.0	7421642
Carb. Alkalinity (calc. as CaCO3)	mg/L				2.7	3.1	1.0	7421635
Cation Sum	me/L				7.75	9.08	N/A	7421638
Hardness (CaCO3)	mg/L				330	270	1.0	7421636
Ion Balance (% Difference)	%				0.610	0.00	N/A	7421637
Langelier Index (@ 20C)	N/A				0.928	0.901		7421639
Langelier Index (@ 4C)	N/A				0.679	0.653		7421640
Saturation pH (@ 20C)	N/A				7.13	7.19		7421639
Saturation pH (@ 4C)	N/A				7.38	7.44		7421640
Inorganics								
Total Ammonia-N	mg/L				<0.050	0.28	0.050	7430355
Conductivity	umho/cm				740	870	1.0	7422524
Dissolved Organic Carbon	mg/L	1.2	0.40	7428766	0.55	0.88	0.40	7427516
Orthophosphate (P)	mg/L				<0.010	<0.010	0.010	7422545
pH	pH				8.06	8.09		7422527
Dissolved Sulphate (SO4)	mg/L				40	20	1.0	7422560
Alkalinity (Total as CaCO3)	mg/L				250	270	1.0	7422513
Dissolved Chloride (Cl-)	mg/L				68	100	1.0	7422556
Nitrite (N)	mg/L				<0.010	<0.010	0.010	7423349
Nitrate (N)	mg/L				0.73	5.20	0.10	7423349
Nitrate + Nitrite (N)	mg/L				0.73	5.20	0.10	7423349
Metals								
Dissolved Aluminum (Al)	ug/L				53	92	4.9	7423183
Dissolved Antimony (Sb)	ug/L				<0.50	<0.50	0.50	7423183
Dissolved Arsenic (As)	ug/L				7.9	<1.0	1.0	7423183
Dissolved Barium (Ba)	ug/L				56	34	2.0	7423183
Dissolved Beryllium (Be)	ug/L				<0.40	<0.40	0.40	7423183

RDL = Reportable Detection Limit
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Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PWX686			PWX687	PWX688		
Sampling Date		2021/06/21 15:30			2021/06/21 16:45	2021/06/21 16:45		
COC Number		831949-01-01			831949-01-01	831949-01-01		
	UNITS	MW20-08 B Lab-Dup	RDL	QC Batch	MW20-07 A	MW20-07 B	RDL	QC Batch
Dissolved Boron (B)	ug/L				23	19	10	7423183
Dissolved Cadmium (Cd)	ug/L				<0.090	<0.090	0.090	7423183
Dissolved Calcium (Ca)	ug/L				81000	71000	200	7423183
Dissolved Chromium (Cr)	ug/L				<5.0	<5.0	5.0	7423183
Dissolved Cobalt (Co)	ug/L				<0.50	<0.50	0.50	7423183
Dissolved Copper (Cu)	ug/L				<0.90	2.8	0.90	7423183
Dissolved Iron (Fe)	ug/L				<100	<100	100	7423183
Dissolved Lead (Pb)	ug/L				<0.50	<0.50	0.50	7423183
Dissolved Magnesium (Mg)	ug/L				30000	22000	50	7423183
Dissolved Manganese (Mn)	ug/L				26	46	2.0	7423183
Dissolved Molybdenum (Mo)	ug/L				1.5	5.5	0.50	7423183
Dissolved Nickel (Ni)	ug/L				<1.0	2.8	1.0	7423183
Dissolved Phosphorus (P)	ug/L				<100	<100	100	7423183
Dissolved Potassium (K)	ug/L				2400	1500	200	7423183
Dissolved Selenium (Se)	ug/L				<2.0	<2.0	2.0	7423183
Dissolved Silicon (Si)	ug/L				3900	3700	50	7423183
Dissolved Silver (Ag)	ug/L				<0.090	<0.090	0.090	7423183
Dissolved Sodium (Na)	ug/L				26000	83000	100	7423183
Dissolved Strontium (Sr)	ug/L				2600	220	1.0	7423183
Dissolved Thallium (Tl)	ug/L				0.056	0.079	0.050	7423183
Dissolved Titanium (Ti)	ug/L				<5.0	<5.0	5.0	7423183
Dissolved Uranium (U)	ug/L				0.53	1.2	0.10	7423183
Dissolved Vanadium (V)	ug/L				<0.50	<0.50	0.50	7423183
Dissolved Zinc (Zn)	ug/L				<5.0	9.5	5.0	7423183

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		PWX686	PWX688		
Sampling Date		2021/06/21 15:30	2021/06/21 16:45		
COC Number		831949-01-01	831949-01-01		
	UNITS	MW20-08 B	MW20-07 B	RDL	QC Batch
BTEX & F1 Hydrocarbons					
Benzene	ug/L	<0.20	<0.20	0.20	7430651
Toluene	ug/L	<0.20	<0.20	0.20	7430651
Ethylbenzene	ug/L	<0.20	<0.20	0.20	7430651
o-Xylene	ug/L	<0.20	<0.20	0.20	7430651
p+m-Xylene	ug/L	<0.40	<0.40	0.40	7430651
Total Xylenes	ug/L	<0.40	<0.40	0.40	7430651
F1 (C6-C10)	ug/L	<25	<25	25	7430651
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	7430651
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	7430615
F3 (C16-C34 Hydrocarbons)	ug/L	<200	360	200	7430615
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	7430615
Reached Baseline at C50	ug/L	Yes	Yes		7430615
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	99	100		7430651
4-Bromofluorobenzene	%	99	97		7430651
D10-o-Xylene	%	116	114		7430651
D4-1,2-Dichloroethane	%	112	111		7430651
o-Terphenyl	%	99	99		7430615

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PWX685
Sample ID: MW20-08 A
Matrix: Water

Collected: 2021/06/21
Shipped:
Received: 2021/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7422513	N/A	2021/06/23	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7421635	N/A	2021/06/24	Automated Statchk
Chloride by Automated Colourimetry	KONE	7422556	N/A	2021/06/23	Alina Dobreanu
Conductivity	AT	7422524	N/A	2021/06/23	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7427516	N/A	2021/06/24	Nimarta Singh
Hardness (calculated as CaCO3)		7421636	N/A	2021/06/24	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7423183	N/A	2021/06/24	Arefa Dabhad
Ion Balance (% Difference)	CALC	7421637	N/A	2021/06/24	Automated Statchk
Anion and Cation Sum	CALC	7421638	N/A	2021/06/24	Automated Statchk
Total Ammonia-N	LACH/NH4	7430355	N/A	2021/06/28	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7423349	N/A	2021/06/24	Chandra Nandlal
pH	AT	7422527	2021/06/22	2021/06/23	Surinder Rai
Orthophosphate	KONE	7422545	N/A	2021/06/23	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7421639	N/A	2021/06/24	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7421640	N/A	2021/06/24	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7422560	N/A	2021/06/24	Avneet Kour Sudan
Total Dissolved Solids (TDS calc)	CALC	7421642	N/A	2021/06/24	Automated Statchk

BV Labs ID: PWX685 Dup
Sample ID: MW20-08 A
Matrix: Water

Collected: 2021/06/21
Shipped:
Received: 2021/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	7422556	N/A	2021/06/23	Alina Dobreanu
Orthophosphate	KONE	7422545	N/A	2021/06/23	Avneet Kour Sudan
Sulphate by Automated Colourimetry	KONE	7422560	N/A	2021/06/24	Avneet Kour Sudan

BV Labs ID: PWX686
Sample ID: MW20-08 B
Matrix: Water

Collected: 2021/06/21
Shipped:
Received: 2021/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7422513	N/A	2021/06/24	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7421635	N/A	2021/06/24	Automated Statchk
Chloride by Automated Colourimetry	KONE	7422556	N/A	2021/06/23	Alina Dobreanu
Conductivity	AT	7422524	N/A	2021/06/24	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7428766	N/A	2021/06/25	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7430651	N/A	2021/06/25	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7430615	2021/06/25	2021/06/27	Jeevaraj Jeevaratrnam
Hardness (calculated as CaCO3)		7421636	N/A	2021/06/24	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7423183	N/A	2021/06/24	Arefa Dabhad
Ion Balance (% Difference)	CALC	7421637	N/A	2021/06/24	Automated Statchk
Anion and Cation Sum	CALC	7421638	N/A	2021/06/24	Automated Statchk
Total Ammonia-N	LACH/NH4	7430355	N/A	2021/06/28	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7423349	N/A	2021/06/24	Chandra Nandlal

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PWX686
Sample ID: MW20-08 B
Matrix: Water

Collected: 2021/06/21
Shipped:
Received: 2021/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH	AT	7422527	2021/06/22	2021/06/24	Surinder Rai
Orthophosphate	KONE	7422545	N/A	2021/06/23	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7421639	N/A	2021/06/24	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7421640	N/A	2021/06/24	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7422560	N/A	2021/06/24	Avneet Kour Sudan
Total Dissolved Solids (TDS calc)	CALC	7421642	N/A	2021/06/24	Automated Statchk

BV Labs ID: PWX686 Dup
Sample ID: MW20-08 B
Matrix: Water

Collected: 2021/06/21
Shipped:
Received: 2021/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7428766	N/A	2021/06/25	Nimarta Singh

BV Labs ID: PWX687
Sample ID: MW20-07 A
Matrix: Water

Collected: 2021/06/21
Shipped:
Received: 2021/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7422513	N/A	2021/06/23	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7421635	N/A	2021/06/24	Automated Statchk
Chloride by Automated Colourimetry	KONE	7422556	N/A	2021/06/23	Alina Dobreanu
Conductivity	AT	7422524	N/A	2021/06/23	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7427516	N/A	2021/06/24	Nimarta Singh
Hardness (calculated as CaCO3)		7421636	N/A	2021/06/24	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7423183	N/A	2021/06/24	Arefa Dabhad
Ion Balance (% Difference)	CALC	7421637	N/A	2021/06/24	Automated Statchk
Anion and Cation Sum	CALC	7421638	N/A	2021/06/24	Automated Statchk
Total Ammonia-N	LACH/NH4	7430355	N/A	2021/06/28	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7423349	N/A	2021/06/24	Chandra Nandlal
pH	AT	7422527	2021/06/22	2021/06/23	Surinder Rai
Orthophosphate	KONE	7422545	N/A	2021/06/23	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7421639	N/A	2021/06/24	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7421640	N/A	2021/06/24	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7422560	N/A	2021/06/24	Avneet Kour Sudan
Total Dissolved Solids (TDS calc)	CALC	7421642	N/A	2021/06/24	Automated Statchk

BV Labs ID: PWX688
Sample ID: MW20-07 B
Matrix: Water

Collected: 2021/06/21
Shipped:
Received: 2021/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7422513	N/A	2021/06/23	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7421635	N/A	2021/06/24	Automated Statchk
Chloride by Automated Colourimetry	KONE	7422556	N/A	2021/06/23	Alina Dobreanu

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H0819
Report Date: 2021/06/29

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: VP

TEST SUMMARY

BV Labs ID: PWX688
Sample ID: MW20-07 B
Matrix: Water

Collected: 2021/06/21
Shipped:
Received: 2021/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	7422524	N/A	2021/06/23	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7427516	N/A	2021/06/24	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7430651	N/A	2021/06/25	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7430615	2021/06/25	2021/06/27	Jeevaraj Jeevaratrnam
Hardness (calculated as CaCO3)		7421636	N/A	2021/06/24	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7423183	N/A	2021/06/24	Arefa Dabhad
Ion Balance (% Difference)	CALC	7421637	N/A	2021/06/24	Automated Statchk
Anion and Cation Sum	CALC	7421638	N/A	2021/06/24	Automated Statchk
Total Ammonia-N	LACH/NH4	7430355	N/A	2021/06/28	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7423349	N/A	2021/06/24	Chandra Nandlal
pH	AT	7422527	2021/06/22	2021/06/23	Surinder Rai
Orthophosphate	KONE	7422545	N/A	2021/06/23	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7421639	N/A	2021/06/24	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7421640	N/A	2021/06/24	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7422560	N/A	2021/06/24	Avneet Kour Sudan
Total Dissolved Solids (TDS calc)	CALC	7421642	N/A	2021/06/24	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	8.3°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7430615	o-Terphenyl	2021/06/27	98	60 - 130	101	60 - 130	99	%		
7430651	1,4-Difluorobenzene	2021/06/25	97	70 - 130	100	70 - 130	99	%		
7430651	4-Bromofluorobenzene	2021/06/25	103	70 - 130	102	70 - 130	99	%		
7430651	D10-o-Xylene	2021/06/25	94	70 - 130	106	70 - 130	114	%		
7430651	D4-1,2-Dichloroethane	2021/06/25	109	70 - 130	101	70 - 130	108	%		
7422513	Alkalinity (Total as CaCO3)	2021/06/23			99	85 - 115	<1.0	mg/L	0.56	20
7422524	Conductivity	2021/06/23			102	85 - 115	<1.0	umho/cm	0.24	25
7422527	pH	2021/06/23			102	98 - 103			1.2	N/A
7422545	Orthophosphate (P)	2021/06/23	106	75 - 125	99	80 - 120	<0.010	mg/L	NC	25
7422556	Dissolved Chloride (Cl-)	2021/06/23	NC	80 - 120	102	80 - 120	<1.0	mg/L	4.3	20
7422560	Dissolved Sulphate (SO4)	2021/06/24	NC	75 - 125	102	80 - 120	<1.0	mg/L	1.6	20
7423183	Dissolved Aluminum (Al)	2021/06/24	105	80 - 120	101	80 - 120	<4.9	ug/L	4.6	20
7423183	Dissolved Antimony (Sb)	2021/06/24	108	80 - 120	102	80 - 120	<0.50	ug/L	NC	20
7423183	Dissolved Arsenic (As)	2021/06/24	102	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
7423183	Dissolved Barium (Ba)	2021/06/24	102	80 - 120	99	80 - 120	<2.0	ug/L	0.93	20
7423183	Dissolved Beryllium (Be)	2021/06/24	99	80 - 120	95	80 - 120	<0.40	ug/L	NC	20
7423183	Dissolved Boron (B)	2021/06/24	96	80 - 120	92	80 - 120	<10	ug/L	0.33	20
7423183	Dissolved Cadmium (Cd)	2021/06/24	106	80 - 120	101	80 - 120	<0.090	ug/L	NC	20
7423183	Dissolved Calcium (Ca)	2021/06/24	NC	80 - 120	98	80 - 120	<200	ug/L	1.1	20
7423183	Dissolved Chromium (Cr)	2021/06/24	98	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
7423183	Dissolved Cobalt (Co)	2021/06/24	101	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
7423183	Dissolved Copper (Cu)	2021/06/24	102	80 - 120	99	80 - 120	<0.90	ug/L	4.1	20
7423183	Dissolved Iron (Fe)	2021/06/24	99	80 - 120	103	80 - 120	<100	ug/L	NC	20
7423183	Dissolved Lead (Pb)	2021/06/24	101	80 - 120	100	80 - 120	<0.50	ug/L	NC	20
7423183	Dissolved Magnesium (Mg)	2021/06/24	96	80 - 120	99	80 - 120	<50	ug/L	2.6	20
7423183	Dissolved Manganese (Mn)	2021/06/24	100	80 - 120	100	80 - 120	<2.0	ug/L	2.9	20
7423183	Dissolved Molybdenum (Mo)	2021/06/24	105	80 - 120	97	80 - 120	<0.50	ug/L	NC	20
7423183	Dissolved Nickel (Ni)	2021/06/24	97	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
7423183	Dissolved Phosphorus (P)	2021/06/24	104	80 - 120	104	80 - 120	<100	ug/L	NC	20
7423183	Dissolved Potassium (K)	2021/06/24	104	80 - 120	103	80 - 120	<200	ug/L	1.9	20
7423183	Dissolved Selenium (Se)	2021/06/24	104	80 - 120	103	80 - 120	<2.0	ug/L	NC	20

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7423183	Dissolved Silicon (Si)	2021/06/24	105	80 - 120	96	80 - 120	<50	ug/L	1.6	20
7423183	Dissolved Silver (Ag)	2021/06/24	99	80 - 120	97	80 - 120	<0.090	ug/L	NC	20
7423183	Dissolved Sodium (Na)	2021/06/24	NC	80 - 120	101	80 - 120	<100	ug/L	2.3	20
7423183	Dissolved Strontium (Sr)	2021/06/24	100	80 - 120	99	80 - 120	<1.0	ug/L	0.89	20
7423183	Dissolved Thallium (Tl)	2021/06/24	102	80 - 120	107	80 - 120	<0.050	ug/L	NC	20
7423183	Dissolved Titanium (Ti)	2021/06/24	105	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
7423183	Dissolved Uranium (U)	2021/06/24	102	80 - 120	99	80 - 120	<0.10	ug/L	4.3	20
7423183	Dissolved Vanadium (V)	2021/06/24	101	80 - 120	100	80 - 120	<0.50	ug/L	NC	20
7423183	Dissolved Zinc (Zn)	2021/06/24	100	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
7423349	Nitrate (N)	2021/06/24	99	80 - 120	99	80 - 120	<0.10	mg/L	3.1	20
7423349	Nitrite (N)	2021/06/24	109	80 - 120	106	80 - 120	<0.010	mg/L	NC	20
7427516	Dissolved Organic Carbon	2021/06/24	95	80 - 120	96	80 - 120	<0.40	mg/L	0.29	20
7428766	Dissolved Organic Carbon	2021/06/25	98	80 - 120	102	80 - 120	<0.40	mg/L	0.57	20
7430355	Total Ammonia-N	2021/06/28	97	75 - 125	102	80 - 120	<0.050	mg/L	NC	20
7430615	F2 (C10-C16 Hydrocarbons)	2021/06/27	97	60 - 130	103	60 - 130	<100	ug/L	NC	30
7430615	F3 (C16-C34 Hydrocarbons)	2021/06/27	93	60 - 130	101	60 - 130	<200	ug/L	27	30
7430615	F4 (C34-C50 Hydrocarbons)	2021/06/27	92	60 - 130	99	60 - 130	<200	ug/L	NC	30
7430651	Benzene	2021/06/25	101	50 - 140	103	50 - 140	<0.20	ug/L	NC	30
7430651	Ethylbenzene	2021/06/25	104	50 - 140	112	50 - 140	<0.20	ug/L	NC	30
7430651	F1 (C6-C10) - BTEX	2021/06/25					<25	ug/L	NC	30
7430651	F1 (C6-C10)	2021/06/25	92	60 - 140	97	60 - 140	<25	ug/L	NC	30
7430651	o-Xylene	2021/06/25	103	50 - 140	107	50 - 140	<0.20	ug/L	NC	30
7430651	p+m-Xylene	2021/06/25	101	50 - 140	107	50 - 140	<0.40	ug/L	NC	30
7430651	Toluene	2021/06/25	97	50 - 140	101	50 - 140	<0.20	ug/L	NC	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7430651	Total Xylenes	2021/06/25					<0.40	ug/L	NC	30

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

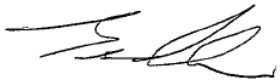
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

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Page of

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#21375 Golder Associates Ltd	Company Name:		Quotation #:	B80683	BV Labs Job #:	Bottle Order #: 831949
Attention:	Accounts Payable	Attention:	Gregory Padusenko	P.O. #:			
Address:	210 Sheldon Drive. Cambridge ON N1T 1A8	Address:		Project:	19129150 (2300)	COC #: C#831949-01-01	Project Manager: Ema Gitej
Tel:	(519) 620-8182 Fax:	Tel:	(519) 620-8182 Ext: 6509 Fax: (519) 620-9878	Project Name:			
Email:	CanadaAccountsPayableInvoices@golder.com	Email:	Gregory_Padusenko@golder.com	Site #:			
				Sampled By:	UP + CS		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ☐ PWQO ☐ Reg 406 Table ☐ Other

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ☑
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	RCAp - Comprehensive	O.Reg 153 PHCs, BTEX/F1-F4								# of Bottles	Comments
1	MW20-08A →		21-Jun-21	15:30	GW	Y	✓									4	
2	MW20-08B →		21-Jun-21	15:30	GW	Y	✓	✓								8	
3	MW20-07A →		21-Jun-21	16:45	GW	Y	✓									4	
4	MW20-07B →		21-Jun-21	16:45	GW	Y	✓	✓								8	
5																	
6																	
7																	
8																	
9																	
10																	

21-Jun-21 18:30
Ema Gitej
C1H0819

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	*RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Claire Steckle / C Steckle	21/06/21			21/06/21	18:30	

Laboratory Use Only					
Time Sensitive	Temperature (°C) on Recei	9/9/7	Custody Seal Present	Yes	No
			Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

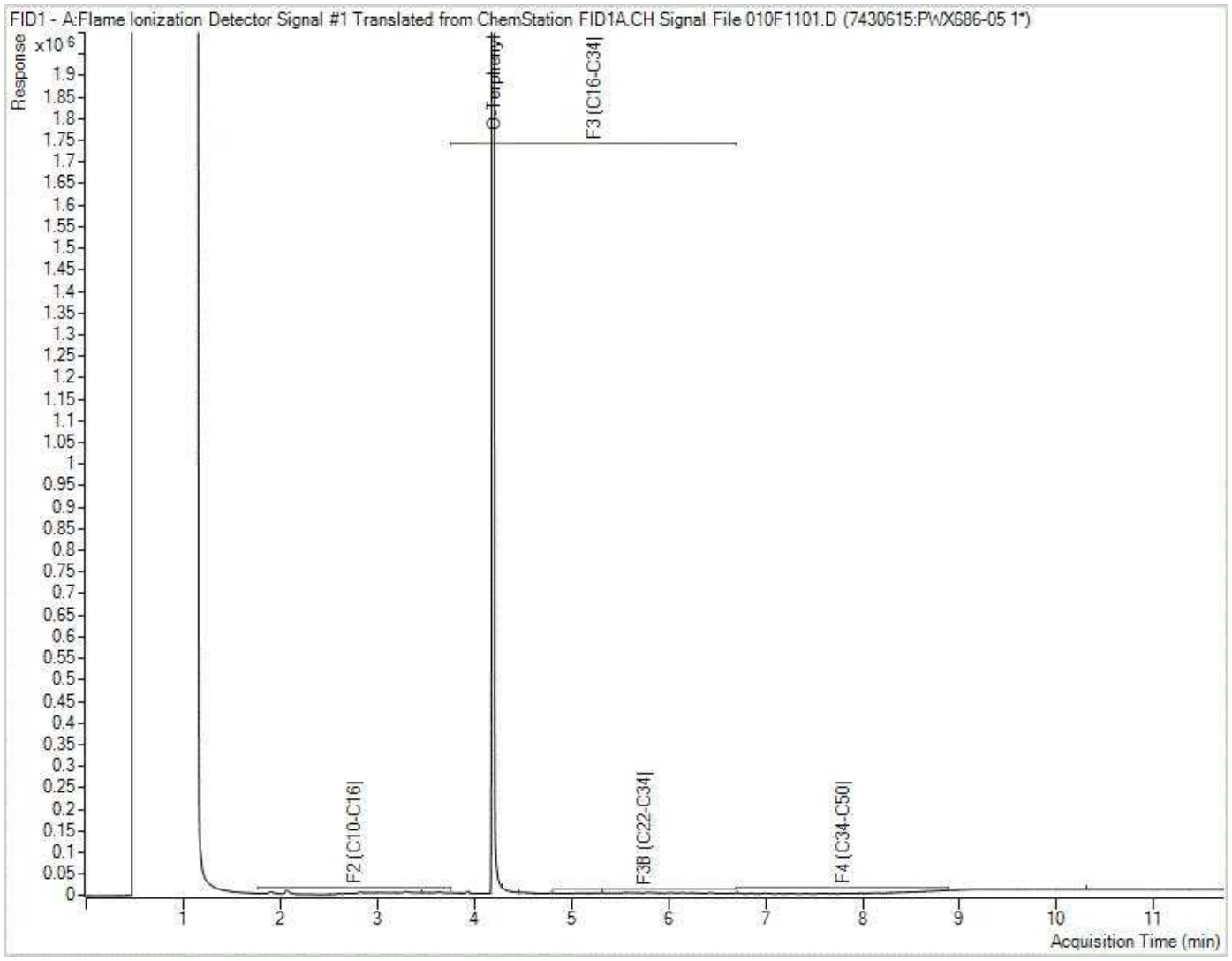
White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

BV Labs Job #: C1H0819
Report Date: 2021/06/29
BV Labs Sample: PWX686

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-08 B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

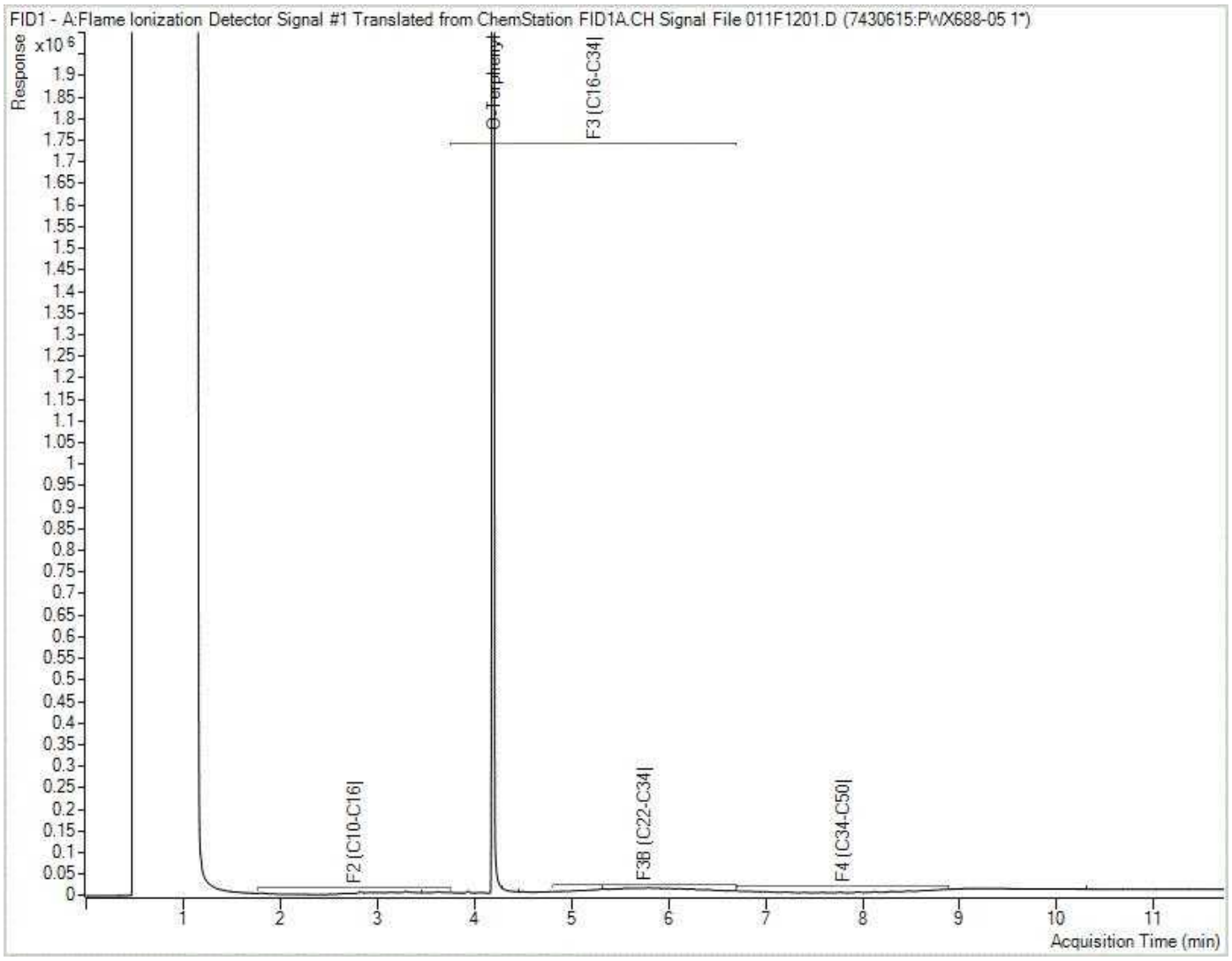


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H0819
Report Date: 2021/06/29
BV Labs Sample: PWX688

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-07 B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: 19129150 (2300)
Your C.O.C. #: 831949-01-01

Attention: Gregory Padusenko

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/07/27
Report #: R6738963
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: C1H0819
Received: 2021/06/21, 18:30

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	3	N/A	2021/06/23	CAM SOP-00448	SM 23 2320 B m
Alkalinity	1	N/A	2021/06/24	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	4	N/A	2021/06/24	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	4	N/A	2021/06/23	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity	3	N/A	2021/06/23	CAM SOP-00414	SM 23 2510 m
Conductivity	1	N/A	2021/06/24	CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (1)	3	N/A	2021/06/24	CAM SOP-00446	SM 23 5310 B m
Dissolved Organic Carbon (DOC) (1)	1	N/A	2021/06/25	CAM SOP-00446	SM 23 5310 B m
Petroleum Hydro. CCME F1 & BTEX in Water	2	N/A	2021/06/25	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (2)	2	2021/06/25	2021/06/27	CAM SOP-00316	CCME PHC-CWS m
Hardness (calculated as CaCO3)	4	N/A	2021/06/24	CAM SOP 00102/00408/00447	SM 2340 B
Dissolved Metals by ICPMS	4	N/A	2021/06/24	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	4	N/A	2021/06/24		
Anion and Cation Sum	4	N/A	2021/06/24		
Total Ammonia-N	4	N/A	2021/06/28	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (3)	4	N/A	2021/06/24	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	3	2021/06/22	2021/06/23	CAM SOP-00413	SM 4500H+ B m
pH	1	2021/06/22	2021/06/24	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	4	N/A	2021/06/23	CAM SOP-00461	EPA 365.1 m
Sat. pH and Langelier Index (@ 20C)	4	N/A	2021/06/24		Auto Calc
Sat. pH and Langelier Index (@ 4C)	4	N/A	2021/06/24		Auto Calc
Sulphate by Automated Colourimetry	4	N/A	2021/06/24	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (TDS calc)	4	N/A	2021/06/24		Auto Calc

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are

Your Project #: 19129150 (2300)
Your C.O.C. #: 831949-01-01

Attention: Gregory Padusenko

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/07/27
Report #: R6738963
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: C1H0819
Received: 2021/06/21, 18:30

reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(3) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: emese.gitej@bureauveritas.com
Phone# (905)817-5829

==========

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C1H0819
Report Date: 2021/07/27

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: VP

RCAP - COMPREHENSIVE (WATER)

BV Labs ID				PWX685			PWX685		
Sampling Date				2021/06/21 15:30			2021/06/21 15:30		
COC Number				831949-01-01			831949-01-01		
	UNITS	MAC	A/O	MW20-08 A	RDL	QC Batch	MW20-08 A Lab-Dup	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	-	-	9.16	N/A	7421638			
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	-	270	1.0	7421635			
Calculated TDS	mg/L	-	500	490	1.0	7421642			
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	-	2.9	1.0	7421635			
Cation Sum	me/L	-	-	9.23	N/A	7421638			
Hardness (CaCO3)	mg/L	-	80:100	**330**	1.0	7421636			
Ion Balance (% Difference)	%	-	-	0.400	N/A	7421637			
Langelier Index (@ 20C)	N/A	-	-	0.947		7421639			
Langelier Index (@ 4C)	N/A	-	-	0.699		7421640			
Saturation pH (@ 20C)	N/A	-	-	7.12		7421639			
Saturation pH (@ 4C)	N/A	-	-	7.37		7421640			
Inorganics									
Total Ammonia-N	mg/L	-	-	0.10	0.050	7430355			
Conductivity	umho/cm	-	-	900	1.0	7422524			
Dissolved Organic Carbon	mg/L	-	5	0.45	0.40	7427516			
Orthophosphate (P)	mg/L	-	-	<0.010	0.010	7422545	<0.010	0.010	7422545
pH	pH	-	6.5:8.5	8.07		7422527			
Dissolved Sulphate (SO4)	mg/L	-	500	22	1.0	7422560	21	1.0	7422560
Alkalinity (Total as CaCO3)	mg/L	-	30:500	270	1.0	7422513			
Dissolved Chloride (Cl-)	mg/L	-	250	110	1.0	7422556	110	1.0	7422556
Nitrite (N)	mg/L	1	-	<0.010	0.010	7423349			
Nitrate (N)	mg/L	10	-	3.65	0.10	7423349			
Nitrate + Nitrite (N)	mg/L	10	-	3.65	0.10	7423349			
Metals									
Dissolved Aluminum (Al)	ug/L	-	100	**120**	4.9	7423183			
Dissolved Antimony (Sb)	ug/L	6	-	<0.50	0.50	7423183			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
MAC,A/O: Ontario Drinking Water Standards - Maximum Acceptable Concentration [MAC] & Table 4-Chemical/Physical Objectives [A/O] - Not Health Related, respectively
(Made under the Ontario Safe Drinking Water Act, 2002)
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H0819
Report Date: 2021/07/27

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: VP

RCAP - COMPREHENSIVE (WATER)

BV Labs ID				PWX685			PWX685		
Sampling Date				2021/06/21 15:30			2021/06/21 15:30		
COC Number				831949-01-01			831949-01-01		
	UNITS	MAC	A/O	MW20-08 A	RDL	QC Batch	MW20-08 A Lab-Dup	RDL	QC Batch
Dissolved Arsenic (As)	ug/L	10	-	<1.0	1.0	7423183			
Dissolved Barium (Ba)	ug/L	1000	-	41	2.0	7423183			
Dissolved Beryllium (Be)	ug/L	-	-	<0.40	0.40	7423183			
Dissolved Boron (B)	ug/L	5000	-	<10	10	7423183			
Dissolved Cadmium (Cd)	ug/L	5	-	<0.090	0.090	7423183			
Dissolved Calcium (Ca)	ug/L	-	-	82000	200	7423183			
Dissolved Chromium (Cr)	ug/L	50	-	<5.0	5.0	7423183			
Dissolved Cobalt (Co)	ug/L	-	-	<0.50	0.50	7423183			
Dissolved Copper (Cu)	ug/L	-	1000	5.7	0.90	7423183			
Dissolved Iron (Fe)	ug/L	-	300	200	100	7423183			
Dissolved Lead (Pb)	ug/L	10	-	1.1	0.50	7423183			
Dissolved Magnesium (Mg)	ug/L	-	-	30000	50	7423183			
Dissolved Manganese (Mn)	ug/L	-	50	15	2.0	7423183			
Dissolved Molybdenum (Mo)	ug/L	-	-	0.56	0.50	7423183			
Dissolved Nickel (Ni)	ug/L	-	-	<1.0	1.0	7423183			
Dissolved Phosphorus (P)	ug/L	-	-	<100	100	7423183			
Dissolved Potassium (K)	ug/L	-	-	880	200	7423183			
Dissolved Selenium (Se)	ug/L	50	-	<2.0	2.0	7423183			
Dissolved Silicon (Si)	ug/L	-	-	3900	50	7423183			
Dissolved Silver (Ag)	ug/L	-	-	<0.090	0.090	7423183			
Dissolved Sodium (Na)	ug/L	-	200000	61000	100	7423183			
Dissolved Strontium (Sr)	ug/L	-	-	230	1.0	7423183			
Dissolved Thallium (Tl)	ug/L	-	-	<0.050	0.050	7423183			
Dissolved Titanium (Ti)	ug/L	-	-	6.8	5.0	7423183			
Dissolved Uranium (U)	ug/L	20	-	0.88	0.10	7423183			
Dissolved Vanadium (V)	ug/L	-	-	<0.50	0.50	7423183			
Dissolved Zinc (Zn)	ug/L	-	5000	9.3	5.0	7423183			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

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MAC,A/O: Ontario Drinking Water Standards - Maximum Acceptable Concentration [MAC] & Table 4-Chemical/Physical Objectives [A/O] - Not Health Related, respectively
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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H0819
Report Date: 2021/07/27

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: VP

RCAP - COMPREHENSIVE (WATER)

BV Labs ID				PWX686			PWX686		
Sampling Date				2021/06/21 15:30			2021/06/21 15:30		
COC Number				831949-01-01			831949-01-01		
	UNITS	MAC	A/O	MW20-08 B	RDL	QC Batch	MW20-08 B Lab-Dup	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	-	-	13.1	N/A	7421638			
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	-	280	1.0	7421635			
Calculated TDS	mg/L	-	500	**720**	1.0	7421642			
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	-	2.8	1.0	7421635			
Cation Sum	me/L	-	-	13.2	N/A	7421638			
Hardness (CaCO3)	mg/L	-	80:100	**320**	1.0	7421636			
Ion Balance (% Difference)	%	-	-	0.690	N/A	7421637			
Langelier Index (@ 20C)	N/A	-	-	0.925		7421639			
Langelier Index (@ 4C)	N/A	-	-	0.679		7421640			
Saturation pH (@ 20C)	N/A	-	-	7.10		7421639			
Saturation pH (@ 4C)	N/A	-	-	7.35		7421640			
Inorganics									
Total Ammonia-N	mg/L	-	-	<0.050	0.050	7430355			
Conductivity	umho/cm	-	-	1400	1.0	7422524			
Dissolved Organic Carbon	mg/L	-	5	1.2	0.40	7428766	1.2	0.40	7428766
Orthophosphate (P)	mg/L	-	-	<0.010	0.010	7422545			
pH	pH	-	6.5:8.5	8.03		7422527			
Dissolved Sulphate (SO4)	mg/L	-	500	17	1.0	7422560			
Alkalinity (Total as CaCO3)	mg/L	-	30:500	280	1.0	7422513			
Dissolved Chloride (Cl-)	mg/L	-	250	240	3.0	7422556			
Nitrite (N)	mg/L	1	-	<0.010	0.010	7423349			
Nitrate (N)	mg/L	10	-	4.31	0.10	7423349			
Nitrate + Nitrite (N)	mg/L	10	-	4.31	0.10	7423349			
Metals									
Dissolved Aluminum (Al)	ug/L	-	100	6.5	4.9	7423183			
Dissolved Antimony (Sb)	ug/L	6	-	<0.50	0.50	7423183			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
MAC,A/O: Ontario Drinking Water Standards - Maximum Acceptable Concentration [MAC] & Table 4-Chemical/Physical Objectives [A/O] - Not Health Related, respectively
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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID				PWX686			PWX686		
Sampling Date				2021/06/21 15:30			2021/06/21 15:30		
COC Number				831949-01-01			831949-01-01		
	UNITS	MAC	A/O	MW20-08 B	RDL	QC Batch	MW20-08 B Lab-Dup	RDL	QC Batch
Dissolved Arsenic (As)	ug/L	10	-	<1.0	1.0	7423183			
Dissolved Barium (Ba)	ug/L	1000	-	31	2.0	7423183			
Dissolved Beryllium (Be)	ug/L	-	-	<0.40	0.40	7423183			
Dissolved Boron (B)	ug/L	5000	-	<10	10	7423183			
Dissolved Cadmium (Cd)	ug/L	5	-	<0.090	0.090	7423183			
Dissolved Calcium (Ca)	ug/L	-	-	92000	200	7423183			
Dissolved Chromium (Cr)	ug/L	50	-	<5.0	5.0	7423183			
Dissolved Cobalt (Co)	ug/L	-	-	<0.50	0.50	7423183			
Dissolved Copper (Cu)	ug/L	-	1000	1.6	0.90	7423183			
Dissolved Iron (Fe)	ug/L	-	300	<100	100	7423183			
Dissolved Lead (Pb)	ug/L	10	-	<0.50	0.50	7423183			
Dissolved Magnesium (Mg)	ug/L	-	-	22000	50	7423183			
Dissolved Manganese (Mn)	ug/L	-	50	<2.0	2.0	7423183			
Dissolved Molybdenum (Mo)	ug/L	-	-	<0.50	0.50	7423183			
Dissolved Nickel (Ni)	ug/L	-	-	<1.0	1.0	7423183			
Dissolved Phosphorus (P)	ug/L	-	-	<100	100	7423183			
Dissolved Potassium (K)	ug/L	-	-	920	200	7423183			
Dissolved Selenium (Se)	ug/L	50	-	<2.0	2.0	7423183			
Dissolved Silicon (Si)	ug/L	-	-	2700	50	7423183			
Dissolved Silver (Ag)	ug/L	-	-	<0.090	0.090	7423183			
Dissolved Sodium (Na)	ug/L	-	200000	160000	100	7423183			
Dissolved Strontium (Sr)	ug/L	-	-	160	1.0	7423183			
Dissolved Thallium (Tl)	ug/L	-	-	<0.050	0.050	7423183			
Dissolved Titanium (Ti)	ug/L	-	-	<5.0	5.0	7423183			
Dissolved Uranium (U)	ug/L	20	-	0.21	0.10	7423183			
Dissolved Vanadium (V)	ug/L	-	-	<0.50	0.50	7423183			
Dissolved Zinc (Zn)	ug/L	-	5000	<5.0	5.0	7423183			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
MAC,A/O: Ontario Drinking Water Standards - Maximum Acceptable Concentration [MAC] & Table 4-Chemical/Physical Objectives [A/O] - Not Health Related, respectively
(Made under the Ontario Safe Drinking Water Act, 2002)

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID				PWX687	PWX688		
Sampling Date				2021/06/21 16:45	2021/06/21 16:45		
COC Number				831949-01-01	831949-01-01		
	UNITS	MAC	A/O	MW20-07 A	MW20-07 B	RDL	QC Batch
Calculated Parameters							
Anion Sum	me/L	-	-	7.85	9.08	N/A	7421638
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	-	250	260	1.0	7421635
Calculated TDS	mg/L	-	500	410	500	1.0	7421642
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	-	2.7	3.1	1.0	7421635
Cation Sum	me/L	-	-	7.75	9.08	N/A	7421638
Hardness (CaCO3)	mg/L	-	80:100	**330**	**270**	1.0	7421636
Ion Balance (% Difference)	%	-	-	0.610	0.00	N/A	7421637
Langelier Index (@ 20C)	N/A	-	-	0.928	0.901		7421639
Langelier Index (@ 4C)	N/A	-	-	0.679	0.653		7421640
Saturation pH (@ 20C)	N/A	-	-	7.13	7.19		7421639
Saturation pH (@ 4C)	N/A	-	-	7.38	7.44		7421640
Inorganics							
Total Ammonia-N	mg/L	-	-	<0.050	0.28	0.050	7430355
Conductivity	umho/cm	-	-	740	870	1.0	7422524
Dissolved Organic Carbon	mg/L	-	5	0.55	0.88	0.40	7427516
Orthophosphate (P)	mg/L	-	-	<0.010	<0.010	0.010	7422545
pH	pH	-	6.5:8.5	8.06	8.09		7422527
Dissolved Sulphate (SO4)	mg/L	-	500	40	20	1.0	7422560
Alkalinity (Total as CaCO3)	mg/L	-	30:500	250	270	1.0	7422513
Dissolved Chloride (Cl-)	mg/L	-	250	68	100	1.0	7422556
Nitrite (N)	mg/L	1	-	<0.010	<0.010	0.010	7423349
Nitrate (N)	mg/L	10	-	0.73	5.20	0.10	7423349
Nitrate + Nitrite (N)	mg/L	10	-	0.73	5.20	0.10	7423349
Metals							
Dissolved Aluminum (Al)	ug/L	-	100	53	92	4.9	7423183
Dissolved Antimony (Sb)	ug/L	6	-	<0.50	<0.50	0.50	7423183
Dissolved Arsenic (As)	ug/L	10	-	7.9	<1.0	1.0	7423183

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

MAC,A/O: Ontario Drinking Water Standards - Maximum Acceptable Concentration [MAC] & Table 4-Chemical/Physical Objectives [A/O] - Not Health Related, respectively
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N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID				PWX687	PWX688		
Sampling Date				2021/06/21 16:45	2021/06/21 16:45		
COC Number				831949-01-01	831949-01-01		
	UNITS	MAC	A/O	MW20-07 A	MW20-07 B	RDL	QC Batch
Dissolved Barium (Ba)	ug/L	1000	-	56	34	2.0	7423183
Dissolved Beryllium (Be)	ug/L	-	-	<0.40	<0.40	0.40	7423183
Dissolved Boron (B)	ug/L	5000	-	23	19	10	7423183
Dissolved Cadmium (Cd)	ug/L	5	-	<0.090	<0.090	0.090	7423183
Dissolved Calcium (Ca)	ug/L	-	-	81000	71000	200	7423183
Dissolved Chromium (Cr)	ug/L	50	-	<5.0	<5.0	5.0	7423183
Dissolved Cobalt (Co)	ug/L	-	-	<0.50	<0.50	0.50	7423183
Dissolved Copper (Cu)	ug/L	-	1000	<0.90	2.8	0.90	7423183
Dissolved Iron (Fe)	ug/L	-	300	<100	<100	100	7423183
Dissolved Lead (Pb)	ug/L	10	-	<0.50	<0.50	0.50	7423183
Dissolved Magnesium (Mg)	ug/L	-	-	30000	22000	50	7423183
Dissolved Manganese (Mn)	ug/L	-	50	26	46	2.0	7423183
Dissolved Molybdenum (Mo)	ug/L	-	-	1.5	5.5	0.50	7423183
Dissolved Nickel (Ni)	ug/L	-	-	<1.0	2.8	1.0	7423183
Dissolved Phosphorus (P)	ug/L	-	-	<100	<100	100	7423183
Dissolved Potassium (K)	ug/L	-	-	2400	1500	200	7423183
Dissolved Selenium (Se)	ug/L	50	-	<2.0	<2.0	2.0	7423183
Dissolved Silicon (Si)	ug/L	-	-	3900	3700	50	7423183
Dissolved Silver (Ag)	ug/L	-	-	<0.090	<0.090	0.090	7423183
Dissolved Sodium (Na)	ug/L	-	200000	26000	83000	100	7423183
Dissolved Strontium (Sr)	ug/L	-	-	2600	220	1.0	7423183
Dissolved Thallium (Tl)	ug/L	-	-	0.056	0.079	0.050	7423183
Dissolved Titanium (Ti)	ug/L	-	-	<5.0	<5.0	5.0	7423183
Dissolved Uranium (U)	ug/L	20	-	0.53	1.2	0.10	7423183
Dissolved Vanadium (V)	ug/L	-	-	<0.50	<0.50	0.50	7423183
Dissolved Zinc (Zn)	ug/L	-	5000	<5.0	9.5	5.0	7423183

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

MAC,A/O: Ontario Drinking Water Standards - Maximum Acceptable Concentration [MAC] & Table 4-Chemical/Physical Objectives [A/O] - Not Health Related, respectively
(Made under the Ontario Safe Drinking Water Act, 2002)

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 PHCS, BTEX/F1-F4 (WATER)

BV Labs ID				PWX686	PWX688		
Sampling Date				2021/06/21 15:30	2021/06/21 16:45		
COC Number				831949-01-01	831949-01-01		
	UNITS	MAC	A/O	MW20-08 B	MW20-07 B	RDL	QC Batch
BTEX & F1 Hydrocarbons							
Benzene	ug/L	1	-	<0.20	<0.20	0.20	7430651
Toluene	ug/L	60	24	<0.20	<0.20	0.20	7430651
Ethylbenzene	ug/L	140	1.6	<0.20	<0.20	0.20	7430651
o-Xylene	ug/L	-	-	<0.20	<0.20	0.20	7430651
p+m-Xylene	ug/L	-	-	<0.40	<0.40	0.40	7430651
Total Xylenes	ug/L	90	20	<0.40	<0.40	0.40	7430651
F1 (C6-C10)	ug/L	-	-	<25	<25	25	7430651
F1 (C6-C10) - BTEX	ug/L	-	-	<25	<25	25	7430651
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	-	-	<100	<100	100	7430615
F3 (C16-C34 Hydrocarbons)	ug/L	-	-	<200	360	200	7430615
F4 (C34-C50 Hydrocarbons)	ug/L	-	-	<200	<200	200	7430615
Reached Baseline at C50	ug/L	-	-	Yes	Yes		7430615
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	-	-	99	100		7430651
4-Bromofluorobenzene	%	-	-	99	97		7430651
D10-o-Xylene	%	-	-	116	114		7430651
D4-1,2-Dichloroethane	%	-	-	112	111		7430651
o-Terphenyl	%	-	-	99	99		7430615

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
MAC,A/O: Ontario Drinking Water Standards - Maximum Acceptable Concentration [MAC] & Table 4-Chemical/Physical Objectives [A/O] - Not Health Related, respectively
(Made under the Ontario Safe Drinking Water Act, 2002)

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PWX685
Sample ID: MW20-08 A
Matrix: Water

Collected: 2021/06/21
Shipped:
Received: 2021/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7422513	N/A	2021/06/23	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7421635	N/A	2021/06/24	Automated Statchk
Chloride by Automated Colourimetry	KONE	7422556	N/A	2021/06/23	Alina Dobreanu
Conductivity	AT	7422524	N/A	2021/06/23	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7427516	N/A	2021/06/24	Nimarta Singh
Hardness (calculated as CaCO3)		7421636	N/A	2021/06/24	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7423183	N/A	2021/06/24	Arefa Dabhad
Ion Balance (% Difference)	CALC	7421637	N/A	2021/06/24	Automated Statchk
Anion and Cation Sum	CALC	7421638	N/A	2021/06/24	Automated Statchk
Total Ammonia-N	LACH/NH4	7430355	N/A	2021/06/28	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7423349	N/A	2021/06/24	Chandra Nandlal
pH	AT	7422527	2021/06/22	2021/06/23	Surinder Rai
Orthophosphate	KONE	7422545	N/A	2021/06/23	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7421639	N/A	2021/06/24	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7421640	N/A	2021/06/24	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7422560	N/A	2021/06/24	Avneet Kour Sudan
Total Dissolved Solids (TDS calc)	CALC	7421642	N/A	2021/06/24	Automated Statchk

BV Labs ID: PWX685 Dup
Sample ID: MW20-08 A
Matrix: Water

Collected: 2021/06/21
Shipped:
Received: 2021/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	7422556	N/A	2021/06/23	Alina Dobreanu
Orthophosphate	KONE	7422545	N/A	2021/06/23	Avneet Kour Sudan
Sulphate by Automated Colourimetry	KONE	7422560	N/A	2021/06/24	Avneet Kour Sudan

BV Labs ID: PWX686
Sample ID: MW20-08 B
Matrix: Water

Collected: 2021/06/21
Shipped:
Received: 2021/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7422513	N/A	2021/06/24	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7421635	N/A	2021/06/24	Automated Statchk
Chloride by Automated Colourimetry	KONE	7422556	N/A	2021/06/23	Alina Dobreanu
Conductivity	AT	7422524	N/A	2021/06/24	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7428766	N/A	2021/06/25	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7430651	N/A	2021/06/25	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7430615	2021/06/25	2021/06/27	Jeevaraj Jeevaratrnam
Hardness (calculated as CaCO3)		7421636	N/A	2021/06/24	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7423183	N/A	2021/06/24	Arefa Dabhad
Ion Balance (% Difference)	CALC	7421637	N/A	2021/06/24	Automated Statchk
Anion and Cation Sum	CALC	7421638	N/A	2021/06/24	Automated Statchk
Total Ammonia-N	LACH/NH4	7430355	N/A	2021/06/28	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7423349	N/A	2021/06/24	Chandra Nandlal

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PWX686
Sample ID: MW20-08 B
Matrix: Water

Collected: 2021/06/21
Shipped:
Received: 2021/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH	AT	7422527	2021/06/22	2021/06/24	Surinder Rai
Orthophosphate	KONE	7422545	N/A	2021/06/23	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7421639	N/A	2021/06/24	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7421640	N/A	2021/06/24	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7422560	N/A	2021/06/24	Avneet Kour Sudan
Total Dissolved Solids (TDS calc)	CALC	7421642	N/A	2021/06/24	Automated Statchk

BV Labs ID: PWX686 Dup
Sample ID: MW20-08 B
Matrix: Water

Collected: 2021/06/21
Shipped:
Received: 2021/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7428766	N/A	2021/06/25	Nimarta Singh

BV Labs ID: PWX687
Sample ID: MW20-07 A
Matrix: Water

Collected: 2021/06/21
Shipped:
Received: 2021/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7422513	N/A	2021/06/23	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7421635	N/A	2021/06/24	Automated Statchk
Chloride by Automated Colourimetry	KONE	7422556	N/A	2021/06/23	Alina Dobreanu
Conductivity	AT	7422524	N/A	2021/06/23	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7427516	N/A	2021/06/24	Nimarta Singh
Hardness (calculated as CaCO3)		7421636	N/A	2021/06/24	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7423183	N/A	2021/06/24	Arefa Dabhad
Ion Balance (% Difference)	CALC	7421637	N/A	2021/06/24	Automated Statchk
Anion and Cation Sum	CALC	7421638	N/A	2021/06/24	Automated Statchk
Total Ammonia-N	LACH/NH4	7430355	N/A	2021/06/28	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7423349	N/A	2021/06/24	Chandra Nandlal
pH	AT	7422527	2021/06/22	2021/06/23	Surinder Rai
Orthophosphate	KONE	7422545	N/A	2021/06/23	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7421639	N/A	2021/06/24	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7421640	N/A	2021/06/24	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7422560	N/A	2021/06/24	Avneet Kour Sudan
Total Dissolved Solids (TDS calc)	CALC	7421642	N/A	2021/06/24	Automated Statchk

BV Labs ID: PWX688
Sample ID: MW20-07 B
Matrix: Water

Collected: 2021/06/21
Shipped:
Received: 2021/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7422513	N/A	2021/06/23	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7421635	N/A	2021/06/24	Automated Statchk
Chloride by Automated Colourimetry	KONE	7422556	N/A	2021/06/23	Alina Dobreanu

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H0819
Report Date: 2021/07/27

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: VP

TEST SUMMARY

BV Labs ID: PWX688
Sample ID: MW20-07 B
Matrix: Water

Collected: 2021/06/21
Shipped:
Received: 2021/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	7422524	N/A	2021/06/23	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7427516	N/A	2021/06/24	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7430651	N/A	2021/06/25	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7430615	2021/06/25	2021/06/27	Jeevaraj Jeevaratrnam
Hardness (calculated as CaCO3)		7421636	N/A	2021/06/24	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7423183	N/A	2021/06/24	Arefa Dabhad
Ion Balance (% Difference)	CALC	7421637	N/A	2021/06/24	Automated Statchk
Anion and Cation Sum	CALC	7421638	N/A	2021/06/24	Automated Statchk
Total Ammonia-N	LACH/NH4	7430355	N/A	2021/06/28	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7423349	N/A	2021/06/24	Chandra Nandlal
pH	AT	7422527	2021/06/22	2021/06/23	Surinder Rai
Orthophosphate	KONE	7422545	N/A	2021/06/23	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7421639	N/A	2021/06/24	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7421640	N/A	2021/06/24	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7422560	N/A	2021/06/24	Avneet Kour Sudan
Total Dissolved Solids (TDS calc)	CALC	7421642	N/A	2021/06/24	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	8.3°C

Revised report (2021/07/27): Criteria is included as requested.

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7430615	o-Terphenyl	2021/06/27	98	60 - 130	101	60 - 130	99	%		
7430651	1,4-Difluorobenzene	2021/06/25	97	70 - 130	100	70 - 130	99	%		
7430651	4-Bromofluorobenzene	2021/06/25	103	70 - 130	102	70 - 130	99	%		
7430651	D10-o-Xylene	2021/06/25	94	70 - 130	106	70 - 130	114	%		
7430651	D4-1,2-Dichloroethane	2021/06/25	109	70 - 130	101	70 - 130	108	%		
7422513	Alkalinity (Total as CaCO3)	2021/06/23			99	85 - 115	<1.0	mg/L	0.56	20
7422524	Conductivity	2021/06/23			102	85 - 115	<1.0	umho/cm	0.24	25
7422527	pH	2021/06/23			102	98 - 103			1.2	N/A
7422545	Orthophosphate (P)	2021/06/23	106	75 - 125	99	80 - 120	<0.010	mg/L	NC	25
7422556	Dissolved Chloride (Cl-)	2021/06/23	NC	80 - 120	102	80 - 120	<1.0	mg/L	4.3	20
7422560	Dissolved Sulphate (SO4)	2021/06/24	NC	75 - 125	102	80 - 120	<1.0	mg/L	1.6	20
7423183	Dissolved Aluminum (Al)	2021/06/24	105	80 - 120	101	80 - 120	<4.9	ug/L	4.6	20
7423183	Dissolved Antimony (Sb)	2021/06/24	108	80 - 120	102	80 - 120	<0.50	ug/L	NC	20
7423183	Dissolved Arsenic (As)	2021/06/24	102	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
7423183	Dissolved Barium (Ba)	2021/06/24	102	80 - 120	99	80 - 120	<2.0	ug/L	0.93	20
7423183	Dissolved Beryllium (Be)	2021/06/24	99	80 - 120	95	80 - 120	<0.40	ug/L	NC	20
7423183	Dissolved Boron (B)	2021/06/24	96	80 - 120	92	80 - 120	<10	ug/L	0.33	20
7423183	Dissolved Cadmium (Cd)	2021/06/24	106	80 - 120	101	80 - 120	<0.090	ug/L	NC	20
7423183	Dissolved Calcium (Ca)	2021/06/24	NC	80 - 120	98	80 - 120	<200	ug/L	1.1	20
7423183	Dissolved Chromium (Cr)	2021/06/24	98	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
7423183	Dissolved Cobalt (Co)	2021/06/24	101	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
7423183	Dissolved Copper (Cu)	2021/06/24	102	80 - 120	99	80 - 120	<0.90	ug/L	4.1	20
7423183	Dissolved Iron (Fe)	2021/06/24	99	80 - 120	103	80 - 120	<100	ug/L	NC	20
7423183	Dissolved Lead (Pb)	2021/06/24	101	80 - 120	100	80 - 120	<0.50	ug/L	NC	20
7423183	Dissolved Magnesium (Mg)	2021/06/24	96	80 - 120	99	80 - 120	<50	ug/L	2.6	20
7423183	Dissolved Manganese (Mn)	2021/06/24	100	80 - 120	100	80 - 120	<2.0	ug/L	2.9	20
7423183	Dissolved Molybdenum (Mo)	2021/06/24	105	80 - 120	97	80 - 120	<0.50	ug/L	NC	20
7423183	Dissolved Nickel (Ni)	2021/06/24	97	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
7423183	Dissolved Phosphorus (P)	2021/06/24	104	80 - 120	104	80 - 120	<100	ug/L	NC	20
7423183	Dissolved Potassium (K)	2021/06/24	104	80 - 120	103	80 - 120	<200	ug/L	1.9	20
7423183	Dissolved Selenium (Se)	2021/06/24	104	80 - 120	103	80 - 120	<2.0	ug/L	NC	20

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7423183	Dissolved Silicon (Si)	2021/06/24	105	80 - 120	96	80 - 120	<50	ug/L	1.6	20
7423183	Dissolved Silver (Ag)	2021/06/24	99	80 - 120	97	80 - 120	<0.090	ug/L	NC	20
7423183	Dissolved Sodium (Na)	2021/06/24	NC	80 - 120	101	80 - 120	<100	ug/L	2.3	20
7423183	Dissolved Strontium (Sr)	2021/06/24	100	80 - 120	99	80 - 120	<1.0	ug/L	0.89	20
7423183	Dissolved Thallium (Tl)	2021/06/24	102	80 - 120	107	80 - 120	<0.050	ug/L	NC	20
7423183	Dissolved Titanium (Ti)	2021/06/24	105	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
7423183	Dissolved Uranium (U)	2021/06/24	102	80 - 120	99	80 - 120	<0.10	ug/L	4.3	20
7423183	Dissolved Vanadium (V)	2021/06/24	101	80 - 120	100	80 - 120	<0.50	ug/L	NC	20
7423183	Dissolved Zinc (Zn)	2021/06/24	100	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
7423349	Nitrate (N)	2021/06/24	99	80 - 120	99	80 - 120	<0.10	mg/L	3.1	20
7423349	Nitrite (N)	2021/06/24	109	80 - 120	106	80 - 120	<0.010	mg/L	NC	20
7427516	Dissolved Organic Carbon	2021/06/24	95	80 - 120	96	80 - 120	<0.40	mg/L	0.29	20
7428766	Dissolved Organic Carbon	2021/06/25	98	80 - 120	102	80 - 120	<0.40	mg/L	0.57	20
7430355	Total Ammonia-N	2021/06/28	97	75 - 125	102	80 - 120	<0.050	mg/L	NC	20
7430615	F2 (C10-C16 Hydrocarbons)	2021/06/27	97	60 - 130	103	60 - 130	<100	ug/L	NC	30
7430615	F3 (C16-C34 Hydrocarbons)	2021/06/27	93	60 - 130	101	60 - 130	<200	ug/L	27	30
7430615	F4 (C34-C50 Hydrocarbons)	2021/06/27	92	60 - 130	99	60 - 130	<200	ug/L	NC	30
7430651	Benzene	2021/06/25	101	50 - 140	103	50 - 140	<0.20	ug/L	NC	30
7430651	Ethylbenzene	2021/06/25	104	50 - 140	112	50 - 140	<0.20	ug/L	NC	30
7430651	F1 (C6-C10) - BTEX	2021/06/25					<25	ug/L	NC	30
7430651	F1 (C6-C10)	2021/06/25	92	60 - 140	97	60 - 140	<25	ug/L	NC	30
7430651	o-Xylene	2021/06/25	103	50 - 140	107	50 - 140	<0.20	ug/L	NC	30
7430651	p+m-Xylene	2021/06/25	101	50 - 140	107	50 - 140	<0.40	ug/L	NC	30
7430651	Toluene	2021/06/25	97	50 - 140	101	50 - 140	<0.20	ug/L	NC	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7430651	Total Xylenes	2021/06/25					<0.40	ug/L	NC	30

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

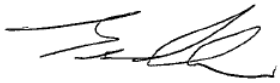
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Page of

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#21375 Golder Associates Ltd	Company Name:		Quotation #:	B80683	BV Labs Job #:	Bottle Order #: 831949
Attention:	Accounts Payable	Attention:	Gregory Padusenko	P.O. #:			
Address:	210 Sheldon Drive. Cambridge ON N1T 1A8	Address:		Project:	19129150 (2300)	COC #: C#831949-01-01	Project Manager: Ema Gitej
Tel:	(519) 620-8182 Fax:	Tel:	(519) 620-8182 Ext: 6509 Fax: (519) 620-9878	Project Name:			
Email:	CanadaAccountsPayableInvoices@golder.com	Email:	Gregory_Padusenko@golder.com	Site #:			
				Sampled By:	UP + CS		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ☐ PWQO ☐ Reg 406 Table ☐ Other

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ☑
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	RCAp - Comprehensive	O.Reg 153 PHCs, BTEX/F1-F4								# of Bottles	Comments
1	MW20-08A		21-Jun-21	15:30	GW	Y	J									4	
2	MW20-08B		21-Jun-21	15:30	GW	Y	J	J								8	
3	MW20-07A		21-Jun-21	16:45	GW	Y	J									4	
4	MW20-07B		21-Jun-21	16:45	GW	Y	J	J								8	
5																	
6																	
7																	
8																	
9																	
10																	

21-Jun-21 18:30
Ema Gitej
C1H0819

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	*RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Claire Steckle / C Steckle	21/06/21			21/06/21	18:30	

Laboratory Use Only					
Time Sensitive	Temperature (°C) on Recei	9/9/7	Custody Seal Present	Yes	No
			Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

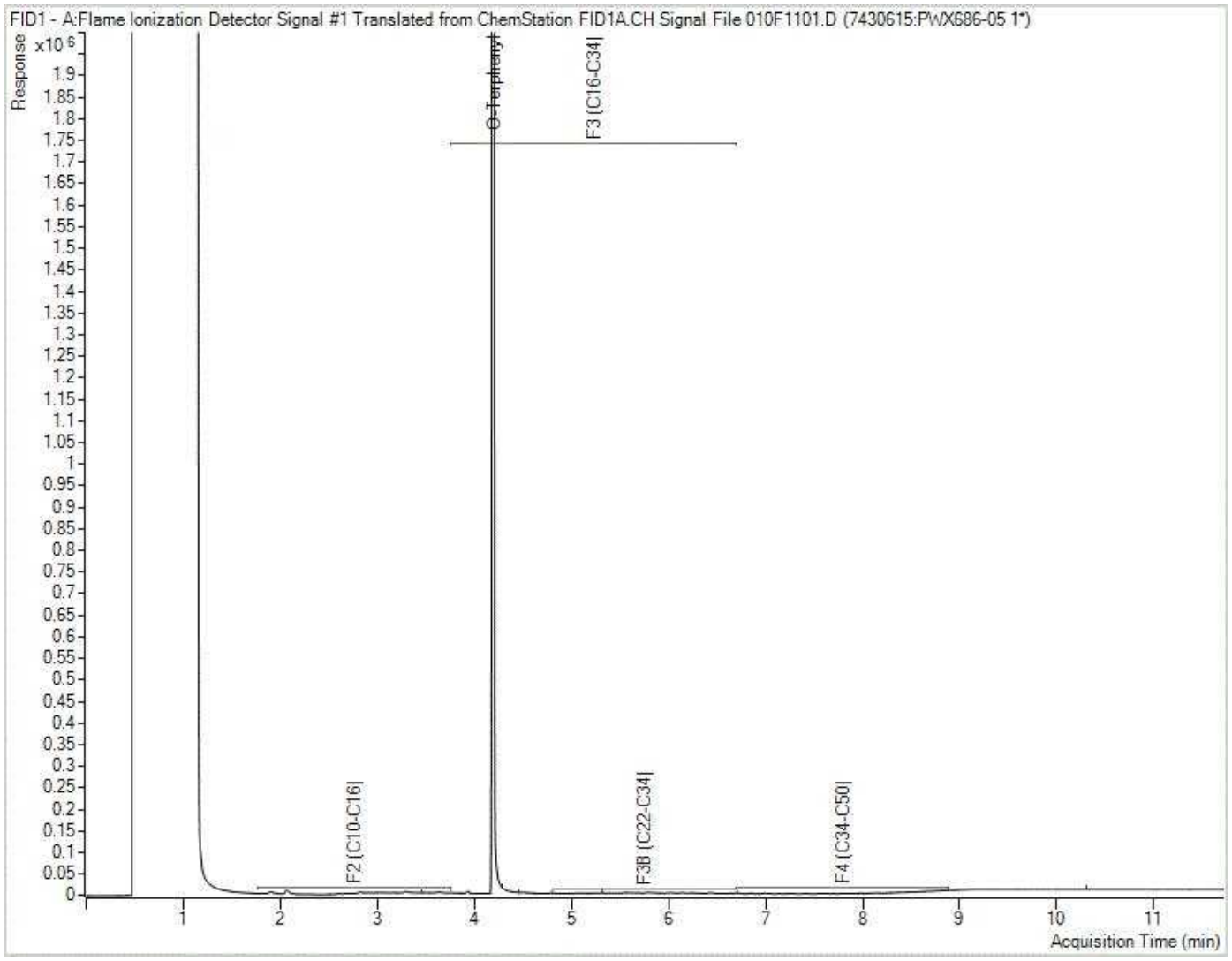
White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

BV Labs Job #: C1H0819
Report Date: 2021/07/27
BV Labs Sample: PWX686

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-08 B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

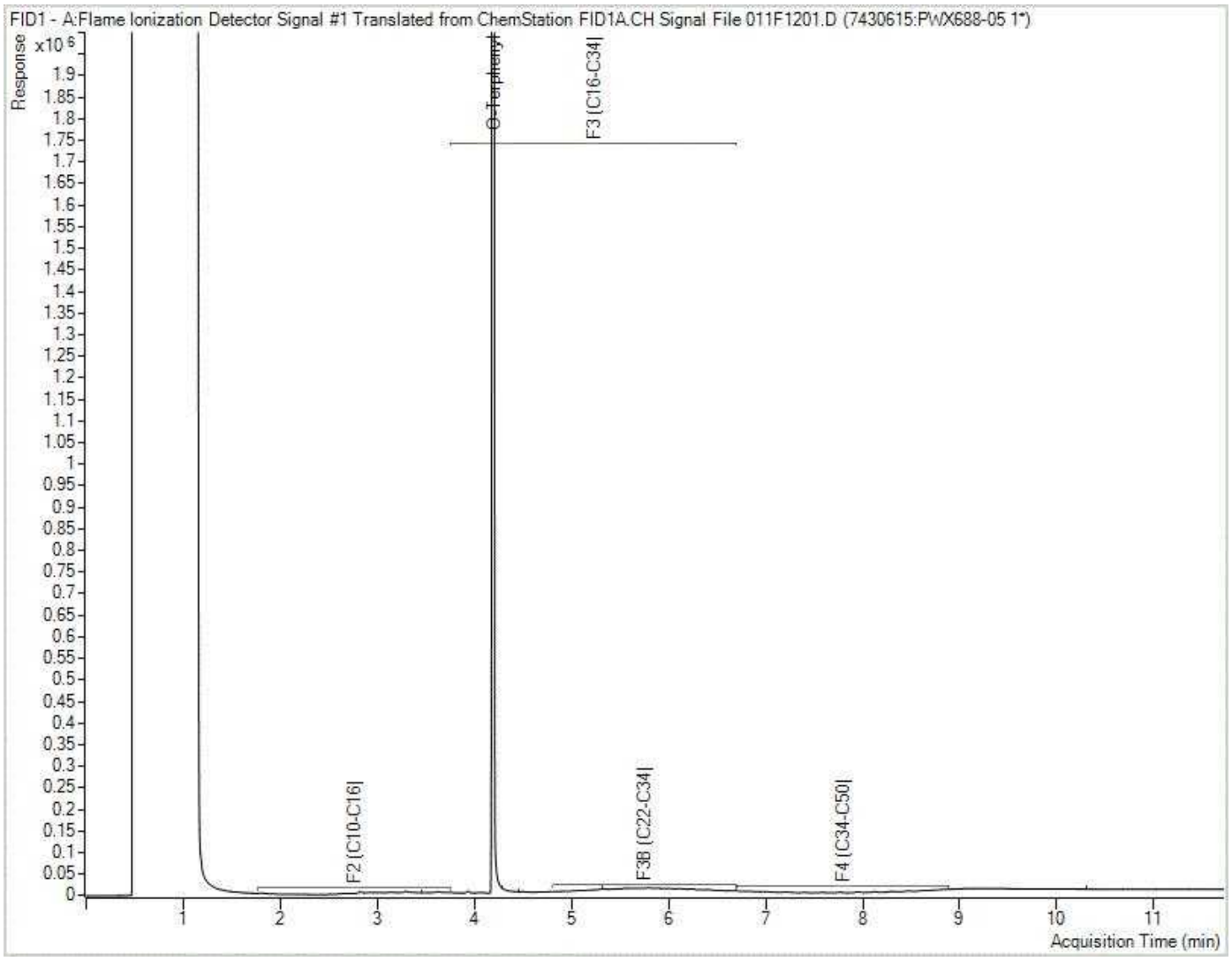


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H0819
Report Date: 2021/07/27
BV Labs Sample: PWX688

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-07 B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Exceedance Summary Table – ODWS (2002)

Result Exceedances

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.

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Your Project #: 19129150 (2300)
Your C.O.C. #: 831949-04-01, 831949-03-01

Attention: Gregory Padusenko

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/06/30
Report #: R6700304
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1H2396
Received: 2021/06/22, 18:07

Sample Matrix: Water
Samples Received: 15

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	15	N/A	2021/06/29	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	3	N/A	2021/06/29	CAM SOP-00102	APHA 4500-CO2 D
Carbonate, Bicarbonate and Hydroxide	12	N/A	2021/06/30	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	1	N/A	2021/06/28	CAM SOP-00463	SM 23 4500-Cl E m
Chloride by Automated Colourimetry	14	N/A	2021/06/29	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity	15	N/A	2021/06/29	CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (1)	8	N/A	2021/06/25	CAM SOP-00446	SM 23 5310 B m
Dissolved Organic Carbon (DOC) (1)	5	N/A	2021/06/26	CAM SOP-00446	SM 23 5310 B m
Dissolved Organic Carbon (DOC) (1)	1	N/A	2021/06/27	CAM SOP-00446	SM 23 5310 B m
Dissolved Organic Carbon (DOC) (1)	1	N/A	2021/06/28	CAM SOP-00446	SM 23 5310 B m
Petroleum Hydro. CCME F1 & BTEX in Water	3	N/A	2021/06/27	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydro. CCME F1 & BTEX in Water	6	N/A	2021/06/28	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (2)	9	2021/06/28	2021/06/28	CAM SOP-00316	CCME PHC-CWS m
Hardness (calculated as CaCO3)	15	N/A	2021/06/29	CAM SOP 00102/00408/00447	SM 2340 B
Dissolved Metals by ICPMS	12	N/A	2021/06/28	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	3	N/A	2021/06/29	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	3	N/A	2021/06/29		
Ion Balance (% Difference)	12	N/A	2021/06/30		
Anion and Cation Sum	3	N/A	2021/06/29		
Anion and Cation Sum	12	N/A	2021/06/30		
Total Ammonia-N	15	N/A	2021/06/29	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (3)	15	N/A	2021/06/29	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	2	2021/06/25	2021/06/29	CAM SOP-00413	SM 4500H+ B m
pH	1	2021/06/26	2021/06/29	CAM SOP-00413	SM 4500H+ B m
pH	12	2021/06/28	2021/06/29	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	2	N/A	2021/06/28	CAM SOP-00461	EPA 365.1 m
Orthophosphate	13	N/A	2021/06/30	CAM SOP-00461	EPA 365.1 m
Sat. pH and Langelier Index (@ 20C)	3	N/A	2021/06/29		Auto Calc
Sat. pH and Langelier Index (@ 20C)	12	N/A	2021/06/30		Auto Calc
Sat. pH and Langelier Index (@ 4C)	3	N/A	2021/06/29		Auto Calc

Your Project #: 19129150 (2300)
Your C.O.C. #: 831949-04-01, 831949-03-01

Attention: Gregory Padusenko

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/06/30
Report #: R6700304
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1H2396
Received: 2021/06/22, 18:07

Sample Matrix: Water
Samples Received: 15

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Sat. pH and Langelier Index (@ 4C)	12	N/A	2021/06/30		Auto Calc
Sulphate by Automated Colourimetry	3	N/A	2021/06/28	CAM SOP-00464	EPA 375.4 m
Sulphate by Automated Colourimetry	12	N/A	2021/06/29	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (TDS calc)	3	N/A	2021/06/29		Auto Calc
Total Dissolved Solids (TDS calc)	12	N/A	2021/06/30		Auto Calc

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
(3) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Your Project #: 19129150 (2300)
Your C.O.C. #: 831949-04-01, 831949-03-01

Attention: Gregory Padusenko

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/06/30
Report #: R6700304
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1H2396
Received: 2021/06/22, 18:07

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: emese.gitej@bureauveritas.com
Phone# (905)817-5829

==========

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RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXG071			PXG071			PXG072		
Sampling Date		2021/06/22 13:00			2021/06/22 13:00			2021/06/22 14:00		
COC Number		831949-04-01			831949-04-01			831949-04-01		
	UNITS	MW20-23A	RDL	QC Batch	MW20-23A Lab-Dup	RDL	QC Batch	MW20-23B	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	28.0	N/A	7424165				20.9	N/A	7424165
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	190	1.0	7424184				210	1.0	7424184
Calculated TDS	mg/L	1900	1.0	7424183				1300	1.0	7424183
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.4	1.0	7424184				1.1	1.0	7424184
Cation Sum	me/L	31.2	N/A	7424165				21.0	N/A	7424165
Hardness (CaCO3)	mg/L	1500	1.0	7424185				990	1.0	7424186
Ion Balance (% Difference)	%	5.49	N/A	7424164				0.200	N/A	7424164
Langelier Index (@ 20C)	N/A	1.22		7424177				0.979		7424177
Langelier Index (@ 4C)	N/A	0.971		7424178				0.734		7424178
Saturation pH (@ 20C)	N/A	6.67		7424177				6.76		7424177
Saturation pH (@ 4C)	N/A	6.91		7424178				7.00		7424178
Inorganics										
Total Ammonia-N	mg/L	0.23	0.050	7429602				0.20	0.050	7429602
Conductivity	umho/cm	2300	1.0	7431743	2300	1.0	7431743	1700	1.0	7433472
Dissolved Organic Carbon	mg/L	0.68	0.40	7431551				0.69	0.40	7430360
Orthophosphate (P)	mg/L	<0.010	0.010	7430971				<0.010	0.010	7434295
pH	pH	7.88		7431744	7.90		7431744	7.74		7433471
Dissolved Sulphate (SO4)	mg/L	1100	10	7430973				770	5.0	7434293
Alkalinity (Total as CaCO3)	mg/L	190	1.0	7431736	190	1.0	7431736	210	1.0	7433466
Dissolved Chloride (Cl-)	mg/L	13	1.0	7430955				23	1.0	7434287
Nitrite (N)	mg/L	<0.010	0.010	7431102				<0.010	0.010	7433476
Nitrate (N)	mg/L	<0.10	0.10	7431102				<0.10	0.10	7433476
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	7431102				<0.10	0.10	7433476
Metals										
Dissolved Aluminum (Al)	ug/L	79	4.9	7429380				64	4.9	7429380
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	7429380				<0.50	0.50	7429380
Dissolved Arsenic (As)	ug/L	5.5	1.0	7429380				10	1.0	7429380
Dissolved Barium (Ba)	ug/L	14	2.0	7429380				14	2.0	7429380
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7429380				<0.40	0.40	7429380
Dissolved Boron (B)	ug/L	130	10	7429380				48	10	7429380

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXG071			PXG071			PXG072		
Sampling Date		2021/06/22 13:00			2021/06/22 13:00			2021/06/22 14:00		
COC Number		831949-04-01			831949-04-01			831949-04-01		
	UNITS	MW20-23A	RDL	QC Batch	MW20-23A Lab-Dup	RDL	QC Batch	MW20-23B	RDL	QC Batch
Dissolved Cadmium (Cd)	ug/L	0.20	0.090	7429380				<0.090	0.090	7429380
Dissolved Calcium (Ca)	ug/L	480000	400	7429380				320000	400	7429380
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7429380				<5.0	5.0	7429380
Dissolved Cobalt (Co)	ug/L	0.52	0.50	7429380				<0.50	0.50	7429380
Dissolved Copper (Cu)	ug/L	3.5	0.90	7429380				2.6	0.90	7429380
Dissolved Iron (Fe)	ug/L	340	100	7429380				1000	100	7429380
Dissolved Lead (Pb)	ug/L	0.85	0.50	7429380				<0.50	0.50	7429380
Dissolved Magnesium (Mg)	ug/L	71000	50	7429380				46000	50	7429380
Dissolved Manganese (Mn)	ug/L	62	2.0	7429380				47	2.0	7429380
Dissolved Molybdenum (Mo)	ug/L	5.4	0.50	7429380				7.1	0.50	7429380
Dissolved Nickel (Ni)	ug/L	5.7	1.0	7429380				4.0	1.0	7429380
Dissolved Phosphorus (P)	ug/L	<100	100	7429380				<100	100	7429380
Dissolved Potassium (K)	ug/L	3600	200	7429380				820	200	7429380
Dissolved Selenium (Se)	ug/L	<2.0	2.0	7429380				<2.0	2.0	7429380
Dissolved Silicon (Si)	ug/L	6100	50	7429380				5700	50	7429380
Dissolved Silver (Ag)	ug/L	0.11	0.090	7429380				<0.090	0.090	7429380
Dissolved Sodium (Na)	ug/L	29000	100	7429380				23000	100	7429380
Dissolved Strontium (Sr)	ug/L	7900	1.0	7429380				5300	1.0	7429380
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	7429380				<0.050	0.050	7429380
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	7429380				8.8	5.0	7429380
Dissolved Uranium (U)	ug/L	0.20	0.10	7429380				0.93	0.10	7429380
Dissolved Vanadium (V)	ug/L	<0.50	0.50	7429380				<0.50	0.50	7429380
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	7429380				<5.0	5.0	7429380

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H2396
Report Date: 2021/06/30

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: VP

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXG072			PXG073		PXG074		
Sampling Date		2021/06/22 14:00			2021/06/22 14:30		2021/06/22 17:00		
COC Number		831949-04-01			831949-04-01		831949-04-01		
	UNITS	MW20-23B Lab-Dup	RDL	QC Batch	MW20-23C	QC Batch	MW20-17A	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L				6.46	7424165	9.25	N/A	7424165
Bicarb. Alkalinity (calc. as CaCO3)	mg/L				240	7424184	210	1.0	7424184
Calculated TDS	mg/L				340	7424183	560	1.0	7424183
Carb. Alkalinity (calc. as CaCO3)	mg/L				2.5	7424184	2.4	1.0	7424184
Cation Sum	me/L				6.53	7424165	9.80	N/A	7424165
Hardness (CaCO3)	mg/L				280	7424186	440	1.0	7424186
Ion Balance (% Difference)	%				0.480	7424164	2.89	N/A	7424164
Langelier Index (@ 20C)	N/A				0.921	7424177	1.05		7424177
Langelier Index (@ 4C)	N/A				0.672	7424178	0.797		7424178
Saturation pH (@ 20C)	N/A				7.14	7424177	7.05		7424177
Saturation pH (@ 4C)	N/A				7.39	7424178	7.30		7424178
Inorganics									
Total Ammonia-N	mg/L				<0.050	7429602	0.19	0.050	7429602
Conductivity	umho/cm	1700	1.0	7433472	630	7431056	850	1.0	7431056
Dissolved Organic Carbon	mg/L				1.6	7430572	1.9	0.40	7430360
Orthophosphate (P)	mg/L				<0.010	7431101	<0.010	0.010	7430971
pH	pH	7.71		7433471	8.06	7431065	8.09		7431065
Dissolved Sulphate (SO4)	mg/L				23	7431104	230	1.0	7430973
Alkalinity (Total as CaCO3)	mg/L	210	1.0	7433466	240	7431045	210	1.0	7431045
Dissolved Chloride (Cl-)	mg/L				39	7431020	9.5	1.0	7430955
Nitrite (N)	mg/L				<0.010	7431102	<0.010	0.010	7431102
Nitrate (N)	mg/L				1.39	7431102	<0.10	0.10	7431102
Nitrate + Nitrite (N)	mg/L				1.39	7431102	<0.10	0.10	7431102
Metals									
Dissolved Aluminum (Al)	ug/L				<4.9	7429380	80	4.9	7429380
Dissolved Antimony (Sb)	ug/L				<0.50	7429380	<0.50	0.50	7429380
Dissolved Arsenic (As)	ug/L				<1.0	7429380	33	1.0	7429380
Dissolved Barium (Ba)	ug/L				40	7429380	31	2.0	7429380
Dissolved Beryllium (Be)	ug/L				<0.40	7429380	<0.40	0.40	7429380
Dissolved Boron (B)	ug/L				10	7429380	160	10	7429380

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXG072			PXG073		PXG074		
Sampling Date		2021/06/22 14:00			2021/06/22 14:30		2021/06/22 17:00		
COC Number		831949-04-01			831949-04-01		831949-04-01		
	UNITS	MW20-23B Lab-Dup	RDL	QC Batch	MW20-23C	QC Batch	MW20-17A	RDL	QC Batch
Dissolved Cadmium (Cd)	ug/L				<0.090	7429380	<0.090	0.090	7429380
Dissolved Calcium (Ca)	ug/L				82000	7429380	130000	200	7429380
Dissolved Chromium (Cr)	ug/L				<5.0	7429380	<5.0	5.0	7429380
Dissolved Cobalt (Co)	ug/L				<0.50	7429380	1.1	0.50	7429380
Dissolved Copper (Cu)	ug/L				3.2	7429380	3.4	0.90	7429380
Dissolved Iron (Fe)	ug/L				<100	7429380	900	100	7429380
Dissolved Lead (Pb)	ug/L				<0.50	7429380	<0.50	0.50	7429380
Dissolved Magnesium (Mg)	ug/L				19000	7429380	30000	50	7429380
Dissolved Manganese (Mn)	ug/L				<2.0	7429380	61	2.0	7429380
Dissolved Molybdenum (Mo)	ug/L				0.61	7429380	8.1	0.50	7429380
Dissolved Nickel (Ni)	ug/L				<1.0	7429380	23	1.0	7429380
Dissolved Phosphorus (P)	ug/L				<100	7429380	<100	100	7429380
Dissolved Potassium (K)	ug/L				2600	7429380	5300	200	7429380
Dissolved Selenium (Se)	ug/L				<2.0	7429380	<2.0	2.0	7429380
Dissolved Silicon (Si)	ug/L				2900	7429380	4900	50	7429380
Dissolved Silver (Ag)	ug/L				<0.090	7429380	<0.090	0.090	7429380
Dissolved Sodium (Na)	ug/L				19000	7429380	17000	100	7429380
Dissolved Strontium (Sr)	ug/L				150	7429380	3800	1.0	7429380
Dissolved Thallium (Tl)	ug/L				<0.050	7429380	<0.050	0.050	7429380
Dissolved Titanium (Ti)	ug/L				<5.0	7429380	<5.0	5.0	7429380
Dissolved Uranium (U)	ug/L				0.71	7429380	0.87	0.10	7429380
Dissolved Vanadium (V)	ug/L				<0.50	7429380	<0.50	0.50	7429380
Dissolved Zinc (Zn)	ug/L				8.9	7429380	8.6	5.0	7429380

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H2396
Report Date: 2021/06/30

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: VP

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXG075	PXG076		PXG101			PXG102		
Sampling Date		2021/06/22 16:30	2021/06/22		2021/06/22 14:30			2021/06/22 14:45		
COC Number		831949-04-01	831949-04-01		831949-03-01			831949-03-01		
	UNITS	MW20-17B	DUP-1	RDL	MW20-01 A	RDL	QC Batch	MW20-01 B	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	7.43	7.46	N/A	11.0	N/A	7424165	8.68	N/A	7424165
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	240	250	1.0	200	1.0	7424184	250	1.0	7424184
Calculated TDS	mg/L	410	400	1.0	690	1.0	7424183	460	1.0	7424183
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.1	2.1	1.0	1.3	1.0	7424184	1.7	1.0	7424184
Cation Sum	me/L	8.14	7.45	N/A	11.7	N/A	7424165	8.24	N/A	7424165
Hardness (CaCO3)	mg/L	340	320	1.0	470	1.0	7424186	300	1.0	7424186
Ion Balance (% Difference)	%	4.54	0.0500	N/A	2.81	N/A	7424164	2.62	N/A	7424164
Langelier Index (@ 20C)	N/A	0.874	0.847		0.825		7424177	0.753		7424177
Langelier Index (@ 4C)	N/A	0.626	0.598		0.578		7424178	0.505		7424178
Saturation pH (@ 20C)	N/A	7.09	7.11		7.02		7424177	7.11		7424177
Saturation pH (@ 4C)	N/A	7.34	7.36		7.27		7424178	7.36		7424178
Inorganics										
Total Ammonia-N	mg/L	<0.050	<0.050	0.050	0.90	0.050	7429602	<0.050	0.050	7429602
Conductivity	umho/cm	730	730	1.0	1000	1.0	7433472	840	1.0	7433472
Dissolved Organic Carbon	mg/L	0.67	0.68	0.40	1.2	0.40	7430572	1.2	0.40	7430360
Orthophosphate (P)	mg/L	<0.010	<0.010	0.010	<0.010	0.010	7434295	<0.010	0.010	7434295
pH	pH	7.97	7.96		7.85		7433471	7.87		7433471
Dissolved Sulphate (SO4)	mg/L	54	53	1.0	310	2.0	7434293	24	1.0	7434293
Alkalinity (Total as CaCO3)	mg/L	250	250	1.0	200	1.0	7433466	250	1.0	7433466
Dissolved Chloride (Cl-)	mg/L	47	47	1.0	23	1.0	7434287	100	1.0	7434287
Nitrite (N)	mg/L	<0.010	<0.010	0.010	<0.010	0.010	7433476	<0.010	0.010	7433476
Nitrate (N)	mg/L	0.74	0.74	0.10	<0.10	0.10	7433476	3.87	0.10	7433476
Nitrate + Nitrite (N)	mg/L	0.74	0.74	0.10	<0.10	0.10	7433476	3.87	0.10	7433476
Metals										
Dissolved Aluminum (Al)	ug/L	44	32	4.9	300	4.9	7429380	17	4.9	7429380
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	0.50	<0.50	0.50	7429380	<0.50	0.50	7429380
Dissolved Arsenic (As)	ug/L	3.8	3.8	1.0	9.7	1.0	7429380	<1.0	1.0	7429380
Dissolved Barium (Ba)	ug/L	55	52	2.0	15	2.0	7429380	42	2.0	7429380
Dissolved Beryllium (Be)	ug/L	<0.40	<0.40	0.40	<0.40	0.40	7429380	<0.40	0.40	7429380
Dissolved Boron (B)	ug/L	26	25	10	680	10	7429380	17	10	7429380
Dissolved Cadmium (Cd)	ug/L	<0.090	<0.090	0.090	<0.090	0.090	7429380	<0.090	0.090	7429380

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXG075	PXG076		PXG101			PXG102		
Sampling Date		2021/06/22 16:30	2021/06/22		2021/06/22 14:30			2021/06/22 14:45		
COC Number		831949-04-01	831949-04-01		831949-03-01			831949-03-01		
	UNITS	MW20-17B	DUP-1	RDL	MW20-01 A	RDL	QC Batch	MW20-01 B	RDL	QC Batch
Dissolved Calcium (Ca)	ug/L	92000	87000	200	150000	400	7429380	88000	200	7429380
Dissolved Chromium (Cr)	ug/L	<5.0	<5.0	5.0	<5.0	5.0	7429380	<5.0	5.0	7429380
Dissolved Cobalt (Co)	ug/L	<0.50	<0.50	0.50	0.56	0.50	7429380	<0.50	0.50	7429380
Dissolved Copper (Cu)	ug/L	<0.90	<0.90	0.90	<0.90	0.90	7429380	1.0	0.90	7429380
Dissolved Iron (Fe)	ug/L	<100	<100	100	940	100	7429380	<100	100	7429380
Dissolved Lead (Pb)	ug/L	1.4	1.0	0.50	0.92	0.50	7429380	<0.50	0.50	7429380
Dissolved Magnesium (Mg)	ug/L	27000	24000	50	22000	50	7429380	19000	50	7429380
Dissolved Manganese (Mn)	ug/L	35	32	2.0	62	2.0	7429380	2.2	2.0	7429380
Dissolved Molybdenum (Mo)	ug/L	1.2	1.2	0.50	1.6	0.50	7429380	<0.50	0.50	7429380
Dissolved Nickel (Ni)	ug/L	1.9	1.9	1.0	2.2	1.0	7429380	<1.0	1.0	7429380
Dissolved Phosphorus (P)	ug/L	<100	<100	100	<100	100	7429380	<100	100	7429380
Dissolved Potassium (K)	ug/L	1400	1300	200	11000	200	7429380	1300	200	7429380
Dissolved Selenium (Se)	ug/L	<2.0	<2.0	2.0	<2.0	2.0	7429380	<2.0	2.0	7429380
Dissolved Silicon (Si)	ug/L	5300	4900	50	4200	50	7429380	2700	50	7429380
Dissolved Silver (Ag)	ug/L	<0.090	<0.090	0.090	<0.090	0.090	7429380	<0.090	0.090	7429380
Dissolved Sodium (Na)	ug/L	29000	25000	100	42000	100	7429380	52000	100	7429380
Dissolved Strontium (Sr)	ug/L	750	740	1.0	5800	1.0	7429380	160	1.0	7429380
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	0.050	<0.050	0.050	7429380	<0.050	0.050	7429380
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	5.0	7.7	5.0	7429380	<5.0	5.0	7429380
Dissolved Uranium (U)	ug/L	0.61	0.58	0.10	0.23	0.10	7429380	0.33	0.10	7429380
Dissolved Vanadium (V)	ug/L	<0.50	<0.50	0.50	0.55	0.50	7429380	<0.50	0.50	7429380
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	5.0	<5.0	5.0	7429380	<5.0	5.0	7429380

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H2396
Report Date: 2021/06/30

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: VP

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXG103		PXG104		PXG105	PXG106		
Sampling Date		2021/06/22 13:30		2021/06/22 12:30		2021/06/22 12:15	2021/06/22 11:00		
COC Number		831949-03-01		831949-03-01		831949-03-01	831949-03-01		
	UNITS	MW20-02	QC Batch	MW20-03	QC Batch	MW20-04	MW20-05A	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	7.55	7424165	7.21	7424165	8.34	7.09	N/A	7424165
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	240	7424184	270	7424184	230	230	1.0	7424184
Calculated TDS	mg/L	410	7424183	380	7424183	460	380	1.0	7424183
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.7	7424184	2.3	7424184	2.0	2.0	1.0	7424184
Cation Sum	me/L	7.40	7424165	7.18	7424165	8.38	6.94	N/A	7424165
Hardness (CaCO3)	mg/L	300	7424186	300	7424186	310	310	1.0	7424186
Ion Balance (% Difference)	%	1.00	7424164	0.190	7424164	0.210	1.11	N/A	7424164
Langelier Index (@ 20C)	N/A	0.762	7424177	0.888	7424177	0.819	0.837		7424177
Langelier Index (@ 4C)	N/A	0.514	7424178	0.640	7424178	0.571	0.589		7424178
Saturation pH (@ 20C)	N/A	7.13	7424177	7.06	7424177	7.14	7.13		7424177
Saturation pH (@ 4C)	N/A	7.38	7424178	7.30	7424178	7.39	7.38		7424178
Inorganics									
Total Ammonia-N	mg/L	<0.050	7429602	<0.050	7429602	<0.050	<0.050	0.050	7429602
Conductivity	umho/cm	730	7433472	680	7433472	810	680	1.0	7433472
Dissolved Organic Carbon	mg/L	1.5	7430360	3.0	7430572	0.86	0.70	0.40	7430360
Orthophosphate (P)	mg/L	<0.010	7434295	<0.010	7434295	<0.010	<0.010	0.010	7434295
pH	pH	7.89	7433471	7.94	7433471	7.96	7.97		7433471
Dissolved Sulphate (SO4)	mg/L	33	7434293	22	7434293	20	39	1.0	7434293
Alkalinity (Total as CaCO3)	mg/L	240	7433466	280	7433466	240	240	1.0	7433466
Dissolved Chloride (Cl-)	mg/L	64	7434287	40	7434287	97	39	1.0	7434287
Nitrite (N)	mg/L	<0.010	7433476	0.016	7433476	<0.010	<0.010	0.010	7433476
Nitrate (N)	mg/L	3.85	7433476	1.85	7433476	6.24	6.28	0.10	7433476
Nitrate + Nitrite (N)	mg/L	3.85	7433476	1.86	7433476	6.24	6.28	0.10	7433476
Metals									
Dissolved Aluminum (Al)	ug/L	<4.9	7429380	40	7429380	30	27	4.9	7429380
Dissolved Antimony (Sb)	ug/L	<0.50	7429380	<0.50	7429380	<0.50	<0.50	0.50	7429380
Dissolved Arsenic (As)	ug/L	<1.0	7429380	<1.0	7429380	<1.0	<1.0	1.0	7429380
Dissolved Barium (Ba)	ug/L	55	7429380	75	7429380	41	110	2.0	7429380
Dissolved Beryllium (Be)	ug/L	<0.40	7429380	<0.40	7429380	<0.40	<0.40	0.40	7429380
Dissolved Boron (B)	ug/L	12	7429380	14	7429380	11	11	10	7429380
Dissolved Cadmium (Cd)	ug/L	<0.090	7429380	<0.090	7429380	<0.090	<0.090	0.090	7429380

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXG103		PXG104		PXG105	PXG106		
Sampling Date		2021/06/22 13:30		2021/06/22 12:30		2021/06/22 12:15	2021/06/22 11:00		
COC Number		831949-03-01		831949-03-01		831949-03-01	831949-03-01		
	UNITS	MW20-02	QC Batch	MW20-03	QC Batch	MW20-04	MW20-05A	RDL	QC Batch
Dissolved Calcium (Ca)	ug/L	87000	7429380	88000	7429380	88000	86000	200	7429380
Dissolved Chromium (Cr)	ug/L	<5.0	7429380	<5.0	7429380	<5.0	<5.0	5.0	7429380
Dissolved Cobalt (Co)	ug/L	<0.50	7429380	<0.50	7429380	<0.50	<0.50	0.50	7429380
Dissolved Copper (Cu)	ug/L	<0.90	7429380	<0.90	7429380	1.6	2.1	0.90	7429380
Dissolved Iron (Fe)	ug/L	<100	7429380	<100	7429380	110	<100	100	7429380
Dissolved Lead (Pb)	ug/L	<0.50	7429380	<0.50	7429380	0.63	<0.50	0.50	7429380
Dissolved Magnesium (Mg)	ug/L	20000	7429380	19000	7429380	21000	22000	50	7429380
Dissolved Manganese (Mn)	ug/L	4.4	7429380	120	7429380	5.9	3.9	2.0	7429380
Dissolved Molybdenum (Mo)	ug/L	0.87	7429380	7.3	7429380	<0.50	<0.50	0.50	7429380
Dissolved Nickel (Ni)	ug/L	1.8	7429380	1.5	7429380	<1.0	<1.0	1.0	7429380
Dissolved Phosphorus (P)	ug/L	<100	7429380	<100	7429380	<100	<100	100	7429380
Dissolved Potassium (K)	ug/L	1700	7429380	2100	7429380	1600	1500	200	7429380
Dissolved Selenium (Se)	ug/L	<2.0	7429380	<2.0	7429380	<2.0	<2.0	2.0	7429380
Dissolved Silicon (Si)	ug/L	3100	7429380	4100	7429380	2900	2600	50	7429380
Dissolved Silver (Ag)	ug/L	<0.090	7429380	<0.090	7429380	<0.090	<0.090	0.090	7429380
Dissolved Sodium (Na)	ug/L	32000	7429380	26000	7429380	51000	17000	100	7429380
Dissolved Strontium (Sr)	ug/L	220	7429380	190	7429380	180	1400	1.0	7429380
Dissolved Thallium (Tl)	ug/L	<0.050	7429380	<0.050	7429380	<0.050	0.065	0.050	7429380
Dissolved Titanium (Ti)	ug/L	<5.0	7429380	7.3	7429380	<5.0	<5.0	5.0	7429380
Dissolved Uranium (U)	ug/L	0.57	7429380	0.77	7429380	0.22	0.23	0.10	7429380
Dissolved Vanadium (V)	ug/L	<0.50	7429380	<0.50	7429380	<0.50	<0.50	0.50	7429380
Dissolved Zinc (Zn)	ug/L	<5.0	7429380	<5.0	7429380	<5.0	5.5	5.0	7429380

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXG106			PXG107			PXG107		
Sampling Date		2021/06/22 11:00			2021/06/22 10:45			2021/06/22 10:45		
COC Number		831949-03-01			831949-03-01			831949-03-01		
	UNITS	MW20-05A Lab-Dup	RDL	QC Batch	MW20-06A	RDL	QC Batch	MW20-06A Lab-Dup	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L				8.04	N/A	7424165			
Bicarb. Alkalinity (calc. as CaCO3)	mg/L				260	1.0	7424184			
Calculated TDS	mg/L				440	1.0	7424183			
Carb. Alkalinity (calc. as CaCO3)	mg/L				2.3	1.0	7424184			
Cation Sum	me/L				8.20	N/A	7424165			
Hardness (CaCO3)	mg/L				340	1.0	7424186			
Ion Balance (% Difference)	%				1.02	N/A	7424164			
Langelier Index (@ 20C)	N/A				0.903		7424177			
Langelier Index (@ 4C)	N/A				0.655		7424178			
Saturation pH (@ 20C)	N/A				7.07		7424177			
Saturation pH (@ 4C)	N/A				7.32		7424178			
Inorganics										
Total Ammonia-N	mg/L				<0.050	0.050	7429602			
Conductivity	umho/cm				760	1.0	7433472			
Dissolved Organic Carbon	mg/L				0.40	0.40	7430572			
Orthophosphate (P)	mg/L	<0.010	0.010	7434295	<0.010	0.010	7434295			
pH	pH				7.97		7433471			
Dissolved Sulphate (SO4)	mg/L	39	1.0	7434293	26	1.0	7434293			
Alkalinity (Total as CaCO3)	mg/L				260	1.0	7433466			
Dissolved Chloride (Cl-)	mg/L	40	1.0	7434287	66	1.0	7434287			
Nitrite (N)	mg/L				<0.010	0.010	7433476	<0.010	0.010	7433476
Nitrate (N)	mg/L				6.44	0.10	7433476	6.44	0.10	7433476
Nitrate + Nitrite (N)	mg/L				6.44	0.10	7433476	6.44	0.10	7433476
Metals										
Dissolved Aluminum (Al)	ug/L				230	4.9	7429380	240	4.9	7429380
Dissolved Antimony (Sb)	ug/L				<0.50	0.50	7429380	<0.50	0.50	7429380
Dissolved Arsenic (As)	ug/L				<1.0	1.0	7429380	<1.0	1.0	7429380
Dissolved Barium (Ba)	ug/L				30	2.0	7429380	31	2.0	7429380
Dissolved Beryllium (Be)	ug/L				<0.40	0.40	7429380	<0.40	0.40	7429380
Dissolved Boron (B)	ug/L				12	10	7429380	11	10	7429380

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXG106			PXG107			PXG107		
Sampling Date		2021/06/22 11:00			2021/06/22 10:45			2021/06/22 10:45		
COC Number		831949-03-01			831949-03-01			831949-03-01		
	UNITS	MW20-05A Lab-Dup	RDL	QC Batch	MW20-06A	RDL	QC Batch	MW20-06A Lab-Dup	RDL	QC Batch
Dissolved Cadmium (Cd)	ug/L				<0.090	0.090	7429380	<0.090	0.090	7429380
Dissolved Calcium (Ca)	ug/L				94000	200	7429380	90000	200	7429380
Dissolved Chromium (Cr)	ug/L				<5.0	5.0	7429380	<5.0	5.0	7429380
Dissolved Cobalt (Co)	ug/L				<0.50	0.50	7429380	<0.50	0.50	7429380
Dissolved Copper (Cu)	ug/L				1.0	0.90	7429380	0.94	0.90	7429380
Dissolved Iron (Fe)	ug/L				400	100	7429380	420	100	7429380
Dissolved Lead (Pb)	ug/L				2.3	0.50	7429380	2.3	0.50	7429380
Dissolved Magnesium (Mg)	ug/L				27000	50	7429380	27000	50	7429380
Dissolved Manganese (Mn)	ug/L				36	2.0	7429380	35	2.0	7429380
Dissolved Molybdenum (Mo)	ug/L				<0.50	0.50	7429380	<0.50	0.50	7429380
Dissolved Nickel (Ni)	ug/L				<1.0	1.0	7429380	<1.0	1.0	7429380
Dissolved Phosphorus (P)	ug/L				<100	100	7429380	<100	100	7429380
Dissolved Potassium (K)	ug/L				2000	200	7429380	2000	200	7429380
Dissolved Selenium (Se)	ug/L				<2.0	2.0	7429380	<2.0	2.0	7429380
Dissolved Silicon (Si)	ug/L				3500	50	7429380	3300	50	7429380
Dissolved Silver (Ag)	ug/L				<0.090	0.090	7429380	<0.090	0.090	7429380
Dissolved Sodium (Na)	ug/L				29000	100	7429380	28000	100	7429380
Dissolved Strontium (Sr)	ug/L				320	1.0	7429380	320	1.0	7429380
Dissolved Thallium (Tl)	ug/L				<0.050	0.050	7429380	<0.050	0.050	7429380
Dissolved Titanium (Ti)	ug/L				11	5.0	7429380	7.1	5.0	7429380
Dissolved Uranium (U)	ug/L				0.25	0.10	7429380	0.23	0.10	7429380
Dissolved Vanadium (V)	ug/L				<0.50	0.50	7429380	0.51	0.50	7429380
Dissolved Zinc (Zn)	ug/L				10	5.0	7429380	10	5.0	7429380

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXG108		PXG109		
Sampling Date		2021/06/22 11:30		2021/06/22 15:00		
COC Number		831949-03-01		831949-03-01		
	UNITS	MW20-06 B	RDL	MW20-18	RDL	QC Batch
Calculated Parameters						
Anion Sum	me/L	6.89	N/A	12.0	N/A	7424165
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	230	1.0	260	1.0	7424184
Calculated TDS	mg/L	370	1.0	660	1.0	7424183
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.9	1.0	2.2	1.0	7424184
Cation Sum	me/L	6.82	N/A	12.1	N/A	7424165
Hardness (CaCO3)	mg/L	300	1.0	390	1.0	7424186
Ion Balance (% Difference)	%	0.520	N/A	0.780	N/A	7424164
Langelier Index (@ 20C)	N/A	0.820		0.938		7424177
Langelier Index (@ 4C)	N/A	0.572		0.691		7424178
Saturation pH (@ 20C)	N/A	7.12		7.01		7424177
Saturation pH (@ 4C)	N/A	7.37		7.26		7424178
Inorganics						
Total Ammonia-N	mg/L	<0.050	0.050	<0.050	0.050	7429602
Conductivity	umho/cm	670	1.0	1300	1.0	7433472
Dissolved Organic Carbon	mg/L	0.81	0.40	1.6	0.40	7430572
Orthophosphate (P)	mg/L	<0.010	0.010	<0.010	0.010	7434295
pH	pH	7.94		7.95		7433471
Dissolved Sulphate (SO4)	mg/L	16	1.0	23	1.0	7434293
Alkalinity (Total as CaCO3)	mg/L	240	1.0	260	1.0	7433466
Dissolved Chloride (Cl-)	mg/L	45	1.0	210	3.0	7434287
Nitrite (N)	mg/L	<0.010	0.010	<0.010	0.010	7433476
Nitrate (N)	mg/L	8.03	0.10	3.04	0.10	7433476
Nitrate + Nitrite (N)	mg/L	8.03	0.10	3.04	0.10	7433476
Metals						
Dissolved Aluminum (Al)	ug/L	63	4.9	15	4.9	7429380
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	<0.50	0.50	7429380
Dissolved Arsenic (As)	ug/L	<1.0	1.0	<1.0	1.0	7429380
Dissolved Barium (Ba)	ug/L	19	2.0	87	2.0	7429380
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	<0.40	0.40	7429380
Dissolved Boron (B)	ug/L	11	10	14	10	7429380
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	<0.090	0.090	7429380

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXG108		PXG109		
Sampling Date		2021/06/22 11:30		2021/06/22 15:00		
COC Number		831949-03-01		831949-03-01		
	UNITS	MW20-06 B	RDL	MW20-18	RDL	QC Batch
Dissolved Calcium (Ca)	ug/L	88000	200	120000	200	7429380
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	<5.0	5.0	7429380
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	<0.50	0.50	7429380
Dissolved Copper (Cu)	ug/L	1.2	0.90	7.4	0.90	7429380
Dissolved Iron (Fe)	ug/L	<100	100	<100	100	7429380
Dissolved Lead (Pb)	ug/L	<0.50	0.50	<0.50	0.50	7429380
Dissolved Magnesium (Mg)	ug/L	19000	50	23000	50	7429380
Dissolved Manganese (Mn)	ug/L	3.9	2.0	16	2.0	7429380
Dissolved Molybdenum (Mo)	ug/L	<0.50	0.50	1.4	0.50	7429380
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	3.3	1.0	7429380
Dissolved Phosphorus (P)	ug/L	<100	100	<100	100	7429380
Dissolved Potassium (K)	ug/L	1200	200	1800	200	7429380
Dissolved Selenium (Se)	ug/L	<2.0	2.0	<2.0	2.0	7429380
Dissolved Silicon (Si)	ug/L	2300	50	3200	50	7429380
Dissolved Silver (Ag)	ug/L	<0.090	0.090	<0.090	0.090	7429380
Dissolved Sodium (Na)	ug/L	20000	100	100000	100	7429380
Dissolved Strontium (Sr)	ug/L	100	1.0	200	1.0	7429380
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	<0.050	0.050	7429380
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	<5.0	5.0	7429380
Dissolved Uranium (U)	ug/L	0.13	0.10	0.82	0.10	7429380
Dissolved Vanadium (V)	ug/L	<0.50	0.50	<0.50	0.50	7429380
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	8.0	5.0	7429380

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		PXG072	PXG075	PXG076	PXG102	PXG103	PXG104		
Sampling Date		2021/06/22 14:00	2021/06/22 16:30	2021/06/22	2021/06/22 14:45	2021/06/22 13:30	2021/06/22 12:30		
COC Number		831949-04-01	831949-04-01	831949-04-01	831949-03-01	831949-03-01	831949-03-01		
	UNITS	**MW20-23B**	**MW20-17B**	**DUP-1**	**MW20-01 B**	**MW20-02**	**MW20-03**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons									
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	7432295
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	7432295
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	7432295
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	7432295
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7432295
Total Xylenes	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7432295
F1 (C6-C10)	ug/L	<25	<25	<25	<25	<25	<25	25	7432295
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	<25	<25	25	7432295
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	<100	<100	<100	100	7432529
F3 (C16-C34 Hydrocarbons)	ug/L	<200	520	410	<200	<200	<200	200	7432529
F4 (C34-C50 Hydrocarbons)	ug/L	<200	420	300	<200	<200	<200	200	7432529
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes	Yes	Yes		7432529
Surrogate Recovery (%)									
1,4-Difluorobenzene	%	102	103	103	103	103	101		7432295
4-Bromofluorobenzene	%	97	97	91	92	93	103		7432295
D10-o-Xylene	%	110	110	113	111	112	111		7432295
D4-1,2-Dichloroethane	%	108	111	112	109	112	110		7432295
o-Terphenyl	%	98	97	96	97	95	96		7432529

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		PXG105	PXG108	PXG109		
Sampling Date		2021/06/22 12:15	2021/06/22 11:30	2021/06/22 15:00		
COC Number		831949-03-01	831949-03-01	831949-03-01		
	UNITS	MW20-04	MW20-06 B	MW20-18	RDL	QC Batch
BTEX & F1 Hydrocarbons						
Benzene	ug/L	<0.20	<0.20	<0.20	0.20	7432295
Toluene	ug/L	<0.20	<0.20	<0.20	0.20	7432295
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	0.20	7432295
o-Xylene	ug/L	<0.20	<0.20	<0.20	0.20	7432295
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	0.40	7432295
Total Xylenes	ug/L	<0.40	<0.40	<0.40	0.40	7432295
F1 (C6-C10)	ug/L	<25	<25	<25	25	7432295
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	25	7432295
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	100	7432529
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	<200	200	7432529
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	200	7432529
Reached Baseline at C50	ug/L	Yes	Yes	Yes		7432529
Surrogate Recovery (%)						
1,4-Difluorobenzene	%	102	100	102		7432295
4-Bromofluorobenzene	%	102	88	99		7432295
D10-o-Xylene	%	111	112	113		7432295
D4-1,2-Dichloroethane	%	112	110	111		7432295
o-Terphenyl	%	97	95	97		7432529

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXG071
Sample ID: MW20-23A
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7431736	N/A	2021/06/29	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7424184	N/A	2021/06/29	Automated Statchk
Chloride by Automated Colourimetry	KONE	7430955	N/A	2021/06/29	Alina Dobreanu
Conductivity	AT	7431743	N/A	2021/06/29	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7431551	N/A	2021/06/28	Nimarta Singh
Hardness (calculated as CaCO3)		7424185	N/A	2021/06/29	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7429380	N/A	2021/06/29	Prempal Bhatti
Ion Balance (% Difference)	CALC	7424164	N/A	2021/06/29	Automated Statchk
Anion and Cation Sum	CALC	7424165	N/A	2021/06/29	Automated Statchk
Total Ammonia-N	LACH/NH4	7429602	N/A	2021/06/29	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7431102	N/A	2021/06/29	Chandra Nandlal
pH	AT	7431744	2021/06/26	2021/06/29	Surinder Rai
Orthophosphate	KONE	7430971	N/A	2021/06/28	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7424177	N/A	2021/06/29	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7424178	N/A	2021/06/29	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7430973	N/A	2021/06/28	Avneet Kour Sudan
Total Dissolved Solids (TDS calc)	CALC	7424183	N/A	2021/06/29	Automated Statchk

BV Labs ID: PXG071 Dup
Sample ID: MW20-23A
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7431736	N/A	2021/06/29	Surinder Rai
Conductivity	AT	7431743	N/A	2021/06/29	Surinder Rai
pH	AT	7431744	2021/06/26	2021/06/29	Surinder Rai

BV Labs ID: PXG072
Sample ID: MW20-23B
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7433466	N/A	2021/06/29	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7424184	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7434287	N/A	2021/06/29	Alina Dobreanu
Conductivity	AT	7433472	N/A	2021/06/29	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7430360	N/A	2021/06/26	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7432295	N/A	2021/06/27	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7432529	2021/06/28	2021/06/28	Jeevaraj Jeevaratrnam
Hardness (calculated as CaCO3)		7424186	N/A	2021/06/29	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7429380	N/A	2021/06/28	Prempal Bhatti
Ion Balance (% Difference)	CALC	7424164	N/A	2021/06/30	Automated Statchk
Anion and Cation Sum	CALC	7424165	N/A	2021/06/30	Automated Statchk
Total Ammonia-N	LACH/NH4	7429602	N/A	2021/06/29	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7433476	N/A	2021/06/29	Chandra Nandlal

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXG072
Sample ID: MW20-23B
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH	AT	7433471	2021/06/28	2021/06/29	Surinder Rai
Orthophosphate	KONE	7434295	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7424177	N/A	2021/06/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7424178	N/A	2021/06/30	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7434293	N/A	2021/06/29	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7424183	N/A	2021/06/30	Automated Statchk

BV Labs ID: PXG072 Dup
Sample ID: MW20-23B
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7433466	N/A	2021/06/29	Surinder Rai
Conductivity	AT	7433472	N/A	2021/06/29	Surinder Rai
pH	AT	7433471	2021/06/28	2021/06/29	Surinder Rai

BV Labs ID: PXG073
Sample ID: MW20-23C
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7431045	N/A	2021/06/29	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7424184	N/A	2021/06/29	Automated Statchk
Chloride by Automated Colourimetry	KONE	7431020	N/A	2021/06/28	Alina Dobreanu
Conductivity	AT	7431056	N/A	2021/06/29	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7430572	N/A	2021/06/25	Nimarta Singh
Hardness (calculated as CaCO3)		7424186	N/A	2021/06/29	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7429380	N/A	2021/06/28	Prempal Bhatti
Ion Balance (% Difference)	CALC	7424164	N/A	2021/06/29	Automated Statchk
Anion and Cation Sum	CALC	7424165	N/A	2021/06/29	Automated Statchk
Total Ammonia-N	LACH/NH4	7429602	N/A	2021/06/29	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7431102	N/A	2021/06/29	Chandra Nandlal
pH	AT	7431065	2021/06/25	2021/06/29	Surinder Rai
Orthophosphate	KONE	7431101	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7424177	N/A	2021/06/29	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7424178	N/A	2021/06/29	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7431104	N/A	2021/06/28	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7424183	N/A	2021/06/29	Automated Statchk

BV Labs ID: PXG074
Sample ID: MW20-17A
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7431045	N/A	2021/06/29	Surinder Rai

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXG074
Sample ID: MW20-17A
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbonate, Bicarbonate and Hydroxide	CALC	7424184	N/A	2021/06/29	Automated Statchk
Chloride by Automated Colourimetry	KONE	7430955	N/A	2021/06/29	Alina Dobreanu
Conductivity	AT	7431056	N/A	2021/06/29	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7430360	N/A	2021/06/26	Nimarta Singh
Hardness (calculated as CaCO3)		7424186	N/A	2021/06/29	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7429380	N/A	2021/06/28	Prempal Bhatti
Ion Balance (% Difference)	CALC	7424164	N/A	2021/06/29	Automated Statchk
Anion and Cation Sum	CALC	7424165	N/A	2021/06/29	Automated Statchk
Total Ammonia-N	LACH/NH4	7429602	N/A	2021/06/29	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7431102	N/A	2021/06/29	Chandra Nandlal
pH	AT	7431065	2021/06/25	2021/06/29	Surinder Rai
Orthophosphate	KONE	7430971	N/A	2021/06/28	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7424177	N/A	2021/06/29	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7424178	N/A	2021/06/29	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7430973	N/A	2021/06/28	Avneet Kour Sudan
Total Dissolved Solids (TDS calc)	CALC	7424183	N/A	2021/06/29	Automated Statchk

BV Labs ID: PXG075
Sample ID: MW20-17B
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7433466	N/A	2021/06/29	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7424184	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7434287	N/A	2021/06/29	Alina Dobreanu
Conductivity	AT	7433472	N/A	2021/06/29	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7430572	N/A	2021/06/25	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7432295	N/A	2021/06/27	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7432529	2021/06/28	2021/06/28	Jeevaraj Jeevaratrnam
Hardness (calculated as CaCO3)		7424186	N/A	2021/06/29	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7429380	N/A	2021/06/29	Prempal Bhatti
Ion Balance (% Difference)	CALC	7424164	N/A	2021/06/30	Automated Statchk
Anion and Cation Sum	CALC	7424165	N/A	2021/06/30	Automated Statchk
Total Ammonia-N	LACH/NH4	7429602	N/A	2021/06/29	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7433476	N/A	2021/06/29	Chandra Nandlal
pH	AT	7433471	2021/06/28	2021/06/29	Surinder Rai
Orthophosphate	KONE	7434295	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7424177	N/A	2021/06/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7424178	N/A	2021/06/30	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7434293	N/A	2021/06/29	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7424183	N/A	2021/06/30	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXG076
Sample ID: DUP-1
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7433466	N/A	2021/06/29	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7424184	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7434287	N/A	2021/06/29	Alina Dobreanu
Conductivity	AT	7433472	N/A	2021/06/29	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7430572	N/A	2021/06/25	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7432295	N/A	2021/06/27	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7432529	2021/06/28	2021/06/28	Jeevaraj Jeevaratrnam
Hardness (calculated as CaCO3)		7424186	N/A	2021/06/29	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7429380	N/A	2021/06/28	Prempal Bhatti
Ion Balance (% Difference)	CALC	7424164	N/A	2021/06/30	Automated Statchk
Anion and Cation Sum	CALC	7424165	N/A	2021/06/30	Automated Statchk
Total Ammonia-N	LACH/NH4	7429602	N/A	2021/06/29	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7433476	N/A	2021/06/29	Chandra Nandlal
pH	AT	7433471	2021/06/28	2021/06/29	Surinder Rai
Orthophosphate	KONE	7434295	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7424177	N/A	2021/06/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7424178	N/A	2021/06/30	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7434293	N/A	2021/06/29	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7424183	N/A	2021/06/30	Automated Statchk

BV Labs ID: PXG101
Sample ID: MW20-01 A
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7433466	N/A	2021/06/29	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7424184	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7434287	N/A	2021/06/29	Alina Dobreanu
Conductivity	AT	7433472	N/A	2021/06/29	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7430572	N/A	2021/06/25	Nimarta Singh
Hardness (calculated as CaCO3)		7424186	N/A	2021/06/29	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7429380	N/A	2021/06/28	Prempal Bhatti
Ion Balance (% Difference)	CALC	7424164	N/A	2021/06/30	Automated Statchk
Anion and Cation Sum	CALC	7424165	N/A	2021/06/30	Automated Statchk
Total Ammonia-N	LACH/NH4	7429602	N/A	2021/06/29	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7433476	N/A	2021/06/29	Chandra Nandlal
pH	AT	7433471	2021/06/28	2021/06/29	Surinder Rai
Orthophosphate	KONE	7434295	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7424177	N/A	2021/06/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7424178	N/A	2021/06/30	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7434293	N/A	2021/06/29	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7424183	N/A	2021/06/30	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXG102
Sample ID: MW20-01 B
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7433466	N/A	2021/06/29	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7424184	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7434287	N/A	2021/06/29	Alina Dobreanu
Conductivity	AT	7433472	N/A	2021/06/29	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7430360	N/A	2021/06/27	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7432295	N/A	2021/06/28	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7432529	2021/06/28	2021/06/28	Jeevaraj Jeevaratrnam
Hardness (calculated as CaCO3)		7424186	N/A	2021/06/29	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7429380	N/A	2021/06/28	Prempal Bhatti
Ion Balance (% Difference)	CALC	7424164	N/A	2021/06/30	Automated Statchk
Anion and Cation Sum	CALC	7424165	N/A	2021/06/30	Automated Statchk
Total Ammonia-N	LACH/NH4	7429602	N/A	2021/06/29	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7433476	N/A	2021/06/29	Chandra Nandlal
pH	AT	7433471	2021/06/28	2021/06/29	Surinder Rai
Orthophosphate	KONE	7434295	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7424177	N/A	2021/06/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7424178	N/A	2021/06/30	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7434293	N/A	2021/06/29	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7424183	N/A	2021/06/30	Automated Statchk

BV Labs ID: PXG103
Sample ID: MW20-02
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7433466	N/A	2021/06/29	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7424184	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7434287	N/A	2021/06/29	Alina Dobreanu
Conductivity	AT	7433472	N/A	2021/06/29	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7430360	N/A	2021/06/26	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7432295	N/A	2021/06/28	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7432529	2021/06/28	2021/06/28	Jeevaraj Jeevaratrnam
Hardness (calculated as CaCO3)		7424186	N/A	2021/06/29	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7429380	N/A	2021/06/28	Prempal Bhatti
Ion Balance (% Difference)	CALC	7424164	N/A	2021/06/30	Automated Statchk
Anion and Cation Sum	CALC	7424165	N/A	2021/06/30	Automated Statchk
Total Ammonia-N	LACH/NH4	7429602	N/A	2021/06/29	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7433476	N/A	2021/06/29	Chandra Nandlal
pH	AT	7433471	2021/06/28	2021/06/29	Surinder Rai
Orthophosphate	KONE	7434295	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7424177	N/A	2021/06/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7424178	N/A	2021/06/30	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7434293	N/A	2021/06/29	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7424183	N/A	2021/06/30	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXG104
Sample ID: MW20-03
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7433466	N/A	2021/06/29	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7424184	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7434287	N/A	2021/06/29	Alina Dobreanu
Conductivity	AT	7433472	N/A	2021/06/29	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7430572	N/A	2021/06/25	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7432295	N/A	2021/06/28	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7432529	2021/06/28	2021/06/28	Jeevaraj Jeevaratrnam
Hardness (calculated as CaCO3)		7424186	N/A	2021/06/29	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7429380	N/A	2021/06/28	Prempal Bhatti
Ion Balance (% Difference)	CALC	7424164	N/A	2021/06/30	Automated Statchk
Anion and Cation Sum	CALC	7424165	N/A	2021/06/30	Automated Statchk
Total Ammonia-N	LACH/NH4	7429602	N/A	2021/06/29	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7433476	N/A	2021/06/29	Chandra Nandlal
pH	AT	7433471	2021/06/28	2021/06/29	Surinder Rai
Orthophosphate	KONE	7434295	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7424177	N/A	2021/06/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7424178	N/A	2021/06/30	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7434293	N/A	2021/06/29	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7424183	N/A	2021/06/30	Automated Statchk

BV Labs ID: PXG105
Sample ID: MW20-04
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7433466	N/A	2021/06/29	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7424184	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7434287	N/A	2021/06/29	Alina Dobreanu
Conductivity	AT	7433472	N/A	2021/06/29	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7430360	N/A	2021/06/26	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7432295	N/A	2021/06/28	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7432529	2021/06/28	2021/06/28	Jeevaraj Jeevaratrnam
Hardness (calculated as CaCO3)		7424186	N/A	2021/06/29	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7429380	N/A	2021/06/29	Prempal Bhatti
Ion Balance (% Difference)	CALC	7424164	N/A	2021/06/30	Automated Statchk
Anion and Cation Sum	CALC	7424165	N/A	2021/06/30	Automated Statchk
Total Ammonia-N	LACH/NH4	7429602	N/A	2021/06/29	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7433476	N/A	2021/06/29	Chandra Nandlal
pH	AT	7433471	2021/06/28	2021/06/29	Surinder Rai
Orthophosphate	KONE	7434295	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7424177	N/A	2021/06/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7424178	N/A	2021/06/30	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7434293	N/A	2021/06/29	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7424183	N/A	2021/06/30	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXG106
Sample ID: MW20-05A
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7433466	N/A	2021/06/29	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7424184	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7434287	N/A	2021/06/29	Alina Dobreanu
Conductivity	AT	7433472	N/A	2021/06/29	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7430360	N/A	2021/06/26	Nimarta Singh
Hardness (calculated as CaCO3)		7424186	N/A	2021/06/29	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7429380	N/A	2021/06/28	Prempal Bhatti
Ion Balance (% Difference)	CALC	7424164	N/A	2021/06/30	Automated Statchk
Anion and Cation Sum	CALC	7424165	N/A	2021/06/30	Automated Statchk
Total Ammonia-N	LACH/NH4	7429602	N/A	2021/06/29	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7433476	N/A	2021/06/29	Chandra Nandlal
pH	AT	7433471	2021/06/28	2021/06/29	Surinder Rai
Orthophosphate	KONE	7434295	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7424177	N/A	2021/06/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7424178	N/A	2021/06/30	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7434293	N/A	2021/06/29	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7424183	N/A	2021/06/30	Automated Statchk

BV Labs ID: PXG106 Dup
Sample ID: MW20-05A
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	7434287	N/A	2021/06/29	Alina Dobreanu
Orthophosphate	KONE	7434295	N/A	2021/06/30	Avneet Kour Sudan
Sulphate by Automated Colourimetry	KONE	7434293	N/A	2021/06/29	Alina Dobreanu

BV Labs ID: PXG107
Sample ID: MW20-06A
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7433466	N/A	2021/06/29	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7424184	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7434287	N/A	2021/06/29	Alina Dobreanu
Conductivity	AT	7433472	N/A	2021/06/29	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7430572	N/A	2021/06/25	Nimarta Singh
Hardness (calculated as CaCO3)		7424186	N/A	2021/06/29	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7429380	N/A	2021/06/28	Prempal Bhatti
Ion Balance (% Difference)	CALC	7424164	N/A	2021/06/30	Automated Statchk
Anion and Cation Sum	CALC	7424165	N/A	2021/06/30	Automated Statchk
Total Ammonia-N	LACH/NH4	7429602	N/A	2021/06/29	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7433476	N/A	2021/06/29	Chandra Nandlal
pH	AT	7433471	2021/06/28	2021/06/29	Surinder Rai
Orthophosphate	KONE	7434295	N/A	2021/06/30	Avneet Kour Sudan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXG107
Sample ID: MW20-06A
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sat. pH and Langelier Index (@ 20C)	CALC	7424177	N/A	2021/06/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7424178	N/A	2021/06/30	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7434293	N/A	2021/06/29	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7424183	N/A	2021/06/30	Automated Statchk

BV Labs ID: PXG107 Dup
Sample ID: MW20-06A
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Metals by ICPMS	ICP/MS	7429380	N/A	2021/06/28	Prempal Bhatti
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7433476	N/A	2021/06/29	Chandra Nandlal

BV Labs ID: PXG108
Sample ID: MW20-06 B
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7433466	N/A	2021/06/29	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7424184	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7434287	N/A	2021/06/29	Alina Dobreanu
Conductivity	AT	7433472	N/A	2021/06/29	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7430572	N/A	2021/06/25	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7432295	N/A	2021/06/28	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7432529	2021/06/28	2021/06/28	Jeevaraj Jeevaratrnam
Hardness (calculated as CaCO3)		7424186	N/A	2021/06/29	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7429380	N/A	2021/06/28	Prempal Bhatti
Ion Balance (% Difference)	CALC	7424164	N/A	2021/06/30	Automated Statchk
Anion and Cation Sum	CALC	7424165	N/A	2021/06/30	Automated Statchk
Total Ammonia-N	LACH/NH4	7429602	N/A	2021/06/29	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7433476	N/A	2021/06/29	Chandra Nandlal
pH	AT	7433471	2021/06/28	2021/06/29	Surinder Rai
Orthophosphate	KONE	7434295	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7424177	N/A	2021/06/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7424178	N/A	2021/06/30	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7434293	N/A	2021/06/29	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7424183	N/A	2021/06/30	Automated Statchk

BV Labs ID: PXG109
Sample ID: MW20-18
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7433466	N/A	2021/06/29	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7424184	N/A	2021/06/30	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H2396
Report Date: 2021/06/30

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: VP

TEST SUMMARY

BV Labs ID: PXG109
Sample ID: MW20-18
Matrix: Water

Collected: 2021/06/22
Shipped:
Received: 2021/06/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	7434287	N/A	2021/06/29	Alina Dobreanu
Conductivity	AT	7433472	N/A	2021/06/29	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7430572	N/A	2021/06/25	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7432295	N/A	2021/06/28	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7432529	2021/06/28	2021/06/28	Jeevaraj Jeevaratrnam
Hardness (calculated as CaCO3)		7424186	N/A	2021/06/29	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7429380	N/A	2021/06/28	Prempal Bhatti
Ion Balance (% Difference)	CALC	7424164	N/A	2021/06/30	Automated Statchk
Anion and Cation Sum	CALC	7424165	N/A	2021/06/30	Automated Statchk
Total Ammonia-N	LACH/NH4	7429602	N/A	2021/06/29	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7433476	N/A	2021/06/29	Chandra Nandlal
pH	AT	7433471	2021/06/28	2021/06/29	Surinder Rai
Orthophosphate	KONE	7434295	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7424177	N/A	2021/06/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7424178	N/A	2021/06/30	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7434293	N/A	2021/06/29	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7424183	N/A	2021/06/30	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	12.3°C
Package 2	15.3°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7432295	1,4-Difluorobenzene	2021/06/27	96	70 - 130	98	70 - 130	105	%		
7432295	4-Bromofluorobenzene	2021/06/27	109	70 - 130	111	70 - 130	92	%		
7432295	D10-o-Xylene	2021/06/27	99	70 - 130	96	70 - 130	112	%		
7432295	D4-1,2-Dichloroethane	2021/06/27	106	70 - 130	104	70 - 130	113	%		
7432529	o-Terphenyl	2021/06/28	97	60 - 130	98	60 - 130	96	%		
7429380	Dissolved Aluminum (Al)	2021/06/28	118	80 - 120	94	80 - 120	<4.9	ug/L	4.3	20
7429380	Dissolved Antimony (Sb)	2021/06/28	107	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
7429380	Dissolved Arsenic (As)	2021/06/28	104	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
7429380	Dissolved Barium (Ba)	2021/06/28	103	80 - 120	102	80 - 120	<2.0	ug/L	1.2	20
7429380	Dissolved Beryllium (Be)	2021/06/28	100	80 - 120	102	80 - 120	<0.40	ug/L	NC	20
7429380	Dissolved Boron (B)	2021/06/28	93	80 - 120	93	80 - 120	<10	ug/L	7.7	20
7429380	Dissolved Cadmium (Cd)	2021/06/28	103	80 - 120	99	80 - 120	<0.090	ug/L	NC	20
7429380	Dissolved Calcium (Ca)	2021/06/28	NC	80 - 120	98	80 - 120	<200	ug/L	3.8	20
7429380	Dissolved Chromium (Cr)	2021/06/28	97	80 - 120	95	80 - 120	<5.0	ug/L	NC	20
7429380	Dissolved Cobalt (Co)	2021/06/28	101	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
7429380	Dissolved Copper (Cu)	2021/06/28	98	80 - 120	96	80 - 120	<0.90	ug/L	7.2	20
7429380	Dissolved Iron (Fe)	2021/06/28	102	80 - 120	99	80 - 120	<100	ug/L	4.2	20
7429380	Dissolved Lead (Pb)	2021/06/28	97	80 - 120	97	80 - 120	<0.50	ug/L	0.58	20
7429380	Dissolved Magnesium (Mg)	2021/06/28	NC	80 - 120	98	80 - 120	<50	ug/L	0.19	20
7429380	Dissolved Manganese (Mn)	2021/06/28	100	80 - 120	98	80 - 120	<2.0	ug/L	2.0	20
7429380	Dissolved Molybdenum (Mo)	2021/06/28	103	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
7429380	Dissolved Nickel (Ni)	2021/06/28	97	80 - 120	96	80 - 120	<1.0	ug/L	NC	20
7429380	Dissolved Phosphorus (P)	2021/06/28	96	80 - 120	105	80 - 120	<100	ug/L	NC	20
7429380	Dissolved Potassium (K)	2021/06/28	104	80 - 120	100	80 - 120	<200	ug/L	0.13	20
7429380	Dissolved Selenium (Se)	2021/06/28	105	80 - 120	99	80 - 120	<2.0	ug/L	NC	20
7429380	Dissolved Silicon (Si)	2021/06/28	106	80 - 120	97	80 - 120	<50	ug/L	6.7	20
7429380	Dissolved Silver (Ag)	2021/06/28	100	80 - 120	97	80 - 120	<0.090	ug/L	NC	20
7429380	Dissolved Sodium (Na)	2021/06/28	NC	80 - 120	95	80 - 120	<100	ug/L	1.0	20
7429380	Dissolved Strontium (Sr)	2021/06/28	100	80 - 120	97	80 - 120	<1.0	ug/L	0.32	20
7429380	Dissolved Thallium (Tl)	2021/06/28	100	80 - 120	100	80 - 120	<0.050	ug/L	NC	20
7429380	Dissolved Titanium (Ti)	2021/06/28	103	80 - 120	96	80 - 120	<5.0	ug/L	NC	20

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7429380	Dissolved Uranium (U)	2021/06/28	99	80 - 120	98	80 - 120	<0.10	ug/L	6.3	20
7429380	Dissolved Vanadium (V)	2021/06/28	98	80 - 120	94	80 - 120	<0.50	ug/L	2.0	20
7429380	Dissolved Zinc (Zn)	2021/06/28	98	80 - 120	96	80 - 120	<5.0	ug/L	3.4	20
7429602	Total Ammonia-N	2021/06/29	95	75 - 125	104	80 - 120	<0.050	mg/L	NC	20
7430360	Dissolved Organic Carbon	2021/06/26	95	80 - 120	98	80 - 120	<0.40	mg/L	5.2	20
7430572	Dissolved Organic Carbon	2021/06/25	95	80 - 120	95	80 - 120	<0.40	mg/L	0.014	20
7430955	Dissolved Chloride (Cl-)	2021/06/29	NC	80 - 120	103	80 - 120	<1.0	mg/L	1.1	20
7430971	Orthophosphate (P)	2021/06/28	115	75 - 125	102	80 - 120	<0.010	mg/L	NC	25
7430973	Dissolved Sulphate (SO4)	2021/06/28	NC	75 - 125	103	80 - 120	<1.0	mg/L	0.26	20
7431020	Dissolved Chloride (Cl-)	2021/06/28	NC	80 - 120	101	80 - 120	<1.0	mg/L	1.2	20
7431045	Alkalinity (Total as CaCO3)	2021/06/29			95	85 - 115	<1.0	mg/L	0.87	20
7431056	Conductivity	2021/06/29			102	85 - 115	<1.0	umho/cm	0.34	25
7431065	pH	2021/06/29			102	98 - 103			0.13	N/A
7431101	Orthophosphate (P)	2021/06/30	92	75 - 125	102	80 - 120	<0.010	mg/L	NC	25
7431102	Nitrate (N)	2021/06/29	106	80 - 120	105	80 - 120	<0.10	mg/L	7.7	20
7431102	Nitrite (N)	2021/06/29	105	80 - 120	104	80 - 120	<0.010	mg/L	NC	20
7431104	Dissolved Sulphate (SO4)	2021/06/28	NC	75 - 125	102	80 - 120	<1.0	mg/L	2.3	20
7431551	Dissolved Organic Carbon	2021/06/28	98	80 - 120	103	80 - 120	<0.40	mg/L	3.8	20
7431736	Alkalinity (Total as CaCO3)	2021/06/29			97	85 - 115	<1.0	mg/L	0.031	20
7431743	Conductivity	2021/06/29			101	85 - 115	<1.0	umho/cm	0.44	25
7431744	pH	2021/06/29			102	98 - 103			0.18	N/A
7432295	Benzene	2021/06/27	98	50 - 140	95	50 - 140	<0.20	ug/L	NC	30
7432295	Ethylbenzene	2021/06/27	101	50 - 140	98	50 - 140	<0.20	ug/L	NC	30
7432295	F1 (C6-C10) - BTEX	2021/06/27					<25	ug/L	NC	30
7432295	F1 (C6-C10)	2021/06/27	86	60 - 140	83	60 - 140	<25	ug/L	NC	30
7432295	o-Xylene	2021/06/27	100	50 - 140	98	50 - 140	<0.20	ug/L	NC	30
7432295	p+m-Xylene	2021/06/27	95	50 - 140	93	50 - 140	<0.40	ug/L	NC	30
7432295	Toluene	2021/06/27	91	50 - 140	87	50 - 140	<0.20	ug/L	NC	30
7432295	Total Xylenes	2021/06/27					<0.40	ug/L	NC	30
7432529	F2 (C10-C16 Hydrocarbons)	2021/06/28	101	60 - 130	100	60 - 130	<100	ug/L	NC	30
7432529	F3 (C16-C34 Hydrocarbons)	2021/06/28	100	60 - 130	100	60 - 130	<200	ug/L	NC	30

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7432529	F4 (C34-C50 Hydrocarbons)	2021/06/28	101	60 - 130	100	60 - 130	<200	ug/L	NC	30
7433466	Alkalinity (Total as CaCO3)	2021/06/29			98	85 - 115	<1.0	mg/L	1.4	20
7433471	pH	2021/06/29			102	98 - 103			0.39	N/A
7433472	Conductivity	2021/06/29			102	85 - 115	<1.0	umho/cm	0.17	25
7433476	Nitrate (N)	2021/06/29	104	80 - 120	104	80 - 120	<0.10	mg/L	0.050	20
7433476	Nitrite (N)	2021/06/29	105	80 - 120	104	80 - 120	<0.010	mg/L	NC	20
7434287	Dissolved Chloride (Cl-)	2021/06/29	NC	80 - 120	102	80 - 120	<1.0	mg/L	0.89	20
7434293	Dissolved Sulphate (SO4)	2021/06/29	NC	75 - 125	104	80 - 120	<1.0	mg/L	0.53	20
7434295	Orthophosphate (P)	2021/06/30	115	75 - 125	102	80 - 120	<0.010	mg/L	NC	25

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

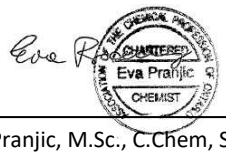
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Laboratories
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22-Jun-21 18:07
Ema Gitej
C1H2396
Bottle Order #: 831949

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name:	#21375 Golder Associates Ltd	Company Name:		Quotation #:	B80683
Attention:	Accounts Payable	Attention:	Gregory Padusenko	P.O. #:	
Address:	210 Sheldon Drive Cambridge ON N1T 1A8	Address:		Project:	19129150 (2300)
Tel:	(519) 620-8182 Fax:	Tel:	(519) 620-8182 Ext: 6509 Fax: (519) 620-9878	Project Name:	
Email:	CanadaAccountsPayableInvoices@golder.com	Email:	Gregory_Padusenko@golder.com	Site #:	
				Sampled By:	

COC #: C#831949-04-01
Project Manager: Ema Gitej

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
- ☐ Table 1 ☐ Res/Park ☐ Medium/Fine
- ☐ Table 2 ☐ Ind/Comm ☐ Coarse
- ☐ Table 3 ☐ Agri/Other ☐ For RSC
- ☐ Table ___

Other Regulations
- ☐ CCME ☐ Sanitary Sewer Bylaw
- ☐ Reg 558 ☐ Storm Sewer Bylaw
- ☐ MISA Municipality ___
- ☐ PWQO ☐ Reg 406 Table ___
- ☐ Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

ANALYSIS REQUESTED (PLEASE BE SPECIFIC):

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	RCAp - Comprehensive	O Reg 153 PHCs, BTEX/F1-F4	# of Bottles	Comments
1		MW20-23A	22-Jun-21	13:00	GW	✓	✓		4	
2		MW20-23B	22-Jun-21	14:00	GW	✓	✓	✓	8	
3		MW20-23C	22-Jun-21	14:30	GW	✓	✓		4	2 coolers
4		MW20-17A	22-Jun-21	17:00	GW	✓	✓		4	
5		MW20-17B	22-Jun-21	16:30	GW	✓	✓	✓	8	
6		DUP-1	22-Jun-21		GW	✓	✓	✓	8	
7										
8										
9										
10										

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
VTrapp	21/06/22	18:05	[illegible]	21/06/22	18:07	

Laboratory Use Only: ON ICE

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	15/12/10	Present		
		Intact	✓	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

18/4/14

Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free 800-563-6266 Fax:(905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#21375 Golder Associates Ltd	Company Name:		Quotation #:	B80683	BV Labs Job #:	Bottle Order #:
Attention:	Accounts Payable	Attention:	Gregory Padusenko	P.O. #:			831949
Address:	210 Sheldon Drive Cambridge ON N1T 1A8	Address:		Project:	19129150 (2300)	COC #:	Project Manager:
Tel:	(519) 620-8182 Fax:	Tel:	(519) 620-8182 Ext: 6509 Fax: (519) 620-9878	Project Name:		C#831949-03-01	Ema Gitej
Email:	CanadaAccountsPayableInvoices@golder.com	Email:	Gregory_Padusenko@golder.com	Site #:			
				Sampled By:			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___	☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ___ ☐ PWQO ☐ Reg 406 Table ___ ☐ Other ___	

Include Criteria on Certificate of Analysis (Y/N)? ___

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): (Metals / Hg / Cr VI)	ANALYSIS REQUESTED (PLEASE BE SPECIFIC): RCAp - Comprehensive	O.Reg 153 PHCs BTEX/F1-F4	# of Bottles	Comments
1		MW20-01 A	22-Jun-21	14:30	GW	✓	✓		4	
2		MW 20-01 B	22-Jun-21	14:45	GW	✓	✓	✓	8	
3		MW20-02	22-Jun-21	13:30	GW	✓	✓	✓	8	
4		MW20-03	22-Jun-21	12:30	GW	✓	✓	✓	8	
5		MW20-04	22-Jun-21	12:15	GW	✓	✓	✓	8	
6		MW20-05A	22-Jun-21	11:00	GW	✓	✓		4	
7		MW20-06A	22-Jun-21	10:45	GW	✓	✓		4	
8		MW20-06B	22-Jun-21	11:30	GW	✓	✓	✓	8	
9		MW20-18	22-Jun-21	15:00	GW	✓	✓	✓	8	
10										

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
VPtorp	~~22-Jun-21~~ 06/22	~~15:05~~ 13:05	see page 1			

Laboratory Use Only				
Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
		Present		
		Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

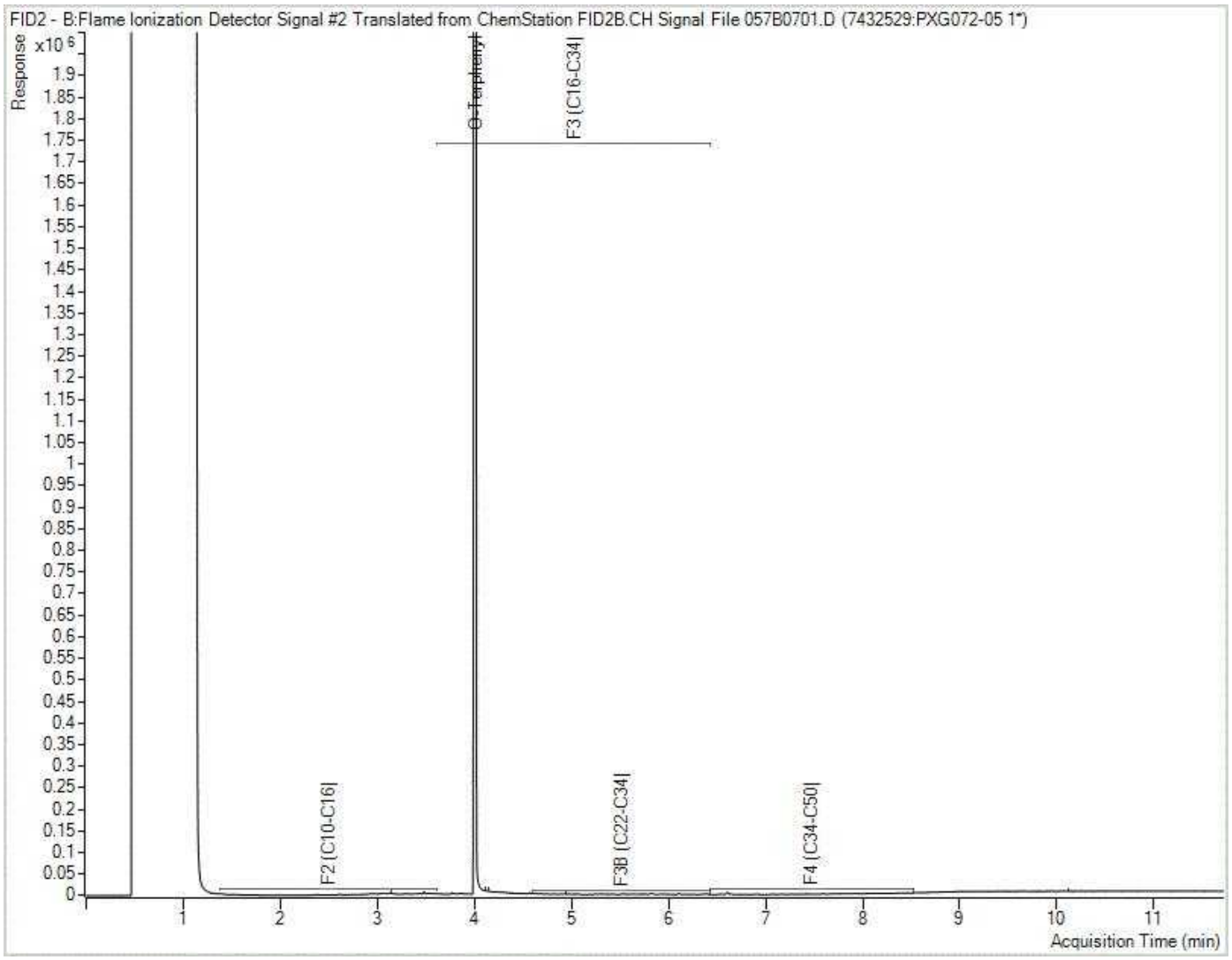
** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

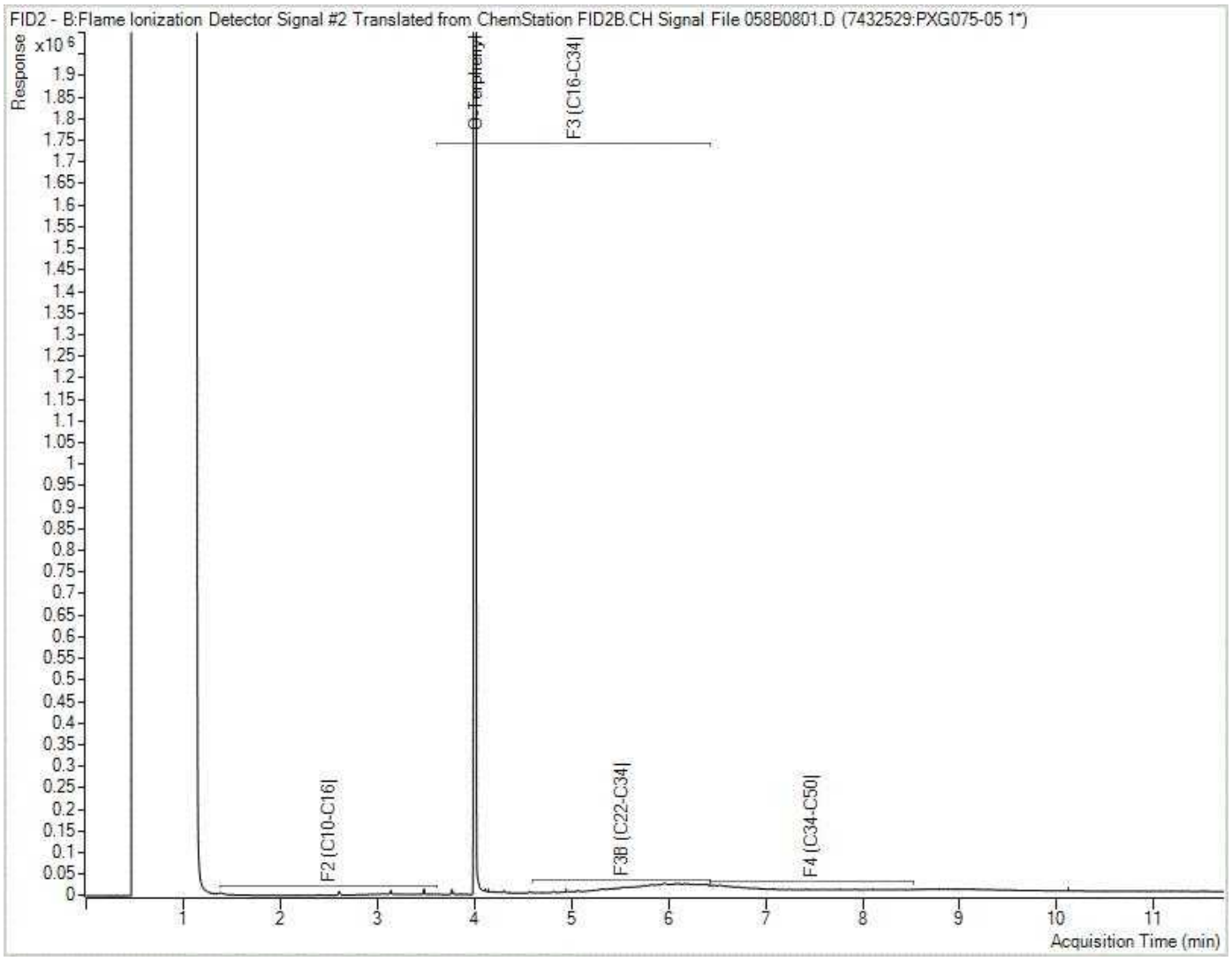


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H2396
Report Date: 2021/06/30
BV Labs Sample: PXG075

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-17B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

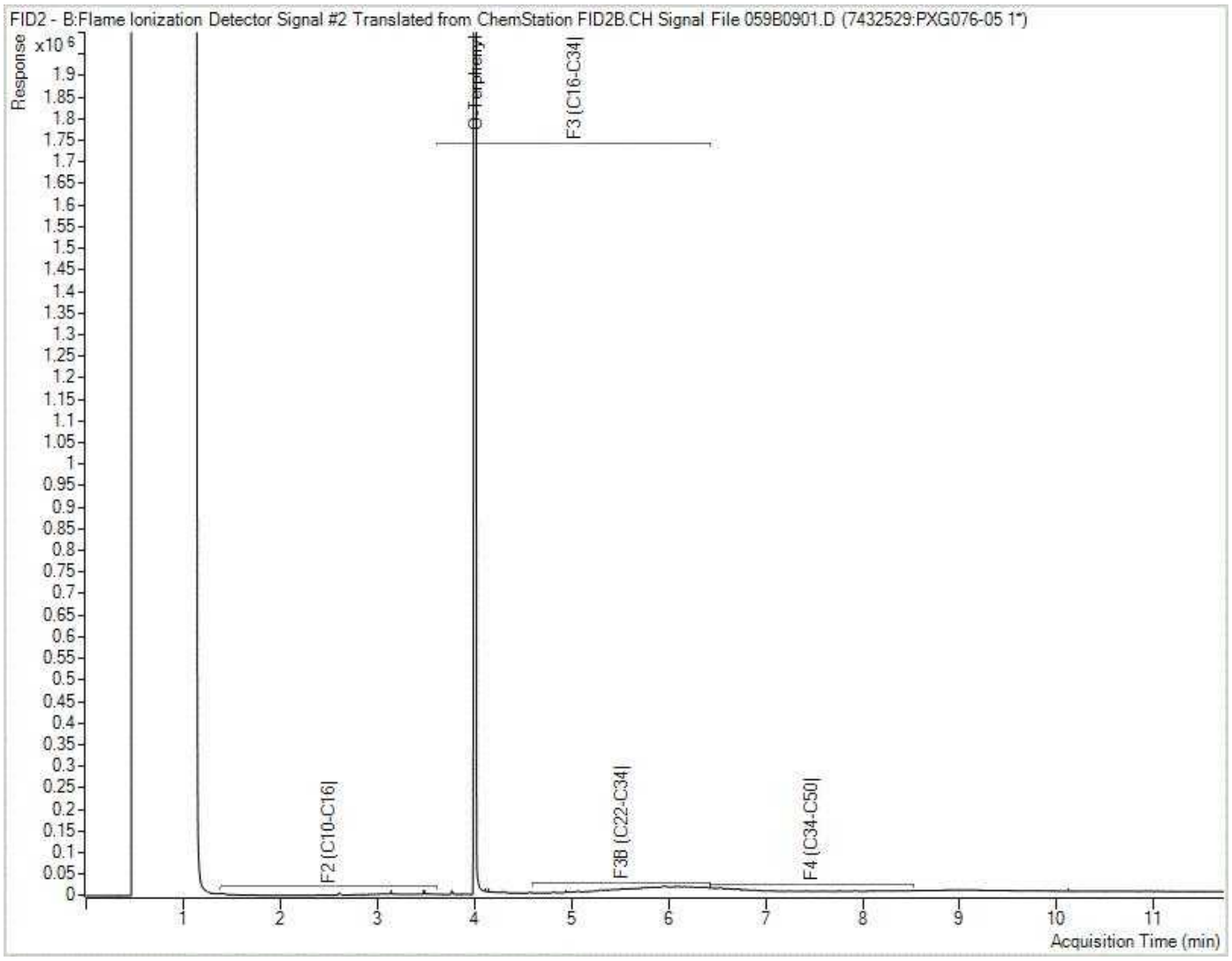


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H2396
Report Date: 2021/06/30
BV Labs Sample: PXG076

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: DUP-1

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

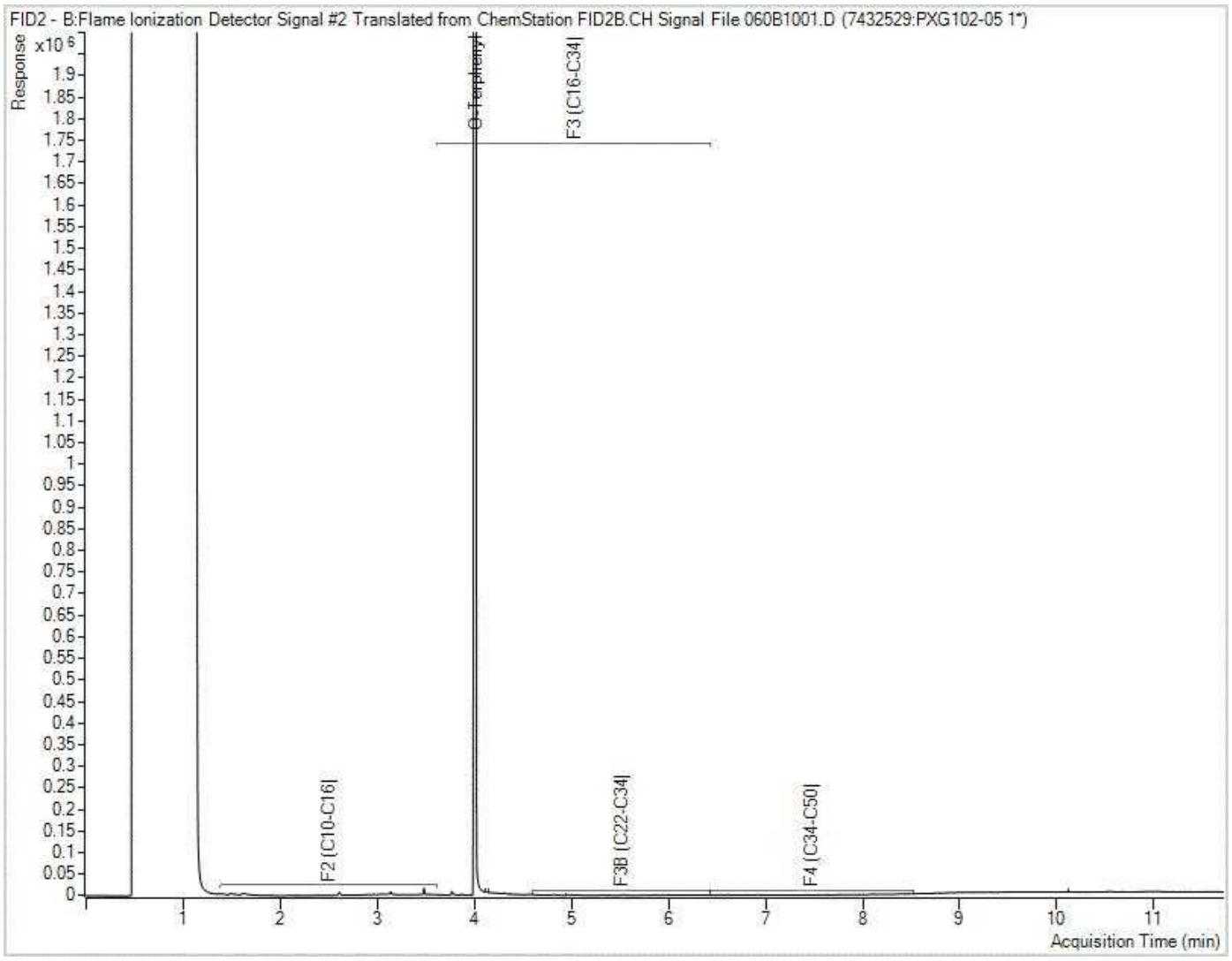


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H2396
Report Date: 2021/06/30
BV Labs Sample: PXG102

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-01 B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

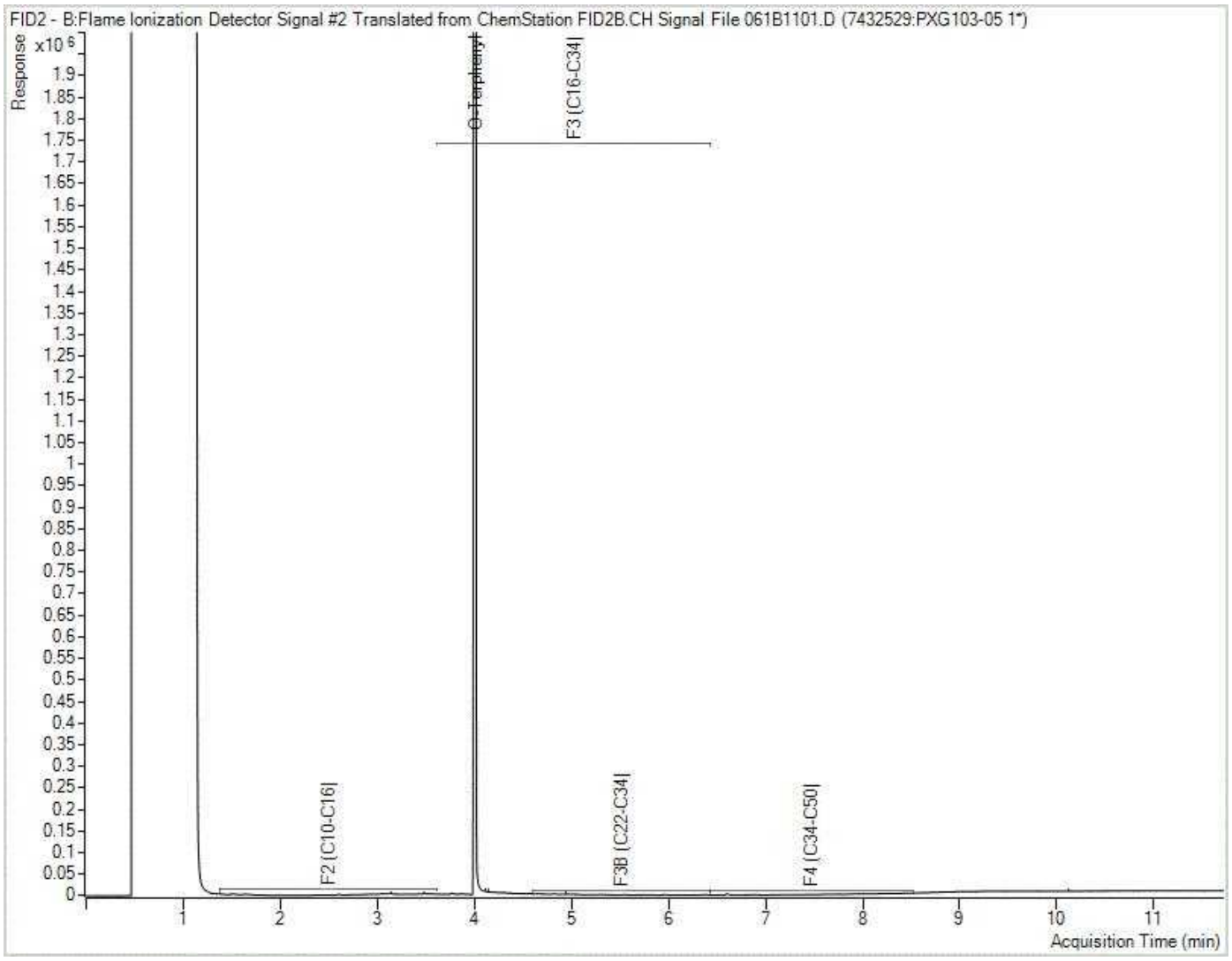


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H2396
Report Date: 2021/06/30
BV Labs Sample: PXG103

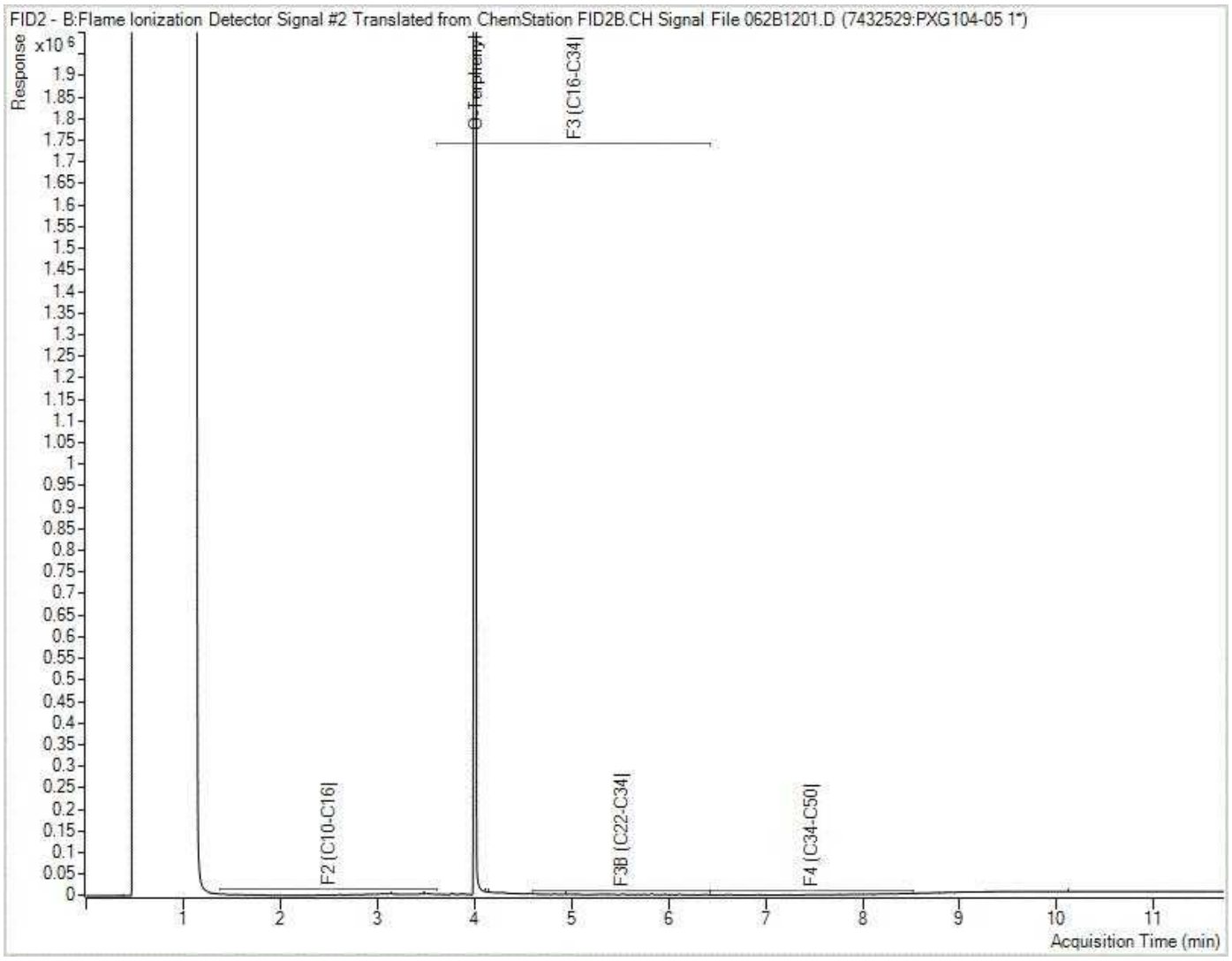
Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-02

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

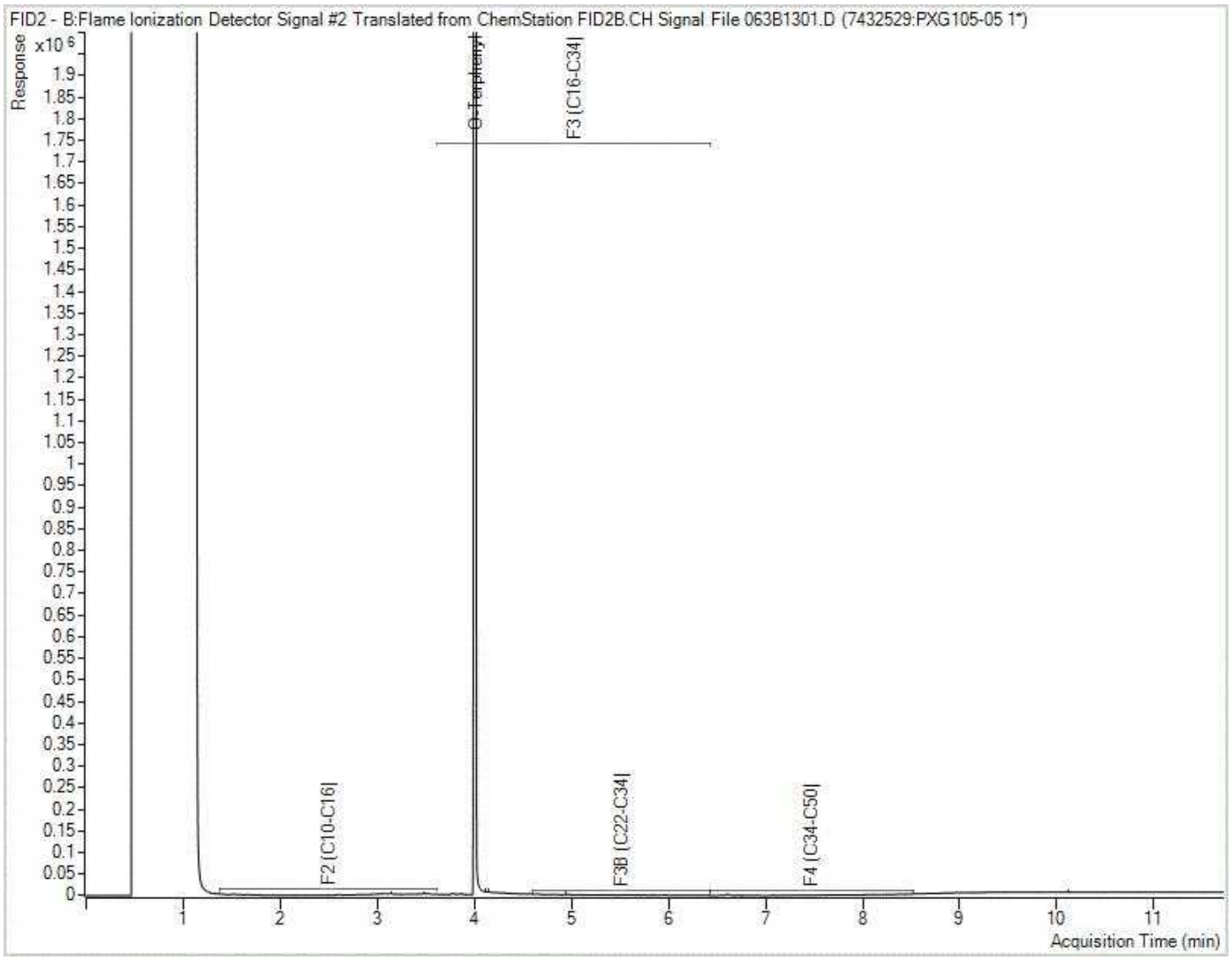


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H2396
Report Date: 2021/06/30
BV Labs Sample: PXG105

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-04

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

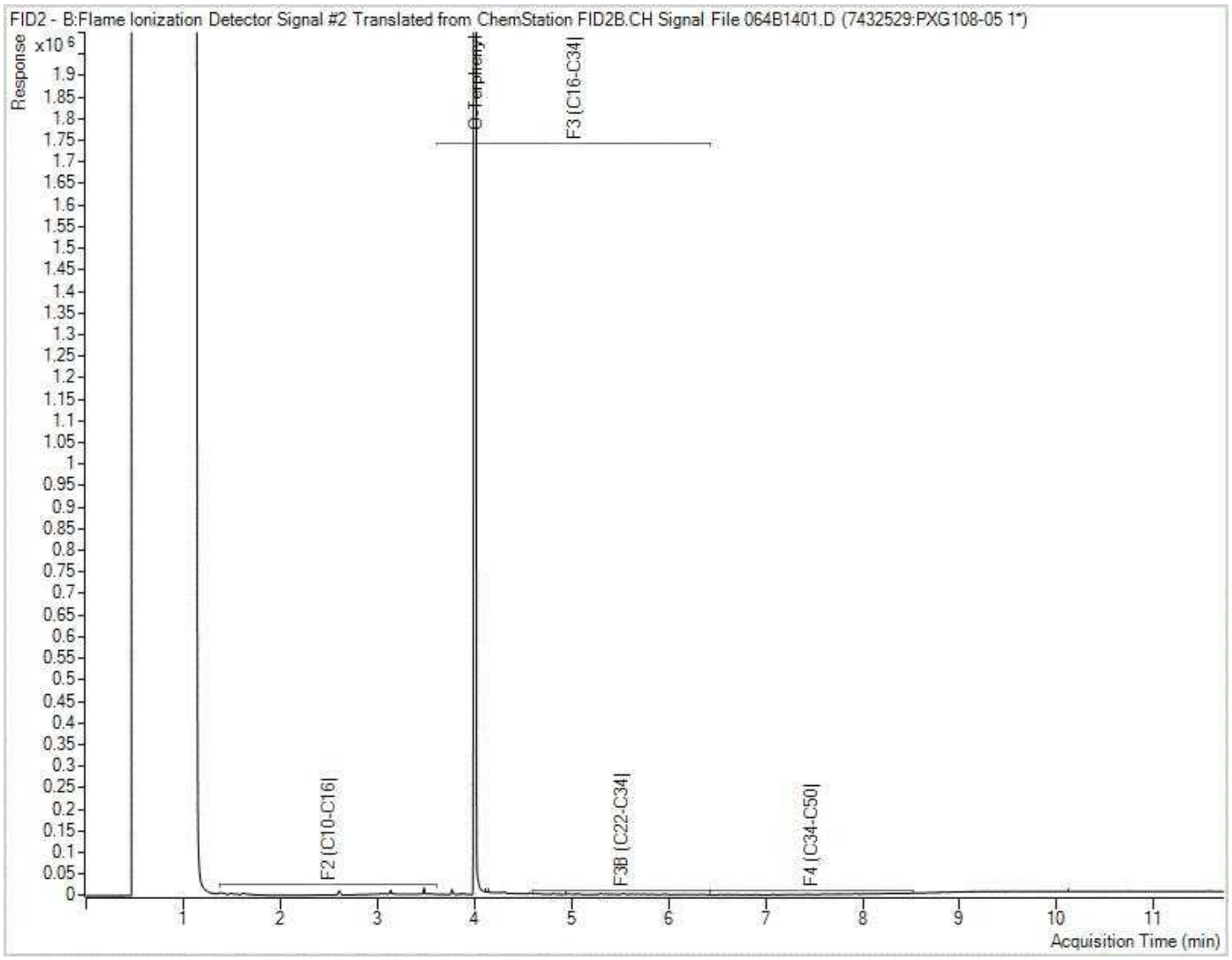


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H2396
Report Date: 2021/06/30
BV Labs Sample: PXG108

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-06 B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

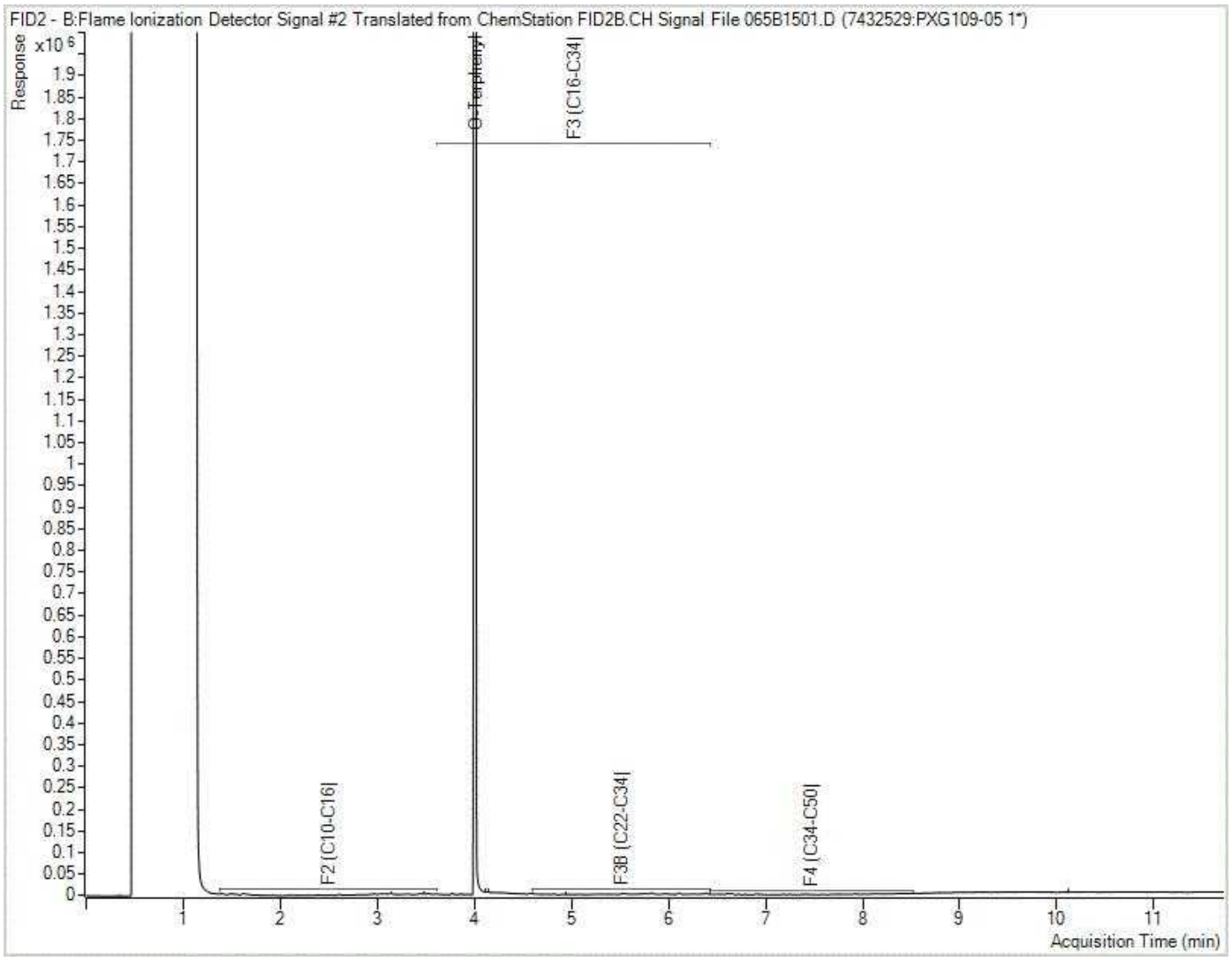


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H2396
Report Date: 2021/06/30
BV Labs Sample: PXG109

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-18

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: 19129150 (2300)
Your C.O.C. #: 831949-01-01, C#831949-02-01

Attention: Gregory Padusenko

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/07/02
Report #: R6702818
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1H4635
Received: 2021/06/24, 08:00

Sample Matrix: Water
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	9	N/A	2021/06/30	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	9	N/A	2021/06/30	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	9	N/A	2021/06/30	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity	9	N/A	2021/06/30	CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (1)	9	N/A	2021/06/29	CAM SOP-00446	SM 23 5310 B m
Petroleum Hydro. CCME F1 & BTEX in Water	5	N/A	2021/06/29	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (2)	4	2021/06/29	2021/06/30	CAM SOP-00316	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (2)	1	2021/06/30	2021/06/30	CAM SOP-00316	CCME PHC-CWS m
Hardness (calculated as CaCO3)	9	N/A	2021/07/02	CAM SOP 00102/00408/00447	SM 2340 B
Dissolved Metals by ICPMS	6	N/A	2021/06/30	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	3	N/A	2021/07/02	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	9	N/A	2021/07/02		
Anion and Cation Sum	9	N/A	2021/07/02		
Total Ammonia-N	9	N/A	2021/06/30	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (3)	9	N/A	2021/06/30	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	1	2021/06/29	2021/06/30	CAM SOP-00413	SM 4500H+ B m
pH	8	2021/06/30	2021/06/30	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	9	N/A	2021/06/30	CAM SOP-00461	EPA 365.1 m
Sat. pH and Langelier Index (@ 20C)	9	N/A	2021/07/02		Auto Calc
Sat. pH and Langelier Index (@ 4C)	9	N/A	2021/07/02		Auto Calc
Sulphate by Automated Colourimetry	9	N/A	2021/06/30	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (TDS calc)	9	N/A	2021/07/02		Auto Calc

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement

Your Project #: 19129150 (2300)
Your C.O.C. #: 831949-01-01, C#831949-02-01

Attention: Gregory Padusenko

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/07/02
Report #: R6702818
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1H4635
Received: 2021/06/24, 08:00

Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
(3) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: emese.gitej@bureauveritas.com
Phone# (905)817-5829

==========

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C1H4635
Report Date: 2021/07/02

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: CS

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXS026			PXS026			PXS027		
Sampling Date		2021/06/23 15:30			2021/06/23 15:30			2021/06/23 15:45		
COC Number		C#831949-02-01			C#831949-02-01			C#831949-02-01		
	UNITS	MW20-19A	RDL	QC Batch	MW20-19A Lab-Dup	RDL	QC Batch	MW20-19B	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	9.06	N/A	7427593				7.25	N/A	7427593
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	240	1.0	7427591				260	1.0	7427591
Calculated TDS	mg/L	490	1.0	7426927				370	1.0	7426927
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.1	1.0	7427591				2.4	1.0	7427591
Cation Sum	me/L	8.56	N/A	7427593				6.66	N/A	7427593
Hardness (CaCO3)	mg/L	420	1.0	7429889				310	1.0	7429889
Ion Balance (% Difference)	%	2.85	N/A	7427592				4.22	N/A	7427592
Langelier Index (@ 20C)	N/A	0.806		7427594				0.859		7427594
Langelier Index (@ 4C)	N/A	0.558		7427596				0.611		7427596
Saturation pH (@ 20C)	N/A	7.16		7427594				7.14		7427594
Saturation pH (@ 4C)	N/A	7.40		7427596				7.39		7427596
Inorganics										
Total Ammonia-N	mg/L	<0.050	0.050	7436397				<0.050	0.050	7436397
Conductivity	umho/cm	780	1.0	7438035	770	1.0	7438035	640	1.0	7438035
Dissolved Organic Carbon	mg/L	1.1	0.40	7436754				0.62	0.40	7436754
Orthophosphate (P)	mg/L	<0.010	0.010	7437783	<0.010	0.010	7437783	<0.010	0.010	7437783
pH	pH	7.96		7438036	7.99		7438036	8.00		7438036
Dissolved Sulphate (SO4)	mg/L	190	1.0	7437782	190	1.0	7437782	76	1.0	7437782
Alkalinity (Total as CaCO3)	mg/L	250	1.0	7438032	240	1.0	7438032	260	1.0	7438032
Dissolved Chloride (Cl-)	mg/L	7.1	1.0	7437775	8.9	1.0	7437775	18	1.0	7437775
Nitrite (N)	mg/L	<0.010	0.010	7437964	<0.010	0.010	7437964	<0.010	0.010	7437964
Nitrate (N)	mg/L	<0.10	0.10	7437964	<0.10	0.10	7437964	<0.10	0.10	7437964
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	7437964	<0.10	0.10	7437964	<0.10	0.10	7437964
Metals										
Dissolved Aluminum (Al)	ug/L	46	4.9	7435801				6.5	4.9	7435801
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	7435801				<0.50	0.50	7435801
Dissolved Arsenic (As)	ug/L	1.3	1.0	7435801				4.3	1.0	7435801
Dissolved Barium (Ba)	ug/L	22	2.0	7435801				35	2.0	7435801
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7435801				<0.40	0.40	7435801
Dissolved Boron (B)	ug/L	35	10	7435801				12	10	7435801

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H4635
Report Date: 2021/07/02

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: CS

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXS026			PXS026			PXS027		
Sampling Date		2021/06/23 15:30			2021/06/23 15:30			2021/06/23 15:45		
COC Number		C#831949-02-01			C#831949-02-01			C#831949-02-01		
	UNITS	MW20-19A	RDL	QC Batch	MW20-19A Lab-Dup	RDL	QC Batch	MW20-19B	RDL	QC Batch
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	7435801				<0.090	0.090	7435801
Dissolved Calcium (Ca)	ug/L	83000	200	7435801				77000	200	7435801
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7435801				<5.0	5.0	7435801
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	7435801				<0.50	0.50	7435801
Dissolved Copper (Cu)	ug/L	<0.90	0.90	7435801				<0.90	0.90	7435801
Dissolved Iron (Fe)	ug/L	310	100	7435801				380	100	7435801
Dissolved Lead (Pb)	ug/L	<0.50	0.50	7435801				<0.50	0.50	7435801
Dissolved Magnesium (Mg)	ug/L	50000	50	7435801				29000	50	7435801
Dissolved Manganese (Mn)	ug/L	7.0	2.0	7435801				48	2.0	7435801
Dissolved Molybdenum (Mo)	ug/L	1.6	0.50	7435801				3.4	0.50	7435801
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	7435801				2.2	1.0	7435801
Dissolved Phosphorus (P)	ug/L	<100	100	7435801				<100	100	7435801
Dissolved Potassium (K)	ug/L	1700	200	7435801				730	200	7435801
Dissolved Selenium (Se)	ug/L	<2.0	2.0	7435801				<2.0	2.0	7435801
Dissolved Silicon (Si)	ug/L	3900	50	7435801				2900	50	7435801
Dissolved Silver (Ag)	ug/L	<0.090	0.090	7435801				<0.090	0.090	7435801
Dissolved Sodium (Na)	ug/L	4400	100	7435801				8800	100	7435801
Dissolved Strontium (Sr)	ug/L	1500	1.0	7435801				610	1.0	7435801
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	7435801				<0.050	0.050	7435801
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	7435801				<5.0	5.0	7435801
Dissolved Uranium (U)	ug/L	0.12	0.10	7435801				0.13	0.10	7435801
Dissolved Vanadium (V)	ug/L	<0.50	0.50	7435801				<0.50	0.50	7435801
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	7435801				<5.0	5.0	7435801

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXS028		PXS029		PXS030		
Sampling Date		2021/06/23		2021/06/23 16:10		2021/06/23 16:40		
COC Number		C#831949-02-01		C#831949-02-01		C#831949-02-01		
	UNITS	DUP2	RDL	MW20-20A	RDL	MW20-20B	RDL	QC Batch
Calculated Parameters								
Anion Sum	me/L	6.82	N/A	26.3	N/A	8.64	N/A	7427593
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	270	1.0	180	1.0	200	1.0	7427591
Calculated TDS	mg/L	360	1.0	1700	1.0	500	1.0	7426927
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.9	1.0	<1.0	1.0	1.3	1.0	7427591
Cation Sum	me/L	6.57	N/A	26.3	N/A	8.13	N/A	7427593
Hardness (CaCO3)	mg/L	310	1.0	1300	1.0	400	1.0	7429889
Ion Balance (% Difference)	%	1.87	N/A	0.00	N/A	3.03	N/A	7427592
Langelier Index (@ 20C)	N/A	0.807		0.952		0.715		7427594
Langelier Index (@ 4C)	N/A	0.558		0.708		0.467		7427596
Saturation pH (@ 20C)	N/A	7.07		6.74		7.13		7427594
Saturation pH (@ 4C)	N/A	7.32		6.98		7.38		7427596
Inorganics								
Total Ammonia-N	mg/L	<0.050	0.050	0.22	0.050	<0.050	0.050	7436397
Conductivity	umho/cm	610	1.0	2000	1.0	740	1.0	7438035
Dissolved Organic Carbon	mg/L	0.65	0.40	<0.40	0.40	<0.40	0.40	7436754
Orthophosphate (P)	mg/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	7437783
pH	pH	7.88		7.69		7.85		7438036
Dissolved Sulphate (SO4)	mg/L	16	1.0	1100	5.0	220	1.0	7437782
Alkalinity (Total as CaCO3)	mg/L	270	1.0	180	1.0	200	1.0	7438032
Dissolved Chloride (Cl-)	mg/L	20	1.0	4.2	1.0	4.5	1.0	7437775
Nitrite (N)	mg/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	7437964
Nitrate (N)	mg/L	7.76	0.10	<0.10	0.10	<0.10	0.10	7437964
Nitrate + Nitrite (N)	mg/L	7.76	0.10	<0.10	0.10	<0.10	0.10	7437964
Metals								
Dissolved Aluminum (Al)	ug/L	7.1	4.9	26	4.9	<4.9	4.9	7435801
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	<0.50	0.50	<0.50	0.50	7435801
Dissolved Arsenic (As)	ug/L	<1.0	1.0	4.8	1.0	5.5	1.0	7435801
Dissolved Barium (Ba)	ug/L	19	2.0	8.1	2.0	14	2.0	7435801
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	<0.40	0.40	<0.40	0.40	7435801
Dissolved Boron (B)	ug/L	<10	10	54	10	13	10	7435801
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	<0.090	0.090	<0.090	0.090	7435801

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXS028		PXS029		PXS030		
Sampling Date		2021/06/23		2021/06/23 16:10		2021/06/23 16:40		
COC Number		C#831949-02-01		C#831949-02-01		C#831949-02-01		
	UNITS	DUP2	RDL	MW20-20A	RDL	MW20-20B	RDL	QC Batch
Dissolved Calcium (Ca)	ug/L	86000	200	430000	400	110000	200	7435801
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	<5.0	5.0	<5.0	5.0	7435801
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	<0.50	0.50	<0.50	0.50	7435801
Dissolved Copper (Cu)	ug/L	<0.90	0.90	<0.90	0.90	<0.90	0.90	7435801
Dissolved Iron (Fe)	ug/L	<100	100	620	100	180	100	7435801
Dissolved Lead (Pb)	ug/L	<0.50	0.50	<0.50	0.50	<0.50	0.50	7435801
Dissolved Magnesium (Mg)	ug/L	24000	50	54000	50	30000	50	7435801
Dissolved Manganese (Mn)	ug/L	<2.0	2.0	41	2.0	6.7	2.0	7435801
Dissolved Molybdenum (Mo)	ug/L	<0.50	0.50	2.0	0.50	2.1	0.50	7435801
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	<1.0	1.0	<1.0	1.0	7435801
Dissolved Phosphorus (P)	ug/L	<100	100	<100	100	<100	100	7435801
Dissolved Potassium (K)	ug/L	1100	200	1600	200	820	200	7435801
Dissolved Selenium (Se)	ug/L	<2.0	2.0	<2.0	2.0	<2.0	2.0	7435801
Dissolved Silicon (Si)	ug/L	4000	50	6700	50	7300	50	7435801
Dissolved Silver (Ag)	ug/L	<0.090	0.090	<0.090	0.090	<0.090	0.090	7435801
Dissolved Sodium (Na)	ug/L	6200	100	7100	100	3300	100	7435801
Dissolved Strontium (Sr)	ug/L	140	1.0	8600	1.0	2700	1.0	7435801
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	<0.050	0.050	<0.050	0.050	7435801
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	<5.0	5.0	<5.0	5.0	7435801
Dissolved Uranium (U)	ug/L	0.14	0.10	0.17	0.10	<0.10	0.10	7435801
Dissolved Vanadium (V)	ug/L	<0.50	0.50	<0.50	0.50	<0.50	0.50	7435801
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	<5.0	5.0	<5.0	5.0	7435801

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H4635
Report Date: 2021/07/02

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: CS

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXS031		PXS032			PXS033		
Sampling Date		2021/06/23 17:10		2021/06/23 09:30			2021/06/23 16:30		
COC Number		C#831949-02-01		C#831949-02-01			C#831949-02-01		
	UNITS	MW20-20C	QC Batch	MW20-09	RDL	QC Batch	MW20-22A	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	7.54	7427593	6.84	N/A	7427593	27.0	N/A	7427593
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	310	7434506	270	1.0	7434506	200	1.0	7434506
Calculated TDS	mg/L	380	7426927	360	1.0	7426927	1700	1.0	7426927
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.2	7434506	2.0	1.0	7434506	<1.0	1.0	7434506
Cation Sum	me/L	7.34	7427593	6.73	N/A	7427593	25.7	N/A	7427593
Hardness (CaCO3)	mg/L	340	7429889	320	1.0	7429889	1300	1.0	7429889
Ion Balance (% Difference)	%	1.38	7427592	0.850	N/A	7427592	2.53	N/A	7427592
Langelier Index (@ 20C)	N/A	0.904	7427594	0.833		7427594	0.961		7427594
Langelier Index (@ 4C)	N/A	0.655	7427596	0.584		7427596	0.717		7427596
Saturation pH (@ 20C)	N/A	6.97	7427594	7.06		7427594	6.73		7427594
Saturation pH (@ 4C)	N/A	7.22	7427596	7.30		7427596	6.98		7427596
Inorganics									
Total Ammonia-N	mg/L	<0.050	7436397	<0.050	0.050	7436397	0.070	0.050	7436397
Conductivity	umho/cm	660	7438035	610	1.0	7438035	2000	1.0	7438035
Dissolved Organic Carbon	mg/L	4.6	7436754	0.70	0.40	7436754	1.2	0.40	7436754
Orthophosphate (P)	mg/L	<0.010	7437783	<0.010	0.010	7436693	<0.010	0.010	7437783
pH	pH	7.88	7438036	7.89		7438036	7.69		7438036
Dissolved Sulphate (SO4)	mg/L	15	7437782	16	1.0	7436692	1100	5.0	7437782
Alkalinity (Total as CaCO3)	mg/L	310	7438032	270	1.0	7438032	200	1.0	7438032
Dissolved Chloride (Cl-)	mg/L	35	7437775	18	1.0	7436686	7.2	1.0	7437775
Nitrite (N)	mg/L	<0.010	7437964	<0.010	0.010	7437964	<0.010	0.010	7437964
Nitrate (N)	mg/L	0.13	7437964	7.61	0.10	7437964	<0.10	0.10	7437964
Nitrate + Nitrite (N)	mg/L	0.13	7437964	7.61	0.10	7437964	<0.10	0.10	7437964
Metals									
Dissolved Aluminum (Al)	ug/L	80	7437678	8.2	4.9	7435801	9.4	4.9	7435801
Dissolved Antimony (Sb)	ug/L	<0.50	7437678	<0.50	0.50	7435801	<0.50	0.50	7435801
Dissolved Arsenic (As)	ug/L	<1.0	7437678	<1.0	1.0	7435801	2.8	1.0	7435801
Dissolved Barium (Ba)	ug/L	33	7437678	19	2.0	7435801	7.7	2.0	7435801
Dissolved Beryllium (Be)	ug/L	<0.40	7437678	<0.40	0.40	7435801	<0.40	0.40	7435801
Dissolved Boron (B)	ug/L	16	7437678	<10	10	7435801	71	10	7435801
Dissolved Cadmium (Cd)	ug/L	<0.090	7437678	<0.090	0.090	7435801	<0.090	0.090	7435801

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXS031		PXS032			PXS033		
Sampling Date		2021/06/23 17:10		2021/06/23 09:30			2021/06/23 16:30		
COC Number		C#831949-02-01		C#831949-02-01			C#831949-02-01		
	UNITS	MW20-20C	QC Batch	MW20-09	RDL	QC Batch	MW20-22A	RDL	QC Batch
Dissolved Calcium (Ca)	ug/L	95000	7437678	88000	200	7435801	400000	1000	7435801
Dissolved Chromium (Cr)	ug/L	<5.0	7437678	<5.0	5.0	7435801	<5.0	5.0	7435801
Dissolved Cobalt (Co)	ug/L	<0.50	7437678	<0.50	0.50	7435801	<0.50	0.50	7435801
Dissolved Copper (Cu)	ug/L	2.0	7437678	1.1	0.90	7435801	<0.90	0.90	7435801
Dissolved Iron (Fe)	ug/L	110	7437678	<100	100	7435801	350	100	7435801
Dissolved Lead (Pb)	ug/L	<0.50	7437678	<0.50	0.50	7435801	<0.50	0.50	7435801
Dissolved Magnesium (Mg)	ug/L	26000	7437678	25000	50	7435801	62000	50	7435801
Dissolved Manganese (Mn)	ug/L	6.0	7437678	<2.0	2.0	7435801	39	2.0	7435801
Dissolved Molybdenum (Mo)	ug/L	<0.50	7437678	<0.50	0.50	7435801	2.9	0.50	7435801
Dissolved Nickel (Ni)	ug/L	<1.0	7437678	<1.0	1.0	7435801	3.9	1.0	7435801
Dissolved Phosphorus (P)	ug/L	<100	7437678	<100	100	7435801	<100	100	7435801
Dissolved Potassium (K)	ug/L	1100	7437678	1100	200	7435801	2200	200	7435801
Dissolved Selenium (Se)	ug/L	<2.0	7437678	<2.0	2.0	7435801	<2.0	2.0	7435801
Dissolved Silicon (Si)	ug/L	4700	7437678	4300	50	7435801	5600	50	7435801
Dissolved Silver (Ag)	ug/L	<0.090	7437678	<0.090	0.090	7435801	<0.090	0.090	7435801
Dissolved Sodium (Na)	ug/L	11000	7437678	6400	100	7435801	14000	100	7435801
Dissolved Strontium (Sr)	ug/L	150	7437678	140	1.0	7435801	7200	1.0	7435801
Dissolved Thallium (Tl)	ug/L	<0.050	7437678	<0.050	0.050	7435801	<0.050	0.050	7435801
Dissolved Titanium (Ti)	ug/L	<5.0	7437678	<5.0	5.0	7435801	<5.0	5.0	7435801
Dissolved Uranium (U)	ug/L	0.80	7437678	0.14	0.10	7435801	0.22	0.10	7435801
Dissolved Vanadium (V)	ug/L	<0.50	7437678	<0.50	0.50	7435801	<0.50	0.50	7435801
Dissolved Zinc (Zn)	ug/L	<5.0	7437678	<5.0	5.0	7435801	<5.0	5.0	7435801

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXS034		
Sampling Date		2021/06/23 18:30		
COC Number		C#831949-02-01		
	UNITS	MW20-22B	RDL	QC Batch
Calculated Parameters				
Anion Sum	me/L	18.7	N/A	7427593
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	220	1.0	7434506
Calculated TDS	mg/L	1200	1.0	7426927
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.9	1.0	7434506
Cation Sum	me/L	18.9	N/A	7427593
Hardness (CaCO3)	mg/L	870	1.0	7429889
Ion Balance (% Difference)	%	0.680	N/A	7427592
Langelier Index (@ 20C)	N/A	1.15		7427594
Langelier Index (@ 4C)	N/A	0.902		7427596
Saturation pH (@ 20C)	N/A	6.81		7427594
Saturation pH (@ 4C)	N/A	7.05		7427596
Inorganics				
Total Ammonia-N	mg/L	0.15	0.050	7436397
Conductivity	umho/cm	1500	1.0	7438035
Dissolved Organic Carbon	mg/L	0.85	0.40	7436754
Orthophosphate (P)	mg/L	<0.010	0.010	7437783
pH	pH	7.95		7438036
Dissolved Sulphate (SO4)	mg/L	650	5.0	7437782
Alkalinity (Total as CaCO3)	mg/L	230	1.0	7438032
Dissolved Chloride (Cl-)	mg/L	24	1.0	7437775
Nitrite (N)	mg/L	0.010	0.010	7437964
Nitrate (N)	mg/L	0.25	0.10	7437964
Nitrate + Nitrite (N)	mg/L	0.26	0.10	7437964
Metals				
Dissolved Aluminum (Al)	ug/L	9.7	4.9	7435801
Dissolved Antimony (Sb)	ug/L	1.8	0.50	7435801
Dissolved Arsenic (As)	ug/L	11	1.0	7435801
Dissolved Barium (Ba)	ug/L	13	2.0	7435801
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7435801
Dissolved Boron (B)	ug/L	54	10	7435801
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	7435801

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXS034		
Sampling Date		2021/06/23 18:30		
COC Number		C#831949-02-01		
	UNITS	MW20-22B	RDL	QC Batch
Dissolved Calcium (Ca)	ug/L	260000	200	7435801
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7435801
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	7435801
Dissolved Copper (Cu)	ug/L	1.0	0.90	7435801
Dissolved Iron (Fe)	ug/L	<100	100	7435801
Dissolved Lead (Pb)	ug/L	<0.50	0.50	7435801
Dissolved Magnesium (Mg)	ug/L	57000	50	7435801
Dissolved Manganese (Mn)	ug/L	34	2.0	7435801
Dissolved Molybdenum (Mo)	ug/L	24	0.50	7435801
Dissolved Nickel (Ni)	ug/L	5.9	1.0	7435801
Dissolved Phosphorus (P)	ug/L	<100	100	7435801
Dissolved Potassium (K)	ug/L	2000	200	7435801
Dissolved Selenium (Se)	ug/L	<2.0	2.0	7435801
Dissolved Silicon (Si)	ug/L	4700	50	7435801
Dissolved Silver (Ag)	ug/L	<0.090	0.090	7435801
Dissolved Sodium (Na)	ug/L	32000	100	7435801
Dissolved Strontium (Sr)	ug/L	4700	1.0	7435801
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	7435801
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	7435801
Dissolved Uranium (U)	ug/L	1.4	0.10	7435801
Dissolved Vanadium (V)	ug/L	1.2	0.50	7435801
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	7435801

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		PXS027	PXS028			PXS028		
Sampling Date		2021/06/23 15:45	2021/06/23			2021/06/23		
COC Number		C#831949-02-01	C#831949-02-01			C#831949-02-01		
	UNITS	MW20-19B	DUP2	RDL	QC Batch	DUP2 Lab-Dup	RDL	QC Batch
BTEX & F1 Hydrocarbons								
Benzene	ug/L	<0.20	<0.20	0.20	7435755			
Toluene	ug/L	<0.20	<0.20	0.20	7435755			
Ethylbenzene	ug/L	<0.20	<0.20	0.20	7435755			
o-Xylene	ug/L	<0.20	<0.20	0.20	7435755			
p+m-Xylene	ug/L	<0.40	<0.40	0.40	7435755			
Total Xylenes	ug/L	<0.40	<0.40	0.40	7435755			
F1 (C6-C10)	ug/L	<25	<25	25	7435755			
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	7435755			
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	7436245	<100	100	7436245
F3 (C16-C34 Hydrocarbons)	ug/L	1100	<200	200	7436245	<200	200	7436245
F4 (C34-C50 Hydrocarbons)	ug/L	810	<200	200	7436245	<200	200	7436245
Reached Baseline at C50	ug/L	Yes	Yes		7436245	Yes		7436245
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	100	100		7435755			
4-Bromofluorobenzene	%	96	96		7435755			
D10-o-Xylene	%	98	97		7435755			
D4-1,2-Dichloroethane	%	107	107		7435755			
o-Terphenyl	%	93	97		7436245	97		7436245

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		PXS030			PXS030			PXS032		
Sampling Date		2021/06/23 16:40			2021/06/23 16:40			2021/06/23 09:30		
COC Number		C#831949-02-01			C#831949-02-01			C#831949-02-01		
	UNITS	MW20-20B	RDL	QC Batch	MW20-20B Lab-Dup	RDL	QC Batch	MW20-09	RDL	QC Batch
BTEX & F1 Hydrocarbons										
Benzene	ug/L	<0.20	0.20	7435755	<0.20	0.20	7435755	<0.20	0.20	7435755
Toluene	ug/L	<0.20	0.20	7435755	<0.20	0.20	7435755	<0.20	0.20	7435755
Ethylbenzene	ug/L	<0.20	0.20	7435755	<0.20	0.20	7435755	<0.20	0.20	7435755
o-Xylene	ug/L	<0.20	0.20	7435755	<0.20	0.20	7435755	<0.20	0.20	7435755
p+m-Xylene	ug/L	<0.40	0.40	7435755	<0.40	0.40	7435755	<0.40	0.40	7435755
Total Xylenes	ug/L	<0.40	0.40	7435755	<0.40	0.40	7435755	<0.40	0.40	7435755
F1 (C6-C10)	ug/L	<25	25	7435755	<25	25	7435755	<25	25	7435755
F1 (C6-C10) - BTEX	ug/L	<25	25	7435755	<25	25	7435755	<25	25	7435755
F2-F4 Hydrocarbons										
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	7436245				<100	100	7436245
F3 (C16-C34 Hydrocarbons)	ug/L	330	200	7436245				<200	200	7436245
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	7436245				<200	200	7436245
Reached Baseline at C50	ug/L	Yes		7436245				Yes		7436245
Surrogate Recovery (%)										
1,4-Difluorobenzene	%	99		7435755	101		7435755	99		7435755
4-Bromofluorobenzene	%	99		7435755	92		7435755	99		7435755
D10-o-Xylene	%	98		7435755	99		7435755	97		7435755
D4-1,2-Dichloroethane	%	106		7435755	108		7435755	103		7435755
o-Terphenyl	%	98		7436245				96		7436245

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		PXS034		
Sampling Date		2021/06/23 18:30		
COC Number		C#831949-02-01		
	UNITS	MW20-22B	RDL	QC Batch
BTEX & F1 Hydrocarbons				
Benzene	ug/L	<0.20	0.20	7435755
Toluene	ug/L	0.27	0.20	7435755
Ethylbenzene	ug/L	<0.20	0.20	7435755
o-Xylene	ug/L	<0.20	0.20	7435755
p+m-Xylene	ug/L	<0.40	0.40	7435755
Total Xylenes	ug/L	<0.40	0.40	7435755
F1 (C6-C10)	ug/L	<25	25	7435755
F1 (C6-C10) - BTEX	ug/L	<25	25	7435755
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	7437559
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	7437559
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	7437559
Reached Baseline at C50	ug/L	Yes		7437559
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	100		7435755
4-Bromofluorobenzene	%	91		7435755
D10-o-Xylene	%	98		7435755
D4-1,2-Dichloroethane	%	104		7435755
o-Terphenyl	%	99		7437559

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXS026
Sample ID: MW20-19A
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438032	N/A	2021/06/30	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7427591	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437775	N/A	2021/06/30	Alina Dobreanu
Conductivity	AT	7438035	N/A	2021/06/30	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7436754	N/A	2021/06/29	Nimarta Singh
Hardness (calculated as CaCO3)		7429889	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7435801	N/A	2021/06/30	Arefa Dabhad
Ion Balance (% Difference)	CALC	7427592	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7427593	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437964	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438036	2021/06/30	2021/06/30	Surinder Rai
Orthophosphate	KONE	7437783	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7427594	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7427596	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437782	N/A	2021/06/30	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7426927	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXS026 Dup
Sample ID: MW20-19A
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438032	N/A	2021/06/30	Surinder Rai
Chloride by Automated Colourimetry	KONE	7437775	N/A	2021/06/30	Alina Dobreanu
Conductivity	AT	7438035	N/A	2021/06/30	Surinder Rai
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437964	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438036	2021/06/30	2021/06/30	Surinder Rai
Orthophosphate	KONE	7437783	N/A	2021/06/30	Avneet Kour Sudan
Sulphate by Automated Colourimetry	KONE	7437782	N/A	2021/06/30	Alina Dobreanu

BV Labs ID: PXS027
Sample ID: MW20-19B
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438032	N/A	2021/06/30	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7427591	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437775	N/A	2021/06/30	Alina Dobreanu
Conductivity	AT	7438035	N/A	2021/06/30	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7436754	N/A	2021/06/29	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7435755	N/A	2021/06/29	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7436245	2021/06/29	2021/06/30	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7429889	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7435801	N/A	2021/06/30	Arefa Dabhad

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXS027
Sample ID: MW20-19B
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Ion Balance (% Difference)	CALC	7427592	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7427593	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437964	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438036	2021/06/30	2021/06/30	Surinder Rai
Orthophosphate	KONE	7437783	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7427594	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7427596	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437782	N/A	2021/06/30	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7426927	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXS028
Sample ID: DUP2
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438032	N/A	2021/06/30	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7427591	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437775	N/A	2021/06/30	Alina Dobreanu
Conductivity	AT	7438035	N/A	2021/06/30	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7436754	N/A	2021/06/29	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7435755	N/A	2021/06/29	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7436245	2021/06/29	2021/06/30	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7429889	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7435801	N/A	2021/06/30	Arefa Dabhad
Ion Balance (% Difference)	CALC	7427592	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7427593	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437964	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438036	2021/06/30	2021/06/30	Surinder Rai
Orthophosphate	KONE	7437783	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7427594	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7427596	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437782	N/A	2021/06/30	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7426927	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXS028 Dup
Sample ID: DUP2
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7436245	2021/06/29	2021/06/30	Ravinder Gaidhu

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXS029
Sample ID: MW20-20A
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438032	N/A	2021/06/30	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7427591	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437775	N/A	2021/06/30	Alina Dobreanu
Conductivity	AT	7438035	N/A	2021/06/30	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7436754	N/A	2021/06/29	Nimarta Singh
Hardness (calculated as CaCO3)		7429889	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7435801	N/A	2021/07/02	Arefa Dabhad
Ion Balance (% Difference)	CALC	7427592	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7427593	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437964	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438036	2021/06/30	2021/06/30	Surinder Rai
Orthophosphate	KONE	7437783	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7427594	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7427596	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437782	N/A	2021/06/30	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7426927	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXS030
Sample ID: MW20-20B
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438032	N/A	2021/06/30	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7427591	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437775	N/A	2021/06/30	Alina Dobreanu
Conductivity	AT	7438035	N/A	2021/06/30	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7436754	N/A	2021/06/29	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7435755	N/A	2021/06/29	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7436245	2021/06/29	2021/06/30	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7429889	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7435801	N/A	2021/06/30	Arefa Dabhad
Ion Balance (% Difference)	CALC	7427592	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7427593	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437964	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438036	2021/06/30	2021/06/30	Surinder Rai
Orthophosphate	KONE	7437783	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7427594	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7427596	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437782	N/A	2021/06/30	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7426927	N/A	2021/07/02	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXS030 Dup
Sample ID: MW20-20B
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7435755	N/A	2021/06/29	Anca Ganea

BV Labs ID: PXS031
Sample ID: MW20-20C
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438032	N/A	2021/06/30	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7434506	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437775	N/A	2021/06/30	Alina Dobreanu
Conductivity	AT	7438035	N/A	2021/06/30	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7436754	N/A	2021/06/29	Nimarta Singh
Hardness (calculated as CaCO3)		7429889	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/07/02	Prempal Bhatti
Ion Balance (% Difference)	CALC	7427592	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7427593	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437964	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438036	2021/06/30	2021/06/30	Surinder Rai
Orthophosphate	KONE	7437783	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7427594	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7427596	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437782	N/A	2021/06/30	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7426927	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXS032
Sample ID: MW20-09
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438032	N/A	2021/06/30	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7434506	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7436686	N/A	2021/06/30	Alina Dobreanu
Conductivity	AT	7438035	N/A	2021/06/30	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7436754	N/A	2021/06/29	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7435755	N/A	2021/06/29	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7436245	2021/06/29	2021/06/30	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7429889	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7435801	N/A	2021/06/30	Arefa Dabhad
Ion Balance (% Difference)	CALC	7427592	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7427593	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437964	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438036	2021/06/29	2021/06/30	Surinder Rai
Orthophosphate	KONE	7436693	N/A	2021/06/30	Avneet Kour Sudan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXS032
Sample ID: MW20-09
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sat. pH and Langelier Index (@ 20C)	CALC	7427594	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7427596	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7436692	N/A	2021/06/30	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7426927	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXS033
Sample ID: MW20-22A
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438032	N/A	2021/06/30	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7434506	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437775	N/A	2021/06/30	Alina Dobreanu
Conductivity	AT	7438035	N/A	2021/06/30	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7436754	N/A	2021/06/29	Nimarta Singh
Hardness (calculated as CaCO3)		7429889	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7435801	N/A	2021/07/02	Arefa Dabhad
Ion Balance (% Difference)	CALC	7427592	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7427593	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437964	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438036	2021/06/30	2021/06/30	Surinder Rai
Orthophosphate	KONE	7437783	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7427594	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7427596	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437782	N/A	2021/06/30	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7426927	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXS034
Sample ID: MW20-22B
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438032	N/A	2021/06/30	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7434506	N/A	2021/06/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437775	N/A	2021/06/30	Alina Dobreanu
Conductivity	AT	7438035	N/A	2021/06/30	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7436754	N/A	2021/06/29	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7435755	N/A	2021/06/29	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7437559	2021/06/30	2021/06/30	(Kent) Maolin Li
Hardness (calculated as CaCO3)		7429889	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7435801	N/A	2021/06/30	Arefa Dabhad
Ion Balance (% Difference)	CALC	7427592	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7427593	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H4635
Report Date: 2021/07/02

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: CS

TEST SUMMARY

BV Labs ID: PXS034
Sample ID: MW20-22B
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437964	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438036	2021/06/30	2021/06/30	Surinder Rai
Orthophosphate	KONE	7437783	N/A	2021/06/30	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7427594	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7427596	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437782	N/A	2021/06/30	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7426927	N/A	2021/07/02	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.0°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H4635
Report Date: 2021/07/02

QUALITY ASSURANCE REPORT

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: CS

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7435755	1,4-Difluorobenzene	2021/06/30	98	70 - 130	99	70 - 130	100	%		
7435755	4-Bromofluorobenzene	2021/06/30	102	70 - 130	100	70 - 130	95	%		
7435755	D10-o-Xylene	2021/06/30	83	70 - 130	97	70 - 130	96	%		
7435755	D4-1,2-Dichloroethane	2021/06/30	101	70 - 130	99	70 - 130	101	%		
7436245	o-Terphenyl	2021/06/29	98	60 - 130	98	60 - 130	98	%		
7437559	o-Terphenyl	2021/06/30	97	60 - 130	99	60 - 130	96	%		
7435755	Benzene	2021/06/29	92	50 - 140	106	50 - 140	<0.20	ug/L	NC	30
7435755	Ethylbenzene	2021/06/29	100	50 - 140	115	50 - 140	<0.20	ug/L	NC	30
7435755	F1 (C6-C10) - BTEX	2021/06/29					<25	ug/L	NC	30
7435755	F1 (C6-C10)	2021/06/29	82	60 - 140	95	60 - 140	<25	ug/L	NC	30
7435755	o-Xylene	2021/06/29	98	50 - 140	112	50 - 140	<0.20	ug/L	NC	30
7435755	p+m-Xylene	2021/06/29	97	50 - 140	110	50 - 140	<0.40	ug/L	NC	30
7435755	Toluene	2021/06/29	88	50 - 140	101	50 - 140	<0.20	ug/L	NC	30
7435755	Total Xylenes	2021/06/29					<0.40	ug/L	NC	30
7435801	Dissolved Aluminum (Al)	2021/06/30	104	80 - 120	99	80 - 120	<4.9	ug/L	1.8	20
7435801	Dissolved Antimony (Sb)	2021/06/30	104	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
7435801	Dissolved Arsenic (As)	2021/06/30	100	80 - 120	98	80 - 120	<1.0	ug/L	13	20
7435801	Dissolved Barium (Ba)	2021/06/30	104	80 - 120	99	80 - 120	<2.0	ug/L	3.9	20
7435801	Dissolved Beryllium (Be)	2021/06/30	103	80 - 120	97	80 - 120	<0.40	ug/L	NC	20
7435801	Dissolved Boron (B)	2021/06/30	95	80 - 120	93	80 - 120	<10	ug/L	2.6	20
7435801	Dissolved Cadmium (Cd)	2021/06/30	99	80 - 120	97	80 - 120	<0.090	ug/L	NC	20
7435801	Dissolved Calcium (Ca)	2021/06/30	NC	80 - 120	100	80 - 120	<200	ug/L	1.0	20
7435801	Dissolved Chromium (Cr)	2021/06/30	95	80 - 120	96	80 - 120	<5.0	ug/L	NC	20
7435801	Dissolved Cobalt (Co)	2021/06/30	97	80 - 120	100	80 - 120	<0.50	ug/L	NC	20
7435801	Dissolved Copper (Cu)	2021/06/30	99	80 - 120	95	80 - 120	<0.90	ug/L	4.4	20
7435801	Dissolved Iron (Fe)	2021/06/30	94	80 - 120	95	80 - 120	<100	ug/L	2.5	20
7435801	Dissolved Lead (Pb)	2021/06/30	95	80 - 120	94	80 - 120	<0.50	ug/L	NC	20
7435801	Dissolved Magnesium (Mg)	2021/06/30	97	80 - 120	97	80 - 120	<50	ug/L	1.3	20
7435801	Dissolved Manganese (Mn)	2021/06/30	97	80 - 120	96	80 - 120	<2.0	ug/L	0.82	20
7435801	Dissolved Molybdenum (Mo)	2021/06/30	101	80 - 120	94	80 - 120	<0.50	ug/L	0.23	20
7435801	Dissolved Nickel (Ni)	2021/06/30	93	80 - 120	95	80 - 120	<1.0	ug/L	0.95	20

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7435801	Dissolved Phosphorus (P)	2021/06/30	97	80 - 120	95	80 - 120	<100	ug/L	NC	20
7435801	Dissolved Potassium (K)	2021/06/30	104	80 - 120	98	80 - 120	<200	ug/L	1.3	20
7435801	Dissolved Selenium (Se)	2021/06/30	99	80 - 120	101	80 - 120	<2.0	ug/L	NC	20
7435801	Dissolved Silicon (Si)	2021/06/30	102	80 - 120	97	80 - 120	<50	ug/L	2.6	20
7435801	Dissolved Silver (Ag)	2021/06/30	94	80 - 120	94	80 - 120	<0.090	ug/L	NC	20
7435801	Dissolved Sodium (Na)	2021/06/30	NC	80 - 120	95	80 - 120	<100	ug/L	0.65	20
7435801	Dissolved Strontium (Sr)	2021/06/30	NC	80 - 120	94	80 - 120	<1.0	ug/L	0.72	20
7435801	Dissolved Thallium (Tl)	2021/06/30	98	80 - 120	98	80 - 120	<0.050	ug/L	NC	20
7435801	Dissolved Titanium (Ti)	2021/06/30	100	80 - 120	95	80 - 120	<5.0	ug/L	NC	20
7435801	Dissolved Uranium (U)	2021/06/30	98	80 - 120	95	80 - 120	<0.10	ug/L	4.0	20
7435801	Dissolved Vanadium (V)	2021/06/30	98	80 - 120	95	80 - 120	<0.50	ug/L	15	20
7435801	Dissolved Zinc (Zn)	2021/06/30	93	80 - 120	94	80 - 120	<5.0	ug/L	NC	20
7436245	F2 (C10-C16 Hydrocarbons)	2021/06/30	90	60 - 130	99	60 - 130	<100	ug/L	NC	30
7436245	F3 (C16-C34 Hydrocarbons)	2021/06/30	88	60 - 130	103	60 - 130	<200	ug/L	NC	30
7436245	F4 (C34-C50 Hydrocarbons)	2021/06/30	93	60 - 130	106	60 - 130	<200	ug/L	NC	30
7436397	Total Ammonia-N	2021/06/30	100	75 - 125	104	80 - 120	<0.050	mg/L	20	20
7436686	Dissolved Chloride (Cl-)	2021/06/30	116	80 - 120	104	80 - 120	<1.0	mg/L	18	20
7436692	Dissolved Sulphate (SO4)	2021/06/30	174 (1)	75 - 125	105	80 - 120	<1.0	mg/L	NC	20
7436693	Orthophosphate (P)	2021/06/30	97	75 - 125	99	80 - 120	<0.010	mg/L	NC	25
7436754	Dissolved Organic Carbon	2021/06/29	93	80 - 120	98	80 - 120	<0.40	mg/L	1.0	20
7437559	F2 (C10-C16 Hydrocarbons)	2021/06/30	104	60 - 130	111	60 - 130	<100	ug/L	NC	30
7437559	F3 (C16-C34 Hydrocarbons)	2021/06/30	114	60 - 130	115	60 - 130	<200	ug/L	NC	30
7437559	F4 (C34-C50 Hydrocarbons)	2021/06/30	112	60 - 130	118	60 - 130	<200	ug/L	NC	30
7437678	Dissolved Aluminum (Al)	2021/06/30	101	80 - 120	99	80 - 120	<4.9	ug/L	NC	20
7437678	Dissolved Antimony (Sb)	2021/06/30	105	80 - 120	100	80 - 120	<0.50	ug/L	NC	20
7437678	Dissolved Arsenic (As)	2021/06/30	103	80 - 120	100	80 - 120	<1.0	ug/L	0.65	20
7437678	Dissolved Barium (Ba)	2021/06/30	102	80 - 120	100	80 - 120	<2.0	ug/L	3.8	20
7437678	Dissolved Beryllium (Be)	2021/06/30	103	80 - 120	96	80 - 120	<0.40	ug/L	NC	20
7437678	Dissolved Boron (B)	2021/06/30	97	80 - 120	88	80 - 120	<10	ug/L	4.1	20
7437678	Dissolved Cadmium (Cd)	2021/06/30	102	80 - 120	99	80 - 120	<0.090	ug/L	NC	20
7437678	Dissolved Calcium (Ca)	2021/06/30	NC	80 - 120	98	80 - 120	<200	ug/L	1.6	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7437678	Dissolved Chromium (Cr)	2021/06/30	100	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
7437678	Dissolved Cobalt (Co)	2021/06/30	105	80 - 120	103	80 - 120	<0.50	ug/L	NC	20
7437678	Dissolved Copper (Cu)	2021/06/30	101	80 - 120	105	80 - 120	<0.90	ug/L	NC	20
7437678	Dissolved Iron (Fe)	2021/06/30	102	80 - 120	99	80 - 120	<100	ug/L	0.31	20
7437678	Dissolved Lead (Pb)	2021/06/30	100	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
7437678	Dissolved Magnesium (Mg)	2021/06/30	NC	80 - 120	102	80 - 120	<50	ug/L	1.2	20
7437678	Dissolved Manganese (Mn)	2021/06/30	100	80 - 120	98	80 - 120	<2.0	ug/L	1.4	20
7437678	Dissolved Molybdenum (Mo)	2021/06/30	105	80 - 120	98	80 - 120	<0.50	ug/L	1.5	20
7437678	Dissolved Nickel (Ni)	2021/06/30	100	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
7437678	Dissolved Phosphorus (P)	2021/06/30	102	80 - 120	103	80 - 120	<100	ug/L	NC	20
7437678	Dissolved Potassium (K)	2021/06/30	104	80 - 120	103	80 - 120	<200	ug/L	0.33	20
7437678	Dissolved Selenium (Se)	2021/06/30	106	80 - 120	102	80 - 120	<2.0	ug/L	NC	20
7437678	Dissolved Silicon (Si)	2021/06/30	98	80 - 120	97	80 - 120	<50	ug/L	1.0	20
7437678	Dissolved Silver (Ag)	2021/06/30	101	80 - 120	98	80 - 120	<0.090	ug/L	NC	20
7437678	Dissolved Sodium (Na)	2021/06/30	102	80 - 120	101	80 - 120	<100	ug/L	1.5	20
7437678	Dissolved Strontium (Sr)	2021/06/30	NC	80 - 120	97	80 - 120	<1.0	ug/L	2.9	20
7437678	Dissolved Thallium (Tl)	2021/06/30	106	80 - 120	102	80 - 120	<0.050	ug/L	NC	20
7437678	Dissolved Titanium (Ti)	2021/06/30	100	80 - 120	96	80 - 120	<5.0	ug/L	NC	20
7437678	Dissolved Uranium (U)	2021/06/30	105	80 - 120	99	80 - 120	<0.10	ug/L	0.64	20
7437678	Dissolved Vanadium (V)	2021/06/30	100	80 - 120	97	80 - 120	<0.50	ug/L	NC	20
7437678	Dissolved Zinc (Zn)	2021/06/30	99	80 - 120	99	80 - 120	<5.0	ug/L	NC	20
7437775	Dissolved Chloride (Cl-)	2021/06/30	100	80 - 120	106	80 - 120	<1.0	mg/L	NC	20
7437782	Dissolved Sulphate (SO4)	2021/06/30	NC	75 - 125	104	80 - 120	<1.0	mg/L	0.82	20
7437783	Orthophosphate (P)	2021/06/30	97	75 - 125	102	80 - 120	<0.010	mg/L	NC	25
7437964	Nitrate (N)	2021/06/30	99	80 - 120	99	80 - 120	<0.10	mg/L	NC	20
7437964	Nitrite (N)	2021/06/30	106	80 - 120	105	80 - 120	<0.010	mg/L	NC	20
7438032	Alkalinity (Total as CaCO3)	2021/06/30			94	85 - 115	<1.0	mg/L	0.58	20
7438035	Conductivity	2021/06/30			102	85 - 115	<1.0	umho/cm	1.2	25

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7438036	pH	2021/06/30			102	98 - 103			0.38	N/A

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

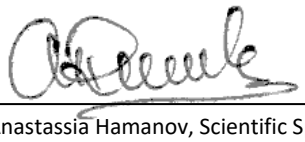
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel (905) 817-5700 Toll-free 800-563-6266 Fax (905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

Page 1 of 2

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#21375 Golder Associates Ltd	Company Name:		Quotation #:	B80683	BV Labs Job #:	Bottle Order #: 831949
Attention:	Accounts Payable	Attention:	Gregory Padusenko	P.O. #:			
Address:	210 Sheldon Drive Cambridge ON N1T 1A8	Address:		Project:	19129150 (2300)	COC #: C#831949-02-01	Project Manager: Ema Gitej
Tel:	(519) 620-8182 Fax:	Tel:	(519) 620-8182 Ext: 6509 Fax: (519) 620-9878	Project Name:			
Email:	CanadaAccountsPayableInvoices@golder.com	Email:	Gregory_Padusenko@golder.com	Site #:			
				Sampled By:			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ☐ PWQO ☐ Reg 406 Table ☐ Other

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): (Metals) Hg / Cr VI	RCAp - Comprehensive	O.Reg 153 PHCs, BTEX/F1-F4	# of Bottles	Comments
1	MW20-19A		06/23/21	15:30	GW	X	X		4	
2	MW20-19B			15:45		X	X	X	8	
3	MW20-28A			12-		X	X		4	
4	MW20-28B			12:30		X	X	X	8	
5	DUP2			—		X	X	X	8	
6	MW20-20A		16/06/21			X	X		4	
7	MW20-20B		16/06/21			X	X	X	8	
8	MW20-20C		17/06/21			X	X		4	
9	MW20-09			9:30		X	X	X	8	
10	DUP3			—		X	X	X	8	

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

24-Jun-21 08:00
Ema Gitej
C1H4635
SYK ENV-796

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Diana Steckle / C Steckle	21/06/23			21/06/24	08:00	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	1 / 1 / 1 °C	Present	✓	
		Intact	✓	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Page 2 of 2

Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel (905) 817-5700 Toll-free 800-563-6266 Fax (905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#21375 Golder Associates Ltd	Company Name:		Quotation #:	B80683	BV Labs Job #:	Bottle Order #: 831949
Attention:	Accounts Payable	Attention:	Gregory Padusenko	P.O. #:			
Address:	210 Sheldon Drive Cambridge ON N1T 1A8	Address:		Project:	19129150 (2300)	COC #: C#831949-05-01	Project Manager: Ema Gitej
Tel:	(519) 620-8182 Fax:	Tel:	(519) 620-8182 Ext: 6509 Fax: (519) 620-9878	Project Name:			
Email:	CanadaAccountsPayableInvoices@golder.com	Email:	Gregory_Padusenko@golder.com	Site #:			
				Sampled By:			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
- ☐ Table 1 ☐ Res/Park ☐ Medium/Fine
- ☐ Table 2 ☐ Ind/Comm ☐ Coarse
- ☐ Table 3 ☐ Agri/Other ☐ For RSC
- ☐ Table ___

Other Regulations
- ☐ CCME ☐ Sanitary Sewer Bylaw
- ☐ Reg 558 ☐ Storm Sewer Bylaw
- ☐ MISA Municipality ___
- ☐ PWQO ☐ Reg 406 Table ___
- ☐ Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

ANALYSIS REQUESTED (PLEASE BE SPECIFIC):

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): (Metals / Hg / Cr VI)	RCAp - Comprehensive	O.Reg 153: PHCs, BTEX/F1-F4	# of Bottles	Comments
1	MW20-22A		06/23/21	16:30	GW	X	X		4	
2	MW20-22B		06/23/21	18:30	GW	X	X	X	8	
3										
4										
5										
6										
7										
8										
9										
10										

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only: Time Sensitive	Temperature (°C) on Recei	Custody Seal Present	Yes	No
Marie-Christine Stecklé / C Stecklé	21/06/23		See page 1						Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

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** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

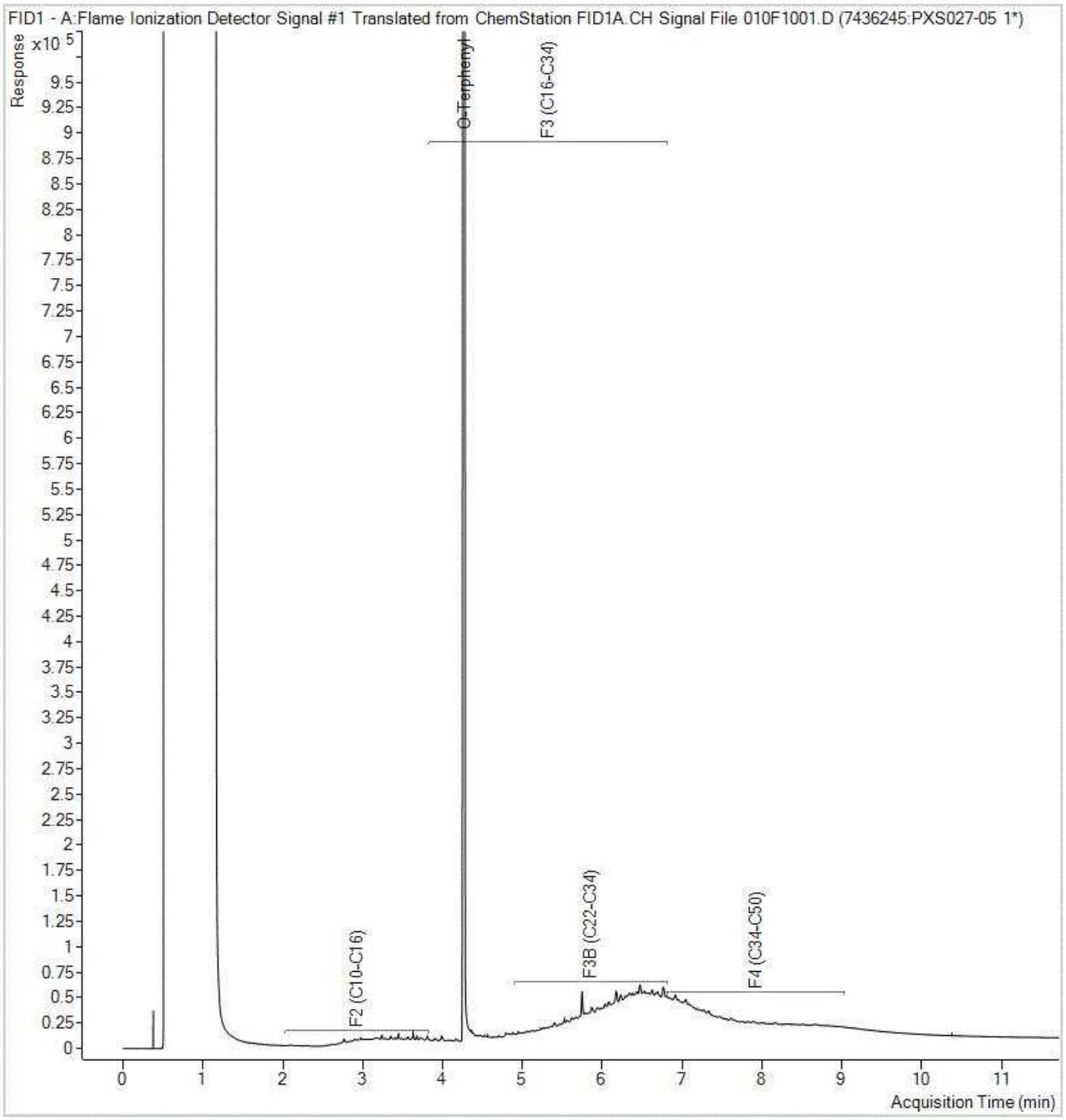
White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

BV Labs Job #: C1H4635
Report Date: 2021/07/02
BV Labs Sample: PXS027

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-19B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

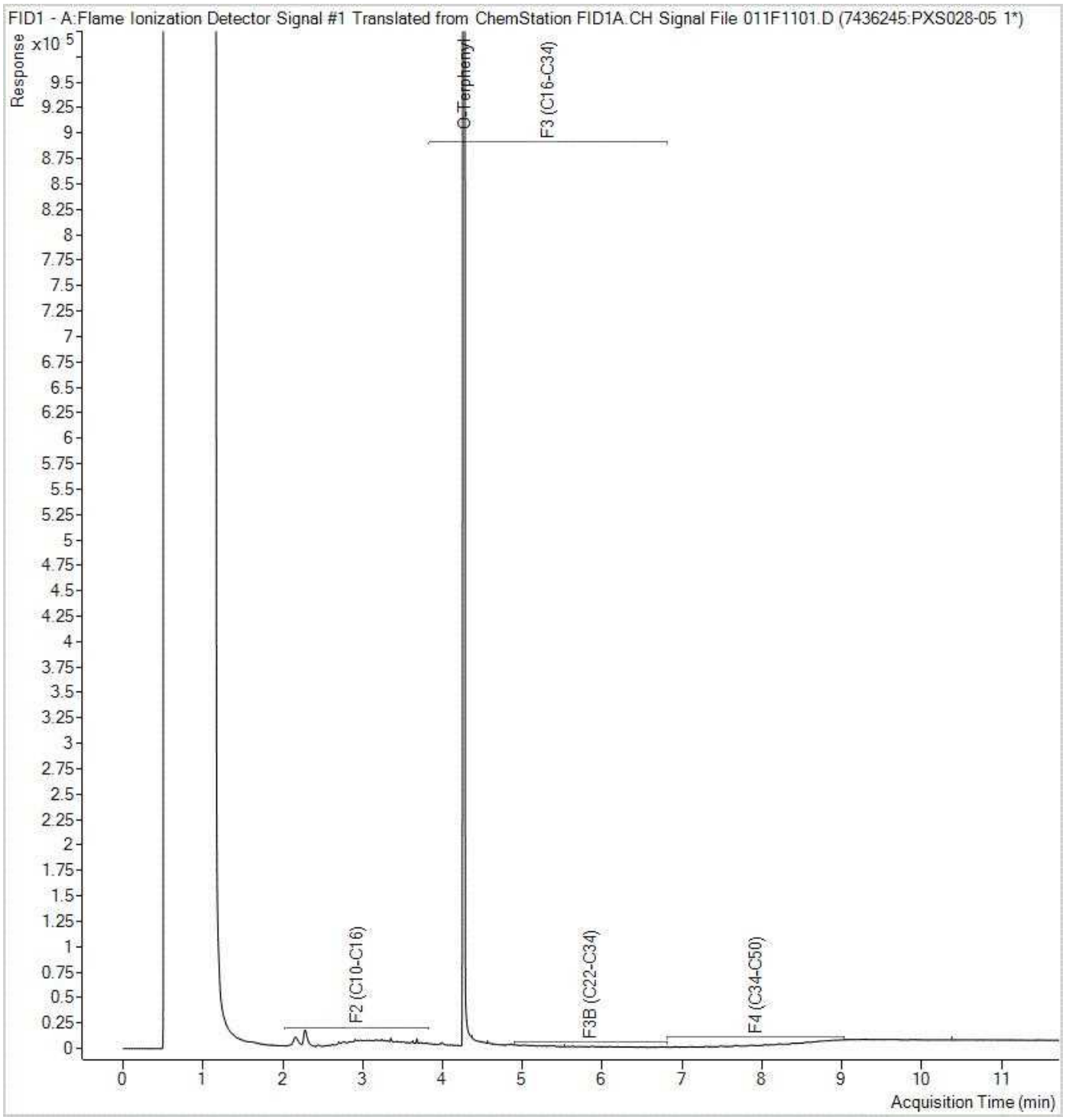


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H4635
Report Date: 2021/07/02
BV Labs Sample: PXS028

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: DUP2

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

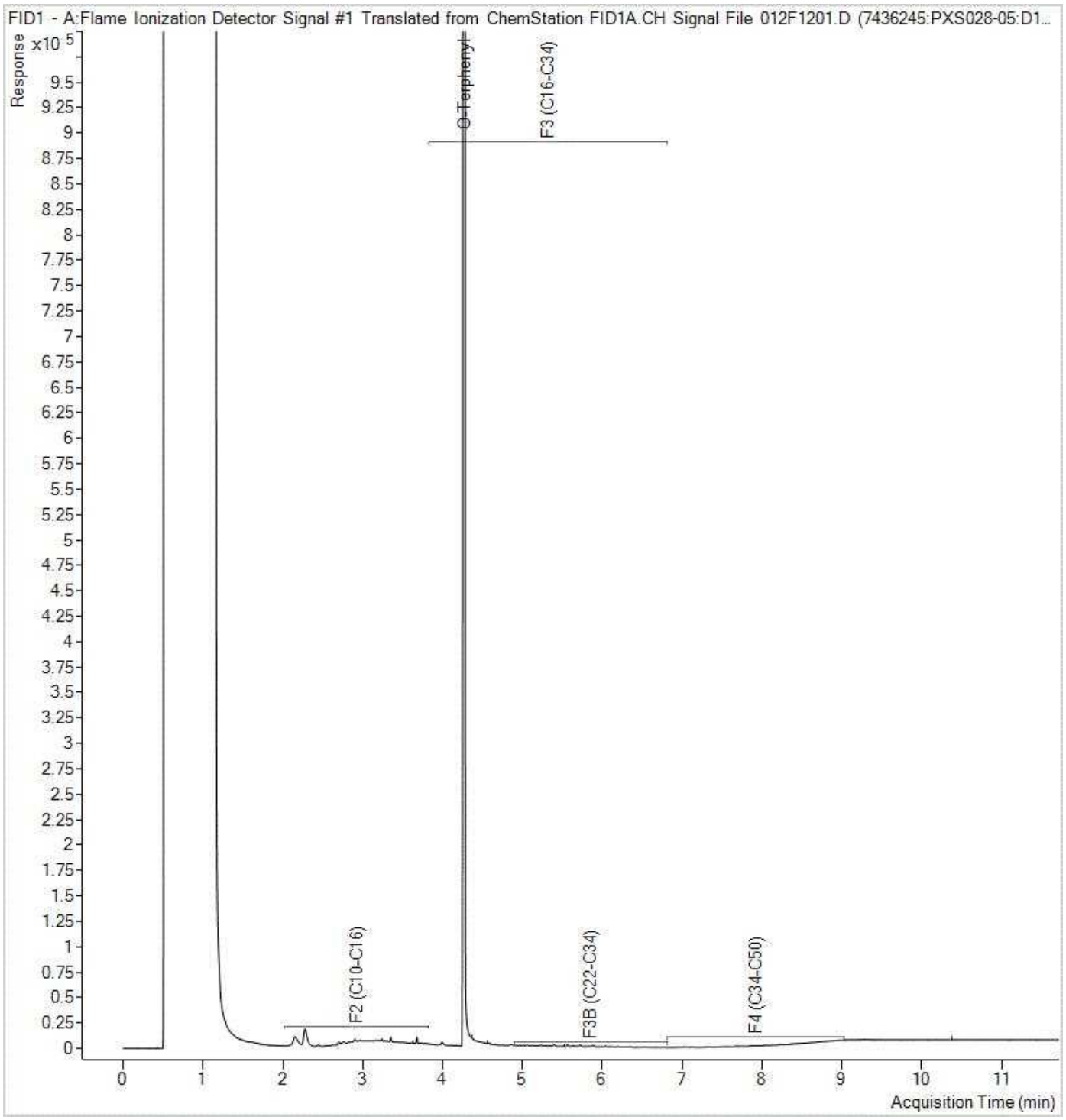


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H4635
Report Date: 2021/07/02
BV Labs Sample: PXS028 Lab-Dup

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: DUP2

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

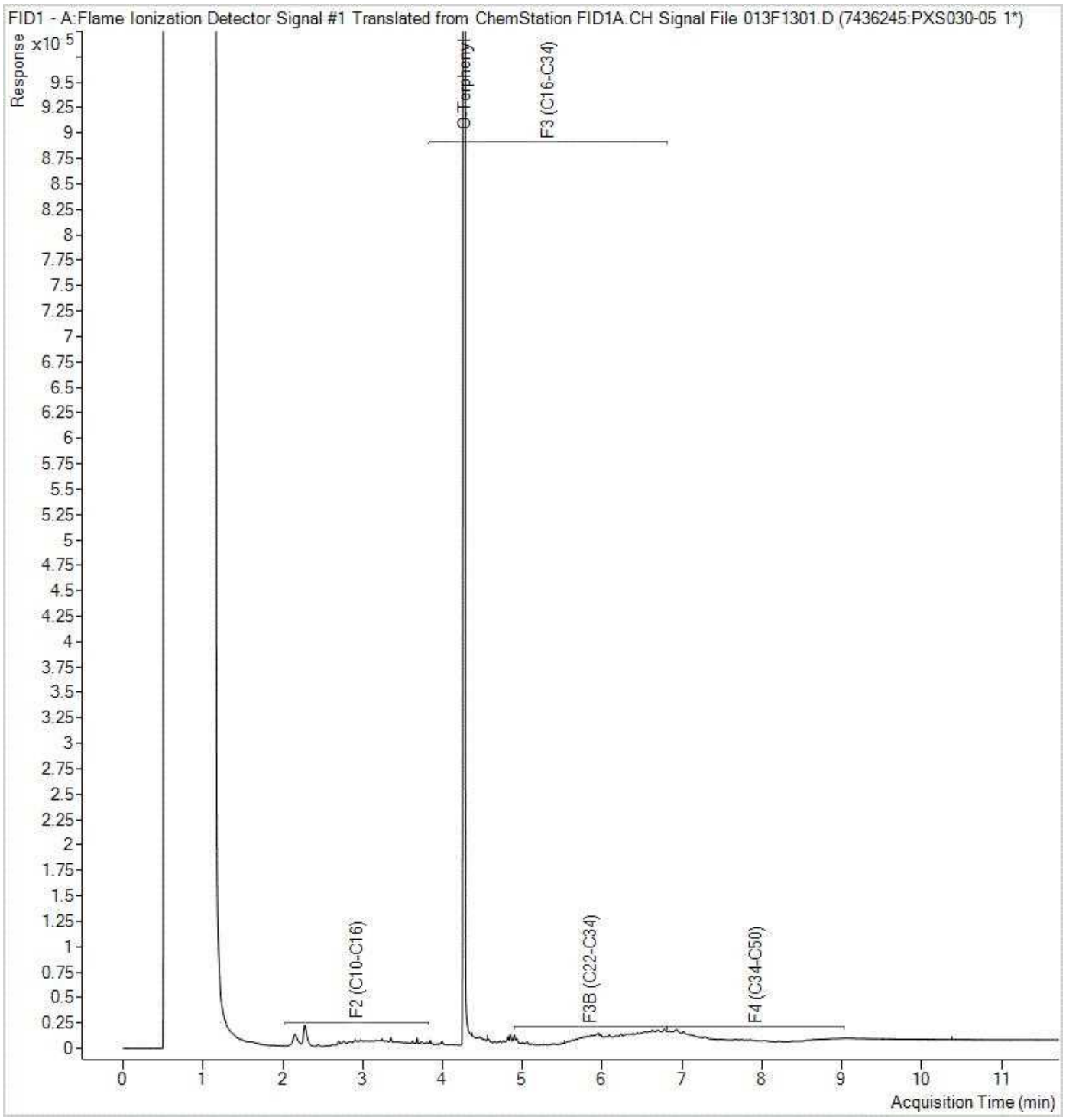


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H4635
Report Date: 2021/07/02
BV Labs Sample: PXS030

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-20B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

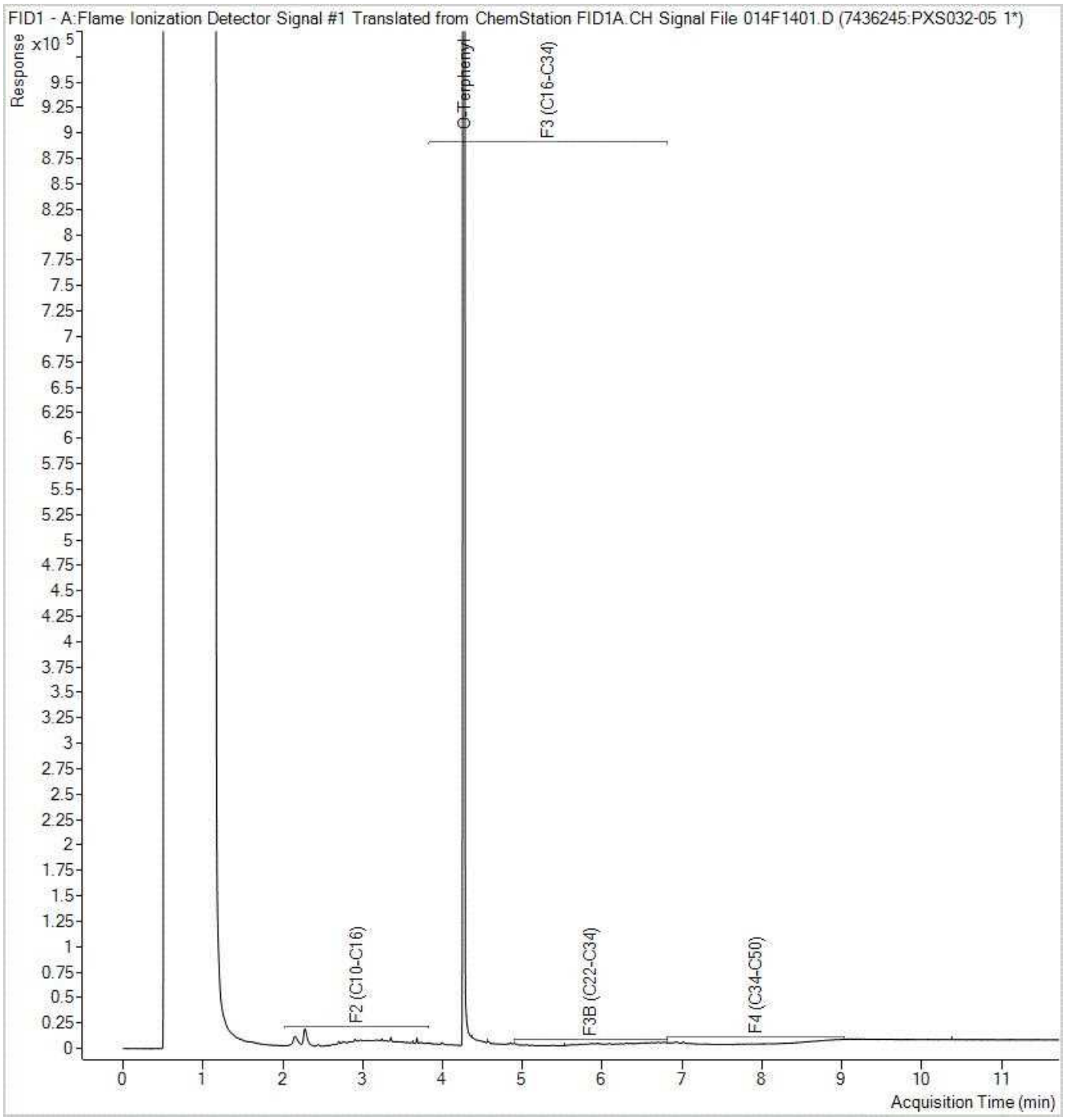


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H4635
Report Date: 2021/07/02
BV Labs Sample: PXS032

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-09

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

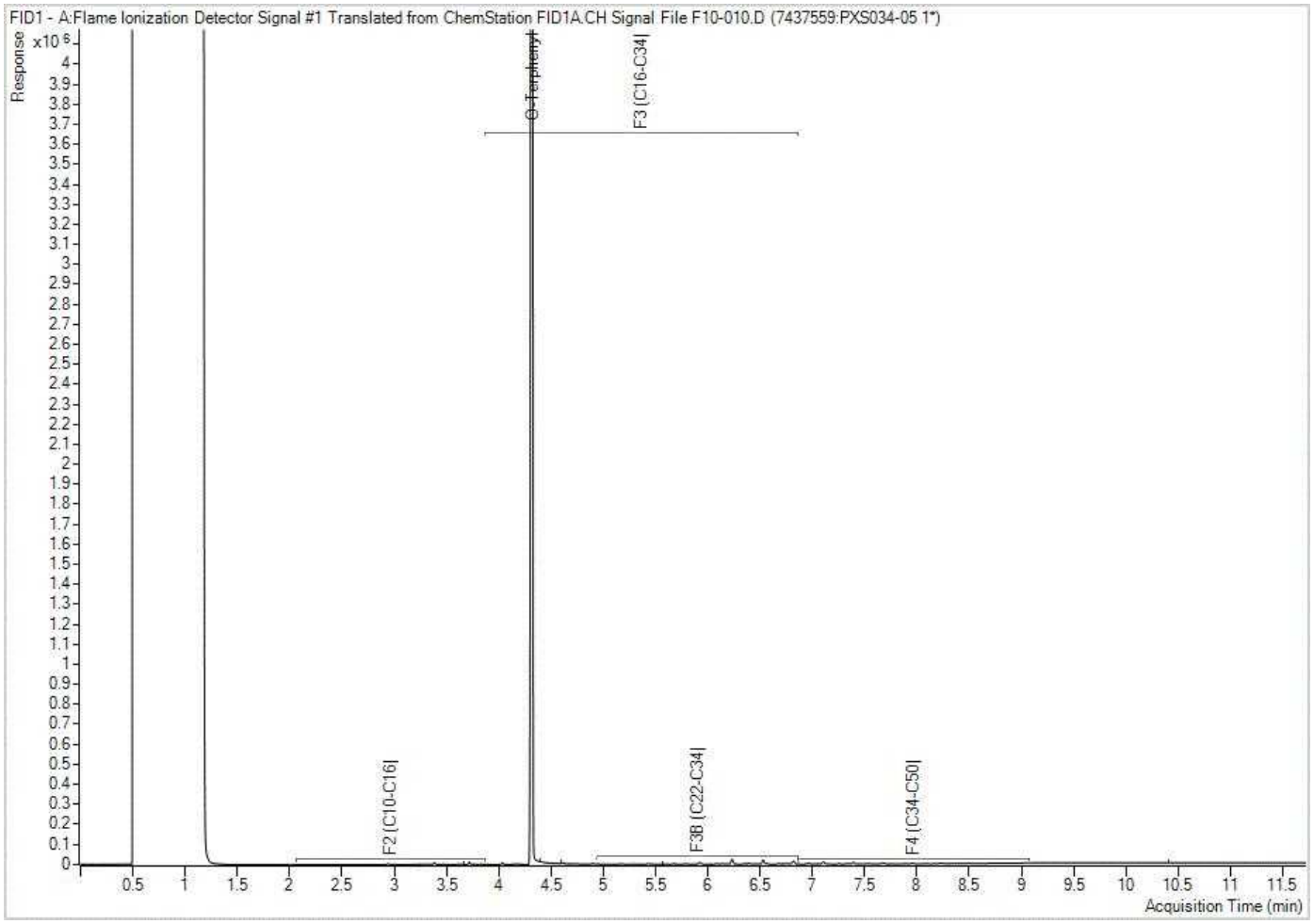


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H4635
Report Date: 2021/07/02
BV Labs Sample: PXS034

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-22B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: 19129150 (2300)
Your C.O.C. #: 831949-06-01, 831949-07-01

Attention: Gregory Padusenko

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/07/12
Report #: R6715096
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1H5980
Received: 2021/06/25, 12:50

Sample Matrix: Water
Samples Received: 19

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	19	N/A	2021/07/01	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	19	N/A	2021/07/02	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	19	N/A	2021/07/02	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity	19	N/A	2021/07/02	CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (1)	10	N/A	2021/06/30	CAM SOP-00446	SM 23 5310 B m
Dissolved Organic Carbon (DOC) (1)	9	N/A	2021/07/01	CAM SOP-00446	SM 23 5310 B m
Petroleum Hydro. CCME F1 & BTEX in Water	10	N/A	2021/06/30	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (2)	10	2021/06/29	2021/06/30	CAM SOP-00316	CCME PHC-CWS m
Hardness (calculated as CaCO3)	19	N/A	2021/07/02	CAM SOP 00102/00408/00447	SM 2340 B
Lab Filtered Metals by ICPMS	1	2021/07/09	2021/07/12	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	18	N/A	2021/06/30	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	19	N/A	2021/07/02		
Anion and Cation Sum	19	N/A	2021/07/02		
Total Ammonia-N	7	N/A	2021/06/30	CAM SOP-00441	USGS I-2522-90 m
Total Ammonia-N	12	N/A	2021/07/02	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (3)	17	N/A	2021/06/30	CAM SOP-00440	SM 23 4500-NO3I/NO2B
Nitrate (NO3) and Nitrite (NO2) in Water (3)	2	N/A	2021/07/02	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	19	2021/06/30	2021/07/01	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	19	N/A	2021/07/05	CAM SOP-00461	EPA 365.1 m
Sat. pH and Langelier Index (@ 20C)	19	N/A	2021/07/02		Auto Calc
Sat. pH and Langelier Index (@ 4C)	19	N/A	2021/07/02		Auto Calc
Sulphate by Automated Colourimetry	19	N/A	2021/07/02	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (TDS calc)	19	N/A	2021/07/02		Auto Calc

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are

Your Project #: 19129150 (2300)
Your C.O.C. #: 831949-06-01, 831949-07-01

Attention: Gregory Padusenko

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/07/12
Report #: R6715096
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1H5980
Received: 2021/06/25, 12:50

reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(3) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: emese.gitej@bureauveritas.com
Phone# (905)817-5829

==========

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXY679		PXY680			PXY680		
Sampling Date		2021/06/24 15:45		2021/06/24 16:30			2021/06/24 16:30		
COC Number		831949-06-01		831949-06-01			831949-06-01		
	UNITS	MW20-13A	QC Batch	MW20-13B	RDL	QC Batch	MW20-13B Lab-Dup	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	4.60	7433941	4.56	N/A	7433941			
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	190	7433456	190	1.0	7433456			
Calculated TDS	mg/L	240	7433944	240	1.0	7433944			
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.7	7433456	3.6	1.0	7433456			
Cation Sum	me/L	4.45	7433941	4.54	N/A	7433941			
Hardness (CaCO3)	mg/L	200	7433195	200	1.0	7433195			
Ion Balance (% Difference)	%	1.66	7433940	0.250	N/A	7433940			
Langelier Index (@ 20C)	N/A	0.693	7433942	0.806		7433942			
Langelier Index (@ 4C)	N/A	0.444	7433943	0.556		7433943			
Saturation pH (@ 20C)	N/A	7.49	7433942	7.50		7433942			
Saturation pH (@ 4C)	N/A	7.74	7433943	7.75		7433943			
Inorganics									
Total Ammonia-N	mg/L	0.21	7436363	<0.050	0.050	7436363			
Conductivity	umho/cm	410	7438013	410	1.0	7438013			
Dissolved Organic Carbon	mg/L	<0.40	7438054	<0.40	0.40	7437920			
Orthophosphate (P)	mg/L	<0.010	7437991	<0.010	0.010	7437991			
pH	pH	8.18	7438016	8.30		7438016			
Dissolved Sulphate (SO4)	mg/L	37	7437990	31	1.0	7437990			
Alkalinity (Total as CaCO3)	mg/L	190	7438011	190	1.0	7438011			
Dissolved Chloride (Cl-)	mg/L	1.4	7437986	1.1	1.0	7437986			
Nitrite (N)	mg/L	<0.010	7437970	<0.010	0.010	7437970	<0.010	0.010	7437970
Nitrate (N)	mg/L	<0.10	7437970	<0.10	0.10	7437970	<0.10	0.10	7437970
Nitrate + Nitrite (N)	mg/L	<0.10	7437970	<0.10	0.10	7437970	<0.10	0.10	7437970
Metals									
Dissolved Aluminum (Al)	ug/L	12	7437678	5.9	4.9	7437678			
Dissolved Antimony (Sb)	ug/L	<0.50	7437678	<0.50	0.50	7437678			
Dissolved Arsenic (As)	ug/L	2.7	7437678	2.6	1.0	7437678			
Dissolved Barium (Ba)	ug/L	43	7437678	57	2.0	7437678			
Dissolved Beryllium (Be)	ug/L	<0.40	7437678	<0.40	0.40	7437678			
Dissolved Boron (B)	ug/L	67	7437678	56	10	7437678			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXY679		PXY680			PXY680		
Sampling Date		2021/06/24 15:45		2021/06/24 16:30			2021/06/24 16:30		
COC Number		831949-06-01		831949-06-01			831949-06-01		
	UNITS	MW20-13A	QC Batch	MW20-13B	RDL	QC Batch	MW20-13B Lab-Dup	RDL	QC Batch
Dissolved Cadmium (Cd)	ug/L	<0.090	7437678	<0.090	0.090	7437678			
Dissolved Calcium (Ca)	ug/L	43000	7437678	41000	200	7437678			
Dissolved Chromium (Cr)	ug/L	<5.0	7437678	<5.0	5.0	7437678			
Dissolved Cobalt (Co)	ug/L	<0.50	7437678	<0.50	0.50	7437678			
Dissolved Copper (Cu)	ug/L	2.1	7437678	<0.90	0.90	7437678			
Dissolved Iron (Fe)	ug/L	<100	7437678	110	100	7437678			
Dissolved Lead (Pb)	ug/L	<0.50	7437678	<0.50	0.50	7437678			
Dissolved Magnesium (Mg)	ug/L	22000	7437678	25000	50	7437678			
Dissolved Manganese (Mn)	ug/L	31	7437678	21	2.0	7437678			
Dissolved Molybdenum (Mo)	ug/L	2.8	7437678	2.5	0.50	7437678			
Dissolved Nickel (Ni)	ug/L	<1.0	7437678	<1.0	1.0	7437678			
Dissolved Phosphorus (P)	ug/L	<100	7437678	<100	100	7437678			
Dissolved Potassium (K)	ug/L	2100	7437678	1700	200	7437678			
Dissolved Selenium (Se)	ug/L	<2.0	7437678	<2.0	2.0	7437678			
Dissolved Silicon (Si)	ug/L	6200	7437678	6400	50	7437678			
Dissolved Silver (Ag)	ug/L	<0.090	7437678	<0.090	0.090	7437678			
Dissolved Sodium (Na)	ug/L	10000	7437678	9700	100	7437678			
Dissolved Strontium (Sr)	ug/L	1700	7437678	960	1.0	7437678			
Dissolved Thallium (Tl)	ug/L	<0.050	7437678	<0.050	0.050	7437678			
Dissolved Titanium (Ti)	ug/L	<5.0	7437678	<5.0	5.0	7437678			
Dissolved Uranium (U)	ug/L	0.29	7437678	0.28	0.10	7437678			
Dissolved Vanadium (V)	ug/L	<0.50	7437678	<0.50	0.50	7437678			
Dissolved Zinc (Zn)	ug/L	<5.0	7437678	<5.0	5.0	7437678			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H5980
Report Date: 2021/07/12

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: VP

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXY681			PXY682		PXY683		
Sampling Date		2021/06/24 16:00			2021/06/24		2021/06/24 10:00		
COC Number		831949-06-01			831949-06-01		831949-06-01		
	UNITS	MW20-13C	RDL	QC Batch	DUP-4	QC Batch	MW20-10A	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	6.69	N/A	7433941	6.65	7433941	8.43	N/A	7433941
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	280	1.0	7433456	260	7433456	290	1.0	7433456
Calculated TDS	mg/L	340	1.0	7433944	350	7433944	460	1.0	7433944
Carb. Alkalinity (calc. as CaCO3)	mg/L	5.0	1.0	7433456	2.9	7433456	3.0	1.0	7433456
Cation Sum	me/L	6.72	N/A	7433941	6.74	7433941	8.45	N/A	7433941
Hardness (CaCO3)	mg/L	320	1.0	7433195	290	7433195	370	1.0	7433195
Ion Balance (% Difference)	%	0.160	N/A	7433940	0.660	7433940	0.0900	N/A	7433940
Langelier Index (@ 20C)	N/A	1.12		7433942	0.954	7433942	1.05		7433942
Langelier Index (@ 4C)	N/A	0.874		7433943	0.705	7433943	0.797		7433943
Saturation pH (@ 20C)	N/A	7.15		7433942	7.13	7433942	7.01		7433942
Saturation pH (@ 4C)	N/A	7.40		7433943	7.38	7433943	7.25		7433943
Inorganics									
Total Ammonia-N	mg/L	0.11	0.050	7436397	<0.050	7436397	0.081	0.050	7436397
Conductivity	umho/cm	580	1.0	7438013	590	7438013	720	1.0	7438013
Dissolved Organic Carbon	mg/L	1.3	0.40	7437920	0.63	7438054	0.80	0.40	7437920
Orthophosphate (P)	mg/L	<0.010	0.010	7437991	<0.010	7437991	<0.010	0.010	7437991
pH	pH	8.27		7438016	8.08	7438016	8.05		7438016
Dissolved Sulphate (SO4)	mg/L	33	1.0	7437990	13	7437990	22	1.0	7437990
Alkalinity (Total as CaCO3)	mg/L	290	1.0	7438011	260	7438011	290	1.0	7438011
Dissolved Chloride (Cl-)	mg/L	3.0	1.0	7437986	36	7437986	43	1.0	7437986
Nitrite (N)	mg/L	0.133	0.010	7437970	<0.010	7437970	0.013	0.010	7437970
Nitrate (N)	mg/L	1.76	0.10	7437970	2.42	7437970	13.0	0.10	7437970
Nitrate + Nitrite (N)	mg/L	1.89	0.10	7437970	2.42	7437970	13.0	0.10	7437970
Metals									
Dissolved Aluminum (Al)	ug/L				<4.9	7437678	150	4.9	7437678
Dissolved Antimony (Sb)	ug/L				<0.50	7437678	<0.50	0.50	7437678
Dissolved Arsenic (As)	ug/L				<1.0	7437678	1.4	1.0	7437678
Dissolved Barium (Ba)	ug/L				29	7437678	46	2.0	7437678
Dissolved Beryllium (Be)	ug/L				<0.40	7437678	<0.40	0.40	7437678
Dissolved Boron (B)	ug/L				<10	7437678	11	10	7437678
Dissolved Cadmium (Cd)	ug/L				<0.090	7437678	<0.090	0.090	7437678

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXY681			PXY682		PXY683		
Sampling Date		2021/06/24 16:00			2021/06/24		2021/06/24 10:00		
COC Number		831949-06-01			831949-06-01		831949-06-01		
	UNITS	MW20-13C	RDL	QC Batch	DUP-4	QC Batch	MW20-10A	RDL	QC Batch
Dissolved Calcium (Ca)	ug/L				78000	7437678	98000	200	7437678
Dissolved Chromium (Cr)	ug/L				<5.0	7437678	<5.0	5.0	7437678
Dissolved Cobalt (Co)	ug/L				<0.50	7437678	<0.50	0.50	7437678
Dissolved Copper (Cu)	ug/L				<0.90	7437678	1.2	0.90	7437678
Dissolved Iron (Fe)	ug/L				<100	7437678	240	100	7437678
Dissolved Lead (Pb)	ug/L				<0.50	7437678	1.2	0.50	7437678
Dissolved Magnesium (Mg)	ug/L				24000	7437678	30000	50	7437678
Dissolved Manganese (Mn)	ug/L				7.2	7437678	17	2.0	7437678
Dissolved Molybdenum (Mo)	ug/L				<0.50	7437678	0.64	0.50	7437678
Dissolved Nickel (Ni)	ug/L				<1.0	7437678	<1.0	1.0	7437678
Dissolved Phosphorus (P)	ug/L				<100	7437678	<100	100	7437678
Dissolved Potassium (K)	ug/L				1700	7437678	1200	200	7437678
Dissolved Selenium (Se)	ug/L				<2.0	7437678	<2.0	2.0	7437678
Dissolved Silicon (Si)	ug/L				3900	7437678	4800	50	7437678
Dissolved Silver (Ag)	ug/L				<0.090	7437678	<0.090	0.090	7437678
Dissolved Sodium (Na)	ug/L				19000	7437678	25000	100	7437678
Dissolved Strontium (Sr)	ug/L				110	7437678	960	1.0	7437678
Dissolved Thallium (Tl)	ug/L				<0.050	7437678	<0.050	0.050	7437678
Dissolved Titanium (Ti)	ug/L				<5.0	7437678	7.0	5.0	7437678
Dissolved Uranium (U)	ug/L				0.23	7437678	0.98	0.10	7437678
Dissolved Vanadium (V)	ug/L				<0.50	7437678	<0.50	0.50	7437678
Dissolved Zinc (Zn)	ug/L				<5.0	7437678	<5.0	5.0	7437678

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXY684			PXY684			PXY685		
Sampling Date		2021/06/24 10:30			2021/06/24 10:30			2021/06/24 12:45		
COC Number		831949-06-01			831949-06-01			831949-06-01		
	UNITS	MW20-10B	RDL	QC Batch	MW20-10B Lab-Dup	RDL	QC Batch	MW20-11A	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	8.14	N/A	7433941				6.95	N/A	7433941
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	280	1.0	7433456				250	1.0	7433456
Calculated TDS	mg/L	450	1.0	7433944				370	1.0	7433944
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.7	1.0	7433456				4.7	1.0	7433456
Cation Sum	me/L	8.41	N/A	7433941				6.91	N/A	7433941
Hardness (CaCO3)	mg/L	370	1.0	7433195				230	1.0	7433195
Ion Balance (% Difference)	%	1.64	N/A	7433940				0.290	N/A	7433940
Langelier Index (@ 20C)	N/A	0.994		7433942				0.959		7433942
Langelier Index (@ 4C)	N/A	0.746		7433943				0.710		7433943
Saturation pH (@ 20C)	N/A	7.02		7433942				7.34		7433942
Saturation pH (@ 4C)	N/A	7.26		7433943				7.59		7433943
Inorganics										
Total Ammonia-N	mg/L	<0.050	0.050	7436363				0.081	0.050	7436363
Conductivity	umho/cm	670	1.0	7438013	670	1.0	7438013	670	1.0	7438013
Dissolved Organic Carbon	mg/L	0.69	0.40	7437920				0.61	0.40	7438054
Orthophosphate (P)	mg/L	<0.010	0.010	7437991				<0.010	0.010	7437991
pH	pH	8.01		7438016	8.04		7438016	8.30		7438016
Dissolved Sulphate (SO4)	mg/L	18	1.0	7437990				42	1.0	7437990
Alkalinity (Total as CaCO3)	mg/L	280	1.0	7438011	290	1.0	7438011	250	1.0	7438011
Dissolved Chloride (Cl-)	mg/L	44	1.0	7437986				35	1.0	7437986
Nitrite (N)	mg/L	<0.010	0.010	7437970				0.013	0.010	7437970
Nitrate (N)	mg/L	13.1	0.10	7437970				0.18	0.10	7437970
Nitrate + Nitrite (N)	mg/L	13.1	0.10	7437970				0.19	0.10	7437970
Metals										
Dissolved Aluminum (Al)	ug/L	7.8	4.9	7437678				28	4.9	7437678
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	7437678				<0.50	0.50	7437678
Dissolved Arsenic (As)	ug/L	<1.0	1.0	7437678				5.9	1.0	7437678
Dissolved Barium (Ba)	ug/L	25	2.0	7437678				96	2.0	7437678
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7437678				<0.40	0.40	7437678
Dissolved Boron (B)	ug/L	10	10	7437678				46	10	7437678

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXY684			PXY684			PXY685		
Sampling Date		2021/06/24 10:30			2021/06/24 10:30			2021/06/24 12:45		
COC Number		831949-06-01			831949-06-01			831949-06-01		
	UNITS	MW20-10B	RDL	QC Batch	MW20-10B Lab-Dup	RDL	QC Batch	MW20-11A	RDL	QC Batch
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	7437678				<0.090	0.090	7437678
Dissolved Calcium (Ca)	ug/L	99000	200	7437678				49000	200	7437678
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7437678				<5.0	5.0	7437678
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	7437678				0.63	0.50	7437678
Dissolved Copper (Cu)	ug/L	<0.90	0.90	7437678				<0.90	0.90	7437678
Dissolved Iron (Fe)	ug/L	<100	100	7437678				<100	100	7437678
Dissolved Lead (Pb)	ug/L	<0.50	0.50	7437678				<0.50	0.50	7437678
Dissolved Magnesium (Mg)	ug/L	29000	50	7437678				26000	50	7437678
Dissolved Manganese (Mn)	ug/L	<2.0	2.0	7437678				180	2.0	7437678
Dissolved Molybdenum (Mo)	ug/L	<0.50	0.50	7437678				15	0.50	7437678
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	7437678				4.3	1.0	7437678
Dissolved Phosphorus (P)	ug/L	<100	100	7437678				<100	100	7437678
Dissolved Potassium (K)	ug/L	1100	200	7437678				1600	200	7437678
Dissolved Selenium (Se)	ug/L	<2.0	2.0	7437678				<2.0	2.0	7437678
Dissolved Silicon (Si)	ug/L	4700	50	7437678				4300	50	7437678
Dissolved Silver (Ag)	ug/L	<0.090	0.090	7437678				<0.090	0.090	7437678
Dissolved Sodium (Na)	ug/L	24000	100	7437678				51000	100	7437678
Dissolved Strontium (Sr)	ug/L	150	1.0	7437678				1100	1.0	7437678
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	7437678				<0.050	0.050	7437678
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	7437678				<5.0	5.0	7437678
Dissolved Uranium (U)	ug/L	0.14	0.10	7437678				3.9	0.10	7437678
Dissolved Vanadium (V)	ug/L	<0.50	0.50	7437678				0.77	0.50	7437678
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	7437678				<5.0	5.0	7437678

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXY686			PXY687	PXY688	PXY888		
Sampling Date		2021/06/24 13:15			2021/06/24 15:45	2021/06/24 16:15	2021/06/23 12:00		
COC Number		831949-06-01			831949-06-01	831949-06-01	831949-07-01		
	UNITS	MW20-11B	RDL	QC Batch	MW20-12A	MW20-12B	MW20-28A	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	18.3	N/A	7433941	6.36	6.65	4.78	N/A	7433941
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	380	1.0	7433456	260	260	200	1.0	7433456
Calculated TDS	mg/L	1000	1.0	7433944	340	350	250	1.0	7433944
Carb. Alkalinity (calc. as CaCO3)	mg/L	3.6	1.0	7433456	2.9	2.9	3.4	1.0	7433456
Cation Sum	me/L	19.2	N/A	7433941	6.36	6.78	4.66	N/A	7433941
Hardness (CaCO3)	mg/L	430	1.0	7433195	300	300	220	1.0	7433195
Ion Balance (% Difference)	%	2.27	N/A	7433940	0.0300	0.920	1.31	N/A	7433940
Langelier Index (@ 20C)	N/A	1.11		7433942	0.942	0.960	0.853		7433942
Langelier Index (@ 4C)	N/A	0.868		7433943	0.693	0.712	0.604		7433943
Saturation pH (@ 20C)	N/A	6.89		7433942	7.14	7.11	7.39		7433942
Saturation pH (@ 4C)	N/A	7.14		7433943	7.39	7.36	7.64		7433943
Inorganics									
Total Ammonia-N	mg/L	<0.050	0.050	7436397	<0.050	<0.050	<0.050	0.050	7436363
Conductivity	umho/cm	1800	1.0	7438013	550	600	450	1.0	7438013
Dissolved Organic Carbon	mg/L	1.0	0.40	7438054	<0.40	0.68	<0.40	0.40	7437920
Orthophosphate (P)	mg/L	<0.010	0.010	7437991	<0.010	<0.010	<0.010	0.010	7437991
pH	pH	8.01		7438016	8.08	8.07	8.25		7438016
Dissolved Sulphate (SO4)	mg/L	37	1.0	7437990	26	13	29	1.0	7437990
Alkalinity (Total as CaCO3)	mg/L	380	1.0	7438011	260	260	210	1.0	7438011
Dissolved Chloride (Cl-)	mg/L	350	5.0	7437986	7.4	35	1.0	1.0	7437986
Nitrite (N)	mg/L	<0.010	0.010	7437970	<0.010	<0.010	<0.010	0.010	7437970
Nitrate (N)	mg/L	2.73	0.10	7437970	4.91	2.45	<0.10	0.10	7437970
Nitrate + Nitrite (N)	mg/L	2.73	0.10	7437970	4.91	2.45	<0.10	0.10	7437970
Metals									
Dissolved Aluminum (Al)	ug/L	520	4.9	7437678	<4.9	6.1	20	4.9	7437678
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	7437678	<0.50	<0.50	<0.50	0.50	7437678
Dissolved Arsenic (As)	ug/L	<1.0	1.0	7437678	<1.0	<1.0	<1.0	1.0	7437678
Dissolved Barium (Ba)	ug/L	61	2.0	7437678	52	30	12	2.0	7437678
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7437678	<0.40	<0.40	<0.40	0.40	7437678
Dissolved Boron (B)	ug/L	15	10	7437678	12	<10	23	10	7437678
Dissolved Cadmium (Cd)	ug/L	0.25	0.090	7437678	<0.090	<0.090	<0.090	0.090	7437678

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H5980
Report Date: 2021/07/12

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: VP

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXY686			PXY687	PXY688	PXY888		
Sampling Date		2021/06/24 13:15			2021/06/24 15:45	2021/06/24 16:15	2021/06/23 12:00		
COC Number		831949-06-01			831949-06-01	831949-06-01	831949-07-01		
	UNITS	MW20-11B	RDL	QC Batch	MW20-12A	MW20-12B	MW20-28A	RDL	QC Batch
Dissolved Calcium (Ca)	ug/L	120000	200	7437678	74000	80000	49000	200	7437678
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7437678	<5.0	<5.0	<5.0	5.0	7437678
Dissolved Cobalt (Co)	ug/L	1.2	0.50	7437678	<0.50	<0.50	<0.50	0.50	7437678
Dissolved Copper (Cu)	ug/L	5.3	0.90	7437678	<0.90	<0.90	<0.90	0.90	7437678
Dissolved Iron (Fe)	ug/L	590	100	7437678	<100	<100	<100	100	7437678
Dissolved Lead (Pb)	ug/L	5.2	0.50	7437678	<0.50	<0.50	<0.50	0.50	7437678
Dissolved Magnesium (Mg)	ug/L	33000	50	7437678	28000	23000	23000	50	7437678
Dissolved Manganese (Mn)	ug/L	370	2.0	7437678	16	7.4	93	2.0	7437678
Dissolved Molybdenum (Mo)	ug/L	<0.50	0.50	7437678	0.77	<0.50	2.4	0.50	7437678
Dissolved Nickel (Ni)	ug/L	4.2	1.0	7437678	<1.0	<1.0	<1.0	1.0	7437678
Dissolved Phosphorus (P)	ug/L	<100	100	7437678	<100	<100	<100	100	7437678
Dissolved Potassium (K)	ug/L	1300	200	7437678	3400	1600	1300	200	7437678
Dissolved Selenium (Se)	ug/L	<2.0	2.0	7437678	<2.0	<2.0	<2.0	2.0	7437678
Dissolved Silicon (Si)	ug/L	5200	50	7437678	4800	4000	6300	50	7437678
Dissolved Silver (Ag)	ug/L	0.19	0.090	7437678	<0.090	<0.090	<0.090	0.090	7437678
Dissolved Sodium (Na)	ug/L	240000	100	7437678	6200	19000	5700	100	7437678
Dissolved Strontium (Sr)	ug/L	200	1.0	7437678	330	110	460	1.0	7437678
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	7437678	<0.050	<0.050	<0.050	0.050	7437678
Dissolved Titanium (Ti)	ug/L	16	5.0	7437678	<5.0	<5.0	<5.0	5.0	7437678
Dissolved Uranium (U)	ug/L	1.1	0.10	7437678	0.47	0.24	0.38	0.10	7437678
Dissolved Vanadium (V)	ug/L	0.87	0.50	7437678	<0.50	<0.50	<0.50	0.50	7437678
Dissolved Zinc (Zn)	ug/L	29	5.0	7437678	<5.0	<5.0	5.4	5.0	7437678

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H5980
Report Date: 2021/07/12

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: VP

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXY888			PXY889			PXY890		
Sampling Date		2021/06/23 12:00			2021/06/23 12:30			2021/06/24 10:30		
COC Number		831949-07-01			831949-07-01			831949-07-01		
	UNITS	MW20-28A Lab-Dup	RDL	QC Batch	MW20-28B	RDL	QC Batch	MW20-27A	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L				4.78	N/A	7433941	22.8	N/A	7433941
Bicarb. Alkalinity (calc. as CaCO3)	mg/L				200	1.0	7433456	190	1.0	7433456
Calculated TDS	mg/L				250	1.0	7433944	1500	1.0	7433944
Carb. Alkalinity (calc. as CaCO3)	mg/L				3.1	1.0	7433456	1.8	1.0	7433456
Cation Sum	me/L				4.67	N/A	7433941	22.3	N/A	7433941
Hardness (CaCO3)	mg/L				220	1.0	7433195	1100	1.0	7433195
Ion Balance (% Difference)	%				1.20	N/A	7433940	1.09	N/A	7433940
Langelier Index (@ 20C)	N/A				0.824		7433942	1.24		7433942
Langelier Index (@ 4C)	N/A				0.575		7433943	0.991		7433943
Saturation pH (@ 20C)	N/A				7.39		7433942	6.77		7433942
Saturation pH (@ 4C)	N/A				7.64		7433943	7.02		7433943
Inorganics										
Total Ammonia-N	mg/L				0.051	0.050	7436363	0.081	0.050	7436397
Conductivity	umho/cm				430	1.0	7438013	1800	1.0	7438013
Dissolved Organic Carbon	mg/L	<0.40	0.40	7437920	<0.40	0.40	7438054	0.68	0.40	7438054
Orthophosphate (P)	mg/L				<0.010	0.010	7437991	<0.010	0.010	7437991
pH	pH				8.21		7438016	8.01		7438016
Dissolved Sulphate (SO4)	mg/L				29	1.0	7437990	910	5.0	7437990
Alkalinity (Total as CaCO3)	mg/L				210	1.0	7438011	190	1.0	7438011
Dissolved Chloride (Cl-)	mg/L				1.0	1.0	7437986	2.1	1.0	7437986
Nitrite (N)	mg/L				<0.010	0.010	7437970	<0.010	0.010	7437970
Nitrate (N)	mg/L				<0.10	0.10	7437970	<0.10	0.10	7437970
Nitrate + Nitrite (N)	mg/L				<0.10	0.10	7437970	<0.10	0.10	7437970
Metals										
Dissolved Aluminum (Al)	ug/L				5.8	4.9	7437678	<4.9	4.9	7437678
Dissolved Antimony (Sb)	ug/L				<0.50	0.50	7437678	<0.50	0.50	7437678
Dissolved Arsenic (As)	ug/L				<1.0	1.0	7437678	5.4	1.0	7437678
Dissolved Barium (Ba)	ug/L				11	2.0	7437678	18	2.0	7437678
Dissolved Beryllium (Be)	ug/L				<0.40	0.40	7437678	<0.40	0.40	7437678
Dissolved Boron (B)	ug/L				22	10	7437678	42	10	7437678

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H5980
Report Date: 2021/07/12

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: VP

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXY888			PXY889			PXY890		
Sampling Date		2021/06/23 12:00			2021/06/23 12:30			2021/06/24 10:30		
COC Number		831949-07-01			831949-07-01			831949-07-01		
	UNITS	MW20-28A Lab-Dup	RDL	QC Batch	MW20-28B	RDL	QC Batch	MW20-27A	RDL	QC Batch
Dissolved Cadmium (Cd)	ug/L				<0.090	0.090	7437678	<0.090	0.090	7437678
Dissolved Calcium (Ca)	ug/L				50000	200	7437678	360000	400	7437678
Dissolved Chromium (Cr)	ug/L				<5.0	5.0	7437678	<5.0	5.0	7437678
Dissolved Cobalt (Co)	ug/L				<0.50	0.50	7437678	<0.50	0.50	7437678
Dissolved Copper (Cu)	ug/L				1.6	0.90	7437678	<0.90	0.90	7437678
Dissolved Iron (Fe)	ug/L				<100	100	7437678	690	100	7437678
Dissolved Lead (Pb)	ug/L				<0.50	0.50	7437678	<0.50	0.50	7437678
Dissolved Magnesium (Mg)	ug/L				23000	50	7437678	49000	50	7437678
Dissolved Manganese (Mn)	ug/L				98	2.0	7437678	34	2.0	7437678
Dissolved Molybdenum (Mo)	ug/L				1.9	0.50	7437678	3.0	0.50	7437678
Dissolved Nickel (Ni)	ug/L				<1.0	1.0	7437678	<1.0	1.0	7437678
Dissolved Phosphorus (P)	ug/L				<100	100	7437678	<100	100	7437678
Dissolved Potassium (K)	ug/L				1200	200	7437678	1700	200	7437678
Dissolved Selenium (Se)	ug/L				<2.0	2.0	7437678	<2.0	2.0	7437678
Dissolved Silicon (Si)	ug/L				6600	50	7437678	5500	50	7437678
Dissolved Silver (Ag)	ug/L				<0.090	0.090	7437678	<0.090	0.090	7437678
Dissolved Sodium (Na)	ug/L				6000	100	7437678	10000	100	7437678
Dissolved Strontium (Sr)	ug/L				420	1.0	7437678	9800	1.0	7437678
Dissolved Thallium (Tl)	ug/L				<0.050	0.050	7437678	<0.050	0.050	7437678
Dissolved Titanium (Ti)	ug/L				<5.0	5.0	7437678	<5.0	5.0	7437678
Dissolved Uranium (U)	ug/L				0.44	0.10	7437678	0.47	0.10	7437678
Dissolved Vanadium (V)	ug/L				<0.50	0.50	7437678	<0.50	0.50	7437678
Dissolved Zinc (Zn)	ug/L				11	5.0	7437678	<5.0	5.0	7437678

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXY890			PXY891			PXY892		
Sampling Date		2021/06/24 10:30			2021/06/24 14:30			2021/06/24 17:00		
COC Number		831949-07-01			831949-07-01			831949-07-01		
	UNITS	MW20-27A Lab-Dup	RDL	QC Batch	MW20-27B	RDL	QC Batch	MW20-26A	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L				8.56	N/A	7433941	22.9	N/A	7433941
Bicarb. Alkalinity (calc. as CaCO3)	mg/L				210	1.0	7433456	180	1.0	7433456
Calculated TDS	mg/L				490	1.0	7433944	1500	1.0	7433944
Carb. Alkalinity (calc. as CaCO3)	mg/L				2.6	1.0	7433456	1.4	1.0	7433456
Cation Sum	me/L				8.18	N/A	7433941	23.0	N/A	7433941
Hardness (CaCO3)	mg/L				370	1.0	7433195	1100	1.0	7433195
Ion Balance (% Difference)	%				2.27	N/A	7433940	0.160	N/A	7433940
Langelier Index (@ 20C)	N/A				0.956		7433942	1.10		7433942
Langelier Index (@ 4C)	N/A				0.708		7433943	0.850		7433943
Saturation pH (@ 20C)	N/A				7.17		7433942	6.84		7433942
Saturation pH (@ 4C)	N/A				7.42		7433943	7.08		7433943
Inorganics										
Total Ammonia-N	mg/L	0.066	0.050	7436397	0.10	0.050	7436363	0.090	0.050	7436363
Conductivity	umho/cm				750	1.0	7438013	1900	1.0	7438013
Dissolved Organic Carbon	mg/L				0.66	0.40	7437920	1.7	0.40	7438054
Orthophosphate (P)	mg/L	<0.010	0.010	7437991	<0.010	0.010	7437991	<0.010	0.010	7437991
pH	pH				8.13		7438016	7.93		7438016
Dissolved Sulphate (SO4)	mg/L	940	5.0	7437990	200	1.0	7437990	920	5.0	7437990
Alkalinity (Total as CaCO3)	mg/L				210	1.0	7438011	180	1.0	7438011
Dissolved Chloride (Cl-)	mg/L	1.9	1.0	7437986	6.2	1.0	7437986	8.0	1.0	7437986
Nitrite (N)	mg/L				<0.010	0.010	7437970	<0.010	0.010	7437970
Nitrate (N)	mg/L				<0.10	0.10	7437970	<0.10	0.10	7437970
Nitrate + Nitrite (N)	mg/L				<0.10	0.10	7437970	<0.10	0.10	7437970
Metals										
Dissolved Aluminum (Al)	ug/L	<4.9	4.9	7437678	<4.9	4.9	7437678	14	4.9	7437678
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	7437678	<0.50	0.50	7437678	<0.50	0.50	7437678
Dissolved Arsenic (As)	ug/L	5.4	1.0	7437678	1.9	1.0	7437678	8.7	1.0	7437678
Dissolved Barium (Ba)	ug/L	18	2.0	7437678	26	2.0	7437678	12	2.0	7437678
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7437678	<0.40	0.40	7437678	<0.40	0.40	7437678
Dissolved Boron (B)	ug/L	44	10	7437678	24	10	7437678	53	10	7437678

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXY890			PXY891			PXY892		
Sampling Date		2021/06/24 10:30			2021/06/24 14:30			2021/06/24 17:00		
COC Number		831949-07-01			831949-07-01			831949-07-01		
	UNITS	MW20-27A Lab-Dup	RDL	QC Batch	MW20-27B	RDL	QC Batch	MW20-26A	RDL	QC Batch
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	7437678	<0.090	0.090	7437678	<0.090	0.090	7437678
Dissolved Calcium (Ca)	ug/L	360000	1000	7437678	93000	200	7437678	330000	400	7437678
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7437678	<5.0	5.0	7437678	<5.0	5.0	7437678
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	7437678	<0.50	0.50	7437678	<0.50	0.50	7437678
Dissolved Copper (Cu)	ug/L	<0.90	0.90	7437678	<0.90	0.90	7437678	<0.90	0.90	7437678
Dissolved Iron (Fe)	ug/L	690	100	7437678	430	100	7437678	590	100	7437678
Dissolved Lead (Pb)	ug/L	<0.50	0.50	7437678	<0.50	0.50	7437678	<0.50	0.50	7437678
Dissolved Magnesium (Mg)	ug/L	50000	50	7437678	33000	50	7437678	70000	50	7437678
Dissolved Manganese (Mn)	ug/L	34	2.0	7437678	25	2.0	7437678	43	2.0	7437678
Dissolved Molybdenum (Mo)	ug/L	3.0	0.50	7437678	11	0.50	7437678	8.6	0.50	7437678
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	7437678	<1.0	1.0	7437678	<1.0	1.0	7437678
Dissolved Phosphorus (P)	ug/L	<100	100	7437678	<100	100	7437678	<100	100	7437678
Dissolved Potassium (K)	ug/L	1700	200	7437678	820	200	7437678	2300	200	7437678
Dissolved Selenium (Se)	ug/L	<2.0	2.0	7437678	<2.0	2.0	7437678	<2.0	2.0	7437678
Dissolved Silicon (Si)	ug/L	5500	50	7437678	5500	50	7437678	5100	50	7437678
Dissolved Silver (Ag)	ug/L	<0.090	0.090	7437678	<0.090	0.090	7437678	<0.090	0.090	7437678
Dissolved Sodium (Na)	ug/L	10000	100	7437678	18000	100	7437678	18000	100	7437678
Dissolved Strontium (Sr)	ug/L	10000	1.0	7437678	3000	1.0	7437678	5700	1.0	7437678
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	7437678	<0.050	0.050	7437678	<0.050	0.050	7437678
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	7437678	<5.0	5.0	7437678	<5.0	5.0	7437678
Dissolved Uranium (U)	ug/L	0.47	0.10	7437678	1.6	0.10	7437678	0.27	0.10	7437678
Dissolved Vanadium (V)	ug/L	<0.50	0.50	7437678	<0.50	0.50	7437678	<0.50	0.50	7437678
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	7437678	<5.0	5.0	7437678	14	5.0	7437678

RDL = Reportable Detection Limit
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Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXY893			PXY894			PXY895		
Sampling Date		2021/06/24 18:30			2021/06/24 17:15			2021/06/23		
COC Number		831949-07-01			831949-07-01			831949-07-01		
	UNITS	MW20-26B	RDL	QC Batch	MW20-26C	RDL	QC Batch	DUP-3	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	11.2	N/A	7433941	18.7	N/A	7433941	4.74	N/A	7433941
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	200	1.0	7433456	230	1.0	7433456	200	1.0	7433456
Calculated TDS	mg/L	680	1.0	7433944	1000	1.0	7433944	250	1.0	7433944
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.2	1.0	7433456	1.3	1.0	7433456	3.2	1.0	7433456
Cation Sum	me/L	11.6	N/A	7433941	18.7	N/A	7433941	4.67	N/A	7433941
Hardness (CaCO3)	mg/L	540	1.0	7433195	840	1.0	7433195	220	1.0	7433195
Ion Balance (% Difference)	%	1.84	N/A	7433940	0.110	N/A	7433940	0.820	N/A	7433940
Langelier Index (@ 20C)	N/A	1.04		7433942	0.936		7433942	0.833		7433942
Langelier Index (@ 4C)	N/A	0.788		7433943	0.690		7433943	0.583		7433943
Saturation pH (@ 20C)	N/A	7.03		7433942	6.86		7433942	7.39		7433942
Saturation pH (@ 4C)	N/A	7.28		7433943	7.11		7433943	7.64		7433943
Inorganics										
Total Ammonia-N	mg/L	<0.050	0.050	7436363	<0.050	0.050	7436363	0.053	0.050	7436397
Conductivity	umho/cm	1000	1.0	7438013	2000	1.0	7438013	430	1.0	7438013
Dissolved Organic Carbon	mg/L	1.4	0.40	7437920	<0.40	0.40	7438054	<0.40	0.40	7437920
Orthophosphate (P)	mg/L	<0.010	0.010	7437991	<0.010	0.010	7437991	<0.010	0.010	7437991
pH	pH	8.07		7438016	7.80		7438016	8.22		7438016
Dissolved Sulphate (SO4)	mg/L	340	2.0	7437990	24	1.0	7437990	29	1.0	7437990
Alkalinity (Total as CaCO3)	mg/L	200	1.0	7438011	230	1.0	7438011	210	1.0	7438011
Dissolved Chloride (Cl-)	mg/L	5.0	1.0	7437986	490	6.0	7437986	<1.0	1.0	7437986
Nitrite (N)	mg/L	<0.010	0.010	7437970	<0.010	0.010	7437970	<0.010	0.010	7437970
Nitrate (N)	mg/L	<0.10	0.10	7437970	0.12	0.10	7437970	<0.10	0.10	7437970
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	7437970	0.12	0.10	7437970	<0.10	0.10	7437970
Metals										
Dissolved Aluminum (Al)	ug/L	7.6	4.9	7437678	6.9	4.9	7437678	7.8	4.9	7437678
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	7437678	<0.50	0.50	7437678	<0.50	0.50	7437678
Dissolved Arsenic (As)	ug/L	2.9	1.0	7437678	<1.0	1.0	7437678	<1.0	1.0	7437678
Dissolved Barium (Ba)	ug/L	20	2.0	7437678	110	2.0	7437678	10	2.0	7437678
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7437678	<0.40	0.40	7437678	<0.40	0.40	7437678
Dissolved Boron (B)	ug/L	30	10	7437678	<10	10	7437678	21	10	7437678
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	7437678	<0.090	0.090	7437678	<0.090	0.090	7437678

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXY893			PXY894			PXY895		
Sampling Date		2021/06/24 18:30			2021/06/24 17:15			2021/06/23		
COC Number		831949-07-01			831949-07-01			831949-07-01		
	UNITS	MW20-26B	RDL	QC Batch	MW20-26C	RDL	QC Batch	DUP-3	RDL	QC Batch
Dissolved Calcium (Ca)	ug/L	150000	200	7437678	210000	200	7437678	50000	200	7437678
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7437678	<5.0	5.0	7437678	<5.0	5.0	7437678
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	7437678	<0.50	0.50	7437678	<0.50	0.50	7437678
Dissolved Copper (Cu)	ug/L	<0.90	0.90	7437678	1.0	0.90	7437678	<0.90	0.90	7437678
Dissolved Iron (Fe)	ug/L	150	100	7437678	<100	100	7437678	<100	100	7437678
Dissolved Lead (Pb)	ug/L	<0.50	0.50	7437678	<0.50	0.50	7437678	<0.50	0.50	7437678
Dissolved Magnesium (Mg)	ug/L	42000	50	7437678	74000	50	7437678	23000	50	7437678
Dissolved Manganese (Mn)	ug/L	26	2.0	7437678	13	2.0	7437678	100	2.0	7437678
Dissolved Molybdenum (Mo)	ug/L	8.1	0.50	7437678	0.55	0.50	7437678	1.9	0.50	7437678
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	7437678	<1.0	1.0	7437678	<1.0	1.0	7437678
Dissolved Phosphorus (P)	ug/L	<100	100	7437678	<100	100	7437678	<100	100	7437678
Dissolved Potassium (K)	ug/L	1600	200	7437678	1100	200	7437678	1200	200	7437678
Dissolved Selenium (Se)	ug/L	<2.0	2.0	7437678	<2.0	2.0	7437678	<2.0	2.0	7437678
Dissolved Silicon (Si)	ug/L	5600	50	7437678	6900	50	7437678	6700	50	7437678
Dissolved Silver (Ag)	ug/L	<0.090	0.090	7437678	<0.090	0.090	7437678	<0.090	0.090	7437678
Dissolved Sodium (Na)	ug/L	17000	100	7437678	45000	100	7437678	6000	100	7437678
Dissolved Strontium (Sr)	ug/L	2400	1.0	7437678	320	1.0	7437678	420	1.0	7437678
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	7437678	<0.050	0.050	7437678	<0.050	0.050	7437678
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	7437678	<5.0	5.0	7437678	<5.0	5.0	7437678
Dissolved Uranium (U)	ug/L	0.86	0.10	7437678	0.52	0.10	7437678	0.43	0.10	7437678
Dissolved Vanadium (V)	ug/L	<0.50	0.50	7437678	<0.50	0.50	7437678	<0.50	0.50	7437678
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	7437678	<5.0	5.0	7437678	8.1	5.0	7437678

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXY896		
Sampling Date		2021/06/24		
COC Number		831949-07-01		
	UNITS	DUP-5	RDL	QC Batch
Calculated Parameters				
Anion Sum	me/L	11.2	N/A	7433941
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	200	1.0	7433456
Calculated TDS	mg/L	680	1.0	7433944
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.1	1.0	7433456
Cation Sum	me/L	11.4	N/A	7433941
Hardness (CaCO3)	mg/L	530	1.0	7433195
Ion Balance (% Difference)	%	1.24	N/A	7433940
Langelier Index (@ 20C)	N/A	1.02		7433942
Langelier Index (@ 4C)	N/A	0.772		7433943
Saturation pH (@ 20C)	N/A	7.04		7433942
Saturation pH (@ 4C)	N/A	7.28		7433943
Inorganics				
Total Ammonia-N	mg/L	0.071	0.050	7436397
Conductivity	umho/cm	1000	1.0	7438013
Dissolved Organic Carbon	mg/L	1.4	0.40	7438054
Orthophosphate (P)	mg/L	<0.010	0.010	7437991
pH	pH	8.05		7438016
Dissolved Sulphate (SO4)	mg/L	340	2.0	7437990
Alkalinity (Total as CaCO3)	mg/L	200	1.0	7438011
Dissolved Chloride (Cl-)	mg/L	4.2	1.0	7437986
Nitrite (N)	mg/L	<0.010	0.010	7437970
Nitrate (N)	mg/L	<0.10	0.10	7437970
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	7437970
Metals				
Dissolved Aluminum (Al)	ug/L	<4.9	4.9	7437678
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	7437678
Dissolved Arsenic (As)	ug/L	2.9	1.0	7437678
Dissolved Barium (Ba)	ug/L	21	2.0	7437678
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7437678
Dissolved Boron (B)	ug/L	32	10	7437678
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	7437678

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PXY896		
Sampling Date		2021/06/24		
COC Number		831949-07-01		
	UNITS	DUP-5	RDL	QC Batch
Dissolved Calcium (Ca)	ug/L	150000	200	7437678
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7437678
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	7437678
Dissolved Copper (Cu)	ug/L	<0.90	0.90	7437678
Dissolved Iron (Fe)	ug/L	150	100	7437678
Dissolved Lead (Pb)	ug/L	<0.50	0.50	7437678
Dissolved Magnesium (Mg)	ug/L	40000	50	7437678
Dissolved Manganese (Mn)	ug/L	26	2.0	7437678
Dissolved Molybdenum (Mo)	ug/L	8.1	0.50	7437678
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	7437678
Dissolved Phosphorus (P)	ug/L	<100	100	7437678
Dissolved Potassium (K)	ug/L	1500	200	7437678
Dissolved Selenium (Se)	ug/L	<2.0	2.0	7437678
Dissolved Silicon (Si)	ug/L	5500	50	7437678
Dissolved Silver (Ag)	ug/L	<0.090	0.090	7437678
Dissolved Sodium (Na)	ug/L	17000	100	7437678
Dissolved Strontium (Sr)	ug/L	2300	1.0	7437678
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	7437678
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	7437678
Dissolved Uranium (U)	ug/L	0.87	0.10	7437678
Dissolved Vanadium (V)	ug/L	<0.50	0.50	7437678
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	7437678

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		PXY681		
Sampling Date		2021/06/24 16:00		
COC Number		831949-06-01		
	UNITS	MW20-13C	RDL	QC Batch
Metals				
Dissolved Aluminum (Al)	ug/L	7.7	4.9	7455024
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	7455024
Dissolved Arsenic (As)	ug/L	<1.0	1.0	7455024
Dissolved Barium (Ba)	ug/L	37	2.0	7455024
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7455024
Dissolved Boron (B)	ug/L	27	10	7455024
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	7455024
Dissolved Calcium (Ca)	ug/L	66000	200	7455024
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7455024
Dissolved Cobalt (Co)	ug/L	0.89	0.50	7455024
Dissolved Copper (Cu)	ug/L	<0.90	0.90	7455024
Dissolved Iron (Fe)	ug/L	<100	100	7455024
Dissolved Lead (Pb)	ug/L	<0.50	0.50	7455024
Dissolved Magnesium (Mg)	ug/L	38000	50	7455024
Dissolved Manganese (Mn)	ug/L	220	2.0	7455024
Dissolved Molybdenum (Mo)	ug/L	15	0.50	7455024
Dissolved Nickel (Ni)	ug/L	1.6	1.0	7455024
Dissolved Phosphorus (P)	ug/L	<100	100	7455024
Dissolved Potassium (K)	ug/L	1200	200	7455024
Dissolved Selenium (Se)	ug/L	<2.0	2.0	7455024
Dissolved Silicon (Si)	ug/L	3300	50	7455024
Dissolved Silver (Ag)	ug/L	<0.090	0.090	7455024
Dissolved Sodium (Na)	ug/L	6100	100	7455024
Dissolved Strontium (Sr)	ug/L	250	1.0	7455024
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	7455024
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	7455024
Dissolved Uranium (U)	ug/L	1.2	0.10	7455024
Dissolved Vanadium (V)	ug/L	0.55	0.50	7455024
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	7455024

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		PXY680	PXY682	PXY684	PXY686	PXY688	PXY889		
Sampling Date		2021/06/24 16:30	2021/06/24	2021/06/24 10:30	2021/06/24 13:15	2021/06/24 16:15	2021/06/23 12:30		
COC Number		831949-06-01	831949-06-01	831949-06-01	831949-06-01	831949-06-01	831949-07-01		
	UNITS	MW20-13B	DUP-4	MW20-10B	MW20-11B	MW20-12B	MW20-28B	RDL	QC Batch
BTEX & F1 Hydrocarbons									
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	7437379
Toluene	ug/L	0.29	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	7437379
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	7437379
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	7437379
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7437379
Total Xylenes	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7437379
F1 (C6-C10)	ug/L	<25	<25	<25	<25	<25	<25	25	7437379
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	<25	<25	25	7437379
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	<100	<100	<100	100	7436245
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	<200	<200	<200	<200	200	7436245
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	<200	<200	<200	200	7436245
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes	Yes	Yes		7436245
Surrogate Recovery (%)									
1,4-Difluorobenzene	%	101	101	99	101	103	100		7437379
4-Bromofluorobenzene	%	86	93	90	88	86	97		7437379
D10-o-Xylene	%	111	114	112	111	112	110		7437379
D4-1,2-Dichloroethane	%	106	109	110	108	108	110		7437379
o-Terphenyl	%	96	97	96	96	97	95		7436245

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		PXY891	PXY893	PXY895	PXY896		
Sampling Date		2021/06/24 14:30	2021/06/24 18:30	2021/06/23	2021/06/24		
COC Number		831949-07-01	831949-07-01	831949-07-01	831949-07-01		
	UNITS	MW20-27B	MW20-26B	DUP-3	DUP-5	RDL	QC Batch
BTEX & F1 Hydrocarbons							
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7437379
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7437379
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7437379
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7437379
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	7437379
Total Xylenes	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	7437379
F1 (C6-C10)	ug/L	<25	<25	<25	<25	25	7437379
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	25	7437379
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	<100	100	7436245
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	<200	<200	200	7436245
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	<200	200	7436245
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes		7436245
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	100	101	100	101		7437379
4-Bromofluorobenzene	%	86	86	94	90		7437379
D10-o-Xylene	%	106	115	107	111		7437379
D4-1,2-Dichloroethane	%	111	107	106	108		7437379
o-Terphenyl	%	96	95	96	95		7436245

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXY679
Sample ID: MW20-13A
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7438054	N/A	2021/07/01	Nimarta Singh
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436363	N/A	2021/07/02	Viorica Rotaru
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXY680
Sample ID: MW20-13B
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7437920	N/A	2021/06/30	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7437379	N/A	2021/06/30	Haibin Wu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7436245	2021/06/29	2021/06/30	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436363	N/A	2021/07/02	Viorica Rotaru
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

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TEST SUMMARY

BV Labs ID: PXY680 Dup
Sample ID: MW20-13B
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal

BV Labs ID: PXY681
Sample ID: MW20-13C
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7437920	N/A	2021/06/30	Nimarta Singh
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Lab Filtered Metals by ICPMS	ICP/MS	7455024	2021/07/09	2021/07/12	Nan Raykha
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXY682
Sample ID: DUP-4
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7438054	N/A	2021/07/01	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7437379	N/A	2021/06/30	Haibin Wu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7436245	2021/06/29	2021/06/30	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXY682
Sample ID: DUP-4
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXY683
Sample ID: MW20-10A
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7437920	N/A	2021/06/30	Nimarta Singh
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXY684
Sample ID: MW20-10B
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7437920	N/A	2021/06/30	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7437379	N/A	2021/06/30	Haibin Wu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7436245	2021/06/29	2021/06/30	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436363	N/A	2021/07/02	Viorica Rotaru

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXY684
Sample ID: MW20-10B
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXY684 Dup
Sample ID: MW20-10B
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai

BV Labs ID: PXY685
Sample ID: MW20-11A
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7438054	N/A	2021/07/01	Nimarta Singh
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436363	N/A	2021/07/02	Viorica Rotaru
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXY686
Sample ID: MW20-11B
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7438054	N/A	2021/07/01	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7437379	N/A	2021/06/30	Haibin Wu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7436245	2021/06/29	2021/06/30	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXY687
Sample ID: MW20-12A
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7437920	N/A	2021/06/30	Nimarta Singh
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436363	N/A	2021/07/02	Viorica Rotaru
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXY688
Sample ID: MW20-12B
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7437920	N/A	2021/06/30	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7437379	N/A	2021/06/30	Haibin Wu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7436245	2021/06/29	2021/06/30	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436363	N/A	2021/07/02	Viorica Rotaru
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXY888
Sample ID: MW20-28A
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7437920	N/A	2021/06/30	Nimarta Singh
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436363	N/A	2021/07/02	Viorica Rotaru
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXY888 Dup
Sample ID: MW20-28A
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7437920	N/A	2021/06/30	Nimarta Singh

BV Labs ID: PXY889
Sample ID: MW20-28B
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7438054	N/A	2021/07/01	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7437379	N/A	2021/06/30	Haibin Wu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7436245	2021/06/29	2021/06/30	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436363	N/A	2021/07/02	Viorica Rotaru
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/07/02	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXY890
Sample ID: MW20-27A
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7438054	N/A	2021/07/01	Nimarta Singh
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXY890
Sample ID: MW20-27A
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXY890 Dup
Sample ID: MW20-27A
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu

BV Labs ID: PXY891
Sample ID: MW20-27B
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7437920	N/A	2021/06/30	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7437379	N/A	2021/06/30	Haibin Wu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7436245	2021/06/29	2021/06/30	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436363	N/A	2021/07/02	Viorica Rotaru
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXY892
Sample ID: MW20-26A
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7438054	N/A	2021/07/01	Nimarta Singh
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436363	N/A	2021/07/02	Viorica Rotaru
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXY893
Sample ID: MW20-26B
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7437920	N/A	2021/06/30	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7437379	N/A	2021/06/30	Haibin Wu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7436245	2021/06/29	2021/06/30	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436363	N/A	2021/07/02	Viorica Rotaru
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PXY894
Sample ID: MW20-26C
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7438054	N/A	2021/07/01	Nimarta Singh
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436363	N/A	2021/07/02	Viorica Rotaru
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

BV Labs ID: PXY895
Sample ID: DUP-3
Matrix: Water

Collected: 2021/06/23
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7437920	N/A	2021/06/30	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7437379	N/A	2021/06/30	Haibin Wu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7436245	2021/06/29	2021/06/30	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/06/30	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H5980
Report Date: 2021/07/12

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: VP

TEST SUMMARY

BV Labs ID: PXY896
Sample ID: DUP-5
Matrix: Water

Collected: 2021/06/24
Shipped:
Received: 2021/06/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7438011	N/A	2021/07/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7433456	N/A	2021/07/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	7437986	N/A	2021/07/02	Alina Dobreanu
Conductivity	AT	7438013	N/A	2021/07/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7438054	N/A	2021/07/01	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7437379	N/A	2021/06/30	Haibin Wu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7436245	2021/06/29	2021/06/30	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7433195	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7437678	N/A	2021/06/30	Prempal Bhatti
Ion Balance (% Difference)	CALC	7433940	N/A	2021/07/02	Automated Statchk
Anion and Cation Sum	CALC	7433941	N/A	2021/07/02	Automated Statchk
Total Ammonia-N	LACH/NH4	7436397	N/A	2021/06/30	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7437970	N/A	2021/07/02	Chandra Nandlal
pH	AT	7438016	2021/06/30	2021/07/01	Surinder Rai
Orthophosphate	KONE	7437991	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7433942	N/A	2021/07/02	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7433943	N/A	2021/07/02	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7437990	N/A	2021/07/02	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7433944	N/A	2021/07/02	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	11.0°C
Package 2	9.7°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7436245	o-Terphenyl	2021/06/29	98	60 - 130	98	60 - 130	98	%		
7437379	1,4-Difluorobenzene	2021/06/30	94	70 - 130	96	70 - 130	100	%		
7437379	4-Bromofluorobenzene	2021/06/30	112	70 - 130	113	70 - 130	102	%		
7437379	D10-o-Xylene	2021/06/30	101	70 - 130	96	70 - 130	112	%		
7437379	D4-1,2-Dichloroethane	2021/06/30	99	70 - 130	95	70 - 130	104	%		
7436245	F2 (C10-C16 Hydrocarbons)	2021/06/30	90	60 - 130	99	60 - 130	<100	ug/L	NC	30
7436245	F3 (C16-C34 Hydrocarbons)	2021/06/30	88	60 - 130	103	60 - 130	<200	ug/L	NC	30
7436245	F4 (C34-C50 Hydrocarbons)	2021/06/30	93	60 - 130	106	60 - 130	<200	ug/L	NC	30
7436363	Total Ammonia-N	2021/07/02	97	75 - 125	101	80 - 120	<0.050	mg/L	3.4	20
7436397	Total Ammonia-N	2021/06/30	100	75 - 125	104	80 - 120	<0.050	mg/L	20	20
7437379	Benzene	2021/06/30	95	50 - 140	92	50 - 140	<0.20	ug/L	NC	30
7437379	Ethylbenzene	2021/06/30	100	50 - 140	98	50 - 140	<0.20	ug/L	NC	30
7437379	F1 (C6-C10) - BTEX	2021/06/30					<25	ug/L	NC	30
7437379	F1 (C6-C10)	2021/06/30	87	60 - 140	85	60 - 140	<25	ug/L	NC	30
7437379	o-Xylene	2021/06/30	99	50 - 140	97	50 - 140	<0.20	ug/L	NC	30
7437379	p+m-Xylene	2021/06/30	94	50 - 140	93	50 - 140	<0.40	ug/L	NC	30
7437379	Toluene	2021/06/30	90	50 - 140	88	50 - 140	<0.20	ug/L	NC	30
7437379	Total Xylenes	2021/06/30					<0.40	ug/L	NC	30
7437678	Dissolved Aluminum (Al)	2021/06/30	101	80 - 120	99	80 - 120	<4.9	ug/L	NC	20
7437678	Dissolved Antimony (Sb)	2021/06/30	105	80 - 120	100	80 - 120	<0.50	ug/L	NC	20
7437678	Dissolved Arsenic (As)	2021/06/30	103	80 - 120	100	80 - 120	<1.0	ug/L	0.65	20
7437678	Dissolved Barium (Ba)	2021/06/30	102	80 - 120	100	80 - 120	<2.0	ug/L	3.8	20
7437678	Dissolved Beryllium (Be)	2021/06/30	103	80 - 120	96	80 - 120	<0.40	ug/L	NC	20
7437678	Dissolved Boron (B)	2021/06/30	97	80 - 120	88	80 - 120	<10	ug/L	4.1	20
7437678	Dissolved Cadmium (Cd)	2021/06/30	102	80 - 120	99	80 - 120	<0.090	ug/L	NC	20
7437678	Dissolved Calcium (Ca)	2021/06/30	NC	80 - 120	98	80 - 120	<200	ug/L	1.6	20
7437678	Dissolved Chromium (Cr)	2021/06/30	100	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
7437678	Dissolved Cobalt (Co)	2021/06/30	105	80 - 120	103	80 - 120	<0.50	ug/L	NC	20
7437678	Dissolved Copper (Cu)	2021/06/30	101	80 - 120	105	80 - 120	<0.90	ug/L	NC	20
7437678	Dissolved Iron (Fe)	2021/06/30	102	80 - 120	99	80 - 120	<100	ug/L	0.31	20
7437678	Dissolved Lead (Pb)	2021/06/30	100	80 - 120	98	80 - 120	<0.50	ug/L	NC	20

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7437678	Dissolved Magnesium (Mg)	2021/06/30	NC	80 - 120	102	80 - 120	<50	ug/L	1.2	20
7437678	Dissolved Manganese (Mn)	2021/06/30	100	80 - 120	98	80 - 120	<2.0	ug/L	1.4	20
7437678	Dissolved Molybdenum (Mo)	2021/06/30	105	80 - 120	98	80 - 120	<0.50	ug/L	1.5	20
7437678	Dissolved Nickel (Ni)	2021/06/30	100	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
7437678	Dissolved Phosphorus (P)	2021/06/30	102	80 - 120	103	80 - 120	<100	ug/L	NC	20
7437678	Dissolved Potassium (K)	2021/06/30	104	80 - 120	103	80 - 120	<200	ug/L	0.33	20
7437678	Dissolved Selenium (Se)	2021/06/30	106	80 - 120	102	80 - 120	<2.0	ug/L	NC	20
7437678	Dissolved Silicon (Si)	2021/06/30	98	80 - 120	97	80 - 120	<50	ug/L	1.0	20
7437678	Dissolved Silver (Ag)	2021/06/30	101	80 - 120	98	80 - 120	<0.090	ug/L	NC	20
7437678	Dissolved Sodium (Na)	2021/06/30	102	80 - 120	101	80 - 120	<100	ug/L	1.5	20
7437678	Dissolved Strontium (Sr)	2021/06/30	NC	80 - 120	97	80 - 120	<1.0	ug/L	2.9	20
7437678	Dissolved Thallium (Tl)	2021/06/30	106	80 - 120	102	80 - 120	<0.050	ug/L	NC	20
7437678	Dissolved Titanium (Ti)	2021/06/30	100	80 - 120	96	80 - 120	<5.0	ug/L	NC	20
7437678	Dissolved Uranium (U)	2021/06/30	105	80 - 120	99	80 - 120	<0.10	ug/L	0.64	20
7437678	Dissolved Vanadium (V)	2021/06/30	100	80 - 120	97	80 - 120	<0.50	ug/L	NC	20
7437678	Dissolved Zinc (Zn)	2021/06/30	99	80 - 120	99	80 - 120	<5.0	ug/L	NC	20
7437920	Dissolved Organic Carbon	2021/06/30	93	80 - 120	94	80 - 120	<0.40	mg/L	NC	20
7437970	Nitrate (N)	2021/06/30	94	80 - 120	97	80 - 120	<0.10	mg/L	NC	20
7437970	Nitrite (N)	2021/06/30	104	80 - 120	105	80 - 120	<0.010	mg/L	NC	20
7437986	Dissolved Chloride (Cl-)	2021/07/02	113	80 - 120	102	80 - 120	<1.0	mg/L	7.0	20
7437990	Dissolved Sulphate (SO4)	2021/07/02	NC	75 - 125	103	80 - 120	<1.0	mg/L	2.5	20
7437991	Orthophosphate (P)	2021/07/05	119	75 - 125	99	80 - 120	<0.010	mg/L	NC	25
7438011	Alkalinity (Total as CaCO3)	2021/07/01			96	85 - 115	<1.0	mg/L	3.0	20
7438013	Conductivity	2021/07/02			99	85 - 115	<1.0	umho/cm	0	25
7438016	pH	2021/07/01			102	98 - 103			0.36	N/A
7438054	Dissolved Organic Carbon	2021/07/01	93	80 - 120	94	80 - 120	<0.40	mg/L	2.7	20
7455024	Dissolved Aluminum (Al)	2021/07/12	101	80 - 120	97	80 - 120	<4.9	ug/L	NC	20
7455024	Dissolved Antimony (Sb)	2021/07/12	109	80 - 120	100	80 - 120	<0.50	ug/L	NC	20
7455024	Dissolved Arsenic (As)	2021/07/12	106	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
7455024	Dissolved Barium (Ba)	2021/07/12	105	80 - 120	98	80 - 120	<2.0	ug/L	2.0	20
7455024	Dissolved Beryllium (Be)	2021/07/12	112	80 - 120	100	80 - 120	<0.40	ug/L	NC	20

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7455024	Dissolved Boron (B)	2021/07/12	105	80 - 120	93	80 - 120	<10	ug/L	2.8	20
7455024	Dissolved Cadmium (Cd)	2021/07/12	105	80 - 120	98	80 - 120	<0.090	ug/L	NC	20
7455024	Dissolved Calcium (Ca)	2021/07/12	NC	80 - 120	97	80 - 120	<200	ug/L	0.91	20
7455024	Dissolved Chromium (Cr)	2021/07/12	105	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
7455024	Dissolved Cobalt (Co)	2021/07/12	104	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
7455024	Dissolved Copper (Cu)	2021/07/12	105	80 - 120	101	80 - 120	1.2, RDL=0.90 (1)	ug/L	NC	20
7455024	Dissolved Iron (Fe)	2021/07/12	104	80 - 120	96	80 - 120	<100	ug/L	NC	20
7455024	Dissolved Lead (Pb)	2021/07/12	101	80 - 120	97	80 - 120	<0.50	ug/L	NC	20
7455024	Dissolved Magnesium (Mg)	2021/07/12	98	80 - 120	99	80 - 120	<50	ug/L	1.5	20
7455024	Dissolved Manganese (Mn)	2021/07/12	104	80 - 120	97	80 - 120	<2.0	ug/L	NC	20
7455024	Dissolved Molybdenum (Mo)	2021/07/12	112	80 - 120	103	80 - 120	<0.50	ug/L	NC	20
7455024	Dissolved Nickel (Ni)	2021/07/12	101	80 - 120	97	80 - 120	<1.0	ug/L	NC	20
7455024	Dissolved Phosphorus (P)	2021/07/12	110	80 - 120	106	80 - 120	<100	ug/L	NC	20
7455024	Dissolved Potassium (K)	2021/07/12	103	80 - 120	98	80 - 120	<200	ug/L	4.8	20
7455024	Dissolved Selenium (Se)	2021/07/12	104	80 - 120	99	80 - 120	<2.0	ug/L	NC	20
7455024	Dissolved Silicon (Si)	2021/07/12	101	80 - 120	97	80 - 120	<50	ug/L	0.68	20
7455024	Dissolved Silver (Ag)	2021/07/12	106	80 - 120	100	80 - 120	<0.090	ug/L	NC	20
7455024	Dissolved Sodium (Na)	2021/07/12	102	80 - 120	98	80 - 120	<100	ug/L	0.96	20
7455024	Dissolved Strontium (Sr)	2021/07/12	106	80 - 120	96	80 - 120	<1.0	ug/L	2.9	20
7455024	Dissolved Thallium (Tl)	2021/07/12	103	80 - 120	99	80 - 120	<0.050	ug/L	NC	20
7455024	Dissolved Titanium (Ti)	2021/07/12	96	80 - 120	94	80 - 120	<5.0	ug/L	NC	20
7455024	Dissolved Uranium (U)	2021/07/12	98	80 - 120	94	80 - 120	<0.10	ug/L	5.1	20
7455024	Dissolved Vanadium (V)	2021/07/12	105	80 - 120	98	80 - 120	<0.50	ug/L	NC	20

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7455024	Dissolved Zinc (Zn)	2021/07/12	104	80 - 120	97	80 - 120	<5.0	ug/L	14	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

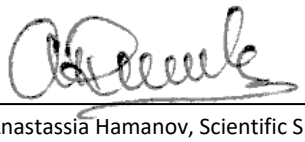
(1) Analyte was detected in the method blank at a level marginally above the detection limit. Sample results have not been blank corrected. Those results at or near the detection limit may be biased high..

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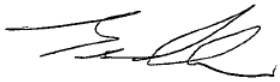
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Ema Gitej

C1H5980

ries
Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.bvlabs.com

2 coolers

CHAIN OF CUSTODY RECORD

Page 1 of 2

KTN ENV-1109

Company Name:	#21375 Golder Associates Ltd
Attention:	Accounts Payable
Address:	210 Sheldon Drive Cambridge ON N1T 1A8
Tel:	(519) 620-8182 Fax:
Email:	CanadaAccountsPayableInvoices@golder.com

REPORT TO:

Company Name:	
Attention:	Gregory Padusenko
Address:	
Tel:	(519) 620-8182 Ext: 6509 Fax: (519) 620-9878
Email:	Gregory_Padusenko@golder.com

PROJECT INFORMATION:

Quotation #:	B80683
P.O. #:	
Project:	19129150 (2300)
Project Name:	
Site #:	
Sampled By:	

Laboratory Use Only:

BV Labs Job #:	Bottle Order #:
	831949
COC #:	**Project Manager:**
C#831949-06-01	Ema Gitej

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
☐ Table 1 ☐ Res/Park ☐ Medium/Fine
☐ Table 2 ☐ Ind/Comm ☐ Coarse
☐ Table 3 ☐ Agri/Other ☐ For RSC
☐ Table ___

Other Regulations
☐ CCME ☐ Sanitary Sewer Bylaw
☐ Reg 558 ☐ Storm Sewer Bylaw
☐ MISA Municipality ___
☐ PWQO ☐ Reg 406 Table ___
☐ Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	RCAp - Comprehensive	O.Reg 153 PHCs, BTEX/F1-F4								# of Bottles	Comments
1		MW20-13A	21/06/24	1545	GW	Y	X								8	4	
2		MW20-13B		1630			X	X								8	
3		MW20-13C		1600			X									4	
4		DUP-4		—	GW		X	X								8	
5		MW20-10A		1000			X									4	
6		MW20-10B		1030			X	X								8	
7		MW20-11A		1245			X									4	
8		MW20-11B		1315			X	X								8	
9		MW20-12A		1545			X									4	
10		MW20-12B		1615			X	X								8	

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
JBOPP	21/06/24	20:40	RM/METHOD/ Rajan	2021-06-25	08:00	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	10/11/12 9/12/8	Present		
		Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

ON ICE

Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.bvlabs.com

2 coolers

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#21375 Golder Associates Ltd	Company Name:		Quotation #:	B80683	BV Labs Job #:	Bottle Order #: 831949
Attention:	Accounts Payable	Attention:	Gregory Padusenko	P.O. #:			
Address:	210 Sheldon Drive Cambridge ON N1T 1A8	Address:		Project:	19129150 (2300)	COC #: C#831949-07-01	Project Manager: Ema Gitej
Tel:	(519) 620-8182 Fax:	Tel:	(519) 620-8182 Ext: 6509 Fax: (519) 620-9878	Project Name:			
Email:	CanadaAccountsPayableInvoices@golder.com	Email:	Gregory_Padusenko@golder.com	Site #:			
				Sampled By:			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

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☐ PWQO ☐ Reg 406 Table ___
☐ Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☑
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): (Metals / Hg / Cr VI)	ANALYSIS REQUESTED (PLEASE BE SPECIFIC): RCAp - Comprehensive	O.Reg 153 PHCs, BTEX/F1-F4	# of Bottles	Comments
1		MW20-28A	21/06/23	1200	GW	Y	X		4	
2		MW20-28B	21/06/23	1230			X	X	8	
3		MW20-27A	21/06/24	1030			X		4	
4		MW20-27B	21/06/24	1430			X	X	8	
5		MW20-26A	21/06/24	1700			X		4	
6		MW20-26B	21/06/24	1830			X	X	8	
7		MW20-26C	21/06/24	1715			X		4	
8		DUP-3	21/06/23	–	GW		X	X	8	
9		DUP-5	21/06/24	–	GW	Y	X	X	8	
10										

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
V Prodd	21/06/24	20:40	Fed ex			

Laboratory Use Only

Time Sensitive	Temperature (°C) on Rece	Custody Seal	Yes	No
		Present		
		Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

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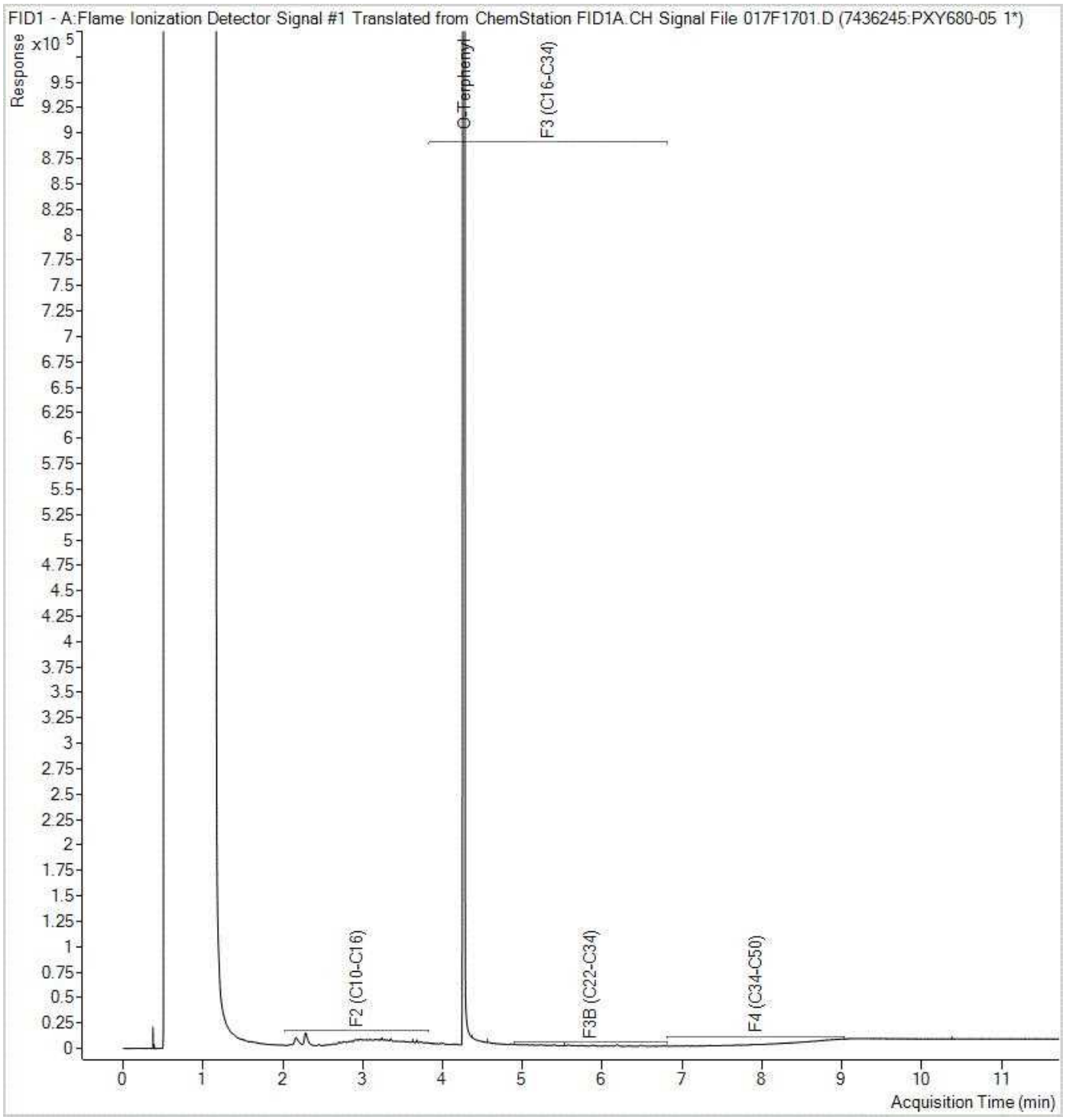
** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

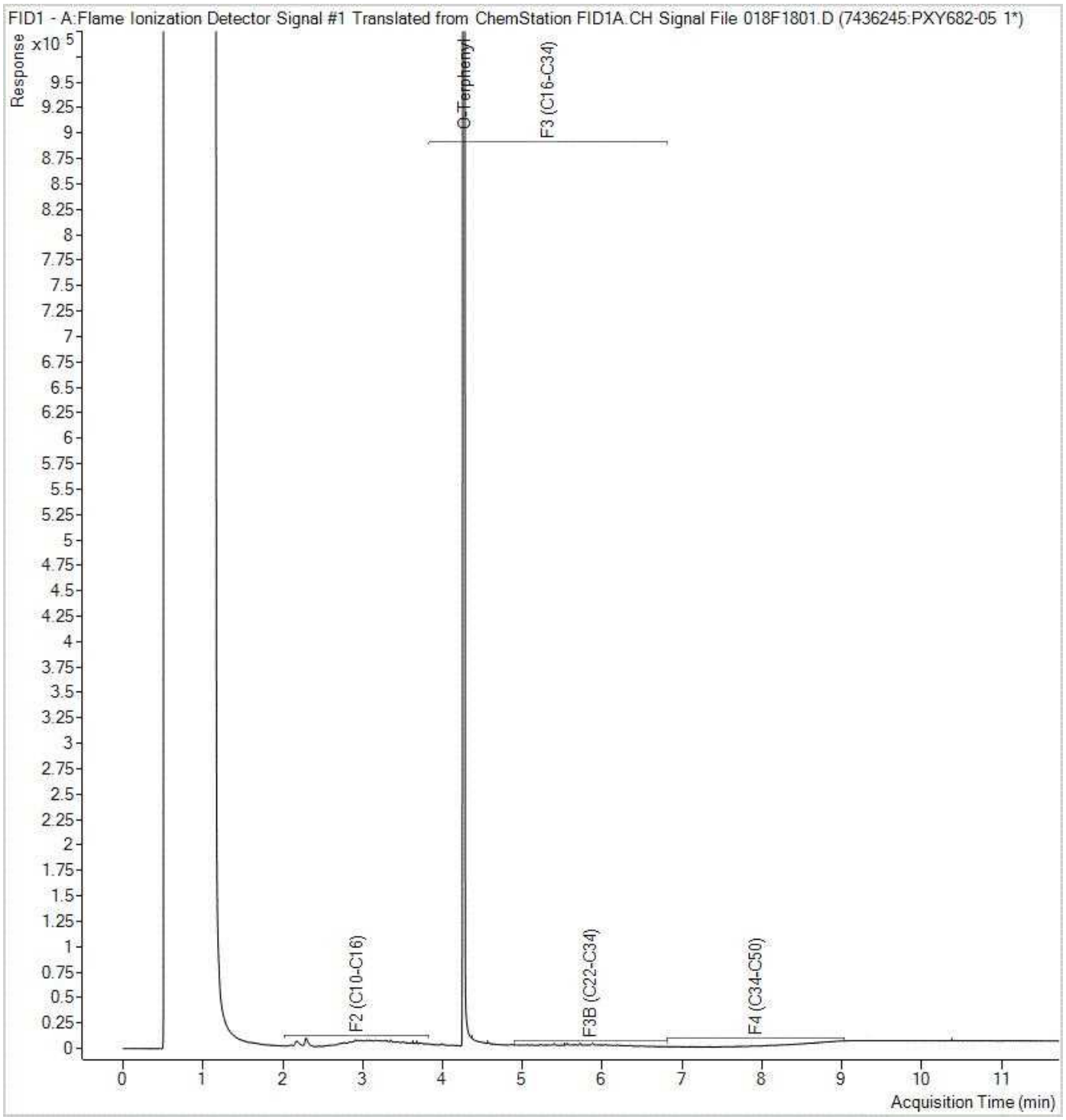


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H5980
Report Date: 2021/07/12
BV Labs Sample: PXY682

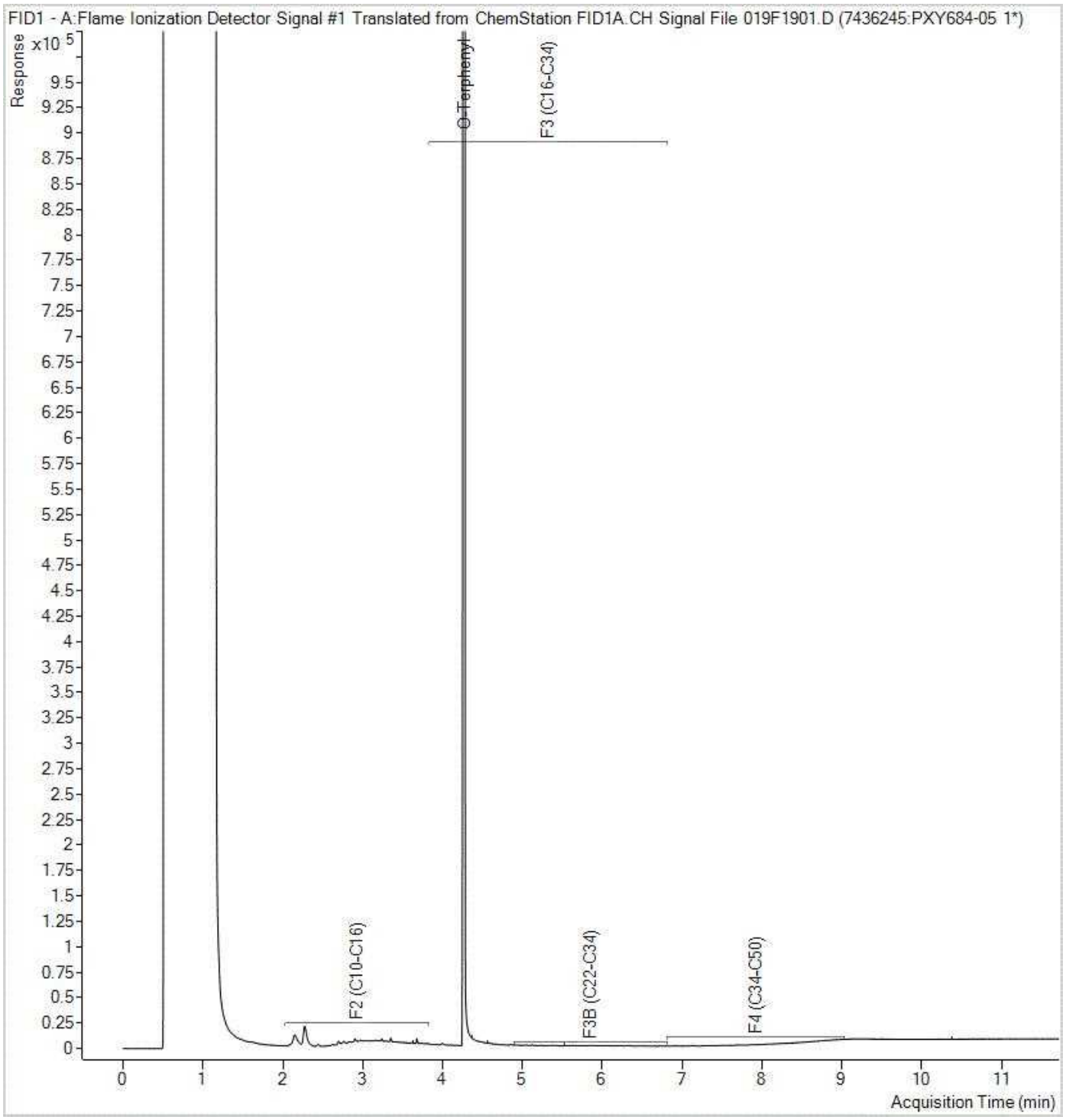
Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: DUP-4

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

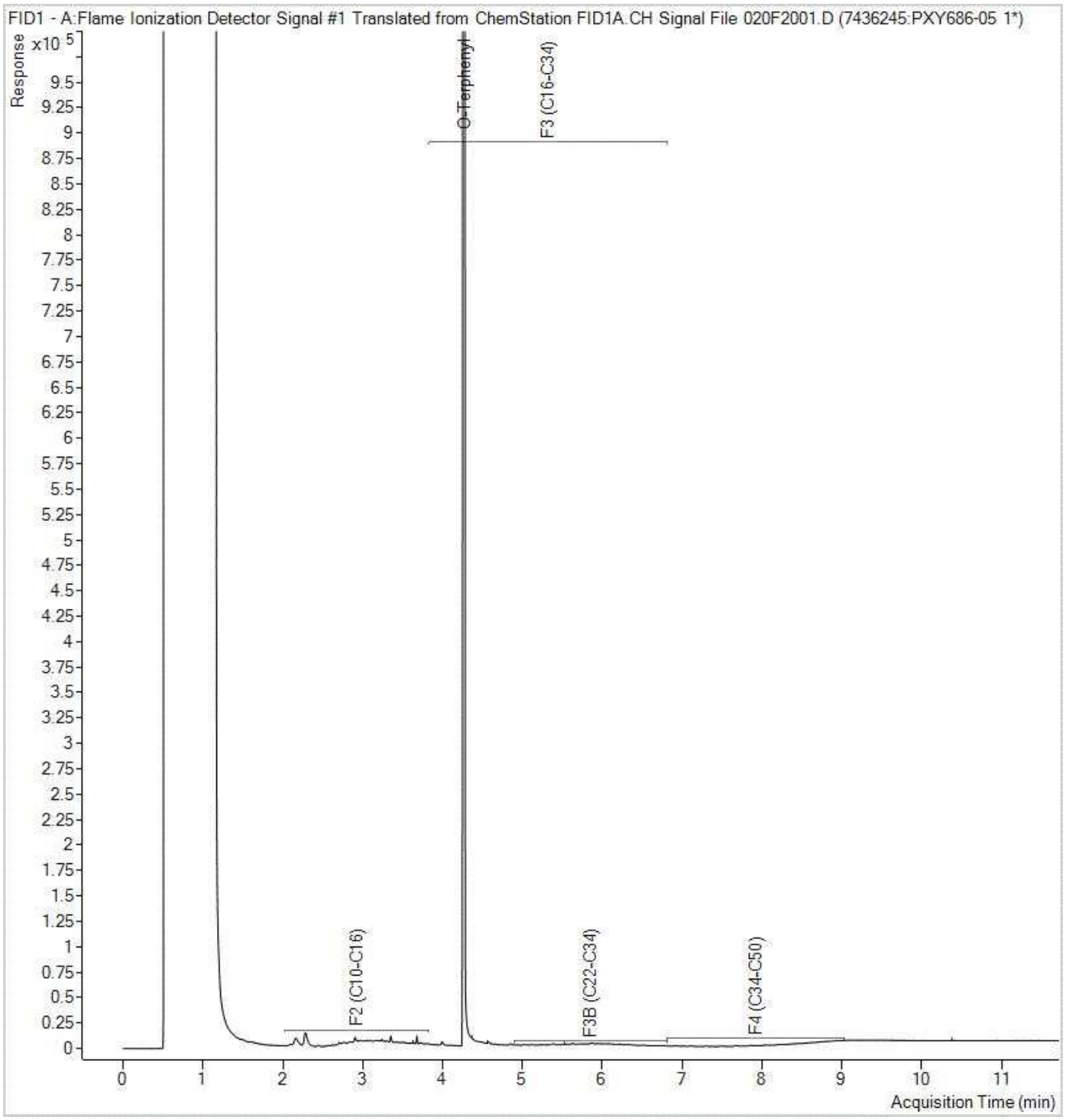


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H5980
Report Date: 2021/07/12
BV Labs Sample: PXY686

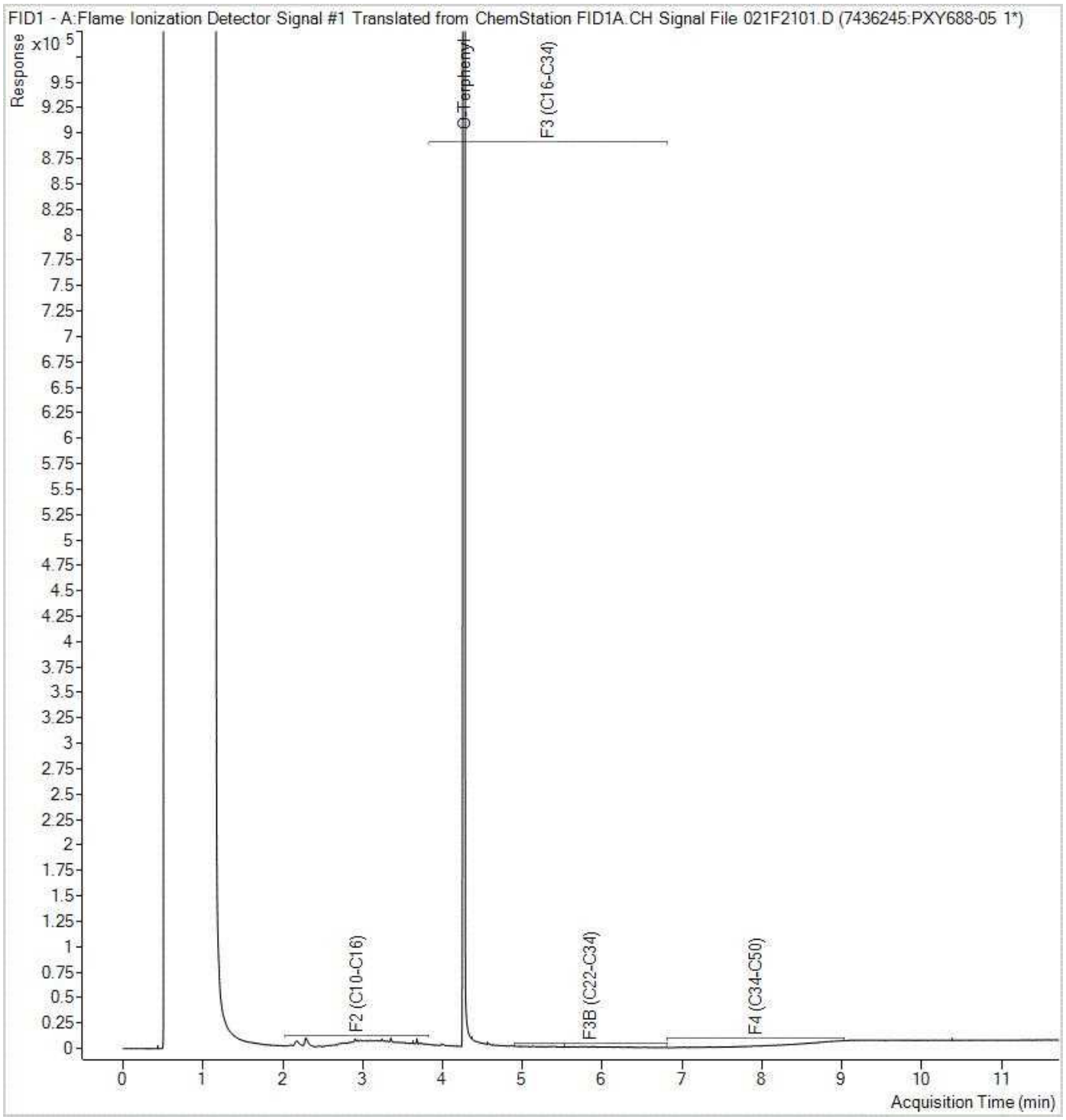
Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-11B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

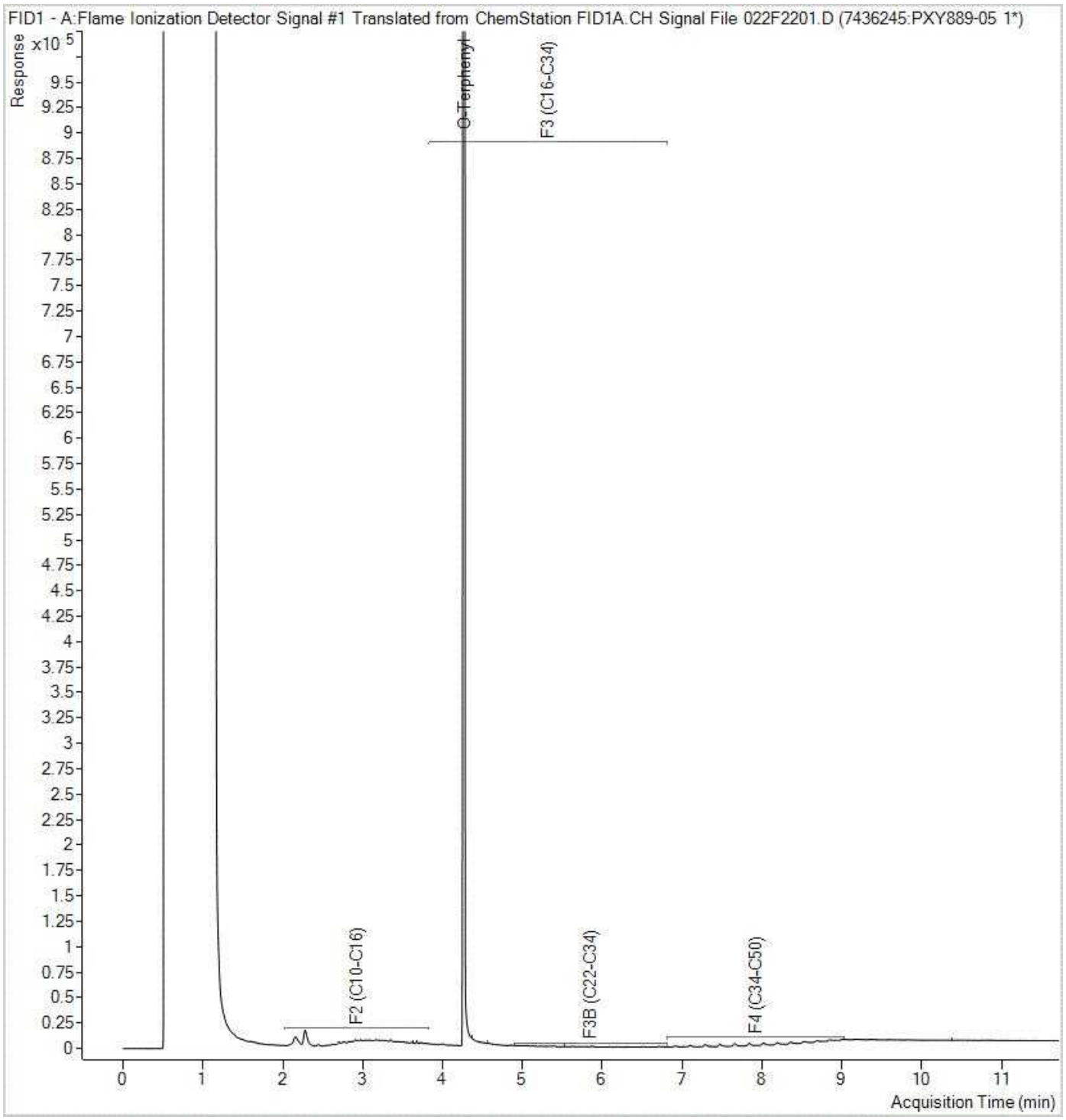


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H5980
Report Date: 2021/07/12
BV Labs Sample: PXY889

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-28B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

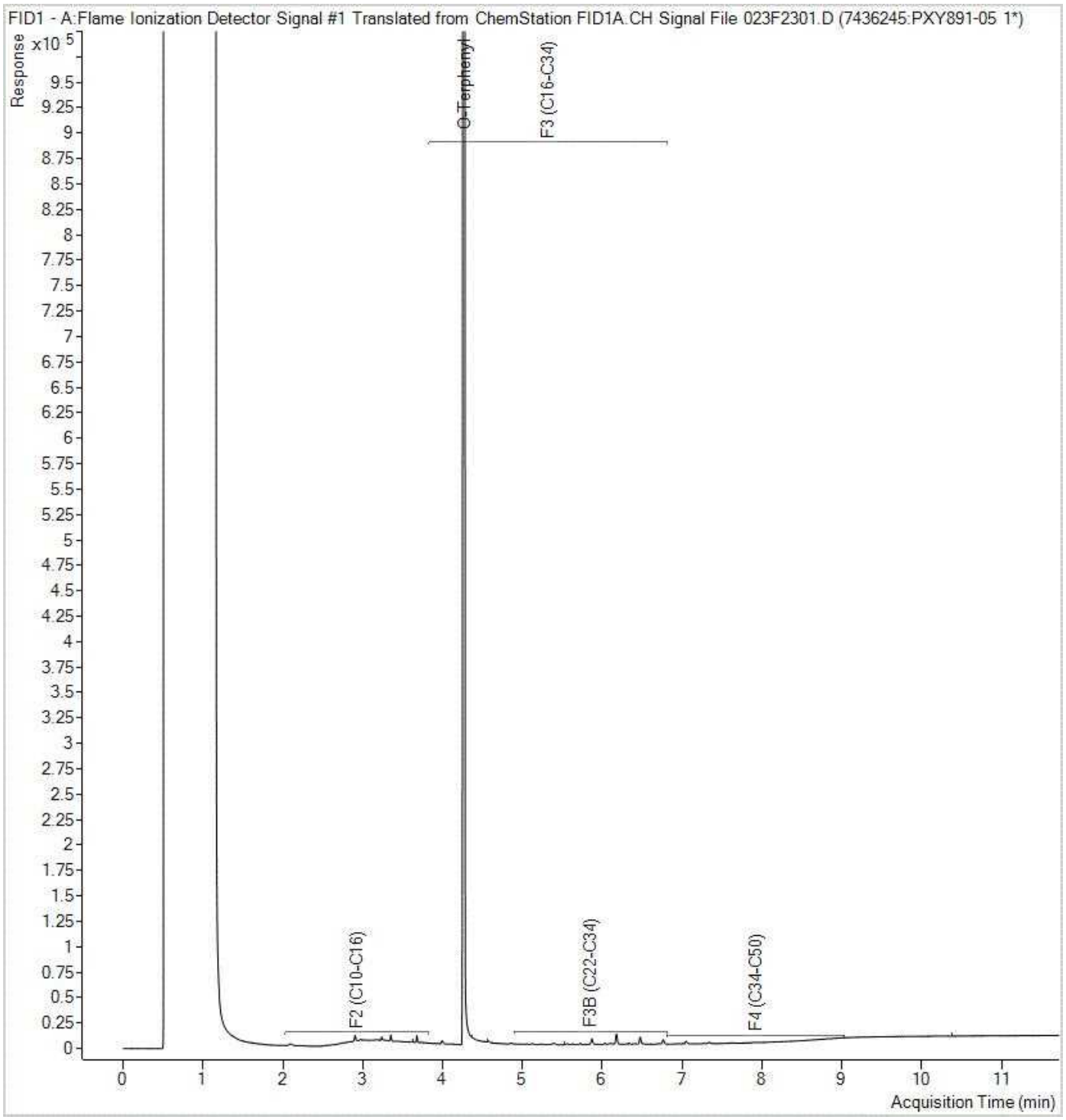


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H5980
Report Date: 2021/07/12
BV Labs Sample: PXY891

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-27B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

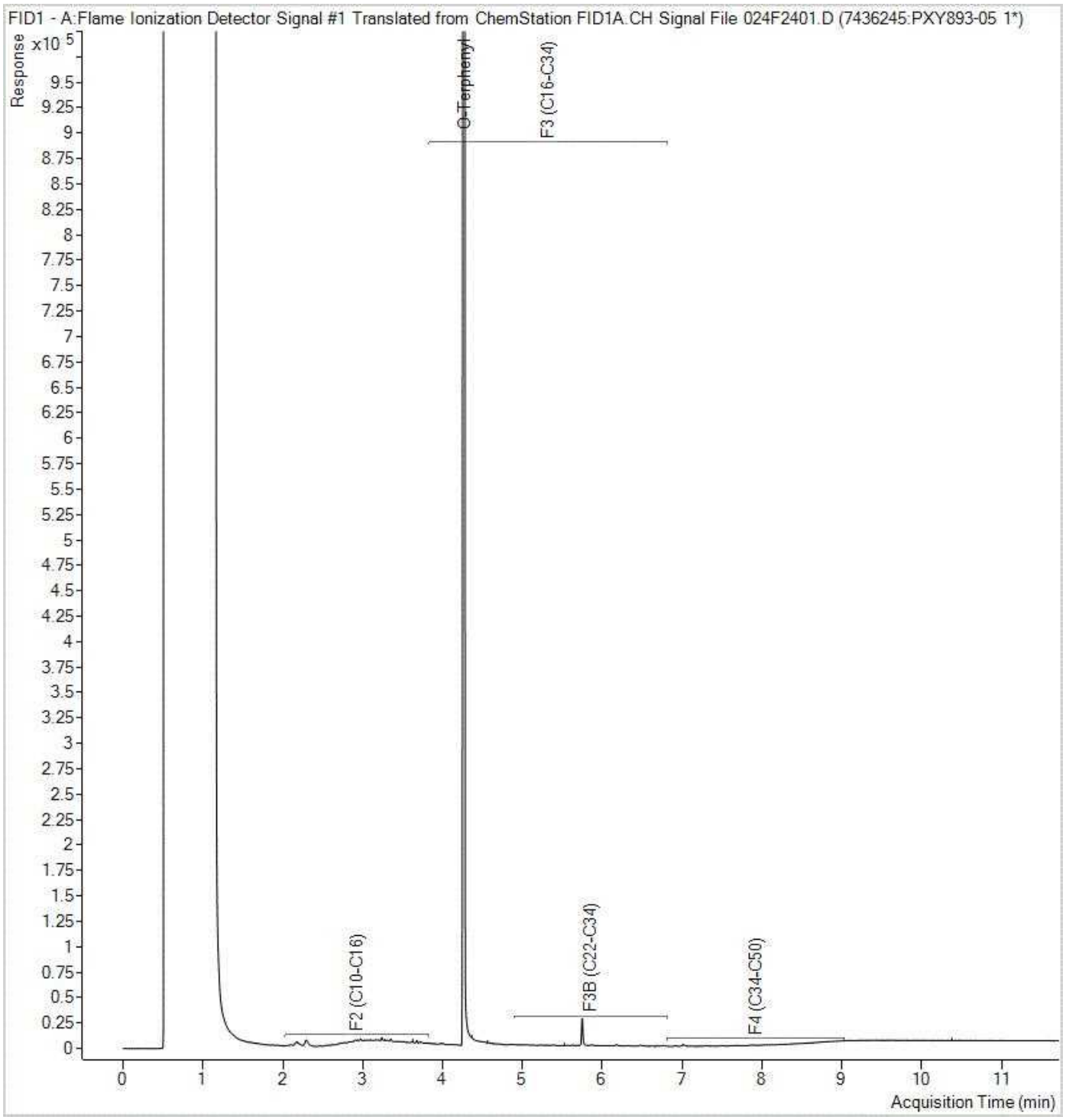


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H5980
Report Date: 2021/07/12
BV Labs Sample: PXY893

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-26B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

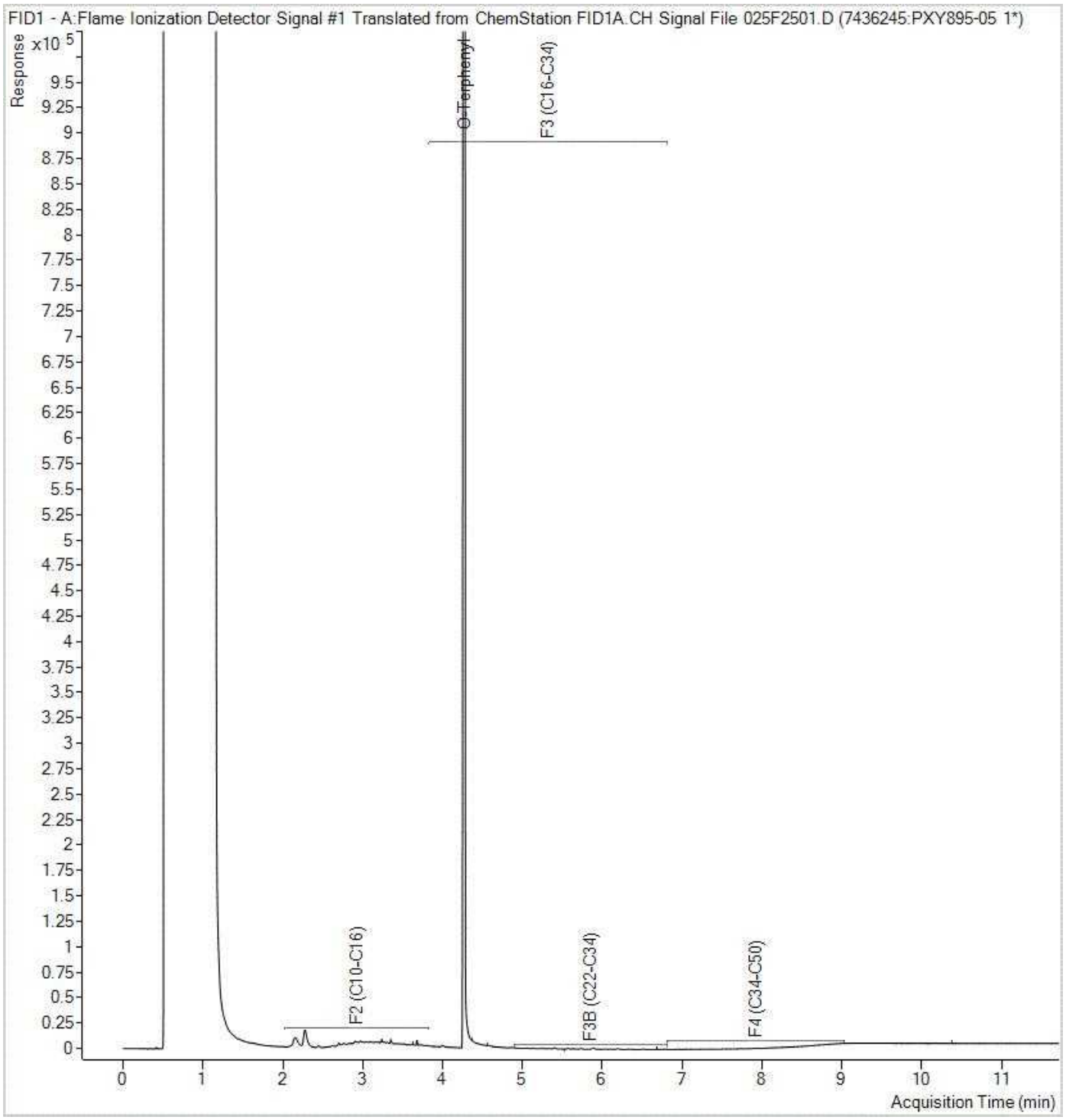


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H5980
Report Date: 2021/07/12
BV Labs Sample: PXY895

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: DUP-3

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

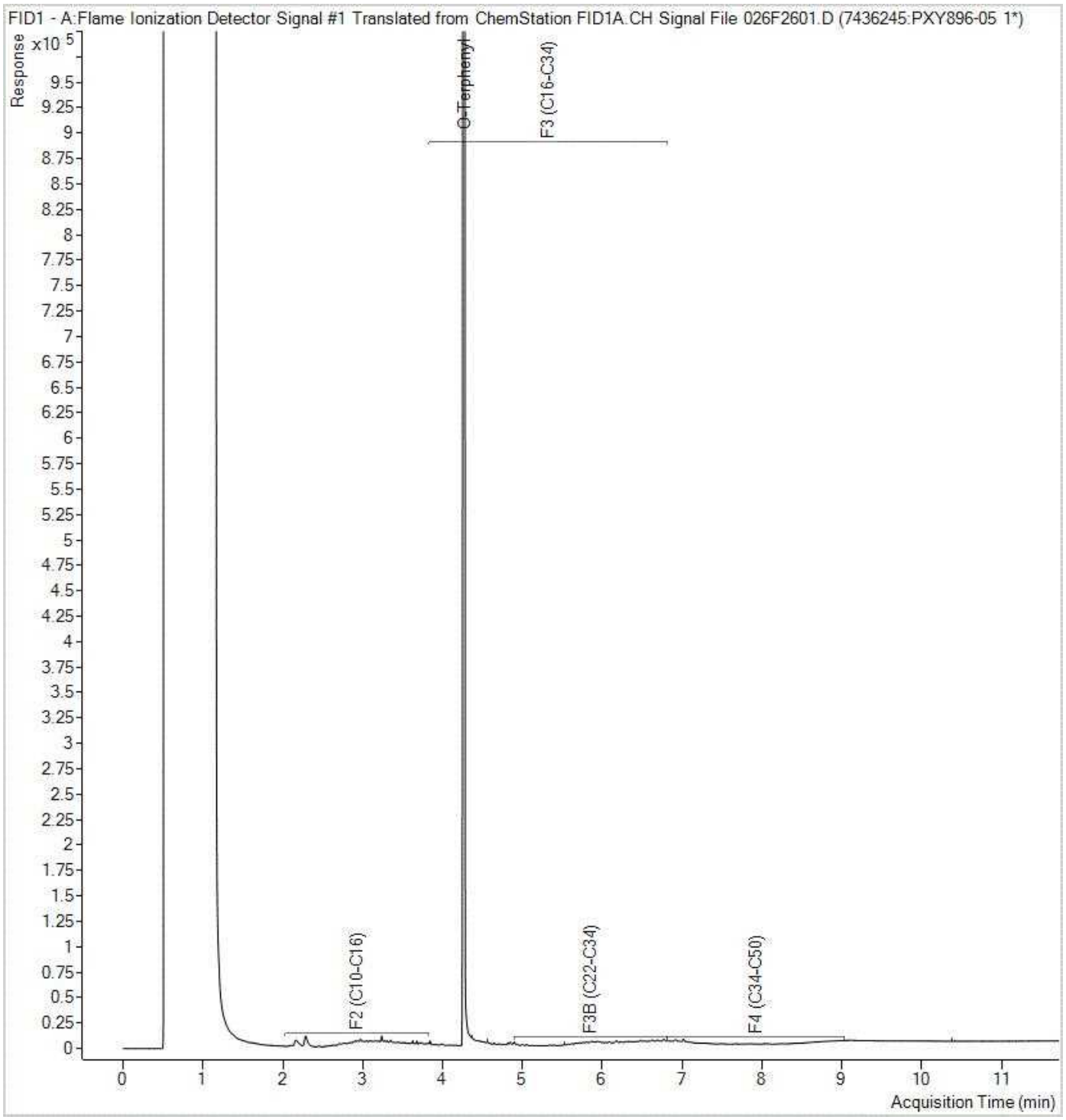


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H5980
Report Date: 2021/07/12
BV Labs Sample: PXY896

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: DUP-5

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: 19129150 (2300)
Your C.O.C. #: 831949-08-01

Attention: Gregory Padusenko

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/07/08
Report #: R6709360
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1H7092
Received: 2021/06/26, 10:13

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	8	N/A	2021/07/05	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	8	N/A	2021/07/06	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	8	N/A	2021/07/05	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity	8	N/A	2021/07/05	CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (1)	1	N/A	2021/06/30	CAM SOP-00446	SM 23 5310 B m
Dissolved Organic Carbon (DOC) (1)	7	N/A	2021/07/02	CAM SOP-00446	SM 23 5310 B m
Petroleum Hydro. CCME F1 & BTEX in Water	4	N/A	2021/07/05	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (2)	4	2021/07/02	2021/07/03	CAM SOP-00316	CCME PHC-CWS m
Hardness (calculated as CaCO3)	8	N/A	2021/07/02	CAM SOP 00102/00408/00447	SM 2340 B
Dissolved Metals by ICPMS	8	N/A	2021/07/02	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	8	N/A	2021/07/06		
Anion and Cation Sum	8	N/A	2021/07/06		
Total Ammonia-N	8	N/A	2021/07/05	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (3)	1	N/A	2021/07/02	CAM SOP-00440	SM 23 4500-NO3I/NO2B
Nitrate (NO3) and Nitrite (NO2) in Water (3)	7	N/A	2021/07/05	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	8	2021/07/02	2021/07/05	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	8	N/A	2021/07/05	CAM SOP-00461	EPA 365.1 m
Sat. pH and Langelier Index (@ 20C)	8	N/A	2021/07/06		Auto Calc
Sat. pH and Langelier Index (@ 4C)	8	N/A	2021/07/06		Auto Calc
Sulphate by Automated Colourimetry	8	N/A	2021/07/05	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (TDS calc)	8	N/A	2021/07/06		Auto Calc

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Your Project #: 19129150 (2300)
Your C.O.C. #: 831949-08-01

Attention: Gregory Padusenko

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/07/08
Report #: R6709360
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1H7092
Received: 2021/06/26, 10:13

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
(3) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: emese.gitej@bureauveritas.com
Phone# (905)817-5829
==========
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C1H7092
Report Date: 2021/07/08

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: CS

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PYF176			PYF177		PYF178		
Sampling Date		2021/06/25 13:30			2021/06/25 12:15		2021/06/25 13:15		
COC Number		831949-08-01			831949-08-01		831949-08-01		
	UNITS	MW20-15A	RDL	QC Batch	MW20-15B	QC Batch	MW20-15C	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	28.8	N/A	7437804	6.49	7437804	6.46	N/A	7437804
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	190	1.0	7437805	210	7437805	290	1.0	7437805
Calculated TDS	mg/L	1900	1.0	7437809	370	7437809	360	1.0	7437809
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.2	1.0	7437805	2.0	7437805	2.7	1.0	7437805
Cation Sum	me/L	30.6	N/A	7437804	6.63	7437804	8.40	N/A	7437804
Hardness (CaCO3)	mg/L	1000	1.0	7437803	320	7437803	400	1.0	7437803
Ion Balance (% Difference)	%	3.06	N/A	7437802	1.11	7437802	13.0	N/A	7437802
Langelier Index (@ 20C)	N/A	0.996		7437806	0.803	7437806	0.985		7437806
Langelier Index (@ 4C)	N/A	0.753		7437807	0.555	7437807	0.736		7437807
Saturation pH (@ 20C)	N/A	6.86		7437806	7.21	7437806	7.01		7437806
Saturation pH (@ 4C)	N/A	7.10		7437807	7.45	7437807	7.26		7437807
Inorganics									
Total Ammonia-N	mg/L	1.5	0.050	7441345	0.052	7441336	<0.050	0.050	7441345
Conductivity	umho/cm	2500	1.0	7442510	630	7442510	600	1.0	7442510
Dissolved Organic Carbon	mg/L	1.7	0.40	7441338	0.46	7441338	0.52	0.40	7439424
Orthophosphate (P)	mg/L	<0.010	0.010	7442183	<0.010	7442183	<0.010	0.010	7442183
pH	pH	7.85		7442511	8.01	7442511	7.99		7442511
Dissolved Sulphate (SO4)	mg/L	1200	10	7442181	110	7442181	25	1.0	7442181
Alkalinity (Total as CaCO3)	mg/L	190	1.0	7442502	210	7442502	290	1.0	7442502
Dissolved Chloride (Cl-)	mg/L	11	1.0	7442173	2.1	7442173	3.4	1.0	7442173
Nitrite (N)	mg/L	0.039	0.010	7442687	<0.010	7442216	<0.010	0.010	7442218
Nitrate (N)	mg/L	0.31	0.10	7442687	<0.10	7442216	<0.10	0.10	7442218
Nitrate + Nitrite (N)	mg/L	0.35	0.10	7442687	<0.10	7442216	<0.10	0.10	7442218
Metals									
Dissolved Aluminum (Al)	ug/L	200	4.9	7439514	<4.9	7439514	600	4.9	7439514
Dissolved Antimony (Sb)	ug/L	2.2	0.50	7439514	<0.50	7439514	<0.50	0.50	7439514
Dissolved Arsenic (As)	ug/L	23	1.0	7439514	2.0	7439514	7.3	1.0	7439514
Dissolved Barium (Ba)	ug/L	24	2.0	7439514	19	7439514	170	2.0	7439514
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7439514	<0.40	7439514	<0.40	0.40	7439514
Dissolved Boron (B)	ug/L	720	10	7439514	60	7439514	31	10	7439514
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	7439514	<0.090	7439514	<0.090	0.090	7439514

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PYF176			PYF177		PYF178		
Sampling Date		2021/06/25 13:30			2021/06/25 12:15		2021/06/25 13:15		
COC Number		831949-08-01			831949-08-01		831949-08-01		
	UNITS	MW20-15A	RDL	QC Batch	MW20-15B	QC Batch	MW20-15C	RDL	QC Batch
Dissolved Calcium (Ca)	ug/L	330000	200	7439514	81000	7439514	92000	200	7439514
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7439514	<5.0	7439514	<5.0	5.0	7439514
Dissolved Cobalt (Co)	ug/L	0.60	0.50	7439514	<0.50	7439514	1.4	0.50	7439514
Dissolved Copper (Cu)	ug/L	1.3	0.90	7439514	<0.90	7439514	4.7	0.90	7439514
Dissolved Iron (Fe)	ug/L	210	100	7439514	<100	7439514	1200	100	7439514
Dissolved Lead (Pb)	ug/L	1.1	0.50	7439514	<0.50	7439514	3.2	0.50	7439514
Dissolved Magnesium (Mg)	ug/L	51000	50	7439514	27000	7439514	42000	50	7439514
Dissolved Manganese (Mn)	ug/L	54	2.0	7439514	16	7439514	130	2.0	7439514
Dissolved Molybdenum (Mo)	ug/L	150	0.50	7439514	2.2	7439514	1.4	0.50	7439514
Dissolved Nickel (Ni)	ug/L	2.0	1.0	7439514	<1.0	7439514	2.1	1.0	7439514
Dissolved Phosphorus (P)	ug/L	<100	100	7439514	<100	7439514	130	100	7439514
Dissolved Potassium (K)	ug/L	12000	200	7439514	1600	7439514	1700	200	7439514
Dissolved Selenium (Se)	ug/L	2.8	2.0	7439514	<2.0	7439514	<2.0	2.0	7439514
Dissolved Silicon (Si)	ug/L	5500	50	7439514	6800	7439514	8500	50	7439514
Dissolved Silver (Ag)	ug/L	<0.090	0.090	7439514	<0.090	7439514	<0.090	0.090	7439514
Dissolved Sodium (Na)	ug/L	220000	100	7439514	6500	7439514	5100	100	7439514
Dissolved Strontium (Sr)	ug/L	4700	1.0	7439514	1700	7439514	430	1.0	7439514
Dissolved Thallium (Tl)	ug/L	0.052	0.050	7439514	<0.050	7439514	<0.050	0.050	7439514
Dissolved Titanium (Ti)	ug/L	7.7	5.0	7439514	<5.0	7439514	18	5.0	7439514
Dissolved Uranium (U)	ug/L	21	0.10	7439514	0.25	7439514	1.2	0.10	7439514
Dissolved Vanadium (V)	ug/L	0.78	0.50	7439514	<0.50	7439514	1.7	0.50	7439514
Dissolved Zinc (Zn)	ug/L	8.9	5.0	7439514	<5.0	7439514	13	5.0	7439514

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PYF179			PYF179			PYF180		
Sampling Date		2021/06/25 11:00			2021/06/25 11:00			2021/06/25 11:45		
COC Number		831949-08-01			831949-08-01			831949-08-01		
	UNITS	MW20-25A	RDL	QC Batch	MW20-25A Lab-Dup	RDL	QC Batch	MW20-25B	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	29.8	N/A	7437804				15.5	N/A	7437804
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	180	1.0	7437805				180	1.0	7437805
Calculated TDS	mg/L	2000	1.0	7437809				1000	1.0	7437809
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	7437805				1.1	1.0	7437805
Cation Sum	me/L	31.6	N/A	7437804				16.8	N/A	7437804
Hardness (CaCO3)	mg/L	1500	1.0	7437803				810	1.0	7437803
Ion Balance (% Difference)	%	3.01	N/A	7437802				3.97	N/A	7437802
Langelier Index (@ 20C)	N/A	1.06		7437806				0.909		7437806
Langelier Index (@ 4C)	N/A	0.821		7437807				0.663		7437807
Saturation pH (@ 20C)	N/A	6.70		7437806				6.91		7437806
Saturation pH (@ 4C)	N/A	6.95		7437807				7.15		7437807
Inorganics										
Total Ammonia-N	mg/L	0.11	0.050	7441336	0.10	0.050	7441336	0.064	0.050	7441345
Conductivity	umho/cm	2400	1.0	7442510				1400	1.0	7442510
Dissolved Organic Carbon	mg/L	1.1	0.40	7441338				0.67	0.40	7441338
Orthophosphate (P)	mg/L	<0.010	0.010	7442183				<0.010	0.010	7442183
pH	pH	7.77		7442511				7.82		7442511
Dissolved Sulphate (SO4)	mg/L	1300	10	7442181				570	5.0	7442181
Alkalinity (Total as CaCO3)	mg/L	180	1.0	7442502				180	1.0	7442502
Dissolved Chloride (Cl-)	mg/L	3.9	1.0	7442173				2.0	1.0	7442173
Nitrite (N)	mg/L	<0.010	0.010	7442218				<0.010	0.010	7442218
Nitrate (N)	mg/L	<0.10	0.10	7442218				<0.10	0.10	7442218
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	7442218				<0.10	0.10	7442218
Metals										
Dissolved Aluminum (Al)	ug/L	<4.9	4.9	7439514				<4.9	4.9	7439514
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	7439514				<0.50	0.50	7439514
Dissolved Arsenic (As)	ug/L	9.6	1.0	7439514				<1.0	1.0	7439514
Dissolved Barium (Ba)	ug/L	10	2.0	7439514				6.6	2.0	7439514
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7439514				<0.40	0.40	7439514
Dissolved Boron (B)	ug/L	89	10	7439514				58	10	7439514

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PYF179			PYF179			PYF180		
Sampling Date		2021/06/25 11:00			2021/06/25 11:00			2021/06/25 11:45		
COC Number		831949-08-01			831949-08-01			831949-08-01		
	UNITS	MW20-25A	RDL	QC Batch	MW20-25A Lab-Dup	RDL	QC Batch	MW20-25B	RDL	QC Batch
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	7439514				<0.090	0.090	7439514
Dissolved Calcium (Ca)	ug/L	490000	400	7439514				240000	200	7439514
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7439514				<5.0	5.0	7439514
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	7439514				<0.50	0.50	7439514
Dissolved Copper (Cu)	ug/L	<0.90	0.90	7439514				<0.90	0.90	7439514
Dissolved Iron (Fe)	ug/L	460	100	7439514				330	100	7439514
Dissolved Lead (Pb)	ug/L	<0.50	0.50	7439514				<0.50	0.50	7439514
Dissolved Magnesium (Mg)	ug/L	77000	50	7439514				53000	50	7439514
Dissolved Manganese (Mn)	ug/L	36	2.0	7439514				20	2.0	7439514
Dissolved Molybdenum (Mo)	ug/L	8.7	0.50	7439514				9.0	0.50	7439514
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	7439514				<1.0	1.0	7439514
Dissolved Phosphorus (P)	ug/L	<100	100	7439514				<100	100	7439514
Dissolved Potassium (K)	ug/L	2700	200	7439514				1800	200	7439514
Dissolved Selenium (Se)	ug/L	<2.0	2.0	7439514				<2.0	2.0	7439514
Dissolved Silicon (Si)	ug/L	5400	50	7439514				5400	50	7439514
Dissolved Silver (Ag)	ug/L	<0.090	0.090	7439514				<0.090	0.090	7439514
Dissolved Sodium (Na)	ug/L	18000	100	7439514				11000	100	7439514
Dissolved Strontium (Sr)	ug/L	8100	1.0	7439514				4400	1.0	7439514
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	7439514				<0.050	0.050	7439514
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	7439514				<5.0	5.0	7439514
Dissolved Uranium (U)	ug/L	<0.10	0.10	7439514				<0.10	0.10	7439514
Dissolved Vanadium (V)	ug/L	<0.50	0.50	7439514				<0.50	0.50	7439514
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	7439514				<5.0	5.0	7439514

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H7092
Report Date: 2021/07/08

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: CS

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PYF180			PYF181		PYF182		
Sampling Date		2021/06/25 11:45			2021/06/25 13:45		2021/06/25 14:00		
COC Number		831949-08-01			831949-08-01		831949-08-01		
	UNITS	MW20-25B Lab-Dup	RDL	QC Batch	MW20-24A	RDL	MW20-24B	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L				7.93	N/A	11.5	N/A	7437804
Bicarb. Alkalinity (calc. as CaCO3)	mg/L				270	1.0	290	1.0	7437805
Calculated TDS	mg/L				430	1.0	620	1.0	7437809
Carb. Alkalinity (calc. as CaCO3)	mg/L				2.0	1.0	1.9	1.0	7437805
Cation Sum	me/L				8.48	N/A	11.9	N/A	7437804
Hardness (CaCO3)	mg/L				350	1.0	500	1.0	7437803
Ion Balance (% Difference)	%				3.36	N/A	1.67	N/A	7437802
Langelier Index (@ 20C)	N/A				0.780		0.916		7437806
Langelier Index (@ 4C)	N/A				0.532		0.669		7437807
Saturation pH (@ 20C)	N/A				7.12		6.93		7437806
Saturation pH (@ 4C)	N/A				7.37		7.17		7437807
Inorganics									
Total Ammonia-N	mg/L				0.094	0.050	<0.050	0.050	7441336
Conductivity	umho/cm				770	1.0	1200	1.0	7442510
Dissolved Organic Carbon	mg/L	0.71	0.40	7441338	2.4	0.40	0.63	0.40	7441338
Orthophosphate (P)	mg/L				<0.010	0.010	<0.010	0.010	7442183
pH	pH				7.90		7.84		7442511
Dissolved Sulphate (SO4)	mg/L				79	1.0	36	1.0	7442181
Alkalinity (Total as CaCO3)	mg/L				270	1.0	290	1.0	7442502
Dissolved Chloride (Cl-)	mg/L				31	1.0	170	2.0	7442173
Nitrite (N)	mg/L				<0.010	0.010	<0.010	0.010	7442218
Nitrate (N)	mg/L				<0.10	0.10	0.98	0.10	7442218
Nitrate + Nitrite (N)	mg/L				<0.10	0.10	0.98	0.10	7442218
Metals									
Dissolved Aluminum (Al)	ug/L				79	4.9	<4.9	4.9	7439514
Dissolved Antimony (Sb)	ug/L				<0.50	0.50	<0.50	0.50	7439514
Dissolved Arsenic (As)	ug/L				<1.0	1.0	<1.0	1.0	7439514
Dissolved Barium (Ba)	ug/L				56	2.0	120	2.0	7439514
Dissolved Beryllium (Be)	ug/L				<0.40	0.40	<0.40	0.40	7439514
Dissolved Boron (B)	ug/L				31	10	24	10	7439514

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PYF180			PYF181		PYF182		
Sampling Date		2021/06/25 11:45			2021/06/25 13:45		2021/06/25 14:00		
COC Number		831949-08-01			831949-08-01		831949-08-01		
	UNITS	MW20-25B Lab-Dup	RDL	QC Batch	MW20-24A	RDL	MW20-24B	RDL	QC Batch
Dissolved Cadmium (Cd)	ug/L				<0.090	0.090	0.29	0.090	7439514
Dissolved Calcium (Ca)	ug/L				79000	200	130000	200	7439514
Dissolved Chromium (Cr)	ug/L				<5.0	5.0	<5.0	5.0	7439514
Dissolved Cobalt (Co)	ug/L				<0.50	0.50	<0.50	0.50	7439514
Dissolved Copper (Cu)	ug/L				5.4	0.90	2.1	0.90	7439514
Dissolved Iron (Fe)	ug/L				640	100	460	100	7439514
Dissolved Lead (Pb)	ug/L				0.72	0.50	<0.50	0.50	7439514
Dissolved Magnesium (Mg)	ug/L				38000	50	45000	50	7439514
Dissolved Manganese (Mn)	ug/L				27	2.0	20	2.0	7439514
Dissolved Molybdenum (Mo)	ug/L				20	0.50	1.7	0.50	7439514
Dissolved Nickel (Ni)	ug/L				1.7	1.0	2.1	1.0	7439514
Dissolved Phosphorus (P)	ug/L				<100	100	<100	100	7439514
Dissolved Potassium (K)	ug/L				1700	200	1300	200	7439514
Dissolved Selenium (Se)	ug/L				<2.0	2.0	<2.0	2.0	7439514
Dissolved Silicon (Si)	ug/L				5200	50	6600	50	7439514
Dissolved Silver (Ag)	ug/L				<0.090	0.090	<0.090	0.090	7439514
Dissolved Sodium (Na)	ug/L				31000	100	41000	100	7439514
Dissolved Strontium (Sr)	ug/L				130	1.0	170	1.0	7439514
Dissolved Thallium (Tl)	ug/L				<0.050	0.050	<0.050	0.050	7439514
Dissolved Titanium (Ti)	ug/L				<5.0	5.0	<5.0	5.0	7439514
Dissolved Uranium (U)	ug/L				0.20	0.10	0.70	0.10	7439514
Dissolved Vanadium (V)	ug/L				<0.50	0.50	<0.50	0.50	7439514
Dissolved Zinc (Zn)	ug/L				7.6	5.0	180	5.0	7439514

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PYF183			PYF183		
Sampling Date		2021/06/25			2021/06/25		
COC Number		831949-08-01			831949-08-01		
	UNITS	DUP-6	RDL	QC Batch	DUP-6 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Anion Sum	me/L	15.8	N/A	7437804			
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	180	1.0	7437805			
Calculated TDS	mg/L	1000	1.0	7437809			
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.0	1.0	7437805			
Cation Sum	me/L	16.9	N/A	7437804			
Hardness (CaCO3)	mg/L	820	1.0	7437803			
Ion Balance (% Difference)	%	3.44	N/A	7437802			
Langelier Index (@ 20C)	N/A	0.871		7437806			
Langelier Index (@ 4C)	N/A	0.625		7437807			
Saturation pH (@ 20C)	N/A	6.91		7437806			
Saturation pH (@ 4C)	N/A	7.16		7437807			
Inorganics							
Total Ammonia-N	mg/L	0.078	0.050	7441345			
Conductivity	umho/cm	1400	1.0	7442510			
Dissolved Organic Carbon	mg/L	0.66	0.40	7441338			
Orthophosphate (P)	mg/L	<0.010	0.010	7442183	<0.010	0.010	7442183
pH	pH	7.78		7442511			
Dissolved Sulphate (SO4)	mg/L	580	5.0	7442181	590	5.0	7442181
Alkalinity (Total as CaCO3)	mg/L	180	1.0	7442502			
Dissolved Chloride (Cl-)	mg/L	1.5	1.0	7442173	2.1	1.0	7442173
Nitrite (N)	mg/L	<0.010	0.010	7442218			
Nitrate (N)	mg/L	<0.10	0.10	7442218			
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	7442218			
Metals							
Dissolved Aluminum (Al)	ug/L	<4.9	4.9	7439514	<4.9	4.9	7439514
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	7439514	<0.50	0.50	7439514
Dissolved Arsenic (As)	ug/L	<1.0	1.0	7439514	<1.0	1.0	7439514
Dissolved Barium (Ba)	ug/L	6.9	2.0	7439514	6.6	2.0	7439514
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7439514	<0.40	0.40	7439514
Dissolved Boron (B)	ug/L	47	10	7439514	48	10	7439514

RDL = Reportable Detection Limit
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Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PYF183			PYF183		
Sampling Date		2021/06/25			2021/06/25		
COC Number		831949-08-01			831949-08-01		
	UNITS	DUP-6	RDL	QC Batch	DUP-6 Lab-Dup	RDL	QC Batch
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	7439514	<0.090	0.090	7439514
Dissolved Calcium (Ca)	ug/L	240000	200	7439514	240000	200	7439514
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7439514	<5.0	5.0	7439514
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	7439514	<0.50	0.50	7439514
Dissolved Copper (Cu)	ug/L	<0.90	0.90	7439514	<0.90	0.90	7439514
Dissolved Iron (Fe)	ug/L	330	100	7439514	330	100	7439514
Dissolved Lead (Pb)	ug/L	<0.50	0.50	7439514	<0.50	0.50	7439514
Dissolved Magnesium (Mg)	ug/L	53000	50	7439514	52000	50	7439514
Dissolved Manganese (Mn)	ug/L	21	2.0	7439514	20	2.0	7439514
Dissolved Molybdenum (Mo)	ug/L	8.8	0.50	7439514	8.8	0.50	7439514
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	7439514	<1.0	1.0	7439514
Dissolved Phosphorus (P)	ug/L	<100	100	7439514	<100	100	7439514
Dissolved Potassium (K)	ug/L	1800	200	7439514	1800	200	7439514
Dissolved Selenium (Se)	ug/L	<2.0	2.0	7439514	<2.0	2.0	7439514
Dissolved Silicon (Si)	ug/L	5400	50	7439514	5400	50	7439514
Dissolved Silver (Ag)	ug/L	<0.090	0.090	7439514	<0.090	0.090	7439514
Dissolved Sodium (Na)	ug/L	11000	100	7439514	11000	100	7439514
Dissolved Strontium (Sr)	ug/L	4600	1.0	7439514	4500	1.0	7439514
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	7439514	<0.050	0.050	7439514
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	7439514	<5.0	5.0	7439514
Dissolved Uranium (U)	ug/L	<0.10	0.10	7439514	<0.10	0.10	7439514
Dissolved Vanadium (V)	ug/L	<0.50	0.50	7439514	<0.50	0.50	7439514
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	7439514	<5.0	5.0	7439514

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		PYF177	PYF180	PYF182	PYF183			PYF183		
Sampling Date		2021/06/25 12:15	2021/06/25 11:45	2021/06/25 14:00	2021/06/25			2021/06/25		
COC Number		831949-08-01	831949-08-01	831949-08-01	831949-08-01			831949-08-01		
	UNITS	MW20-15B	MW20-25B	MW20-24B	DUP-6	RDL	QC Batch	DUP-6 Lab-Dup	RDL	QC Batch
BTEX & F1 Hydrocarbons										
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7443249			
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7443249			
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7443249			
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7443249			
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	7443249			
Total Xylenes	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	7443249			
F1 (C6-C10)	ug/L	<25	<25	<25	<25	25	7443249			
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	25	7443249			
F2-F4 Hydrocarbons										
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	<100	100	7441556	<100	100	7441556
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	<200	<200	200	7441556	<200	200	7441556
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	<200	200	7441556	<200	200	7441556
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes		7441556	Yes		7441556
Surrogate Recovery (%)										
1,4-Difluorobenzene	%	99	98	99	97		7443249			
4-Bromofluorobenzene	%	89	90	90	89		7443249			
D10-o-Xylene	%	100	99	99	97		7443249			
D4-1,2-Dichloroethane	%	97	93	95	97		7443249			
o-Terphenyl	%	95	94	94	93		7441556	94		7441556

RDL = Reportable Detection Limit
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Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H7092
Report Date: 2021/07/08

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: CS

TEST SUMMARY

BV Labs ID: PYF176
Sample ID: MW20-15A
Matrix: Water

Collected: 2021/06/25
Shipped:
Received: 2021/06/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7442502	N/A	2021/07/05	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7437805	N/A	2021/07/06	Automated Statchk
Chloride by Automated Colourimetry	KONE	7442173	N/A	2021/07/05	Alina Dobreanu
Conductivity	AT	7442510	N/A	2021/07/05	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7441338	N/A	2021/07/02	Nimarta Singh
Hardness (calculated as CaCO3)		7437803	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7439514	N/A	2021/07/02	Daniel Teclu
Ion Balance (% Difference)	CALC	7437802	N/A	2021/07/06	Automated Statchk
Anion and Cation Sum	CALC	7437804	N/A	2021/07/06	Automated Statchk
Total Ammonia-N	LACH/NH4	7441345	N/A	2021/07/05	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7442687	N/A	2021/07/05	Amanpreet Sappal
pH	AT	7442511	2021/07/02	2021/07/05	Surinder Rai
Orthophosphate	KONE	7442183	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7437806	N/A	2021/07/06	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7437807	N/A	2021/07/06	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7442181	N/A	2021/07/05	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7437809	N/A	2021/07/06	Automated Statchk

BV Labs ID: PYF177
Sample ID: MW20-15B
Matrix: Water

Collected: 2021/06/25
Shipped:
Received: 2021/06/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7442502	N/A	2021/07/05	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7437805	N/A	2021/07/06	Automated Statchk
Chloride by Automated Colourimetry	KONE	7442173	N/A	2021/07/05	Alina Dobreanu
Conductivity	AT	7442510	N/A	2021/07/05	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7441338	N/A	2021/07/02	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7443249	N/A	2021/07/05	Domnica Andronescu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7441556	2021/07/02	2021/07/03	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7437803	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7439514	N/A	2021/07/02	Daniel Teclu
Ion Balance (% Difference)	CALC	7437802	N/A	2021/07/06	Automated Statchk
Anion and Cation Sum	CALC	7437804	N/A	2021/07/06	Automated Statchk
Total Ammonia-N	LACH/NH4	7441336	N/A	2021/07/05	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7442216	N/A	2021/07/02	Chandra Nandlal
pH	AT	7442511	2021/07/02	2021/07/05	Surinder Rai
Orthophosphate	KONE	7442183	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7437806	N/A	2021/07/06	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7437807	N/A	2021/07/06	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7442181	N/A	2021/07/05	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7437809	N/A	2021/07/06	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H7092
Report Date: 2021/07/08

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: CS

TEST SUMMARY

BV Labs ID: PYF178
Sample ID: MW20-15C
Matrix: Water

Collected: 2021/06/25
Shipped:
Received: 2021/06/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7442502	N/A	2021/07/05	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7437805	N/A	2021/07/06	Automated Statchk
Chloride by Automated Colourimetry	KONE	7442173	N/A	2021/07/05	Alina Dobreanu
Conductivity	AT	7442510	N/A	2021/07/05	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7439424	N/A	2021/06/30	Nimarta Singh
Hardness (calculated as CaCO3)		7437803	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7439514	N/A	2021/07/02	Daniel Teclu
Ion Balance (% Difference)	CALC	7437802	N/A	2021/07/06	Automated Statchk
Anion and Cation Sum	CALC	7437804	N/A	2021/07/06	Automated Statchk
Total Ammonia-N	LACH/NH4	7441345	N/A	2021/07/05	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7442218	N/A	2021/07/05	Amanpreet Sappal
pH	AT	7442511	2021/07/02	2021/07/05	Surinder Rai
Orthophosphate	KONE	7442183	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7437806	N/A	2021/07/06	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7437807	N/A	2021/07/06	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7442181	N/A	2021/07/05	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7437809	N/A	2021/07/06	Automated Statchk

BV Labs ID: PYF179
Sample ID: MW20-25A
Matrix: Water

Collected: 2021/06/25
Shipped:
Received: 2021/06/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7442502	N/A	2021/07/05	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7437805	N/A	2021/07/06	Automated Statchk
Chloride by Automated Colourimetry	KONE	7442173	N/A	2021/07/05	Alina Dobreanu
Conductivity	AT	7442510	N/A	2021/07/05	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7441338	N/A	2021/07/02	Nimarta Singh
Hardness (calculated as CaCO3)		7437803	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7439514	N/A	2021/07/02	Daniel Teclu
Ion Balance (% Difference)	CALC	7437802	N/A	2021/07/06	Automated Statchk
Anion and Cation Sum	CALC	7437804	N/A	2021/07/06	Automated Statchk
Total Ammonia-N	LACH/NH4	7441336	N/A	2021/07/05	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7442218	N/A	2021/07/05	Amanpreet Sappal
pH	AT	7442511	2021/07/02	2021/07/05	Surinder Rai
Orthophosphate	KONE	7442183	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7437806	N/A	2021/07/06	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7437807	N/A	2021/07/06	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7442181	N/A	2021/07/05	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7437809	N/A	2021/07/06	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PYF179 Dup
Sample ID: MW20-25A
Matrix: Water

Collected: 2021/06/25
Shipped:
Received: 2021/06/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Ammonia-N	LACH/NH4	7441336	N/A	2021/07/05	Amanpreet Sappal

BV Labs ID: PYF180
Sample ID: MW20-25B
Matrix: Water

Collected: 2021/06/25
Shipped:
Received: 2021/06/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7442502	N/A	2021/07/05	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7437805	N/A	2021/07/06	Automated Statchk
Chloride by Automated Colourimetry	KONE	7442173	N/A	2021/07/05	Alina Dobreanu
Conductivity	AT	7442510	N/A	2021/07/05	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7441338	N/A	2021/07/02	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7443249	N/A	2021/07/05	Domnica Andronescu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7441556	2021/07/02	2021/07/03	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7437803	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7439514	N/A	2021/07/02	Daniel Teclu
Ion Balance (% Difference)	CALC	7437802	N/A	2021/07/06	Automated Statchk
Anion and Cation Sum	CALC	7437804	N/A	2021/07/06	Automated Statchk
Total Ammonia-N	LACH/NH4	7441345	N/A	2021/07/05	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7442218	N/A	2021/07/05	Amanpreet Sappal
pH	AT	7442511	2021/07/02	2021/07/05	Surinder Rai
Orthophosphate	KONE	7442183	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7437806	N/A	2021/07/06	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7437807	N/A	2021/07/06	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7442181	N/A	2021/07/05	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7437809	N/A	2021/07/06	Automated Statchk

BV Labs ID: PYF180 Dup
Sample ID: MW20-25B
Matrix: Water

Collected: 2021/06/25
Shipped:
Received: 2021/06/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7441338	N/A	2021/07/02	Nimarta Singh

BV Labs ID: PYF181
Sample ID: MW20-24A
Matrix: Water

Collected: 2021/06/25
Shipped:
Received: 2021/06/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7442502	N/A	2021/07/05	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7437805	N/A	2021/07/06	Automated Statchk
Chloride by Automated Colourimetry	KONE	7442173	N/A	2021/07/05	Alina Dobreanu
Conductivity	AT	7442510	N/A	2021/07/05	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7441338	N/A	2021/07/02	Nimarta Singh
Hardness (calculated as CaCO3)		7437803	N/A	2021/07/02	Automated Statchk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PYF181
Sample ID: MW20-24A
Matrix: Water

Collected: 2021/06/25
Shipped:
Received: 2021/06/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Metals by ICPMS	ICP/MS	7439514	N/A	2021/07/02	Daniel Teclu
Ion Balance (% Difference)	CALC	7437802	N/A	2021/07/06	Automated Statchk
Anion and Cation Sum	CALC	7437804	N/A	2021/07/06	Automated Statchk
Total Ammonia-N	LACH/NH4	7441336	N/A	2021/07/05	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7442218	N/A	2021/07/05	Amanpreet Sappal
pH	AT	7442511	2021/07/02	2021/07/05	Surinder Rai
Orthophosphate	KONE	7442183	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7437806	N/A	2021/07/06	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7437807	N/A	2021/07/06	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7442181	N/A	2021/07/05	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7437809	N/A	2021/07/06	Automated Statchk

BV Labs ID: PYF182
Sample ID: MW20-24B
Matrix: Water

Collected: 2021/06/25
Shipped:
Received: 2021/06/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7442502	N/A	2021/07/05	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7437805	N/A	2021/07/06	Automated Statchk
Chloride by Automated Colourimetry	KONE	7442173	N/A	2021/07/05	Alina Dobreanu
Conductivity	AT	7442510	N/A	2021/07/05	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7441338	N/A	2021/07/02	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7443249	N/A	2021/07/05	Domnica Andronescu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7441556	2021/07/02	2021/07/03	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7437803	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7439514	N/A	2021/07/02	Daniel Teclu
Ion Balance (% Difference)	CALC	7437802	N/A	2021/07/06	Automated Statchk
Anion and Cation Sum	CALC	7437804	N/A	2021/07/06	Automated Statchk
Total Ammonia-N	LACH/NH4	7441336	N/A	2021/07/05	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7442218	N/A	2021/07/05	Amanpreet Sappal
pH	AT	7442511	2021/07/02	2021/07/05	Surinder Rai
Orthophosphate	KONE	7442183	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7437806	N/A	2021/07/06	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7437807	N/A	2021/07/06	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7442181	N/A	2021/07/05	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7437809	N/A	2021/07/06	Automated Statchk

BV Labs ID: PYF183
Sample ID: DUP-6
Matrix: Water

Collected: 2021/06/25
Shipped:
Received: 2021/06/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7442502	N/A	2021/07/05	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7437805	N/A	2021/07/06	Automated Statchk
Chloride by Automated Colourimetry	KONE	7442173	N/A	2021/07/05	Alina Dobreanu

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1H7092
Report Date: 2021/07/08

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: CS

TEST SUMMARY

BV Labs ID: PYF183
Sample ID: DUP-6
Matrix: Water

Collected: 2021/06/25
Shipped:
Received: 2021/06/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	7442510	N/A	2021/07/05	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7441338	N/A	2021/07/02	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7443249	N/A	2021/07/05	Domnica Andronescu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7441556	2021/07/02	2021/07/03	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7437803	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7439514	N/A	2021/07/02	Daniel Teclu
Ion Balance (% Difference)	CALC	7437802	N/A	2021/07/06	Automated Statchk
Anion and Cation Sum	CALC	7437804	N/A	2021/07/06	Automated Statchk
Total Ammonia-N	LACH/NH4	7441345	N/A	2021/07/05	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7442218	N/A	2021/07/05	Amanpreet Sappal
pH	AT	7442511	2021/07/02	2021/07/05	Surinder Rai
Orthophosphate	KONE	7442183	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7437806	N/A	2021/07/06	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7437807	N/A	2021/07/06	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7442181	N/A	2021/07/05	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7437809	N/A	2021/07/06	Automated Statchk

BV Labs ID: PYF183 Dup
Sample ID: DUP-6
Matrix: Water

Collected: 2021/06/25
Shipped:
Received: 2021/06/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	7442173	N/A	2021/07/05	Alina Dobreanu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7441556	2021/07/02	2021/07/03	Ravinder Gaidhu
Dissolved Metals by ICPMS	ICP/MS	7439514	N/A	2021/07/02	Daniel Teclu
Orthophosphate	KONE	7442183	N/A	2021/07/05	Avneet Kour Sudan
Sulphate by Automated Colourimetry	KONE	7442181	N/A	2021/07/05	Alina Dobreanu

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	13.7°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7441556	o-Terphenyl	2021/07/03	95	60 - 130	96	60 - 130	94	%		
7443249	1,4-Difluorobenzene	2021/07/05	95	70 - 130	98	70 - 130	98	%		
7443249	4-Bromofluorobenzene	2021/07/05	91	70 - 130	93	70 - 130	89	%		
7443249	D10-o-Xylene	2021/07/05	88	70 - 130	95	70 - 130	100	%		
7443249	D4-1,2-Dichloroethane	2021/07/05	93	70 - 130	90	70 - 130	95	%		
7439424	Dissolved Organic Carbon	2021/06/30	95	80 - 120	98	80 - 120	<0.40	mg/L	0.99	20
7439514	Dissolved Aluminum (Al)	2021/07/02	101	80 - 120	101	80 - 120	<4.9	ug/L	NC	20
7439514	Dissolved Antimony (Sb)	2021/07/02	104	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
7439514	Dissolved Arsenic (As)	2021/07/02	103	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
7439514	Dissolved Barium (Ba)	2021/07/02	102	80 - 120	98	80 - 120	<2.0	ug/L	3.5	20
7439514	Dissolved Beryllium (Be)	2021/07/02	103	80 - 120	100	80 - 120	<0.40	ug/L	NC	20
7439514	Dissolved Boron (B)	2021/07/02	98	80 - 120	96	80 - 120	<10	ug/L	2.1	20
7439514	Dissolved Cadmium (Cd)	2021/07/02	101	80 - 120	98	80 - 120	<0.090	ug/L	NC	20
7439514	Dissolved Calcium (Ca)	2021/07/02	NC	80 - 120	100	80 - 120	<200	ug/L	0.63	20
7439514	Dissolved Chromium (Cr)	2021/07/02	98	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
7439514	Dissolved Cobalt (Co)	2021/07/02	103	80 - 120	105	80 - 120	<0.50	ug/L	NC	20
7439514	Dissolved Copper (Cu)	2021/07/02	106	80 - 120	103	80 - 120	<0.90	ug/L	NC	20
7439514	Dissolved Iron (Fe)	2021/07/02	101	80 - 120	100	80 - 120	<100	ug/L	2.1	20
7439514	Dissolved Lead (Pb)	2021/07/02	102	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
7439514	Dissolved Magnesium (Mg)	2021/07/02	NC	80 - 120	102	80 - 120	<50	ug/L	2.1	20
7439514	Dissolved Manganese (Mn)	2021/07/02	97	80 - 120	96	80 - 120	<2.0	ug/L	2.6	20
7439514	Dissolved Molybdenum (Mo)	2021/07/02	106	80 - 120	99	80 - 120	<0.50	ug/L	0.43	20
7439514	Dissolved Nickel (Ni)	2021/07/02	98	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
7439514	Dissolved Phosphorus (P)	2021/07/02	102	80 - 120	101	80 - 120	<100	ug/L	NC	20
7439514	Dissolved Potassium (K)	2021/07/02	102	80 - 120	100	80 - 120	<200	ug/L	0.43	20
7439514	Dissolved Selenium (Se)	2021/07/02	103	80 - 120	102	80 - 120	<2.0	ug/L	NC	20
7439514	Dissolved Silicon (Si)	2021/07/02	100	80 - 120	97	80 - 120	<50	ug/L	0.98	20
7439514	Dissolved Silver (Ag)	2021/07/02	100	80 - 120	98	80 - 120	<0.090	ug/L	NC	20
7439514	Dissolved Sodium (Na)	2021/07/02	104	80 - 120	102	80 - 120	<100	ug/L	1.7	20
7439514	Dissolved Strontium (Sr)	2021/07/02	NC	80 - 120	90	80 - 120	<1.0	ug/L	2.2	20
7439514	Dissolved Thallium (Tl)	2021/07/02	107	80 - 120	102	80 - 120	<0.050	ug/L	NC	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7439514	Dissolved Titanium (Ti)	2021/07/02	96	80 - 120	94	80 - 120	<5.0	ug/L	NC	20
7439514	Dissolved Uranium (U)	2021/07/02	101	80 - 120	97	80 - 120	<0.10	ug/L	NC	20
7439514	Dissolved Vanadium (V)	2021/07/02	101	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
7439514	Dissolved Zinc (Zn)	2021/07/02	98	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
7441336	Total Ammonia-N	2021/07/05	96	75 - 125	101	80 - 120	<0.050	mg/L	6.3	20
7441338	Dissolved Organic Carbon	2021/07/02	94	80 - 120	92	80 - 120	<0.40	mg/L	5.9	20
7441345	Total Ammonia-N	2021/07/05	96	75 - 125	99	80 - 120	<0.050	mg/L	NC	20
7441556	F2 (C10-C16 Hydrocarbons)	2021/07/03	107	60 - 130	108	60 - 130	<100	ug/L	NC	30
7441556	F3 (C16-C34 Hydrocarbons)	2021/07/03	108	60 - 130	110	60 - 130	<200	ug/L	NC	30
7441556	F4 (C34-C50 Hydrocarbons)	2021/07/03	110	60 - 130	110	60 - 130	<200	ug/L	NC	30
7442173	Dissolved Chloride (Cl-)	2021/07/05	116	80 - 120	104	80 - 120	<1.0	mg/L	NC	20
7442181	Dissolved Sulphate (SO4)	2021/07/05	NC	75 - 125	102	80 - 120	<1.0	mg/L	1.2	20
7442183	Orthophosphate (P)	2021/07/05	105	75 - 125	99	80 - 120	<0.010	mg/L	NC	25
7442216	Nitrate (N)	2021/07/02	94	80 - 120	99	80 - 120	<0.10	mg/L	2.8	20
7442216	Nitrite (N)	2021/07/02	103	80 - 120	108	80 - 120	<0.010	mg/L	NC	20
7442218	Nitrate (N)	2021/07/05	87	80 - 120	99	80 - 120	<0.10	mg/L	0.50	20
7442218	Nitrite (N)	2021/07/05	100	80 - 120	103	80 - 120	<0.010	mg/L	11	20
7442502	Alkalinity (Total as CaCO3)	2021/07/06			97	85 - 115	<1.0	mg/L	0.34	20
7442510	Conductivity	2021/07/05			103	85 - 115	<1.0	umho/cm	0.14	25
7442511	pH	2021/07/05			102	98 - 103			0.21	N/A
7442687	Nitrate (N)	2021/07/05	96	80 - 120	98	80 - 120	<0.10	mg/L	0.38	20
7442687	Nitrite (N)	2021/07/05	103	80 - 120	104	80 - 120	<0.010	mg/L	5.3	20
7443249	Benzene	2021/07/05	94	50 - 140	99	50 - 140	<0.20	ug/L	NC	30
7443249	Ethylbenzene	2021/07/05	103	50 - 140	110	50 - 140	<0.20	ug/L	NC	30
7443249	F1 (C6-C10) - BTEX	2021/07/05					<25	ug/L	NC	30
7443249	F1 (C6-C10)	2021/07/05	84	60 - 140	89	60 - 140	<25	ug/L	NC	30
7443249	o-Xylene	2021/07/05	100	50 - 140	107	50 - 140	<0.20	ug/L	NC	30
7443249	p+m-Xylene	2021/07/05	111	50 - 140	122	50 - 140	<0.40	ug/L	NC	30
7443249	Toluene	2021/07/05	98	50 - 140	105	50 - 140	<0.20	ug/L	NC	30

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7443249	Total Xylenes	2021/07/05					<0.40	ug/L	NC	30

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

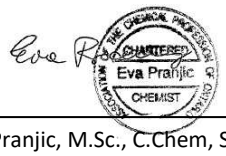
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel (905) 817-5700 Toll-free 800-563-6266 Fax (905) 817-5777 www.bvlabs.com

Page of

26-Jun-21 10:13
Ema Gitej
C1H7092

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:			
Company Name:	#21375 Golder Associates Ltd	Company Name:		Quotation #:	B80683	Bottle Order #:	831949
Attention:	Accounts Payable	Attention:	Gregory Padusenko	P.O. #:			
Address:	210 Sheldon Drive Cambridge ON N1T 1A8	Address:		Project:	19129150 (2300)	COC #:	C#831949-08-01
Tel:	(519) 620-8182 Fax:	Tel:	(519) 620-8182 Ext: 6509 Fax: (519) 620-9878	Project Name:		Project Manager:	Ema Gitej
Email:	CanadaAccountsPayableInvoices@golder.com	Email:	Gregory_Padusenko@golder.com	Site #:			
				Sampled By:	CS + VP		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___	☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ____ ☐ PWQO ☐ Reg 406 Table ____ ☐ Other ____	

Include Criteria on Certificate of Analysis (Y/N)? ____

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ____ Time Required: ____
Rush Confirmation Number: ____ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	RCAp - Comprehensive	O Reg 153 PHCs, BTEX/F1-F4							# of Bottles	Comments
1		MW20-15A	June 25 2021	13:30	GW	Y	✓	✓							4	
2		MW20-15B		12:15		Y	✓	✓							8	
3		MW20-15C		13:15		Y	✓								4	
4		MW20-25A		1100		Y	✓								4	
5		MW20-25B		1145		Y	✓	✓							8	
6		MW20-24A*		1345		Y	✓		*Field filtered, not preserved, lab to preserve						4	
7		MW20-24B		1400		Y	✓	✓							8	
8		DUP-6		—		Y	✓	✓							8	
9																
10																

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only				
Claire Steckle / C Steckle	21/06/25	1630		21/06/25	1659		Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
								4/1/7/16	Present		
									Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

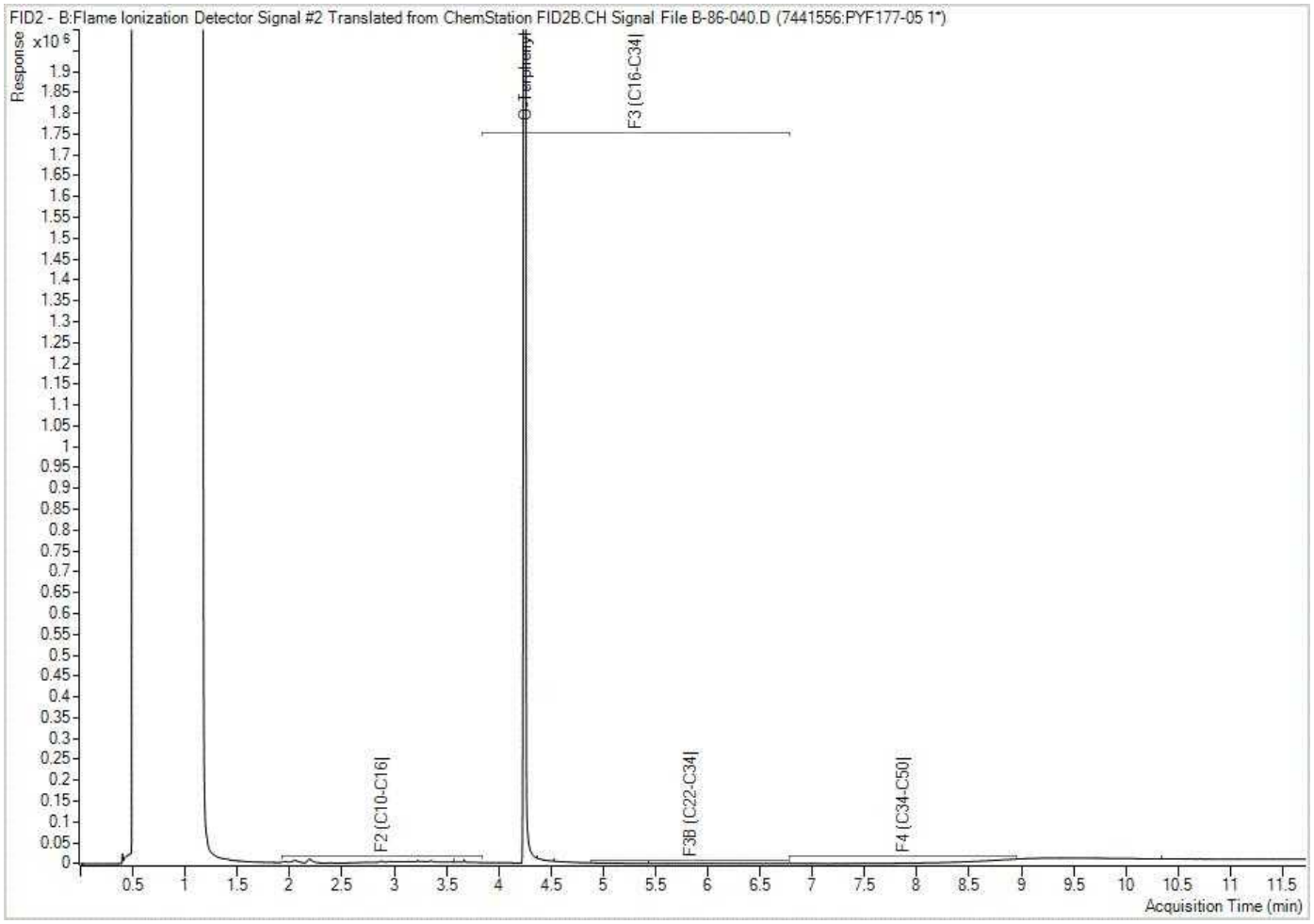
White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

BV Labs Job #: C1H7092
Report Date: 2021/07/08
BV Labs Sample: PYF177

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-15B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

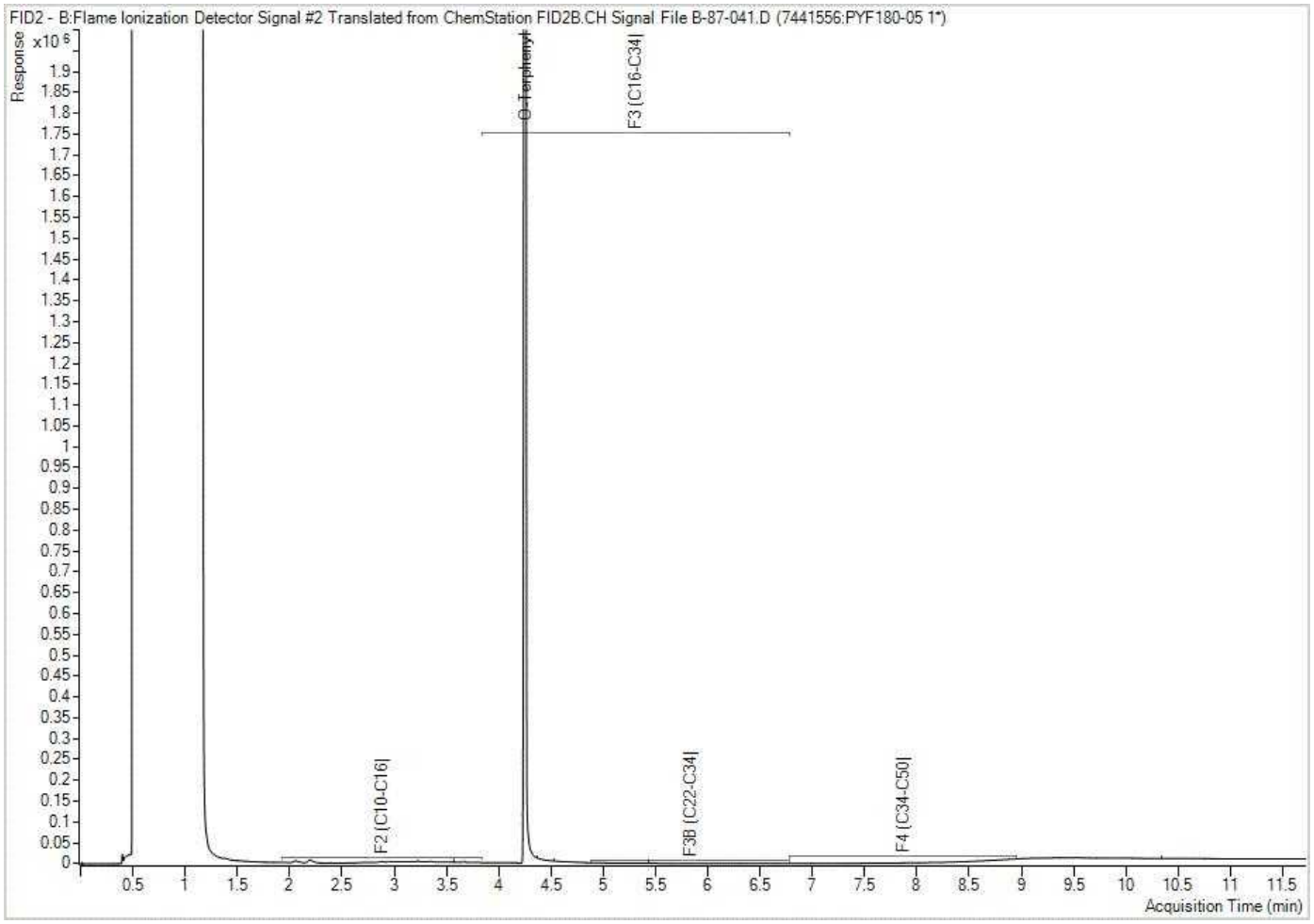


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H7092
Report Date: 2021/07/08
BV Labs Sample: PYF180

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-25B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

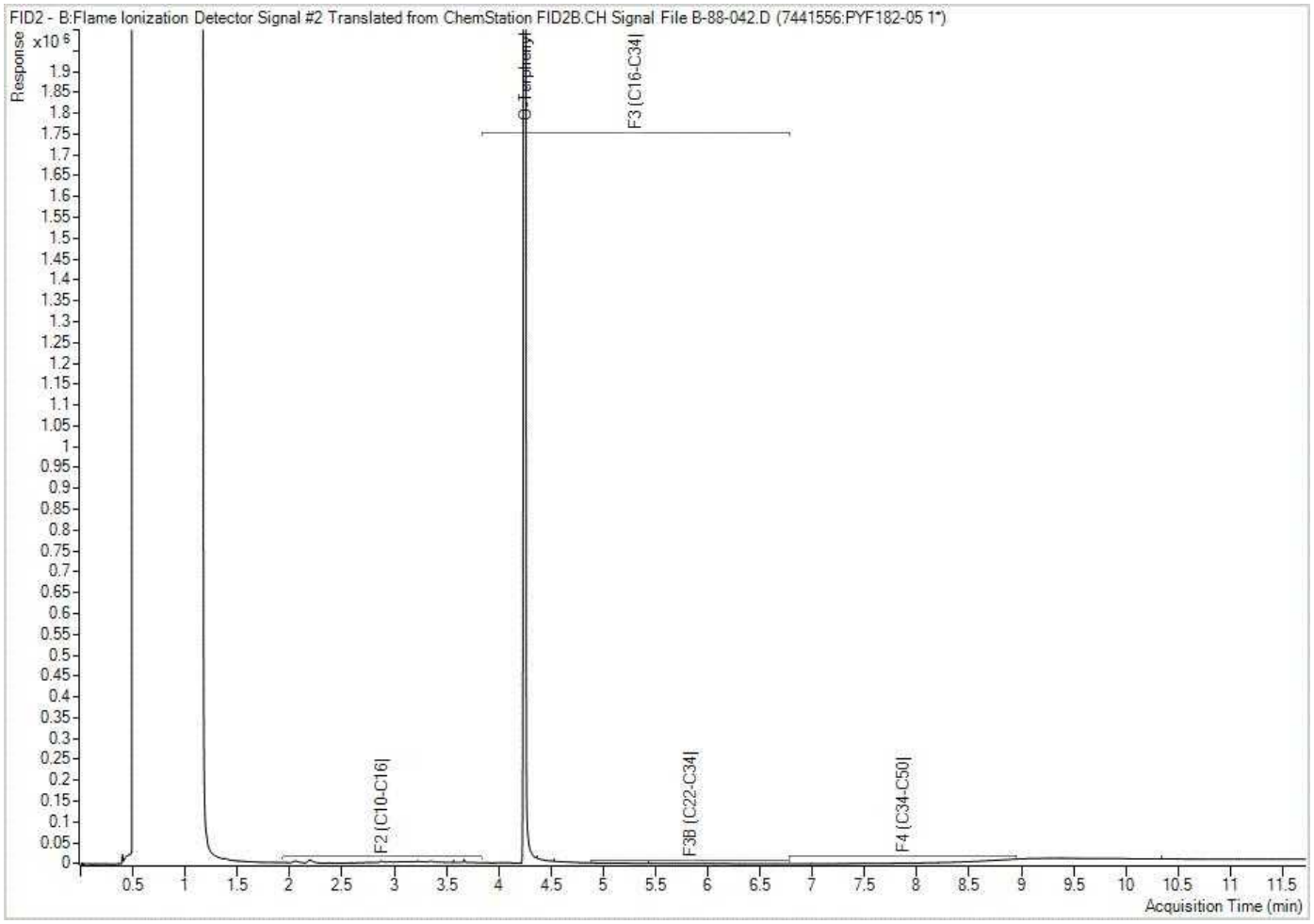


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H7092
Report Date: 2021/07/08
BV Labs Sample: PYF182

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-24B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

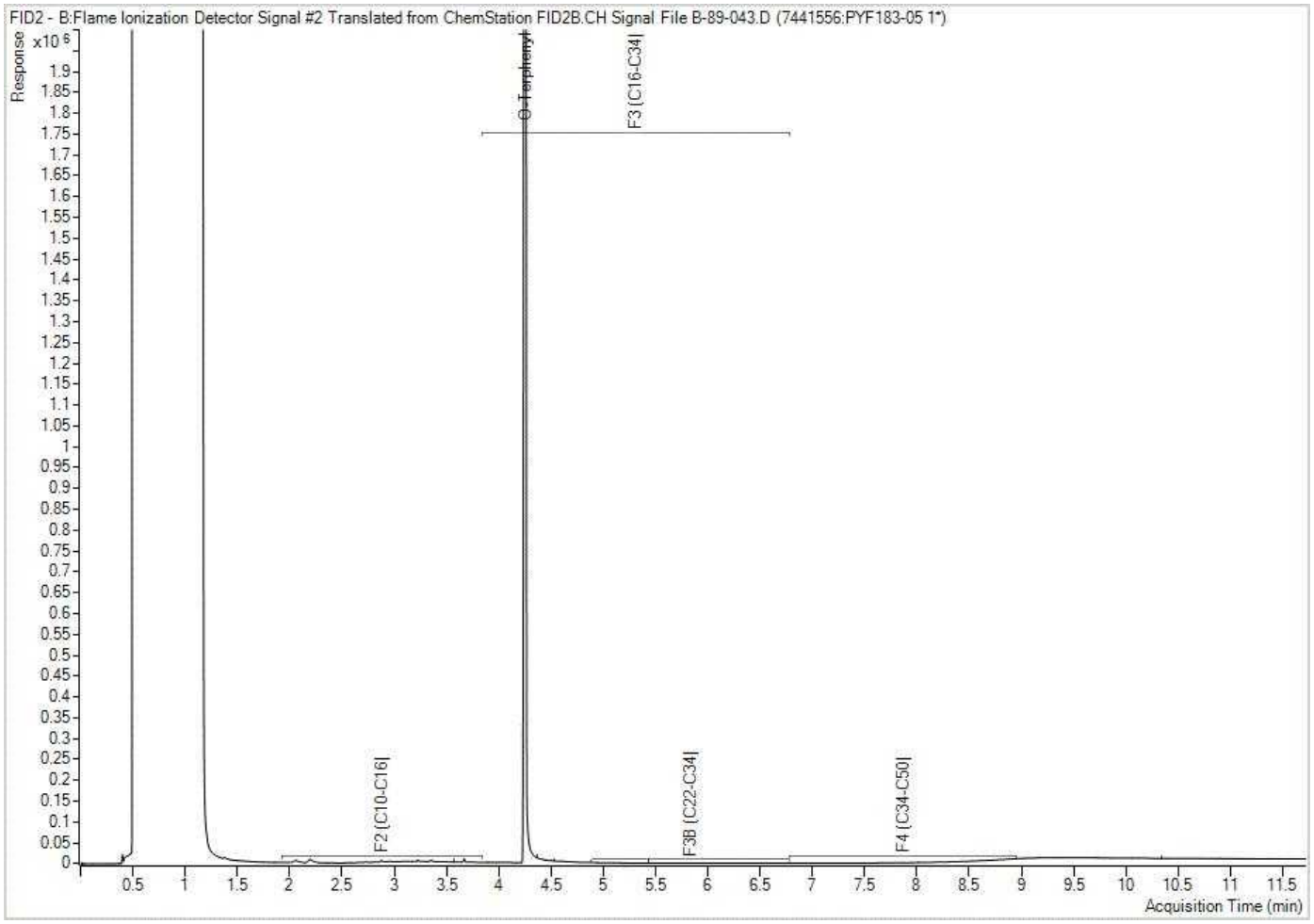


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H7092
Report Date: 2021/07/08
BV Labs Sample: PYF183

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: DUP-6

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

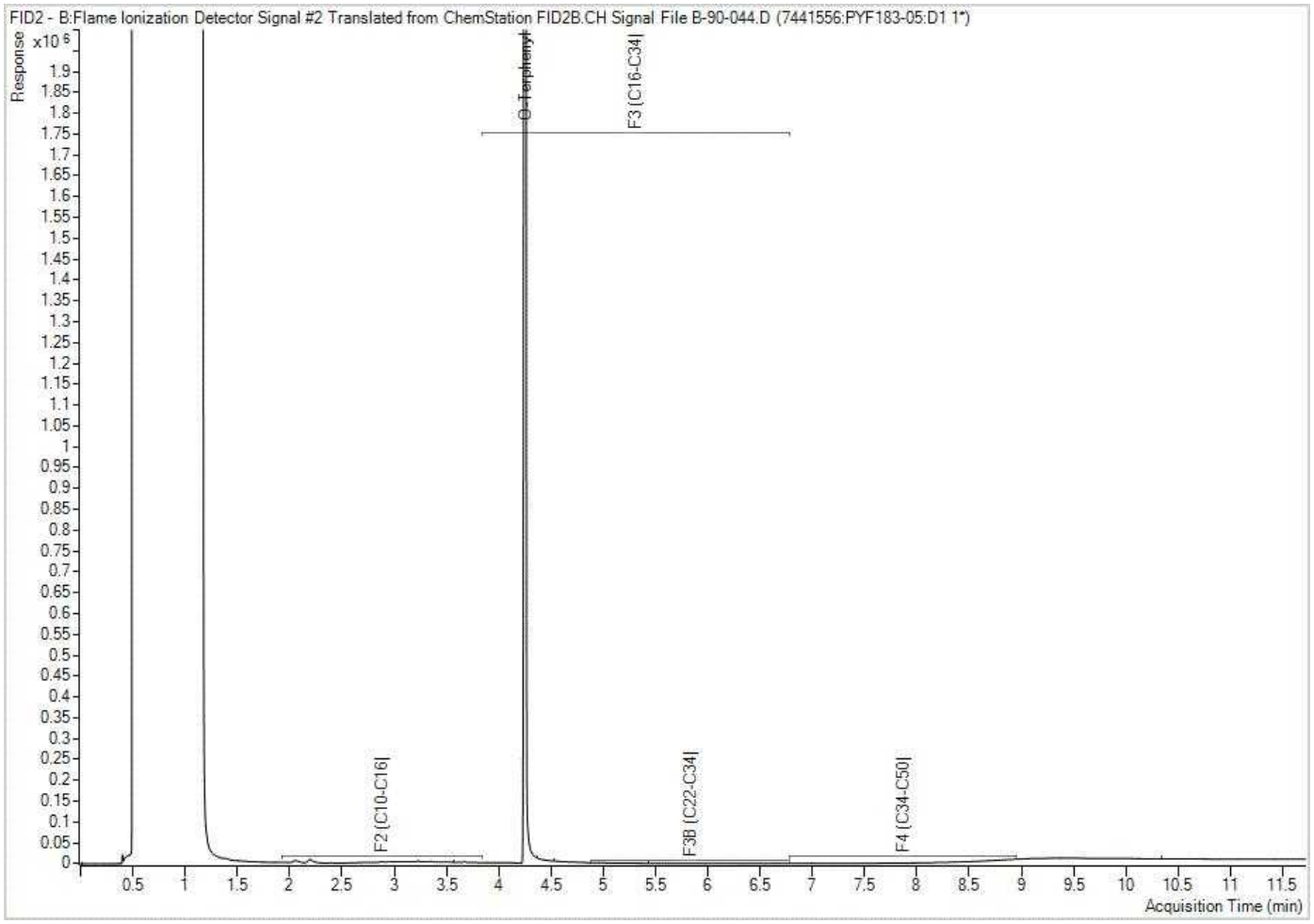


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1H7092
Report Date: 2021/07/08
BV Labs Sample: PYF183 Lab-Dup

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: DUP-6

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: 19129150 (2300)
Your C.O.C. #: 831949-09-01

Attention: Gregory Padusenko

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/07/08
Report #: R6709541
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1I0177
Received: 2021/06/28, 16:35

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	4	N/A	2021/07/06	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	4	N/A	2021/07/06	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	4	N/A	2021/07/05	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity	4	N/A	2021/07/06	CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (1)	1	N/A	2021/06/30	CAM SOP-00446	SM 23 5310 B m
Dissolved Organic Carbon (DOC) (1)	3	N/A	2021/07/02	CAM SOP-00446	SM 23 5310 B m
Petroleum Hydro. CCME F1 & BTEX in Water	2	N/A	2021/07/05	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (2)	2	2021/07/02	2021/07/03	CAM SOP-00316	CCME PHC-CWS m
Hardness (calculated as CaCO3)	3	N/A	2021/07/02	CAM SOP 00102/00408/00447	SM 2340 B
Hardness (calculated as CaCO3)	1	N/A	2021/07/05	CAM SOP 00102/00408/00447	SM 2340 B
Dissolved Metals by ICPMS	4	N/A	2021/07/02	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	4	N/A	2021/07/06		
Anion and Cation Sum	4	N/A	2021/07/06		
Total Ammonia-N	4	N/A	2021/07/05	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (3)	4	N/A	2021/07/05	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	4	2021/07/02	2021/07/06	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	4	N/A	2021/07/05	CAM SOP-00461	EPA 365.1 m
Sat. pH and Langelier Index (@ 20C)	4	N/A	2021/07/06		Auto Calc
Sat. pH and Langelier Index (@ 4C)	4	N/A	2021/07/06		Auto Calc
Sulphate by Automated Colourimetry	4	N/A	2021/07/05	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (TDS calc)	4	N/A	2021/07/06		Auto Calc

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement

Your Project #: 19129150 (2300)
Your C.O.C. #: 831949-09-01

Attention: Gregory Padusenko

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210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2021/07/08
Report #: R6709541
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1I0177
Received: 2021/06/28, 16:35

Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
(3) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: emese.gitej@bureauveritas.com
Phone# (905)817-5829
==========
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C1I0177
Report Date: 2021/07/08

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: AK

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PYW902			PYW902			PYW903		
Sampling Date		2021/06/28			2021/06/28			2021/06/28		
COC Number		831949-09-01			831949-09-01			831949-09-01		
	UNITS	MW20-16A	RDL	QC Batch	MW20-16A Lab-Dup	RDL	QC Batch	MW20-16B	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	5.57	N/A	7437804				6.43	N/A	7437804
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	200	1.0	7437805				240	1.0	7437805
Calculated TDS	mg/L	290	1.0	7437809				350	1.0	7437809
Carb. Alkalinity (calc. as CaCO3)	mg/L	3.2	1.0	7437805				5.2	1.0	7437805
Cation Sum	me/L	5.04	N/A	7437804				6.56	N/A	7437804
Hardness (CaCO3)	mg/L	230	1.0	7437803				180	1.0	7437803
Ion Balance (% Difference)	%	4.96	N/A	7437802				1.02	N/A	7437802
Langelier Index (@ 20C)	N/A	0.842		7437806				0.822		7437806
Langelier Index (@ 4C)	N/A	0.593		7437807				0.573		7437807
Saturation pH (@ 20C)	N/A	7.38		7437806				7.54		7437806
Saturation pH (@ 4C)	N/A	7.63		7437807				7.78		7437807
Inorganics										
Total Ammonia-N	mg/L	0.063	0.050	7441345				0.23	0.050	7441345
Conductivity	umho/cm	520	1.0	7441777				590	1.0	7441777
Dissolved Organic Carbon	mg/L	0.66	0.40	7441338				2.5	0.40	7439424
Orthophosphate (P)	mg/L	<0.010	0.010	7441833				<0.010	0.010	7441833
pH	pH	8.22		7441778				8.36		7441778
Dissolved Sulphate (SO4)	mg/L	58	1.0	7441832				29	1.0	7441832
Alkalinity (Total as CaCO3)	mg/L	210	1.0	7441747				250	1.0	7441747
Dissolved Chloride (Cl-)	mg/L	8.5	1.0	7441814				32	1.0	7441814
Nitrite (N)	mg/L	<0.010	0.010	7442218				<0.010	0.010	7442481
Nitrate (N)	mg/L	<0.10	0.10	7442218				<0.10	0.10	7442481
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	7442218				<0.10	0.10	7442481
Metals										
Dissolved Aluminum (Al)	ug/L	5.8	4.9	7439414	5.6	4.9	7439414	6.6	4.9	7439514
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	7439414	<0.50	0.50	7439414	<0.50	0.50	7439514
Dissolved Arsenic (As)	ug/L	8.2	1.0	7439414	8.1	1.0	7439414	5.8	1.0	7439514
Dissolved Barium (Ba)	ug/L	42	2.0	7439414	42	2.0	7439414	73	2.0	7439514
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7439414	<0.40	0.40	7439414	<0.40	0.40	7439514
Dissolved Boron (B)	ug/L	53	10	7439414	53	10	7439414	53	10	7439514
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	7439414	<0.090	0.090	7439414	<0.090	0.090	7439514

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PYW902			PYW902			PYW903		
Sampling Date		2021/06/28			2021/06/28			2021/06/28		
COC Number		831949-09-01			831949-09-01			831949-09-01		
	UNITS	MW20-16A	RDL	QC Batch	MW20-16A Lab-Dup	RDL	QC Batch	MW20-16B	RDL	QC Batch
Dissolved Calcium (Ca)	ug/L	53000	200	7439414	53000	200	7439414	32000	200	7439514
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7439414	<5.0	5.0	7439414	<5.0	5.0	7439514
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	7439414	<0.50	0.50	7439414	<0.50	0.50	7439514
Dissolved Copper (Cu)	ug/L	<0.90	0.90	7439414	<0.90	0.90	7439414	<0.90	0.90	7439514
Dissolved Iron (Fe)	ug/L	110	100	7439414	110	100	7439414	<100	100	7439514
Dissolved Lead (Pb)	ug/L	<0.50	0.50	7439414	<0.50	0.50	7439414	<0.50	0.50	7439514
Dissolved Magnesium (Mg)	ug/L	23000	50	7439414	23000	50	7439414	24000	50	7439514
Dissolved Manganese (Mn)	ug/L	11	2.0	7439414	10	2.0	7439414	21	2.0	7439514
Dissolved Molybdenum (Mo)	ug/L	4.6	0.50	7439414	4.5	0.50	7439414	35	0.50	7439514
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	7439414	<1.0	1.0	7439414	4.1	1.0	7439514
Dissolved Phosphorus (P)	ug/L	<100	100	7439414	<100	100	7439414	<100	100	7439514
Dissolved Potassium (K)	ug/L	2100	200	7439414	2100	200	7439414	1600	200	7439514
Dissolved Selenium (Se)	ug/L	<2.0	2.0	7439414	<2.0	2.0	7439414	<2.0	2.0	7439514
Dissolved Silicon (Si)	ug/L	5800	50	7439414	5800	50	7439414	5200	50	7439514
Dissolved Silver (Ag)	ug/L	<0.090	0.090	7439414	<0.090	0.090	7439414	<0.090	0.090	7439514
Dissolved Sodium (Na)	ug/L	11000	100	7439414	11000	100	7439414	67000	100	7439514
Dissolved Strontium (Sr)	ug/L	1000	1.0	7439414	1000	1.0	7439414	210	1.0	7439514
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	7439414	<0.050	0.050	7439414	<0.050	0.050	7439514
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	7439414	<5.0	5.0	7439414	<5.0	5.0	7439514
Dissolved Uranium (U)	ug/L	0.67	0.10	7439414	0.66	0.10	7439414	2.8	0.10	7439514
Dissolved Vanadium (V)	ug/L	<0.50	0.50	7439414	<0.50	0.50	7439414	<0.50	0.50	7439514
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	7439414	<5.0	5.0	7439414	<5.0	5.0	7439514

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1I0177
Report Date: 2021/07/08

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: AK

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PYW904		PYW905		
Sampling Date		2021/06/28		2021/06/28		
COC Number		831949-09-01		831949-09-01		
	UNITS	MW20-21A	RDL	MW20-21B	RDL	QC Batch
Calculated Parameters						
Anion Sum	me/L	27.5	N/A	7.21	N/A	7437804
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	200	1.0	290	1.0	7437805
Calculated TDS	mg/L	1800	1.0	410	1.0	7437809
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.9	1.0	4.7	1.0	7437805
Cation Sum	me/L	28.6	N/A	8.22	N/A	7437804
Hardness (CaCO3)	mg/L	1400	1.0	350	1.0	7437803
Ion Balance (% Difference)	%	2.00	N/A	6.59	N/A	7437802
Langelier Index (@ 20C)	N/A	1.27		1.22		7437806
Langelier Index (@ 4C)	N/A	1.02		0.970		7437807
Saturation pH (@ 20C)	N/A	6.73		7.01		7437806
Saturation pH (@ 4C)	N/A	6.98		7.26		7437807
Inorganics						
Total Ammonia-N	mg/L	0.085	0.050	0.61	0.050	7441345
Conductivity	umho/cm	2100	1.0	640	1.0	7441777
Dissolved Organic Carbon	mg/L	0.92	0.40	5.5	0.40	7441338
Orthophosphate (P)	mg/L	<0.010	0.010	<0.010	0.010	7441833
pH	pH	8.00		8.23		7441778
Dissolved Sulphate (SO4)	mg/L	1100	10	56	1.0	7441832
Alkalinity (Total as CaCO3)	mg/L	200	1.0	300	1.0	7441747
Dissolved Chloride (Cl-)	mg/L	15	1.0	3.1	1.0	7441814
Nitrite (N)	mg/L	<0.010	0.010	<0.010	0.010	7442481
Nitrate (N)	mg/L	<0.10	0.10	<0.10	0.10	7442481
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	<0.10	0.10	7442481
Metals						
Dissolved Aluminum (Al)	ug/L	7.4	4.9	500	4.9	7439514
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	<0.50	0.50	7439514
Dissolved Arsenic (As)	ug/L	14	1.0	9.3	1.0	7439514
Dissolved Barium (Ba)	ug/L	17	2.0	130	2.0	7439514
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	<0.40	0.40	7439514
Dissolved Boron (B)	ug/L	110	10	47	10	7439514
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	<0.090	0.090	7439514
Dissolved Calcium (Ca)	ug/L	390000	400	91000	200	7439514

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (WATER)

BV Labs ID		PYW904		PYW905		
Sampling Date		2021/06/28		2021/06/28		
COC Number		831949-09-01		831949-09-01		
	UNITS	MW20-21A	RDL	MW20-21B	RDL	QC Batch
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	<5.0	5.0	7439514
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	<0.50	0.50	7439514
Dissolved Copper (Cu)	ug/L	<0.90	0.90	3.1	0.90	7439514
Dissolved Iron (Fe)	ug/L	810	100	1100	100	7439514
Dissolved Lead (Pb)	ug/L	<0.50	0.50	2.1	0.50	7439514
Dissolved Magnesium (Mg)	ug/L	94000	50	30000	50	7439514
Dissolved Manganese (Mn)	ug/L	21	2.0	41	2.0	7439514
Dissolved Molybdenum (Mo)	ug/L	4.0	0.50	5.1	0.50	7439514
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	5.2	1.0	7439514
Dissolved Phosphorus (P)	ug/L	<100	100	<100	100	7439514
Dissolved Potassium (K)	ug/L	3200	200	1100	200	7439514
Dissolved Selenium (Se)	ug/L	<2.0	2.0	<2.0	2.0	7439514
Dissolved Silicon (Si)	ug/L	6600	50	10000	50	7439514
Dissolved Silver (Ag)	ug/L	<0.090	0.090	<0.090	0.090	7439514
Dissolved Sodium (Na)	ug/L	33000	100	25000	100	7439514
Dissolved Strontium (Sr)	ug/L	7100	1.0	1200	1.0	7439514
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	<0.050	0.050	7439514
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	23	5.0	7439514
Dissolved Uranium (U)	ug/L	0.20	0.10	1.8	0.10	7439514
Dissolved Vanadium (V)	ug/L	<0.50	0.50	1.2	0.50	7439514
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	9.8	5.0	7439514

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		PYW903	PYW905		
Sampling Date		2021/06/28	2021/06/28		
COC Number		831949-09-01	831949-09-01		
	UNITS	MW20-16B	MW20-21B	RDL	QC Batch
BTEX & F1 Hydrocarbons					
Benzene	ug/L	<0.20	<0.20	0.20	7443249
Toluene	ug/L	0.21	<0.20	0.20	7443249
Ethylbenzene	ug/L	<0.20	<0.20	0.20	7443249
o-Xylene	ug/L	<0.20	<0.20	0.20	7443249
p+m-Xylene	ug/L	<0.40	<0.40	0.40	7443249
Total Xylenes	ug/L	<0.40	<0.40	0.40	7443249
F1 (C6-C10)	ug/L	86	<25	25	7443249
F1 (C6-C10) - BTEX	ug/L	86	<25	25	7443249
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	7441624
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	200	7441624
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	7441624
Reached Baseline at C50	ug/L	Yes	Yes		7441624
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	97	98		7443249
4-Bromofluorobenzene	%	92	89		7443249
D10-o-Xylene	%	97	98		7443249
D4-1,2-Dichloroethane	%	98	97		7443249
o-Terphenyl	%	93	94		7441624

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PYW902
Sample ID: MW20-16A
Matrix: Water

Collected: 2021/06/28
Shipped:
Received: 2021/06/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7441747	N/A	2021/07/06	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7437805	N/A	2021/07/06	Automated Statchk
Chloride by Automated Colourimetry	KONE	7441814	N/A	2021/07/05	Alina Dobreanu
Conductivity	AT	7441777	N/A	2021/07/06	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7441338	N/A	2021/07/02	Nimarta Singh
Hardness (calculated as CaCO3)		7437803	N/A	2021/07/05	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7439414	N/A	2021/07/02	Nan Raykha
Ion Balance (% Difference)	CALC	7437802	N/A	2021/07/06	Automated Statchk
Anion and Cation Sum	CALC	7437804	N/A	2021/07/06	Automated Statchk
Total Ammonia-N	LACH/NH4	7441345	N/A	2021/07/05	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7442218	N/A	2021/07/05	Amanpreet Sappal
pH	AT	7441778	2021/07/02	2021/07/06	Surinder Rai
Orthophosphate	KONE	7441833	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7437806	N/A	2021/07/06	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7437807	N/A	2021/07/06	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7441832	N/A	2021/07/05	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7437809	N/A	2021/07/06	Automated Statchk

BV Labs ID: PYW902 Dup
Sample ID: MW20-16A
Matrix: Water

Collected: 2021/06/28
Shipped:
Received: 2021/06/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Metals by ICPMS	ICP/MS	7439414	N/A	2021/07/02	Nan Raykha

BV Labs ID: PYW903
Sample ID: MW20-16B
Matrix: Water

Collected: 2021/06/28
Shipped:
Received: 2021/06/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7441747	N/A	2021/07/06	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7437805	N/A	2021/07/06	Automated Statchk
Chloride by Automated Colourimetry	KONE	7441814	N/A	2021/07/05	Alina Dobreanu
Conductivity	AT	7441777	N/A	2021/07/06	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7439424	N/A	2021/06/30	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7443249	N/A	2021/07/05	Domnica Andronescu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7441624	2021/07/02	2021/07/03	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7437803	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7439514	N/A	2021/07/02	Daniel Teclu
Ion Balance (% Difference)	CALC	7437802	N/A	2021/07/06	Automated Statchk
Anion and Cation Sum	CALC	7437804	N/A	2021/07/06	Automated Statchk
Total Ammonia-N	LACH/NH4	7441345	N/A	2021/07/05	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7442481	N/A	2021/07/05	Amanpreet Sappal
pH	AT	7441778	2021/07/02	2021/07/06	Surinder Rai
Orthophosphate	KONE	7441833	N/A	2021/07/05	Avneet Kour Sudan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PYW903
Sample ID: MW20-16B
Matrix: Water

Collected: 2021/06/28
Shipped:
Received: 2021/06/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sat. pH and Langelier Index (@ 20C)	CALC	7437806	N/A	2021/07/06	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7437807	N/A	2021/07/06	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7441832	N/A	2021/07/05	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7437809	N/A	2021/07/06	Automated Statchk

BV Labs ID: PYW904
Sample ID: MW20-21A
Matrix: Water

Collected: 2021/06/28
Shipped:
Received: 2021/06/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7441747	N/A	2021/07/06	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7437805	N/A	2021/07/06	Automated Statchk
Chloride by Automated Colourimetry	KONE	7441814	N/A	2021/07/05	Alina Dobreanu
Conductivity	AT	7441777	N/A	2021/07/06	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7441338	N/A	2021/07/02	Nimarta Singh
Hardness (calculated as CaCO3)		7437803	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7439514	N/A	2021/07/02	Daniel Teclu
Ion Balance (% Difference)	CALC	7437802	N/A	2021/07/06	Automated Statchk
Anion and Cation Sum	CALC	7437804	N/A	2021/07/06	Automated Statchk
Total Ammonia-N	LACH/NH4	7441345	N/A	2021/07/05	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7442481	N/A	2021/07/05	Amanpreet Sappal
pH	AT	7441778	2021/07/02	2021/07/06	Surinder Rai
Orthophosphate	KONE	7441833	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7437806	N/A	2021/07/06	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7437807	N/A	2021/07/06	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7441832	N/A	2021/07/05	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7437809	N/A	2021/07/06	Automated Statchk

BV Labs ID: PYW905
Sample ID: MW20-21B
Matrix: Water

Collected: 2021/06/28
Shipped:
Received: 2021/06/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7441747	N/A	2021/07/06	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7437805	N/A	2021/07/06	Automated Statchk
Chloride by Automated Colourimetry	KONE	7441814	N/A	2021/07/05	Alina Dobreanu
Conductivity	AT	7441777	N/A	2021/07/06	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7441338	N/A	2021/07/02	Nimarta Singh
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7443249	N/A	2021/07/05	Domnica Andronescu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7441624	2021/07/02	2021/07/03	Ravinder Gaidhu
Hardness (calculated as CaCO3)		7437803	N/A	2021/07/02	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7439514	N/A	2021/07/02	Daniel Teclu
Ion Balance (% Difference)	CALC	7437802	N/A	2021/07/06	Automated Statchk
Anion and Cation Sum	CALC	7437804	N/A	2021/07/06	Automated Statchk
Total Ammonia-N	LACH/NH4	7441345	N/A	2021/07/05	Amanpreet Sappal

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1I0177
Report Date: 2021/07/08

Golder Associates Ltd
Client Project #: 19129150 (2300)
Sampler Initials: AK

TEST SUMMARY

BV Labs ID: PYW905
Sample ID: MW20-21B
Matrix: Water

Collected: 2021/06/28
Shipped:
Received: 2021/06/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7442481	N/A	2021/07/05	Amanpreet Sappal
pH	AT	7441778	2021/07/02	2021/07/06	Surinder Rai
Orthophosphate	KONE	7441833	N/A	2021/07/05	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7437806	N/A	2021/07/06	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7437807	N/A	2021/07/06	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7441832	N/A	2021/07/05	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	7437809	N/A	2021/07/06	Automated Statchk

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	15.0°C

Sample PYW903 [MW20-16B] : F1 BTEX analysis:The contamination in the F1 range is mainly due to a single peak , not a typical petroleum product.

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7441624	o-Terphenyl	2021/07/02	99	60 - 130	98	60 - 130	95	%		
7443249	1,4-Difluorobenzene	2021/07/05	95	70 - 130	98	70 - 130	98	%		
7443249	4-Bromofluorobenzene	2021/07/05	91	70 - 130	93	70 - 130	89	%		
7443249	D10-o-Xylene	2021/07/05	88	70 - 130	95	70 - 130	100	%		
7443249	D4-1,2-Dichloroethane	2021/07/05	93	70 - 130	90	70 - 130	95	%		
7439414	Dissolved Aluminum (Al)	2021/07/02	93	80 - 120	101	80 - 120	<4.9	ug/L	3.5	20
7439414	Dissolved Antimony (Sb)	2021/07/02	108	80 - 120	100	80 - 120	<0.50	ug/L	NC	20
7439414	Dissolved Arsenic (As)	2021/07/02	103	80 - 120	98	80 - 120	<1.0	ug/L	0.20	20
7439414	Dissolved Barium (Ba)	2021/07/02	102	80 - 120	101	80 - 120	<2.0	ug/L	0.49	20
7439414	Dissolved Beryllium (Be)	2021/07/02	110	80 - 120	102	80 - 120	<0.40	ug/L	NC	20
7439414	Dissolved Boron (B)	2021/07/02	108	80 - 120	100	80 - 120	<10	ug/L	0.65	20
7439414	Dissolved Cadmium (Cd)	2021/07/02	103	80 - 120	98	80 - 120	<0.090	ug/L	NC	20
7439414	Dissolved Calcium (Ca)	2021/07/02	NC	80 - 120	91	80 - 120	<200	ug/L	0.39	20
7439414	Dissolved Chromium (Cr)	2021/07/02	100	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
7439414	Dissolved Cobalt (Co)	2021/07/02	98	80 - 120	96	80 - 120	<0.50	ug/L	NC	20
7439414	Dissolved Copper (Cu)	2021/07/02	102	80 - 120	97	80 - 120	<0.90	ug/L	NC	20
7439414	Dissolved Iron (Fe)	2021/07/02	98	80 - 120	95	80 - 120	<100	ug/L	0.35	20
7439414	Dissolved Lead (Pb)	2021/07/02	103	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
7439414	Dissolved Magnesium (Mg)	2021/07/02	93	80 - 120	92	80 - 120	<50	ug/L	0.98	20
7439414	Dissolved Manganese (Mn)	2021/07/02	99	80 - 120	96	80 - 120	<2.0	ug/L	2.6	20
7439414	Dissolved Molybdenum (Mo)	2021/07/02	107	80 - 120	101	80 - 120	<0.50	ug/L	1.4	20
7439414	Dissolved Nickel (Ni)	2021/07/02	96	80 - 120	94	80 - 120	<1.0	ug/L	NC	20
7439414	Dissolved Phosphorus (P)	2021/07/02	102	80 - 120	110	80 - 120	<100	ug/L	NC	20
7439414	Dissolved Potassium (K)	2021/07/02	99	80 - 120	97	80 - 120	<200	ug/L	1.0	20
7439414	Dissolved Selenium (Se)	2021/07/02	98	80 - 120	94	80 - 120	<2.0	ug/L	NC	20
7439414	Dissolved Silicon (Si)	2021/07/02	91	80 - 120	91	80 - 120	<50	ug/L	0.20	20
7439414	Dissolved Silver (Ag)	2021/07/02	98	80 - 120	96	80 - 120	<0.090	ug/L	NC	20
7439414	Dissolved Sodium (Na)	2021/07/02	96	80 - 120	92	80 - 120	<100	ug/L	2.3	20
7439414	Dissolved Strontium (Sr)	2021/07/02	NC	80 - 120	98	80 - 120	<1.0	ug/L	0.37	20
7439414	Dissolved Thallium (Tl)	2021/07/02	104	80 - 120	98	80 - 120	<0.050	ug/L	NC	20
7439414	Dissolved Titanium (Ti)	2021/07/02	91	80 - 120	90	80 - 120	<5.0	ug/L	NC	20

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7439414	Dissolved Uranium (U)	2021/07/02	104	80 - 120	96	80 - 120	<0.10	ug/L	0.30	20
7439414	Dissolved Vanadium (V)	2021/07/02	99	80 - 120	95	80 - 120	<0.50	ug/L	NC	20
7439414	Dissolved Zinc (Zn)	2021/07/02	99	80 - 120	95	80 - 120	<5.0	ug/L	NC	20
7439424	Dissolved Organic Carbon	2021/06/30	95	80 - 120	98	80 - 120	<0.40	mg/L	0.99	20
7439514	Dissolved Aluminum (Al)	2021/07/02	101	80 - 120	101	80 - 120	<4.9	ug/L	NC	20
7439514	Dissolved Antimony (Sb)	2021/07/02	104	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
7439514	Dissolved Arsenic (As)	2021/07/02	103	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
7439514	Dissolved Barium (Ba)	2021/07/02	102	80 - 120	98	80 - 120	<2.0	ug/L	3.5	20
7439514	Dissolved Beryllium (Be)	2021/07/02	103	80 - 120	100	80 - 120	<0.40	ug/L	NC	20
7439514	Dissolved Boron (B)	2021/07/02	98	80 - 120	96	80 - 120	<10	ug/L	2.1	20
7439514	Dissolved Cadmium (Cd)	2021/07/02	101	80 - 120	98	80 - 120	<0.090	ug/L	NC	20
7439514	Dissolved Calcium (Ca)	2021/07/02	NC	80 - 120	100	80 - 120	<200	ug/L	0.63	20
7439514	Dissolved Chromium (Cr)	2021/07/02	98	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
7439514	Dissolved Cobalt (Co)	2021/07/02	103	80 - 120	105	80 - 120	<0.50	ug/L	NC	20
7439514	Dissolved Copper (Cu)	2021/07/02	106	80 - 120	103	80 - 120	<0.90	ug/L	NC	20
7439514	Dissolved Iron (Fe)	2021/07/02	101	80 - 120	100	80 - 120	<100	ug/L	2.1	20
7439514	Dissolved Lead (Pb)	2021/07/02	102	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
7439514	Dissolved Magnesium (Mg)	2021/07/02	NC	80 - 120	102	80 - 120	<50	ug/L	2.1	20
7439514	Dissolved Manganese (Mn)	2021/07/02	97	80 - 120	96	80 - 120	<2.0	ug/L	2.6	20
7439514	Dissolved Molybdenum (Mo)	2021/07/02	106	80 - 120	99	80 - 120	<0.50	ug/L	0.43	20
7439514	Dissolved Nickel (Ni)	2021/07/02	98	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
7439514	Dissolved Phosphorus (P)	2021/07/02	102	80 - 120	101	80 - 120	<100	ug/L	NC	20
7439514	Dissolved Potassium (K)	2021/07/02	102	80 - 120	100	80 - 120	<200	ug/L	0.43	20
7439514	Dissolved Selenium (Se)	2021/07/02	103	80 - 120	102	80 - 120	<2.0	ug/L	NC	20
7439514	Dissolved Silicon (Si)	2021/07/02	100	80 - 120	97	80 - 120	<50	ug/L	0.98	20
7439514	Dissolved Silver (Ag)	2021/07/02	100	80 - 120	98	80 - 120	<0.090	ug/L	NC	20
7439514	Dissolved Sodium (Na)	2021/07/02	104	80 - 120	102	80 - 120	<100	ug/L	1.7	20
7439514	Dissolved Strontium (Sr)	2021/07/02	NC	80 - 120	90	80 - 120	<1.0	ug/L	2.2	20
7439514	Dissolved Thallium (Tl)	2021/07/02	107	80 - 120	102	80 - 120	<0.050	ug/L	NC	20
7439514	Dissolved Titanium (Ti)	2021/07/02	96	80 - 120	94	80 - 120	<5.0	ug/L	NC	20
7439514	Dissolved Uranium (U)	2021/07/02	101	80 - 120	97	80 - 120	<0.10	ug/L	NC	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7439514	Dissolved Vanadium (V)	2021/07/02	101	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
7439514	Dissolved Zinc (Zn)	2021/07/02	98	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
7441338	Dissolved Organic Carbon	2021/07/02	94	80 - 120	92	80 - 120	<0.40	mg/L	5.9	20
7441345	Total Ammonia-N	2021/07/05	96	75 - 125	99	80 - 120	<0.050	mg/L	NC	20
7441624	F2 (C10-C16 Hydrocarbons)	2021/07/03	NC	60 - 130	111	60 - 130	<100	ug/L	12	30
7441624	F3 (C16-C34 Hydrocarbons)	2021/07/03	100	60 - 130	113	60 - 130	<200	ug/L	NC	30
7441624	F4 (C34-C50 Hydrocarbons)	2021/07/03	104	60 - 130	112	60 - 130	<200	ug/L	NC	30
7441747	Alkalinity (Total as CaCO3)	2021/07/06			95	85 - 115	<1.0	mg/L	1.2	20
7441777	Conductivity	2021/07/06			99	85 - 115	<1.0	umho/cm	0.38	25
7441778	pH	2021/07/06			101	98 - 103			0.42	N/A
7441814	Dissolved Chloride (Cl-)	2021/07/05	112	80 - 120	104	80 - 120	<1.0	mg/L	1.9	20
7441832	Dissolved Sulphate (SO4)	2021/07/05	NC	75 - 125	102	80 - 120	<1.0	mg/L	0.30	20
7441833	Orthophosphate (P)	2021/07/05	113	75 - 125	99	80 - 120	<0.010	mg/L	NC	25
7442218	Nitrate (N)	2021/07/05	87	80 - 120	99	80 - 120	<0.10	mg/L	0.50	20
7442218	Nitrite (N)	2021/07/05	100	80 - 120	103	80 - 120	<0.010	mg/L	11	20
7442481	Nitrate (N)	2021/07/05	97	80 - 120	100	80 - 120	<0.10	mg/L	NC	20
7442481	Nitrite (N)	2021/07/05	102	80 - 120	103	80 - 120	<0.010	mg/L	NC	20
7443249	Benzene	2021/07/05	94	50 - 140	99	50 - 140	<0.20	ug/L	NC	30
7443249	Ethylbenzene	2021/07/05	103	50 - 140	110	50 - 140	<0.20	ug/L	NC	30
7443249	F1 (C6-C10) - BTEX	2021/07/05					<25	ug/L	NC	30
7443249	F1 (C6-C10)	2021/07/05	84	60 - 140	89	60 - 140	<25	ug/L	NC	30
7443249	o-Xylene	2021/07/05	100	50 - 140	107	50 - 140	<0.20	ug/L	NC	30
7443249	p+m-Xylene	2021/07/05	111	50 - 140	122	50 - 140	<0.40	ug/L	NC	30
7443249	Toluene	2021/07/05	98	50 - 140	105	50 - 140	<0.20	ug/L	NC	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7443249	Total Xylenes	2021/07/05					<0.40	ug/L	NC	30

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

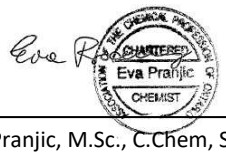
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free 800-563-6266 Fax:(905) 817-5777 www.bvlabs.com

Page 1 of 1

28-Jun-21 16:35
Ema Gitej
C1I0177

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name:	#21375 Golder Associates Ltd	Company Name:		Quotation #:	B80683
Attention:	Accounts Payable	Attention:	Gregory Padusenko	P.O. #:	
Address:	210 Sheldon Drive Cambridge ON N1T 1A8	Address:		Project:	19129150 (2300)
Tel:	(519) 620-8182 Fax:	Tel:	(519) 620-8182 Ext: 6509 Fax: (519) 620-9878	Project Name:	
Email:	CanadaAccountsPayableInvoices@golder.com	Email:	Gregory_Padusenko@golder.com	Site #:	
				Sampled By:	

Lab Use Only: Bottle Order #: 831949
C#831949-09-01
Project Manager: Ema Gitej

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ☐ PWQO ☐ Reg 406 Table ☐ Other

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

ANALYSIS REQUESTED (PLEASE BE SPECIFIC):

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	RCAp - Comprehensive	O Reg 153 PHCs, BTEX/F1-F4								# of Bottles	Comments
1		MW20-16A	06/28/21	GW	12-	X	X									4	
2		MW20-16B	↓	↓	12:30	X	X	X								8	
3		MW20-21A			9-	X	X									4	
4		MW20-21B			9:30	X	X	X								8	
5																	
6																	
7																	
8																	REC'D IN WATERLOO
9																	
10																	

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time
Future Link Lab/A. Link/Golder	21/06/28		JASPREET TIWANA [signature]	2021/06/28	16:35
			KRISTEETHA SKANTHA	21/06/29	12:30

jars used and not submitted

Laboratory Use Only
Time Sensitive
Temperature (°C) on Receipt: 19° 12° 14°
Custody Seal Present Intact: Yes ☐ No ☐

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

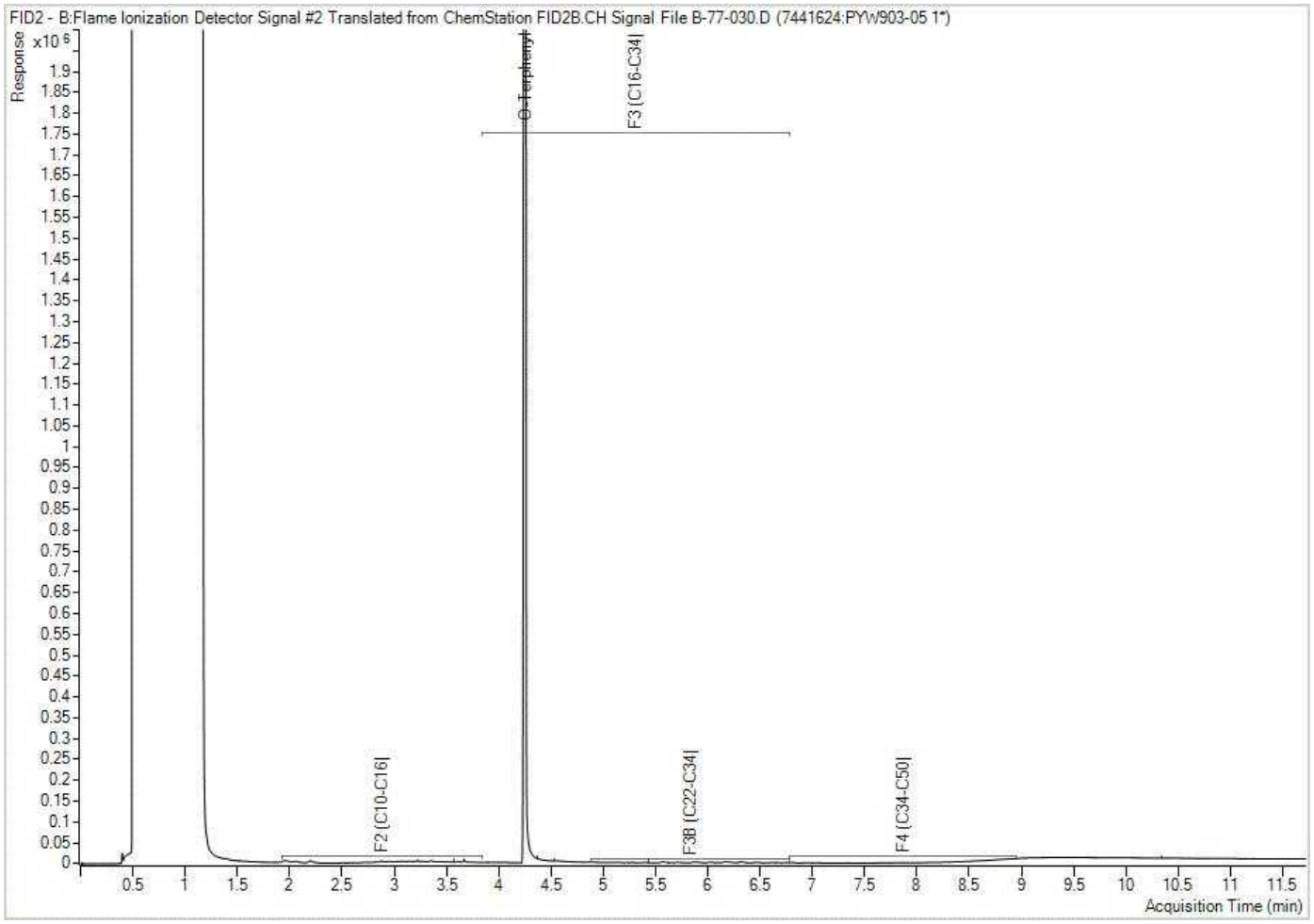
Bureau Veritas Canada (2019) Inc.

6/7/3 ON ICE

BV Labs Job #: C1I0177
Report Date: 2021/07/08
BV Labs Sample: PYW903

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-16B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

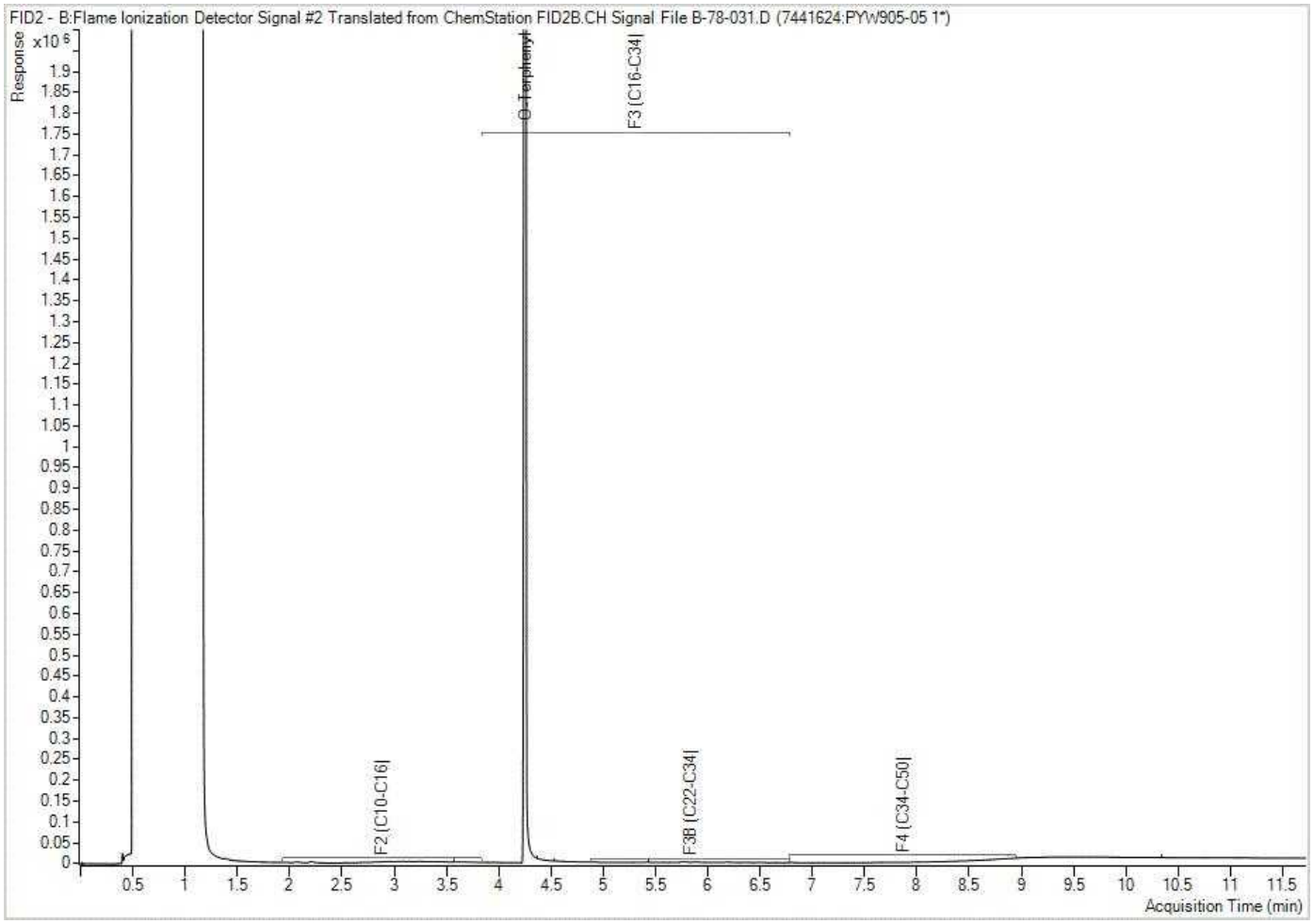


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1I0177
Report Date: 2021/07/08
BV Labs Sample: PYW905

Golder Associates Ltd
Client Project #: 19129150 (2300)
Client ID: MW20-21B

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

APPENDIX J

Northwest Area Investigations

APPENDIX J

Northwest Investigation Borehole Logs

PROJECT: 19129150

RECORD OF DRILLHOLE: MW22-01 (CAL)

SHEET 1 OF 1

LOCATION: N 4853808.0 ;E 576781.7

DRILLING DATE: August 9, 2022

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: Sonic

DRILLING CONTRACTOR: Choice Sonic Drilling

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate
BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage
PL - Planar; CU - Curved; UN - Undulating; ST - Stepped; IR - Irregular
PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE min/(m)	FLUSH	COLOUR % RETURN	RECOVERY TOTAL CORE %	RECOVERY SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jr	Ja	Jn	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
		GROUND SURFACE		421.40																		
0		(SM) SILTY SAND LOAM; dark brown, no odors, no straining, non-cohesive, moist (TOPSOIL)		0.00 420.79 0.61																		
		(SM) SILTY SAND, with trace clay; brown, no odors, no staining, non-cohesive, moist		419.57 1.83																		
2		(SM) SILTY SAND TILL, with some gravel; brown, no odors, no staining, cohesive, w<PL																				Bentonite August 26, 2022
4				415.92																		Sand
6		(SM) SILTY SAND; brown, no odors, no staining, non-cohesive, moist		5.49 415.00																		Screen
		(SM) SILTY SAND TILL, with some gravel; brown, no odors, no staining, cohesive, w<PL		6.40																		
8				413.33																		Sand
		BOTTOM OF HOLE		8.08																		
10																						
12																						
14																						
16																						
18																						
20																						
22																						
24																						
26																						
28																						
30																						

DEPTH SCALE
1 : 150

GOLDER
MEMBER OF WSP

LOGGED: VP
CHECKED: GRP

GTA-RCK 004 S:\CLIENTS\VOTORANTIM_CIMENTOS\LONG_PAR_5_CALEDON\02_DATA\GINTI\LONG_PAR_5_CALEDON.GPJ GAL-MISS.GDT 11/1/22

PROJECT: 19129150

RECORD OF DRILLHOLE: MW22-02 (CAL) - OFFSET

SHEET 1 OF 1

LOCATION: N 4853793.8 ;E 576478.0

DRILLING DATE: August 8, 2022

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: Sonic

DRILLING CONTRACTOR: Choice Sonic Drilling

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate; BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage; PL - Planar; CU - Curved; UN - Undulating; ST - Stepped; IR - Irregular; PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break; BR - Broken Rock

NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE min/(m)	FLUSH	COLOUR % RETURN	RECOVERY TOTAL CORE %	RECOVERY SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jr	Ja	Jn	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
0		GROUND SURFACE		420.00																		
0		(ML/SP) SILT and SAND LOAM; brown, no odors, no staining, cohesive, w<PL (TOPSOIL)		0.00																		
				0.30																		
2		(SM) SILTY SAND TILL, with some gravel; brown, no odors, no staining, cohesive, w<PL																				Bentonite August 26, 2022
				416.64																		
4		(SM/GP) SILTY SAND and GRAVEL TILL; brown, no odors, no staining, non-cohesive, moist		3.35																		Sand; Screen
				414.51																		
6		(SM) SILTY SAND TILL, with some gravel; brown, no odors, no staining, cohesive, w<PL		5.49																		Sand; Bentonite
8				411.31																		
		BOTTOM OF HOLE		8.69																		
10																						
12																						
14																						
16																						
18																						
20																						
22																						
24																						
26																						
28																						
30																						

DEPTH SCALE

1 : 150

GOLDER
MEMBER OF WSP

LOGGED: VP

CHECKED: GRP

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PROJECT: 19129150

RECORD OF DRILLHOLE: MW22-02 (CAL)

SHEET 1 OF 2

LOCATION: N 4853794.9 ;E 576481.0

DRILLING DATE: August 2-3, 2022

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: Sonic

DRILLING CONTRACTOR: Choice Sonic Drilling

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate
BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage
PL - Planar; CU - Curved; UN - Undulating; ST - Stepped; IR - Irregular
PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE min/(m)	FLUSH	COLOUR % RETURN	RECOVERY TOTAL CORE %	RECOVERY SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jr	Ja	Jn	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
		GROUND SURFACE		419.81																		
0		(ML/SP) SILT and SAND LOAM; brown, no odors, no staining, cohesive, w<PL (TOPSOIL)		0.00																		
				0.46																		
2		(SM) SILTY SAND TILL, with some gravel; brown, no odors, no staining, cohesive, w<PL																				August 26, 2022 (B) August 26, 2022 (A)
				416.45																		
4		(SM/GP) SILTY SAND and GRAVEL TILL; brown, no odors, no staining, non-cohesive, moist		3.35																		
				414.32																		
6		(SM) SILTY SAND TILL, with some gravel; brown, no odors, no staining, cohesive, w<PL		5.49																		Bentonite
8				411.27																		
		(CH) SILTY CLAY TILL, some sand and gravel; brown, no odors, no staining, cohesive, W < PL		8.53																		
10				409.14																		
		(SM) SILTY SAND TILL, with some gravel; brown, no odors, no staining, non-cohesive, wet		10.67																		
12				407.31																		Sand
		DOLOSTONE, highly weathered to fresh, bedded dolostone, grey (GASPORT FORMATION)		12.50																		Screen
14																						
16																						Sand
18																						
20																						
22																						Bentonite
24																						
26																						
28																						
30		*CONTINUED NEXT PAGE*																				

DEPTH SCALE
1 : 150

GOLDER
MEMBER OF WSP

LOGGED: VP
CHECKED: GRP

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PROJECT: 19129150

RECORD OF DRILLHOLE: MW22-02 (CAL)

SHEET 2 OF 2

LOCATION: N 4853794.9 ;E 576481.0

DRILLING DATE: August 2-3, 2022

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: Sonic

DRILLING CONTRACTOR: Choice Sonic Drilling

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate
BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage
PL - Planar; CU - Curved; UN - Undulating; ST - Stepped; IR - Irregular
PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE min/(m)	FLUSH	COLOUR % RETURN	RECOVERY TOTAL CORE %	RECOVERY SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jr	Ja	Jn	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
		--- CONTINUED FROM PREVIOUS PAGE ---																				
30		DOLOSTONE, highly weathered to fresh, bedded dolostone, grey (GASPORT FORMATION)																				
32																						Bentonite
34																						Sand
36																						Screen Sand
				382.62																		
		SHALEY DOLOSTONE, bedded, shaley dolostone, slate grey/brown		37.19																		
38				381.71																		Bentonite
		SHALE; bedded shale, blue green (CABOT HEAD FORMATION)		38.10																		
				380.18																		
40		BOTTOM OF HOLE		39.62																		
42																						
44																						
46																						
48																						
50																						
52																						
54																						
56																						
58																						
60																						

DEPTH SCALE

1 : 150

GOLDER
MEMBER OF WSP

LOGGED: VP

CHECKED: GRP

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PROJECT: 19129150

RECORD OF DRILLHOLE: MW22-03 (CAL)

SHEET 1 OF 1

LOCATION: N 4854077.5 ;E 576200.6

DRILLING DATE: August 8-9, 2022

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: Sonic

DRILLING CONTRACTOR: Choice Sonic Drilling

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate; BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage; PL - Planar; CU - Curved; UN - Undulating; ST - Stepped; IR - Irregular; PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break; BR - Broken Rock

NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE min/(m)	FLUSH	COLOUR % RETURN	RECOVERY TOTAL CORE %	RECOVERY SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: B Angle	DIP w.r.t. CORE AXIS	TYPE AND SURFACE DESCRIPTION	Jr	Ja	Jn	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
		GROUND SURFACE		421.87																		
0		(ML) SILT, some sand and trace clay; dark brown, no odors, no staining, cohesive, w<PL (TOPSOIL)		0.00																		
				0.46																		
		(ML/SP) SILT and SAND, trace clay; brown, no odors, no staining, cohesive, w<PL		420.80 1.07																		
2		(SM/GP) SILTY SAND and GRAVEL TILL; brown, no odors, no staining, non-cohesive, moist																				August 26, 2022 (A) Bentonite August 26, 2022 (B)
4																						Sand
																						Screen
6				415.31																		Sand
		(CH) SILTY CLAY TILL, some sand and gravel; brown, no odors, no staining, cohesive, W < PL		6.55																		
8				413.33																		
		(SM) SILTY SAND TILL, with some gravel; brown, no odors, no staining, non-cohesive, moist		8.53																		Bentonite
10																						
12																						Sand
14																						Screen
16																						Sand
18																						Bentonite
				402.82																		
20		DOLOSTONE, highly weathered to fresh, bedded dolostone, grey (GASPORT FORMATION)		19.05 401.45																		
		BOTTOM OF HOLE		20.42																		
22																						
24																						
26																						
28																						
30																						

DEPTH SCALE

1 : 150

GOLDER MEMBER OF WSP

LOGGED: VP

CHECKED: GRP

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PROJECT: 19129150

RECORD OF DRILLHOLE: PW22-01 (CAL)

SHEET 1 OF 2

LOCATION: N 4853535.3 ;E 576573.8

DRILLING DATE: August 9-10, 2022

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: Sonic

DRILLING CONTRACTOR: Choice Sonic Drilling

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate
BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage
PL - Planar; CU - Curved; UN - Undulating; ST - Stepped; IR - Irregular
PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE min/(m)	FLUSH	COLOUR % RETURN	RECOVERY TOTAL CORE %	RECOVERY SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jr	Ja	Jn	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
0		GROUND SURFACE		416.75																		
		(SM) SILTY SAND LOAM; dark brown, no odors, no straining, non-cohesive, moist (TOPSOIL)		0.00																		
				0.46																		
		(SM) SILTY SAND TILL, with some gravel; brown, no odors, no staining, non-cohesive, moist		415.53 1.22																		
		(CH) SILTY CLAY TILL, some sand and gravel; brown, no odors, no staining, cohesive, W < PL																				
				406.38																		
		DOLOSTONE, highly weathered to fresh, bedded dolostone, grey (GASPORT FORMATION)		10.36																		
		CONTINUED NEXT PAGE																				

August 26, 2022

Bentonite

Sand

Screen

DEPTH SCALE
1 : 150

GOLDER
MEMBER OF WSP

LOGGED: VP

CHECKED: GRP

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PROJECT: 19129150

RECORD OF DRILLHOLE: PW22-01 (CAL)

SHEET 2 OF 2

LOCATION: N 4853535.3 ;E 576573.8

DRILLING DATE: August 9-10, 2022

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: Sonic

DRILLING CONTRACTOR: Choice Sonic Drilling

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate
BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage
PL - Planar; CU - Curved; UN - Undulating; ST - Stepped; IR - Irregular
PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	PENETRATION RATE min/(m)	FLUSH	COLOUR % RETURN	RECOVERY TOTAL CORE %	RECOVERY SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jr	Ja	Jn	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
30		*--- CONTINUED FROM PREVIOUS PAGE ---*																				
		DOLOSTONE, highly weathered to fresh, bedded dolostone, grey (GASPORT FORMATION)																				
32																						Screen
				383.83																		
		SHALEY DOLOSTONE, bedded, shaley dolostone, slate grey/brown		32.92																		
34				382.61																		
		SHALE; bedded shale, blue green (CABOT HEAD FORMATION)		34.14																		
36																						Sand
38				377.12																		
		BOTTOM OF HOLE		39.62																		
40																						
42																						
44																						
46																						
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58																						
60																						

DEPTH SCALE
1 : 150

GOLDER
MEMBER OF WSP

LOGGED: VP
CHECKED: GRP

GTA-RCK 004 S:\CLIENTS\VOTORANTIM_CIMENTOS\LONG_PAR_5_CALEDON\02_DATA\GINT\LONG_PAR_5_CALEDON.GPJ GAL-MISS.GDT 11/1/22

APPENDIX J

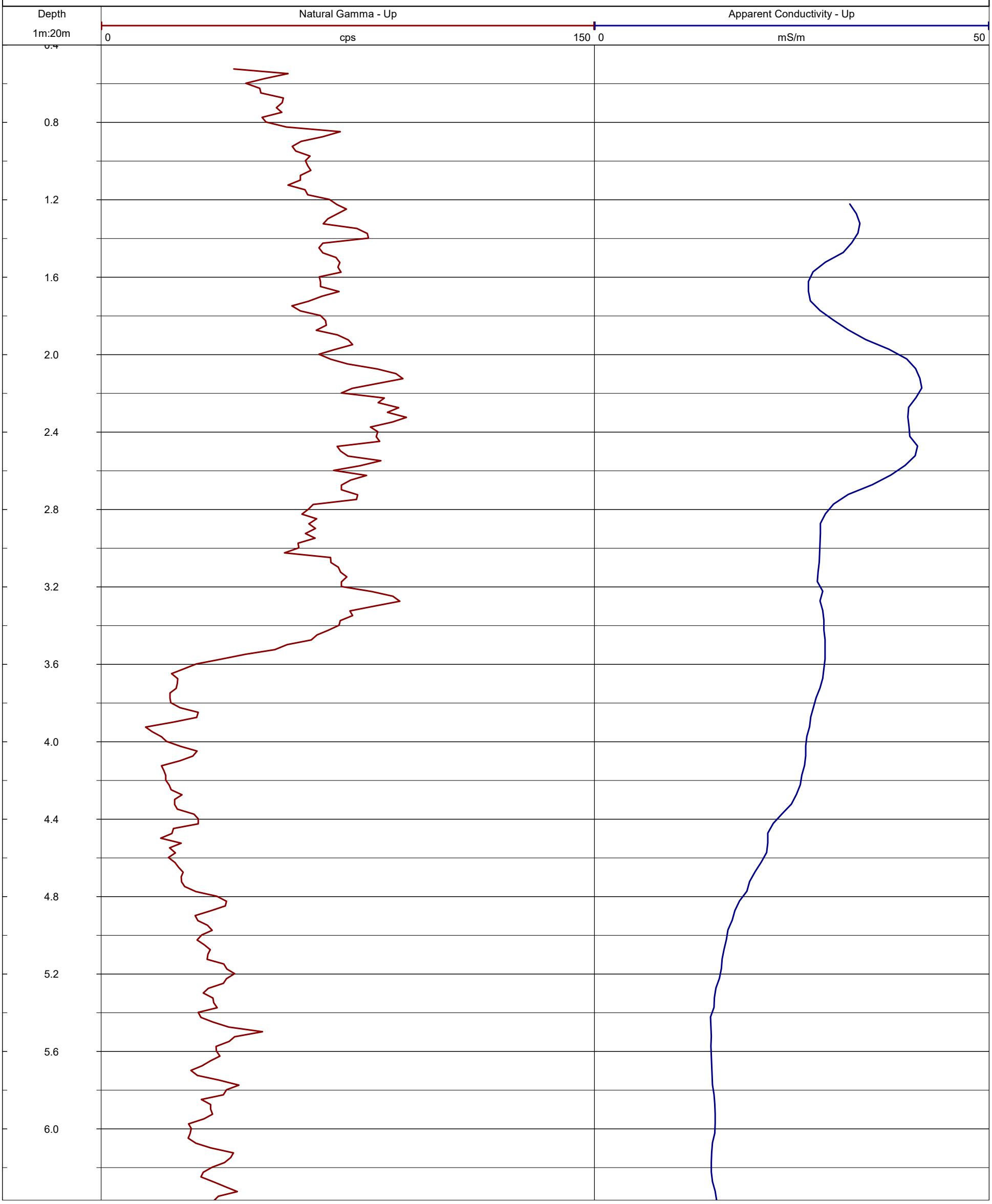
Northwest Investigation - Geophysical Borehole Logs

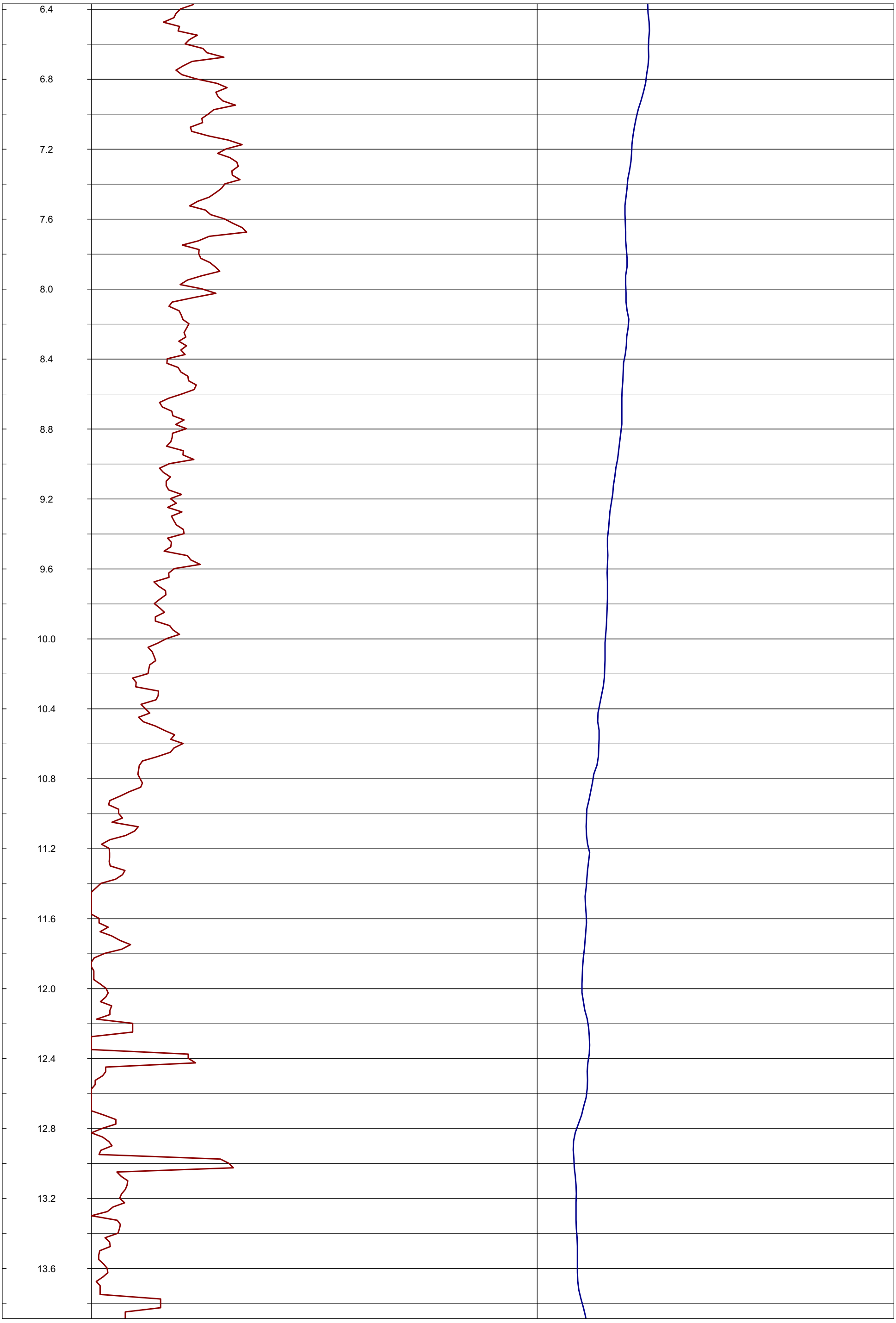
GOLDER
MEMBER OF WSP

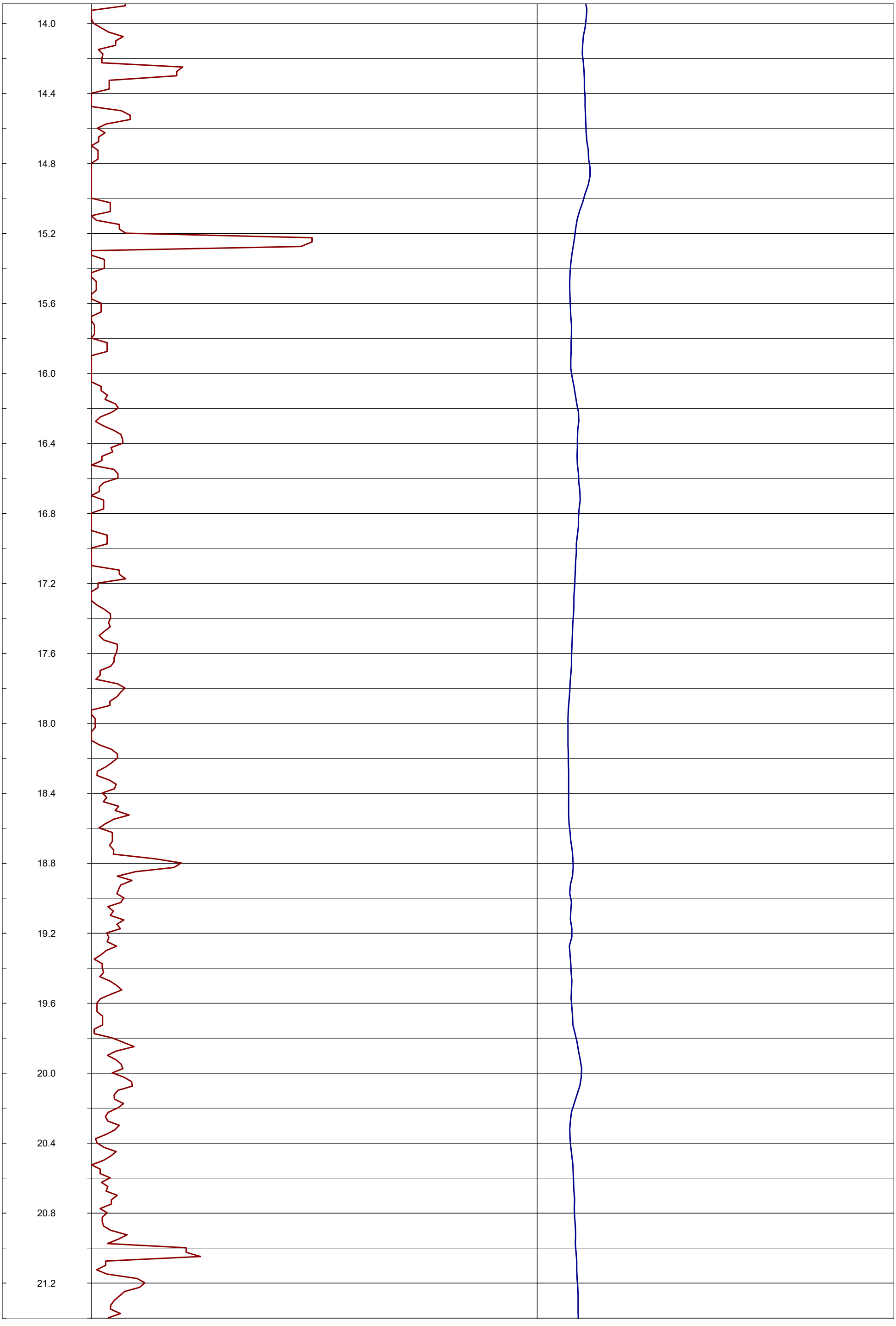
Geophysical Record of Borehole: PW22-01 (CAL)

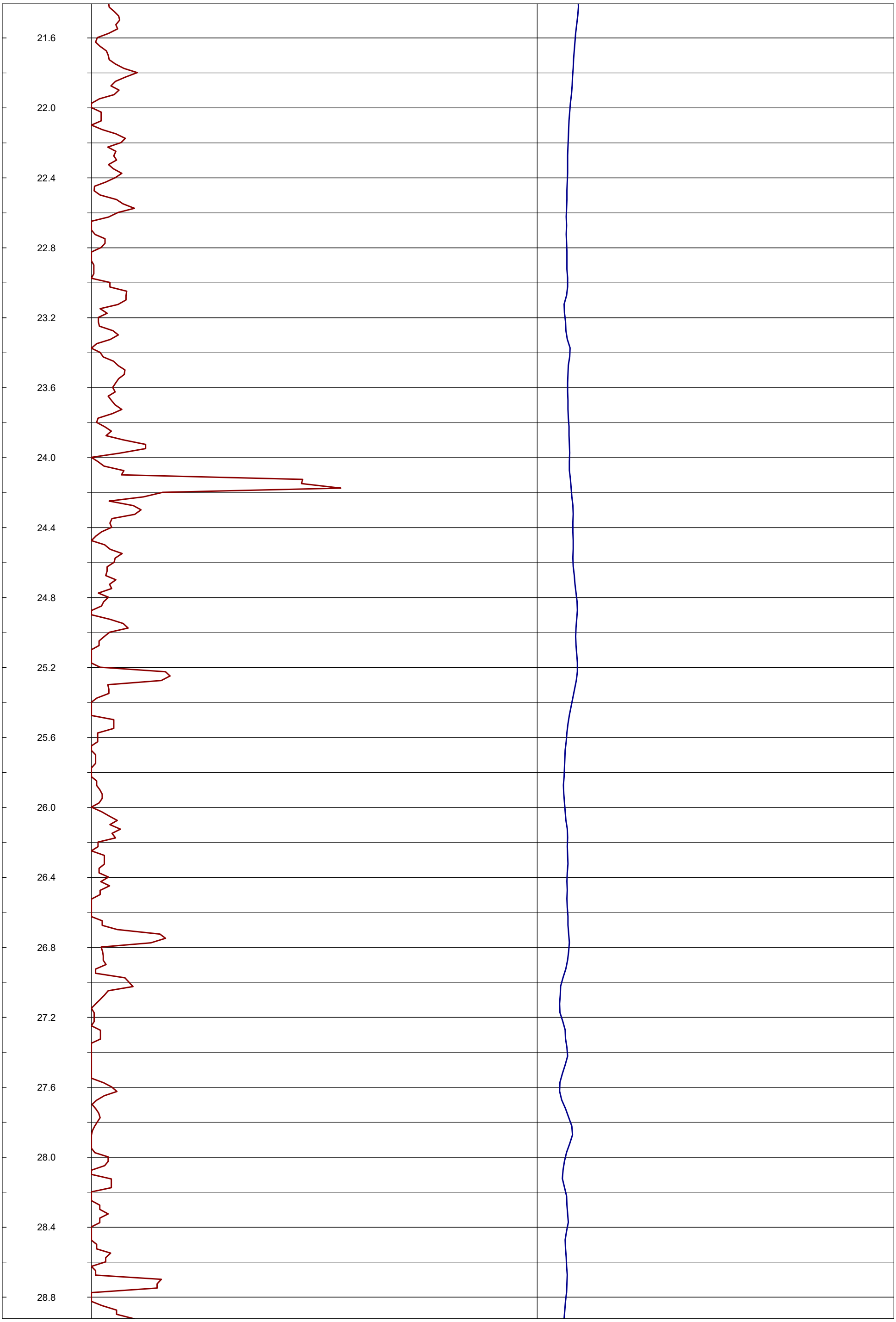
Log Title: Geophysical Log
Project Number: 19129150
Client: St. Marys Cement Inc. (Canada)
Date: September 2022

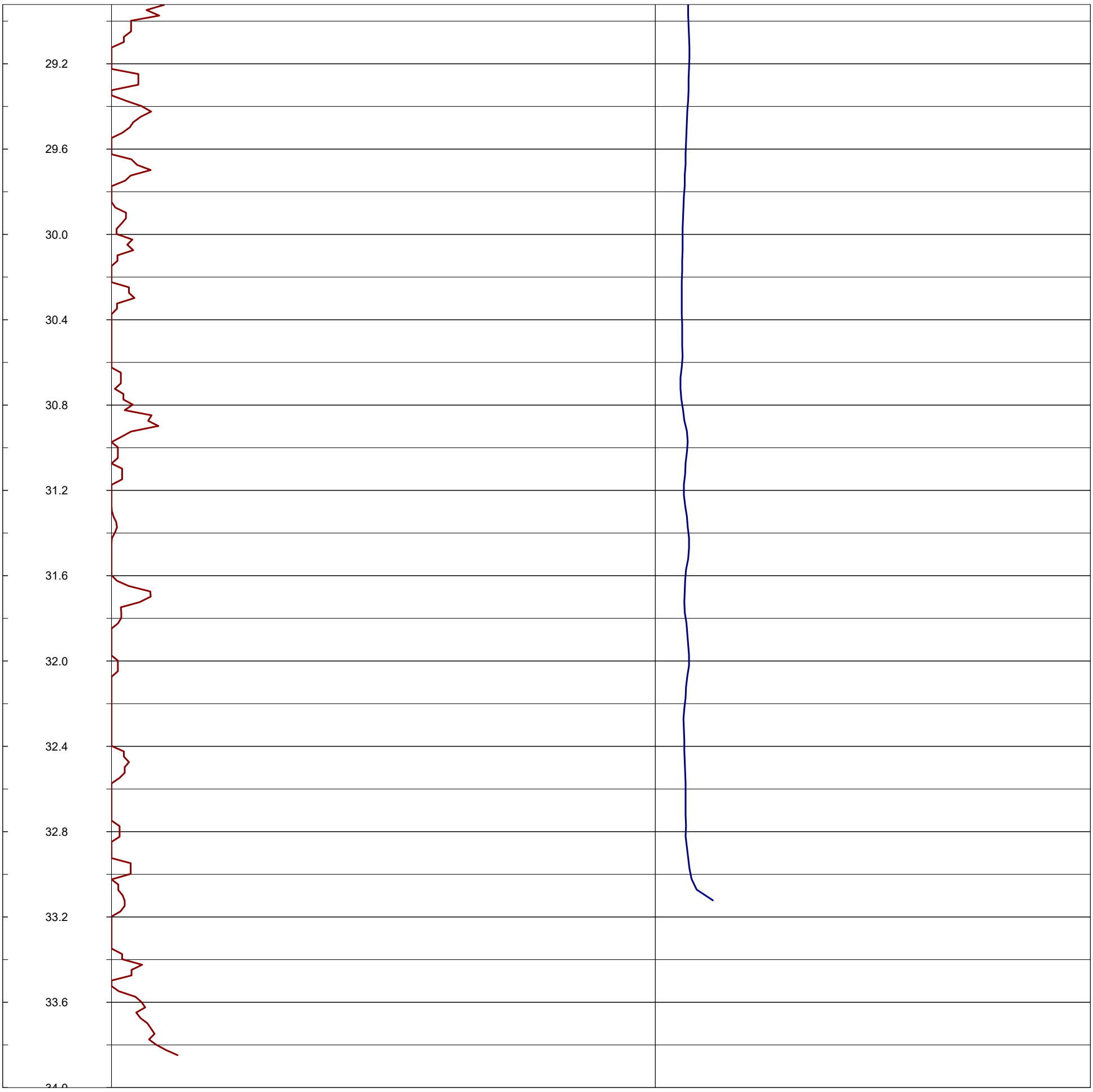
Datum:	NAD83, UTM Zone 17N	**Depth Reference:**	"0" at Ground	**Casing Depth:**	1.22 m bgs	**Location:**	Caledon, Ontario
Easting:		**Drilled Depth:**	34.14 m bgs	**Water Level:**	1.54 m bgs	**Log Date:**	Sept-9-2022
Northing:		**Borehole Diameter:**	124 mm	**Borehole Inclination:**	0 degs		
Elevation:		**Casing Diameter:**	152 mm	**Casing Stickup:**	0.97 m ags	**Logged By:**	EP




6.4
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33.6

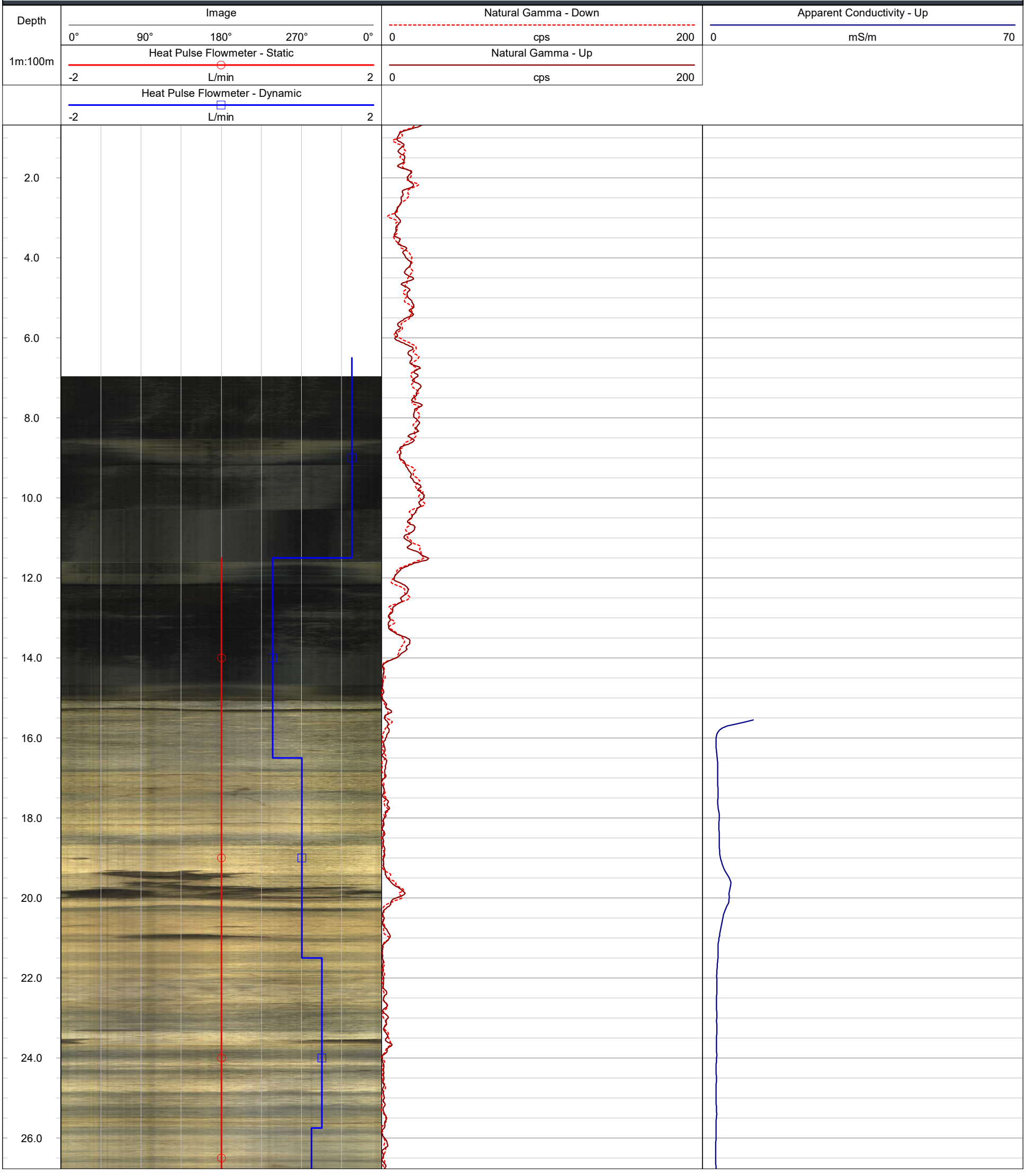
GOLDER
MEMBER OF WSP

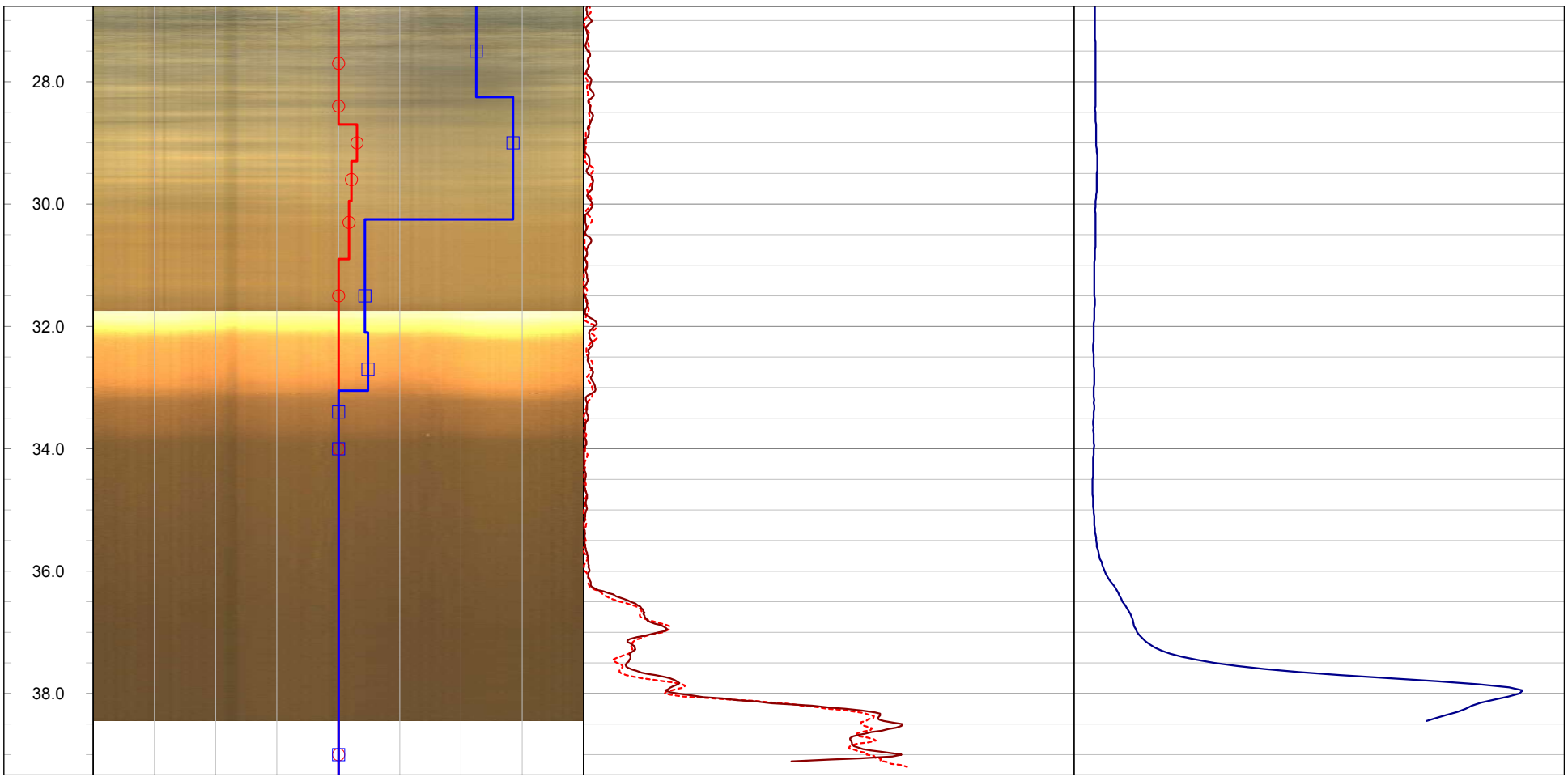
Geophysical Record of Borehole: MW22-02 (CAL)

Log Title: Geophysical Log
Project Number: 19129150
Client: St. Marys Cement Inc. (Canada)
Date: August 2022

Datum:	NAD83, UTM Zone 17N	**Depth Reference:**	"0" at Ground	**Casing Depth:**	14.85 m bgs	**Location:**	Caledon, Ontario
Easting:		**Drilled Depth:**	39.27 m bgs	**Water Level:**	0.67 m bgs	**Log Date:**	Aug-05-2022
Northing:		**Borehole Diameter:**	124 mm	**Borehole Inclination:**	0 degs		
Elevation:		**Casing Diameter:**	152 mm	**Casing Stickup:**	0.33 m ags	**Logged By:**	PL

Notes: OBI Image opaque >39 m bgs




28.0
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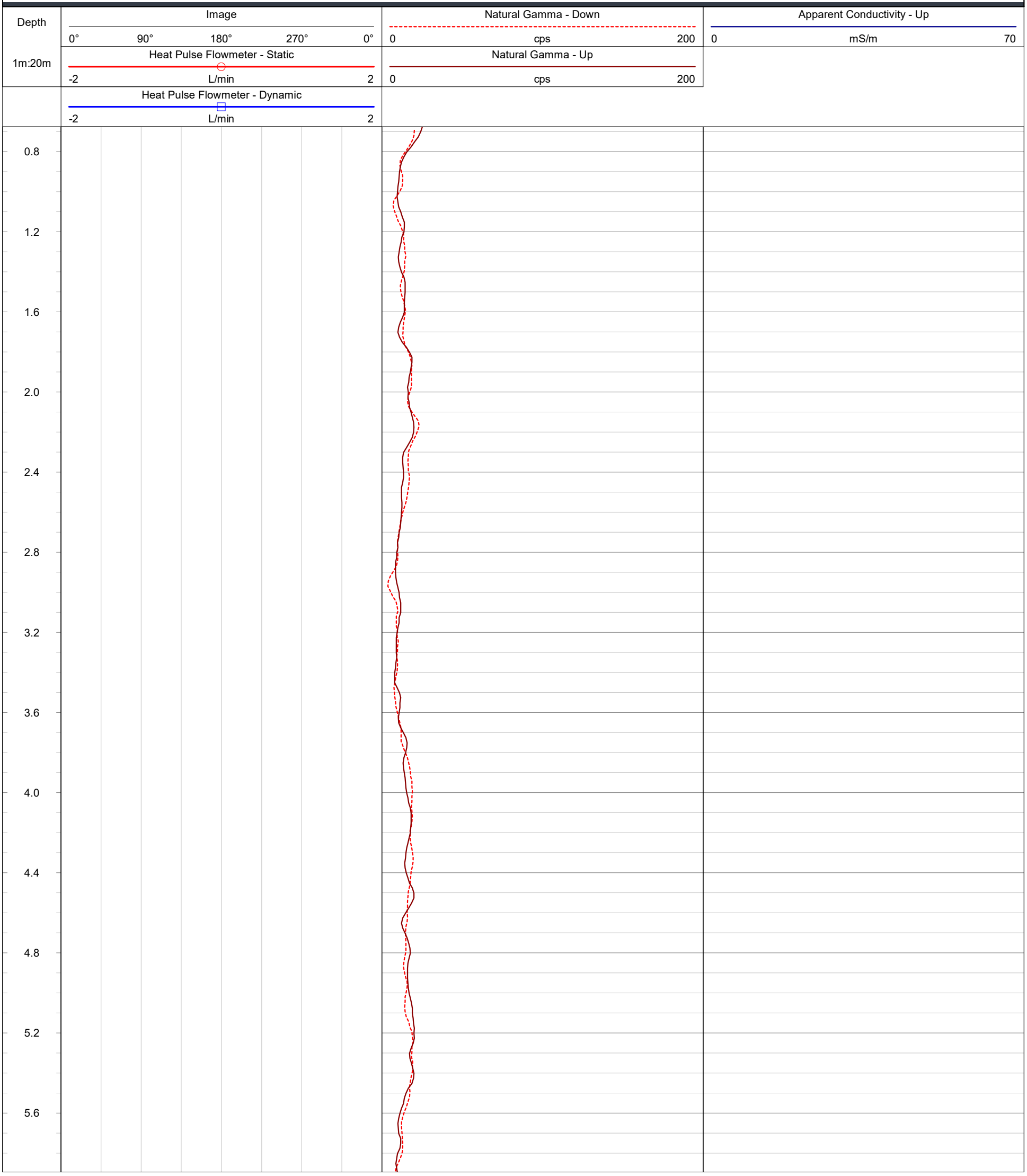
GOLDER
MEMBER OF WSP

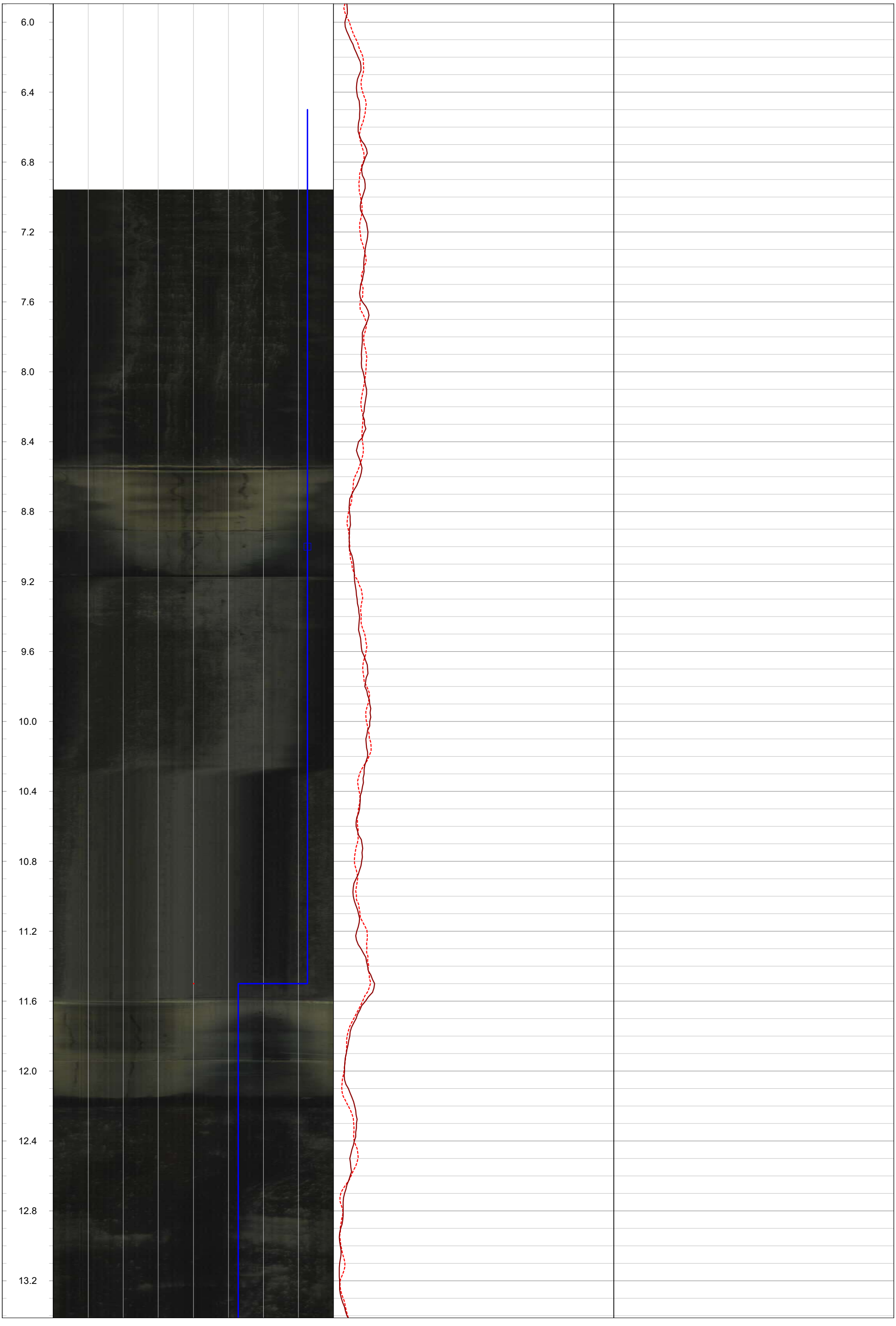
Geophysical Record of Borehole: MW22-02 (CAL)

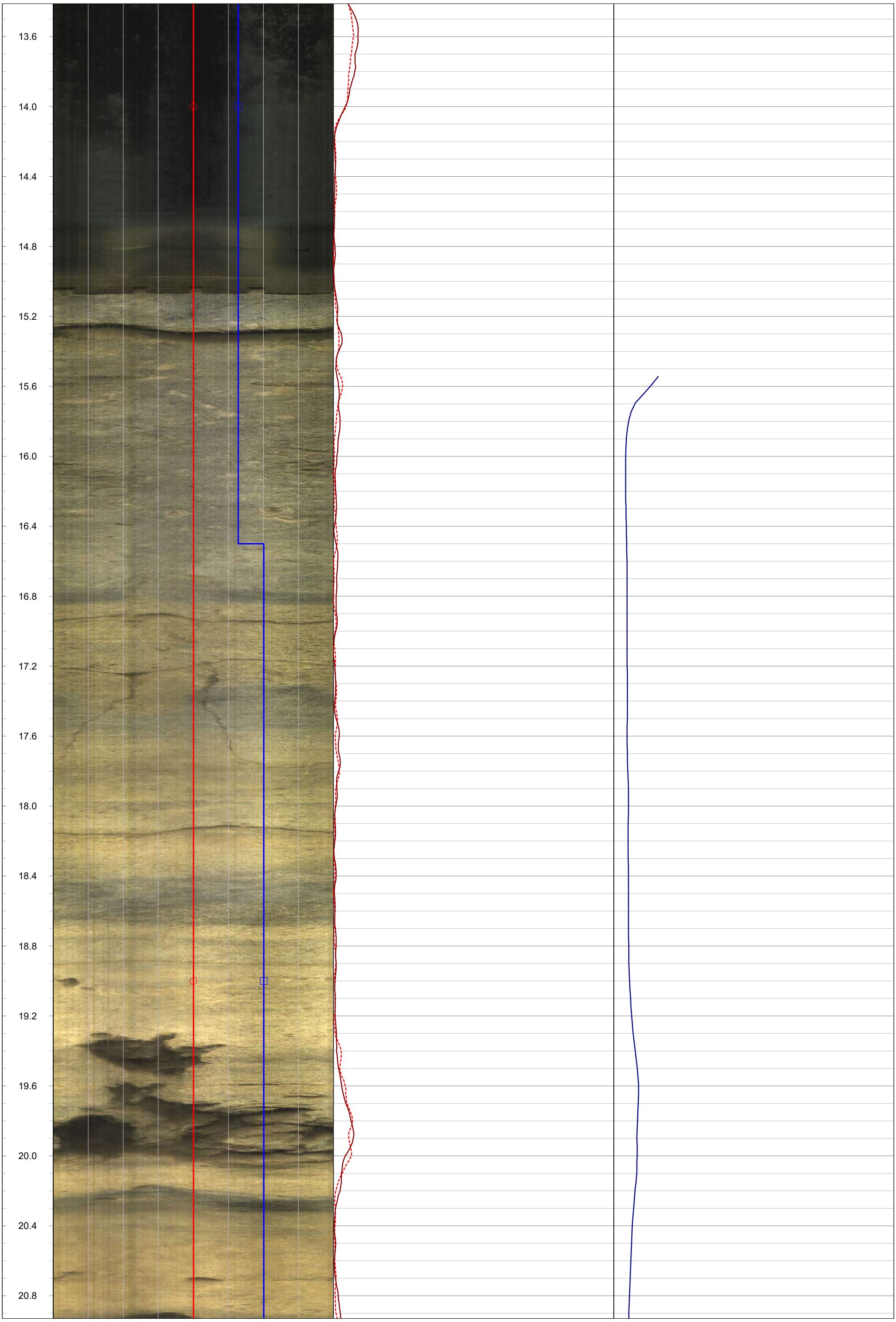
Log Title: Geophysical Log
Project Number: 19129150
Client: St. Marys Cement Inc. (Canada)
Date: August 2022

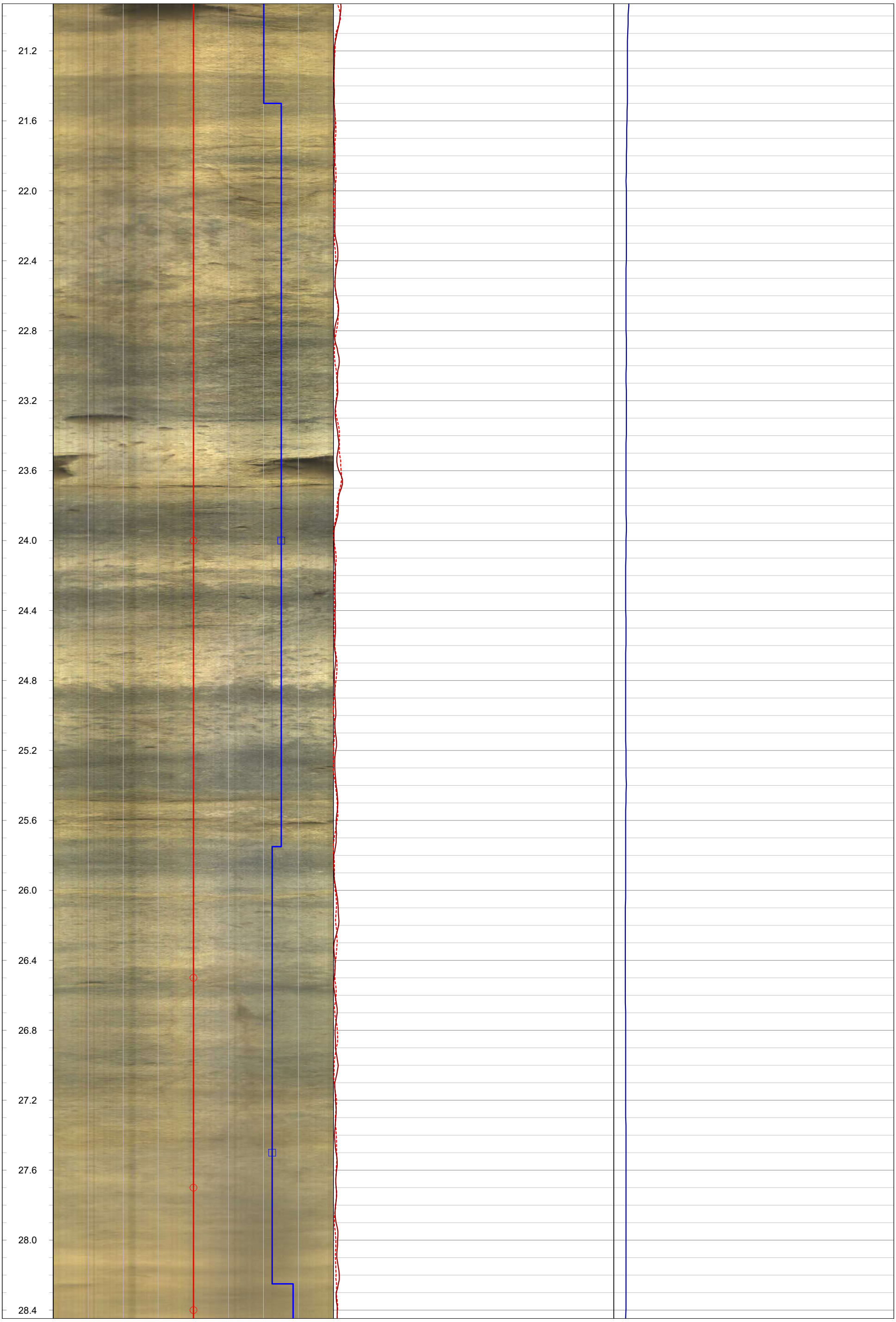
Datum:	NAD83, UTM Zone 17N	**Depth Reference:**	"0" at Ground	**Casing Depth:**	14.85 m bgs	**Location:**	Caledon, Ontario
Easting:		**Drilled Depth:**	39.27 m bgs	**Water Level:**	0.67 m bgs	**Log Date:**	Aug-05-2022
Northing:		**Borehole Diameter:**	124 mm	**Borehole Inclination:**	0 degs		
Elevation:		**Casing Diameter:**	152 mm	**Casing Stickup:**	0.33 m ags	**Logged By:**	PL

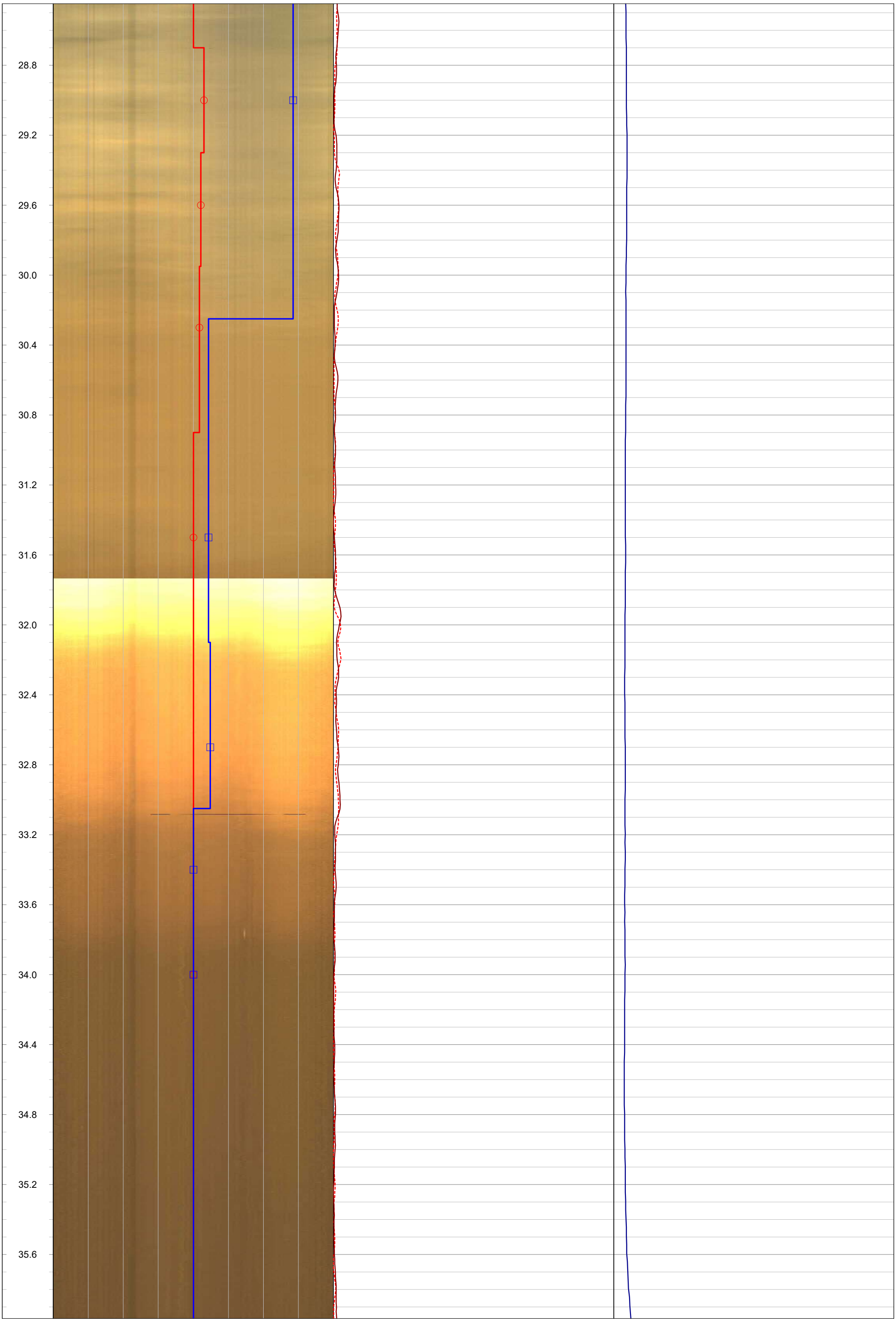
Notes: OBI Image opaque >39 m bgs




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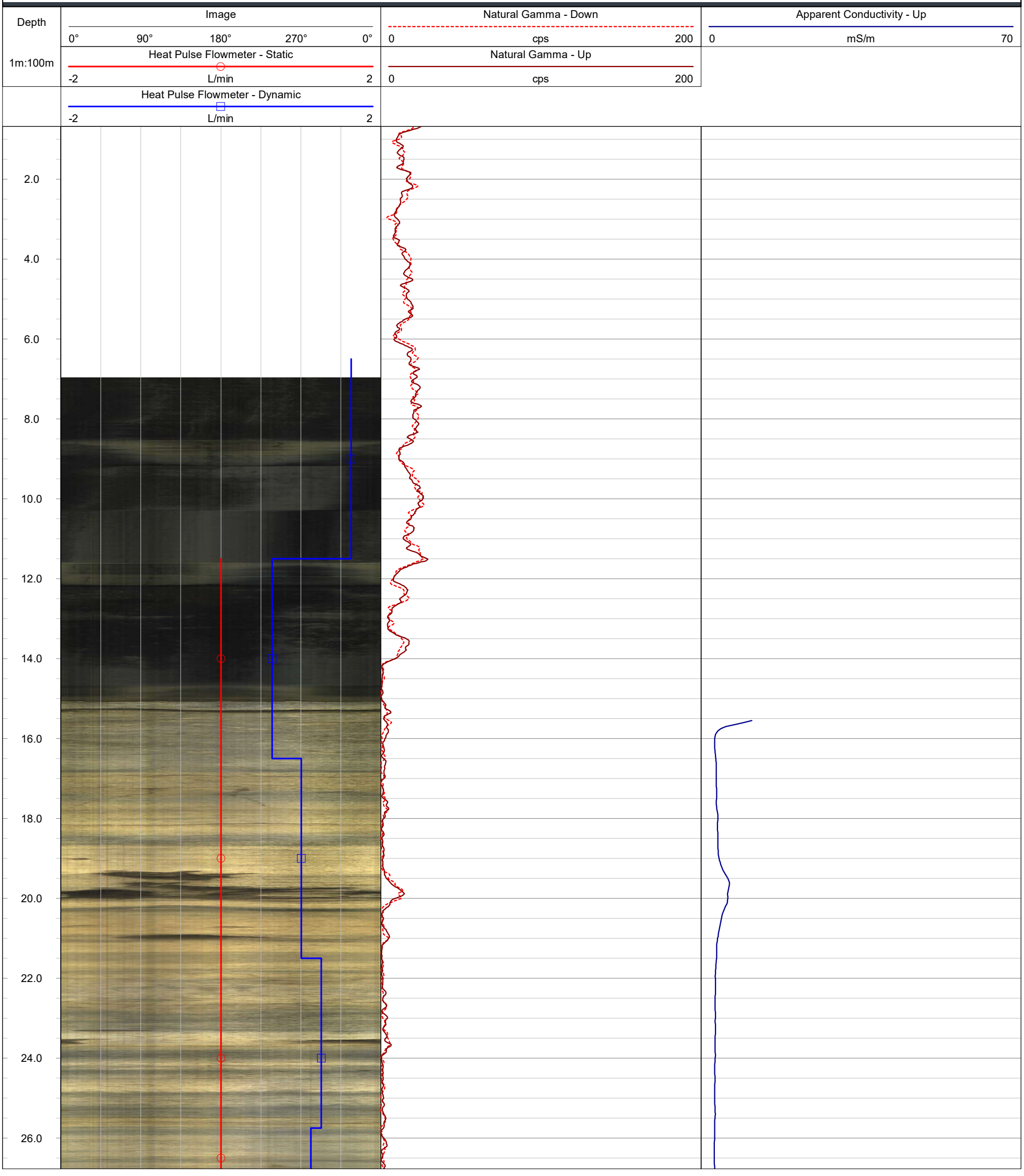
GOLDER
MEMBER OF WSP

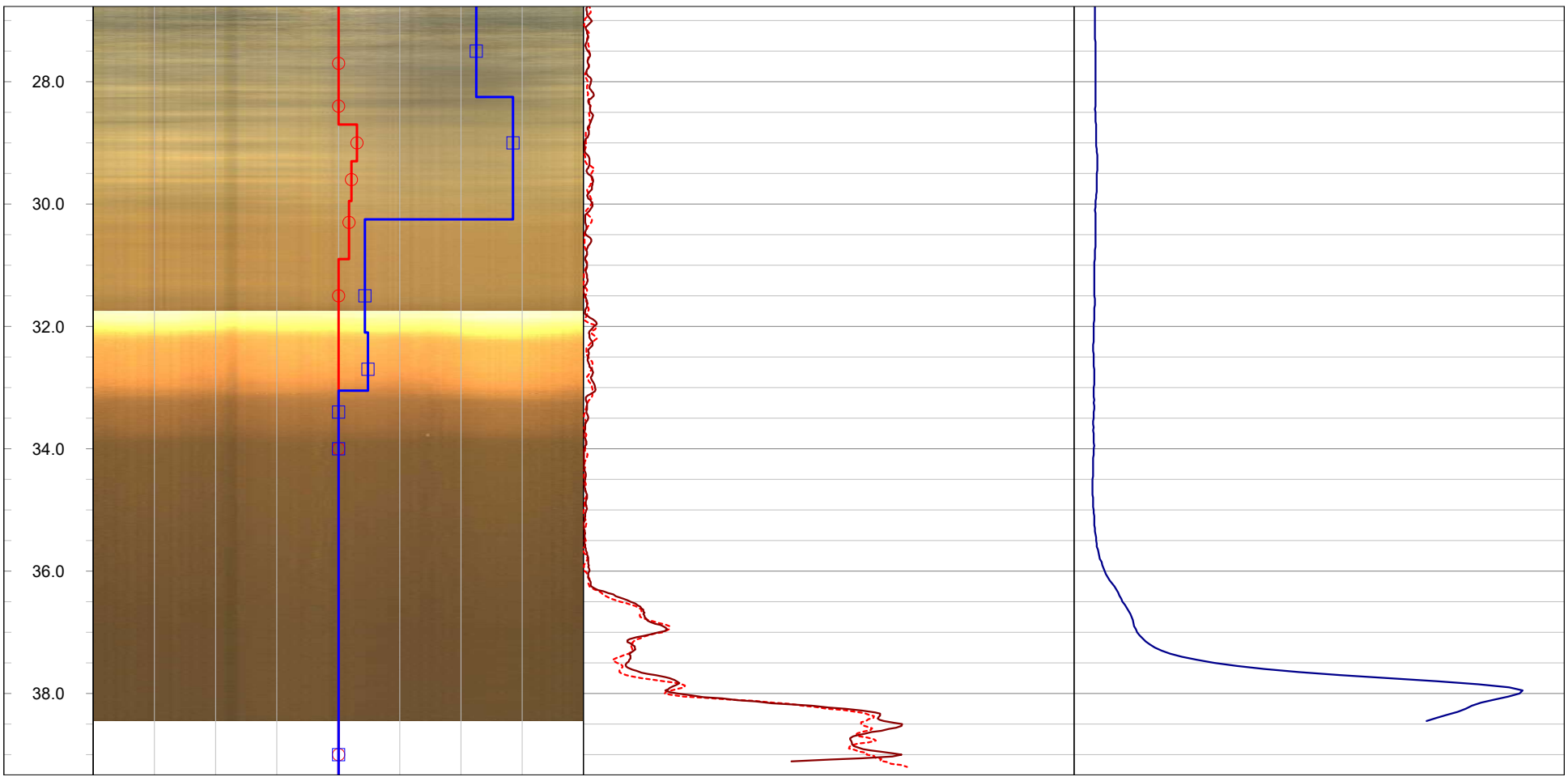
Geophysical Record of Borehole: MW22-02 (CAL)

Log Title: Geophysical Log
Project Number: 19129150
Client: St. Marys Cement Inc. (Canada)
Date: August 2022

Datum:	NAD83, UTM Zone 17N	**Depth Reference:**	"0" at Ground	**Casing Depth:**	14.85 m bgs	**Location:**	Caledon, Ontario
Easting:		**Drilled Depth:**	39.27 m bgs	**Water Level:**	0.67 m bgs	**Log Date:**	Aug-05-2022
Northing:		**Borehole Diameter:**	124 mm	**Borehole Inclination:**	0 degs		
Elevation:		**Casing Diameter:**	152 mm	**Casing Stickup:**	0.33 m ags	**Logged By:**	PL

Notes: OBI Image opaque >39 m bgs




28.0
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38.0

APPENDIX J

Northwest Investigation - Soil Core Soil Sample Results

SUMMARY OF WATER CONTENT DETERMINATIONS

ASTM D 2216-10

PROJECT NUMBER	19129150 (7900)
PROJECT NAME	
DATE TESTED	September 20, 2022

Borehole No.	Sample No.	Water Content (%)	Atterberg Limits LL, PL, PI
SC 22-01	1	35.5%	
SC 22-01	2	15.5%	
SC 22-01	3	5.8%	
SC 22-02	1	24.6%	
SC 22-02	2	16.5%	
SC 22-03	1	43.3%	
SC 22-03	2	15.1%	
SC 22-04	1	56.4%	
SC 22-04	2	22.4%	
SC 22-05	1	19.0%	
SC 22-05	2	10.6%	
SC 22-06	2	20.7%	
SC 22-07	2	32.3%	
SC 22-07	3	30.5%	
SC 22-07	4	14.1%	
SC 22-08	1	23.5%	
SC 22-08	2	15.8%	
SC 22-09	1	21.6%	
SC 22-09	2	10.3%	

SUMMARY OF WATER CONTENT DETERMINATIONS

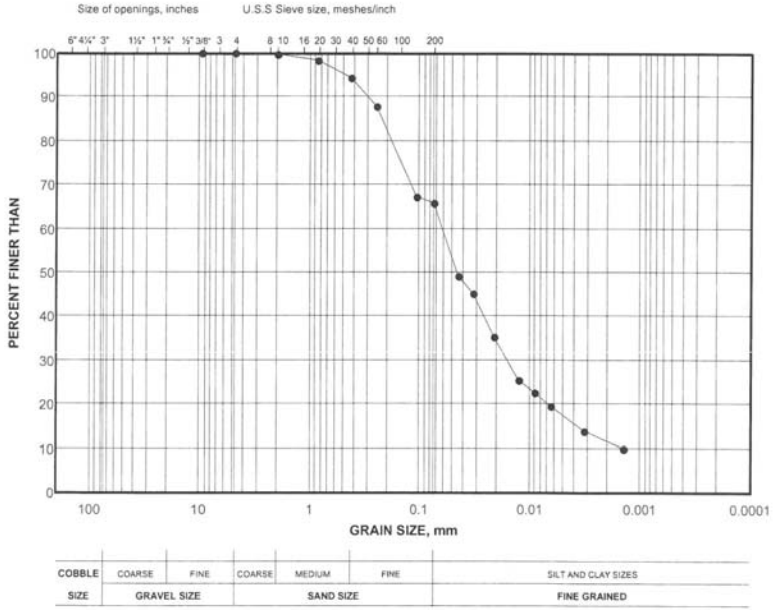
ASTM D 2216-10

PROJECT NUMBER	19129150 (7900)
PROJECT NAME	
DATE TESTED	September 20, 2022

Borehole No.	Sample No.	Water Content (%)	Atterberg Limits LL, PL, PI
SC 22-10	1	29.1%	
SC 22-10	2	11.9%	

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
●	SC 22-01	1	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 286.74(g)
Weight measured for back sieving = 50.26(g)
Weight of Sample for Hydrometer = 50.26(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	0.00	0.00	9.50	100.0
4.75mm	0.38	0.13	4.75	99.9
2.00mm	1.07	0.24	2.00	99.6
PAN	284.88	99.63	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	0.69	1.37	0.85	98.3
425µm	2.62	3.83	0.43	94.4
250µm	5.99	6.68	0.25	87.8
106µm	16.38	20.60	0.11	67.2
75µm	17.11	1.45	0.08	65.7

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-21	10:11:00 AM
Finished :	2022-09-22	8:30:00 AM

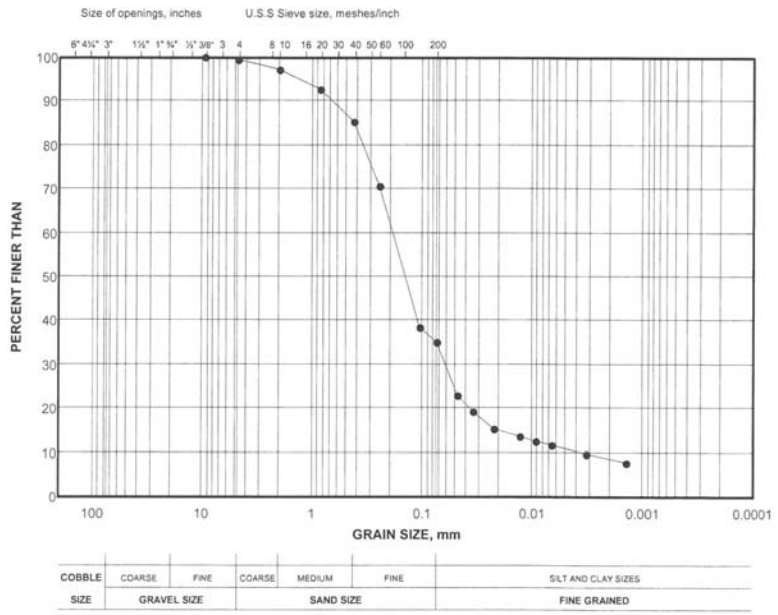
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	30.00	5.0	23.7	25.00	0.0450	49.1	True
2.00	28.00	5.0	23.7	23.00	0.0323	45.1	True
5.00	23.00	5.0	23.7	18.00	0.0211	35.3	True
15.00	18.00	5.0	23.5	13.00	0.0126	25.5	True
30.00	16.50	5.0	23.5	11.50	0.0090	22.6	True
60.00	15.00	5.0	23.6	10.00	0.0064	19.6	True
250.00	12.00	5.0	23.6	7.00	0.0032	13.7	True
1339.00	10.00	5.0	21.9	5.00	0.0014	9.8	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-01	Testing Date	2022-09-22 12:16:12 PM
Sample Number	1	Tested By	Sieve - SI, Hydrometer - KM
Checked By	_____	LabID	22-2006

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
•	SC 22-01	2	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 360.01(g)
Weight measured for back sieving = 50.26(g)
Weight of Sample for Hydrometer = 50.26(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	0.00	0.00	9.50	100.0
4.75mm	2.32	0.64	4.75	99.4
2.00mm	9.77	2.07	2.00	97.3
PAN	349.07	97.29	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	2.44	4.72	0.85	92.6
425µm	6.16	7.20	0.43	85.4
250µm	13.72	14.63	0.25	70.7
106µm	30.48	32.44	0.11	38.3
75µm	32.19	3.31	0.08	35.0

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-20	11:23:00 AM
Finished :	2022-09-21	9:33:00 AM

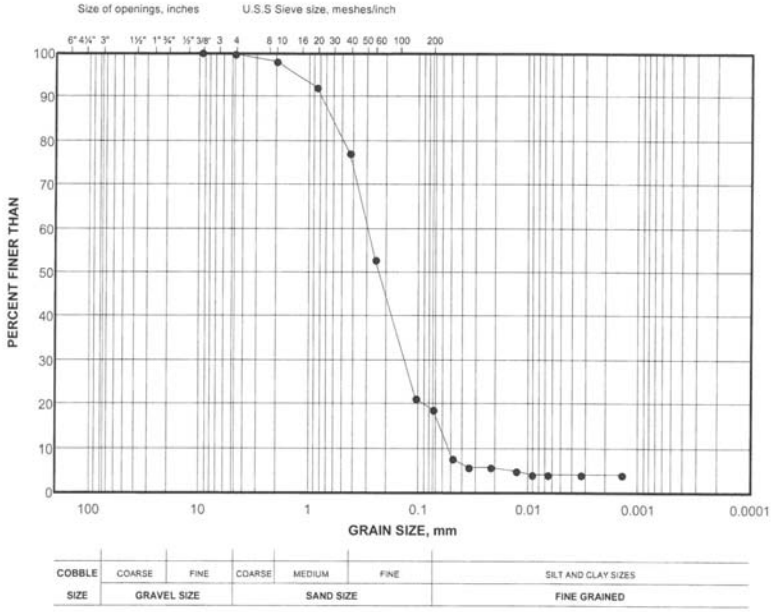
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	17.00	5.0	24.2	12.00	0.0486	23.0	True
2.00	15.00	5.0	24.2	10.00	0.0348	19.2	True
5.00	13.00	5.0	24.2	8.00	0.0222	15.3	True
15.00	12.00	5.0	24.0	7.00	0.0129	13.4	True
30.00	11.50	5.0	23.9	6.50	0.0092	12.5	True
60.00	11.00	5.0	23.5	6.00	0.0066	11.5	True
250.00	10.00	5.0	23.2	5.00	0.0032	9.6	True
1330.00	9.00	5.0	22.3	4.00	0.0014	7.7	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-01	Testing Date	2022-09-22 8:47:23 AM
Sample Number	2	Tested By	Sieve - KM, Hydrometer - KM
Checked By	_____	LabID	22-2007

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
•	SC 22-01	3	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 455.09(g)
Weight measured for back sieving = 50.24(g)
Weight of Sample for Hydrometer = 50.24(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	0.00	0.00	9.50	100.0
4.75mm	1.25	0.27	4.75	99.7
2.00mm	9.81	1.88	2.00	97.9
PAN	444.39	97.85	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	2.89	5.63	0.85	92.2
425µm	10.69	15.19	0.43	77.0
250µm	23.07	24.11	0.25	52.9
106µm	39.33	31.67	0.11	21.3
75µm	40.65	2.57	0.08	18.7

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-21	10:01:00 AM
Finished :	2022-09-22	8:27:00 AM

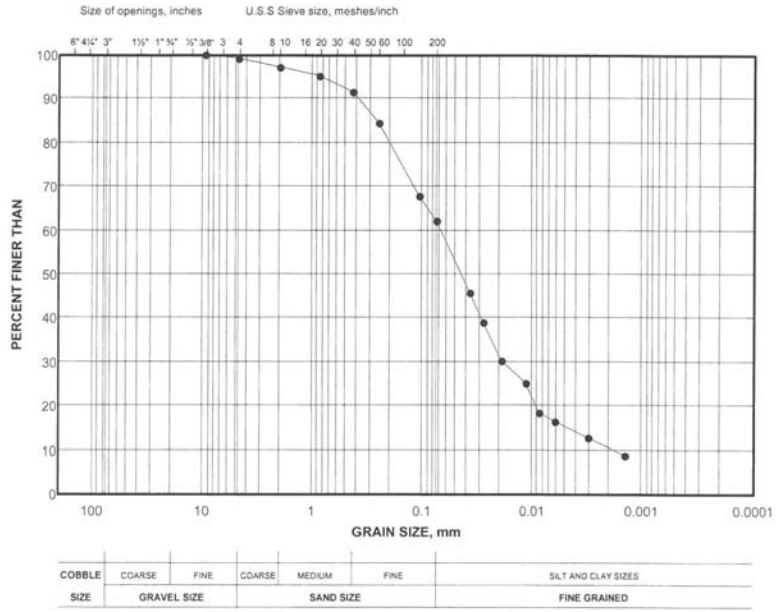
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	9.00	5.0	25.9	4.00	0.0497	7.7	True
2.00	8.00	5.0	25.9	3.00	0.0353	5.8	True
5.00	8.00	5.0	25.9	3.00	0.0224	5.8	True
15.00	7.50	5.0	25.5	2.50	0.0130	4.8	True
30.00	7.00	5.0	25.0	2.00	0.0093	3.9	True
60.00	7.00	5.0	24.8	2.00	0.0066	3.9	True
250.00	7.00	5.0	23.8	2.00	0.0033	3.9	True
1346.00	7.00	5.0	21.7	2.00	0.0014	3.9	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-01	Testing Date	2022-09-22 12:19:41 PM
Sample Number	3	Tested By	Sieve - SI, Hydrometer - KM
Checked By		LabID	22-2008

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
●	SC 22-02	1	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 277.93(g)
Weight measured for back sieving = 98.96(g)
Weight of Sample for Hydrometer = 98.96(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	0.00	0.00	9.50	100.0
4.75mm	2.25	0.81	4.75	99.2
2.00mm	8.01	2.07	2.00	97.1
PAN	268.07	97.12	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	2.03	1.99	0.85	95.1
425µm	5.83	3.73	0.43	91.4
250µm	12.78	6.82	0.25	84.6
106µm	29.77	16.67	0.11	67.9
75µm	35.70	5.82	0.08	62.1

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-19	9:35:00 AM
Finished :	2022-09-20	8:33:00 AM

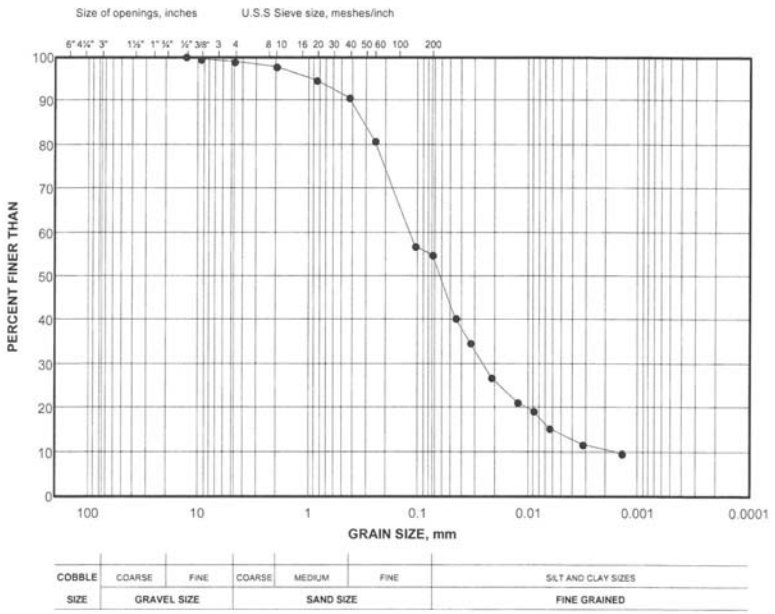
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	52.00	5.0	24.9	47.00	0.0369	45.7	True
2.00	45.00	5.0	24.9	40.00	0.0279	38.9	True
5.00	36.00	5.0	24.9	31.00	0.0190	30.1	True
15.00	31.00	5.0	24.7	26.00	0.0114	25.3	True
30.00	24.00	5.0	24.4	19.00	0.0085	18.5	True
60.00	22.00	5.0	24.2	17.00	0.0061	16.5	True
250.00	18.00	5.0	23.8	13.00	0.0031	12.6	True
1378.00	14.00	5.0	22.6	9.00	0.0014	8.7	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-02	Testing Date	2022-09-21 8:00:32 AM
Sample Number	1	Tested By	Sieve - ES, Hydrometer - KM
Checked By	_____	LabID	22-2009

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
●	SC 22-02	2	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 346.23(g)
Weight measured for back sieving = 50.27(g)
Weight of Sample for Hydrometer = 50.27(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	2.12	0.61	9.50	99.4
4.75mm	3.72	0.46	4.75	98.9
2.00mm	7.86	1.20	2.00	97.7
PAN	337.81	97.73	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	1.55	3.01	0.85	94.7
425µm	3.63	4.04	0.43	90.7
250µm	8.68	9.82	0.25	80.9
106µm	21.12	24.18	0.11	56.7
75µm	22.06	1.83	0.08	54.9

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-20	10:09:00 AM
Finished :	2022-09-21	9:05:00 AM

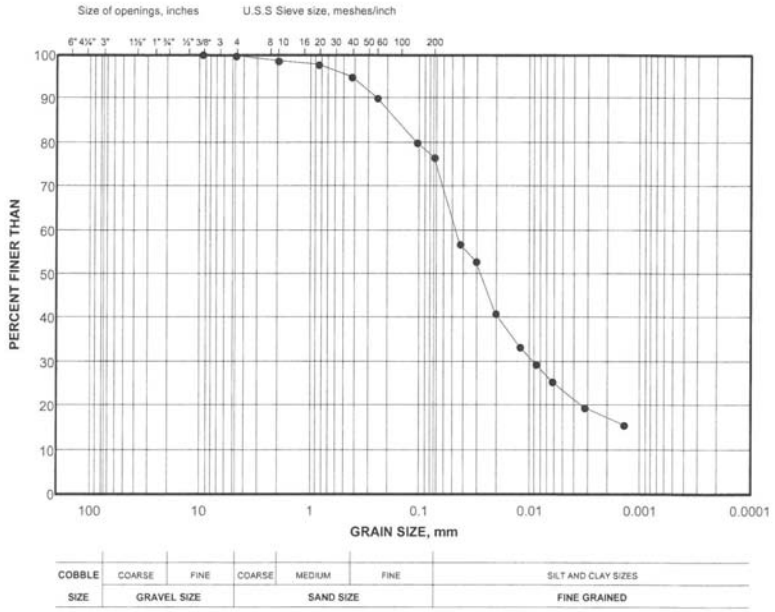
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	26.00	5.0	24.2	21.00	0.0460	40.4	True
2.00	23.00	5.0	24.2	18.00	0.0331	34.6	True
5.00	19.00	5.0	24.2	14.00	0.0215	26.9	True
15.00	16.00	5.0	24.0	11.00	0.0127	21.2	True
30.00	15.00	5.0	23.8	10.00	0.0090	19.2	True
60.00	13.00	5.0	23.7	8.00	0.0065	15.4	True
250.00	11.00	5.0	23.2	6.00	0.0032	11.5	True
1440.00	10.00	5.0	22.3	5.00	0.0014	9.6	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-02	Testing Date	2022-09-22 8:50:41 AM
Sample Number	2	Tested By	Sieve - KM, Hydrometer - KM
Checked By	_____	LabID	22-2010

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
●	SC 22-03	1	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 290.11(g)
Weight measured for back sieving = 49.95(g)
Weight of Sample for Hydrometer = 49.95(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	0.00	0.00	9.50	100.0
4.75mm	0.90	0.31	4.75	99.7
2.00mm	4.13	1.11	2.00	98.6
PAN	284.99	98.58	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	0.52	1.03	0.85	97.6
425µm	1.86	2.64	0.43	94.9
250µm	4.33	4.87	0.25	90.0
106µm	9.46	10.12	0.11	79.9
75µm	11.18	3.39	0.08	76.5

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-15	9:30:00 AM
Finished :	2022-09-16	7:21:00 AM

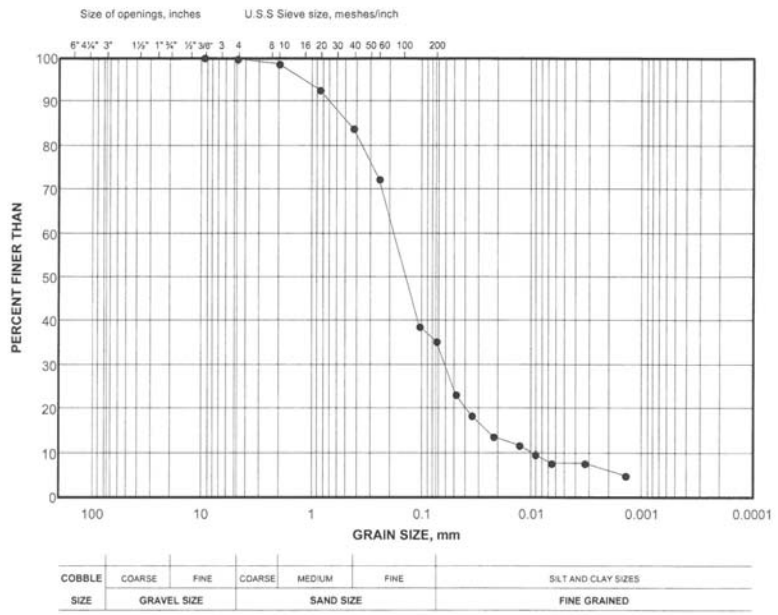
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	34.00	5.0	24.1	29.00	0.0435	56.7	True
2.00	32.00	5.0	24.1	27.00	0.0312	52.8	True
5.00	26.00	5.0	24.1	21.00	0.0206	41.0	True
15.00	22.00	5.0	23.8	17.00	0.0122	33.2	True
30.00	20.00	5.0	23.6	15.00	0.0088	29.3	True
60.00	18.00	5.0	23.4	13.00	0.0063	25.4	True
250.00	15.00	5.0	22.7	10.00	0.0032	19.5	True
1311.00	13.00	5.0	22.5	8.00	0.0014	15.6	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-03	Testing Date	2022-09-21 8:28:56 AM
Sample Number	1	Tested By	Sieve - ES, Hydrometer - KM
Checked By	_____	LabID	22-2011

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
●	SC 22-03	2	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 402.83(g)
Weight measured for back sieving = 50.66(g)
Weight of Sample for Hydrometer = 50.66(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	0.00	0.00	9.50	100.0
4.75mm	1.62	0.40	4.75	99.6
2.00mm	5.82	1.04	2.00	98.6
PAN	396.27	98.56	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	3.09	6.01	0.85	92.6
425µm	7.57	8.72	0.43	83.8
250µm	13.56	11.65	0.25	72.2
106µm	30.75	33.44	0.11	38.7
75µm	32.52	3.44	0.08	35.3

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-20	10:37:00 AM
Finished :	2022-09-21	9:19:00 AM

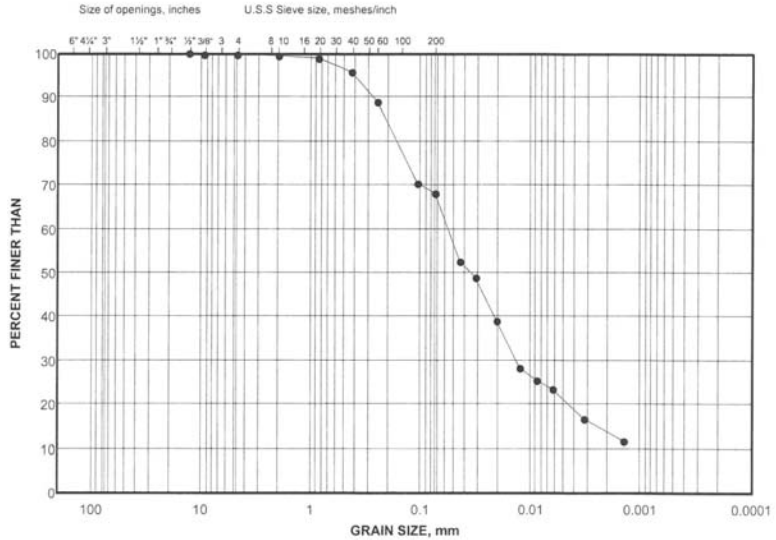
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	17.00	5.0	24.1	12.00	0.0487	23.1	True
2.00	14.50	5.0	24.1	9.50	0.0349	18.3	True
5.00	12.00	5.0	24.1	7.00	0.0224	13.5	True
15.00	11.00	5.0	24.0	6.00	0.0130	11.6	True
30.00	10.00	5.0	23.9	5.00	0.0093	9.6	True
60.00	9.00	5.0	23.7	4.00	0.0066	7.7	True
250.00	9.00	5.0	23.2	4.00	0.0033	7.7	True
1362.00	7.50	5.0	22.2	2.50	0.0014	4.8	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-03	Testing Date	2022-09-22 8:55:01 AM
Sample Number	2	Tested By	Sieve - KM, Hydrometer - KM
Checked By	_____	LabID	22-2012

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
•	SC 22-04	1	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 323(g)
Weight measured for back sieving = 50.53(g)
Weight of Sample for Hydrometer = 50.53(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	0.80	0.25	9.50	99.8
4.75mm	0.80	0.00	4.75	99.8
2.00mm	1.71	0.28	2.00	99.5
PAN	320.07	99.47	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	0.36	0.71	0.85	98.8
425µm	1.94	3.11	0.43	95.7
250µm	5.35	6.71	0.25	88.9
106µm	14.80	18.60	0.11	70.3
75µm	16.00	2.36	0.08	68.0

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-20	10:20:00 AM
Finished :	2022-09-21	9:11:00 AM

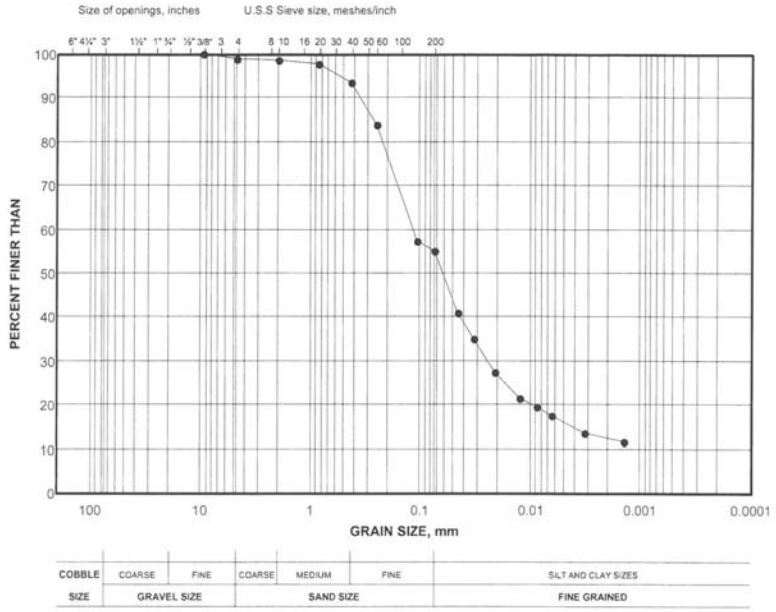
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	32.00	5.0	23.7	27.00	0.0444	52.6	True
2.00	30.00	5.0	23.7	25.00	0.0318	48.7	True
5.00	25.00	5.0	23.7	20.00	0.0208	39.0	True
15.00	19.50	5.0	23.6	14.50	0.0125	28.3	True
30.00	18.00	5.0	23.6	13.00	0.0089	25.3	True
60.00	17.00	5.0	23.5	12.00	0.0063	23.4	True
250.00	13.50	5.0	23.1	8.50	0.0032	16.6	True
1371.00	11.00	5.0	23.3	6.00	0.0014	11.7	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-04	Testing Date	2022-09-22 8:58:46 AM
Sample Number	1	Tested By	Sieve - KM, Hydrometer - KM
Checked By	_____	LabID	22-2013

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
•	SC 22-04	2	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 369.77(g)
Weight measured for back sieving = 50.1(g)
Weight of Sample for Hydrometer = 50.1(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	0.00	0.00	9.50	100.0
4.75mm	4.04	1.09	4.75	98.9
2.00mm	5.07	0.28	2.00	98.6
PAN	363.92	98.63	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	0.54	1.06	0.85	97.6
425µm	2.55	3.96	0.43	93.6
250µm	7.54	9.82	0.25	83.8
106µm	21.01	26.52	0.11	57.3
75µm	22.10	2.15	0.08	55.1

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-20	10:50:00 AM
Finished :	2022-09-21	9:20:00 AM

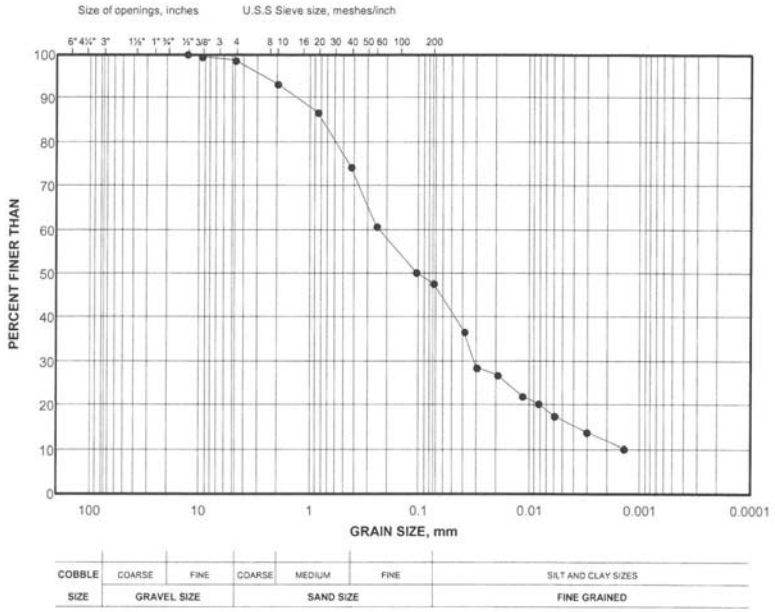
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	26.00	5.0	25.1	21.00	0.0454	40.9	True
2.00	23.00	5.0	25.1	18.00	0.0327	35.1	True
5.00	19.00	5.0	25.1	14.00	0.0212	27.3	True
15.00	16.00	5.0	24.7	11.00	0.0125	21.4	True
30.00	15.00	5.0	24.5	10.00	0.0089	19.5	True
60.00	14.00	5.0	24.1	9.00	0.0064	17.5	True
250.00	12.00	5.0	23.3	7.00	0.0032	13.6	True
1350.00	11.00	5.0	22.3	6.00	0.0014	11.7	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-04	Testing Date	2022-09-22 9:02:24 AM
Sample Number	2	Tested By	Sieve - KM, Hydrometer - KM
Checked By	_____	LabID	22-2014

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
●	SC 22-05	1	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 296.78(g)
Weight measured for back sieving = 100.12(g)
Weight of Sample for Hydrometer = 100.12(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	2.13	0.72	9.50	99.3
4.75mm	4.27	0.72	4.75	98.6
2.00mm	20.16	5.35	2.00	93.2
PAN	275.89	93.21	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	6.96	6.48	0.85	86.7
425µm	20.24	12.36	0.43	74.4
250µm	34.91	13.66	0.25	60.7
106µm	46.12	10.44	0.11	50.3
75µm	48.87	2.56	0.08	47.7

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-15	10:46:00 AM
Finished :	2022-09-16	7:28:00 AM

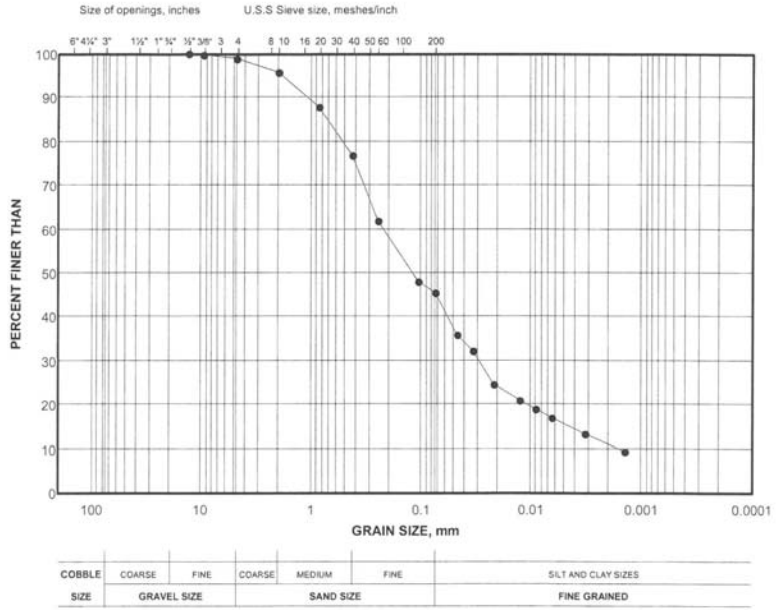
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	45.00	5.0	24.7	40.00	0.0395	36.9	True
2.00	36.00	5.0	24.7	31.00	0.0301	28.6	True
5.00	34.00	5.0	24.7	29.00	0.0193	26.7	True
15.00	29.00	5.0	24.3	24.00	0.0116	22.1	True
30.00	27.00	5.0	24.2	22.00	0.0083	20.3	True
60.00	24.00	5.0	23.8	19.00	0.0060	17.5	True
250.00	20.00	5.0	22.8	15.00	0.0031	13.8	True
1242.00	16.00	5.0	22.5	11.00	0.0014	10.1	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-05	Testing Date	2022-09-21 8:48:30 AM
Sample Number	1	Tested By	Sieve - ES, Hydrometer - KM
Checked By	_____	LabID	22-2015

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
●	SC 22-05	2	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 353.21(g)
Weight measured for back sieving = 50.28(g)
Weight of Sample for Hydrometer = 50.28(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	0.70	0.20	9.50	99.8
4.75mm	3.95	0.92	4.75	98.9
2.00mm	14.56	3.00	2.00	95.9
PAN	338.05	95.88	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	4.23	8.07	0.85	87.8
425µm	10.00	11.00	0.43	76.8
250µm	17.82	14.91	0.25	61.9
106µm	25.16	14.00	0.11	47.9
75µm	26.42	2.40	0.08	45.5

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-20	9:57:00 AM
Finished :	2022-09-21	8:50:00 AM

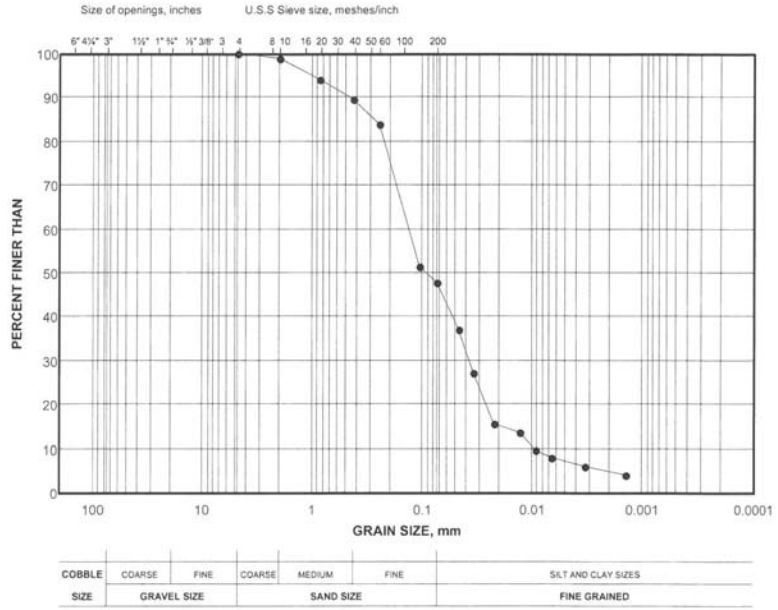
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	24.00	5.0	24.2	19.00	0.0466	35.9	True
2.00	22.00	5.0	24.2	17.00	0.0333	32.1	True
5.00	18.00	5.0	24.2	13.00	0.0216	24.6	True
15.00	16.00	5.0	24.0	11.00	0.0127	20.8	True
30.00	15.00	5.0	23.9	10.00	0.0090	18.9	True
60.00	14.00	5.0	23.7	9.00	0.0064	17.0	True
250.00	12.00	5.0	23.2	7.00	0.0032	13.2	True
1373.00	10.00	5.0	22.3	5.00	0.0014	9.4	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-05	Testing Date	2022-09-22 9:05:36 AM
Sample Number	2	Tested By	Sieve - KM, Hydrometer - KM
Checked By	_____	LabID	22-2016

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
•	SC 22-06	2	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 443.64(g)
Weight measured for back sieving = 50.31(g)
Weight of Sample for Hydrometer = 50.31(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	0.00	0.00	9.50	100.0
4.75mm	0.00	0.00	4.75	100.0
2.00mm	5.21	1.17	2.00	98.8
PAN	437.75	98.83	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	2.44	4.79	0.85	94.0
425µm	4.68	4.40	0.43	89.6
250µm	7.64	5.81	0.25	83.8
106µm	24.10	32.33	0.11	51.5
75µm	26.04	3.81	0.08	47.7

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-20	11:01:00 AM
Finished :	2022-09-21	9:29:00 AM

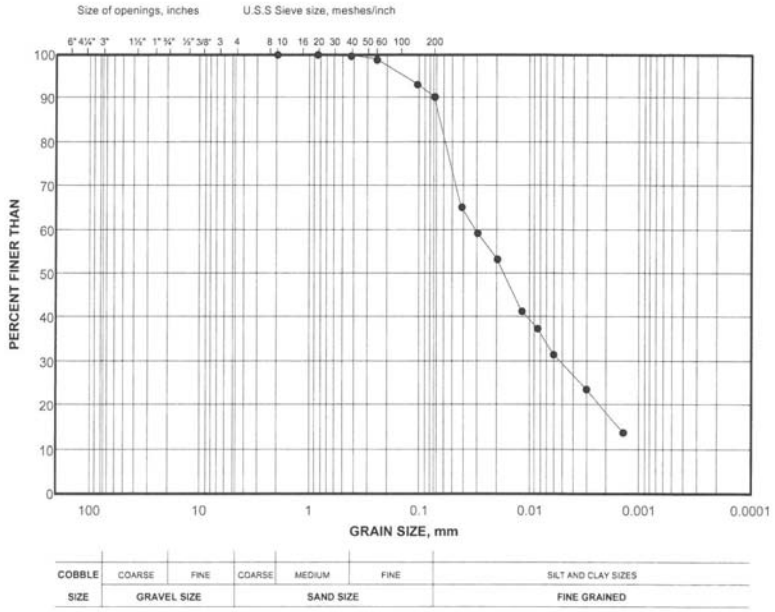
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	24.00	5.0	24.1	19.00	0.0466	36.9	True
2.00	19.00	5.0	24.1	14.00	0.0340	27.2	True
5.00	13.00	5.0	24.1	8.00	0.0223	15.6	True
15.00	12.00	5.0	23.9	7.00	0.0130	13.6	True
30.00	10.00	5.0	23.7	5.00	0.0093	9.7	True
60.00	9.00	5.0	23.6	4.00	0.0066	7.8	True
250.00	8.00	5.0	23.7	3.00	0.0033	5.8	True
1440.00	7.00	5.0	22.3	2.00	0.0014	3.9	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-06	Testing Date	2022-09-22 9:08:49 AM
Sample Number	2	Tested By	Sieve - KM, Hydrometer - KM
Checked By	_____	LabID	22-2017

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
•	SC 22-07	2	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 361.84(g)
Weight measured for back sieving = 50.16(g)
Weight of Sample for Hydrometer = 50.16(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	0.00	0.00	9.50	100.0
4.75mm	0.00	0.00	4.75	100.0
2.00mm	0.14	0.04	2.00	100.0
PAN	361.06	99.96	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	0.05	0.10	0.85	99.9
425µm	0.17	0.24	0.43	99.6
250µm	0.50	0.66	0.25	99.0
106µm	3.37	5.72	0.11	93.2
75µm	4.79	2.83	0.08	90.4

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-15	10:38:00 AM
Finished :	2022-09-16	7:27:00 AM

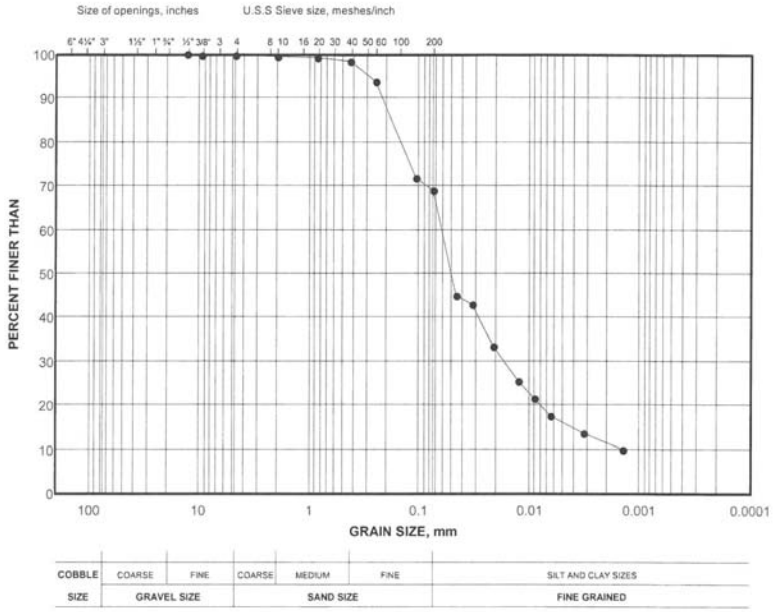
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	38.00	5.0	24.1	33.00	0.0422	65.1	True
2.00	35.00	5.0	24.1	30.00	0.0306	59.2	True
5.00	32.00	5.0	24.1	27.00	0.0198	53.3	True
15.00	26.00	5.0	23.9	21.00	0.0119	41.5	True
30.00	24.00	5.0	23.8	19.00	0.0085	37.5	True
60.00	21.00	5.0	23.3	16.00	0.0062	31.6	True
250.00	17.00	5.0	22.6	12.00	0.0031	23.7	True
1249.00	12.00	5.0	22.5	7.00	0.0014	13.8	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-07	Testing Date	2022-09-21 8:52:01 AM
Sample Number	2	Tested By	Sieve - ES, Hydrometer - KM
Checked By	_____	LabID	22-2018

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
●	SC 22-07	3	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 455.69(g)
Weight measured for back sieving = 50.32(g)
Weight of Sample for Hydrometer = 50.32(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	1.25	0.27	9.50	99.7
4.75mm	1.51	0.06	4.75	99.7
2.00mm	2.11	0.13	2.00	99.5
PAN	451.48	99.54	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	0.15	0.30	0.85	99.2
425µm	0.60	0.89	0.43	98.4
250µm	2.91	4.57	0.25	93.8
106µm	14.00	21.94	0.11	71.8
75µm	15.53	3.03	0.08	68.8

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-20	11:13:00 AM
Finished :	2022-09-21	9:30:00 AM

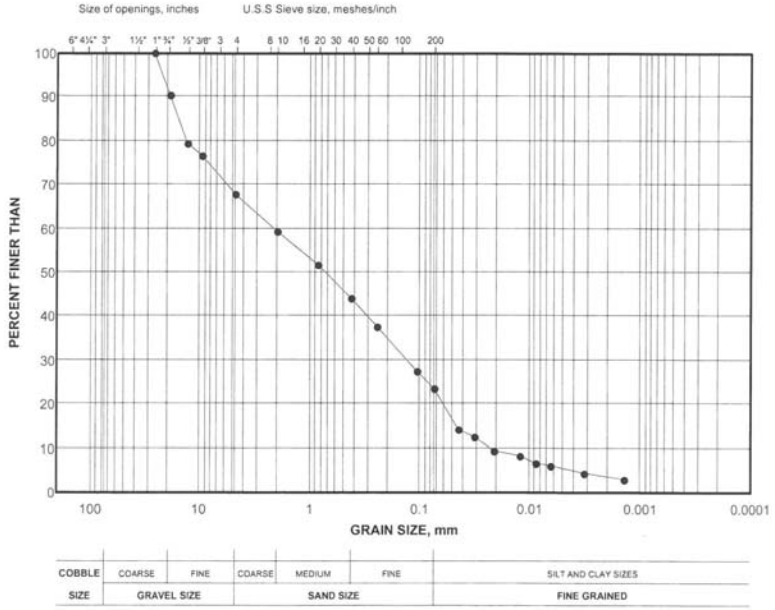
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	28.00	5.0	23.9	23.00	0.0455	45.0	True
2.00	27.00	5.0	23.9	22.00	0.0324	43.1	True
5.00	22.00	5.0	23.9	17.00	0.0212	33.3	True
15.00	18.00	5.0	23.7	13.00	0.0126	25.5	True
30.00	16.00	5.0	23.6	11.00	0.0090	21.5	True
60.00	14.00	5.0	23.4	9.00	0.0065	17.6	True
250.00	12.00	5.0	23.2	7.00	0.0032	13.7	True
1337.00	10.00	5.0	22.4	5.00	0.0014	9.8	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-07	Testing Date	2022-09-22 9:12:44 AM
Sample Number	3	Tested By	Sieve - KM, Hydrometer - KM
Checked By	_____	LabID	22-2019

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
•	SC 22-07	4	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 414.49(g)
Weight measured for back sieving = 99.89(g)
Weight of Sample for Hydrometer = 99.89(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	39.34	9.49	19.00	90.5
13.2mm	85.98	11.25	13.20	79.3
9.5mm	97.21	2.71	9.50	76.6
4.75mm	133.16	8.67	4.75	67.9
2.00mm	168.37	8.49	2.00	59.4
PAN	246.10	59.39	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	12.79	7.60	0.85	51.8
425µm	25.50	7.56	0.43	44.2
250µm	36.53	6.56	0.25	37.7
106µm	53.74	10.23	0.11	27.4
75µm	60.43	3.98	0.08	23.5

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-15	9:52:00 AM
Finished :	2022-09-16	7:24:00 AM

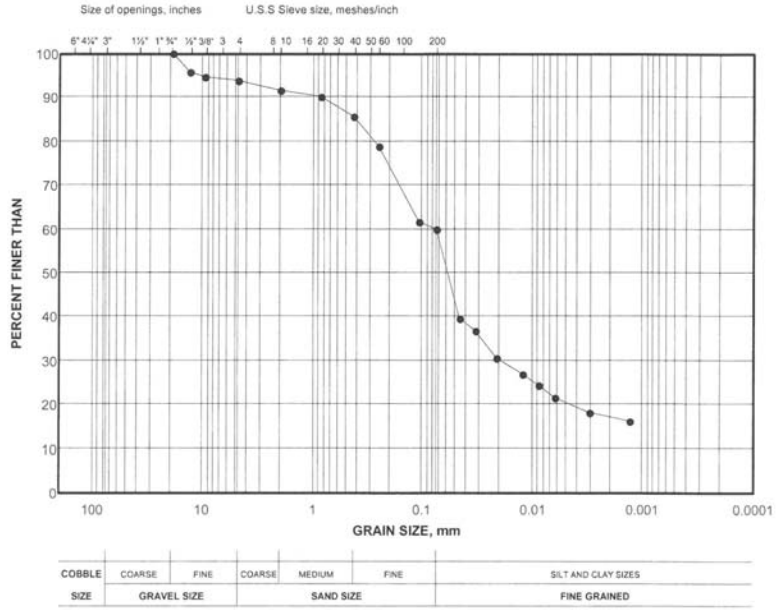
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	29.00	5.0	25.0	24.00	0.0446	14.1	True
2.00	26.00	5.0	25.0	21.00	0.0322	12.4	True
5.00	21.00	5.0	25.0	16.00	0.0210	9.4	True
15.00	19.00	5.0	24.6	14.00	0.0123	8.2	True
30.00	16.00	5.0	24.2	11.00	0.0089	6.5	True
60.00	15.00	5.0	23.9	10.00	0.0064	5.9	True
250.00	12.00	5.0	22.8	7.00	0.0032	4.1	True
1292.00	10.00	5.0	22.5	5.00	0.0014	2.9	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-07	Testing Date	2022-09-21 8:55:18 AM
Sample Number	4	Tested By	Sieve - ES, Hydrometer - KM
Checked By	_____	LabID	22-2020

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
•	SC 22-08	1	

Project Number: 19129150 (7900)

Checked By:

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 320.45(g)
Weight measured for back sieving = 50.38(g)
Weight of Sample for Hydrometer = 50.38(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	13.64	4.26	13.20	95.7
9.5mm	16.89	1.01	9.50	94.7
4.75mm	19.79	0.90	4.75	93.8
2.00mm	27.37	2.37	2.00	91.5
PAN	292.77	91.46	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	0.68	1.23	0.85	90.2
425µm	3.25	4.67	0.43	85.6
250µm	6.98	6.77	0.25	78.8
106µm	16.39	17.08	0.11	61.7
75µm	17.39	1.82	0.08	59.9

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-21	10:56:00 AM
Finished :	2022-09-22	8:36:00 AM

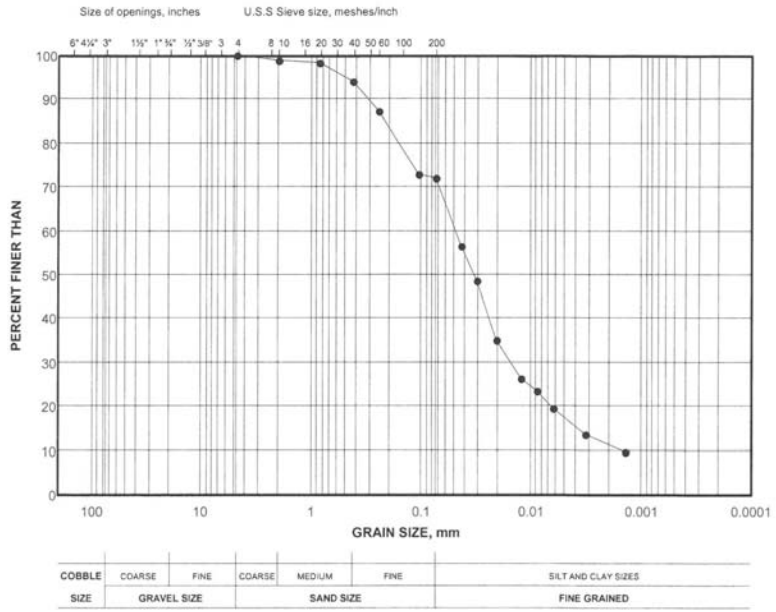
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	27.00	5.0	24.4	22.00	0.0455	39.6	True
2.00	25.50	5.0	24.4	20.50	0.0325	36.9	True
5.00	22.00	5.0	24.4	17.00	0.0210	30.6	True
15.00	20.00	5.0	24.2	15.00	0.0123	27.0	True
30.00	18.50	5.0	24.2	13.50	0.0088	24.3	True
60.00	17.00	5.0	23.9	12.00	0.0063	21.6	True
250.00	15.00	5.0	23.8	10.00	0.0031	18.0	True
1440.00	14.00	5.0	21.8	9.00	0.0013	16.2	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-08	Testing Date	2022-09-22 12:22:49 PM
Sample Number	1	Tested By	Sieve - SI, Hydrometer - KM
Checked By		LabID	22-2021

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
•	SC 22-08	2	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 281.35(g)
Weight measured for back sieving = 50.22(g)
Weight of Sample for Hydrometer = 50.22(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	0.00	0.00	9.50	100.0
4.75mm	0.00	0.00	4.75	100.0
2.00mm	3.26	1.16	2.00	98.8
PAN	276.89	98.84	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	0.32	0.63	0.85	98.2
425µm	2.36	4.02	0.43	94.2
250µm	5.80	6.77	0.25	87.4
106µm	13.11	14.39	0.11	73.0
75µm	13.67	1.10	0.08	71.9

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-21	10:45:00 AM
Finished :	2022-09-22	8:35:00 AM

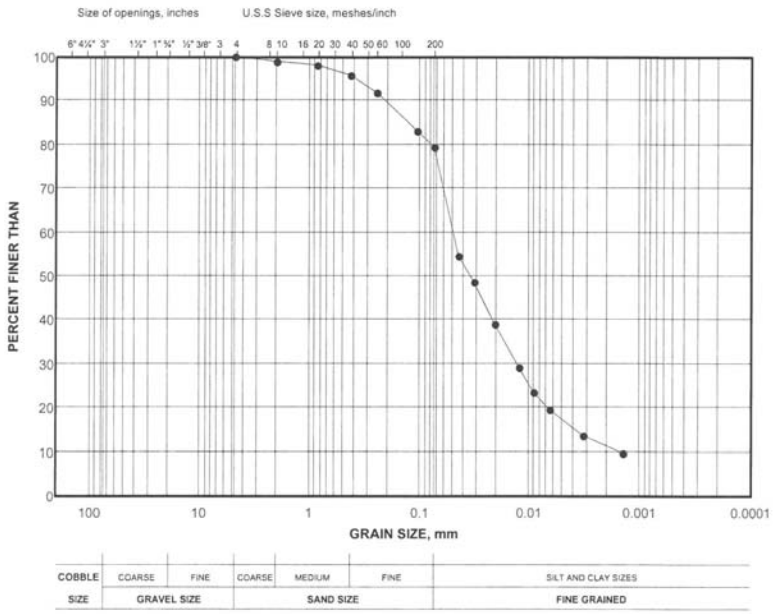
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	34.00	5.0	24.7	29.00	0.0432	56.5	True
2.00	30.00	5.0	24.7	25.00	0.0314	48.7	True
5.00	23.00	5.0	24.7	18.00	0.0208	35.1	True
15.00	18.50	5.0	24.7	13.50	0.0124	26.3	True
30.00	17.00	5.0	24.6	12.00	0.0088	23.4	True
60.00	15.00	5.0	24.3	10.00	0.0063	19.5	True
250.00	12.00	5.0	23.8	7.00	0.0032	13.6	True
1310.00	10.00	5.0	21.9	5.00	0.0014	9.7	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-08	Testing Date	2022-09-22 12:28:38 PM
Sample Number	2	Tested By	Sieve - SI, Hydrometer - KM
Checked By		LabID	22-2022

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
•	SC 22-09	1	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 280.77(g)
Weight measured for back sieving = 50.33(g)
Weight of Sample for Hydrometer = 50.33(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	0.00	0.00	9.50	100.0
4.75mm	0.00	0.00	4.75	100.0
2.00mm	3.01	1.07	2.00	98.9
PAN	277.43	98.93	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	0.50	0.98	0.85	98.0
425µm	1.66	2.28	0.43	95.7
250µm	3.68	3.97	0.25	91.7
106µm	8.05	8.59	0.11	83.1
75µm	9.95	3.73	0.08	79.4

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-15	10:04:00 AM
Finished :	2022-09-16	7:25:00 AM

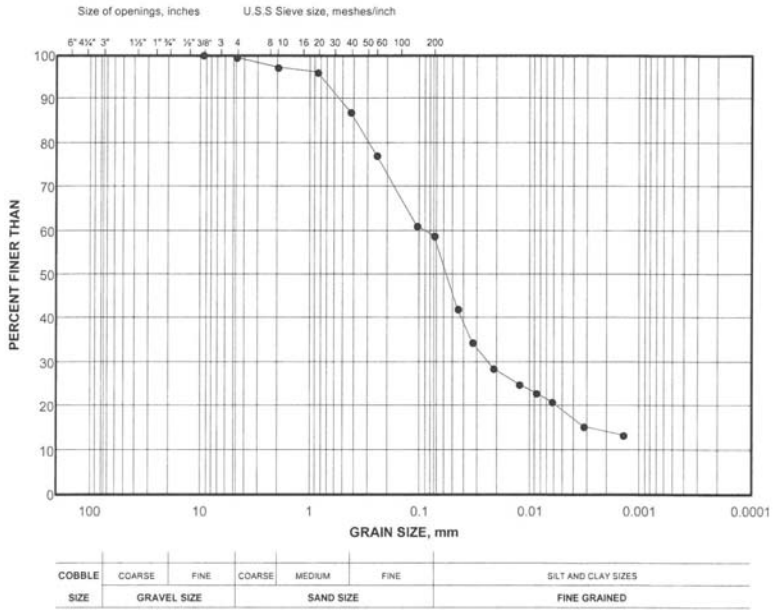
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	33.00	5.0	23.8	28.00	0.0440	54.5	True
2.00	30.00	5.0	23.8	25.00	0.0318	48.6	True
5.00	25.00	5.0	23.8	20.00	0.0208	38.9	True
15.00	20.00	5.0	23.6	15.00	0.0124	29.2	True
30.00	17.00	5.0	23.4	12.00	0.0090	23.3	True
60.00	15.00	5.0	23.3	10.00	0.0064	19.5	True
250.00	12.00	5.0	22.6	7.00	0.0032	13.6	True
1440.00	10.00	5.0	22.5	5.00	0.0014	9.7	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-09	Testing Date	2022-09-21 8:58:59 AM
Sample Number	1	Tested By	Sieve - ES, Hydrometer - KM
Checked By		LabID	22-2023

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
●	SC 22-09	2	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 405.06(g)
Weight measured for back sieving = 50.4(g)
Weight of Sample for Hydrometer = 50.4(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	0.00	0.00	9.50	100.0
4.75mm	2.94	0.73	4.75	99.3
2.00mm	11.61	2.14	2.00	97.1
PAN	392.87	97.13	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	0.54	1.04	0.85	96.1
425µm	5.23	9.04	0.43	87.1
250µm	10.44	10.04	0.25	77.0
106µm	18.74	16.00	0.11	61.0
75µm	19.91	2.25	0.08	58.8

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-21	10:33:00 AM
Finished :	2022-09-22	8:34:00 AM

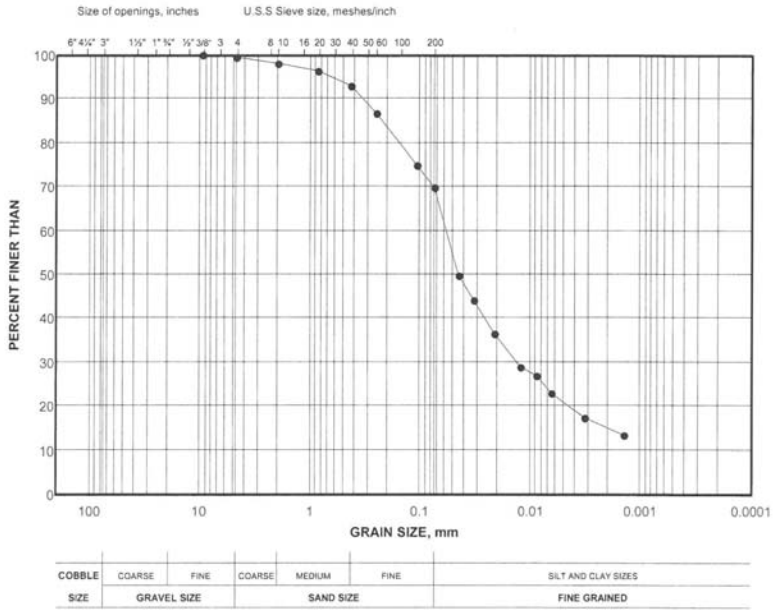
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	27.00	5.0	24.1	22.00	0.0457	42.0	True
2.00	23.00	5.0	24.1	18.00	0.0332	34.3	True
5.00	20.00	5.0	24.1	15.00	0.0214	28.6	True
15.00	18.00	5.0	24.0	13.00	0.0125	24.8	True
30.00	17.00	5.0	24.0	12.00	0.0089	22.9	True
60.00	16.00	5.0	24.0	11.00	0.0063	21.0	True
250.00	13.00	5.0	23.7	8.00	0.0032	15.3	True
1321.00	12.00	5.0	21.9	7.00	0.0014	13.4	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-09	Testing Date	2022-09-22 12:32:52 PM
Sample Number	2	Tested By	Sieve - SI, Hydrometer - KM
Checked By	_____	LabID	22-2024

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
•	SC 22-10	1	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 280.03(g)
Weight measured for back sieving = 50.59(g)
Weight of Sample for Hydrometer = 50.59(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	0.00	0.00	9.50	100.0
4.75mm	1.61	0.57	4.75	99.4
2.00mm	5.96	1.55	2.00	97.9
PAN	273.78	97.88	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	0.78	1.51	0.85	96.4
425µm	2.63	3.58	0.43	92.8
250µm	5.79	6.11	0.25	86.7
106µm	11.91	11.84	0.11	74.8
75µm	14.59	5.19	0.08	69.7

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-15	9:40:00 AM
Finished :	2022-09-16	7:22:00 AM

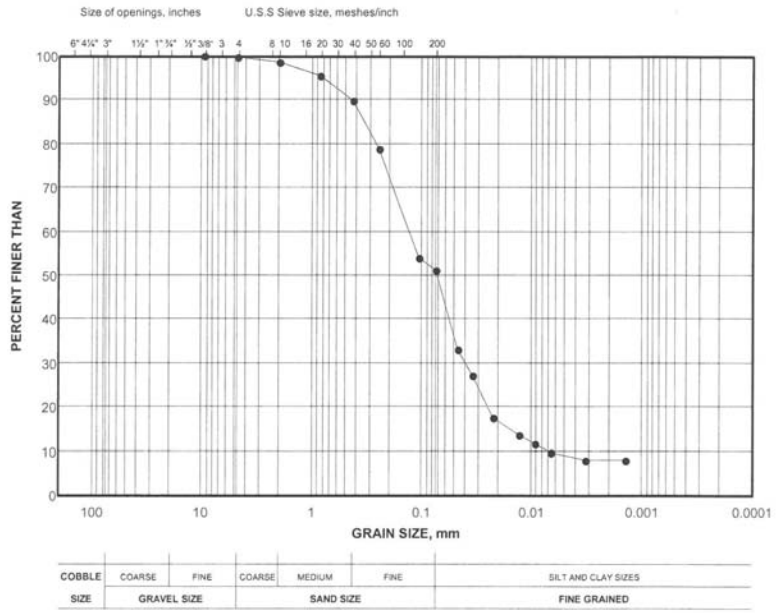
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	31.00	5.0	23.7	26.00	0.0447	49.8	True
2.00	28.00	5.0	23.7	23.00	0.0323	44.1	True
5.00	24.00	5.0	23.7	19.00	0.0210	36.4	True
15.00	20.00	5.0	23.5	15.00	0.0124	28.7	True
30.00	19.00	5.0	23.3	14.00	0.0089	26.8	True
60.00	17.00	5.0	23.1	12.00	0.0064	23.0	True
250.00	14.00	5.0	22.6	9.00	0.0032	17.2	True
1302.00	12.00	5.0	22.5	7.00	0.0014	13.4	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-10	Testing Date	2022-09-21 9:02:22 AM
Sample Number	1	Tested By	Sieve - ES, Hydrometer - KM
Checked By	_____	LabID	22-2025

Golder Associates

GRAIN SIZE DISTRIBUTION
MTO LS-702

FIGURE



LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
•	SC 22-10	2	

Project Number: 19129150 (7900)

Checked By: _____

Golder Associates

Date: 23-Sep-22

SOIL SIEVE AND HYDROMETER ANALYSIS

Initial weight of dry sample = 459.94(g)
Weight measured for back sieving = 50.18(g)
Weight of Sample for Hydrometer = 50.18(g)

COARSE SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
150mm	0.00	0.00	150.00	100.0
125mm	0.00	0.00	125.00	100.0
75mm	0.00	0.00	75.00	100.0
63mm	0.00	0.00	63.00	100.0
53mm	0.00	0.00	53.00	100.0
37.5mm	0.00	0.00	37.50	100.0
26.5mm	0.00	0.00	26.50	100.0
19.0mm	0.00	0.00	19.00	100.0
13.2mm	0.00	0.00	13.20	100.0
9.5mm	0.00	0.00	9.50	100.0
4.75mm	1.05	0.23	4.75	99.8
2.00mm	6.72	1.23	2.00	98.5
PAN	452.63	98.54	0.00	0.0

HYDROMETER BACK SIEVING

SIEVE	CUM. MASS RETAINED (g)	% RETAINED	PARTICLE SIZE(mm)	% PASSING
850µm	1.54	3.02	0.85	95.5
425µm	4.40	5.62	0.43	89.9
250µm	10.03	11.06	0.25	78.8
106µm	22.74	24.96	0.11	53.9
75µm	24.10	2.67	0.08	51.2

HYDROMETER

	DATE (MM\DD\YYYY)	TIME (HH:MM:SS)
Started :	2022-09-21	10:21:00 AM
Finished :	2022-09-22	8:32:00 AM

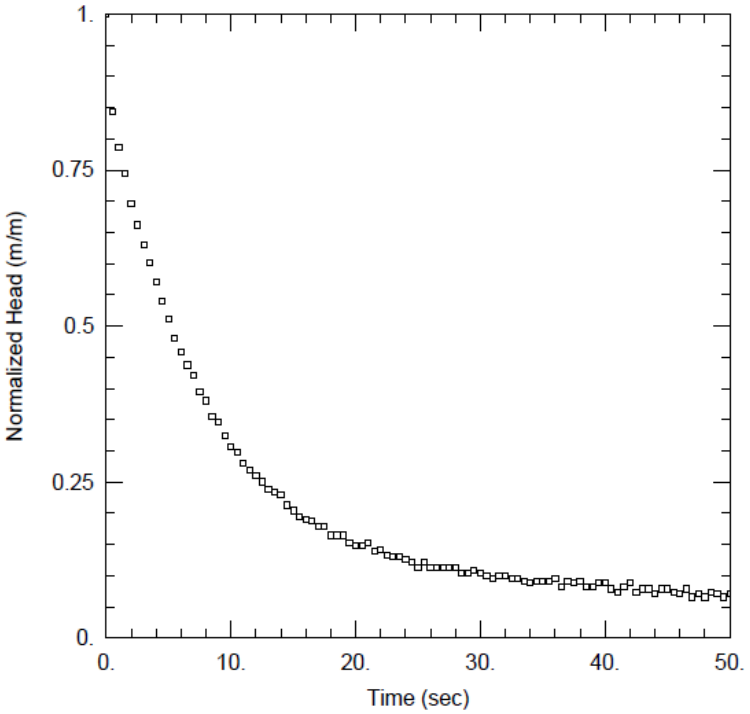
Elapsed Time (min)	HYDROMETER READING	DEFLOCCULANT CORRECTION	WATER TEMP (°C)	CORRECTED HYDROMETER READING	PARTICLE SIZE (mm)	% PASSING	PLOT
1.00	22.00	5.0	23.9	17.00	0.0473	33.0	True
2.00	19.00	5.0	23.9	14.00	0.0341	27.2	True
5.00	14.00	5.0	23.9	9.00	0.0222	17.5	True
15.00	12.00	5.0	23.7	7.00	0.0130	13.6	True
30.00	11.00	5.0	23.7	6.00	0.0092	11.7	True
60.00	10.00	5.0	23.8	5.00	0.0066	9.7	True
250.00	9.00	5.0	23.6	4.00	0.0032	7.8	True
1331.00	9.00	5.0	21.8	4.00	0.0014	7.8	True

Project Number	19129150 (7900)	Depth	
Project Task	1000	Units	Metric
Borehole Number	SC 22-10	Testing Date	2022-09-22 12:36:13 PM
Sample Number	2	Tested By	Sieve - SI, Hydrometer - KM
Checked By	_____	LabID	22-2026

Golder Associates

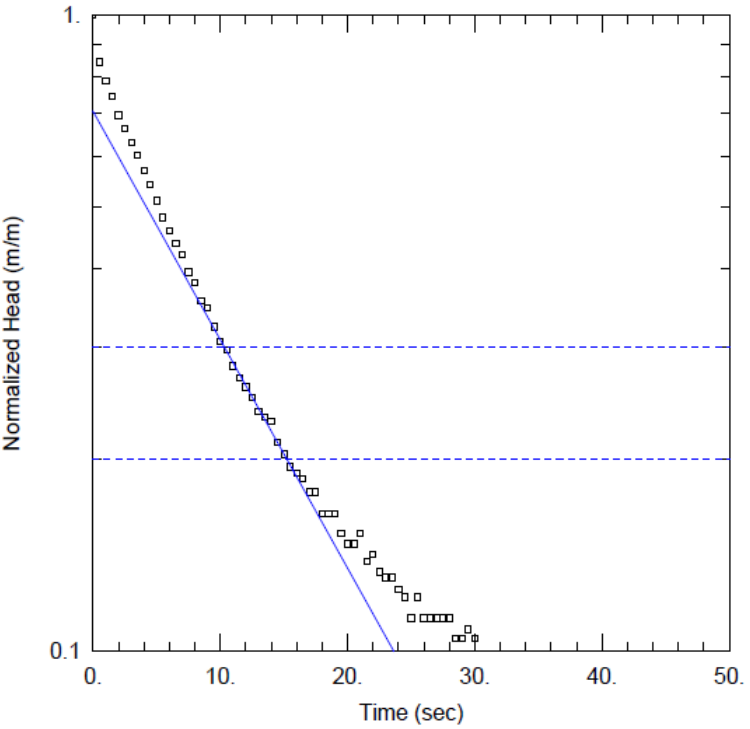
APPENDIX J

Northwest Investigation - Single Well Response Test Results



TEST INFORMATION:

Test Well:	PW22-01
Date of Test:	September 14, 2022
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	0.62 mbgs
Initial Displacement:	1.12 m
Casing Radius:	0.051 m
Borehole Radius:	0.084 m
Well Screen Interval:	10.36 m to 39.62 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

2×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
CALEDON PIT / QUARRY

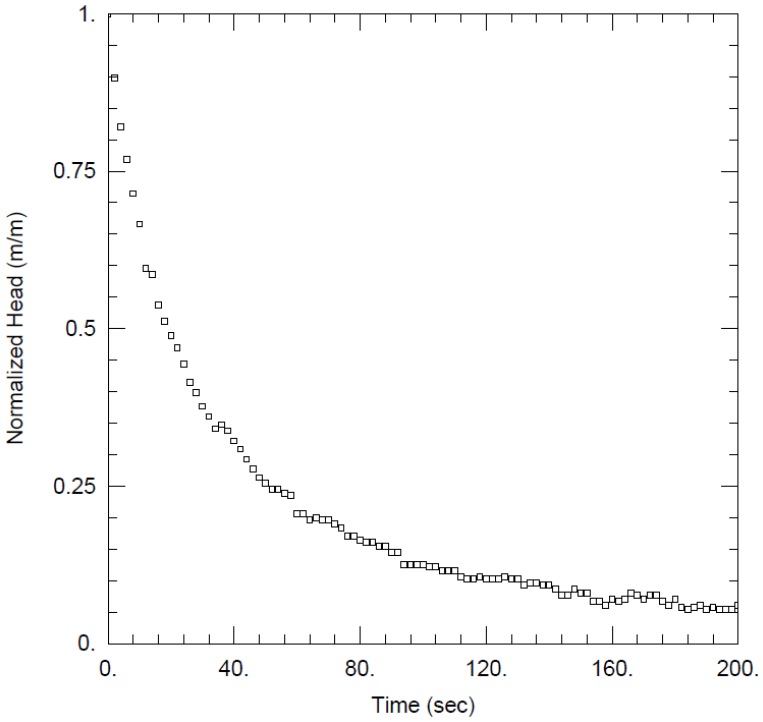
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-10-12
PREPARED	PGM
DESIGN	PGM
REVIEW	GWS
APPROVED	###

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL PW22-01

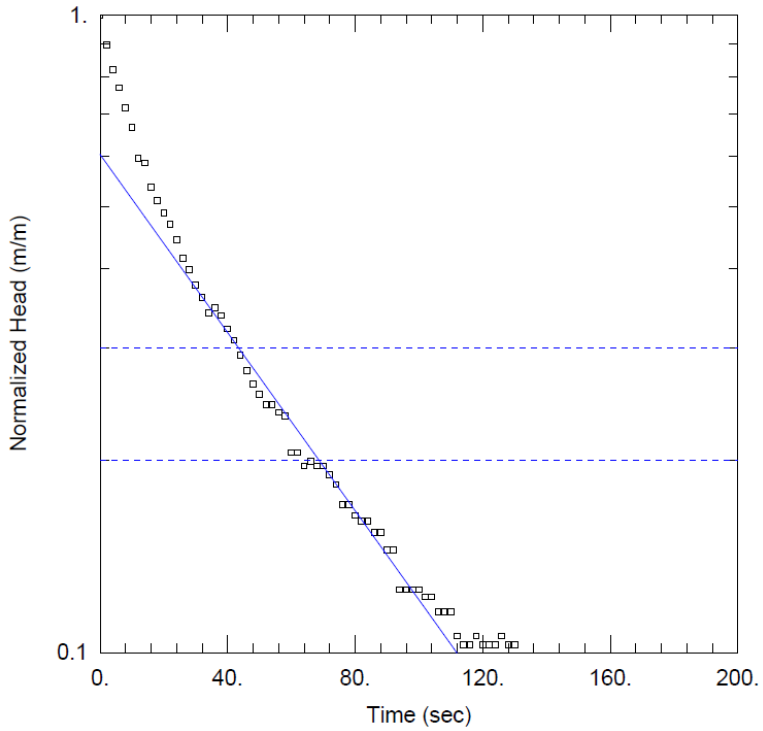
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	J-01

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW22-01
Date of Test:	August 15, 2022
Test Type:	Rising Head Test
Test Method:	Physical Slug Rising Head Test
Static Water Level:	2.35 mbgs
Initial Displacement:	0.31 m
Casing Radius:	0.025 m
Borehole Radius:	0.079 m
Well Screen Interval:	4.11 m to 7.16 m
Geology:	Silty Sand



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

5×10^{-6} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

CONSULTANT
GOLDER
MEMBER OF WSP

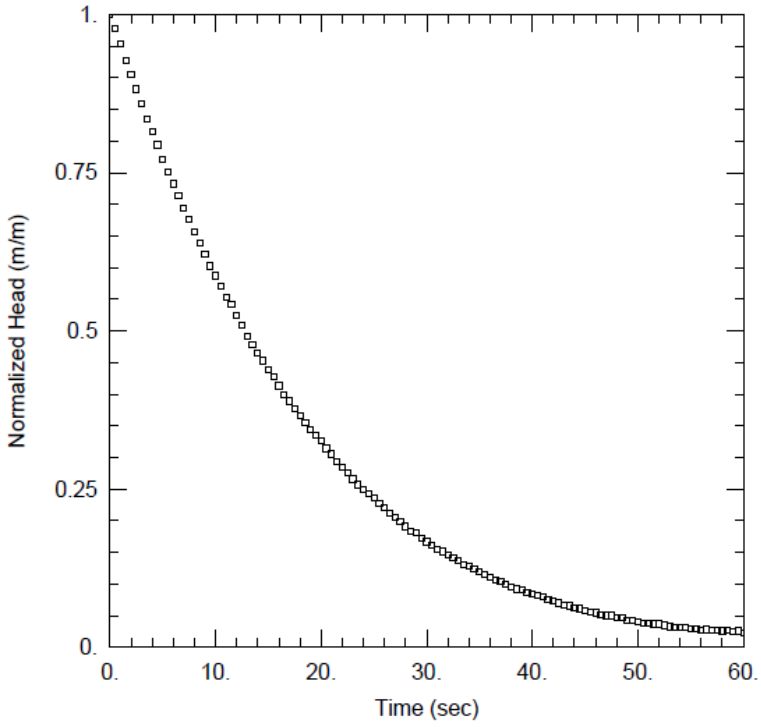
YYYY-MM-DD	2022-10-12
PREPARED	PGM
DESIGN	PGM
REVIEW	GWS
APPROVED	###

PROJECT
CALEDON PIT / QUARRY

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW22-01

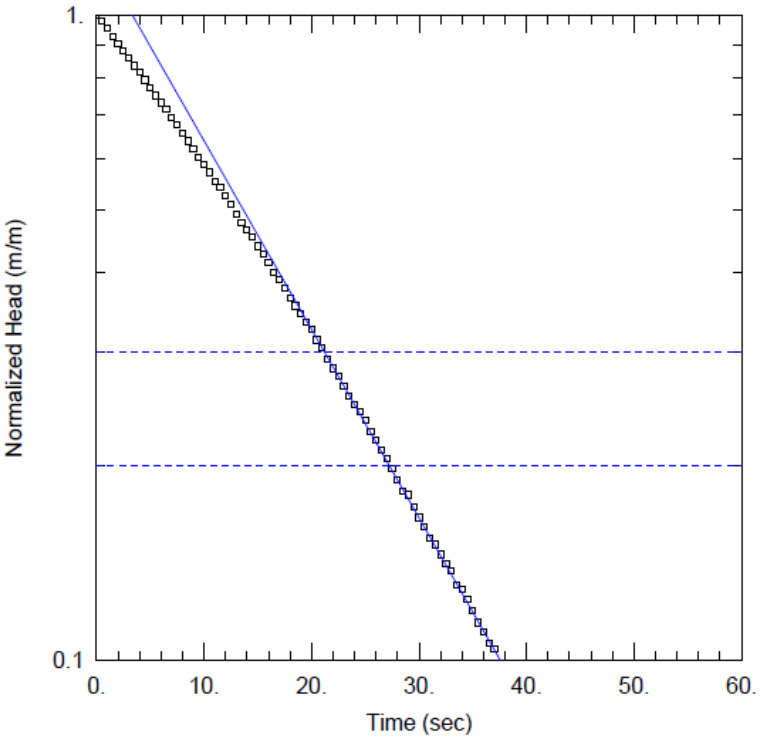
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	J-02

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW22-02A
Date of Test:	September 14, 2022
Test Type:	Rising Head Test
Test Method:	Pneumatic Rising Head Test
Static Water Level:	1.56 mbgs
Initial Displacement:	3.65 m
Casing Radius:	0.013 m
Borehole Radius:	0.054 m
Well Screen Interval:	34.75 m to 36.27 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

2×10^{-5} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

CONSULTANT
GOLDER
MEMBER OF WSP

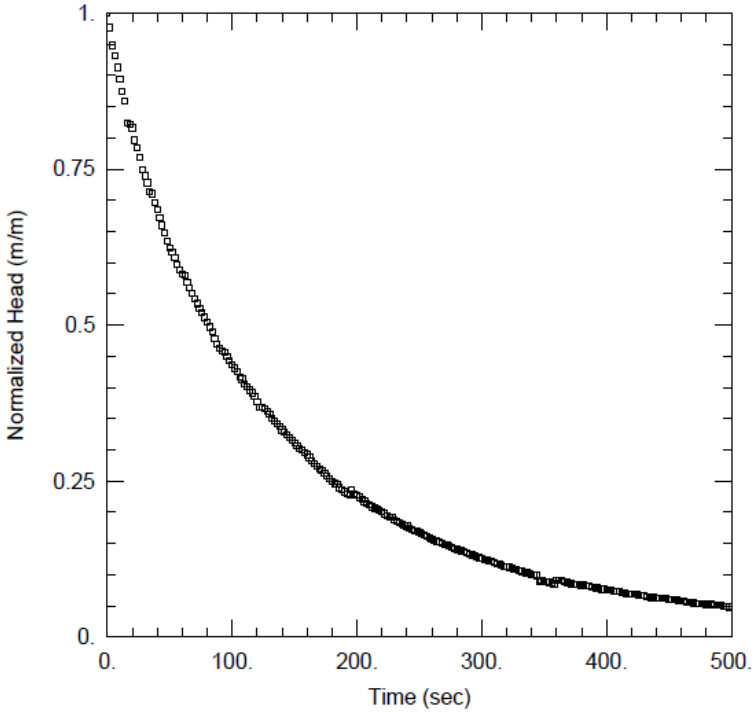
YYYY-MM-DD	2022-10-12
PREPARED	PGM
DESIGN	PGM
REVIEW	GWS
APPROVED	###

PROJECT
CALEDON PIT / QUARRY

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW22-02A

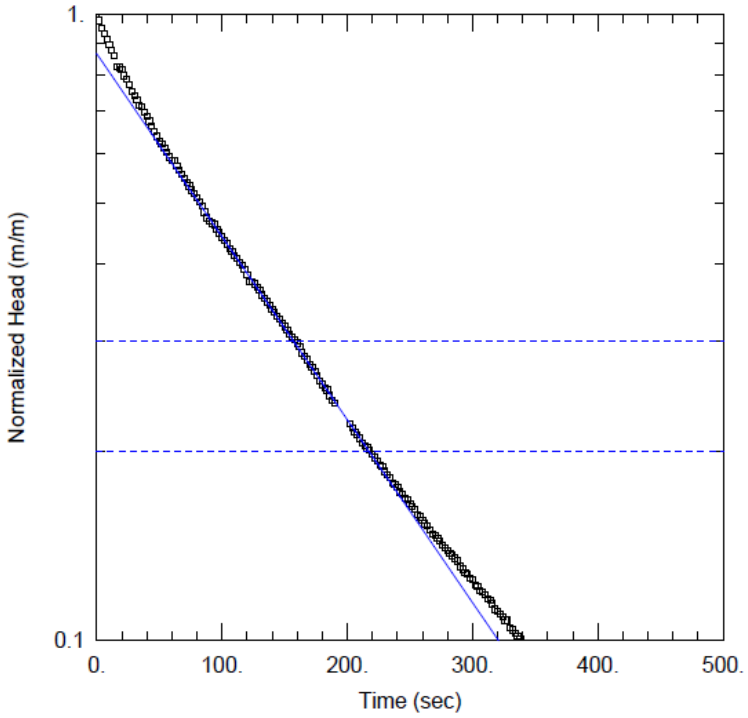
PROJECT No.	PHASE	Rev.	FIGURE
19129150	**2300**	**A**	**J-03**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW22-02B
Date of Test:	September 6, 2022
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	1.29 mbgs
Initial Displacement:	2.20 m
Casing Radius:	0.013 m
Borehole Radius:	0.054 m
Well Screen Interval:	12.80 m to 15.85 m
Geology:	Dolostone, Gasport Fm



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

8×10^{-6} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

CONSULTANT
GOLDER
MEMBER OF WSP

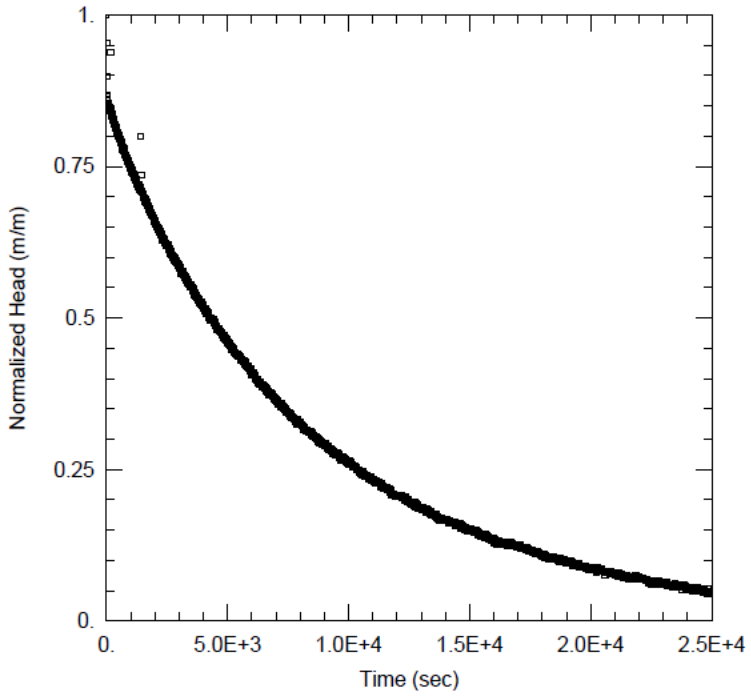
YYYY-MM-DD	2022-10-12
PREPARED	PGM
DESIGN	PGM
REVIEW	GWS
APPROVED	###

PROJECT
CALEDON PIT / QUARRY

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS
MONITORING WELL MW22-02B

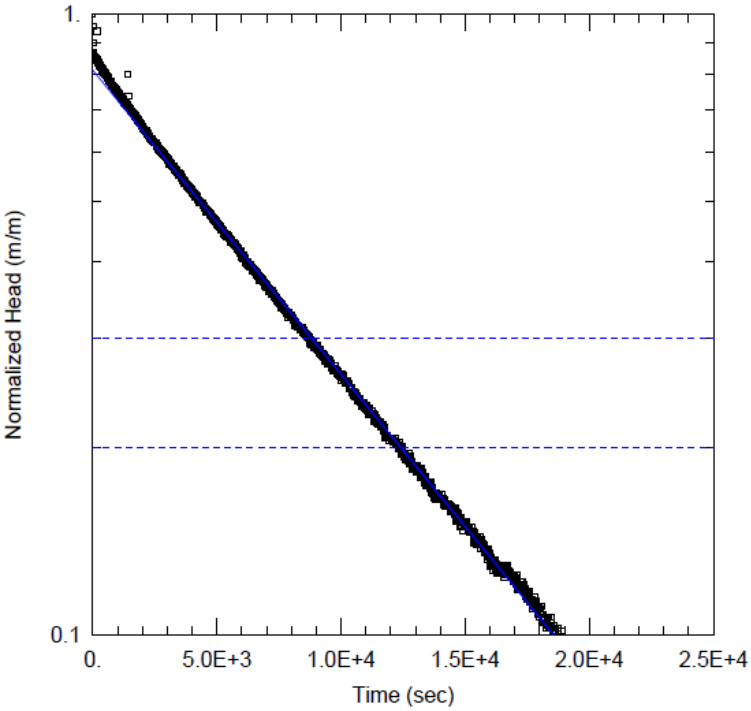
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	J-04

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW22-02C
Date of Test:	September 6, 2022
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	1.64 mbgs
Initial Displacement:	0.94 m
Casing Radius:	0.025 m
Borehole Radius:	0.079 m
Well Screen Interval:	3.96 m to 5.49 m
Geology:	Silty Sand and Gravel Till



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-8} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-10-12
PREPARED	PGM
DESIGN	PGM
REVIEW	GWS
APPROVED	###

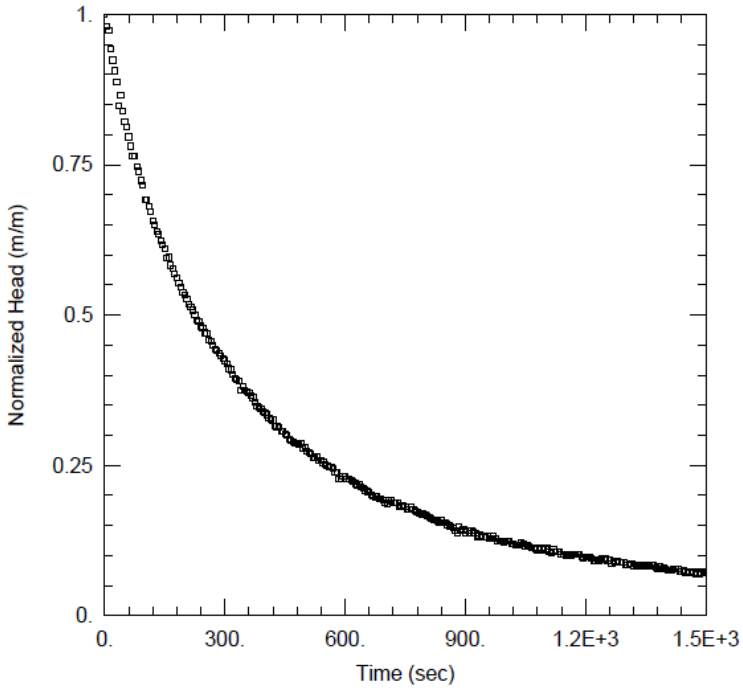
PROJECT
CALEDON PIT / QUARRY

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS
MONITORING WELL MW22-02C

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	J-05

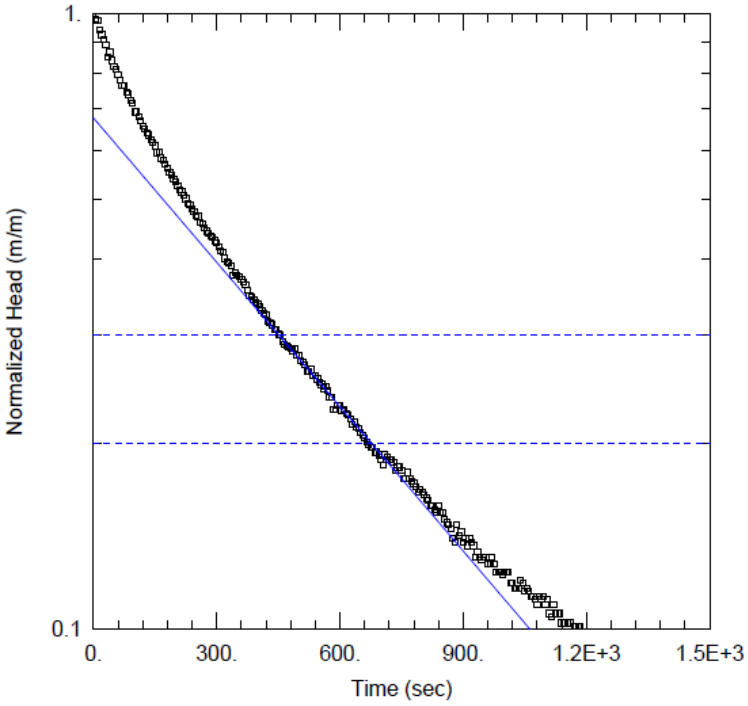
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

TEST INFORMATION:



Test Well:	MW22-03A
Date of Test:	September 6, 2022
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	0.92 mbgs
Initial Displacement:	2.68 m
Casing Radius:	0.013 m
Borehole Radius:	0.079 m
Well Screen Interval:	12.80 m to 15.85 m
Geology:	Silty Sand Till

SOLUTION:



Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

2×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

CONSULTANT
GOLDER
MEMBER OF WSP

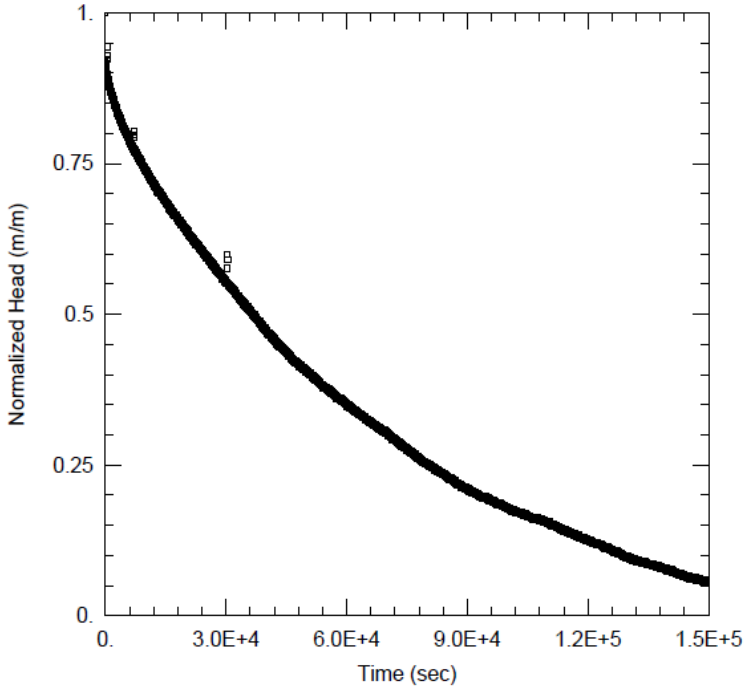
YYYY-MM-DD	2022-10-12
PREPARED	PGM
DESIGN	PGM
REVIEW	GWS
APPROVED	###

PROJECT
CALEDON PIT / QUARRY

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS
MONITORING WELL MW22-03A

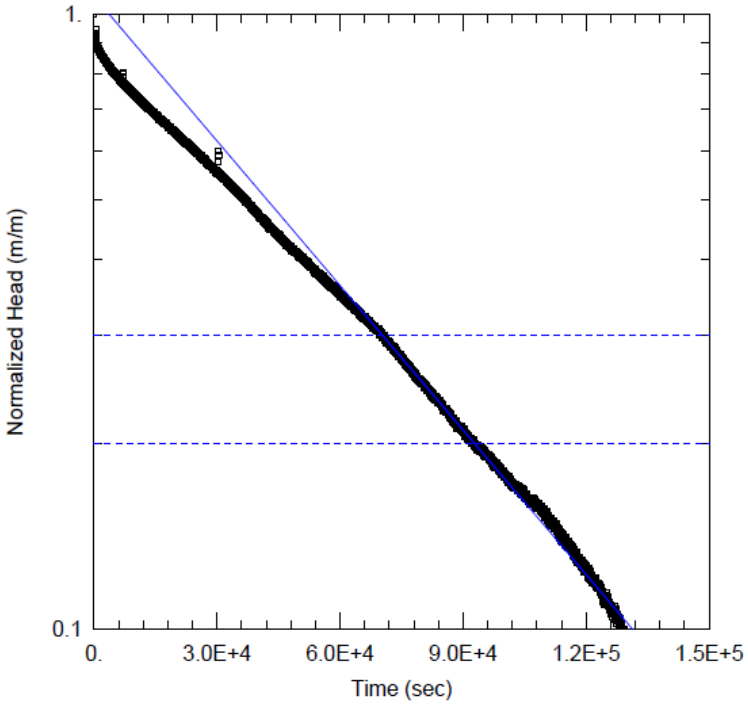
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	J-06

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MW22-03B
Date of Test:	September 6 to 8, 2022
Test Type:	Rising Head Test
Test Method:	Waterra Purge Rising Head Test
Static Water Level:	1.73 mbgs
Initial Displacement:	1.59 m
Casing Radius:	0.013 m
Borehole Radius:	0.079 m
Well Screen Interval:	4.57 m to 6.10 m
Geology:	Silty Sand and Gravel Till



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Confined

Hydraulic Conductivity (K) =

3×10^{-9} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

CONSULTANT
GOLDER
MEMBER OF WSP

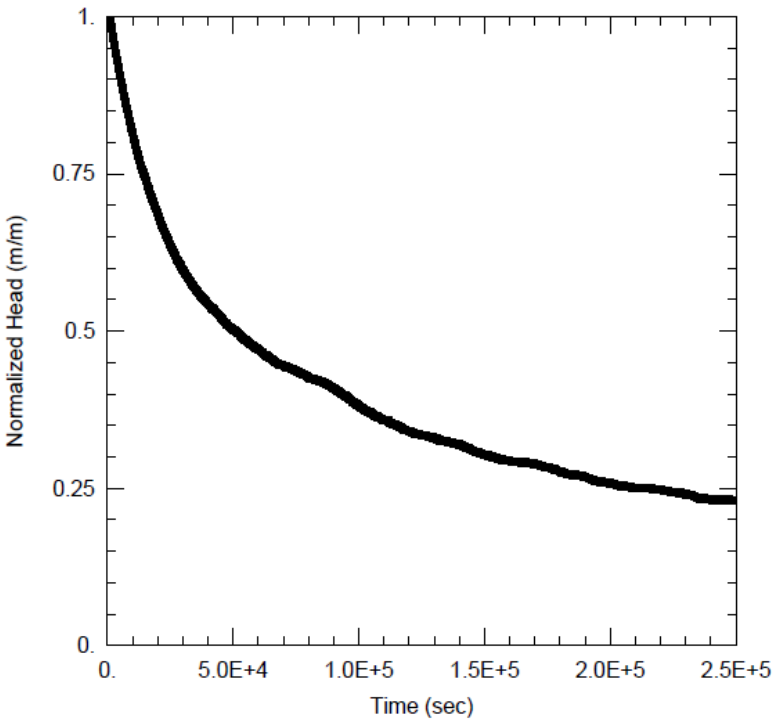
YYYY-MM-DD	2022-10-12
PREPARED	PGM
DESIGN	PGM
REVIEW	GWS
APPROVED	###

PROJECT
CALEDON PIT / QUARRY

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MW22-03B

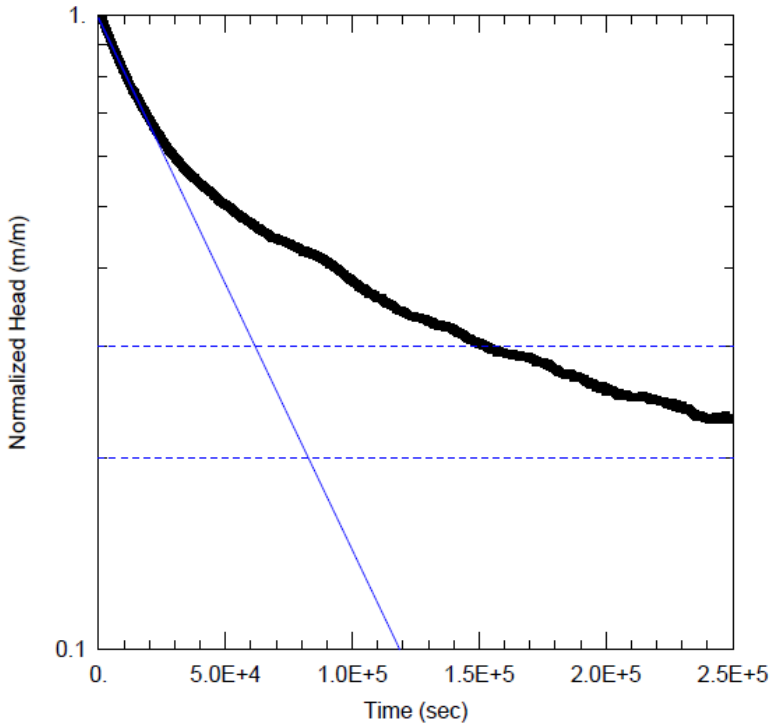
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	J-07

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MP17
Date of Test:	August 12 to 15, 2022
Test Type:	Falling Head Test
Test Method:	Pour In Falling Head Test
Static Water Level:	0.80 mbgs
Initial Displacement:	1.74 m
Casing Radius:	0.010 m
Borehole Radius:	0.013 m
Well Screen Interval:	0.90 m to 1.10 m
Geology:	Silty Sand Till



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

1×10^{-8} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

CONSULTANT
GOLDER
MEMBER OF WSP

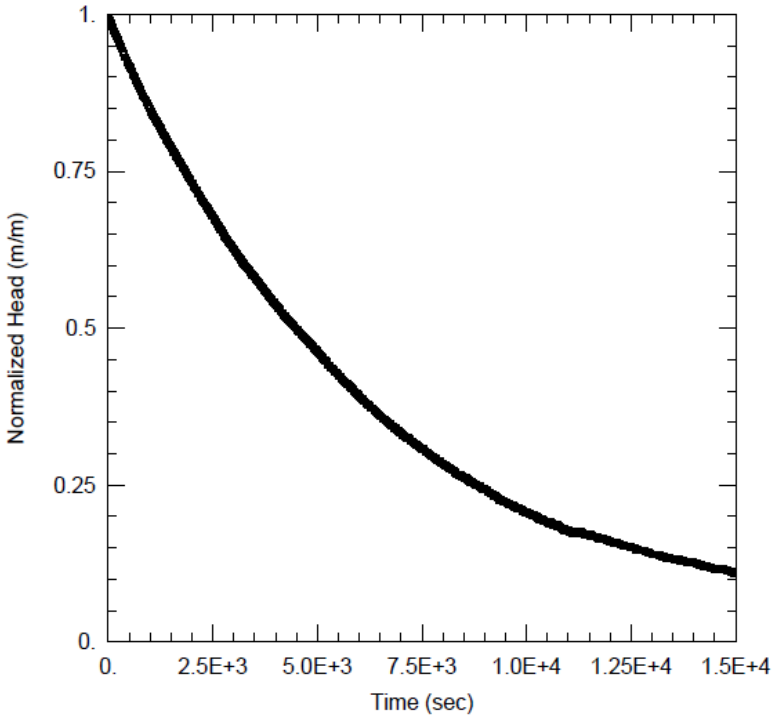
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PREPARED	PGM
DESIGN	PGM
REVIEW	GWS
APPROVED	###

PROJECT
CALEDON PIT / QUARRY

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MP17

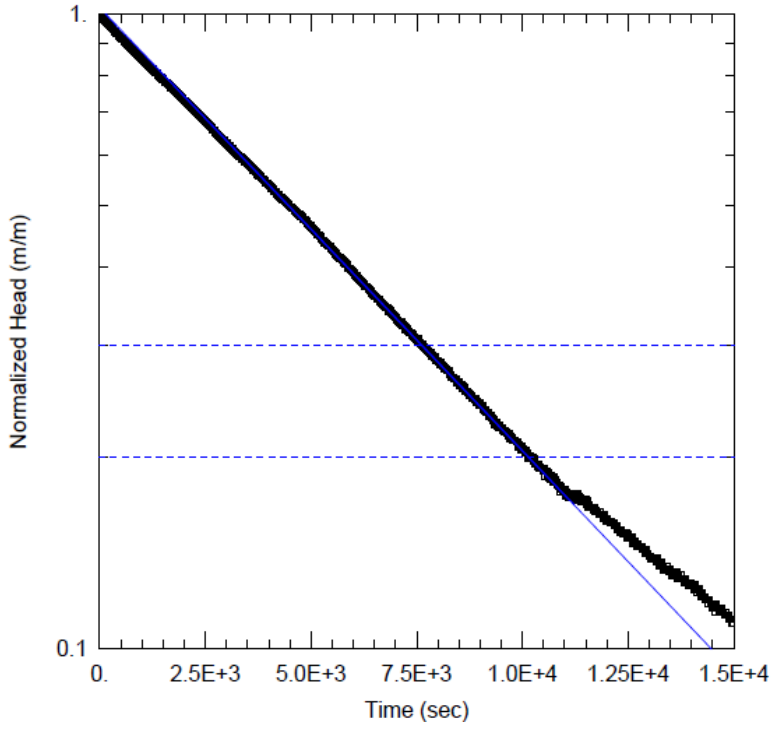
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	J-08

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MP18
Date of Test:	August 12, 2022
Test Type:	Falling Head Test
Test Method:	Pour In Falling Head Test
Static Water Level:	0.55 mbgs
Initial Displacement:	1.10 m
Casing Radius:	0.010 m
Borehole Radius:	0.013 m
Well Screen Interval:	1.35 m to 1.55 m
Geology:	-



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

1×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

CONSULTANT
GOLDER
MEMBER OF WSP

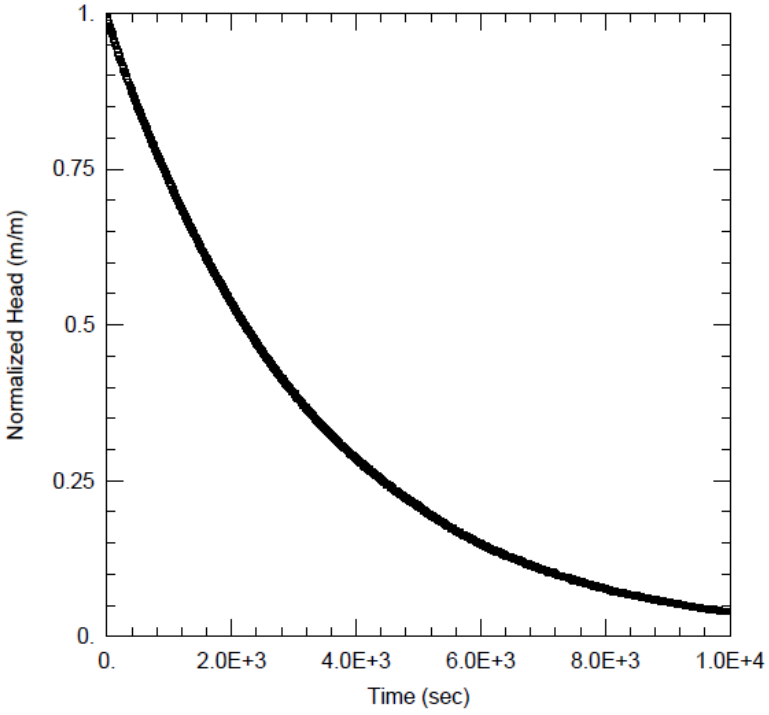
YYYY-MM-DD	2022-10-12
PREPARED	PGM
DESIGN	PGM
REVIEW	GWS
APPROVED	###

PROJECT
CALEDON PIT / QUARRY

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MP18

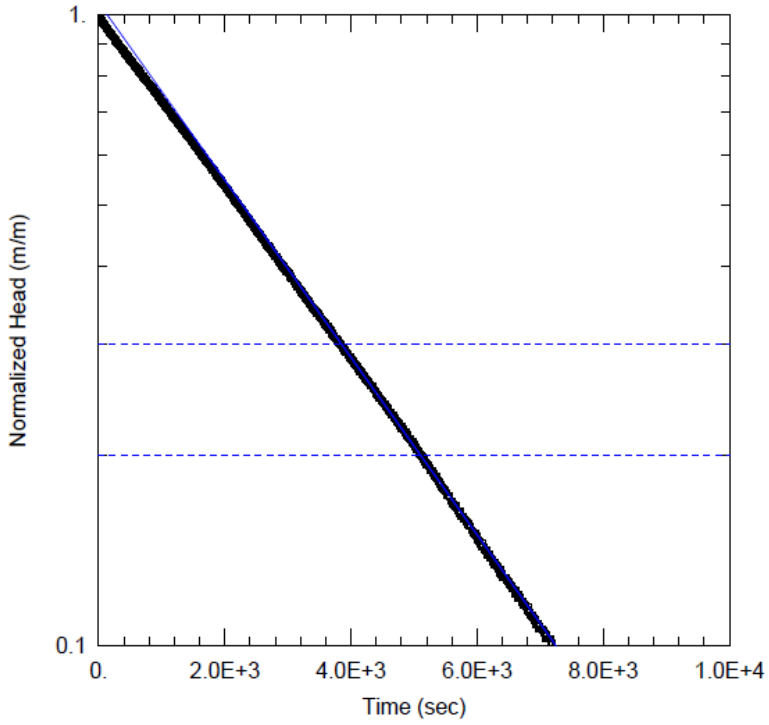
PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	J-09

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



TEST INFORMATION:

Test Well:	MP19
Date of Test:	August 12, 2022
Test Type:	Falling Head Test
Test Method:	Pour In Falling Head Test
Static Water Level:	0.62 mbgs
Initial Displacement:	1.50 m
Casing Radius:	0.010 m
Borehole Radius:	0.013 m
Well Screen Interval:	1.01 m to 1.21 m
Geology:	-



SOLUTION:

Solution Method:	Bouwer-Rice
Solution Type:	Zero Storage
Aquifer Model:	Unconfined

Hydraulic Conductivity (K) =

2×10^{-7} m/s

Water Level Measurement

Solution Match Line

CLIENT
CBM AGGREGATES (CBM), A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

CONSULTANT
GOLDER
MEMBER OF WSP

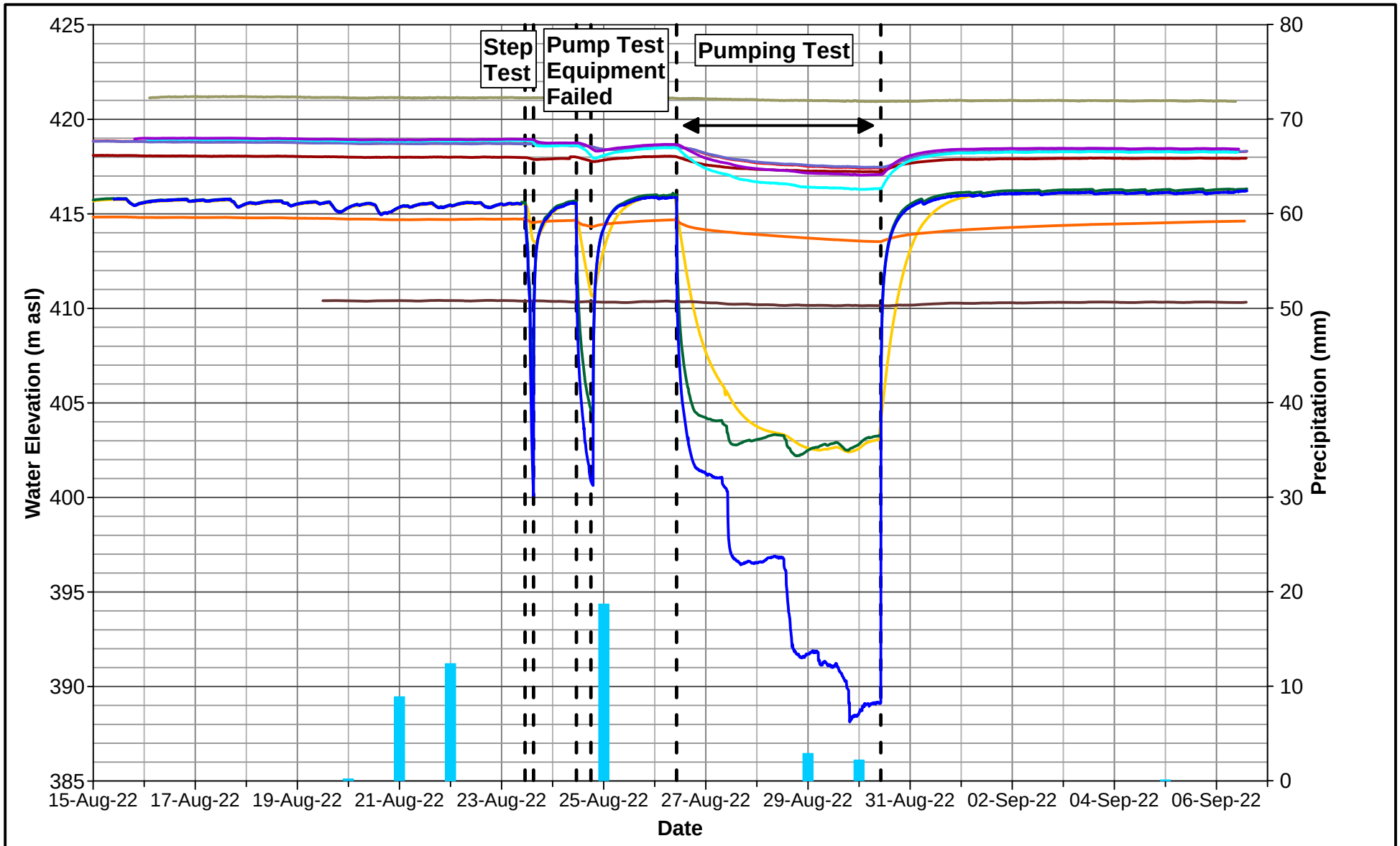
YYYY-MM-DD	2022-10-12
PREPARED	PGM
DESIGN	PGM
REVIEW	GWS
APPROVED	###

PROJECT
CALEDON PIT / QUARRY

TITLE
SINGLE WELL RESPONSE TEST ANALYSIS MONITORING WELL MP19

PROJECT No.	PHASE	Rev.	FIGURE
19129150	2300	A	J-10

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A



PW22-01 MW20-15A MW20-16A MW22-02A MW22-03A
PW21-1 MW20-15B MW20-16B MW22-02B Precipitation (mm)
MW21-1-3 MW20-15C

Notes:
1) Average pumping rate = 80.4 L/min
2) Precipitation data from Met Station ID 6157000

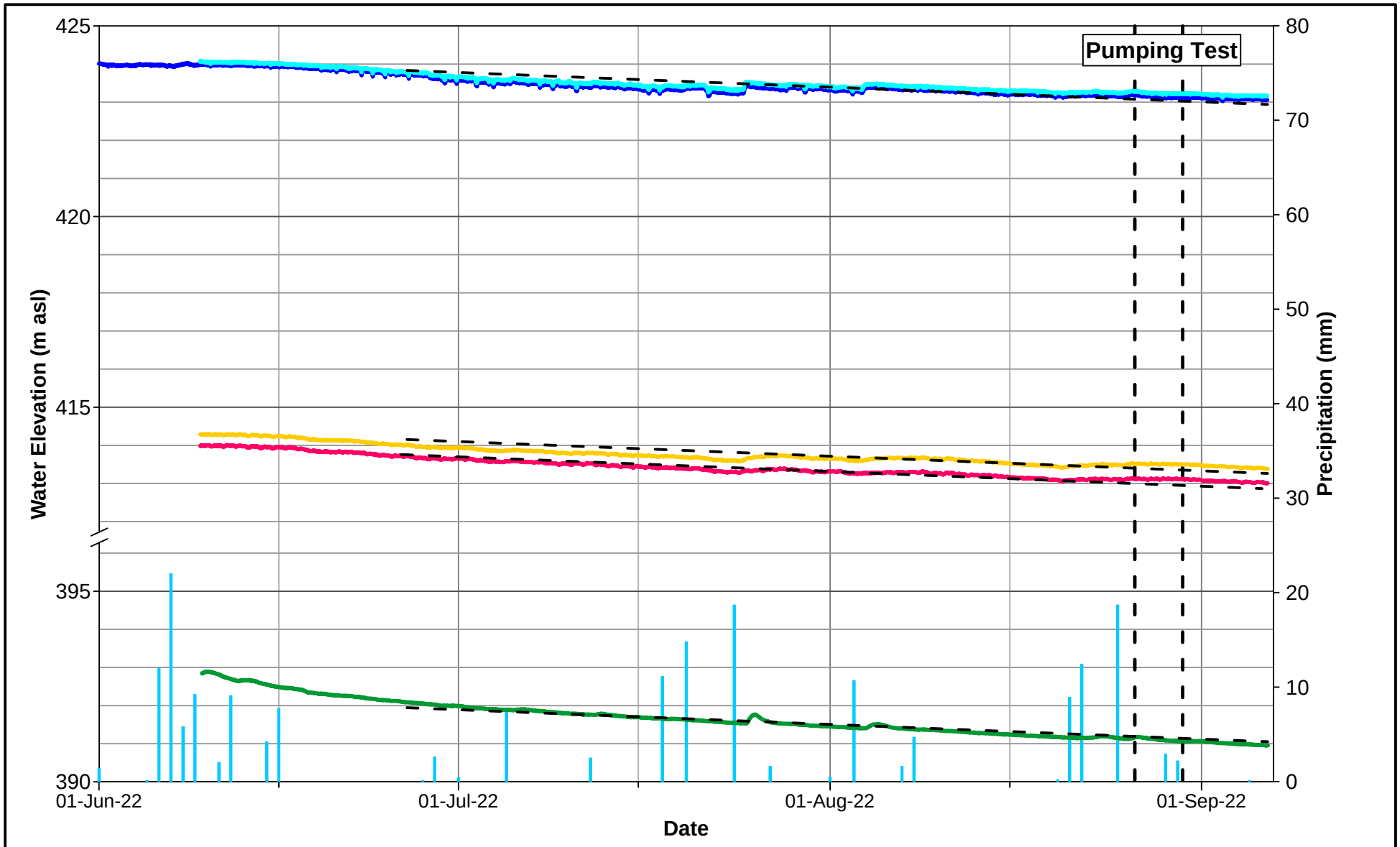
GOLDER
MEMBER OF WSP

DATE	October 2022
DESIGN	PGM
REVIEW	GWS
APPROVED	GWS

PROJECT: CBM CALEDON QUARRY

TITLE: PW22-01 PUMPING TEST GROUNDWATER ELEVATION

PROJECT NO.	REV	FIGURE
19129150	A	J-11



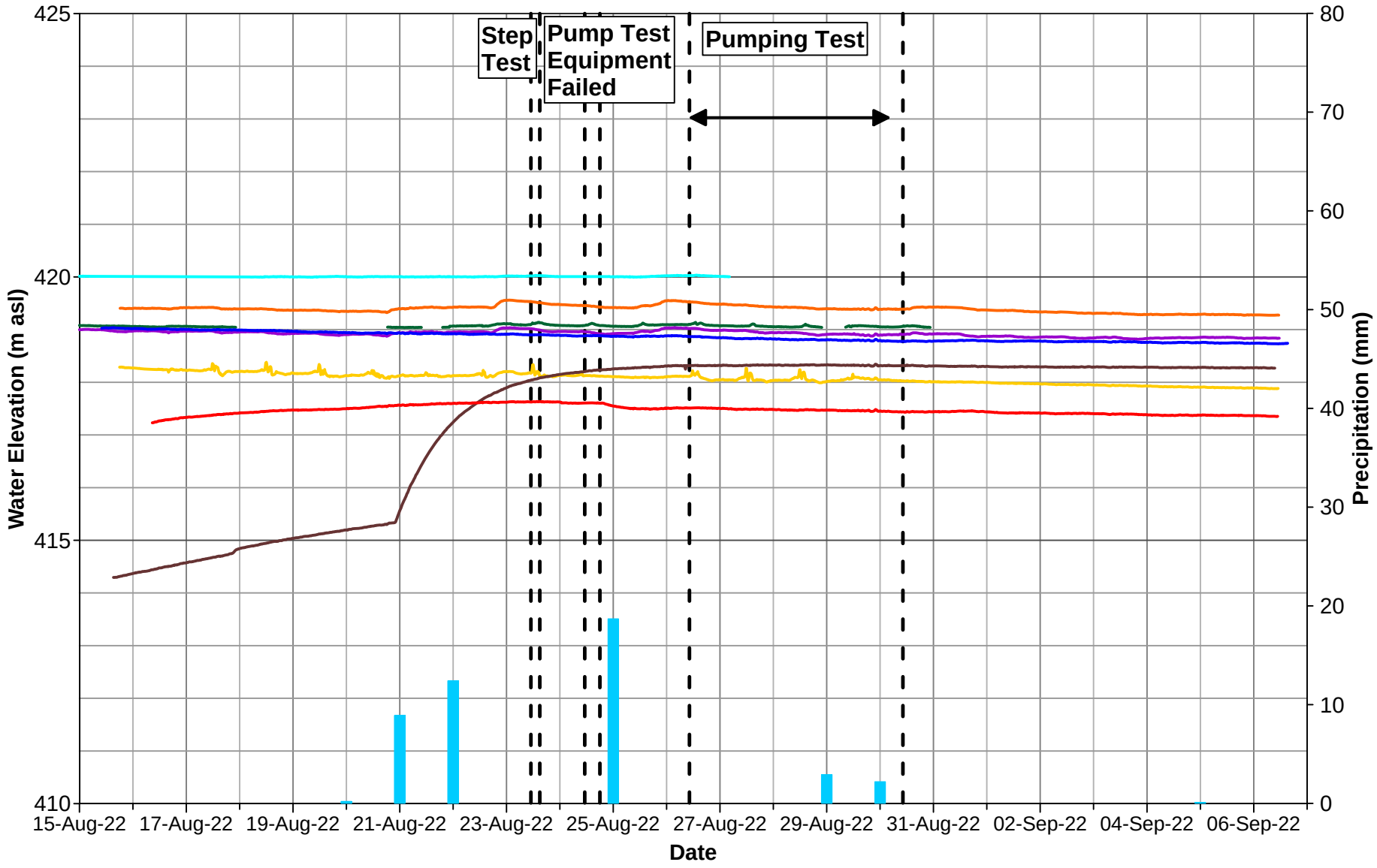
GOLDER
MEMBER OF WSP

DATE	October 2022
DESIGN	PGM/ VRP
REVIEW	GWS
APPROVED	GWS

PROJECT: **CBM CALEDON QUARRY**

TITLE: **PW22-01 PUMPING TEST BEDROCK AQUIFER BACKGROUND GROUNDWATER ELEVATION**

PROJECT NO.	REV	FIGURE
19129150	A	J-12



Notes:
1) Average pumping rate = 80.4 L/min
2) Precipitation data from Met Station ID 6157000

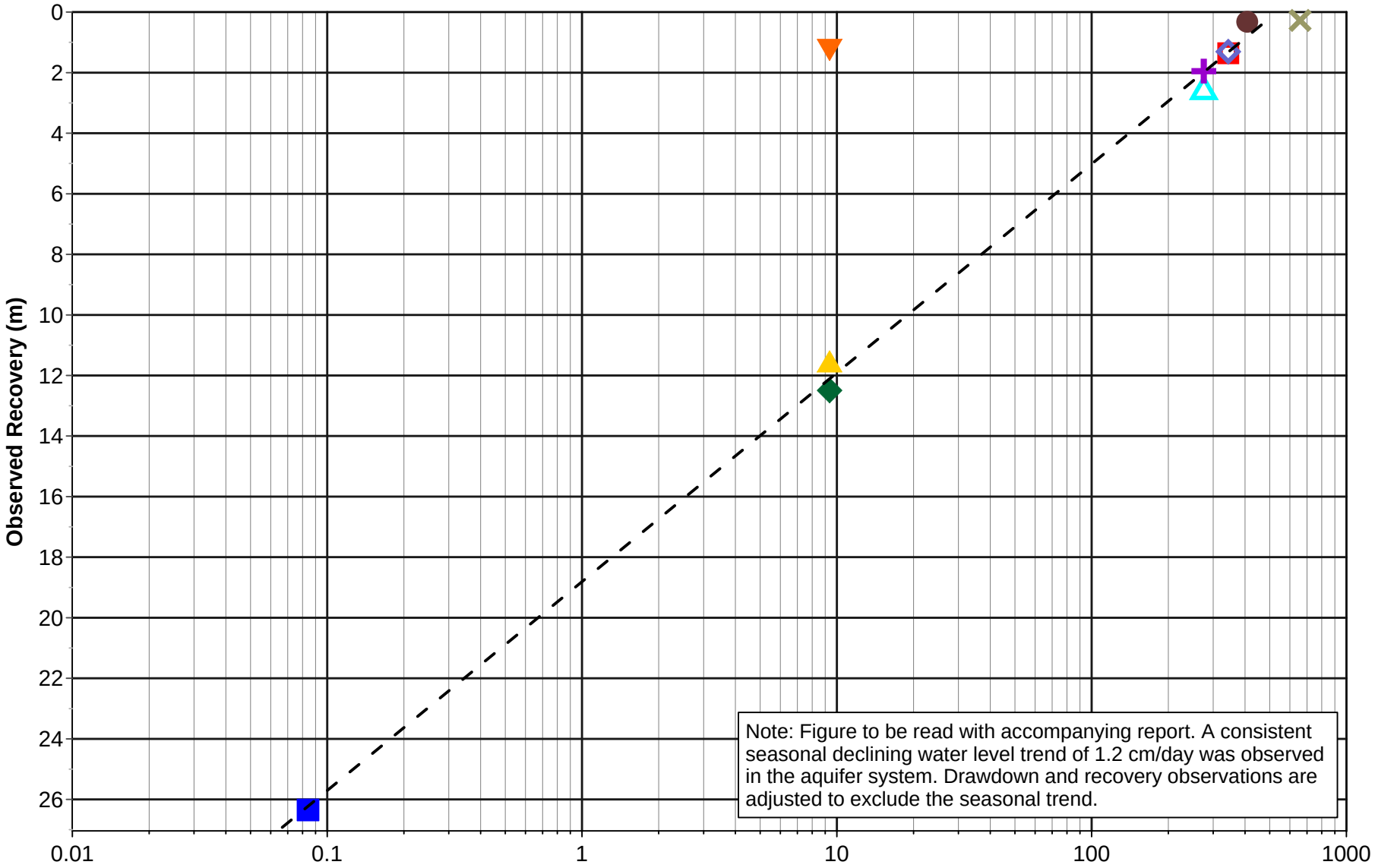
GOLDER
MEMBER OF WSP

DATE	October 2022
DESIGN	PGM/ VRP
REVIEW	GWS
APPROVED	GWS

PROJECT: **CBM CALEDON QUARRY**

TITLE: **PW22-01 PUMPING TEST OVERBURDEN GROUNDWATER AND SURFACE WATER ELEVATION**

PROJECT NO.	REV	FIGURE
19129150	A	J-13



GOLDER
MEMBER OF WSP

DATE	October 2022
DESIGN	PGM
REVIEW	GWS
APPROVED	GWS

PROJECT **CBM CALEDON QUARRY**

TITLE
PW22-01 PUMPING TEST
DISTANCE VERSUS RECOVERY

PROJECT NO.	REV	FIGURE
19129150	A	J-14



LEGEND

- MONITORING WELL
- MONITORING WELL (PUMPING TEST)
- TEST WELL
- DISCHARGE LOCATION
- HISTORICAL MONITORING WELL
- SOIL CORE LOCATIONS
- SURFACE WATER LOCATIONS
- GASPORT FORMATION FINAL DRAWDOWN CONTOUR
- INFERRED GASPORT FORMATION FINAL DRAWDOWN CONTOURS
- ROAD
- WATERCOURSE
- UNEVALUATED WETLAND
- OTHER EVALUATED WETLAND
- NORTHWEST WETLAND
- LICENCE BOUNDARY
- LIMIT OF EXTRACTION

0 100 200 300

1:5,000 METRES

NOTE(S)

1. FIGURE TO BE READ WITH ACCOMPANYING REPORT. A CONSISTENT SEASONAL DECLINING WATER LEVEL TREND OF 1.2 CM/DAY WAS OBSERVED IN THE AQUIFER SYSTEM. DRAWDOWN AND RECOVERY OBSERVATIONS ARE ADJUSTED TO EXCLUDE THE SEASONAL TREND.

REFERENCE(S)

1. BASE DATA MNRF LIO OBTAINED 2020
2. WATERCOURSES OBTAINED FROM CREDIT VALLEY CONSERVATION AUTHORITY OPEN DATA PORTAL, NOVEMBER 2022 IN COMBINATION WITH SITE WATERCOURSE SURVEY PROVIDED BY FIRST BASE SOLUTIONS NOVEMBER 2021
3. IMAGERY FIRSTBASE SOLUTIONS SPRING 2019 (15CM RESOLUTION) AND SOURCES: ESRI, HERE, GARMIN, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
SOURCE: ESRI, MAXAR, EARTHSTAR GEOGRAPHICS, AND THE GIS USER COMMUNITY
4. LICENCE AND LIMIT OF EXTRACTION PROVIDED BY MHBC APRIL 2023.
5. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17N

CLIENT
CBM AGGREGATES, A DIVISION OF ST. MARYS CEMENT INC. (CANADA).

PROJECT
CALEDON PIT / QUARRY

TITLE
OBSERVED DRAWDOWN IN THE GASPORT

CONSULTANT
GOLDER
MEMBER OF WSP

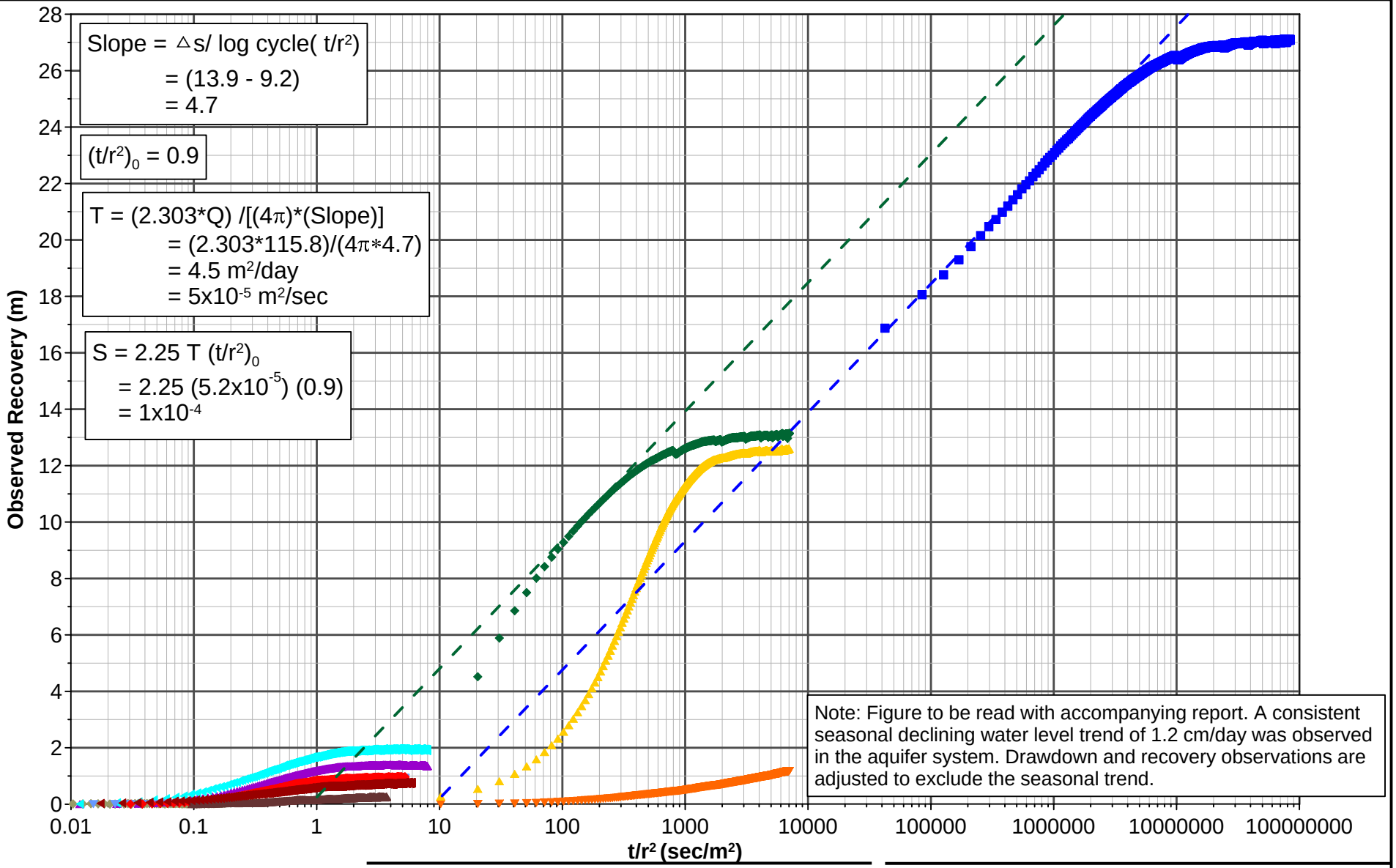
YYYY-MM-DD	2023-04-27
DESIGNED	CGE
PREPARED	SO
REVIEWED	PM
APPROVED	HM

PROJECT NO.	CONTROL	REV.	FIGURE
19129150	0006	0.0	J-6

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

0 25mm

PATH: S:\Clients\Votorantim_Cimentos\sites\Orog_Par_5_Caledon\99_PROJ\19129150\40_PROD\0036_Water_Resources\19129150-0036-CH-007J_6.mxd PRINTED ON: 2023-04-27 AT: 3:35:45 PM



GOLDER
MEMBER OF WSP

DATE	October 2022
DESIGN	PGM
REVIEW	GWS
APPROVED	GWS

PROJECT **CBM CALEDON QUARRY**

TITLE **PW22-01 PUMPING TEST**
t/r² VERSUS RECOVERY

PROJECT NO.	REV	FIGURE
19129150	A	J-16

APPENDIX K

Karst Assessment

Report on potential karst issues at the proposed Caledon Quarry
Stephen R.H. Worthington, Ph.D., P.Geo.

1. Introduction

Karst is a geomorphological term that refers to a landscape that exhibits solutional erosion of outcropping bedrock and associated hydrological features such as sinking streams and springs. It is common on limestone and dolostone, which are moderately soluble, as well as on the more highly-soluble halite and gypsum rocks. All four rocks occur in Ontario, with limestone and dolostone often forming prominent escarpments such as the Niagara Escarpment, and halite and gypsum being so soluble that they have been completely dissolved away at the surface. Limestone and dolostone are collectively referred to as carbonate rocks. Dissolution of the bedrock enhances the hydraulic conductivity of carbonate rocks so that in some areas the hydraulic conductivity is high enough that carbonate aquifers are able to transmit the entire water surplus (i.e. precipitation minus evapotranspiration). In these situations there is an absence of surface streams. Where lower-hydraulic conductivity rocks or sediments are adjacent to limestone or dolostone, then streams that flow off the lower-hydraulic conductivity rock and onto the higher-hydraulic conductivity carbonate rocks may lose all their flow into the bedrock. Such streams are referred to as sinking streams. These streams often have low solute concentrations and substantial dissolution occurs when they flow onto carbonate bedrock, enlarging fractures to form conduits and sometimes caves. Many hundreds of sinking streams are known in southern Ontario, of which some dozens have known caves associated with them.

The solution of limestone and dolostone varies with the carbon dioxide concentration. In areas of bare rock, dissolved carbon dioxide in recharge water equilibrates with the 415 ppm concentration in the atmosphere, and the solubility limit is <50 mg/L. Where there are thick soils and a vegetation cover then plants and microorganisms can raise the soil water carbon dioxide to >1%, resulting in greater dissolution and solute concentrations are often >300 mg/L. Caves are more likely to be formed in limestone than in dolostone because the dissolution rate is about twenty times higher.

There are a range of definitions of the term "karst aquifer". There are five common ones (Worthington et al., 2017). The defining characteristic of the five definitions are that a karst aquifer is characterized by:

a) the presence of caves
b) a karstic landscape, or "karst terrain" on the surface
c) the presence of turbulent flow in conduits
d) the presence of hydraulic conductivities >10^{-6} m/s
e) the presence of solutionally-enlarged fractures.

The use of different definitions can result on conflicting views on whether specific areas have karst aquifers. If any of the first three definitions is used than a majority of southern Ontario carbonate aquifers would not be classified as karstic. If the either of the last two definitions is used than a majority of southern Ontario carbonate aquifers would be classified as karstic. However, it is not the definition

that is important in evaluating an aquifer but rather how karst processes may have affected the functioning of the aquifer.

There are two major karst considerations associated with development on karst areas. The first is the extent of preferential flow paths, especially those associated with recharge at sinking streams. These result in faster groundwater velocities and less predictable flow directions than in lithologies that are less soluble, such as shale or sand. This is particularly the case where there are substantial (e.g. >10 L/s) sinking streams or springs.

A second karst consideration is that dissolution of the bedrock may result in an uneven bedrock surface and the possibility of collapse of voids created by dissolution. This creates a potential hazard for building structures in karst areas. However, this risk applies to built structures and so is not relevant to this quarry application.

2. Investigation of closed depressions and surface flow

A site visit was carried out on April 23, 2020 to assess possible karst features. The timing was chosen because it was before the onset of seasonal growth of surface vegetation that might obscure karst features and because high water levels in both the groundwater and surface water features in April enable seasonally active flows to be assessed. The main focus of the investigation was to visit closed depressions, 15 of which had been identified within the project area from topographic mapping with a 1 m contour interval (Figure 1). Overburden thickness varies from <5 m over much of the centre of the project area to >10 m in the northern part of the site and to >20 m in the southern part of the site. Sediments vary from gravel and sand in the southern part of the site to sandy silt till to the north.

One closed depression (Figure 2 and location 2 on Figure 1) had standing water when visited on April 23, 2020. Several more depressions are also shallow, have gentle slopes, and lie within arable fields (e.g. Figures 3, 4, 5, and 7). The small depression show in Figure 6 has somewhat steeper sides. The origin of all of the depressions appears to have been from the uneven deposition of the glacial and fluvioglacial sediments. No evidence of concentrated surface flow into any of the depressions was found. This is not surprising, given the coarse-grained nature and thus high hydraulic conductivity of the overburden sediments. One depression (Figure 5) has field stones in the center of the depression. However, the lack of vegetation in this area does suggest that the depression does flood at times. This inference was supported by checking the 17 historical images available in Google Earth. Consequently, it is concluded that none of the depressions in the project area deliver concentrated recharge into the subsurface and thus do not perform a karstic function.

An important consideration in a karst assessment is whether there are substantial sinking (or losing) streams. In the Caledon investigation, there is a wetland (the Northwest Wetland) at an elevation of 420-421 m, which is >30 m higher than the Credit River some 2 km to the east. Accordingly, it was thought likely that groundwater flow would predominantly be to the east in the northern part of the site, and it was possible that there might be a sinking stream at the eastern end of the wetland. This part

of the wetland was visited on April 23, 2020, and it was found that flow in the wetland was towards the creek to the west, and no evidence of any sinking stream was found. Subsequent investigations showed that the water-table contours are smooth and that the hydraulic conductivity in this area is fairly low (Gasport zone GP6: Kh= 1E-7 m/s). These are both indications that there is an absence of the preferential flow that would be expected if there were a sinking stream in the wetland.

3. Investigations during pumping tests

3.1 Tracer tests

Four four-day pumping tests were carried out in the project area in August and September 2021. It was planned to carry out tracer tests from nearby monitoring wells to each pumping well if drawdowns in the wells indicated that the tracer test would probably succeed. In the event, tracer injections were made during three of the four pumping tests. It was decided to not perform a tracer test at the PW21-4 cluster due to the small response at the monitoring wells during the first day of the pumping test. Sodium fluorescein (uranine) was chosen as the tracer due to its high detectability and low toxicity. The mass injected was calculated from equations developed by Worthington and Smart (2016).

3.1.1. Pumping test at PW21-1 cluster

A four-day pumping test took place at PW-21-1, starting on September 20, 2021 at 12:00. A mass of 0.76 g of sodium fluorescein was injected into MW21-1-1 at 14:27, following which 80 litres of water was siphoned into the well over the following 20 minutes to ensure that the tracer was flushed out of the well and into the aquifer. Initial manual sampling at the pumping well took place at one minute intervals, reducing to 5 minute intervals after 30 minutes, and ten minutes intervals after two hours. Manual sampled was discontinued at 17:50, when an Isco model 3700 24-bottle water sampler started to collect samples at 40 minute intervals was installed at the pumping well. The following day the Isco was reprogrammed to collect samples every three hours for the last three days of the pumping test.

Dye concentrations were measured on site with a Turner Designs Picofluor filter fluorometer, and following the end of the test all samples were measured under lab conditions. Tracer test results are shown in Figure 8a. The dye arrived at the pumping well after 1.25 hours, reached a peak after 8.7 hours, and thereafter followed an approximately exponential recession.

3.1.2. Pumping test at PW21-2 cluster

A four-day pumping test at PW-21-2 started on August 10, 2021, but small drawdowns at monitoring wells resulted in a delay in dye injection until 14:22 on August 11. A mass of 0.26 g of sodium fluorescein was injected in MW21-2-1, following which 60 litres of water was injected over the following 85 minutes to flush the dye into the aquifer. Initial sampling took place at about 5 minute intervals, with the Isco collecting samples at 40 minute intervals over the first night and then at 2 hour intervals over the last two days of the test.

The main dye breakthrough curve started after 4.1 hours, reaching a peak after 15.8 hours, followed by an exponential decline in dye concentration (Figure 8b). There were also two sharp and short-lived

earlier peaks, with the first starting 0.88 hours after tracer injection. It is thought that these are associated with the flushing of the dye into the aquifer. The flushing consisted of three slugs, each of 20 litres, which would have raised the water table in PW-21-2 and may have activated a preferential flow path for a short period that could have carried a small fraction of the dye to the pumping well.

3.1.3. Pumping test at PW21-3 cluster

A tracer test was also carried out at the PW3 well cluster, where MW21-3-1 served as the as the pumping well. Injection of 0.922 g of sodium fluorescein into PW21-3 took place at 12:00 on August 25. Sampling protocols were similar to the other tracer tests, with 98 samples being collected, but no dye was detected in the pumping well. At the end of the test, a sampling at the injection well gave a dye concentration of 6925 ppb, giving a mass of 0.794 g of sodium fluorescein still in the well. Thus some 86% of the dye injected had not moved out of the injection well, indicating the very low hydraulic conductivity of this well.

3.2 Electrical conductivity profiling

A series of electrical conductivity (EC) profiles were measured at the PW21-1, PW21-2, and PW21-3 clusters, using a Heron Instruments conductivity meter. Profiles were measured at the monitoring wells before the pumping tests started and thereafter during the tracer tests. A total of 41 profiles were measured at 11 wells (Figure 9, 10, and 11). Measurements were usually made at 1 m intervals, with closer-spaced measurements being made where there were substantial changes in EC values.

Results show a number of distinctive characteristics which are typical of bedrock aquifers dominated by fracture flow. Notable characteristics include:

a) the combination of minimal changes over most of the profiles due to vertical flow with the well between horizontal bedding plane fractures with different heads.

b) substantial changes over narrow intervals due to substantial fracture flow and varying fractures flow EC.

c) a substantial decrease in the EC in the top 2 m of MW21-1-1 on September 21, 2021. This followed heavy overnight rain.

d) contrasts at the bottom of MW21-1-2, MW21-1-3, MW21-2-1, MW21-2-2, MW21-2-4, PW21-3

4. Correlation with other site investigations

4.1 Proportions of surface flow and groundwater flow in the study area

Long-term measurements of flow in the Credit River are made to the east of the site. The average flow for the period 1915 to 2020 was 1.79 m^3/s. The average discharge per unit area is known as the specific discharge. For the 209 km^2 catchment area of the Credit River, the specific discharge is 8.6 $L/s/km^2$. This is shown in Figure 12, along with specific discharges for 16 much smaller catchments gauged by Golder Associates. Most of these have values <8.6 $L/s/km^2$, and are shown with a pink background. Low values represent recharge from the surface to groundwater, and this reflects the high hydraulic conductivity of both the sediments and the bedrock in the area. Higher values than the specific discharge in the Credit River are shown with a blue background, and represent groundwater discharge areas. Two are to the

east of the site and represent low-elevation groundwater discharge. The third site is two kilometres to the west of the site, and also represents an area where the groundwater catchment is larger than the surface water catchment.

4.2 Preferential flow in the bedrock aquifer

Carbonate aquifers sometimes have large conduits in which flow is turbulent rather than laminar. The high hydraulic conductivity in such conduits often results in there being troughs in the water table, with convergent flow to the troughs. Turbulent flow in a conduit results in much larger seasonal changes in water levels than if flow were laminar. This is because the water level change is proportional to the square root of the hydraulic gradient if flow is turbulent, but is proportional to the gradient if flow is laminar (Worthington and Soley, 2017).

There is a trough in the water table on the western site of the site, and it defined by five well along or close to Mississauga Road, MW 20-01, MW20-15, MW20-17, MW20-18, and MW20-27. Groundwater levels in the bedrock at times of high levels in April 2021 and low levels in September 2021 are shown in Figure 13. The difference in water levels at these two times at the five wells are 1.52 m, 0.90 m, 0.65 m, 2.21 m, and 0.80 m, respectively. These values are not consistently much greater than elsewhere on the site, and so it is concluded that there is no conduit with turbulent flow in this area.

4.3 Fracture apertures from tracer tests and packer tests

The results from the tracer tests and packer tests can be correlated by calculating fracture apertures. The first method is to use the cubic law (Domenico and Schwartz, 1998, p. 50):

$$Q = \rho g b^3 w i / 12\mu \quad (1)$$

where Q is discharge, Δ is the density of water, g is gravitational acceleration, b is fracture aperture, w is fracture width, and $\therefore$ is dynamic viscosity. This equation can be combined with the continuity equation $Q = vA$, where v is groundwater velocity in the fracture and A is fracture cross-sectional area (= wb), to give

$$b = (12v\mu / \rho g i)^{1/2} \quad (2)$$

Calculated fracture apertures from the two tracer tests are shown in Table 1.

Table 1 Calculated fracture apertures from tracer tests

Injection well	Recovery well	Traced distance (m)	Elapsed time to tracer peak (hours)	Groundwater velocity (m/d)	Hydraulic gradient	Fracture aperture (mm)
MW21-1-1	PW21-1	10.7	8.7	29.5	0.54	0.032
MW21-2-1	PW21-2	11.3	15.8	17.2	0.62	0.023

The second method is to use transmissivity (*T*) measurements from the packer tests (Novakowski et al., 2016), using the cubic law

$$T = \rho g b^3 / 12 \text{:} \quad (3)$$

Equation 3 was applied to the 81 packer tests in 44 wells carried out at the site in the Gasport Formation. Results are shown in Figure 14. In both cases, most calculated fracture apertures are between 0.1 mm and 1 mm, with a minority up to several millimetres in diameter.

4.4 Groundwater modelling

Groundwater models provide a useful tool for understanding aquifer behaviour because they synthesize available data to provide a coherent explanation of groundwater flow and transport. This is particularly the case in carbonate aquifers due to dissolution preferentially enlarging some fractures. If wells encounter solutionally-enlarged fractures then they can have high hydraulic conductivities. Conversely, if a well does not encounter any solutionally-enlarged fractures then it can have very low hydraulic conductivity. Regional groundwater models are calibrated principally on the water levels in wells and the flow through the aquifers, and give estimates of hydraulic conductivity over much broader areas than individual well tests. However, measurements at a local scale using pumping tests, packer tests, and single well response (slug) tests are a useful complement for understanding the detailed local permeability variation in the aquifer.

Hydraulic conductivity in carbonates in highest where there is the most dissolution. The most obvious place where dissolution takes place is in the uppermost bedrock, where infiltration from rainwater has low solute concentrations and consequently there is substantial dissolution. Consequently a high-hydraulic conductivity zone develops here, which is referred to as the weathered zone or epikarst. This is present in the Caledon model, where its horizontal hydraulic conductivity (Kh) varies from 5E-6 to 1E-3 m/s.

Deeper in the bedrock, the major factor determining hydraulic conductivity is the specific discharge (i.e. the flow per unit of cross-sectional area). In an aquifer such as at Caledon there is an increase in flow in

a downgradient direction as a result of there being more recharge to the aquifer than discharge from the aquifer to creeks, except at the downgradient termination of the Gasport where it discharges to the Credit River. Such a flow pattern in a sand would result in increasing hydraulic gradients, giving a convex water table. However, in limestone and dolostone the increase in flow results in an increase in hydraulic conductivity, so the convexity of the water table is less than in a sand and may be flat or concave, especially for long flow paths (>10 km). This is well established and widespread (Worthington, 2009; Worthington and Foley, 2021). In the Caledon model this is seen in higher hydraulic conductivity (1E-5 m/s) in the downgradient GP4 and GP5 than further upgradient (e.g. 1E-7 m/s in GP2). However this is not ubiquitous; the downgradient GP6 has low K (1E-7 m/s).

The third dissolution effect seen at the site is a groundwater trough identified in particular at three wells along Mississauga Road - MW20-01, MW20-17, and MW20-18. Flowlines converge on groundwater troughs and this increases the specific discharge and hence there is more dissolution and the hydraulic conductivity increases. This trough has the highest Kh values at the site in both the Gasport (GP4: 1E-5 m/s) and in the overlying weathered zone (WB4: 1E-3 m/s).

The above explanation broadly accounts for the variation in hydraulic conductivity across the site. It shows that the calibration of the groundwater model on flow and water level data provides an excellent way to determine regional hydraulic conductivity.

5. Conclusions

The karst investigation found that dolostone aquifer on the study area is a typical of such aquifers where there is fairly thin overburden, which allows substantial recharge to enter the bedrock. Such distributed recharge results in pervasive dissolution of fractures, with most enlarged fractures having apertures of 0.1 mm - 3 mm. This results in the aquifer having a predictable to response to large-scale stresses such as quarry development.

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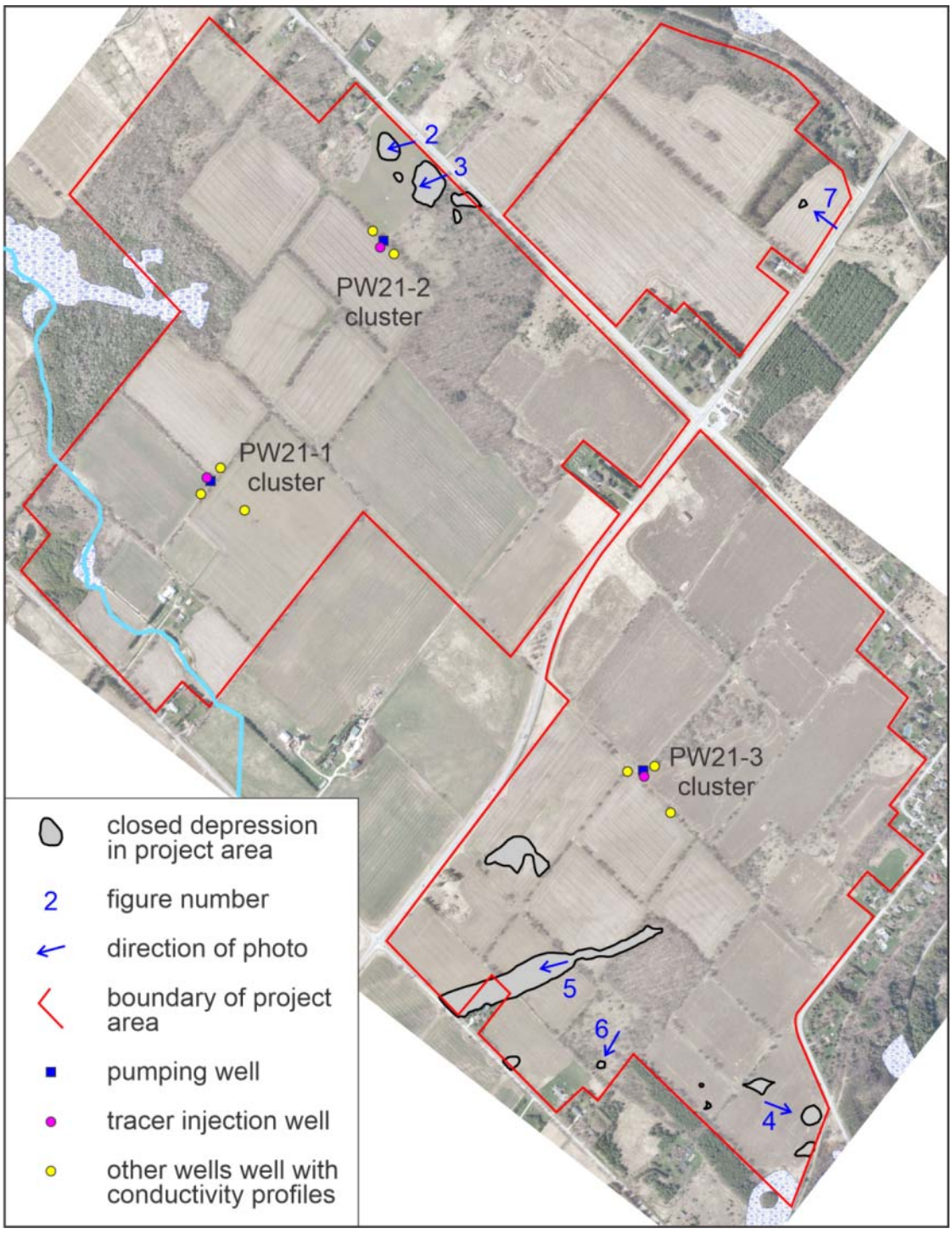


Figure 1. Orthophotography of the project area, showing locations of tracer tests, electrical conductivity profiles, and closed depressions identified from 1 m contour interval mapping. Numbers 2 to 7 refer to the photos shown in Figures 2 to 7, respectively.



Figure 2. Looking west from Main Street (Regional Road 136) across a closed depression with ponded surface water on April 23, 2020 (location 2 on Figure 1).



Figure 3. Looking west from Main Street (Regional Road 136) across a closed depression (with darker vegetation) on April 23, 2020 (location 3 on Figure 1).



Figure 4. Looking southeast towards a closed depression on April 23, 2020. (location 4 on Figure 1).



Figure 5. Looking west to a closed depression filled with field stones(location 5 on Figure 1).



Figure 6. Looking southwest to a closed depression with willow saplings, just behind the pine tree (location 6 on Figure 1).



Figure 7. Looking northwest from Charleston Sideroad (Regional Road 24) (location 7 on Figure 1).

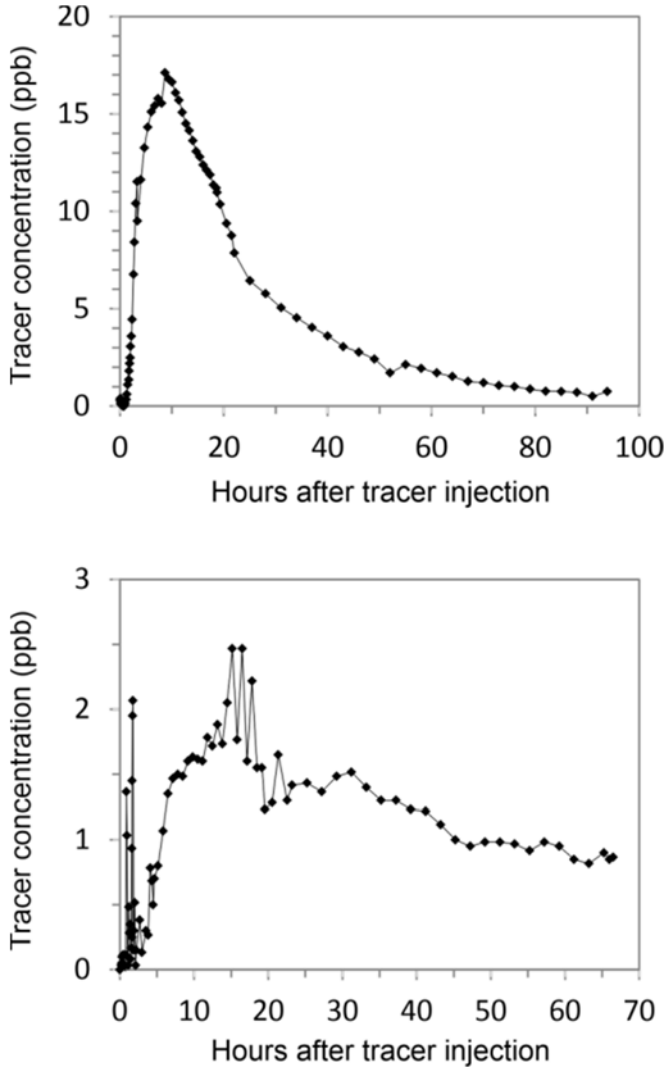


Figure 8. Tracer test results:

(top) From MW1-1 to PW21-1, starting on September 20, 2021.

(bottom) From MW2-1 to PW21-2, starting on August 11, 2021.

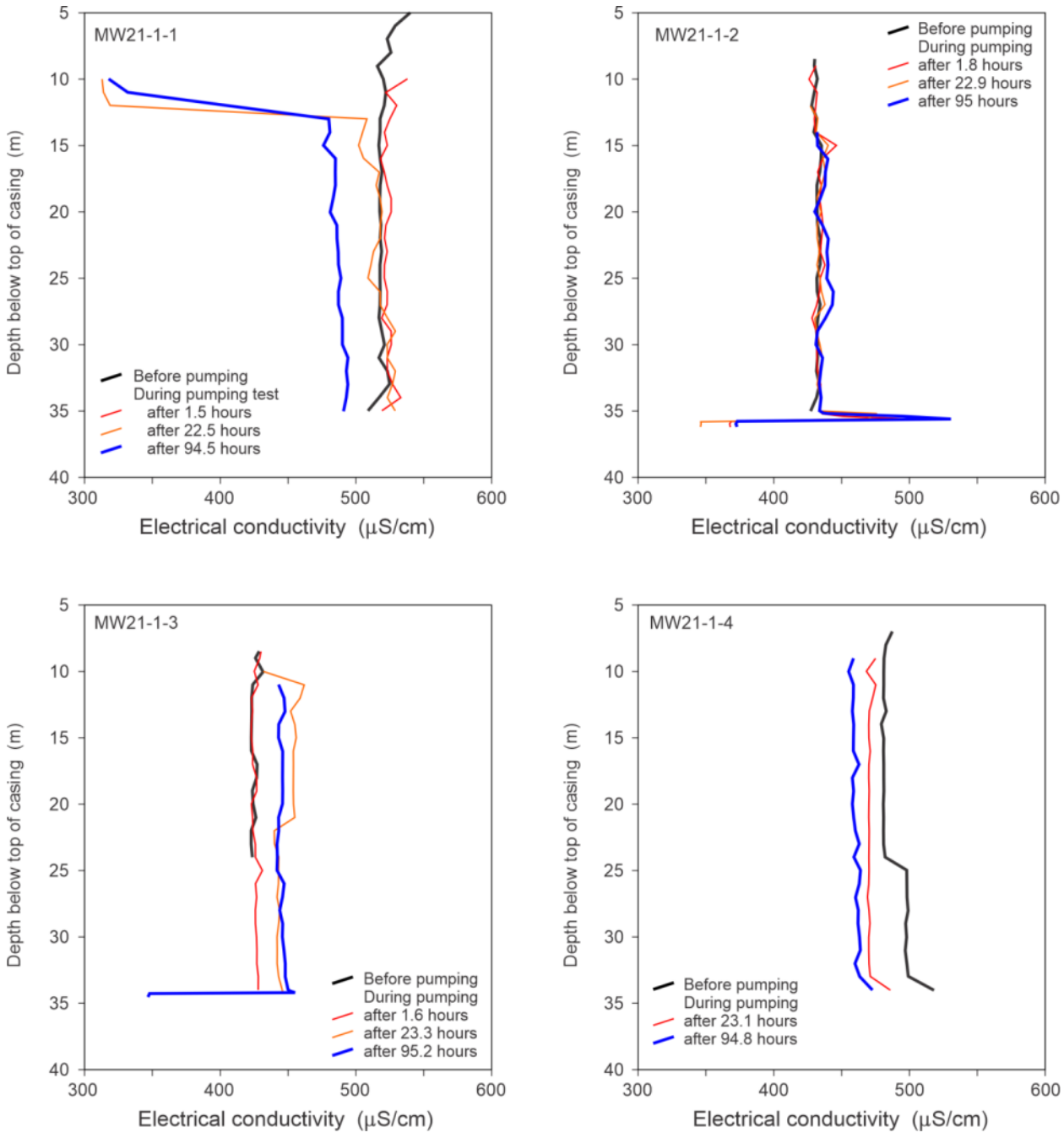


Figure 9. Electrical conductivity profiles at the PW21-1 cluster during the pumping test

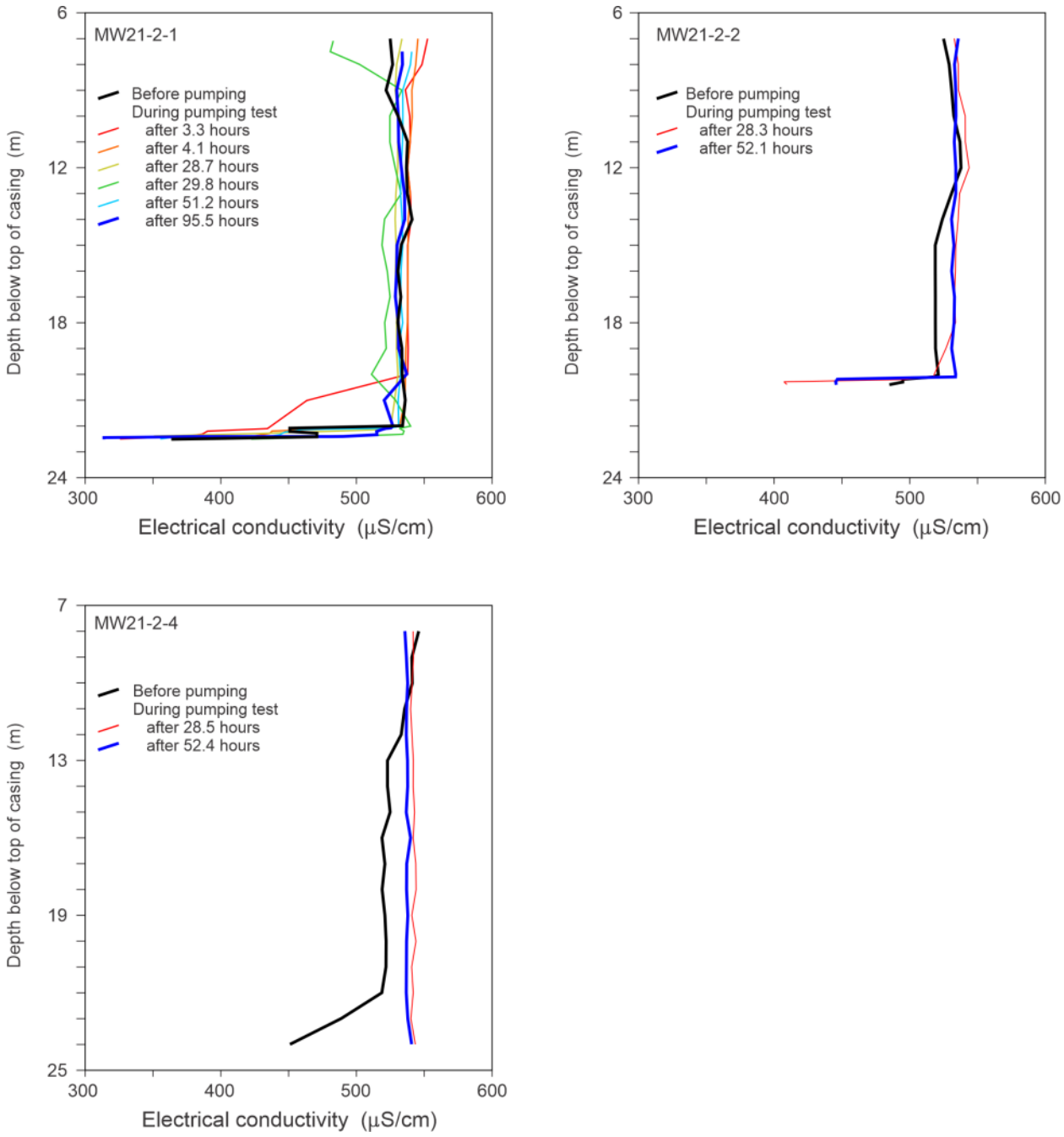


Figure 10. Electrical conductivity profiles at the PW21-2 cluster during the pumping test

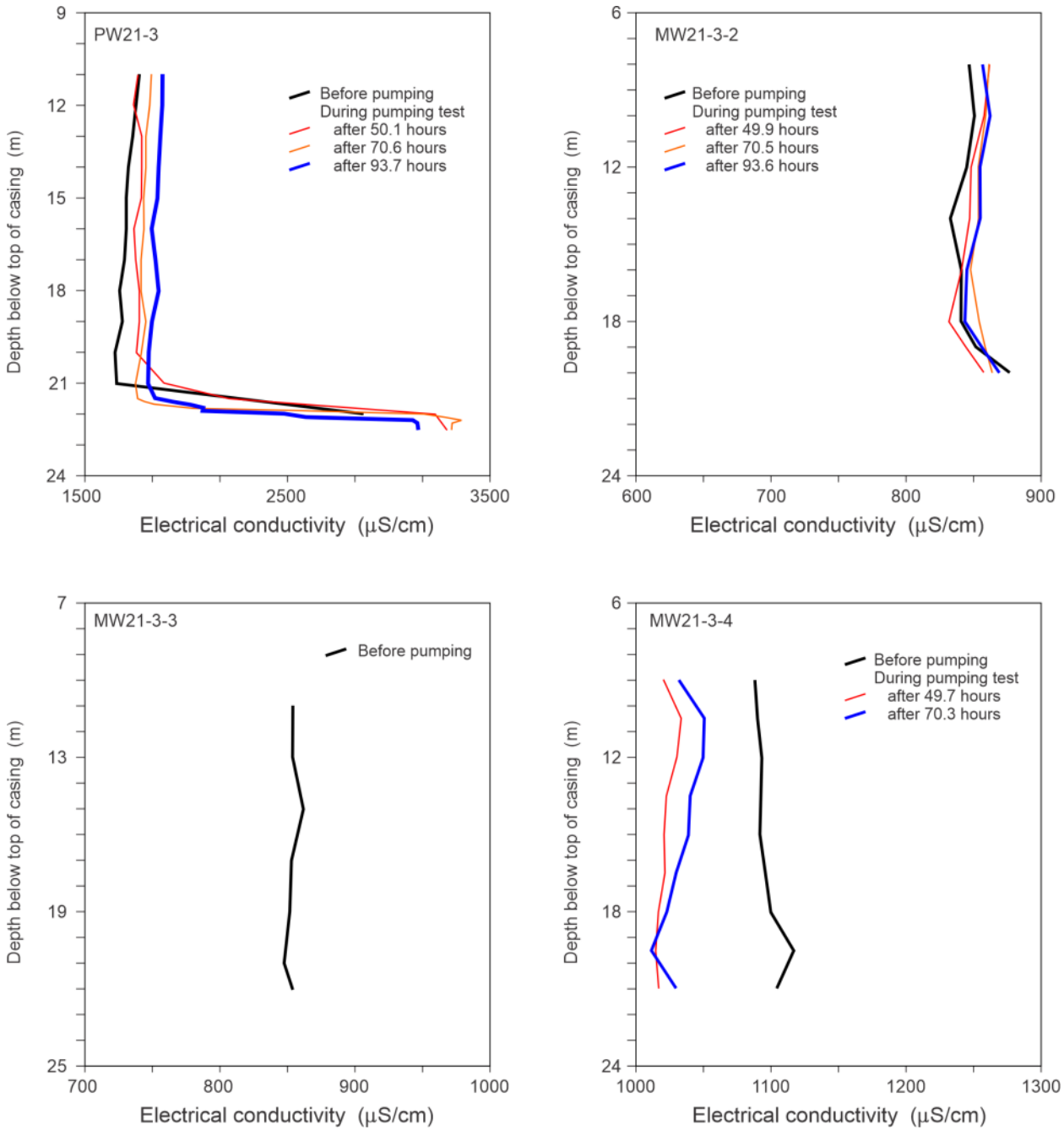


Figure 11. Electrical conductivity profiles at the PW21-3 cluster during the pumping test

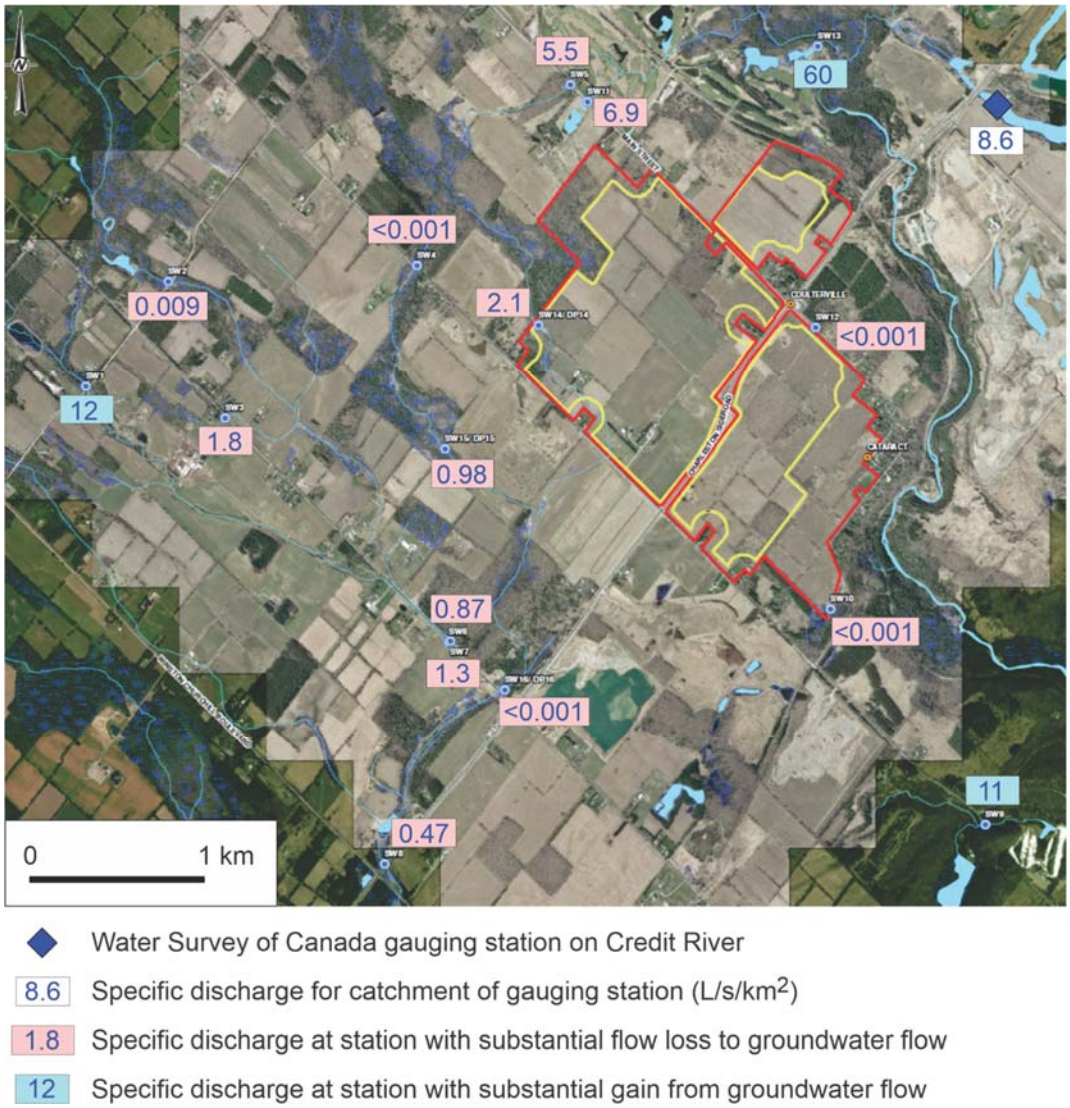


Figure 12. Specific discharge at stream gauging stations in the study area, showing values calculated for the 16 stations monitored by Golder Associates plus the Water Survey of Canada station on the Credit River.

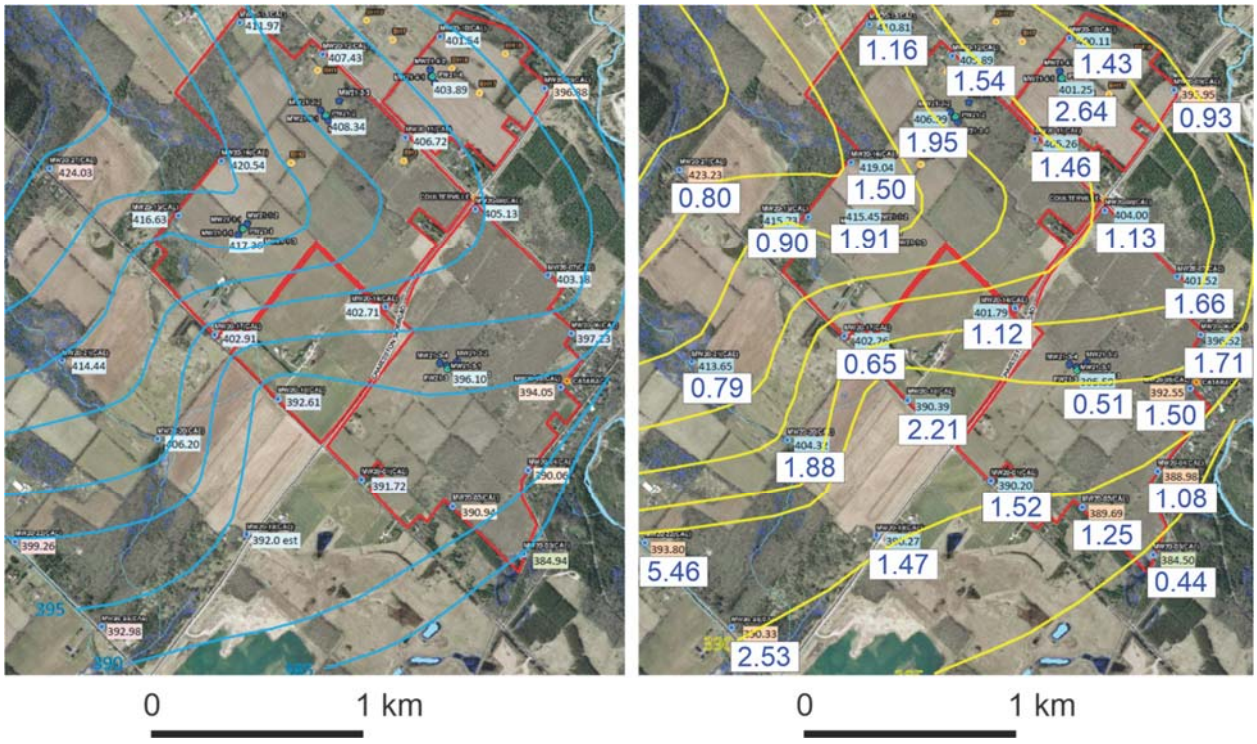


Figure 13. Inferred bedrock groundwater levels in April 2021 (left) and September 2021 (right). The differences in water levels between the two values are shown in blue on the right-hand figure.

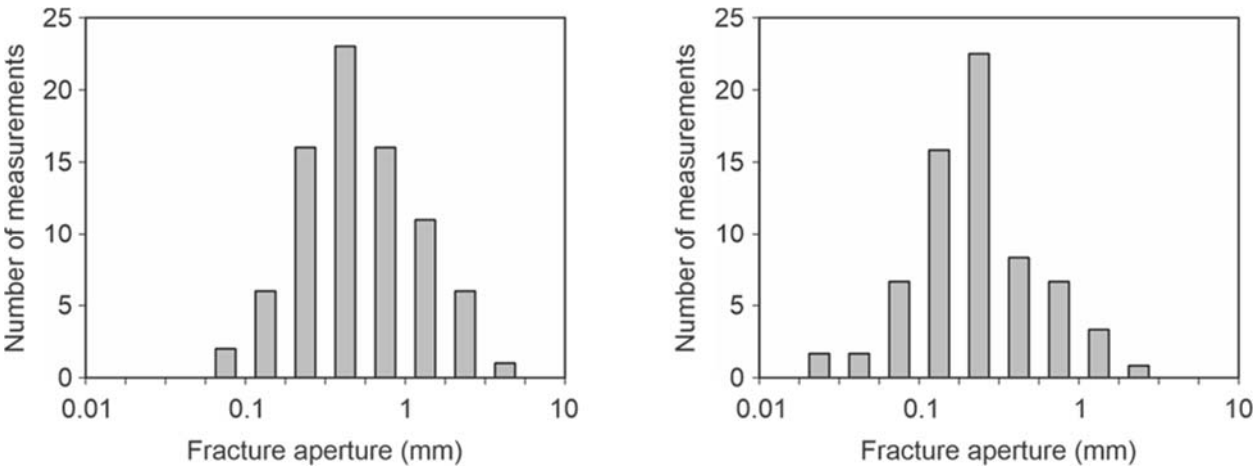


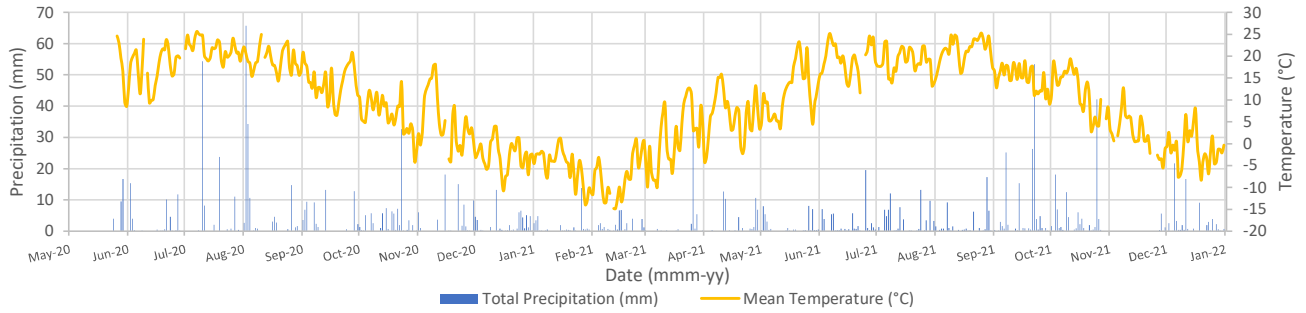
Figure 14. Calculated fracture apertures derived from packer testing using the cubic law, based on the assumption that all flow is through a single constant-aperture fracture per packer test intervals (left), and through ten fractures with identical apertures (right).

APPENDIX L

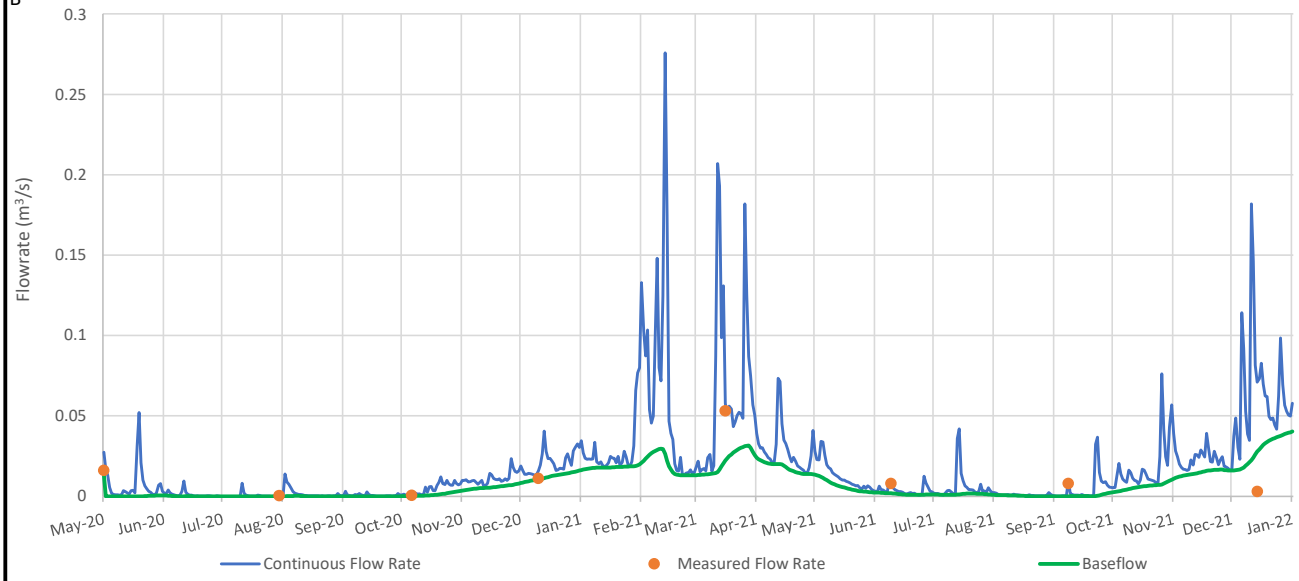
Surface Water Levels and Flows

Water Levels & Flow at SW1 Adjacent to VCNA Caledon Quarry (2020 - 2021) | FIGURE L1

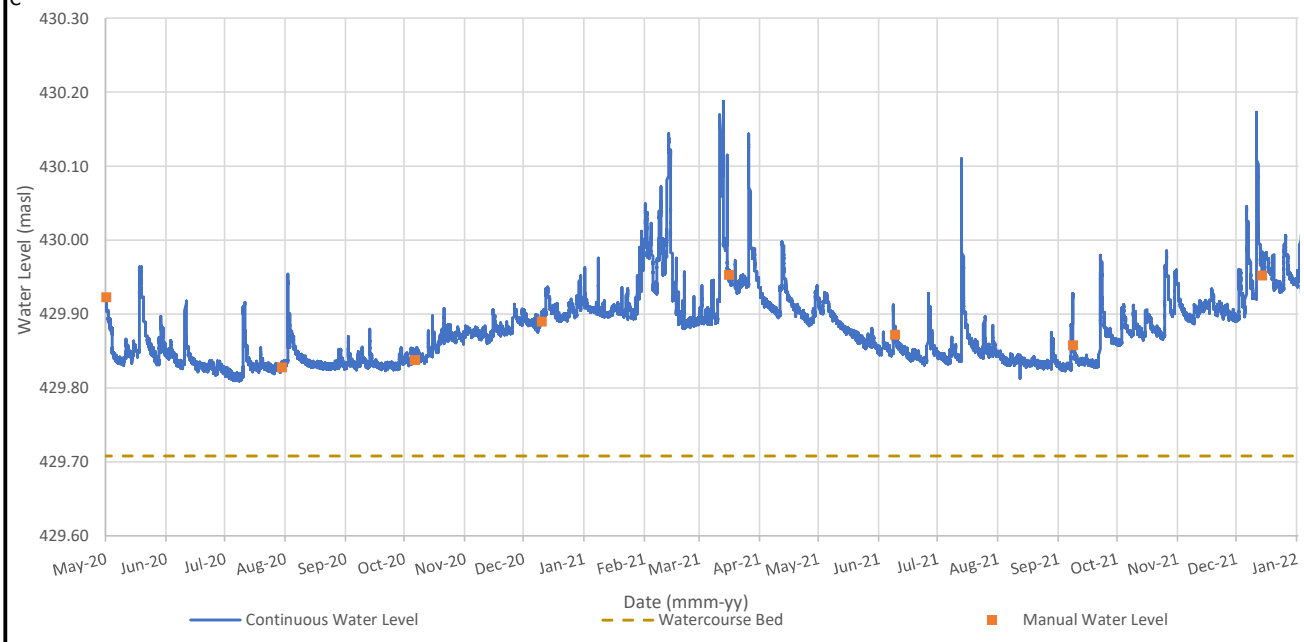
A



B



C



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Flow Rate** **C. Water Level**

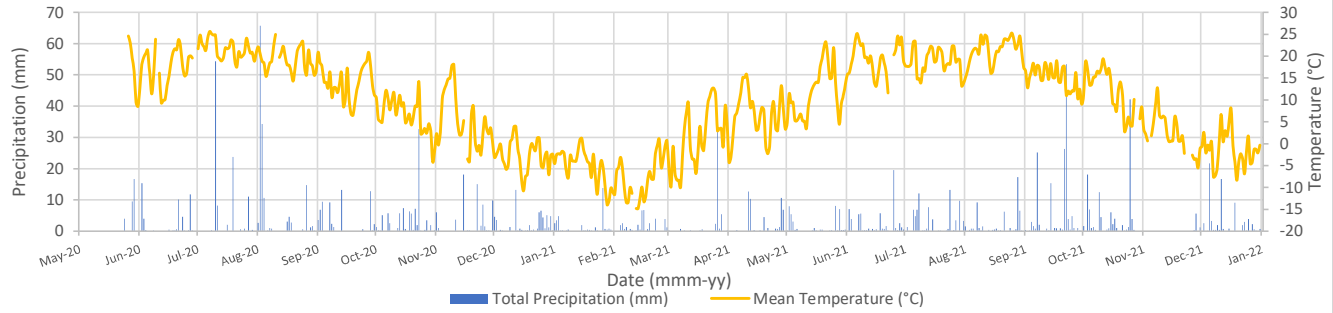
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DATE: December 2022

GOLDER
MEMBER OF WSP

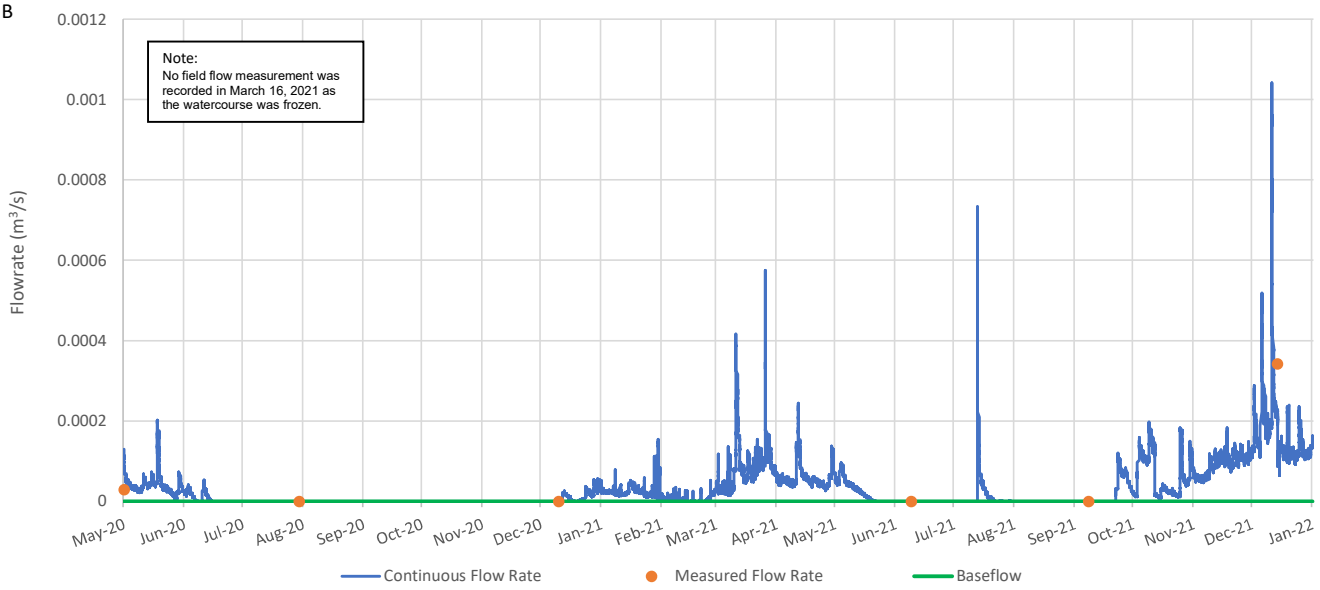
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Water Levels & Flow at SW2 Adjacent to VCNA Caledon Quarry (2020 - 2021) | FIGURE L2

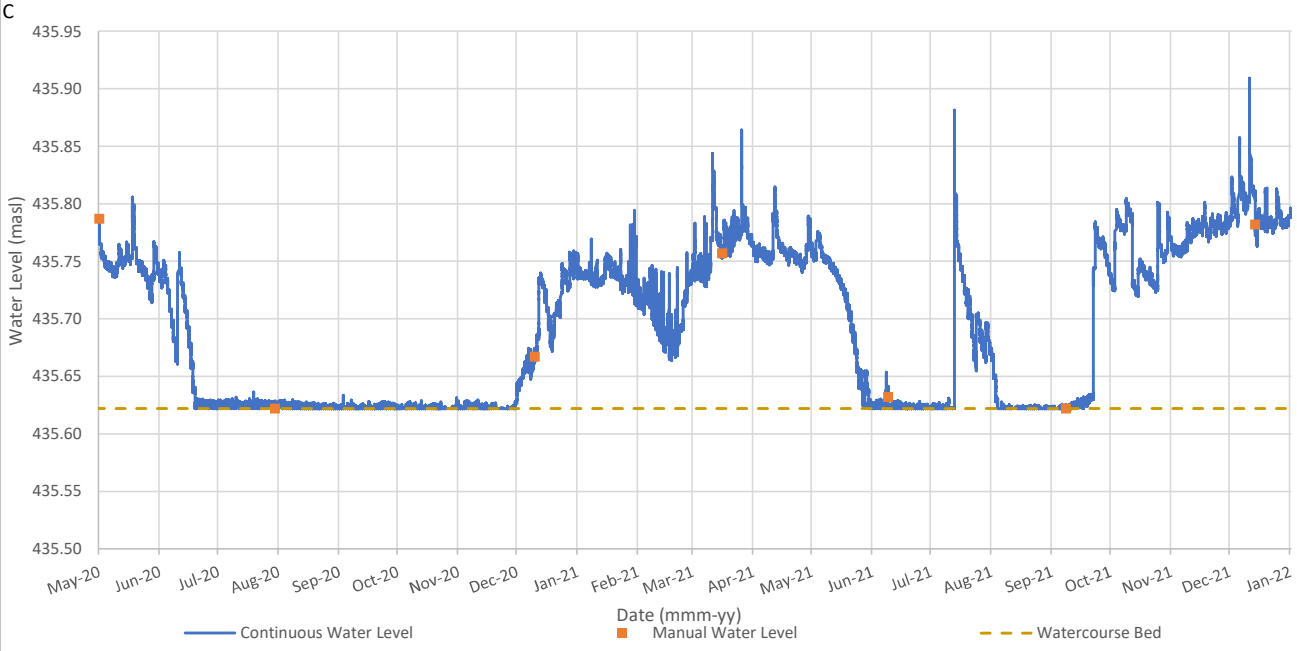
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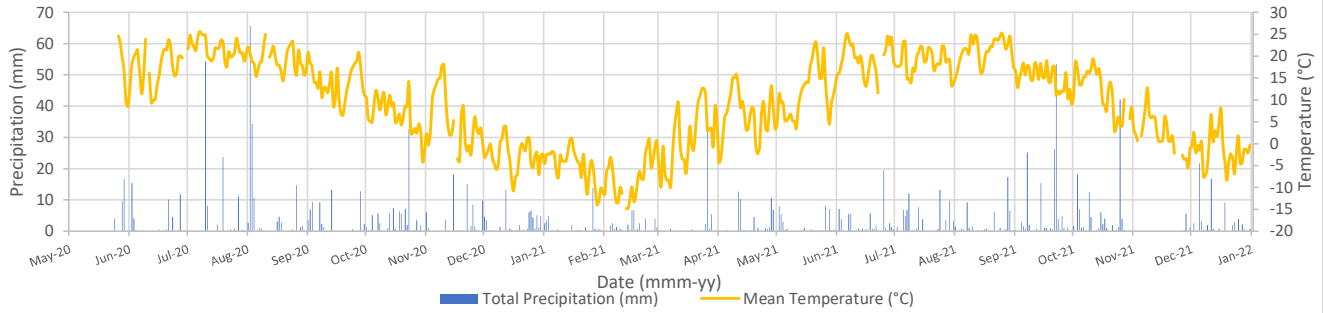
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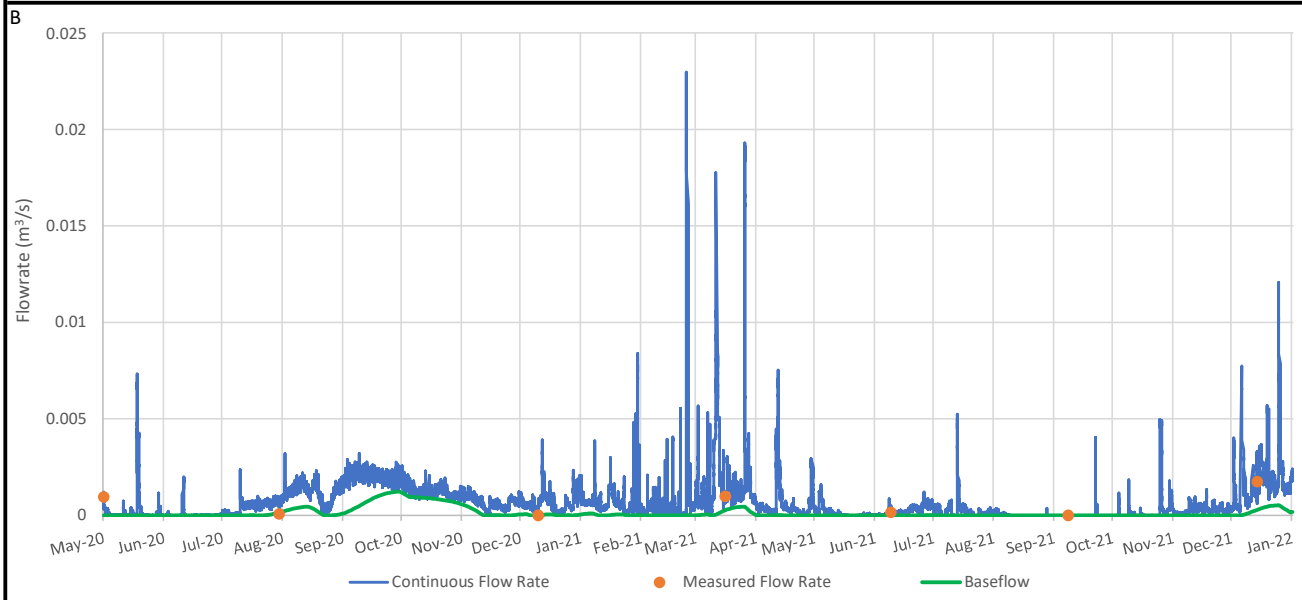
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Water Levels & Flow at SW3 Adjacent to VCNA Caledon Quarry (2020 - 2021) | FIGURE L3

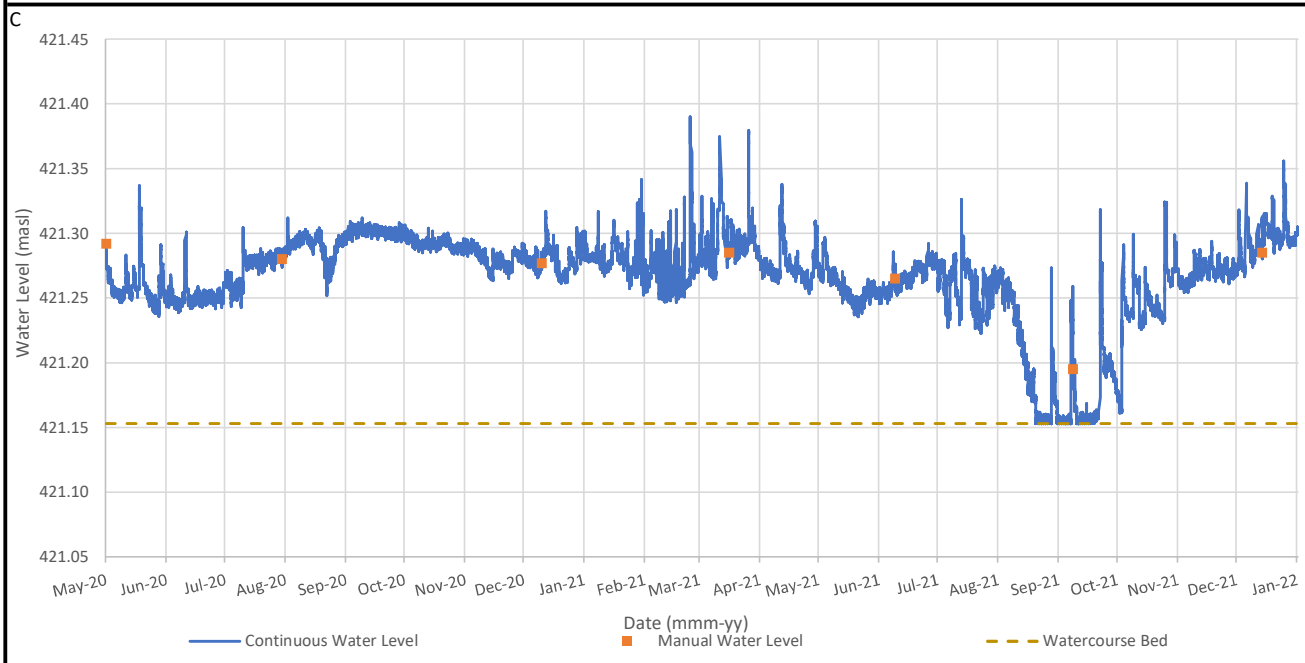
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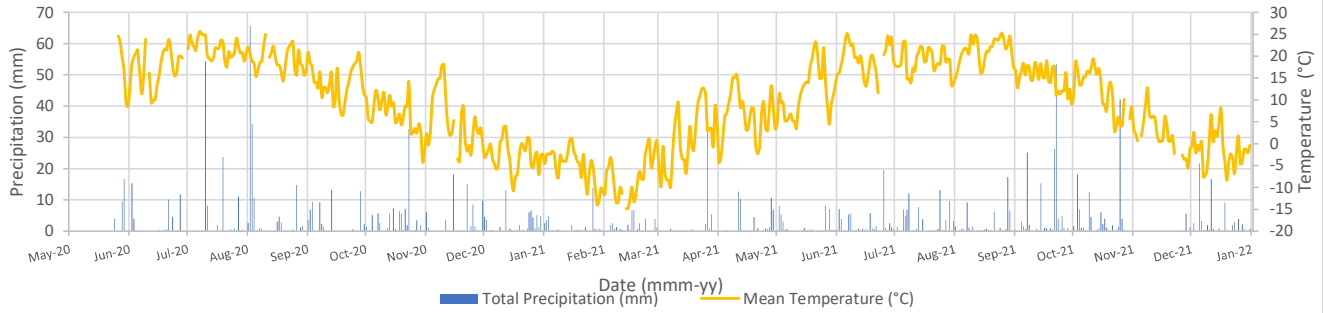
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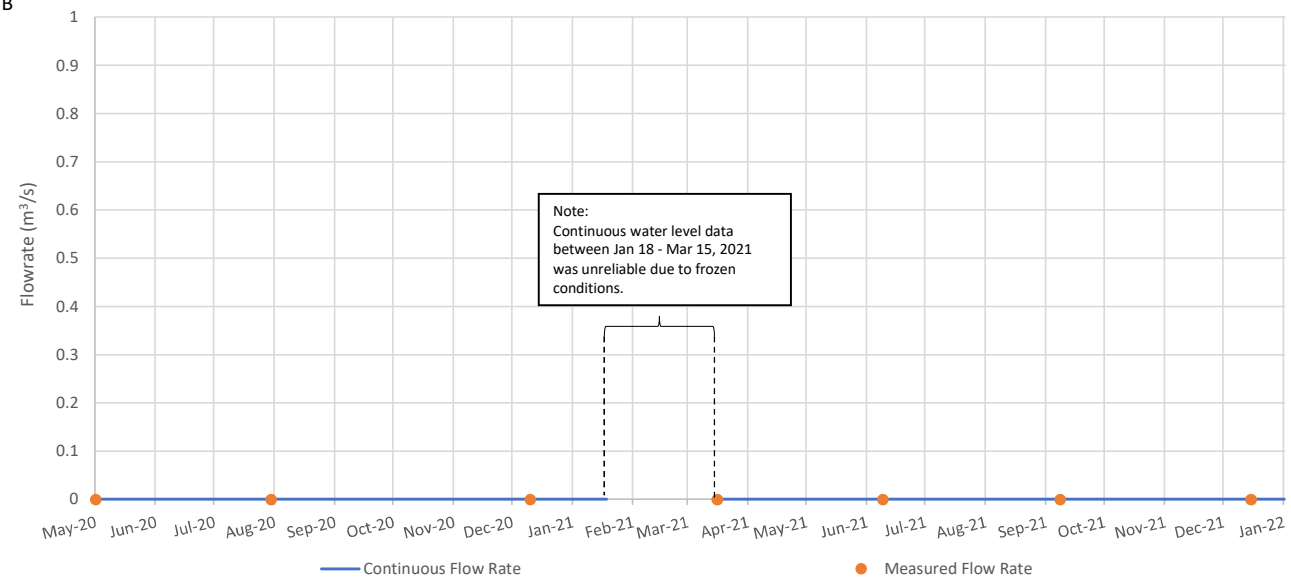
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Water Levels & Flow at SW4 Adjacent to VCNA Caledon Quarry (2020 - 2021) | FIGURE L4

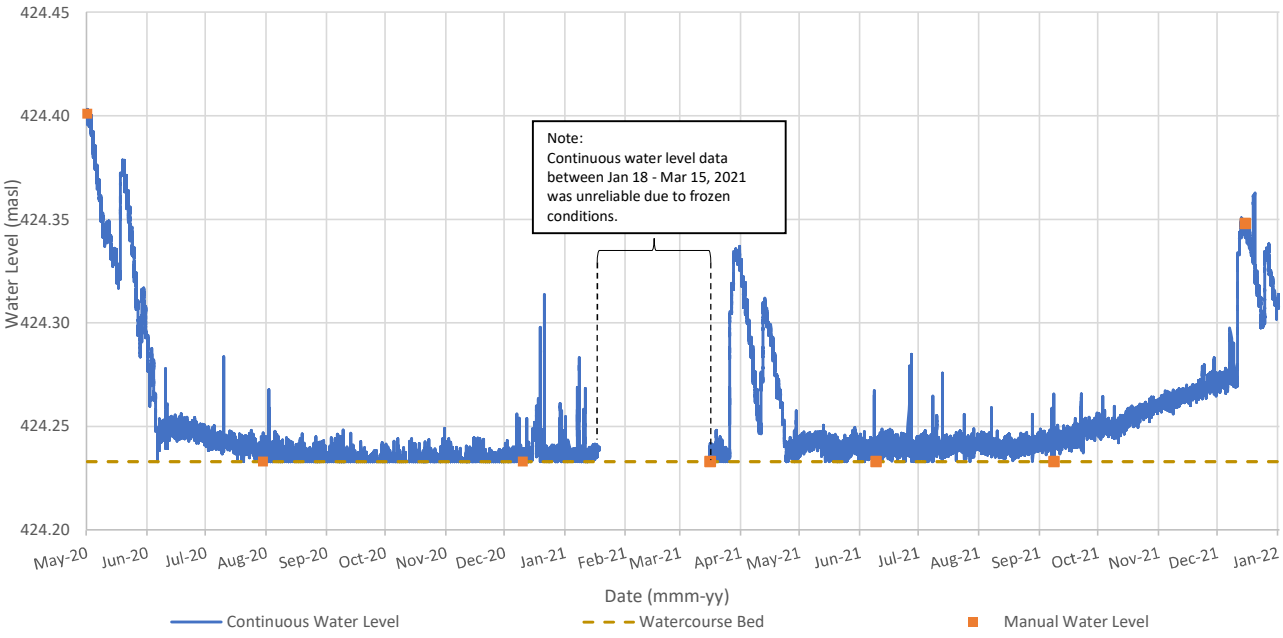
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C



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Flow Rate** **C. Water Level**

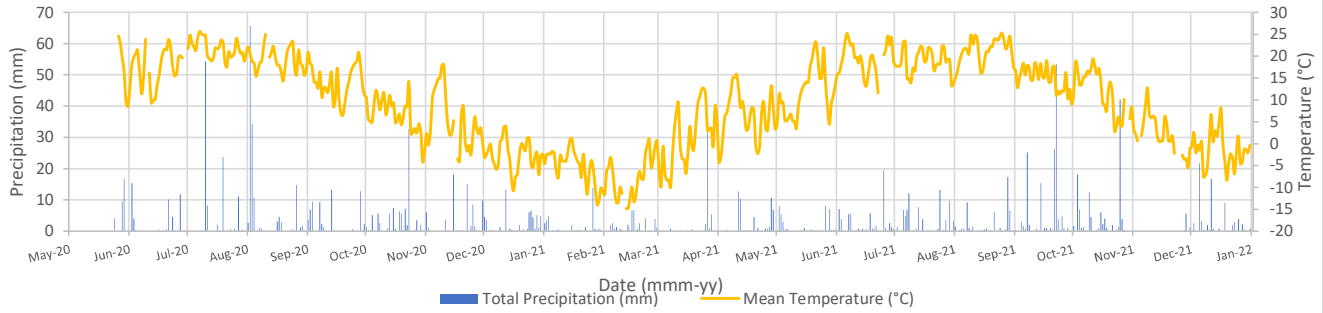
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GOLDER
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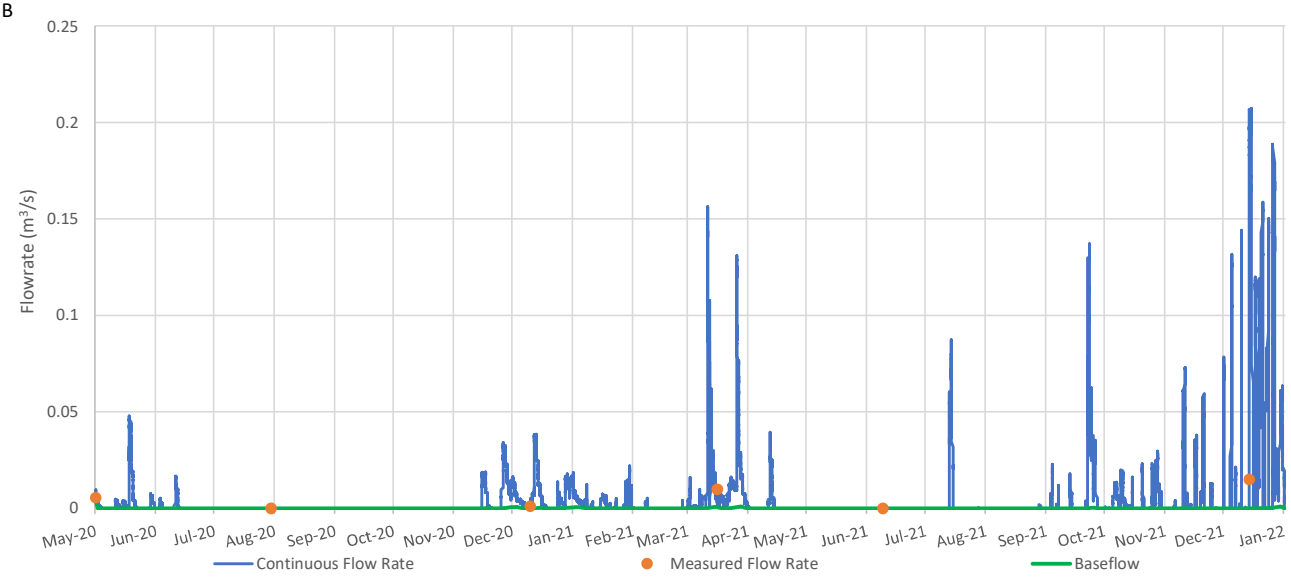
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Water Levels & Flow at SW5 Adjacent to VCNA Caledon Quarry (2020 - 2021) | FIGURE L5

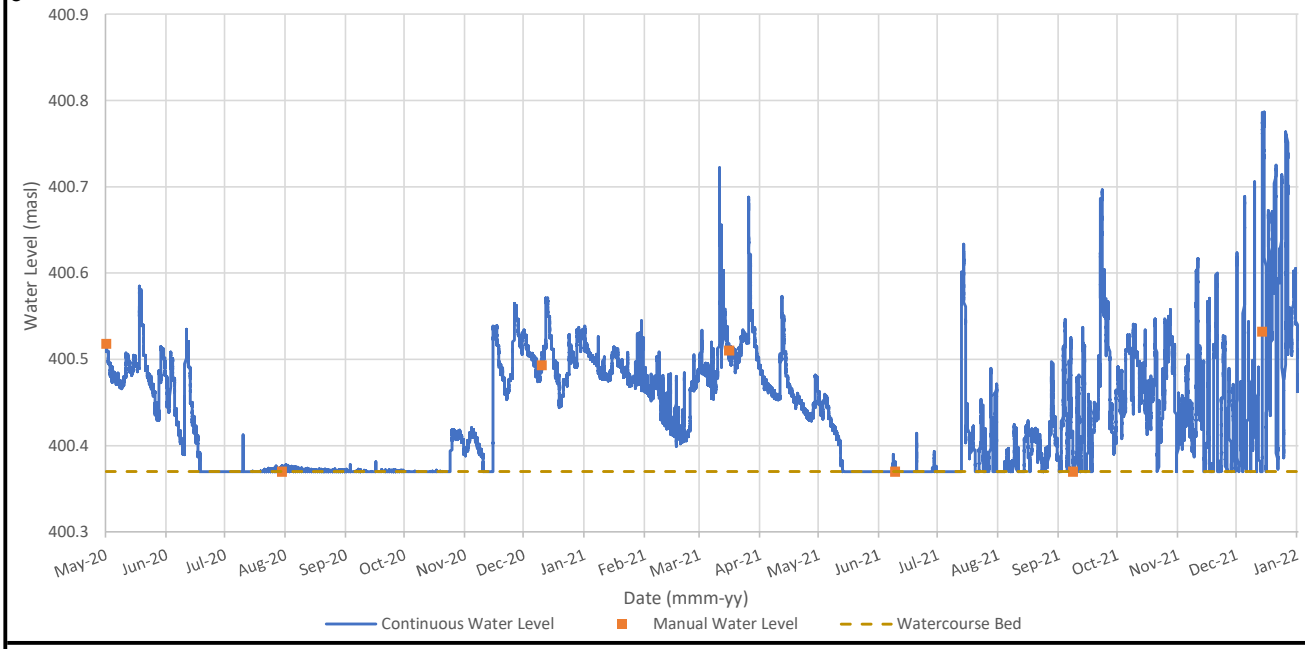
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B



C



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Flow Rate** **C. Water Level**

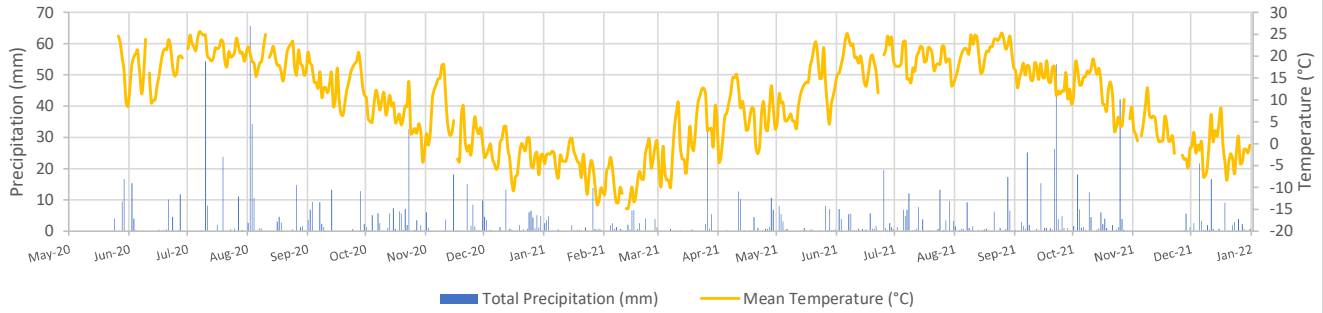
PROJECT: 19129150
DATE: December 2022

GOLDER
MEMBER OF WSP

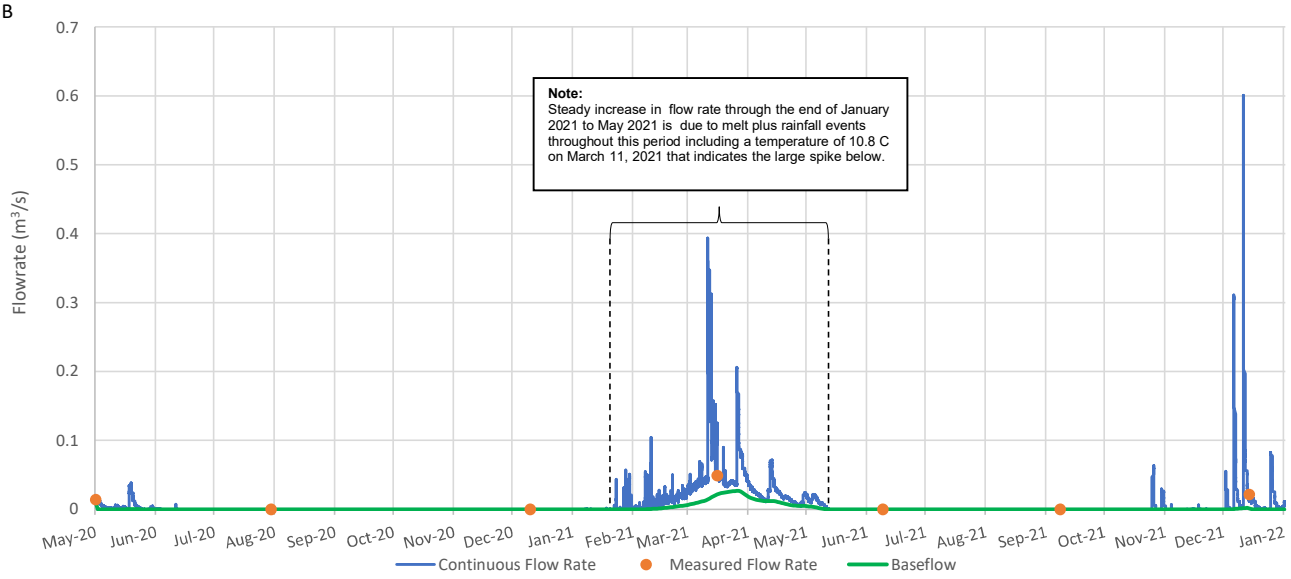
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CHECK: CDV

Water Levels & Flow at SW6 Adjacent to VCNA Caledon Quarry (2020 - 2021) | FIGURE L6

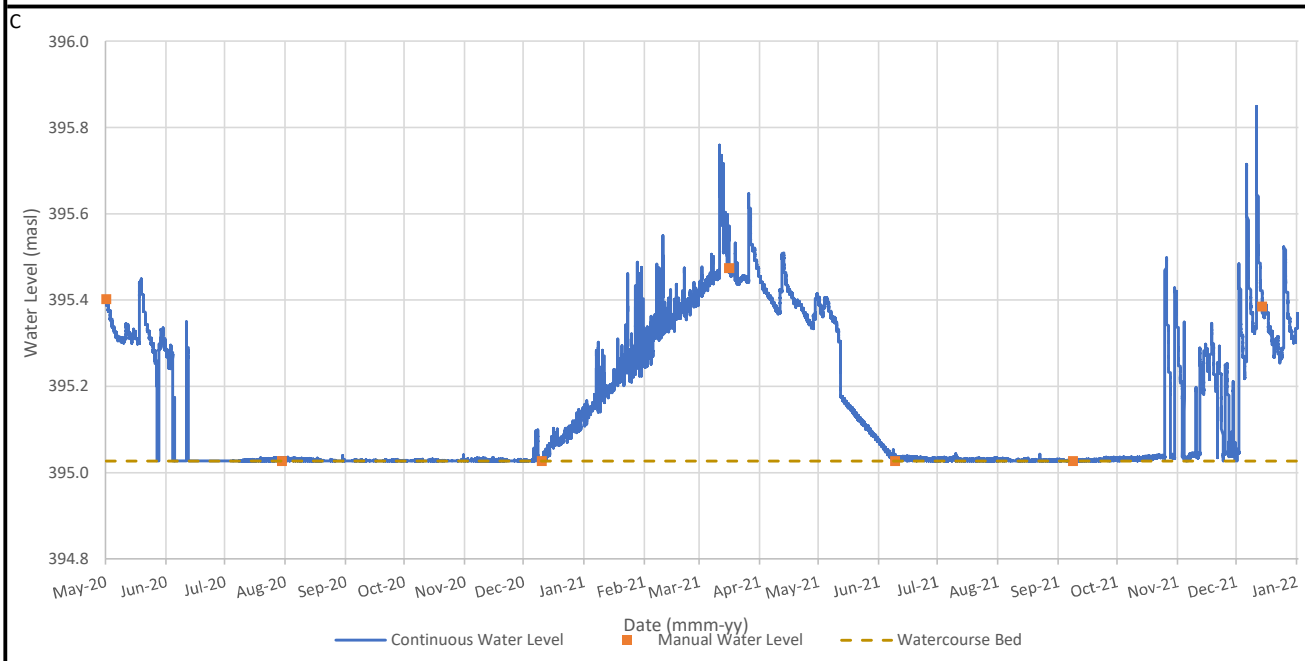
A



B



C



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Flow Rate** **C. Water Level**

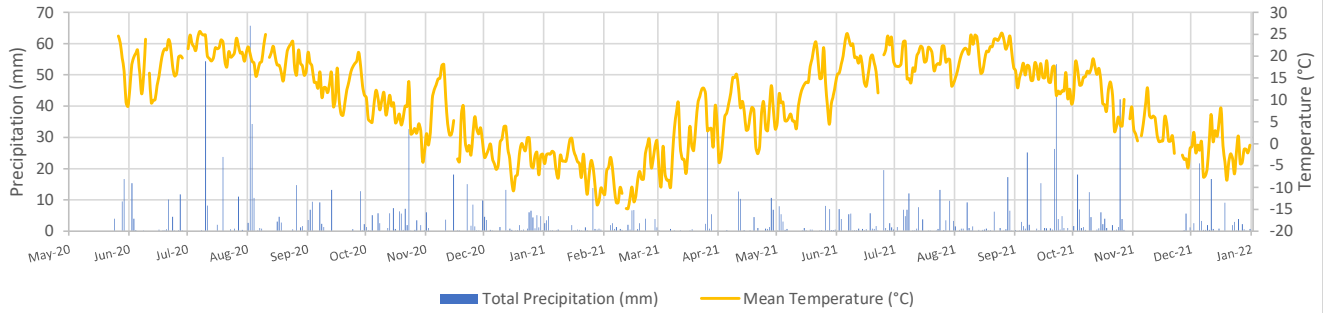
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DATE: December 2022

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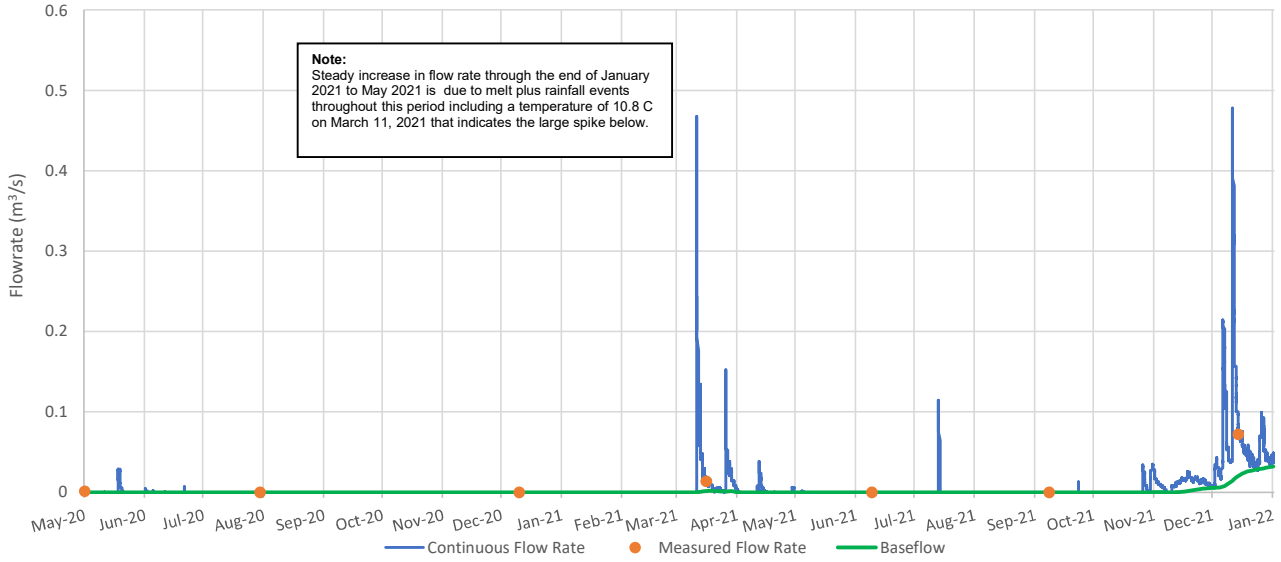
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Water Levels & Flow at SW7 Adjacent to VCNA Caledon Quarry (2020 - 2021) | FIGURE L7

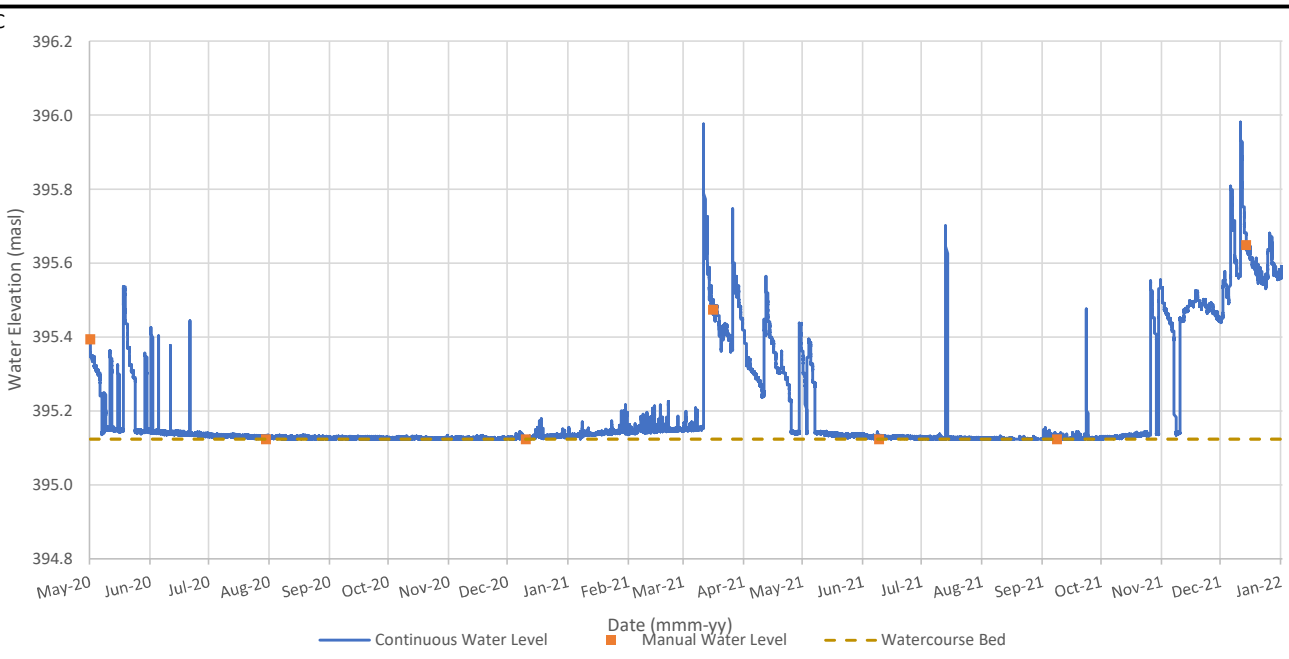
A



B



C



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Flow Rate** **C. Water Level**

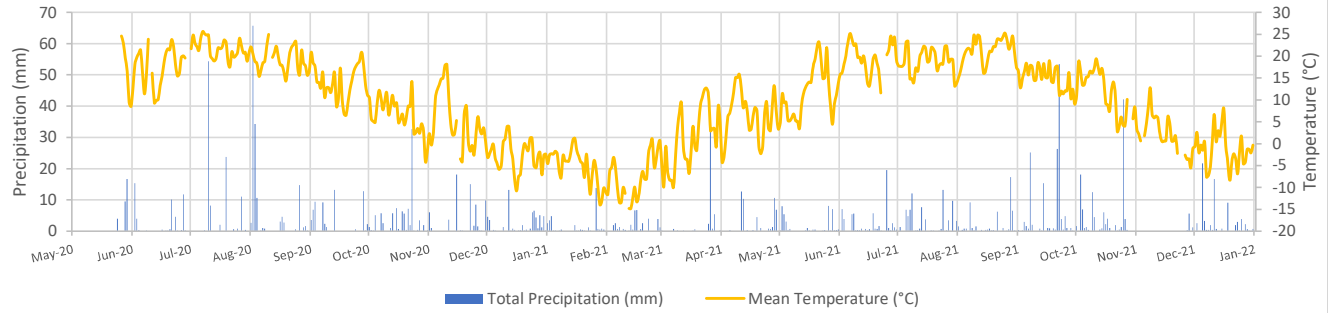
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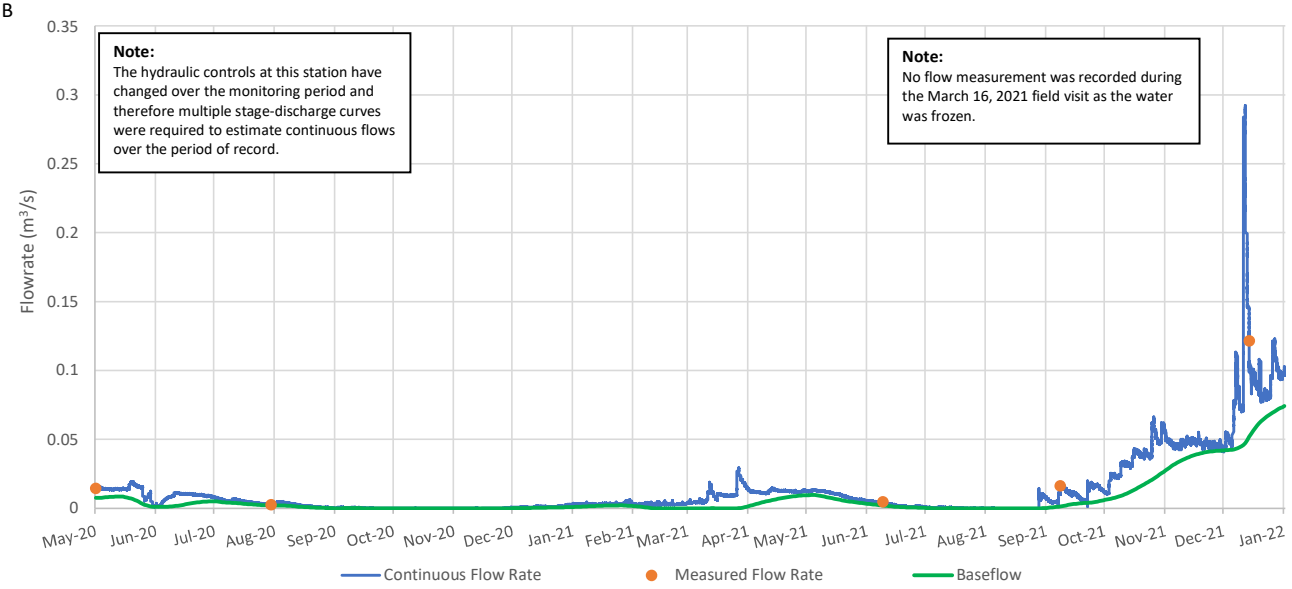
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Water Levels & Flow at SW8 Adjacent to VCNA Caledon Quarry (2020 - 2021) | FIGURE L8

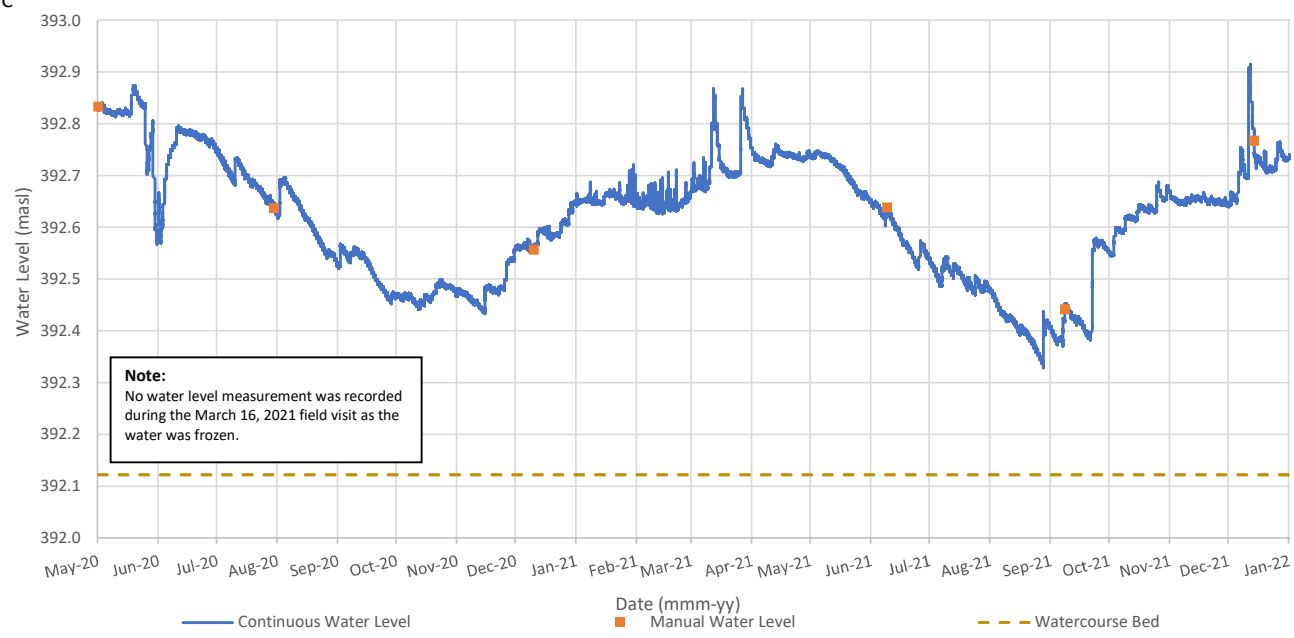
A



B



C



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Flow Rate** **C. Water Level**

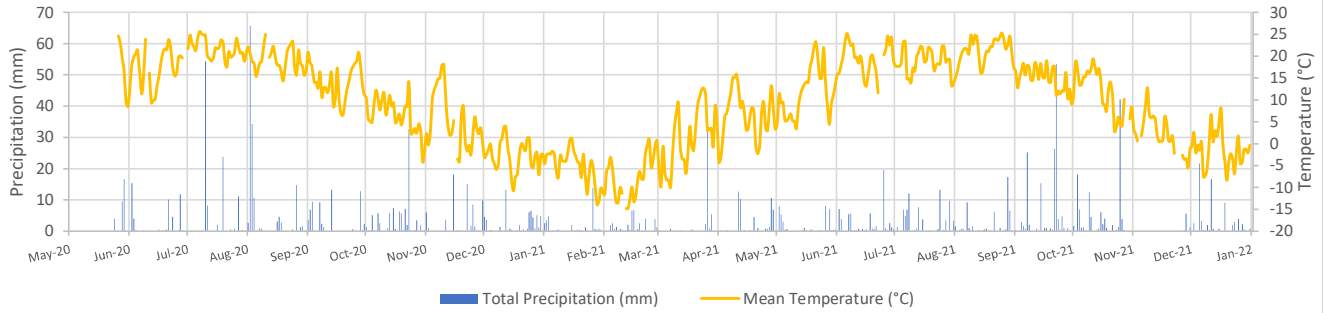
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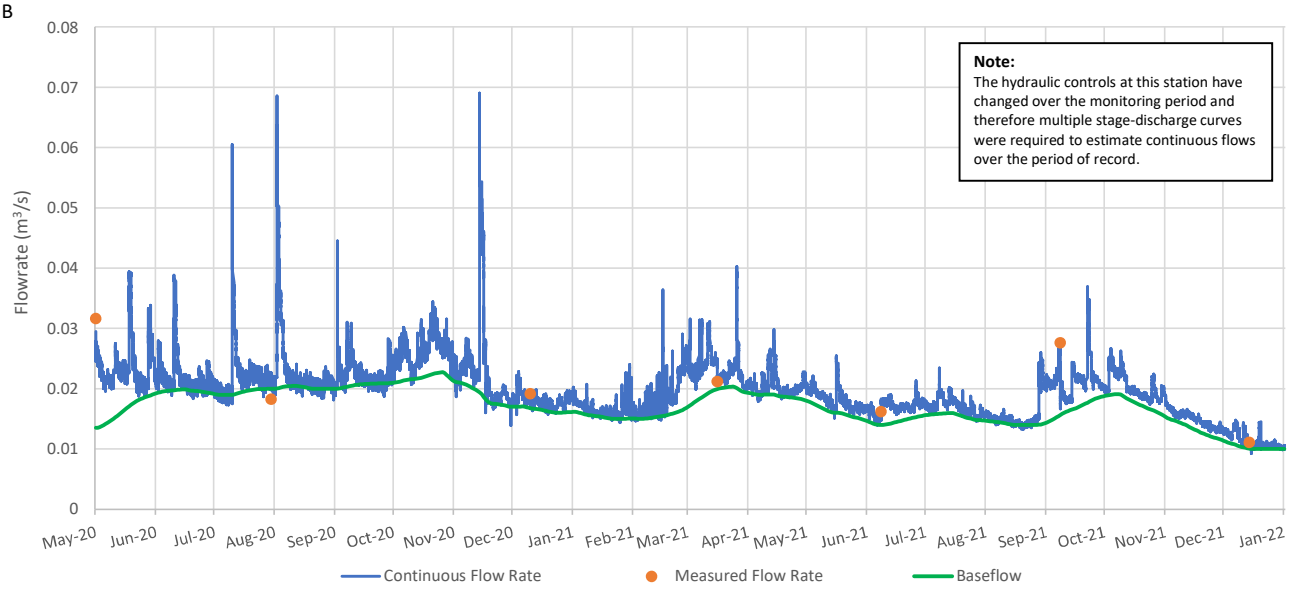
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CHECK: CDV

Water Levels & Flow at SW9 Adjacent to Caledon Quarry (2020 - 2021) | FIGURE L9

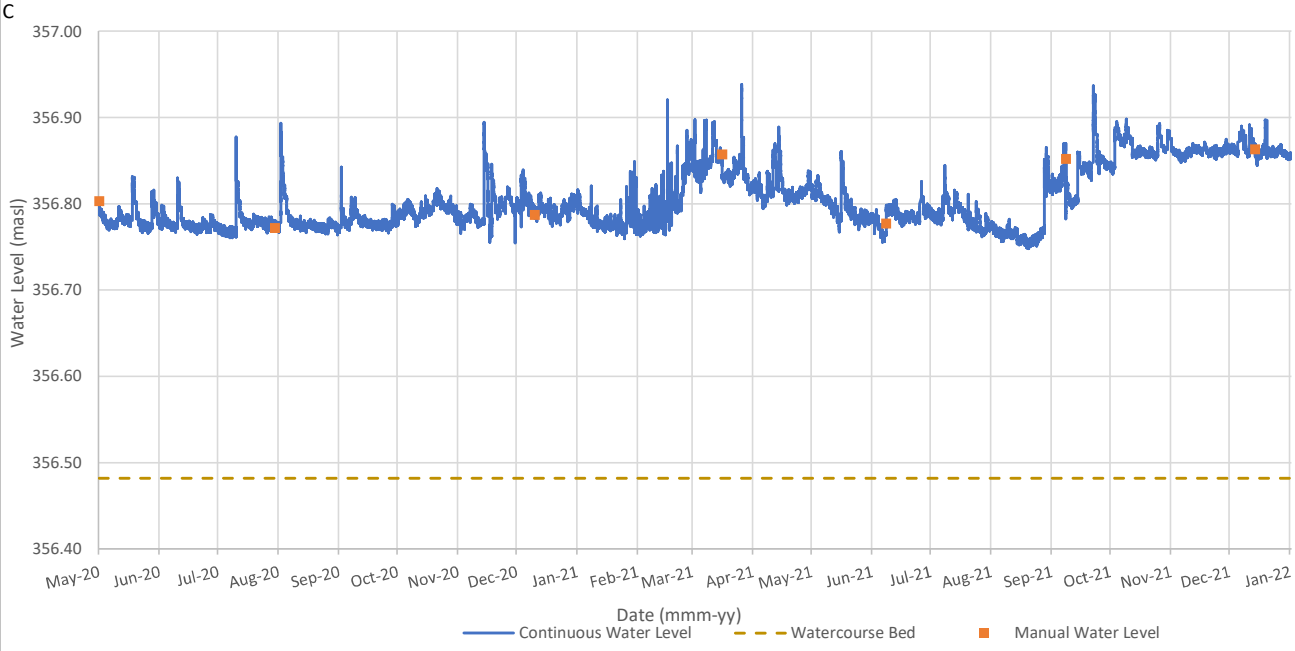
A



B



C



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Flow rate** **C. Water Level**

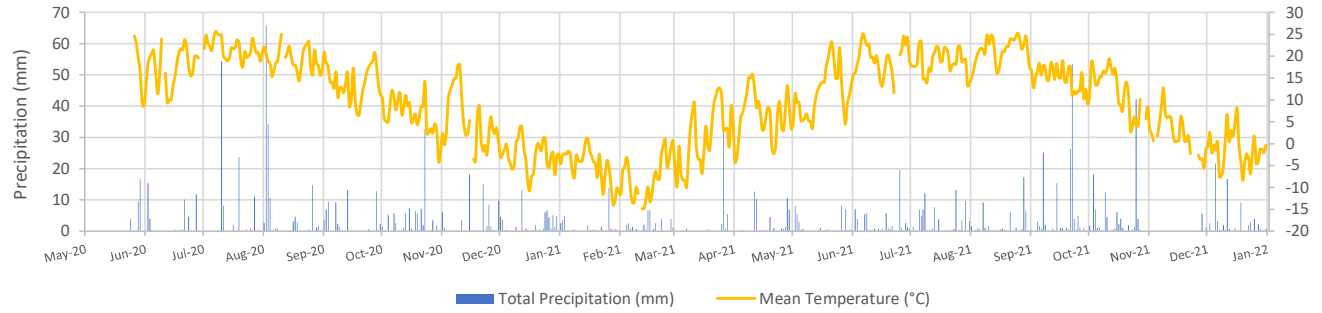
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MEMBER OF WSP

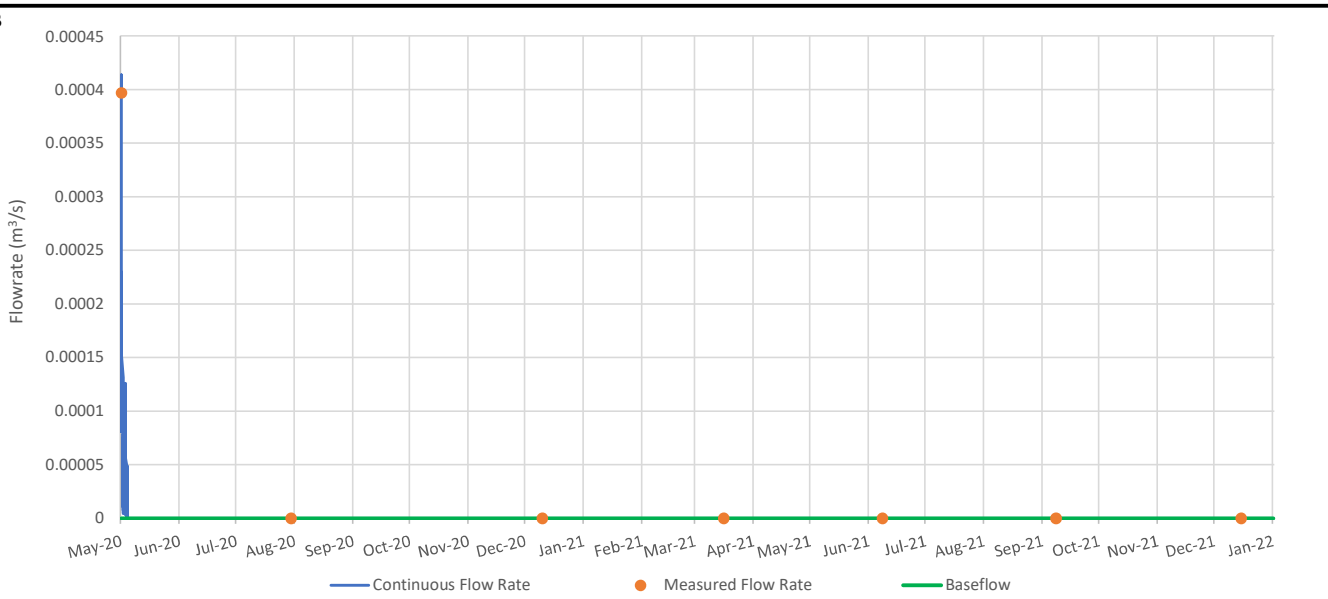
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Water Levels & Flow at SW10 Adjacent to VCNA Caledon Quarry (2020 - 2021) | FIGURE L10

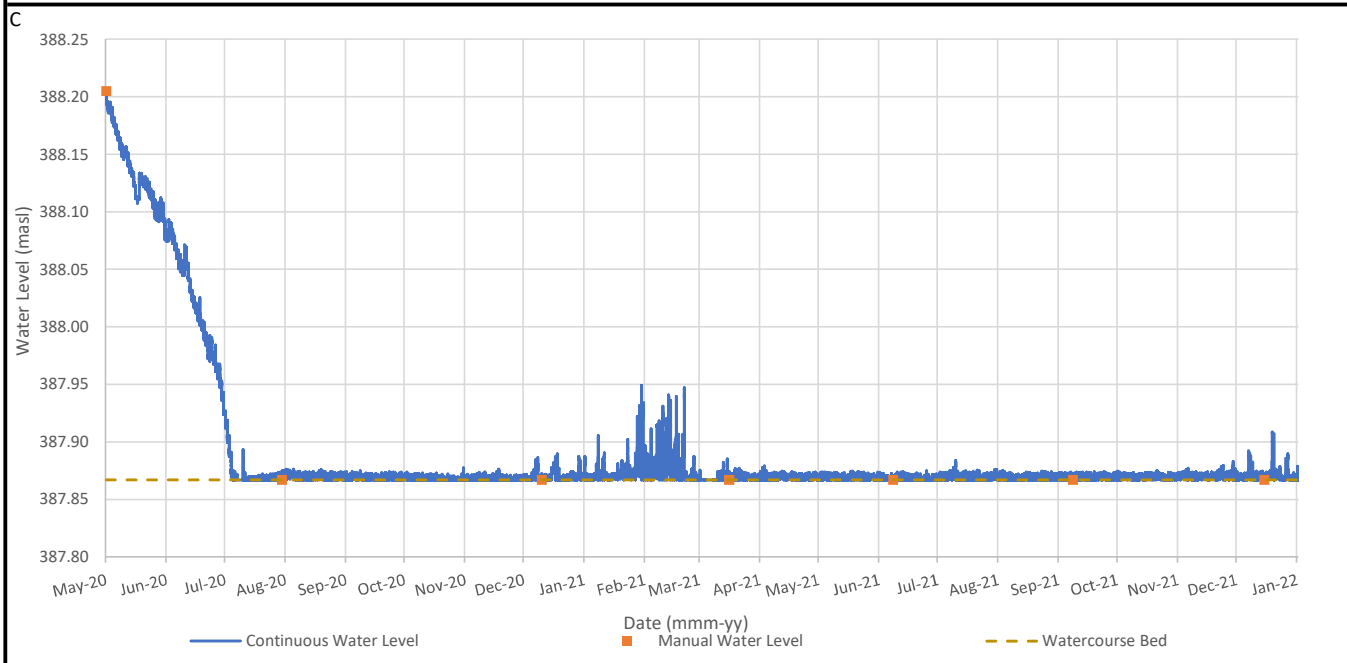
A



B



C



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Flow rate** **C. Water Level**

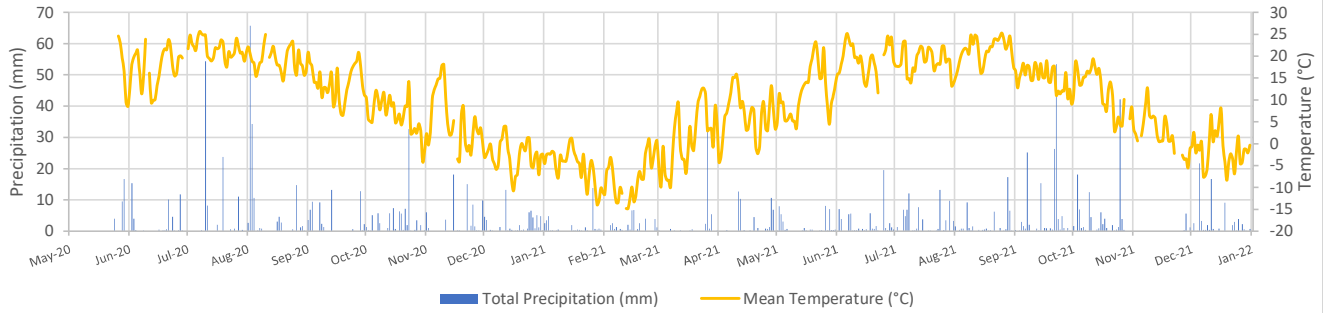
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DATE: December 2022

GOLDER
MEMBER OF WSP

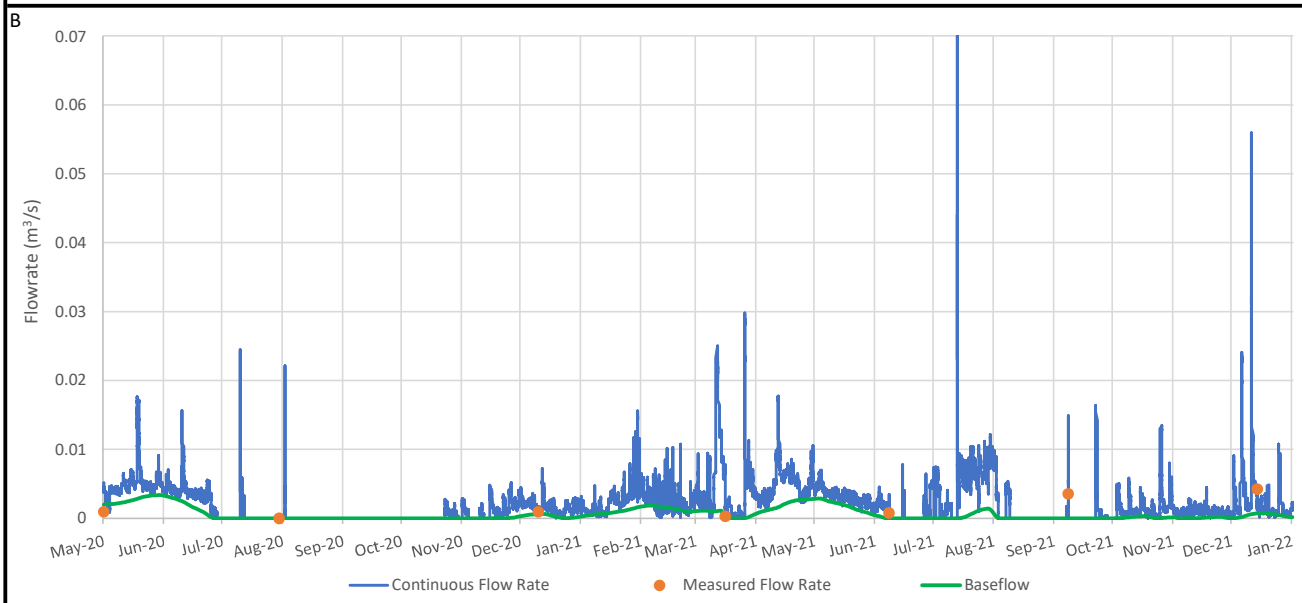
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CHECK: CDV

Water Levels & Flow at SW11 Adjacent to VCNA Caledon Quarry (2020 - 2021) | FIGURE L11

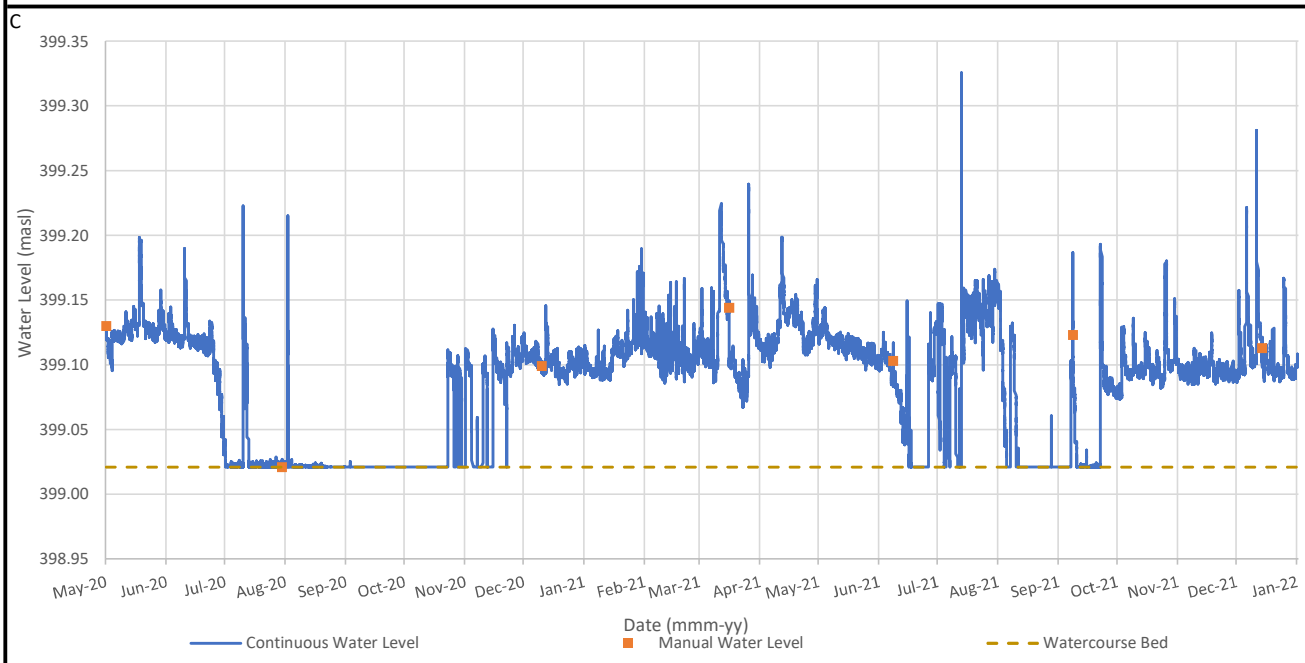
A



B



C



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Flow rate** **C. Water Level**

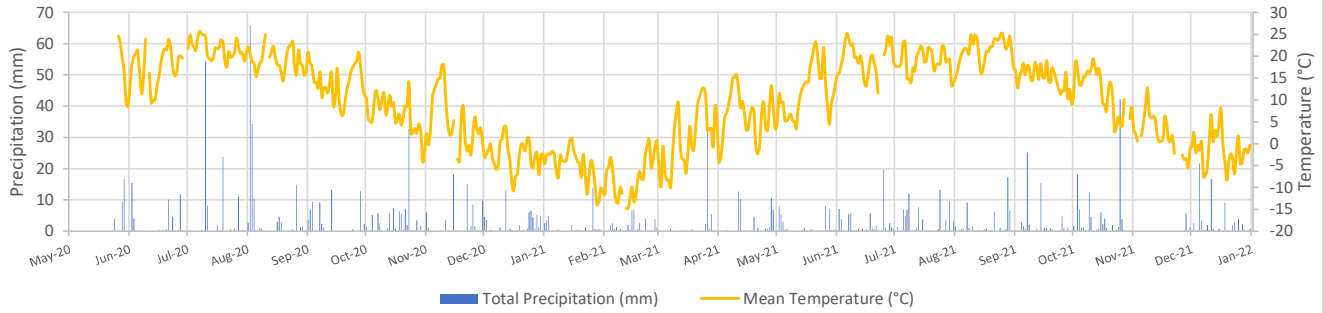
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DATE: December 2022

GOLDER
MEMBER OF WSP

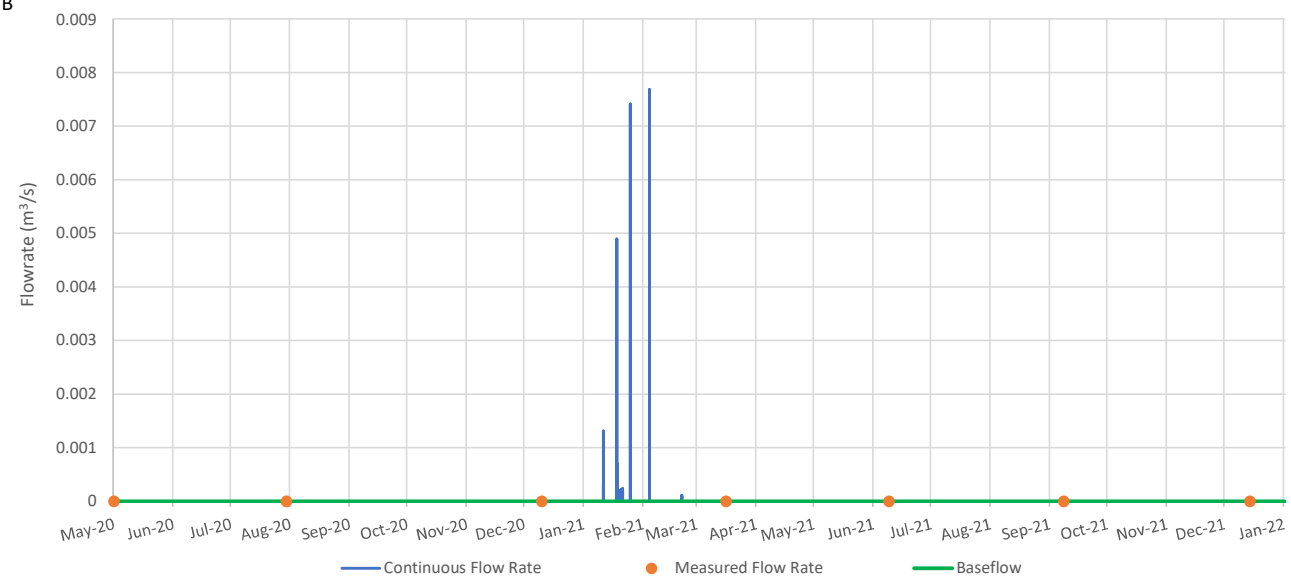
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CHECK: CDV

Water Levels & Flow at SW12 Adjacent to VCNA Caledon Quarry (2020 - 2021) | FIGURE L12

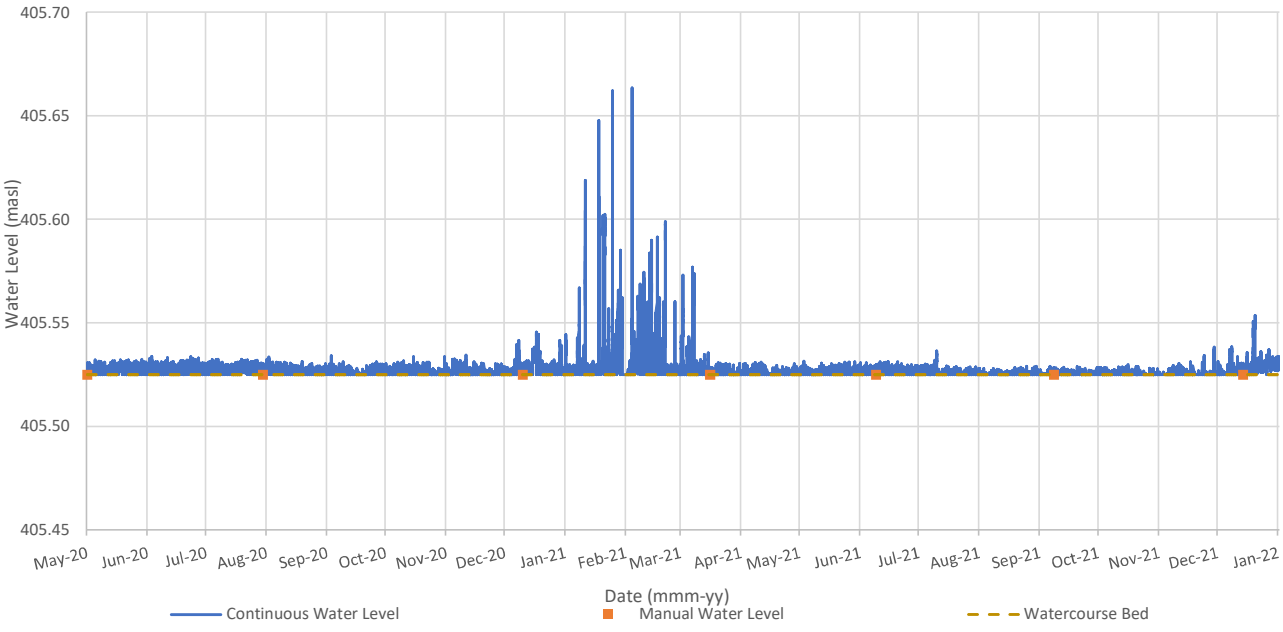
A



B



C



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Flow Rate** **C. Water Level**

PROJECT: 19129150
DATE: December 2022

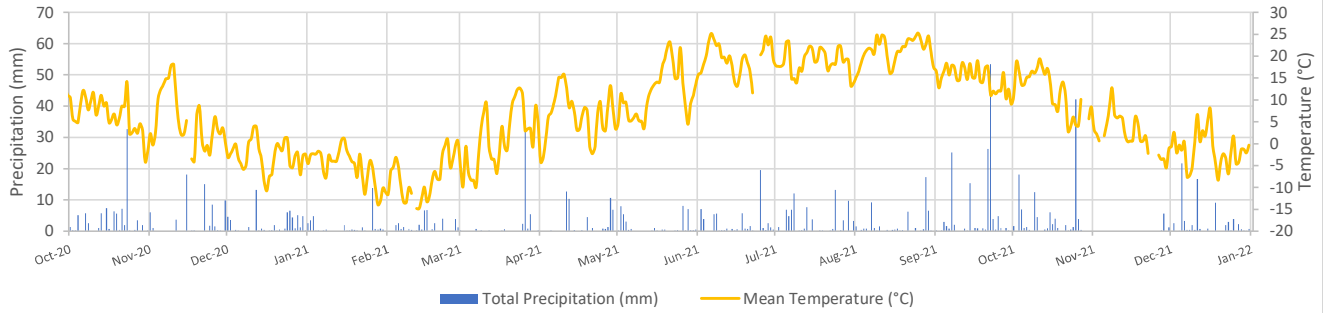
GOLDER
MEMBER OF WSP

DRAWN: MR
CHECK: CDV

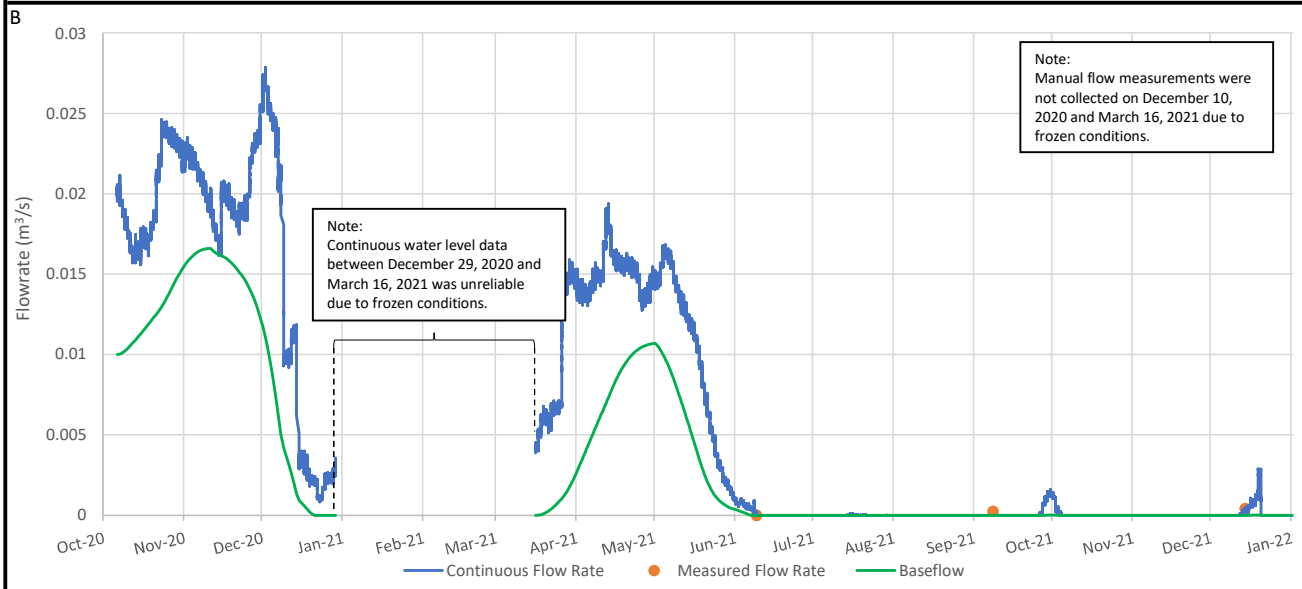
Water Levels & Flow at SW13 Adjacent to VCNA Caledon Quarry (2020 - 2021)

FIGURE L13

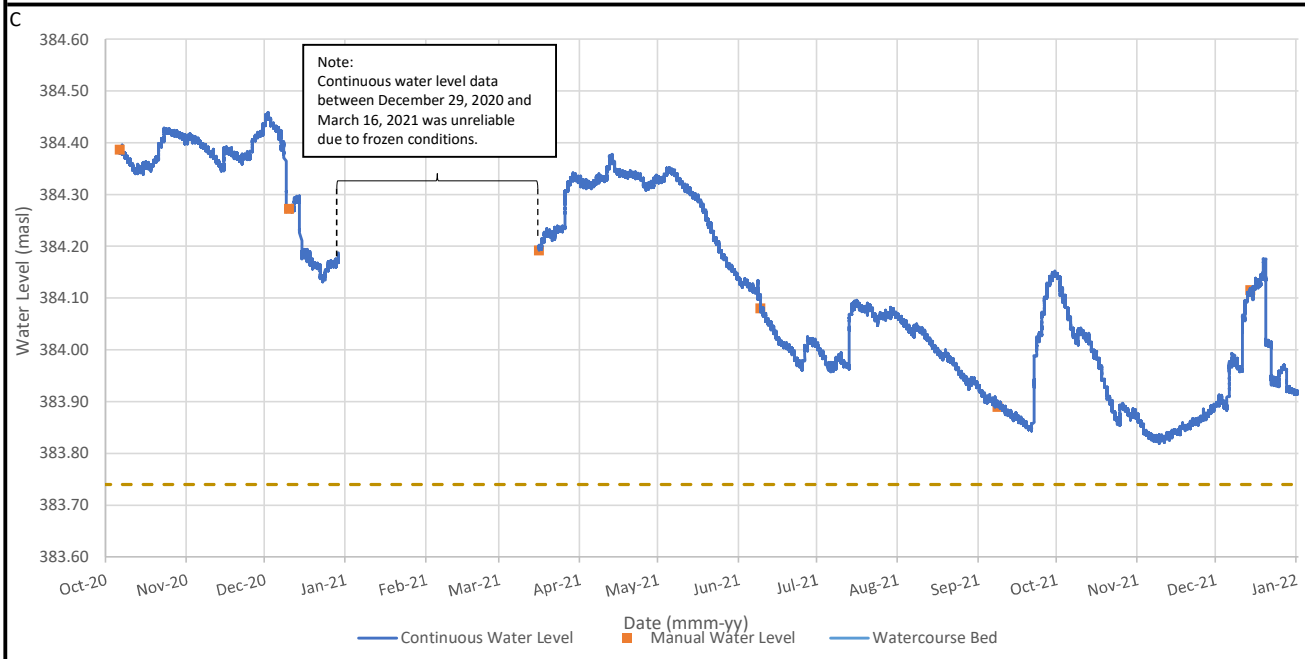
A



B



C



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Flow Rate** **C. Water Level**

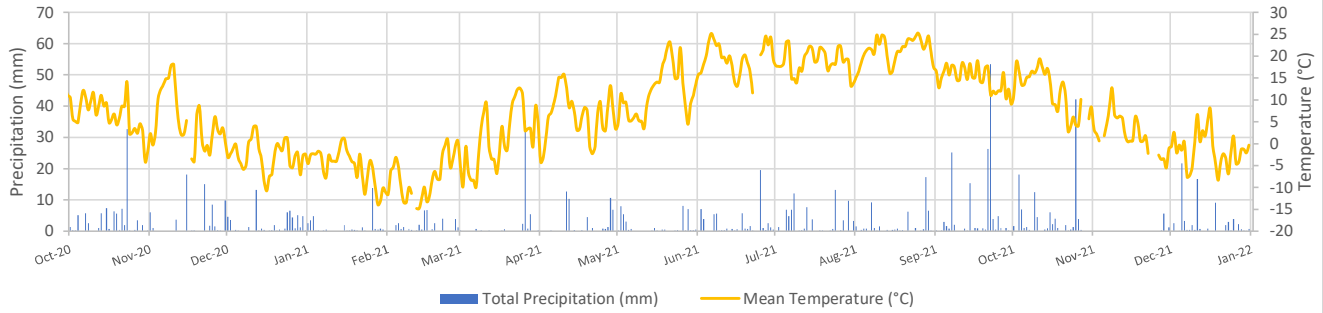
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DATE: December 2022

GOLDER
MEMBER OF WSP

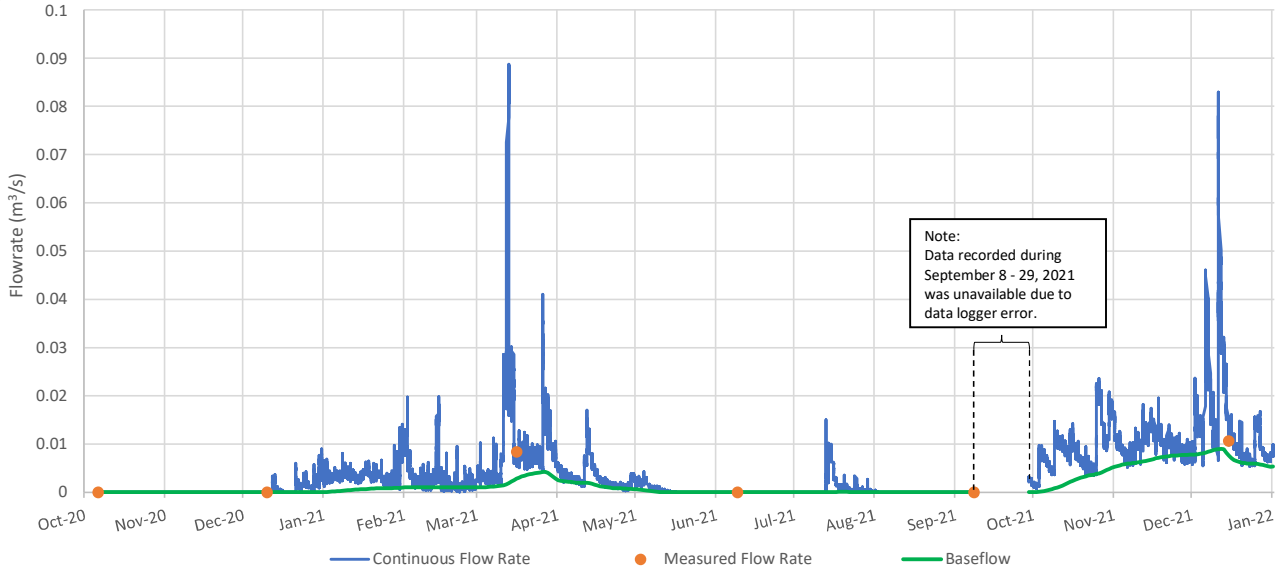
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Water Levels & Flow at SW14/MP14 Adjacent to VCNA Caledon Quarry (2020 - 2021) | FIGURE L14

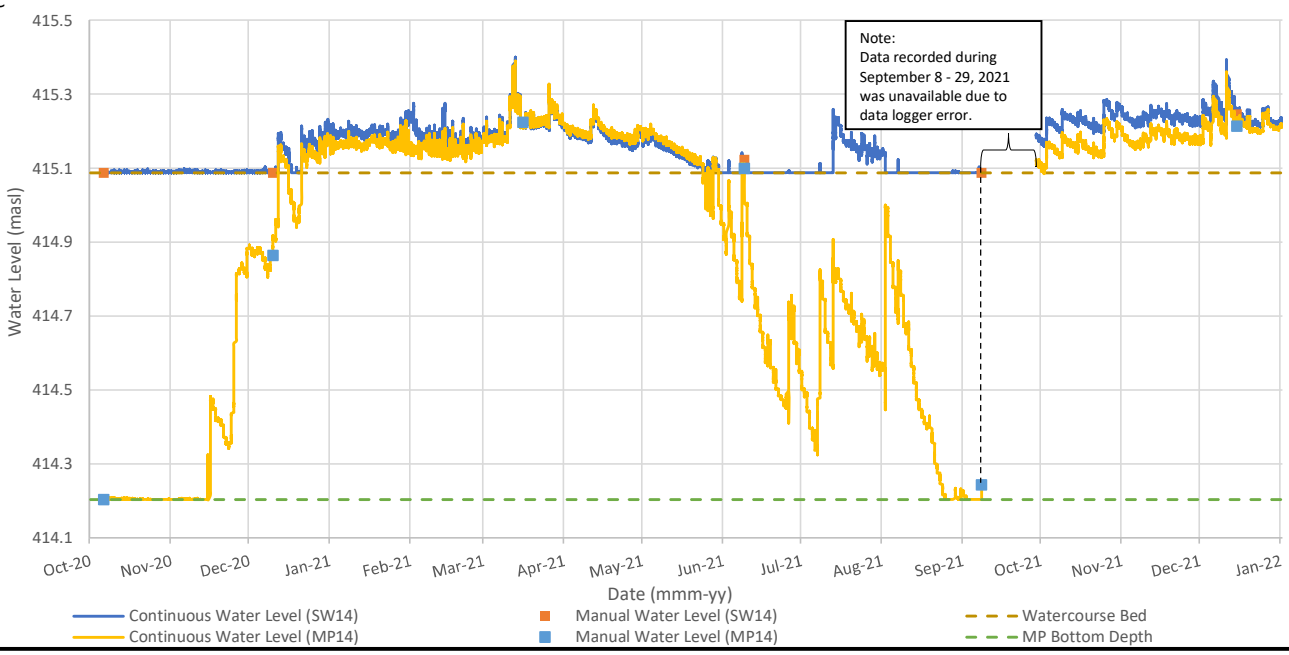
A



B



C



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Flow Rate** **C. Water Level**

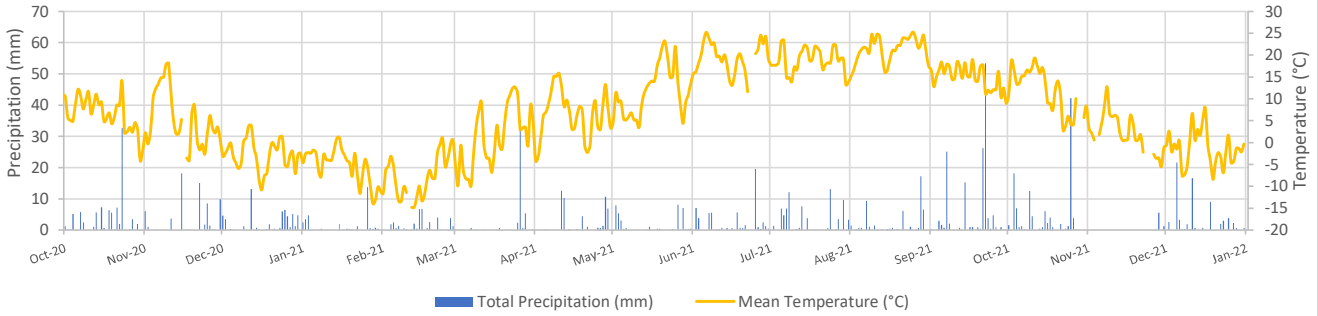
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DATE: December 2022

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MEMBER OF WSP

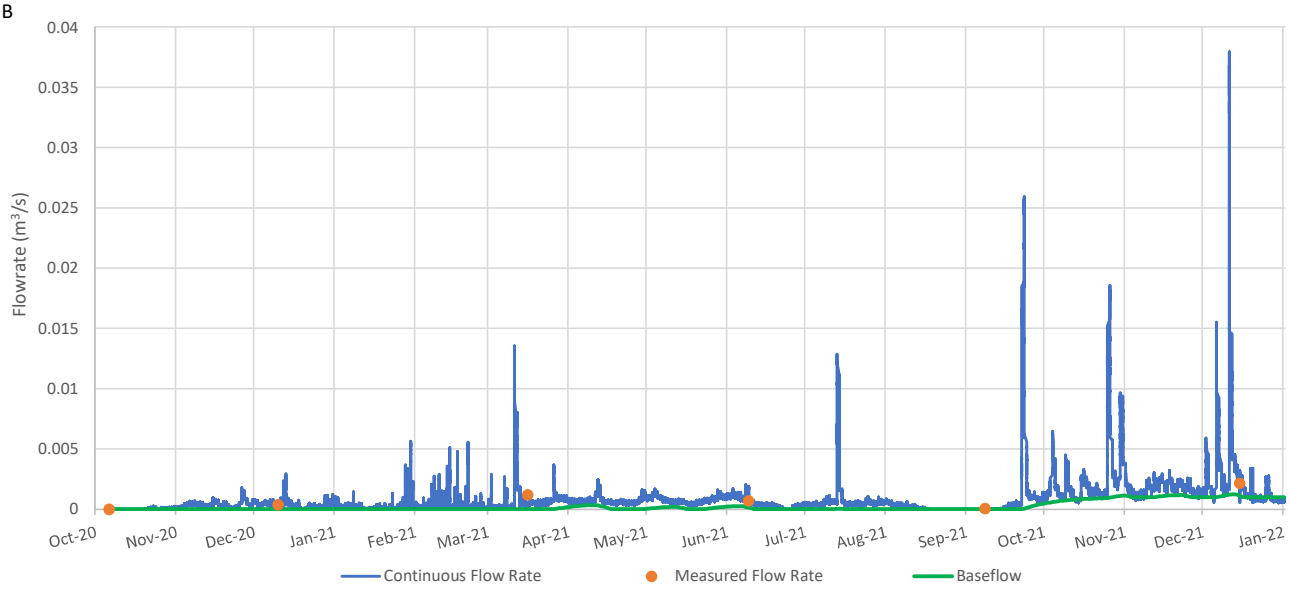
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Water Levels & Flow at SW15/MP15 Adjacent to VCNA Caledon Quarry (2020 - 2021) | Figure L15

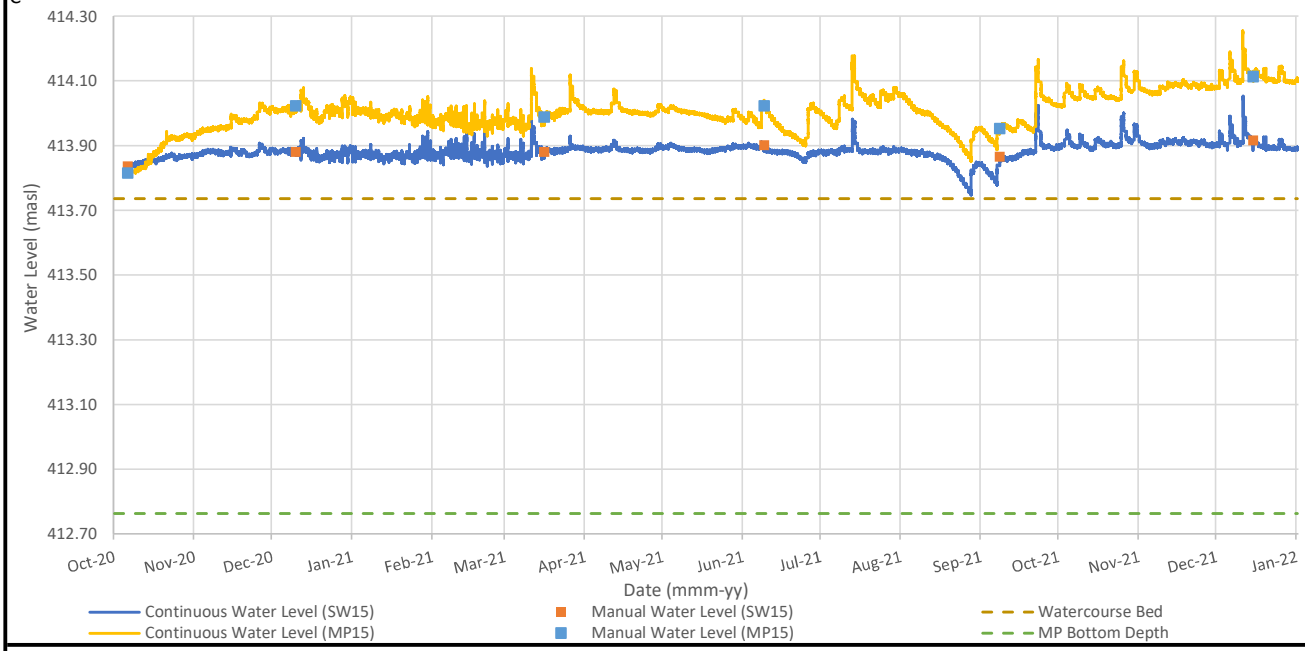
A



B



C



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Flow Rate** **C. Water Level**

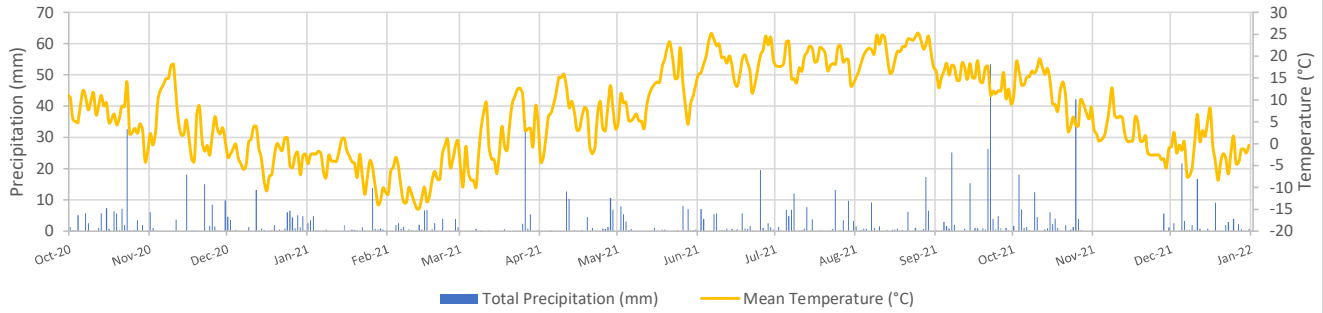
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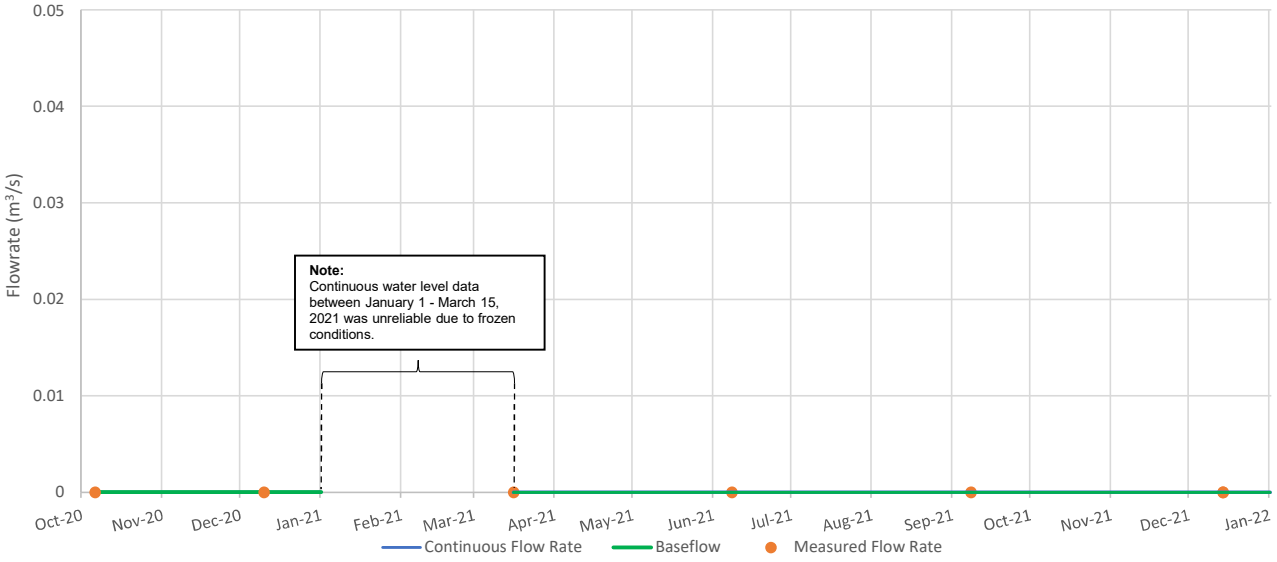
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Water Levels & Flow at SW16/MP16 Adjacent to VCNA Caledon Quarry (2020 - 2021) | FIGURE L16

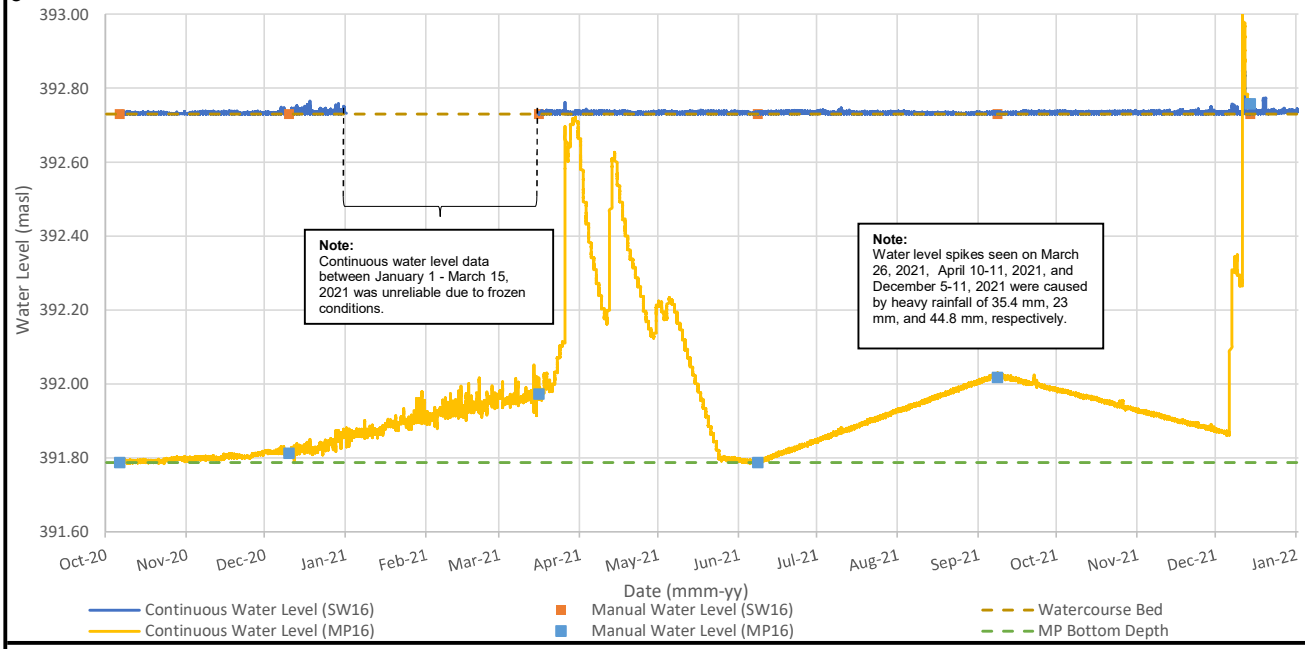
A



B



C



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Flow Rate** **C. Water Level**

PROJECT: 19129150
DATE: December 2022

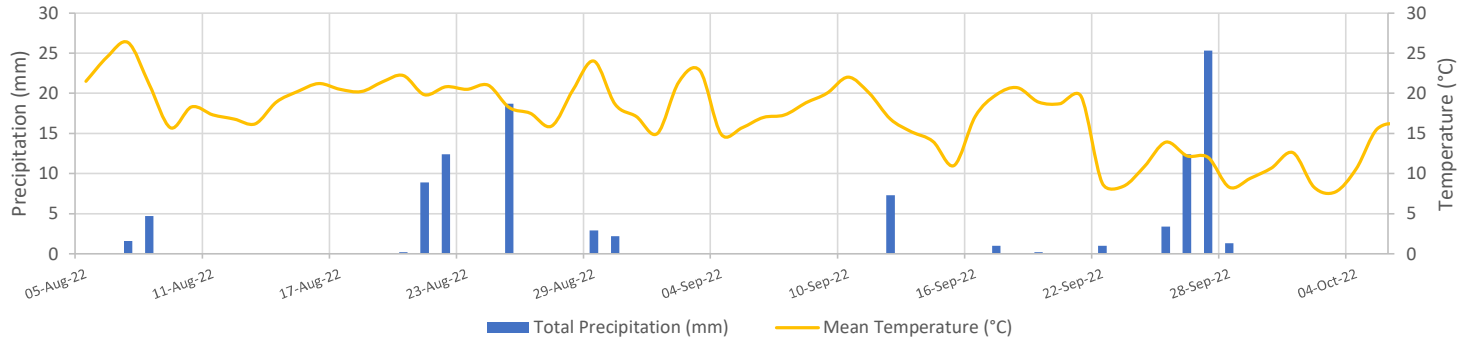
GOLDER
MEMBER OF WSP

DRAWN: MR
CHECK: CDV

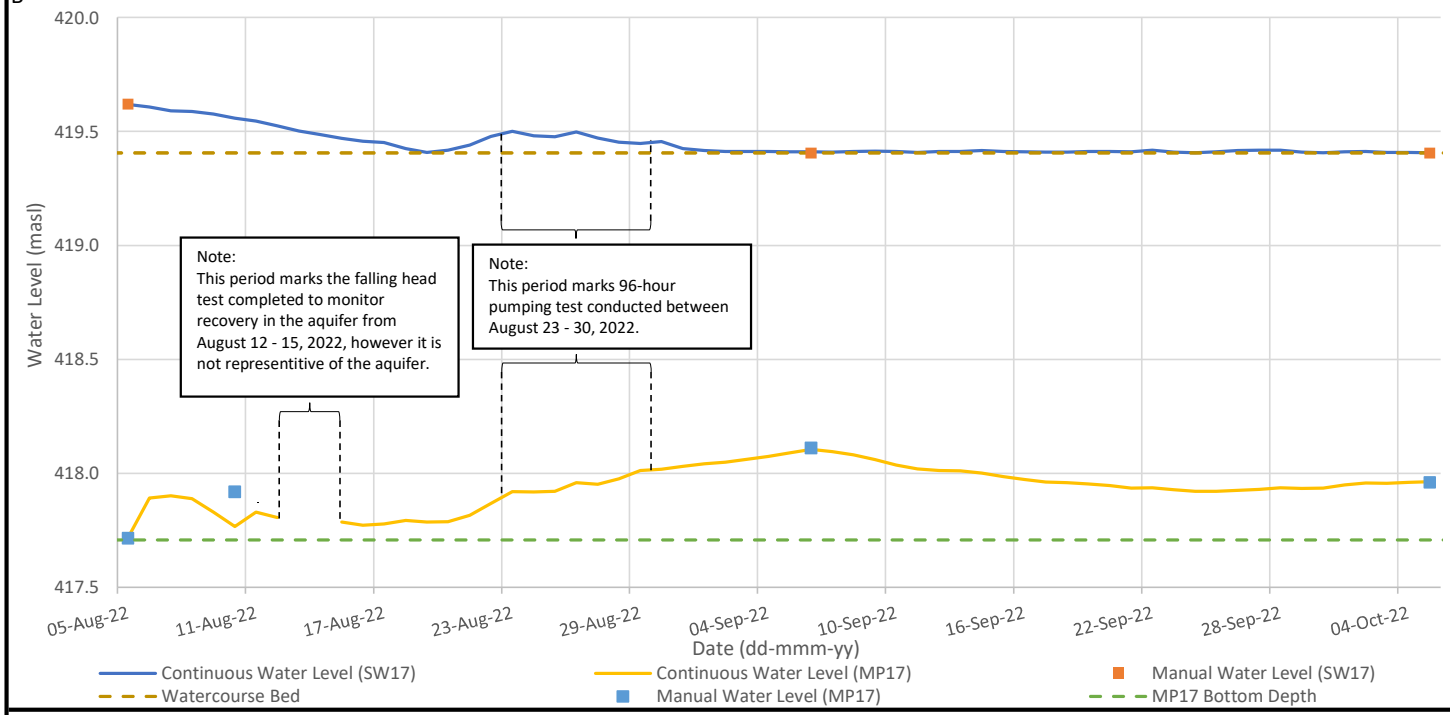
Water Levels at SW17/MP17 Adjacent to VCNA Caledon Quarry in the Northwest Wetland (2022)

FIGURE L17

A



B



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Water Level**

PROJECT: 19129150

DATE: December 2022

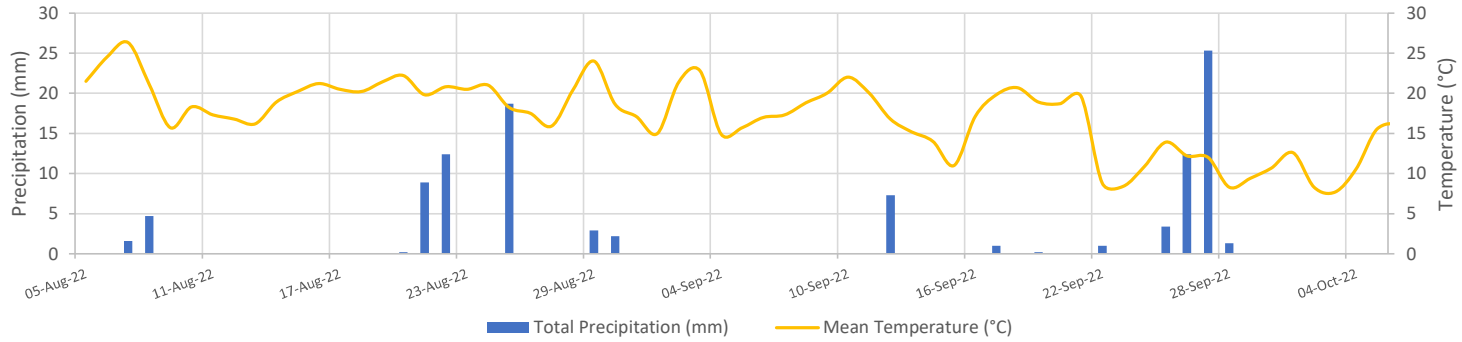
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MEMBER OF WSP

DRAWN: MR

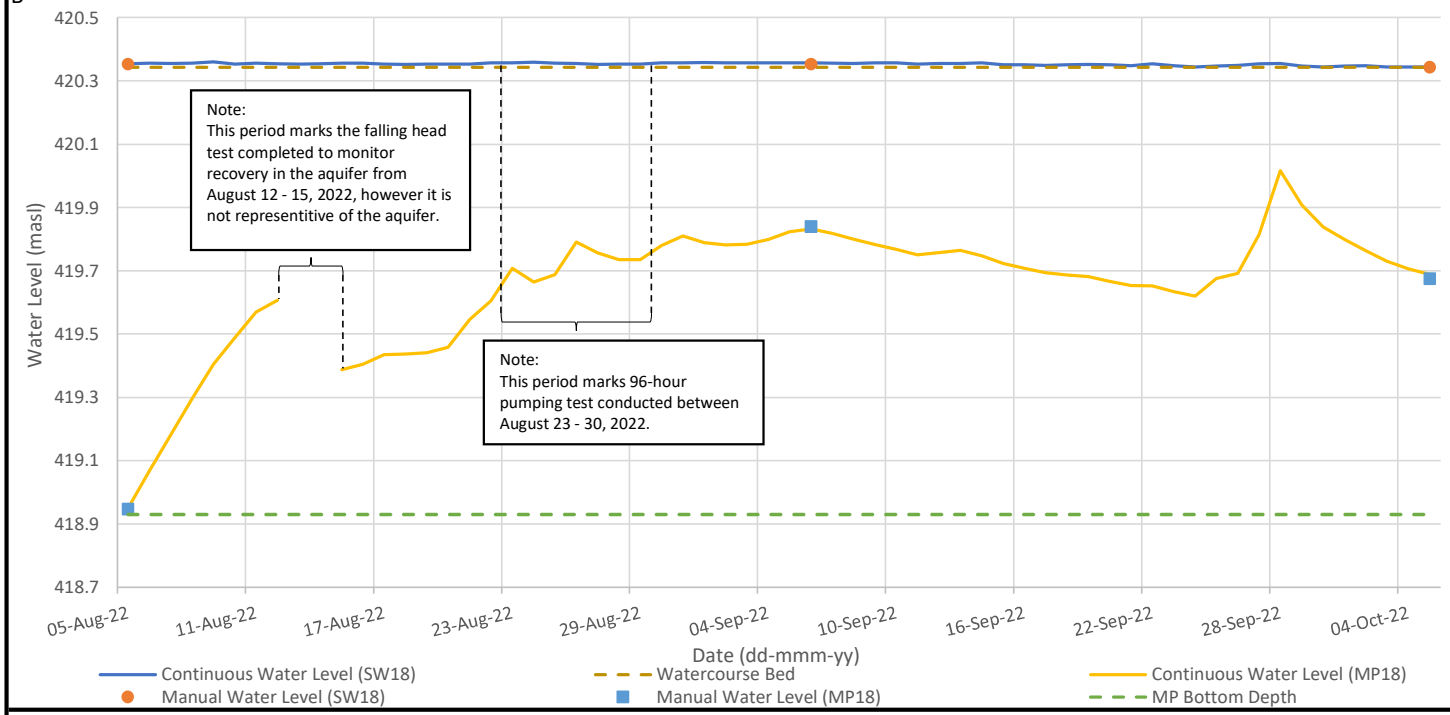
CHECK: CDV

Water Levels at SW18/MP18 Adjacent to VCNA Caledon Quarry in the Northwest Wetland (2022) | FIGURE L18

A



B



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Water Level**

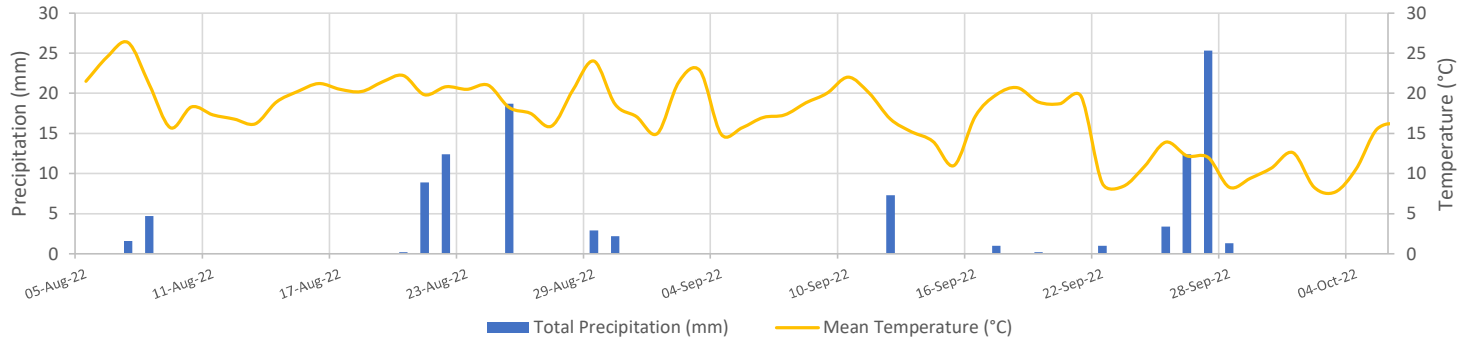
PROJECT: 19129150
DATE: December 2022

GOLDER
MEMBER OF WSP

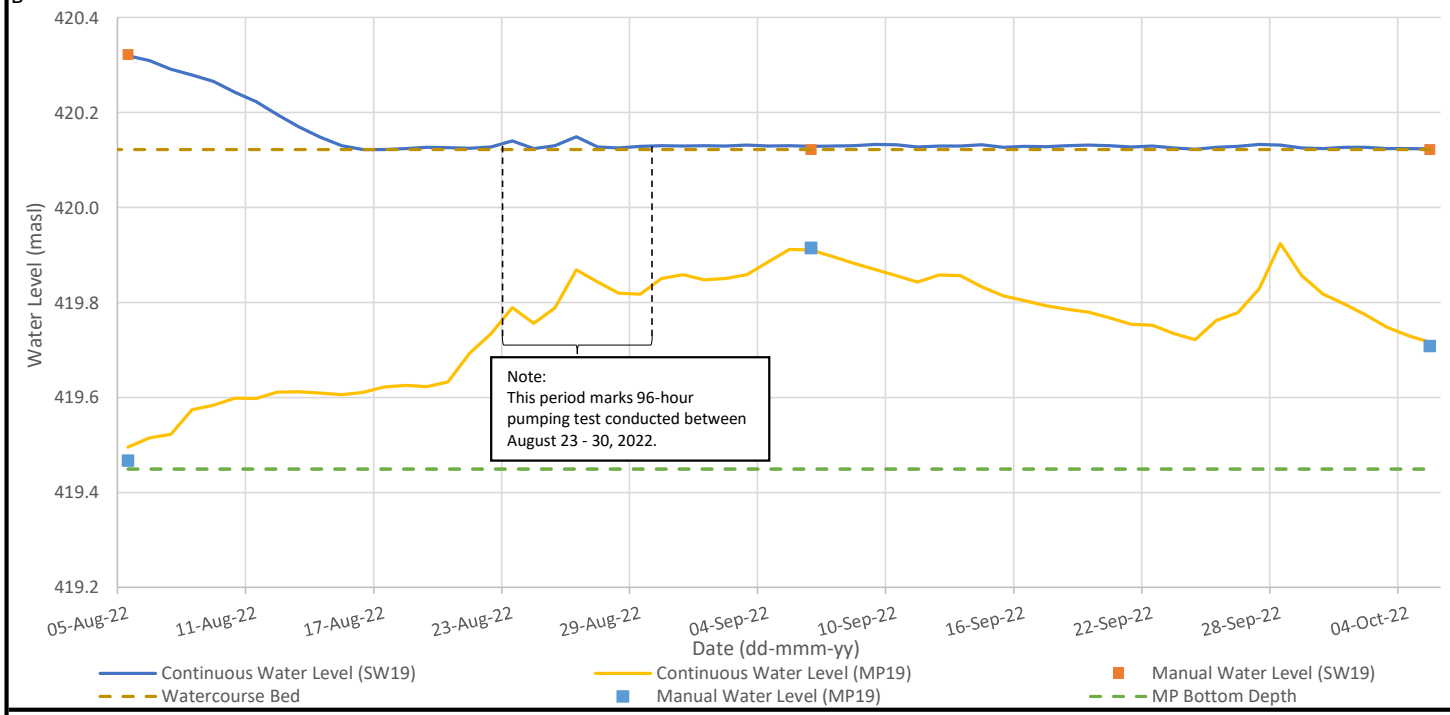
DRAWN: MR
CHECK: CDV

Water Levels at SW19/MP19 Adjacent to VCNA Caledon Quarry in the Northwest Wetland (2022) | FIGURE L19

A



B



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Water Level**

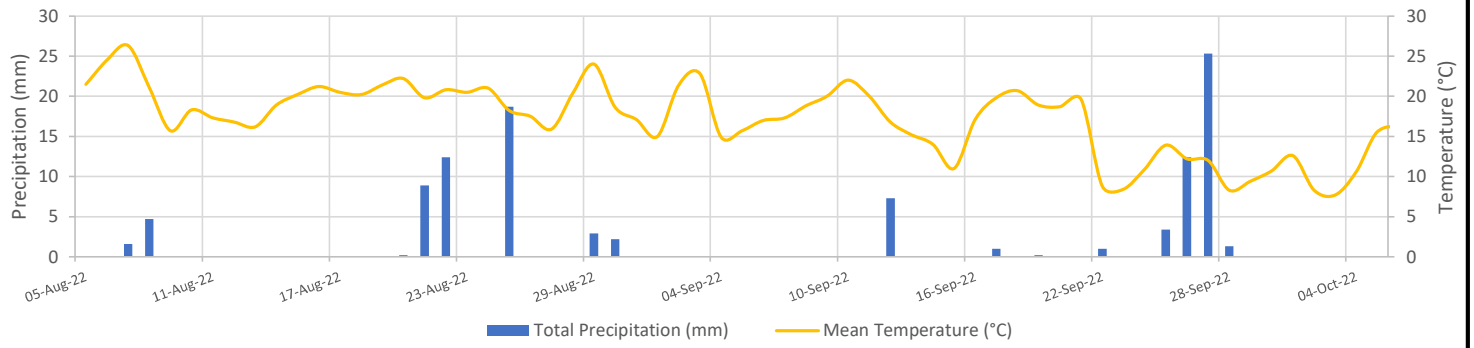
PROJECT: 19129150
DATE: December 2022

GOLDER
MEMBER OF WSP

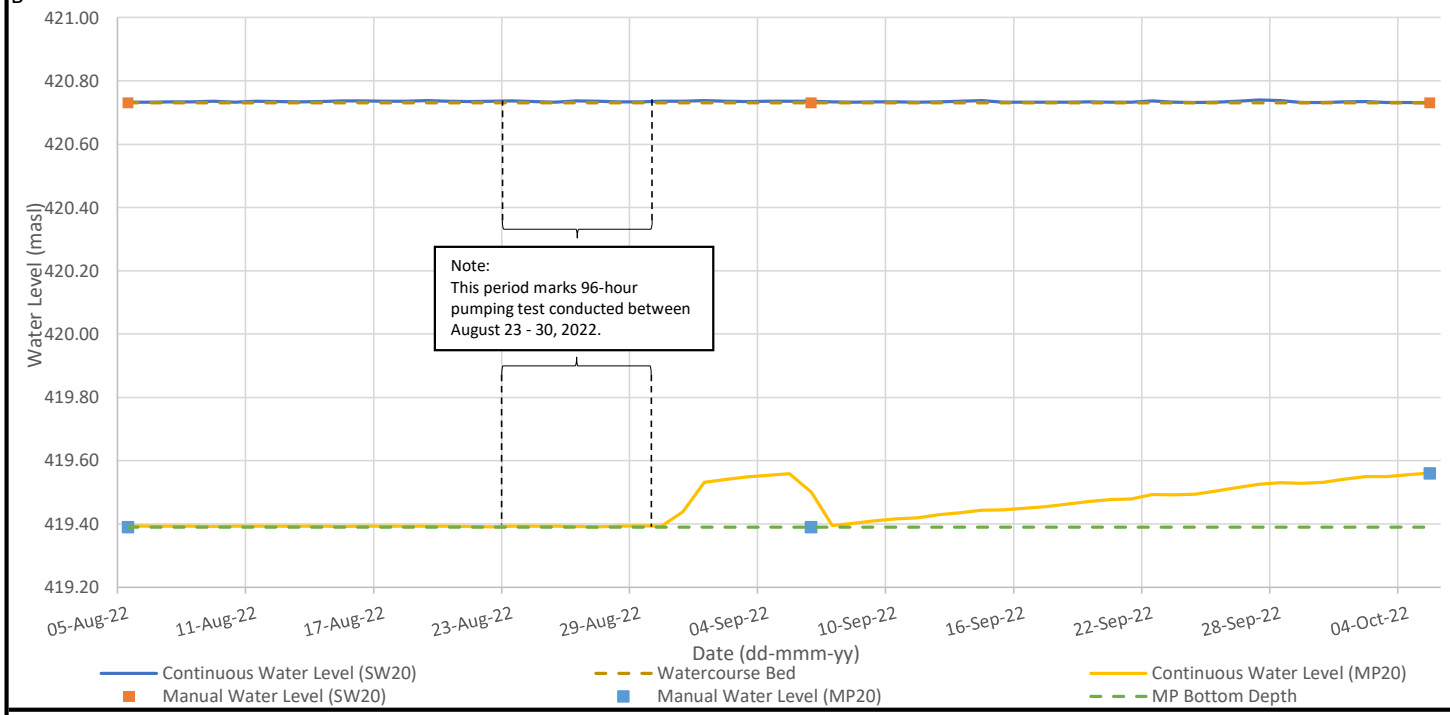
DRAWN: MR
CHECK: CDV

Water Levels at SW20/MP20 Adjacent to VCNA Caledon Quarry in the Northwest Wetland (2022)	FIGURE L20

A



B



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Water Level**

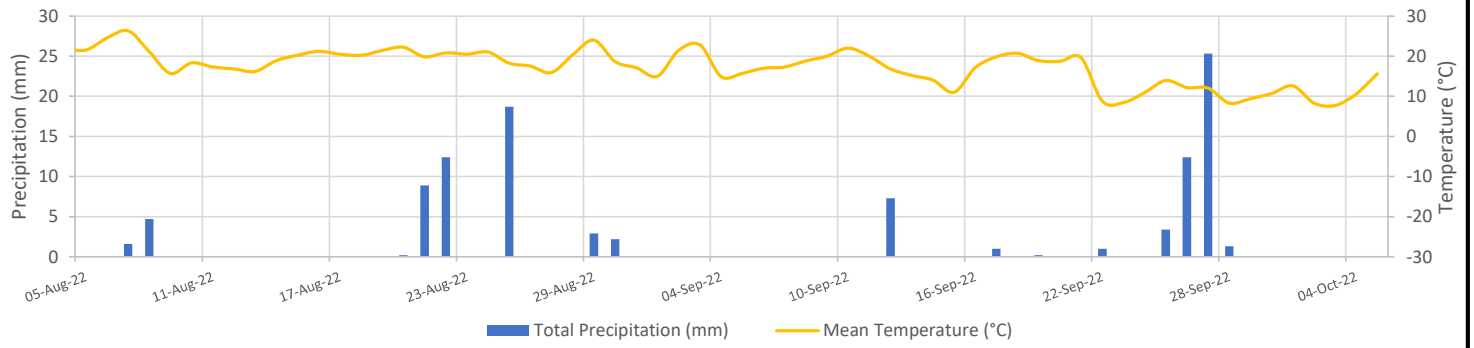
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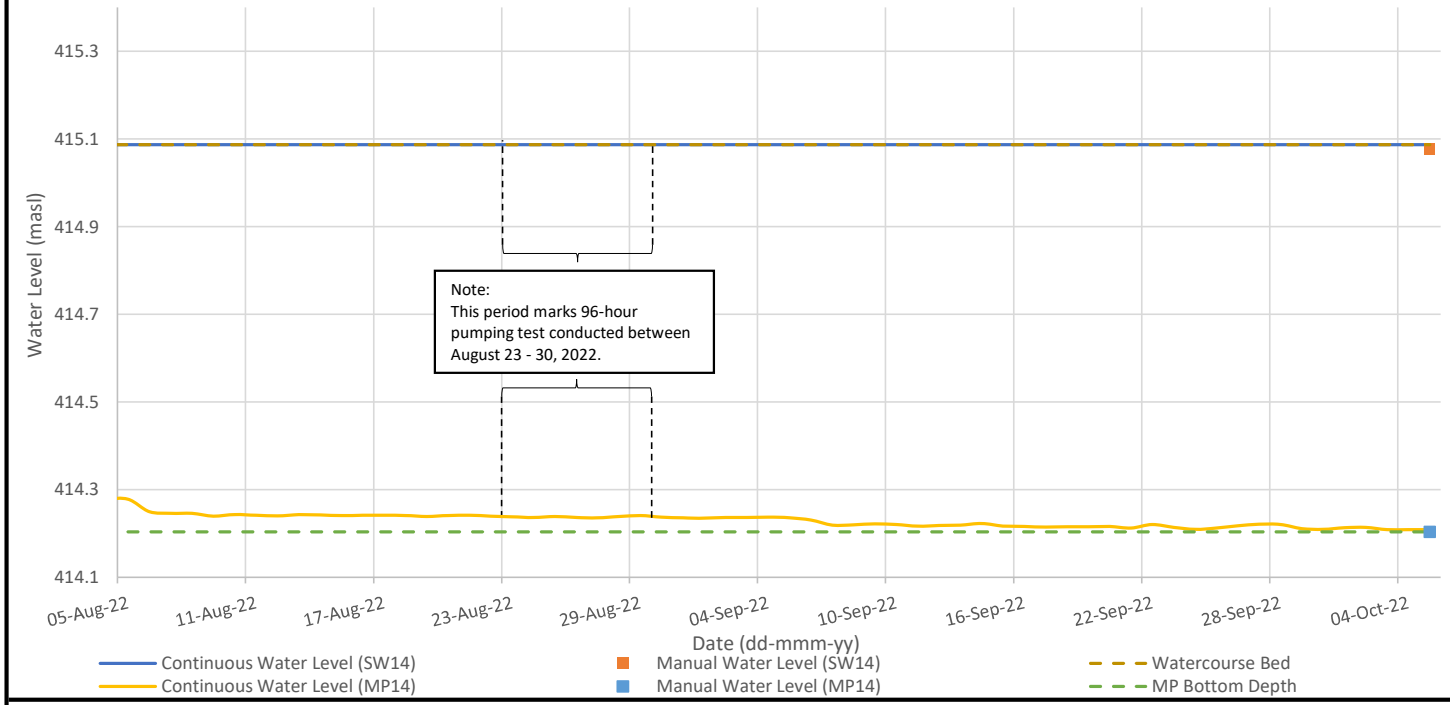
DRAWN: MR
CHECK: CDV

Water Levels at SW14/MP14 Adjacent to VCNA Caledon Quarry in the Northwest Wetland (2022) | FIGURE L21

A



B



A. Total Daily Precipitation and Mean Daily Temperature (Mono Centre, ON, EC Climate ID#6157000) **B. Water Level**

PROJECT: 19129150
DATE: December 2022

GOLDER
MEMBER OF WSP

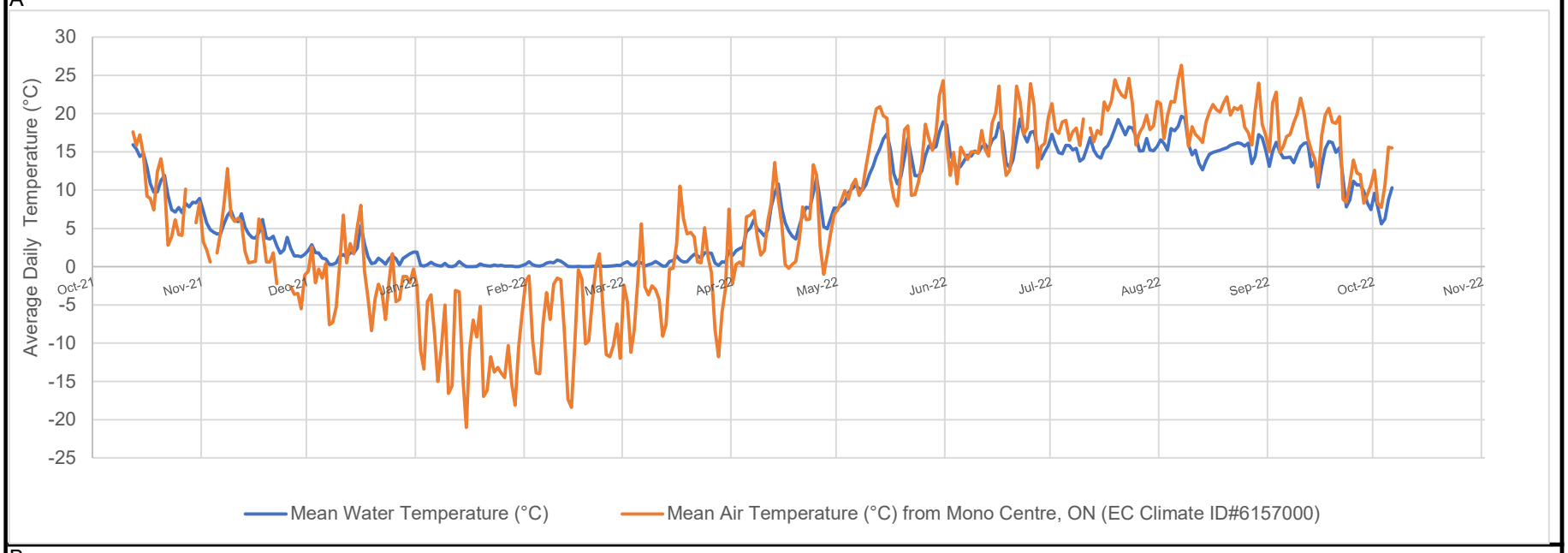
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CHECK: CDV

APPENDIX M

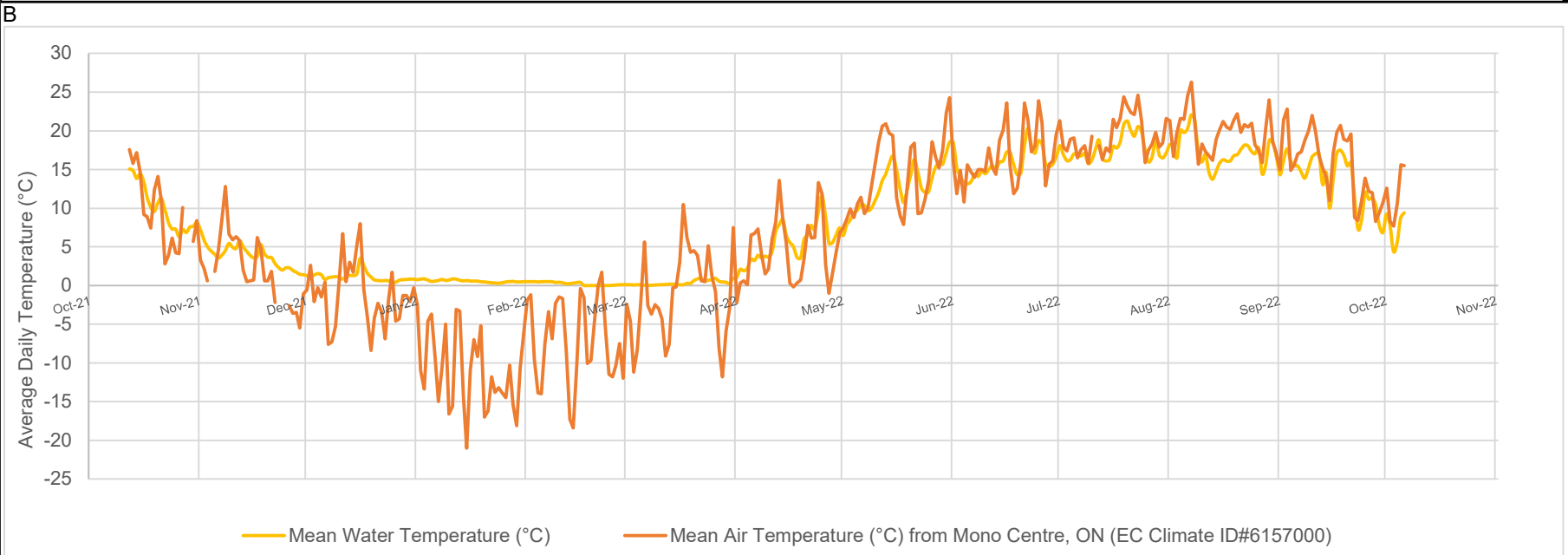
Surface Water Temperature

Water Temperatures at Surface Water Stations SW1 - SW4 Adjacent to VCNA License Caledon Quarry (2021 - 2022)	FIGURE M1

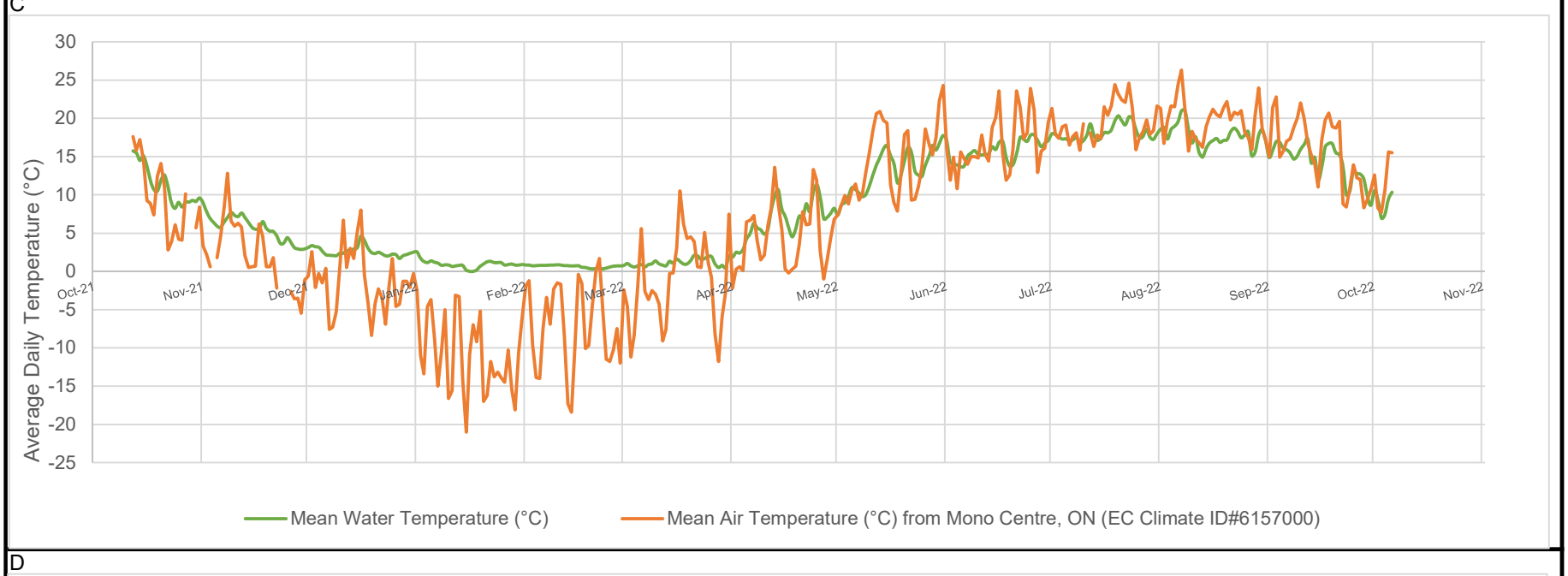
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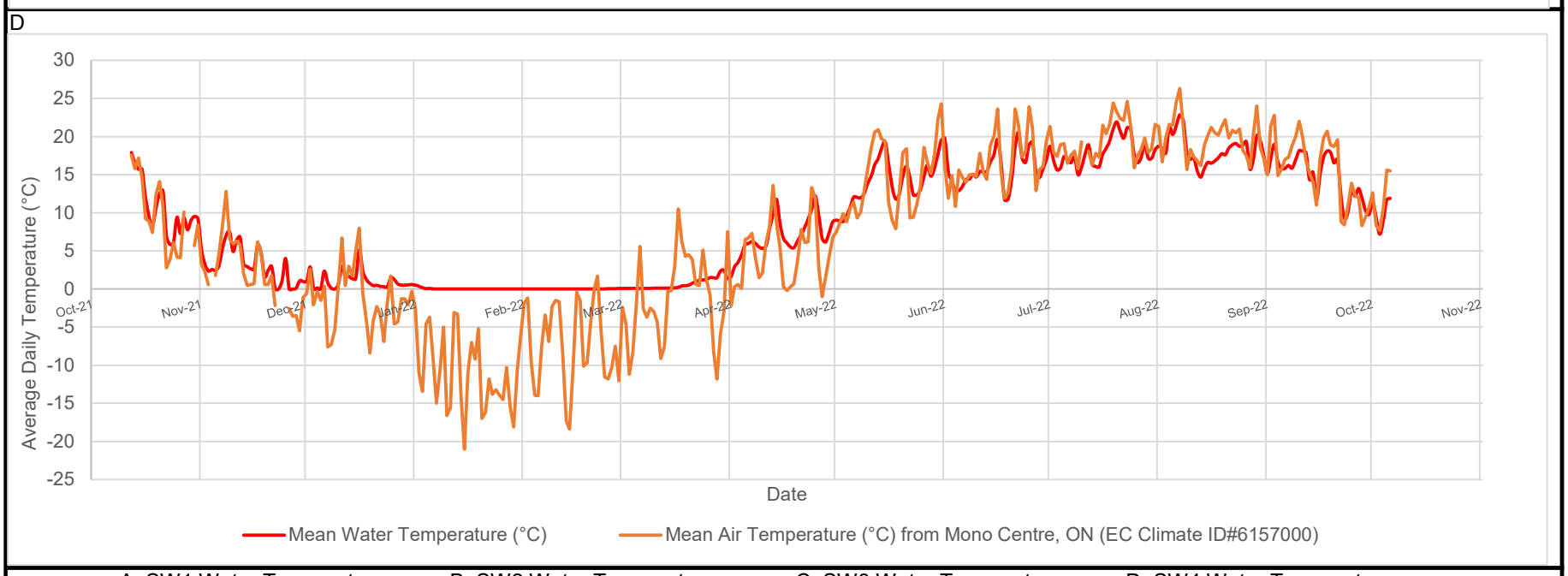
B



C



D



A. SW1 Water Temperature	B. SW2 Water Temperature	C. SW3 Water Temperature	D. SW4 Water Temperature

PROJECT: 19129150
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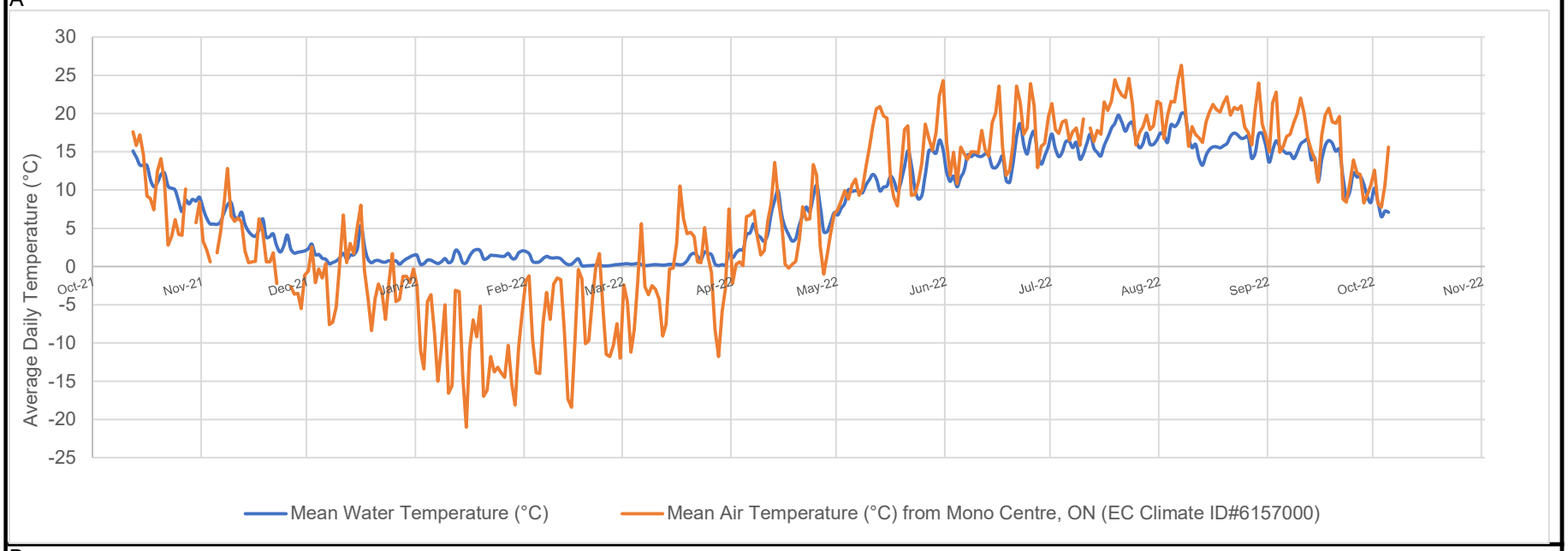
GOLDER
MEMBER OF WSP

DRAWN: MR
CHECK: CDV

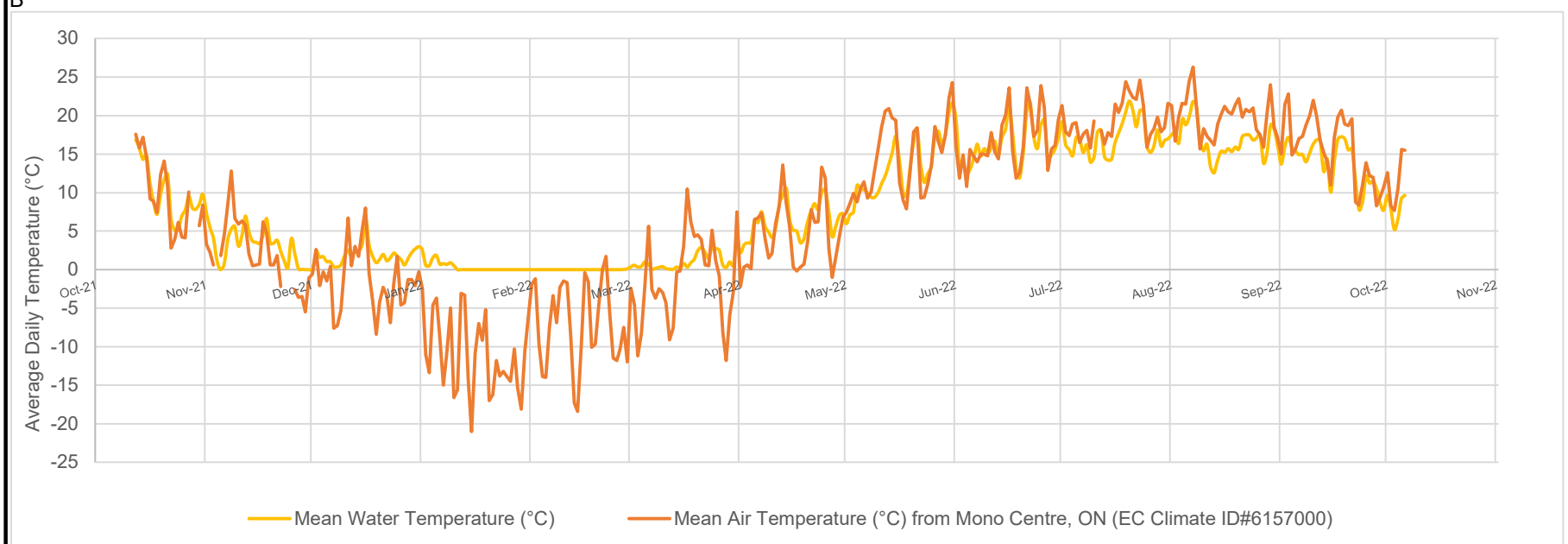
Water Temperatures at Surface Water Stations SW5 - SW8 Adjacent to VCNA License Caledon Quarry (2021 - 2022)

FIGURE M2

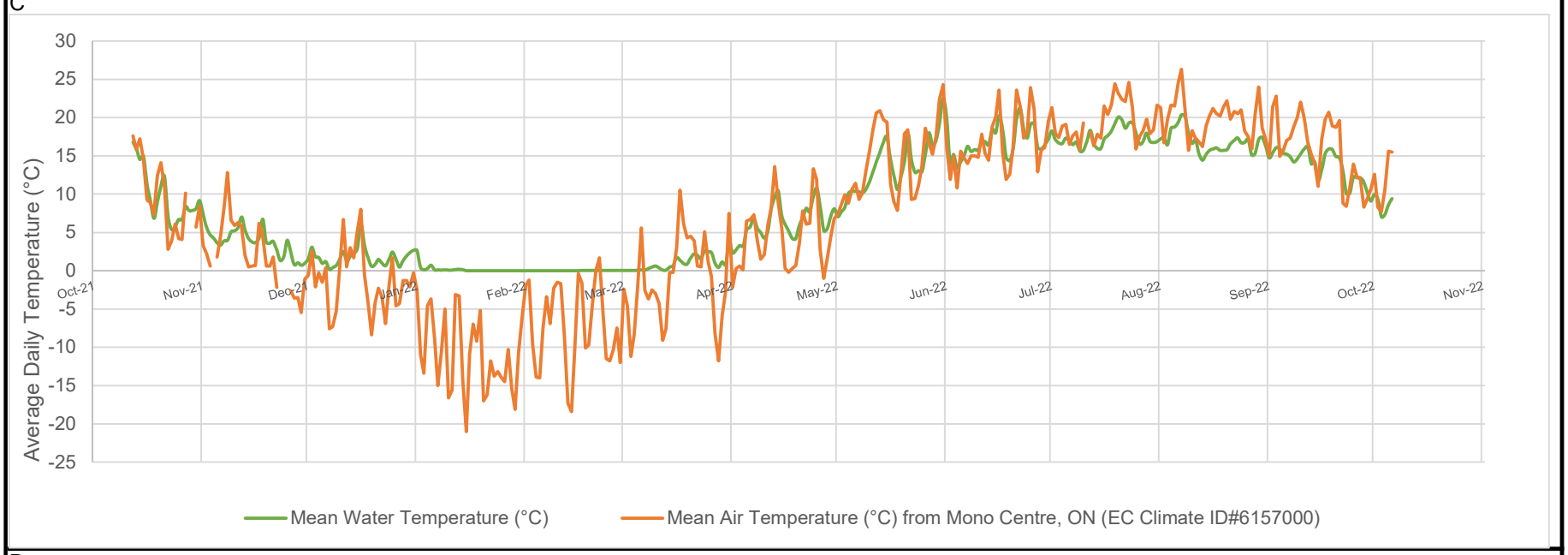
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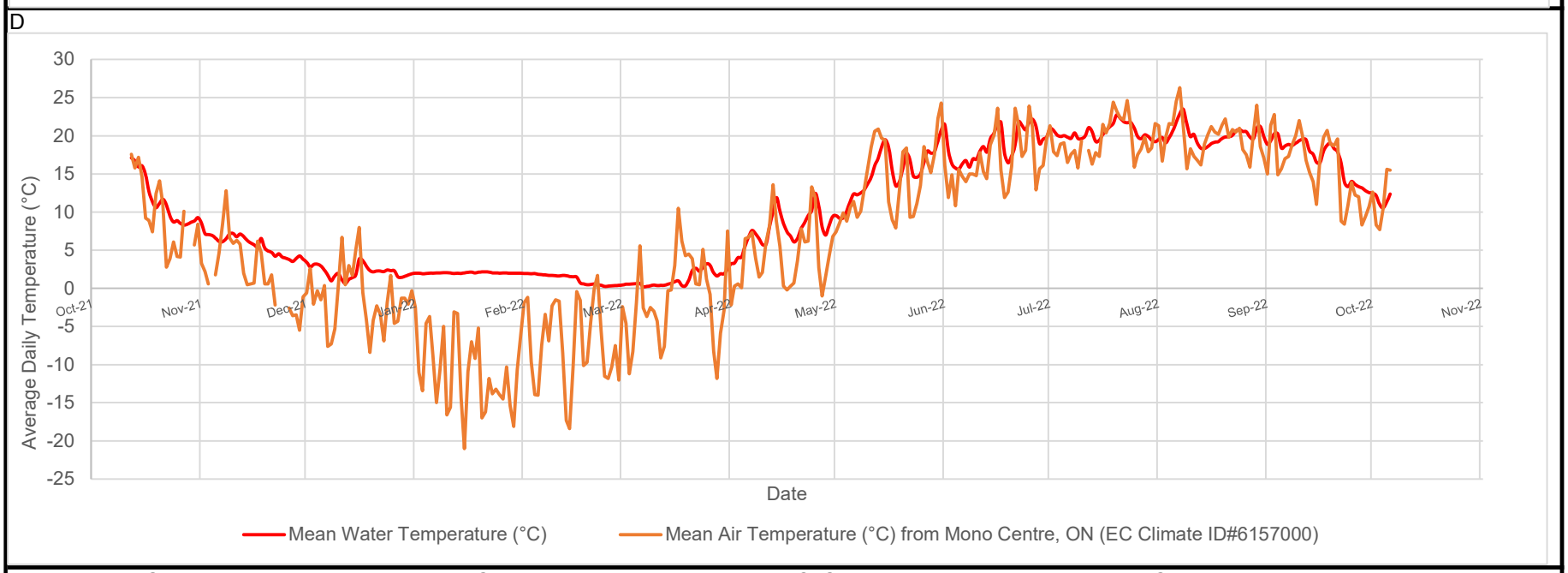
B



C



D



A. SW5 Water Temperature B. SW6 Water Temperature C. SW7 Water Temperature D. SW8 Water Temperature

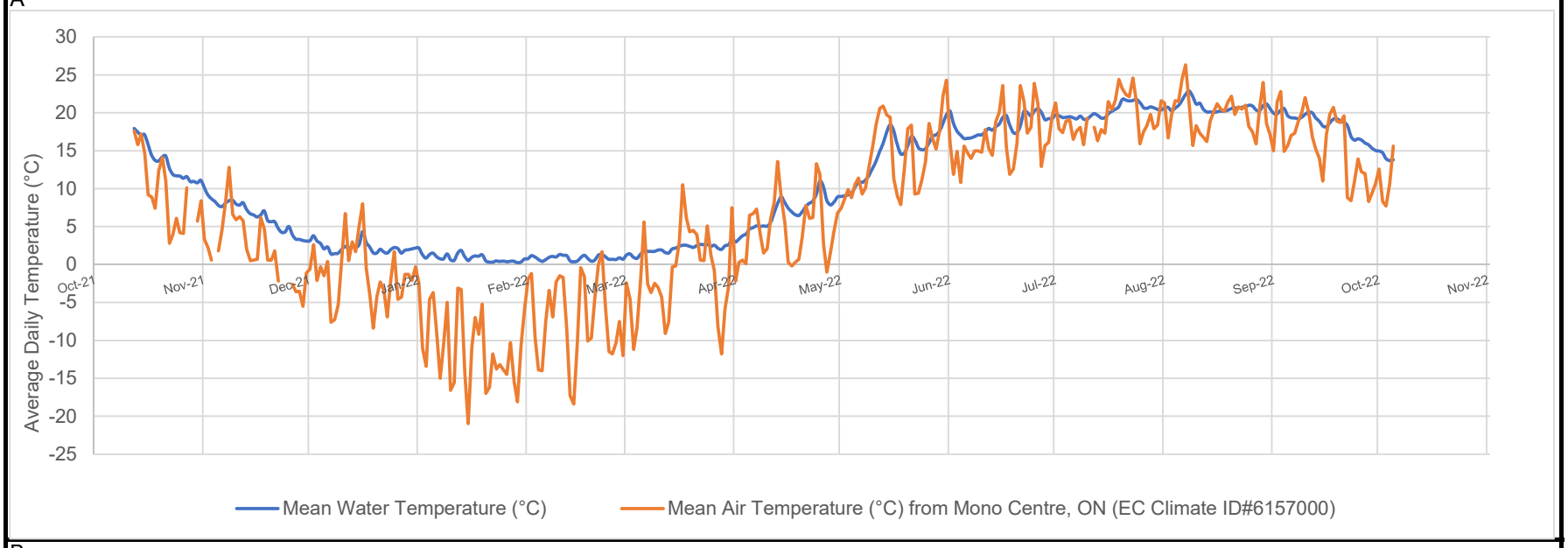
PROJECT: 19129150
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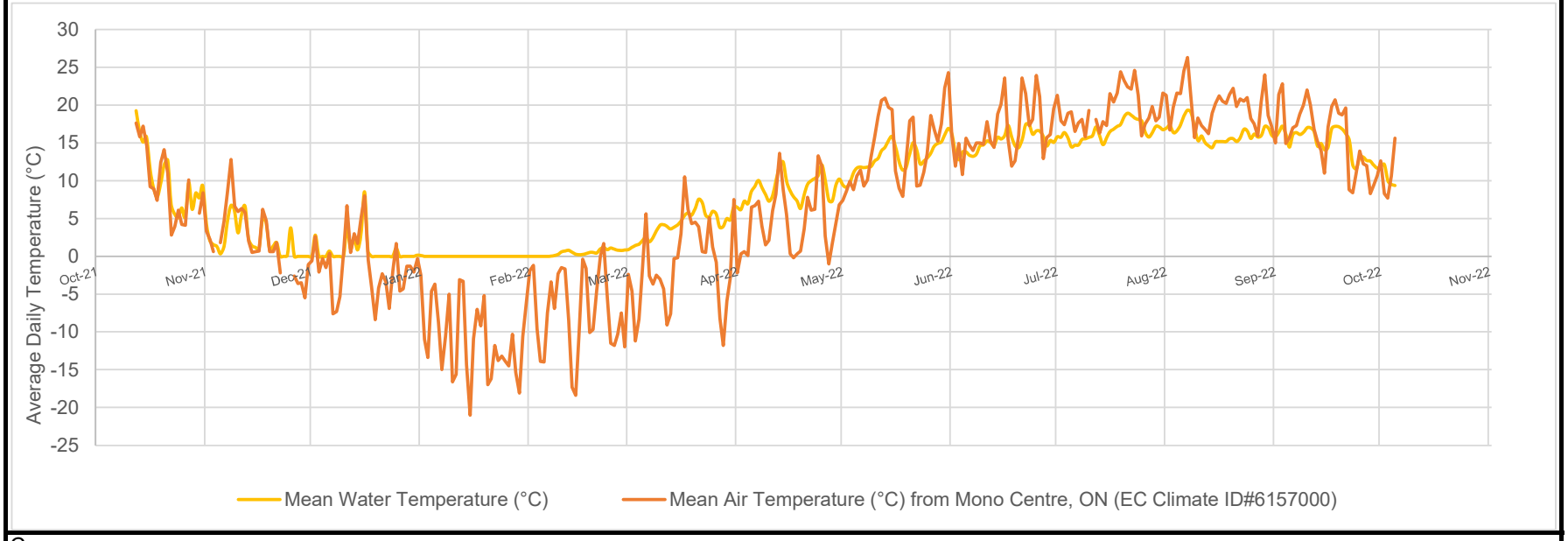
DRAWN: MR
CHECK: CDV

Water Temperatures at Surface Water Stations SW9 - SW12 Adjacent to VCNA License Caledon Quarry (2021 - 2022)	FIGURE M3

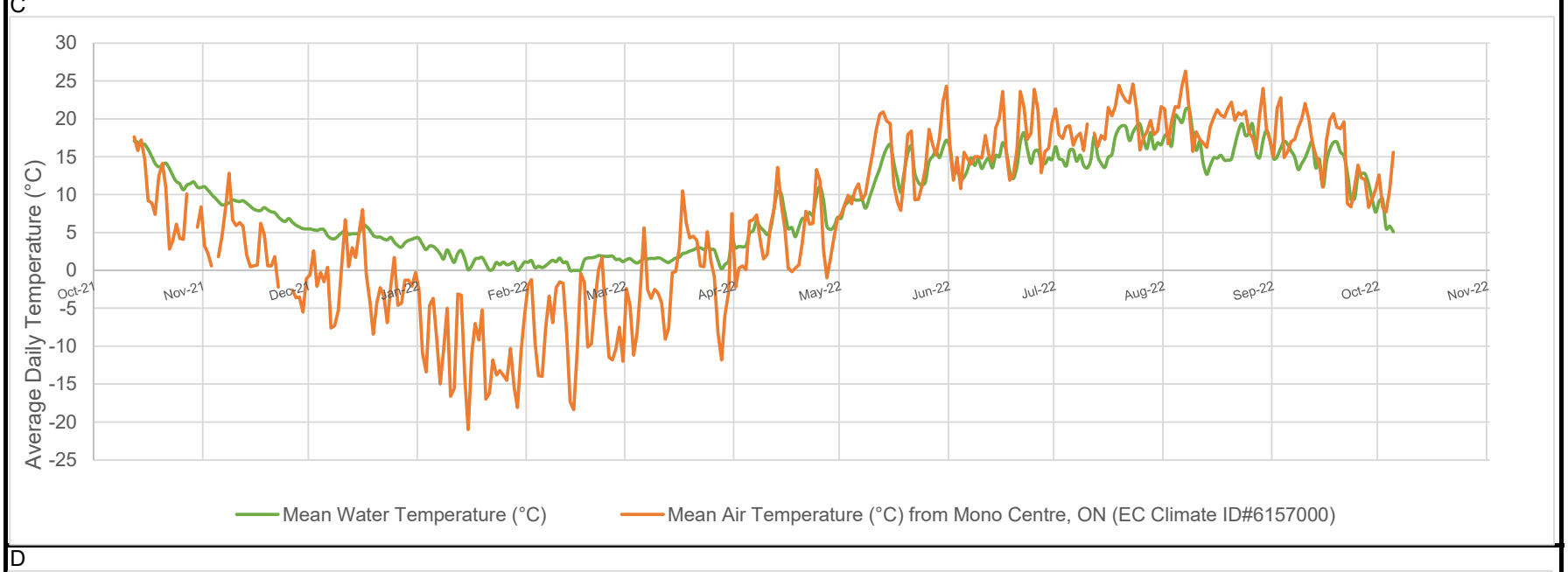
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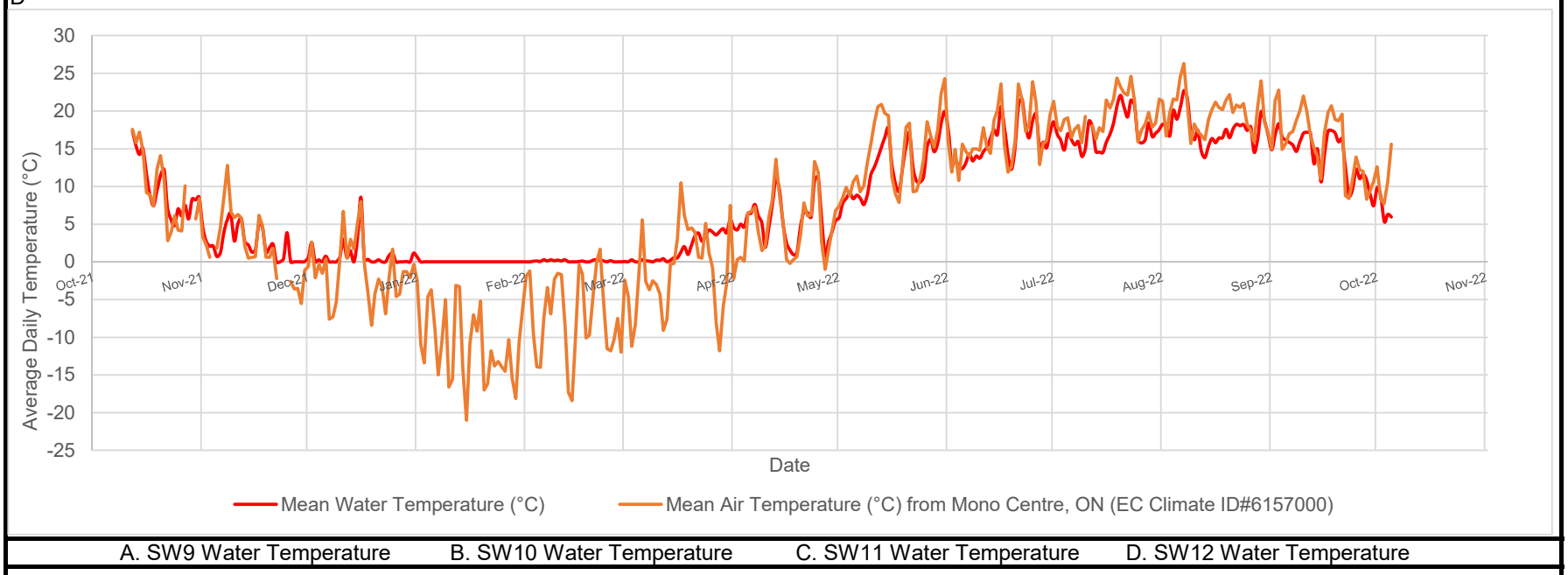
B



C



D



A. SW9 Water Temperature	B. SW10 Water Temperature	C. SW11 Water Temperature	D. SW12 Water Temperature

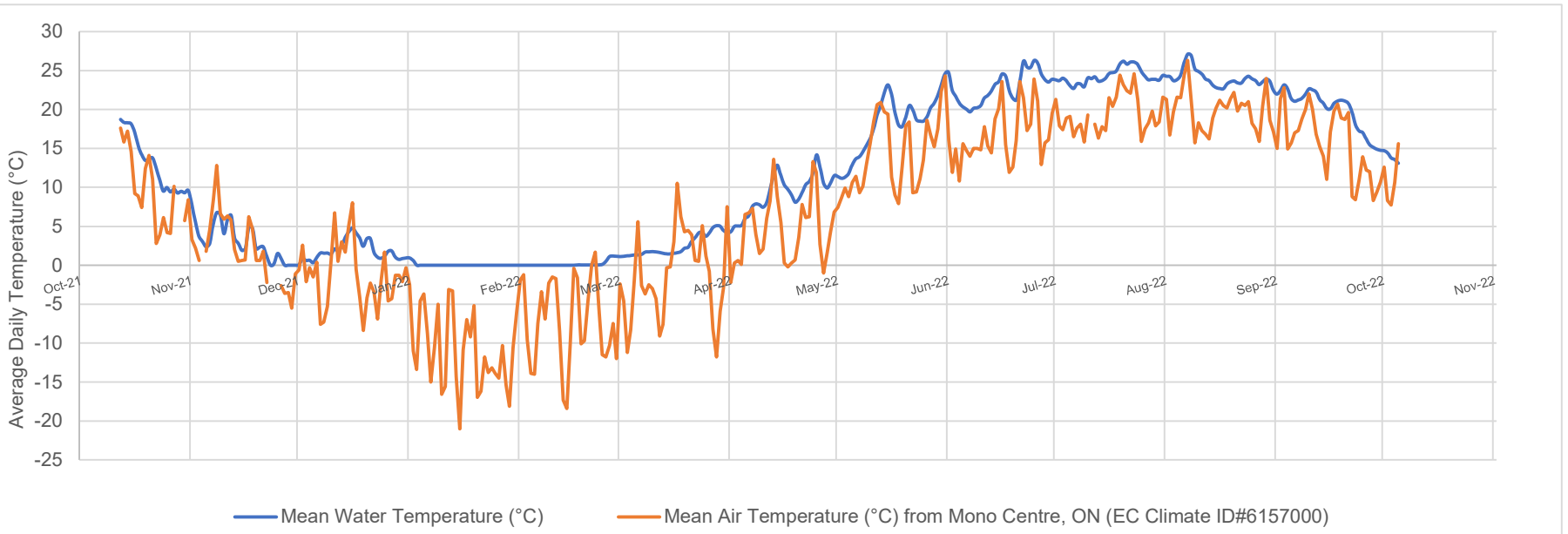
PROJECT: 19129150
DATE: December 2022

GOLDER
MEMBER OF WSP

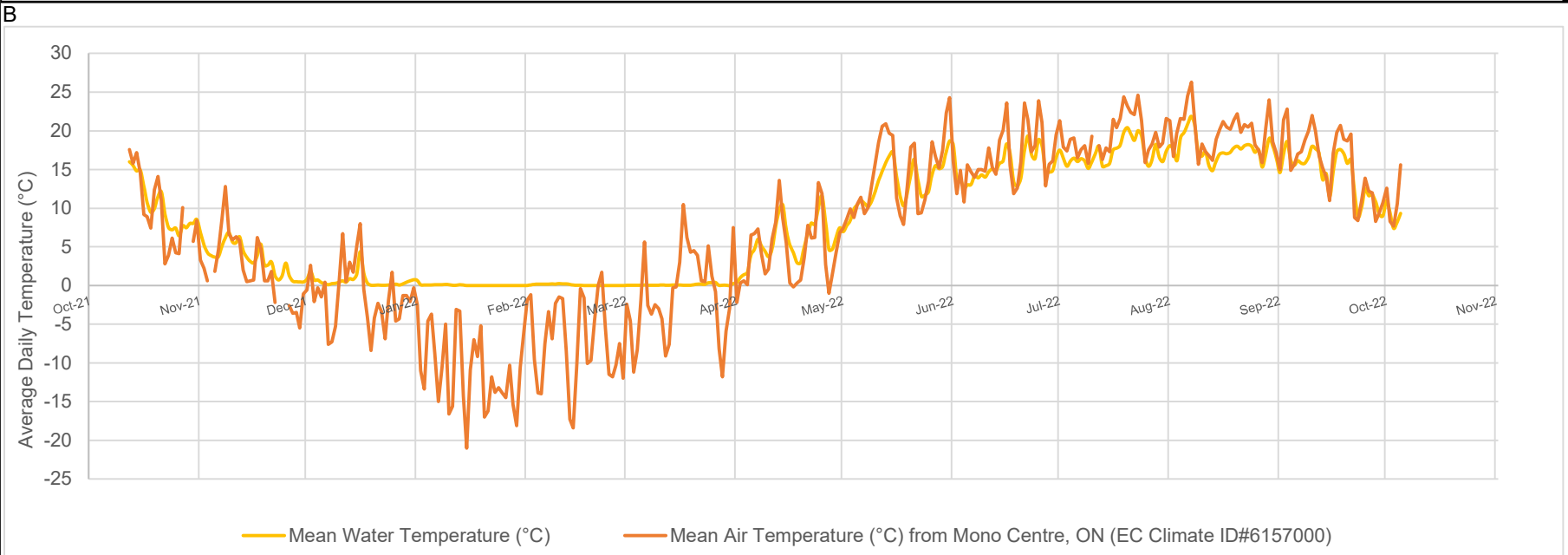
DRAWN: MR
CHECK: CDV

Water Temperatures at Surface Water Stations SW13 - SW16 Adjacent to VCNA License Caledon Quarry (2021 - 2022)	FIGURE M4

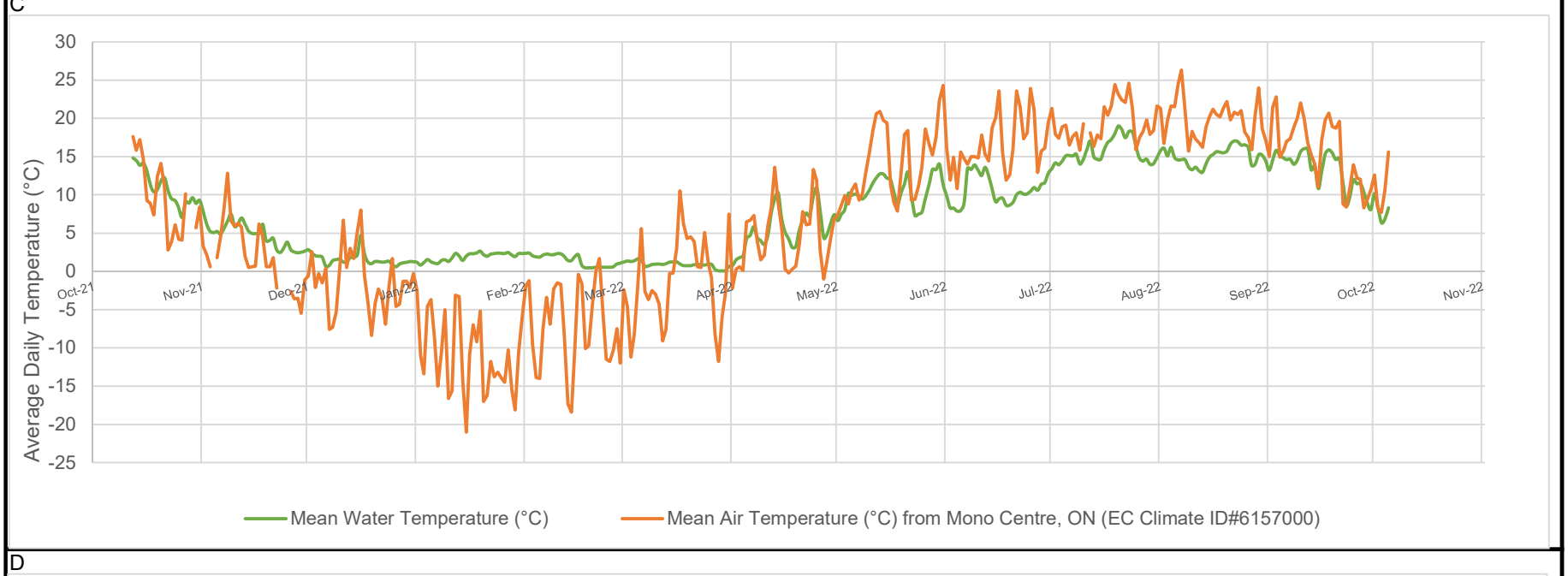
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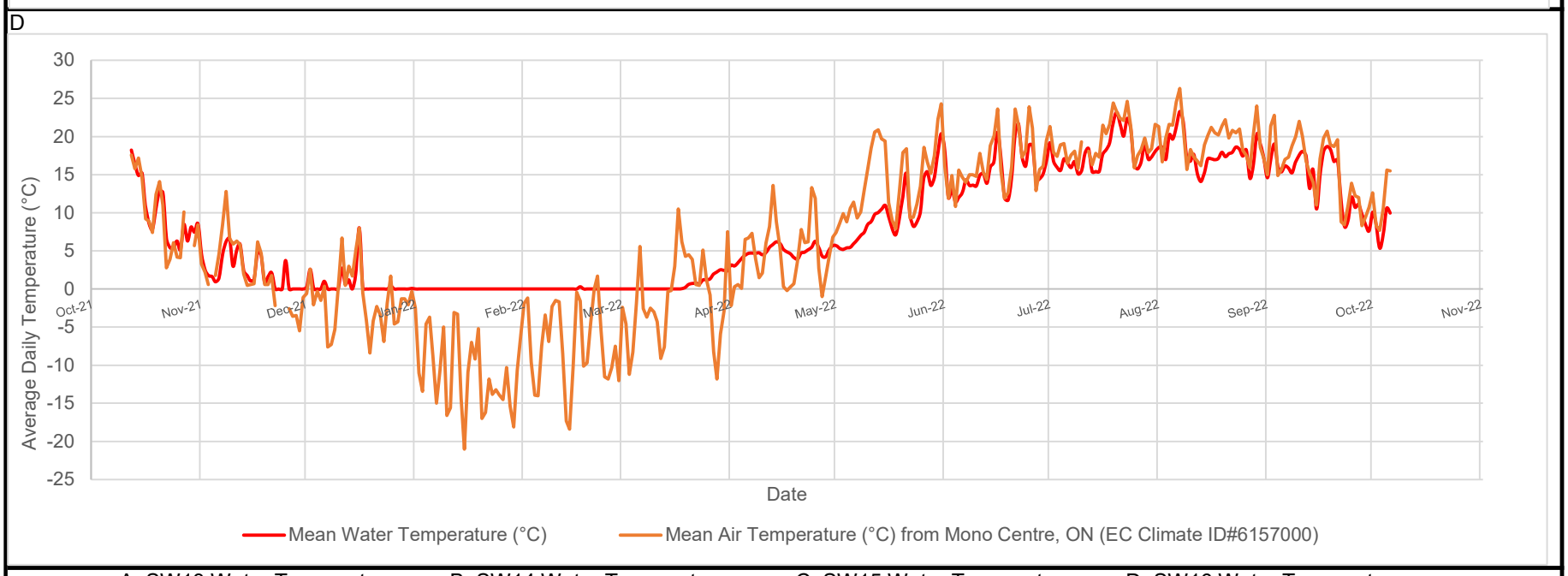
B



C



D



A. SW13 Water Temperature B. SW14 Water Temperature C. SW15 Water Temperature D. SW16 Water Temperature

PROJECT: 19129150
DATE: December 2022

GOLDER
MEMBER OF WSP

DRAWN: MR
CHECK: CDV

APPENDIX N

Surface Water Quality

Table N-1

CBM Caledon Quarry Water Quality Results

Sampling Date			June 8, 2021					September 8, 2021				December 14, 2021				March 24, 2022				
Calculated Parameters	**UNITS**	**PWQO**	**SW8**	**SW9**	**SW10**	**SW11**	**SW13**	**SW8**	**SW9**	**SW11**	**SW13**	**SW8**	**SW9**	**SW11**	**SW13**	**SW8**	**SW9**	**SW10**	**SW11**	**SW13**
Hardness (CaCO3)	mg/L	-	250.00	260.00	250.00	170.00	150.00	190.00	250.00	130.00	220.00	240	270	230	170	220	230	280	230	210
Field Measurements																				
Field Temperature	Celsius	-	25.2	23.6	26.9	22.6	25.1	18.6	21.8	20.5	15.1	1.2	1.9	2.4	1.5	4.3	2.6	5.2	3.0	3.0
Field Measured pH	-	6.5 - 8.5	7.8	8.4	8.1	7.5	8.3	8.1	8.7	8.3	8.3	7.9	8.7	8.4	8.7	8.0	7.8	7.9	7.9	7.8
Field Measured Conductivity	uS/cm	-	812	615	595	407	411	1817	606	305	759	547	615	494	424	627	507	626	465	450
Field Measured Dissolved Oxygen	mg/L	-	7.31	8.33	9.85	4.21	9.62	8.00	8.52	6.25	6.95	10.63	12.30	11.81	14.41	10.12	9.47	10.80	11.06	11.58
Field Measured Turbidity	NTU	-	2.3	6.0	1.2	1.5	1.2	11.1	25.5	7.6	17.3	1.2	3.7	3.4	4.5	0.0	0.8	0.0	5.5	0.3
Inorganics																				
Total Ammonia-N	mg/L	-	<0.050	0.06	<0.050	0.21	<0.050	0.07	<0.050	<0.050	<0.050	<0.050	0.39	0.35	0.13	<0.050	0.099	<0.050	1.2	0.087
Total Phosphorus	mg/L	0.03	0.081	0.028	0.027	0.180	0.027	0.064	0.020	0.120	0.025	0.024	0.016	0.220	0.007	0.014	0.020	0.008	0.37	0.009
Alkalinity (Total as CaCO3)	mg/L	-	240.00	230.00	180.00	160.00	140.00	170.00	210.00	120.00	180.00	200	230	220	150	200	200	240	210	190
Dissolved Chloride (Cl-)	mg/L	-	130.00	44.00	45.00	23.00	39.00	420.00	44.00	21.00	110.00	29	40	19	34	36	30	42	37	31
Nitrite (N)	mg/L	-	<0.010	0.01	<0.010	0.02	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	0.022	0.021	<0.010	<0.010	<0.010	<0.010	0.059	<0.010
Nitrate (N)	mg/L	-	<0.10	0.72	<0.10	<0.10	<0.10	<0.10	0.50	<0.10	0.63	1.7	0.63	0.36	0.10	1.26	1.00	1.08	1.14	0.26
Nitrate + Nitrite (N)	mg/L	-	<0.10	0.74	<0.10	<0.10	<0.10	<0.10	0.50	<0.10	0.63	1.71	0.66	0.38	0.10	1.26	1.00	1.08	1.20	0.26
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.54	0.17	0.46	0.88	0.43	0.50	0.27	0.55	0.24	0.37	0.58	1	0.48	0.20	0.30	0.12	1.6	0.27
Total Suspended Solids	mg/L	-	4.00	13.00	2.00	7.00	4.00	13.00	9.00	14.00	11.00	1	7	8	4	<1	18	<1	5	2
Petroleum Hydrocarbons																				
Total Oil & Grease	mg/L	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.60	0.80	0.70	0.70
Total Metals																				
Aluminum (Al)	ug/L	-	12	21	7	31	7	180	20	32	30	17	24	30	4.9	23	13	7.0	27	18
Antimony (Sb)	ug/L	20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic (As)	ug/L	100	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Barium (Ba)	ug/L	-	16	140	76	19	27	46	130	12	47	16	130	19	28	16	97	63	19	28
Beryllium (Be)	ug/L	11	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bismuth (Bi)	ug/L	-	<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
Boron (B)	ug/L	200	12	27	24	25	10	12	29	22	32	<10	24	16	<10	<10	16	<10	10	<10
Cadmium (Cd)	ug/L	0.2	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Calcium (Ca)	ug/L	-	68000	72000	74000	42000	37000	56000	63000	25000	62000	60000	69000	66000	43000	62000	59000	77000	66000	58000
Chromium (Cr)	ug/L	-	<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
Cobalt (Co)	ug/L	0.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Copper (Cu)	ug/L	5	<0.90	<0.90	<0.90	<0.90	2	3	<0.90	<0.90	1	<0.90	<0.90	1.1	<0.90	<0.90	<0.90	1.8	1.4	<0.90
Iron (Fe)	ug/L	300	1200	<100	<100	730	210	610	<100	170	<100	<100	<100	280	110	<100	<100	<100	290	130
Lead (Pb)	ug/L	5	<0.50	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Lithium (Li)	ug/L	-	<5.0	8	<5.0	<5.0	<5.0	<5.0	9	<5.0	<5.0	<5.0	6.6	<5.0	<5.0	<5.0	5.3	<5.0	<5.0	<5.0
Magnesium (Mg)	ug/L	-	22000	24000	17000	17000	17000	13000	24000	16000	17000	16000	22000	15000	12000	16000	16000	16000	13000	12000
Manganese (Mn)	ug/L	-	110	13	20	420	31	130	8	23	58	3.4	13	65	11	4.6	13	3.9	130	41
Molybdenum (Mo)	ug/L	40	<0.50	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.59	<0.50	<0.50	<0.50
Nickel (Ni)	ug/L	25	<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
Potassium (K)	ug/L	-	690	1500	770	9000	1400	1200	1600	9000	2700	2600	1400	12000	1400	1800	1100	1200	6400	1200
Selenium (Se)	ug/L	100	<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
Silicon (Si)	ug/L	-	2100	3400	7700	890	680	2500	3500	640	2900	3700	5500	1800	2800	2000	3800	3300	2500	2100
Silver (Ag)	ug/L	0.1	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Sodium (Na)	ug/L	-	73000	24000	22000	7800	23000	280000	25000	6100	60000	12000	20000	4700	18000	18000	16000	24000	17000	16000
Strontium (Sr)	ug/L	-	180	240	140	94	120	180	240	81	140	110	230	120	110	110	180	130	100	100
Tellurium (Te)	ug/L	-	<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
Thallium (Tl)	ug/L	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tin (Sn)	ug/L	-	<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
Titanium (Ti)	ug/L	-	<5.0	<5.0	<5.0	<5.0	<5.0	7	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Tungsten (W)	ug/L	30	<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
Uranium (U)	ug/L	5	0	1	0	0	0	0.2	0	<0.10	0	0.65	0.38	0.28	0.2	0.54	0.59	0.19	0.26	0.18
Vanadium (V)	ug/L	6	<0.50	<0.50	1	1	<0.50	1	<0.50	1	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Zinc (Zn)	ug/L	30	<5.0	<5.0	<5.0	<5.0	<5.0	8	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	6.6	<5.0
Zirconium (Zr)	ug/L	4	<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

Note(s):

(1) Shaded (grey) results indicate an exceedance of Ontario Provincial Water Quality Objectives (PWQO).

Entered by: MR
Checked by: CDV

APPENDIX O

Surface Water Lab Certificates

Your Project #: 19129150
Your C.O.C. #: 830687-01-01

Attention: Craig De Vito

Golder Associates Ltd
6925 Century Ave
Suite 100
Mississauga, ON
CANADA L5N 7K2

Report Date: 2021/06/15
Report #: R6676766
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1F8070
Received: 2021/06/09, 07:59

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	5	N/A	2021/06/11	CAM SOP-00448	SM 23 2320 B m
Chloride by Automated Colourimetry	5	N/A	2021/06/11	CAM SOP-00463	SM 23 4500-Cl E m
Hardness (calculated as CaCO3)	5	N/A	2021/06/14	CAM SOP 00102/00408/00447	SM 2340 B
Total Metals Analysis by ICPMS	5	N/A	2021/06/14	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	5	N/A	2021/06/11	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1)	3	N/A	2021/06/11	CAM SOP-00440	SM 23 4500-NO3I/NO2B
Nitrate (NO3) and Nitrite (NO2) in Water (1)	2	N/A	2021/06/14	CAM SOP-00440	SM 23 4500-NO3I/NO2B
Total Oil and Grease	5	2021/06/13	2021/06/13	CAM SOP-00326	EPA1664B m,SM5520B m
Total Kjeldahl Nitrogen in Water	5	2021/06/10	2021/06/11	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	3	2021/06/10	2021/06/11	CAM SOP-00407	SM 23 4500 P B H m
Total Phosphorus (Colourimetric)	2	2021/06/10	2021/06/14	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids	2	2021/06/11	2021/06/14	CAM SOP-00428	SM 23 2540D m
Low Level Total Suspended Solids	3	2021/06/12	2021/06/14	CAM SOP-00428	SM 23 2540D m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope

Your Project #: 19129150
Your C.O.C. #: 830687-01-01

Attention: Craig De Vito

Golder Associates Ltd
6925 Century Ave
Suite 100
Mississauga, ON
CANADA L5N 7K2

Report Date: 2021/06/15
Report #: R6676766
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1F8070
Received: 2021/06/09, 07:59

dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: emese.gitej@bureauveritas.com
Phone# (905)817-5829
==========
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BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C1F8070
Report Date: 2021/06/15

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: BL

RESULTS OF ANALYSES OF WATER

BV Labs ID		PUG858		PUG859			PUG859		
Sampling Date		2021/06/08 14:00		2021/06/08 15:00			2021/06/08 15:00		
COC Number		830687-01-01		830687-01-01			830687-01-01		
	UNITS	SW8	QC Batch	SW9	RDL	QC Batch	SW9 Lab-Dup	RDL	QC Batch
Calculated Parameters									
Hardness (CaCO3)	mg/L	250	7398104	260	1.0	7398104			
Inorganics									
Total Ammonia-N	mg/L	<0.050	7400379	0.055	0.050	7401360	<0.050	0.050	7401360
Total Kjeldahl Nitrogen (TKN)	mg/L	0.54	7401057	0.17	0.10	7401057			
Total Phosphorus	mg/L	0.081	7400351	0.028	0.004	7400351			
Total Suspended Solids	mg/L	4	7404824	13	1	7400752			
Alkalinity (Total as CaCO3)	mg/L	240	7401873	230	1.0	7401873			
Dissolved Chloride (Cl-)	mg/L	130	7401927	44	1.0	7401927			
Nitrite (N)	mg/L	<0.010	7401889	0.014	0.010	7401903			
Nitrate (N)	mg/L	<0.10	7401889	0.72	0.10	7401903			
Nitrate + Nitrite (N)	mg/L	<0.10	7401889	0.74	0.10	7401903			
Petroleum Hydrocarbons									
Total Oil & Grease	mg/L	<0.50	7405212	<0.50	0.50	7405212			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1F8070
Report Date: 2021/06/15

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: BL

RESULTS OF ANALYSES OF WATER

BV Labs ID		PUG860			PUG861			PUG862		
Sampling Date		2021/06/08 15:45			2021/06/08 12:15			2021/06/08 11:00		
COC Number		830687-01-01			830687-01-01			830687-01-01		
	UNITS	SW10	RDL	QC Batch	SW11	RDL	QC Batch	SW13	RDL	QC Batch
Calculated Parameters										
Hardness (CaCO3)	mg/L	250	1.0	7398104	170	1.0	7398104	150	1.0	7398104
Inorganics										
Total Ammonia-N	mg/L	<0.050	0.050	7400379	0.21	0.050	7400379	<0.050	0.050	7400379
Total Kjeldahl Nitrogen (TKN)	mg/L	0.46	0.10	7401057	0.88	0.10	7401057	0.43	0.10	7401057
Total Phosphorus	mg/L	0.027	0.004	7400351	0.18	0.02	7400351	0.027	0.004	7400351
Total Suspended Solids	mg/L	2	1	7400752	7	1	7404824	4	1	7404824
Alkalinity (Total as CaCO3)	mg/L	180	1.0	7401873	160	1.0	7401873	140	1.0	7401873
Dissolved Chloride (Cl-)	mg/L	45	1.0	7401927	23	1.0	7401927	39	1.0	7401927
Nitrite (N)	mg/L	<0.010	0.010	7401889	0.022	0.010	7401889	<0.010	0.010	7401903
Nitrate (N)	mg/L	<0.10	0.10	7401889	<0.10	0.10	7401889	<0.10	0.10	7401903
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	7401889	<0.10	0.10	7401889	<0.10	0.10	7401903
Petroleum Hydrocarbons										
Total Oil & Grease	mg/L	<0.50	0.50	7405212	<0.50	0.50	7405212	<0.50	0.50	7405212

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		PUG862		
Sampling Date		2021/06/08 11:00		
COC Number		830687-01-01		
	UNITS	SW13 Lab-Dup	RDL	QC Batch
Inorganics				
Total Phosphorus	mg/L	0.026	0.004	7400351
Dissolved Chloride (Cl-)	mg/L	40	1.0	7401927

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		PUG858	PUG859	PUG860	PUG861	PUG862		
Sampling Date		2021/06/08 14:00	2021/06/08 15:00	2021/06/08 15:45	2021/06/08 12:15	2021/06/08 11:00		
COC Number		830687-01-01	830687-01-01	830687-01-01	830687-01-01	830687-01-01		
	UNITS	SW8	SW9	SW10	SW11	SW13	RDL	QC Batch
Metals								
Total Aluminum (Al)	ug/L	12	21	6.7	31	6.5	4.9	7405528
Total Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	7405528
Total Arsenic (As)	ug/L	<1.0	<1.0	<1.0	1.4	<1.0	1.0	7405528
Total Barium (Ba)	ug/L	16	140	76	19	27	2.0	7405528
Total Beryllium (Be)	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7405528
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7405528
Total Boron (B)	ug/L	12	27	24	25	10	10	7405528
Total Cadmium (Cd)	ug/L	<0.090	<0.090	<0.090	<0.090	<0.090	0.090	7405528
Total Calcium (Ca)	ug/L	68000	72000	74000	42000	37000	200	7405528
Total Chromium (Cr)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	7405528
Total Cobalt (Co)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	7405528
Total Copper (Cu)	ug/L	<0.90	<0.90	<0.90	<0.90	1.5	0.90	7405528
Total Iron (Fe)	ug/L	1200	<100	<100	730	210	100	7405528
Total Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	7405528
Total Lithium (Li)	ug/L	<5.0	7.8	<5.0	<5.0	<5.0	5.0	7405528
Total Magnesium (Mg)	ug/L	22000	24000	17000	17000	17000	50	7405528
Total Manganese (Mn)	ug/L	110	13	20	420	31	2.0	7405528
Total Molybdenum (Mo)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	7405528
Total Nickel (Ni)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7405528
Total Potassium (K)	ug/L	690	1500	770	9000	1400	200	7405528
Total Selenium (Se)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	7405528
Total Silicon (Si)	ug/L	2100	3400	7700	890	680	50	7405528
Total Silver (Ag)	ug/L	<0.090	<0.090	<0.090	<0.090	<0.090	0.090	7405528
Total Sodium (Na)	ug/L	73000	24000	22000	7800	23000	100	7405528
Total Strontium (Sr)	ug/L	180	240	140	94	120	1.0	7405528
Total Tellurium (Te)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7405528
Total Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	7405528
Total Tin (Sn)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7405528
Total Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	7405528
Total Tungsten (W)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7405528
Total Uranium (U)	ug/L	0.12	0.50	0.22	0.20	0.21	0.10	7405528

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1F8070
Report Date: 2021/06/15

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: BL

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		PUG858	PUG859	PUG860	PUG861	PUG862		
Sampling Date		2021/06/08 14:00	2021/06/08 15:00	2021/06/08 15:45	2021/06/08 12:15	2021/06/08 11:00		
COC Number		830687-01-01	830687-01-01	830687-01-01	830687-01-01	830687-01-01		
	UNITS	SW8	SW9	SW10	SW11	SW13	RDL	QC Batch
Total Vanadium (V)	ug/L	<0.50	<0.50	0.54	0.57	<0.50	0.50	7405528
Total Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	7405528
Total Zirconium (Zr)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7405528

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: PUG858
Sample ID: SW8
Matrix: Water

Collected: 2021/06/08
Shipped:
Received: 2021/06/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7401873	N/A	2021/06/11	Surinder Rai
Chloride by Automated Colourimetry	KONE	7401927	N/A	2021/06/11	Alina Dobreanu
Hardness (calculated as CaCO3)		7398104	N/A	2021/06/14	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7405528	N/A	2021/06/14	Prempal Bhatti
Total Ammonia-N	LACH/NH4	7400379	N/A	2021/06/11	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7401889	N/A	2021/06/11	Chandra Nandlal
Total Oil and Grease	BAL	7405212	2021/06/13	2021/06/13	Mitul Patel
Total Kjeldahl Nitrogen in Water	SKAL	7401057	2021/06/10	2021/06/11	Rajni Tyagi
Total Phosphorus (Colourimetric)	LACH/P	7400351	2021/06/10	2021/06/14	Shivani Shivani
Low Level Total Suspended Solids	BAL	7404824	2021/06/12	2021/06/14	Sandeep Kaur

BV Labs ID: PUG859
Sample ID: SW9
Matrix: Water

Collected: 2021/06/08
Shipped:
Received: 2021/06/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7401873	N/A	2021/06/11	Surinder Rai
Chloride by Automated Colourimetry	KONE	7401927	N/A	2021/06/11	Alina Dobreanu
Hardness (calculated as CaCO3)		7398104	N/A	2021/06/14	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7405528	N/A	2021/06/14	Prempal Bhatti
Total Ammonia-N	LACH/NH4	7401360	N/A	2021/06/11	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7401903	N/A	2021/06/14	Chandra Nandlal
Total Oil and Grease	BAL	7405212	2021/06/13	2021/06/13	Mitul Patel
Total Kjeldahl Nitrogen in Water	SKAL	7401057	2021/06/10	2021/06/11	Rajni Tyagi
Total Phosphorus (Colourimetric)	LACH/P	7400351	2021/06/10	2021/06/11	Shivani Shivani
Low Level Total Suspended Solids	BAL	7400752	2021/06/11	2021/06/14	Sandeep Kaur

BV Labs ID: PUG859 Dup
Sample ID: SW9
Matrix: Water

Collected: 2021/06/08
Shipped:
Received: 2021/06/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Ammonia-N	LACH/NH4	7401360	N/A	2021/06/11	Amanpreet Sappal

BV Labs ID: PUG860
Sample ID: SW10
Matrix: Water

Collected: 2021/06/08
Shipped:
Received: 2021/06/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7401873	N/A	2021/06/11	Surinder Rai
Chloride by Automated Colourimetry	KONE	7401927	N/A	2021/06/11	Alina Dobreanu
Hardness (calculated as CaCO3)		7398104	N/A	2021/06/14	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7405528	N/A	2021/06/14	Prempal Bhatti
Total Ammonia-N	LACH/NH4	7400379	N/A	2021/06/11	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7401889	N/A	2021/06/11	Chandra Nandlal

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TEST SUMMARY

BV Labs ID: PUG860
Sample ID: SW10
Matrix: Water

Collected: 2021/06/08
Shipped:
Received: 2021/06/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Oil and Grease	BAL	7405212	2021/06/13	2021/06/13	Mitul Patel
Total Kjeldahl Nitrogen in Water	SKAL	7401057	2021/06/10	2021/06/11	Rajni Tyagi
Total Phosphorus (Colourimetric)	LACH/P	7400351	2021/06/10	2021/06/11	Shivani Shivani
Low Level Total Suspended Solids	BAL	7400752	2021/06/11	2021/06/14	Sandeep Kaur

BV Labs ID: PUG861
Sample ID: SW11
Matrix: Water

Collected: 2021/06/08
Shipped:
Received: 2021/06/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7401873	N/A	2021/06/11	Surinder Rai
Chloride by Automated Colourimetry	KONE	7401927	N/A	2021/06/11	Alina Dobreanu
Hardness (calculated as CaCO3)		7398104	N/A	2021/06/14	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7405528	N/A	2021/06/14	Prempal Bhatti
Total Ammonia-N	LACH/NH4	7400379	N/A	2021/06/11	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7401889	N/A	2021/06/11	Chandra Nandlal
Total Oil and Grease	BAL	7405212	2021/06/13	2021/06/13	Mitul Patel
Total Kjeldahl Nitrogen in Water	SKAL	7401057	2021/06/10	2021/06/11	Rajni Tyagi
Total Phosphorus (Colourimetric)	LACH/P	7400351	2021/06/10	2021/06/14	Shivani Shivani
Low Level Total Suspended Solids	BAL	7404824	2021/06/12	2021/06/14	Sandeep Kaur

BV Labs ID: PUG862
Sample ID: SW13
Matrix: Water

Collected: 2021/06/08
Shipped:
Received: 2021/06/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7401873	N/A	2021/06/11	Surinder Rai
Chloride by Automated Colourimetry	KONE	7401927	N/A	2021/06/11	Alina Dobreanu
Hardness (calculated as CaCO3)		7398104	N/A	2021/06/14	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7405528	N/A	2021/06/14	Prempal Bhatti
Total Ammonia-N	LACH/NH4	7400379	N/A	2021/06/11	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7401903	N/A	2021/06/14	Chandra Nandlal
Total Oil and Grease	BAL	7405212	2021/06/13	2021/06/13	Mitul Patel
Total Kjeldahl Nitrogen in Water	SKAL	7401057	2021/06/10	2021/06/11	Rajni Tyagi
Total Phosphorus (Colourimetric)	LACH/P	7400351	2021/06/10	2021/06/11	Shivani Shivani
Low Level Total Suspended Solids	BAL	7404824	2021/06/12	2021/06/14	Sandeep Kaur

BV Labs ID: PUG862 Dup
Sample ID: SW13
Matrix: Water

Collected: 2021/06/08
Shipped:
Received: 2021/06/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	7401927	N/A	2021/06/11	Alina Dobreanu
Total Phosphorus (Colourimetric)	LACH/P	7400351	2021/06/10	2021/06/11	Shivani Shivani

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1F8070
Report Date: 2021/06/15

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: BL

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	-0.3°C
Package 2	0.7°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1F8070
Report Date: 2021/06/15

QUALITY ASSURANCE REPORT

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: BL

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7400351	Total Phosphorus	2021/06/11	102	80 - 120	101	80 - 120	<0.004	mg/L	0.38	20	96	80 - 120
7400379	Total Ammonia-N	2021/06/11	86	75 - 125	103	80 - 120	<0.050	mg/L	0.48	20		
7400752	Total Suspended Solids	2021/06/14					<1	mg/L	3.6	25	98	85 - 115
7401057	Total Kjeldahl Nitrogen (TKN)	2021/06/11	NC	80 - 120	95	80 - 120	<0.10	mg/L	1.1	20	94	80 - 120
7401360	Total Ammonia-N	2021/06/11	97	75 - 125	100	80 - 120	<0.050	mg/L	10	20		
7401873	Alkalinity (Total as CaCO3)	2021/06/11			96	85 - 115	<1.0	mg/L	1.0	20		
7401889	Nitrate (N)	2021/06/11	97	80 - 120	97	80 - 120	<0.10	mg/L	0.76	20		
7401889	Nitrite (N)	2021/06/11	100	80 - 120	101	80 - 120	<0.010	mg/L	NC	20		
7401903	Nitrate (N)	2021/06/14	99	80 - 120	100	80 - 120	<0.10	mg/L	NC	20		
7401903	Nitrite (N)	2021/06/14	105	80 - 120	106	80 - 120	<0.010	mg/L	NC	20		
7401927	Dissolved Chloride (Cl-)	2021/06/11	NC	80 - 120	105	80 - 120	<1.0	mg/L	1.2	20		
7404824	Total Suspended Solids	2021/06/14					<1	mg/L	6.1	25	96	85 - 115
7405212	Total Oil & Grease	2021/06/13			98	85 - 115	<0.50	mg/L	1.0	25		
7405528	Total Aluminum (Al)	2021/06/14	NC	80 - 120	95	80 - 120	<4.9	ug/L	3.5	20		
7405528	Total Antimony (Sb)	2021/06/14	101	80 - 120	99	80 - 120	<0.50	ug/L				
7405528	Total Arsenic (As)	2021/06/14	98	80 - 120	98	80 - 120	<1.0	ug/L				
7405528	Total Barium (Ba)	2021/06/14	95	80 - 120	96	80 - 120	<2.0	ug/L				
7405528	Total Beryllium (Be)	2021/06/14	99	80 - 120	95	80 - 120	<0.40	ug/L				
7405528	Total Bismuth (Bi)	2021/06/14	103	80 - 120	99	80 - 120	<1.0	ug/L				
7405528	Total Boron (B)	2021/06/14	95	80 - 120	92	80 - 120	<10	ug/L				
7405528	Total Cadmium (Cd)	2021/06/14	99	80 - 120	99	80 - 120	<0.090	ug/L	7.2	20		
7405528	Total Calcium (Ca)	2021/06/14	NC	80 - 120	98	80 - 120	<200	ug/L				
7405528	Total Chromium (Cr)	2021/06/14	93	80 - 120	92	80 - 120	<5.0	ug/L	2.6	20		
7405528	Total Cobalt (Co)	2021/06/14	101	80 - 120	98	80 - 120	<0.50	ug/L				
7405528	Total Copper (Cu)	2021/06/14	100	80 - 120	99	80 - 120	<0.90	ug/L	3.2	20		
7405528	Total Iron (Fe)	2021/06/14	96	80 - 120	96	80 - 120	<100	ug/L	0.68	20		
7405528	Total Lead (Pb)	2021/06/14	102	80 - 120	99	80 - 120	<0.50	ug/L	9.6	20		
7405528	Total Lithium (Li)	2021/06/14	102	80 - 120	96	80 - 120	<5.0	ug/L				
7405528	Total Magnesium (Mg)	2021/06/14	95	80 - 120	98	80 - 120	<50	ug/L				
7405528	Total Manganese (Mn)	2021/06/14	95	80 - 120	95	80 - 120	<2.0	ug/L				
7405528	Total Molybdenum (Mo)	2021/06/14	98	80 - 120	96	80 - 120	<0.50	ug/L				

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7405528	Total Nickel (Ni)	2021/06/14	96	80 - 120	96	80 - 120	<1.0	ug/L	8.2	20		
7405528	Total Potassium (K)	2021/06/14	92	80 - 120	96	80 - 120	<200	ug/L				
7405528	Total Selenium (Se)	2021/06/14	90	80 - 120	102	80 - 120	<2.0	ug/L				
7405528	Total Silicon (Si)	2021/06/14	97	80 - 120	96	80 - 120	<50	ug/L				
7405528	Total Silver (Ag)	2021/06/14	98	80 - 120	99	80 - 120	<0.090	ug/L				
7405528	Total Sodium (Na)	2021/06/14	NC	80 - 120	97	80 - 120	<100	ug/L				
7405528	Total Strontium (Sr)	2021/06/14	93	80 - 120	94	80 - 120	<1.0	ug/L				
7405528	Total Tellurium (Te)	2021/06/14	95	80 - 120	99	80 - 120	<1.0	ug/L				
7405528	Total Thallium (Tl)	2021/06/14	102	80 - 120	101	80 - 120	<0.050	ug/L				
7405528	Total Tin (Sn)	2021/06/14	98	80 - 120	98	80 - 120	<1.0	ug/L				
7405528	Total Titanium (Ti)	2021/06/14	93	80 - 120	96	80 - 120	<5.0	ug/L				
7405528	Total Tungsten (W)	2021/06/14	104	80 - 120	101	80 - 120	<1.0	ug/L				
7405528	Total Uranium (U)	2021/06/14	104	80 - 120	99	80 - 120	<0.10	ug/L				
7405528	Total Vanadium (V)	2021/06/14	95	80 - 120	93	80 - 120	<0.50	ug/L				
7405528	Total Zinc (Zn)	2021/06/14	100	80 - 120	102	80 - 120	<5.0	ug/L	0.83	20		
7405528	Total Zirconium (Zr)	2021/06/14	65 (1)	80 - 120	96	80 - 120	<1.0	ug/L				

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

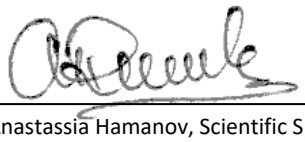
(1) Matrix spike exceedes aceptance limits, probable matrix interference

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

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Bureau Veritas Laboratories
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CHAIN OF CUSTODY RECORD

Page | of

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#1326 Golder Associates Ltd	Company Name:		Quotation #:	B80683	BV Labs Job #:	Bottle Order #:
Attention:	Accounts Payable	Attention:	Craig De Vito	P.O. #:			830687
Address:	6925 Century Ave Suite 100 Mississauga ON L5N 7K2	Address:		Project:	19129150	COC #:	Project Manager:
Tel:	(905) 567-4444 Fax: (905) 567-6561	Tel:	(905) 567-6100 Ext: 1507 Fax:	Project Name:		C#830687-01-01	Ema Gitej
Email:	CanadaAccountsPayableInvoices@golder.com	Email:	Craig_DeVito@golder.com	Site #:			
				Sampled By:	B. LINGELBACH		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☐ Res/Park ☐ Medium/Fine; ☐ Table 2 ☐ Ind/Comm ☐ Coarse; ☐ Table 3 ☐ Agri/Other ☐ For RSC; ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw; ☐ Reg 558 ☐ Storm Sewer Bylaw; ☐ MISA Municipality ___; ☐ PWQO ☐ Reg 406 Table ___; ☐ Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? N

Field Filtered (please circle): Metals / Hg / Cr VI

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Total Metals Analysis by ICPMS	Chloride, Nitrate & Nitrite	Total Ammonia-N, TKN, Total P	Alkalinity, Hardness	Low Level Total Suspended Solids	Total Oil and Grease	# of Bottles	Comments
1		SW 8	2021-06-08	14:00	SW	Y	Y	Y	Y	Y	Y	6	
2		SW 9	"	15:00	SW	Y	Y	Y	Y	Y	Y	6	
3		SW 10	"	15:45	SW	Y	Y	Y	Y	Y	Y	6	
4		SW 11	"	12:15	SW	Y	Y	Y	Y	Y	Y	6	
5		SW 13	"	11:00	SW	Y	Y	Y	Y	Y	Y	6	
6													
7													
8													
9													
10													

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: Y
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___
Rush Confirmation Number: ___ *(call lab for #)*

09-Jun-21 07:59
Ema Gitej
C1F8070
AE2 ENV-1324

REC'D IN WATERLOO

Ice Melted

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only: Time Sensitive	Temperature (°C) on Recei	Custody Seal Present	Yes	No
K. EASTON	21/06/08	17:20	JASPREET KAUR	2021/06/09	7:59			-1.1 0.1 0.1	Intact	Y	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

KAVITHASELVAN 2021/06/09 16:02 BV # B213 1/1/2

Your Project #: 19129150
Your C.O.C. #: 845006-01-01

Attention: Craig De Vito

Golder Associates Ltd
6925 Century Ave
Suite 100
Mississauga, ON
CANADA L5N 7K2

Report Date: 2021/09/14
Report #: R6810615
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1P7686
Received: 2021/09/08, 16:40

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	2	N/A	2021/09/11	CAM SOP-00448	SM 23 2320 B m
Alkalinity	2	N/A	2021/09/14	CAM SOP-00448	SM 23 2320 B m
Chloride by Automated Colourimetry	4	N/A	2021/09/13	CAM SOP-00463	SM 23 4500-Cl E m
Hardness (calculated as CaCO3)	4	N/A	2021/09/14	CAM SOP 00102/00408/00447	SM 2340 B
Total Metals Analysis by ICPMS	4	N/A	2021/09/10	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	4	N/A	2021/09/11	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1)	4	N/A	2021/09/10	CAM SOP-00440	SM 23 4500-NO3I/NO2B
Total Oil and Grease	4	2021/09/11	2021/09/11	CAM SOP-00326	EPA1664B m,SM5520B m
Total Kjeldahl Nitrogen in Water	1	2021/09/10	2021/09/13	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	3	2021/09/09	2021/09/13	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	1	2021/09/10	2021/09/10	CAM SOP-00407	SM 23 4500 P B H m
Total Phosphorus (Colourimetric)	1	2021/09/10	2021/09/13	CAM SOP-00407	SM 23 4500 P B H m
Total Phosphorus (Colourimetric)	2	2021/09/10	2021/09/14	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids	4	2021/09/10	2021/09/13	CAM SOP-00428	SM 23 2540D m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Your Project #: 19129150
Your C.O.C. #: 845006-01-01

Attention: Craig De Vito

Golder Associates Ltd
6925 Century Ave
Suite 100
Mississauga, ON
CANADA L5N 7K2

Report Date: 2021/09/14
Report #: R6810615
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1P7686
Received: 2021/09/08, 16:40

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: emese.gitej@bureauveritas.com
Phone# (905)817-5829

==========

This report has been generated and distributed using a secure automated process.
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C1P7686
Report Date: 2021/09/14

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: AK

RESULTS OF ANALYSES OF WATER

BV Labs ID		QPC693			QPC693			QPC694		
Sampling Date		2021/09/08 08:45			2021/09/08 08:45			2021/09/08 10:00		
COC Number		845006-01-01			845006-01-01			845006-01-01		
	UNITS	SW 13	RDL	QC Batch	SW 13 Lab-Dup	RDL	QC Batch	SW 11	RDL	QC Batch
Calculated Parameters										
Hardness (CaCO3)	mg/L	220	1.0	7564190				130	1.0	7564190
Inorganics										
Total Ammonia-N	mg/L	<0.050	0.050	7571013				<0.050	0.050	7571013
Total Kjeldahl Nitrogen (TKN)	mg/L	0.24	0.10	7567963				0.55	0.10	7567963
Total Phosphorus	mg/L	0.025	0.004	7570124	0.027	0.004	7570124	0.12	0.02	7570124
Total Suspended Solids	mg/L	11	1	7568700				14	1	7568700
Alkalinity (Total as CaCO3)	mg/L	180	1.0	7569431				120	1.0	7569431
Dissolved Chloride (Cl-)	mg/L	110	1.0	7569572	100	1.0	7569572	21	1.0	7569572
Nitrite (N)	mg/L	<0.010	0.010	7569473				<0.010	0.010	7569473
Nitrate (N)	mg/L	0.63	0.10	7569473				<0.10	0.10	7569473
Nitrate + Nitrite (N)	mg/L	0.63	0.10	7569473				<0.10	0.10	7569473
Petroleum Hydrocarbons										
Total Oil & Grease	mg/L	<0.50	0.50	7572204				<0.50	0.50	7572204

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1P7686
Report Date: 2021/09/14

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: AK

RESULTS OF ANALYSES OF WATER

BV Labs ID		QPC695			QPC696			QPC696		
Sampling Date		2021/09/08 13:45			2021/09/08 15:00			2021/09/08 15:00		
COC Number		845006-01-01			845006-01-01			845006-01-01		
	UNITS	SW 8	RDL	QC Batch	SW 9	RDL	QC Batch	SW 9 Lab-Dup	RDL	QC Batch
Calculated Parameters										
Hardness (CaCO3)	mg/L	190	1.0	7564190	250	1.0	7564190			
Inorganics										
Total Ammonia-N	mg/L	0.066	0.050	7571013	<0.050	0.050	7571013			
Total Kjeldahl Nitrogen (TKN)	mg/L	0.50	0.10	7570411	0.27	0.10	7567963			
Total Phosphorus	mg/L	0.064	0.004	7570124	0.020	0.004	7569427	0.019	0.004	7569427
Total Suspended Solids	mg/L	13	1	7568700	9	1	7568700			
Alkalinity (Total as CaCO3)	mg/L	170	1.0	7571045	210	1.0	7571045			
Dissolved Chloride (Cl-)	mg/L	420	5.0	7569572	44	1.0	7569572			
Nitrite (N)	mg/L	<0.010	0.010	7569473	<0.010	0.010	7569473	<0.010	0.010	7569473
Nitrate (N)	mg/L	<0.10	0.10	7569473	0.50	0.10	7569473	0.50	0.10	7569473
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	7569473	0.50	0.10	7569473	0.50	0.10	7569473
Petroleum Hydrocarbons										
Total Oil & Grease	mg/L	<0.50	0.50	7572204	<0.50	0.50	7572204			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		QPC693	QPC694	QPC695	QPC696		
Sampling Date		2021/09/08 08:45	2021/09/08 10:00	2021/09/08 13:45	2021/09/08 15:00		
COC Number		845006-01-01	845006-01-01	845006-01-01	845006-01-01		
	UNITS	SW 13	SW 11	SW 8	SW 9	RDL	QC Batch
Metals							
Total Aluminum (Al)	ug/L	30	32	180	20	4.9	7569728
Total Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7569728
Total Arsenic (As)	ug/L	<1.0	1.2	<1.0	<1.0	1.0	7569728
Total Barium (Ba)	ug/L	47	12	46	130	2.0	7569728
Total Beryllium (Be)	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	7569728
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	7569728
Total Boron (B)	ug/L	32	22	12	29	10	7569728
Total Cadmium (Cd)	ug/L	<0.090	<0.090	<0.090	<0.090	0.090	7569728
Total Calcium (Ca)	ug/L	62000	25000	56000	63000	200	7569728
Total Chromium (Cr)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	7569728
Total Cobalt (Co)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7569728
Total Copper (Cu)	ug/L	1.3	<0.90	3.1	<0.90	0.90	7569728
Total Iron (Fe)	ug/L	<100	170	610	<100	100	7569728
Total Lead (Pb)	ug/L	<0.50	<0.50	0.61	<0.50	0.50	7569728
Total Lithium (Li)	ug/L	<5.0	<5.0	<5.0	8.9	5.0	7569728
Total Magnesium (Mg)	ug/L	17000	16000	13000	24000	50	7569728
Total Manganese (Mn)	ug/L	58	23	130	7.6	2.0	7569728
Total Molybdenum (Mo)	ug/L	<0.50	<0.50	0.90	<0.50	0.50	7569728
Total Nickel (Ni)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	7569728
Total Potassium (K)	ug/L	2700	9000	1200	1600	200	7569728
Total Selenium (Se)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	7569728
Total Silicon (Si)	ug/L	2900	640	2500	3500	50	7569728
Total Silver (Ag)	ug/L	<0.090	<0.090	<0.090	<0.090	0.090	7569728
Total Sodium (Na)	ug/L	60000	6100	280000	25000	100	7569728
Total Strontium (Sr)	ug/L	140	81	180	240	1.0	7569728
Total Tellurium (Te)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	7569728
Total Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7569728
Total Tin (Sn)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	7569728
Total Titanium (Ti)	ug/L	<5.0	<5.0	7.2	<5.0	5.0	7569728
Total Tungsten (W)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	7569728
Total Uranium (U)	ug/L	0.27	<0.10	0.17	0.41	0.10	7569728

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		QPC693	QPC694	QPC695	QPC696		
Sampling Date		2021/09/08 08:45	2021/09/08 10:00	2021/09/08 13:45	2021/09/08 15:00		
COC Number		845006-01-01	845006-01-01	845006-01-01	845006-01-01		
	UNITS	SW 13	SW 11	SW 8	SW 9	RDL	QC Batch
Total Vanadium (V)	ug/L	0.51	0.61	0.89	<0.50	0.50	7569728
Total Zinc (Zn)	ug/L	<5.0	<5.0	7.6	<5.0	5.0	7569728
Total Zirconium (Zr)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	7569728

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: QPC693
Sample ID: SW 13
Matrix: Water

Collected: 2021/09/08
Shipped:
Received: 2021/09/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7569431	N/A	2021/09/11	Surinder Rai
Chloride by Automated Colourimetry	KONE	7569572	N/A	2021/09/13	Alina Dobreanu
Hardness (calculated as CaCO3)		7564190	N/A	2021/09/14	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7569728	N/A	2021/09/10	Nan Raykha
Total Ammonia-N	LACH/NH4	7571013	N/A	2021/09/11	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7569473	N/A	2021/09/10	Chandra Nandlal
Total Oil and Grease	BAL	7572204	2021/09/11	2021/09/11	Saumya Modh
Total Kjeldahl Nitrogen in Water	SKAL	7567963	2021/09/09	2021/09/13	Rajni Tyagi
Total Phosphorus (Colourimetric)	LACH/P	7570124	2021/09/10	2021/09/13	Shivani Shivani
Low Level Total Suspended Solids	BAL	7568700	2021/09/10	2021/09/13	Shaneil Hall

BV Labs ID: QPC693 Dup
Sample ID: SW 13
Matrix: Water

Collected: 2021/09/08
Shipped:
Received: 2021/09/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	7569572	N/A	2021/09/13	Alina Dobreanu
Total Phosphorus (Colourimetric)	LACH/P	7570124	2021/09/10	2021/09/13	Shivani Shivani

BV Labs ID: QPC694
Sample ID: SW 11
Matrix: Water

Collected: 2021/09/08
Shipped:
Received: 2021/09/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7569431	N/A	2021/09/11	Surinder Rai
Chloride by Automated Colourimetry	KONE	7569572	N/A	2021/09/13	Alina Dobreanu
Hardness (calculated as CaCO3)		7564190	N/A	2021/09/14	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7569728	N/A	2021/09/10	Nan Raykha
Total Ammonia-N	LACH/NH4	7571013	N/A	2021/09/11	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7569473	N/A	2021/09/10	Chandra Nandlal
Total Oil and Grease	BAL	7572204	2021/09/11	2021/09/11	Saumya Modh
Total Kjeldahl Nitrogen in Water	SKAL	7567963	2021/09/09	2021/09/13	Rajni Tyagi
Total Phosphorus (Colourimetric)	LACH/P	7570124	2021/09/10	2021/09/14	Shivani Shivani
Low Level Total Suspended Solids	BAL	7568700	2021/09/10	2021/09/13	Shaneil Hall

BV Labs ID: QPC695
Sample ID: SW 8
Matrix: Water

Collected: 2021/09/08
Shipped:
Received: 2021/09/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7571045	N/A	2021/09/14	Surinder Rai
Chloride by Automated Colourimetry	KONE	7569572	N/A	2021/09/13	Alina Dobreanu
Hardness (calculated as CaCO3)		7564190	N/A	2021/09/14	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7569728	N/A	2021/09/10	Nan Raykha
Total Ammonia-N	LACH/NH4	7571013	N/A	2021/09/11	Amanpreet Sappal

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1P7686
Report Date: 2021/09/14

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: AK

TEST SUMMARY

BV Labs ID: QPC695
Sample ID: SW 8
Matrix: Water

Collected: 2021/09/08
Shipped:
Received: 2021/09/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7569473	N/A	2021/09/10	Chandra Nandlal
Total Oil and Grease	BAL	7572204	2021/09/11	2021/09/11	Saumya Modh
Total Kjeldahl Nitrogen in Water	SKAL	7570411	2021/09/10	2021/09/13	Rajni Tyagi
Total Phosphorus (Colourimetric)	LACH/P	7570124	2021/09/10	2021/09/14	Shivani Shivani
Low Level Total Suspended Solids	BAL	7568700	2021/09/10	2021/09/13	Shaneil Hall

BV Labs ID: QPC696
Sample ID: SW 9
Matrix: Water

Collected: 2021/09/08
Shipped:
Received: 2021/09/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7571045	N/A	2021/09/14	Surinder Rai
Chloride by Automated Colourimetry	KONE	7569572	N/A	2021/09/13	Alina Dobreanu
Hardness (calculated as CaCO3)		7564190	N/A	2021/09/14	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7569728	N/A	2021/09/10	Nan Raykha
Total Ammonia-N	LACH/NH4	7571013	N/A	2021/09/11	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7569473	N/A	2021/09/10	Chandra Nandlal
Total Oil and Grease	BAL	7572204	2021/09/11	2021/09/11	Saumya Modh
Total Kjeldahl Nitrogen in Water	SKAL	7567963	2021/09/09	2021/09/13	Rajni Tyagi
Total Phosphorus (Colourimetric)	LACH/P	7569427	2021/09/10	2021/09/10	Shivani Shivani
Low Level Total Suspended Solids	BAL	7568700	2021/09/10	2021/09/13	Shaneil Hall

BV Labs ID: QPC696 Dup
Sample ID: SW 9
Matrix: Water

Collected: 2021/09/08
Shipped:
Received: 2021/09/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7569473	N/A	2021/09/10	Chandra Nandlal
Total Phosphorus (Colourimetric)	LACH/P	7569427	2021/09/10	2021/09/10	Shivani Shivani

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	14.0°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1P7686
Report Date: 2021/09/14

QUALITY ASSURANCE REPORT

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: AK

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7567963	Total Kjeldahl Nitrogen (TKN)	2021/09/13	102	80 - 120	105	80 - 120	<0.10	mg/L	NC (1)	20	102	80 - 120
7568700	Total Suspended Solids	2021/09/13					<1	mg/L	8.3	25	95	85 - 115
7569427	Total Phosphorus	2021/09/10	110	80 - 120	99	80 - 120	<0.004	mg/L	1.0	20	104	80 - 120
7569431	Alkalinity (Total as CaCO3)	2021/09/11			96	85 - 115	<1.0	mg/L	0.49	20		
7569473	Nitrate (N)	2021/09/10	99	80 - 120	100	80 - 120	<0.10	mg/L	0.30	20		
7569473	Nitrite (N)	2021/09/10	104	80 - 120	104	80 - 120	<0.010	mg/L	NC	20		
7569572	Dissolved Chloride (Cl-)	2021/09/13	NC	80 - 120	103	80 - 120	<1.0	mg/L	1.2	20		
7569728	Total Aluminum (Al)	2021/09/10	95	80 - 120	95	80 - 120	<4.9	ug/L	NC	20		
7569728	Total Antimony (Sb)	2021/09/10	105	80 - 120	104	80 - 120	<0.50	ug/L	NC	20		
7569728	Total Arsenic (As)	2021/09/10	96	80 - 120	97	80 - 120	<1.0	ug/L	NC	20		
7569728	Total Barium (Ba)	2021/09/10	92	80 - 120	93	80 - 120	<2.0	ug/L	3.4	20		
7569728	Total Beryllium (Be)	2021/09/10	94	80 - 120	92	80 - 120	<0.40	ug/L	NC	20		
7569728	Total Bismuth (Bi)	2021/09/10	95	80 - 120	91	80 - 120	<1.0	ug/L				
7569728	Total Boron (B)	2021/09/10	91	80 - 120	89	80 - 120	<10	ug/L	NC	20		
7569728	Total Cadmium (Cd)	2021/09/10	97	80 - 120	98	80 - 120	<0.090	ug/L	NC	20		
7569728	Total Calcium (Ca)	2021/09/10	NC	80 - 120	94	80 - 120	<200	ug/L	0.44	20		
7569728	Total Chromium (Cr)	2021/09/10	90	80 - 120	90	80 - 120	<5.0	ug/L	NC	20		
7569728	Total Cobalt (Co)	2021/09/10	97	80 - 120	96	80 - 120	<0.50	ug/L	NC	20		
7569728	Total Copper (Cu)	2021/09/10	90	80 - 120	91	80 - 120	<0.90	ug/L	NC	20		
7569728	Total Iron (Fe)	2021/09/10	94	80 - 120	94	80 - 120	<100	ug/L	NC	20		
7569728	Total Lead (Pb)	2021/09/10	91	80 - 120	93	80 - 120	<0.50	ug/L	NC	20		
7569728	Total Lithium (Li)	2021/09/10	105	80 - 120	97	80 - 120	<5.0	ug/L				
7569728	Total Magnesium (Mg)	2021/09/10	NC	80 - 120	92	80 - 120	<50	ug/L	1.8	20		
7569728	Total Manganese (Mn)	2021/09/10	92	80 - 120	93	80 - 120	<2.0	ug/L	NC	20		
7569728	Total Molybdenum (Mo)	2021/09/10	94	80 - 120	95	80 - 120	<0.50	ug/L	NC	20		
7569728	Total Nickel (Ni)	2021/09/10	92	80 - 120	94	80 - 120	<1.0	ug/L	NC	20		
7569728	Total Potassium (K)	2021/09/10	95	80 - 120	92	80 - 120	<200	ug/L	1.1	20		
7569728	Total Selenium (Se)	2021/09/10	99	80 - 120	100	80 - 120	<2.0	ug/L	NC	20		
7569728	Total Silicon (Si)	2021/09/10	92	80 - 120	92	80 - 120	<50	ug/L	1.1	20		
7569728	Total Silver (Ag)	2021/09/10	95	80 - 120	95	80 - 120	<0.090	ug/L	NC	20		
7569728	Total Sodium (Na)	2021/09/10	92	80 - 120	95	80 - 120	<100	ug/L	2.7	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7569728	Total Strontium (Sr)	2021/09/10	91	80 - 120	93	80 - 120	<1.0	ug/L	0.22	20		
7569728	Total Tellurium (Te)	2021/09/10	94	80 - 120	93	80 - 120	<1.0	ug/L				
7569728	Total Thallium (Tl)	2021/09/10	91	80 - 120	94	80 - 120	<0.050	ug/L	NC	20		
7569728	Total Tin (Sn)	2021/09/10	97	80 - 120	97	80 - 120	<1.0	ug/L				
7569728	Total Titanium (Ti)	2021/09/10	91	80 - 120	91	80 - 120	<5.0	ug/L	NC	20		
7569728	Total Tungsten (W)	2021/09/10	98	80 - 120	97	80 - 120	<1.0	ug/L				
7569728	Total Uranium (U)	2021/09/10	91	80 - 120	94	80 - 120	<0.10	ug/L				
7569728	Total Vanadium (V)	2021/09/10	90	80 - 120	90	80 - 120	<0.50	ug/L	NC	20		
7569728	Total Zinc (Zn)	2021/09/10	95	80 - 120	97	80 - 120	<5.0	ug/L	3.8	20		
7569728	Total Zirconium (Zr)	2021/09/10	98	80 - 120	99	80 - 120	<1.0	ug/L				
7570124	Total Phosphorus	2021/09/13	112	80 - 120	100	80 - 120	<0.004	mg/L	8.8	20	99	80 - 120
7570411	Total Kjeldahl Nitrogen (TKN)	2021/09/13	104	80 - 120	105	80 - 120	<0.10	mg/L	5.9	20	101	80 - 120
7571013	Total Ammonia-N	2021/09/11	98	75 - 125	102	80 - 120	<0.050	mg/L	9.5	20		
7571045	Alkalinity (Total as CaCO3)	2021/09/14			97	85 - 115	<1.0	mg/L	1.5	20		
7572204	Total Oil & Grease	2021/09/11			98	85 - 115	<0.50	mg/L	1.5	25		

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Due to a high concentration of NOx, the sample required dilution. The detection limit was adjusted accordingly.

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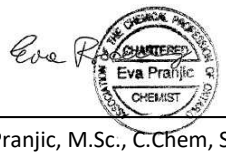
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C1P7686
Report Date: 2021/09/14

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: AK

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

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Bureau Veritas Laboratories
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08-Sep-21 16:40
Ema Gitej
C1P7686

Page 1 of 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Lab Use Only:
Company Name:	#1326 Golder Associates Ltd	Company Name:		Quotation #:	B80683	Bottle Order #:
Attention:	Accounts Payable	Attention:	Craig De Vito	P.O. #:		845006
Address:	6925 Century Ave Suite 100 Mississauga ON L5N 7K2	Address:		Project:	19129150 RJM ENV-907	COC #: C#845006-01-01
Tel:	(905) 567-4444 Fax: (905) 567-6561	Tel:	(905) 567-6100 Ext: 1507 Fax:	Project Name:		Project Manager: Ema Gitej
Email:	CanadaAccountsPayableInvoices@golder.com	Email:	Craig_DeVito@golder.com	Site #:		
				Sampled By:	AK/MH	

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☐ Res/Park ☐ Medium/Fine; ☐ Table 2 ☐ Ind/Comm ☐ Coarse; ☐ Table 3 ☐ Agri/Other ☐ For RSC; ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw; ☐ Reg 558. ☐ Storm Sewer Bylaw; ☐ MISA Municipality ___; ☐ PWQO ☐ Reg 406 Table ___; ☐ Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	Total Metals Analysis by ICPMS	Chloride, Nitrate & Nitrite	Total Ammonia-N, TKN, Total P	Alkalinity, Hardness	Low Level Total Suspended Solids	Total Oil and Grease	# of Bottles	pH	Comments Temp °C
1		SW 13	21/09/08	8:45	SW	No	✓	✓	✓	✓	✓	✓	6	8.27	15.05
2		SW 11	↓	10:00	↓	↓	✓	✓	✓	✓	✓	✓	6	8.34	20.46
3		SW 8		13:45			✓	✓	✓	✓	✓	✓	6	8.12	18.63
4		SW 9		15:00			✓	✓	✓	✓	✓	✓	6	8.65	21.75
5															
6															
7															
8															
9															
10															

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☑
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Adam Kennedy	21/09/08	16:40		21/09/08	16:40	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	(9/9/9)0	Present		
		Intact	✓	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

ONTR

Bureau Veritas Canada (2019) Inc.

Your Project #: 19129150
Your C.O.C. #: 844029-01-01

Attention: Craig De Vito

Golder Associates Ltd
6925 Century Ave
Suite 100
Mississauga, ON
CANADA L5N 7K2

Report Date: 2021/12/23
Report #: R6936963
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1Z1795
Received: 2021/12/15, 09:16

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	5	N/A	2021/12/17	CAM SOP-00448	SM 23 2320 B m
Chloride by Automated Colourimetry	5	N/A	2021/12/17	CAM SOP-00463	SM 23 4500-Cl E m
Hardness (calculated as CaCO3)	5	N/A	2021/12/22	CAM SOP 00102/00408/00447	SM 2340 B
Total Metals Analysis by ICPMS	5	N/A	2021/12/21	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	4	N/A	2021/12/20	CAM SOP-00441	USGS I-2522-90 m
Total Ammonia-N	1	N/A	2021/12/21	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	5	N/A	2021/12/20	CAM SOP-00440	SM 23 4500-NO3I/NO2B
Total Oil and Grease	5	2021/12/17	2021/12/17	CAM SOP-00326	EPA1664B m,SM5520B m
Total Kjeldahl Nitrogen in Water	5	2021/12/17	2021/12/20	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	5	2021/12/17	2021/12/19	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids	5	2021/12/18	2021/12/20	CAM SOP-00428	SM 23 2540D m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Your Project #: 19129150
Your C.O.C. #: 844029-01-01

Attention: Craig De Vito

Golder Associates Ltd
6925 Century Ave
Suite 100
Mississauga, ON
CANADA L5N 7K2

Report Date: 2021/12/23
Report #: R6936963
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1Z1795
Received: 2021/12/15, 09:16

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: emese.gitej@bureauveritas.com
Phone# (905)817-5829

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Bureau Veritas Job #: C1Z1795
Report Date: 2021/12/23

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: BL

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		RJF526			RJF526			RJF527		
Sampling Date		2021/12/14 15:45			2021/12/14 15:45			2021/12/14		
COC Number		844029-01-01			844029-01-01			844029-01-01		
	UNITS	SW8	RDL	QC Batch	SW8 Lab-Dup	RDL	QC Batch	DUP	RDL	QC Batch
Calculated Parameters										
Hardness (CaCO3)	mg/L	240	1.0	7727723				240	1.0	7727723
Inorganics										
Total Ammonia-N	mg/L	<0.050	0.050	7736126				<0.050	0.050	7736126
Total Kjeldahl Nitrogen (TKN)	mg/L	0.37	0.10	7735168				0.40	0.10	7735168
Total Phosphorus	mg/L	0.024	0.004	7735497				0.025	0.004	7735497
Total Suspended Solids	mg/L	1	1	7736524				2	1	7736524
Alkalinity (Total as CaCO3)	mg/L	200	1.0	7732729	200	1.0	7732729	210	1.0	7732729
Dissolved Chloride (Cl-)	mg/L	29	1.0	7733859				29	1.0	7733859
Nitrite (N)	mg/L	0.012	0.010	7732590				0.012	0.010	7733819
Nitrate (N)	mg/L	1.70	0.10	7732590				1.69	0.10	7733819
Nitrate + Nitrite (N)	mg/L	1.71	0.10	7732590				1.71	0.10	7733819
Petroleum Hydrocarbons										
Total Oil & Grease	mg/L	<0.50	0.50	7736936				<0.50	0.50	7736936

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C1Z1795
Report Date: 2021/12/23

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: BL

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		RJF528			RJF528			RJF529		
Sampling Date		2021/12/14 11:30			2021/12/14 11:30			2021/12/14 10:40		
COC Number		844029-01-01			844029-01-01			844029-01-01		
	UNITS	SW9	RDL	QC Batch	SW9 Lab-Dup	RDL	QC Batch	SW11	RDL	QC Batch
Calculated Parameters										
Hardness (CaCO3)	mg/L	270	1.0	7727723				230	1.0	7727723
Inorganics										
Total Ammonia-N	mg/L	0.39	0.050	7736146	0.37	0.050	7736146	0.35	0.050	7736126
Total Kjeldahl Nitrogen (TKN)	mg/L	0.58	0.10	7735168	0.59	0.10	7735168	1.0	0.10	7735168
Total Phosphorus	mg/L	0.016	0.004	7735497				0.22	0.02	7735497
Total Suspended Solids	mg/L	7	1	7736524				8	1	7736524
Alkalinity (Total as CaCO3)	mg/L	230	1.0	7732729				220	1.0	7732729
Dissolved Chloride (Cl-)	mg/L	40	1.0	7733859	40	1.0	7733859	19	1.0	7733859
Nitrite (N)	mg/L	0.022	0.010	7732590				0.021	0.010	7732590
Nitrate (N)	mg/L	0.63	0.10	7732590				0.36	0.10	7732590
Nitrate + Nitrite (N)	mg/L	0.66	0.10	7732590				0.38	0.10	7732590
Petroleum Hydrocarbons										
Total Oil & Grease	mg/L	<0.50	0.50	7736936				<0.50	0.50	7736936

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C1Z1795
Report Date: 2021/12/23

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: BL

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		RJF530		
Sampling Date		2021/12/14 09:20		
COC Number		844029-01-01		
	UNITS	SW13	RDL	QC Batch
Calculated Parameters				
Hardness (CaCO3)	mg/L	170	1.0	7727723
Inorganics				
Total Ammonia-N	mg/L	0.13	0.050	7736126
Total Kjeldahl Nitrogen (TKN)	mg/L	0.48	0.10	7735168
Total Phosphorus	mg/L	0.007	0.004	7735497
Total Suspended Solids	mg/L	4	1	7736524
Alkalinity (Total as CaCO3)	mg/L	150	1.0	7732729
Dissolved Chloride (Cl-)	mg/L	34	1.0	7733859
Nitrite (N)	mg/L	<0.010	0.010	7732590
Nitrate (N)	mg/L	0.10	0.10	7732590
Nitrate + Nitrite (N)	mg/L	0.10	0.10	7732590
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	<0.50	0.50	7736936

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C1Z1795
Report Date: 2021/12/23

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: BL

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		RJF526	RJF527	RJF528	RJF529	RJF530	RJF530		
Sampling Date		2021/12/14 15:45	2021/12/14	2021/12/14 11:30	2021/12/14 10:40	2021/12/14 09:20	2021/12/14 09:20		
COC Number		844029-01-01	844029-01-01	844029-01-01	844029-01-01	844029-01-01	844029-01-01		
	UNITS	SW8	DUP	SW9	SW11	SW13	SW13 Lab-Dup	RDL	QC Batch
Metals									
Total Aluminum (Al)	ug/L	17	14	24	30	7.8	7.1	4.9	7742166
Total Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	7742166
Total Arsenic (As)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7742166
Total Barium (Ba)	ug/L	16	16	130	19	28	29	2.0	7742166
Total Beryllium (Be)	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7742166
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7742166
Total Boron (B)	ug/L	<10	<10	24	16	<10	<10	10	7742166
Total Cadmium (Cd)	ug/L	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	0.090	7742166
Total Calcium (Ca)	ug/L	60000	61000	69000	66000	43000	43000	200	7742166
Total Chromium (Cr)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	7742166
Total Cobalt (Co)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	7742166
Total Copper (Cu)	ug/L	<0.90	<0.90	<0.90	1.1	<0.90	<0.90	0.90	7742166
Total Iron (Fe)	ug/L	<100	<100	<100	280	110	110	100	7742166
Total Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	7742166
Total Lithium (Li)	ug/L	<5.0	<5.0	6.6	<5.0	<5.0	<5.0	5.0	7742166
Total Magnesium (Mg)	ug/L	16000	16000	22000	15000	12000	12000	50	7742166
Total Manganese (Mn)	ug/L	3.4	3.3	13	65	11	11	2.0	7742166
Total Molybdenum (Mo)	ug/L	<0.50	0.51	<0.50	<0.50	<0.50	<0.50	0.50	7742166
Total Nickel (Ni)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7742166
Total Potassium (K)	ug/L	2600	2600	1400	12000	1400	1400	200	7742166
Total Selenium (Se)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	7742166
Total Silicon (Si)	ug/L	3700	3700	5500	1800	2800	2800	50	7742166
Total Silver (Ag)	ug/L	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	0.090	7742166
Total Sodium (Na)	ug/L	12000	12000	20000	4700	18000	18000	100	7742166
Total Strontium (Sr)	ug/L	110	110	230	120	110	110	1.0	7742166
Total Tellurium (Te)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7742166
Total Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	7742166
Total Tin (Sn)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7742166
Total Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	7742166
Total Tungsten (W)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7742166
Total Uranium (U)	ug/L	0.65	0.70	0.38	0.28	0.20	0.20	0.10	7742166

RDL = Reportable Detection Limit
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Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		RJF526	RJF527	RJF528	RJF529	RJF530	RJF530		
Sampling Date		2021/12/14 15:45	2021/12/14	2021/12/14 11:30	2021/12/14 10:40	2021/12/14 09:20	2021/12/14 09:20		
COC Number		844029-01-01	844029-01-01	844029-01-01	844029-01-01	844029-01-01	844029-01-01		
	UNITS	**SW8**	**DUP**	**SW9**	**SW11**	**SW13**	**SW13 Lab-Dup**	**RDL**	**QC Batch**
Total Vanadium (V)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	7742166
Total Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	7742166
Total Zirconium (Zr)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7742166

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

Bureau Veritas ID: RJF526
Sample ID: SW8
Matrix: Water

Collected: 2021/12/14
Shipped:
Received: 2021/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7732729	N/A	2021/12/17	Surinder Rai
Chloride by Automated Colourimetry	KONE	7733859	N/A	2021/12/17	Alina Dobreanu
Hardness (calculated as CaCO3)		7727723	N/A	2021/12/22	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7742166	N/A	2021/12/21	Daniel Teclu
Total Ammonia-N	LACH/NH4	7736126	N/A	2021/12/20	Amanpreet Sappal
Nitrate & Nitrite as Nitrogen in Water	LACH	7732590	N/A	2021/12/20	Chandra Nandlal
Total Oil and Grease	BAL	7736936	2021/12/17	2021/12/17	Saumya Modh
Total Kjeldahl Nitrogen in Water	SKAL	7735168	2021/12/17	2021/12/20	Rajni Tyagi
Total Phosphorus (Colourimetric)	LACH/P	7735497	2021/12/17	2021/12/19	Shivani Shivani
Low Level Total Suspended Solids	BAL	7736524	2021/12/18	2021/12/20	Shivani Desai

Bureau Veritas ID: RJF526 Dup
Sample ID: SW8
Matrix: Water

Collected: 2021/12/14
Shipped:
Received: 2021/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7732729	N/A	2021/12/17	Surinder Rai

Bureau Veritas ID: RJF527
Sample ID: DUP
Matrix: Water

Collected: 2021/12/14
Shipped:
Received: 2021/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7732729	N/A	2021/12/17	Surinder Rai
Chloride by Automated Colourimetry	KONE	7733859	N/A	2021/12/17	Alina Dobreanu
Hardness (calculated as CaCO3)		7727723	N/A	2021/12/22	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7742166	N/A	2021/12/21	Daniel Teclu
Total Ammonia-N	LACH/NH4	7736126	N/A	2021/12/20	Amanpreet Sappal
Nitrate & Nitrite as Nitrogen in Water	LACH	7733819	N/A	2021/12/20	Chandra Nandlal
Total Oil and Grease	BAL	7736936	2021/12/17	2021/12/17	Saumya Modh
Total Kjeldahl Nitrogen in Water	SKAL	7735168	2021/12/17	2021/12/20	Rajni Tyagi
Total Phosphorus (Colourimetric)	LACH/P	7735497	2021/12/17	2021/12/19	Shivani Shivani
Low Level Total Suspended Solids	BAL	7736524	2021/12/18	2021/12/20	Shivani Desai

Bureau Veritas ID: RJF528
Sample ID: SW9
Matrix: Water

Collected: 2021/12/14
Shipped:
Received: 2021/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7732729	N/A	2021/12/17	Surinder Rai
Chloride by Automated Colourimetry	KONE	7733859	N/A	2021/12/17	Alina Dobreanu
Hardness (calculated as CaCO3)		7727723	N/A	2021/12/22	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7742166	N/A	2021/12/21	Daniel Teclu
Total Ammonia-N	LACH/NH4	7736146	N/A	2021/12/21	Amanpreet Sappal
Nitrate & Nitrite as Nitrogen in Water	LACH	7732590	N/A	2021/12/20	Chandra Nandlal

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

Bureau Veritas ID: RJF528
Sample ID: SW9
Matrix: Water

Collected: 2021/12/14
Shipped:
Received: 2021/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Oil and Grease	BAL	7736936	2021/12/17	2021/12/17	Saumya Modh
Total Kjeldahl Nitrogen in Water	SKAL	7735168	2021/12/17	2021/12/20	Rajni Tyagi
Total Phosphorus (Colourimetric)	LACH/P	7735497	2021/12/17	2021/12/19	Shivani Shivani
Low Level Total Suspended Solids	BAL	7736524	2021/12/18	2021/12/20	Shivani Desai

Bureau Veritas ID: RJF528 Dup
Sample ID: SW9
Matrix: Water

Collected: 2021/12/14
Shipped:
Received: 2021/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	7733859	N/A	2021/12/17	Alina Dobreanu
Total Ammonia-N	LACH/NH4	7736146	N/A	2021/12/21	Amanpreet Sappal
Total Kjeldahl Nitrogen in Water	SKAL	7735168	2021/12/17	2021/12/20	Rajni Tyagi

Bureau Veritas ID: RJF529
Sample ID: SW11
Matrix: Water

Collected: 2021/12/14
Shipped:
Received: 2021/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7732729	N/A	2021/12/17	Surinder Rai
Chloride by Automated Colourimetry	KONE	7733859	N/A	2021/12/17	Alina Dobreanu
Hardness (calculated as CaCO3)		7727723	N/A	2021/12/22	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7742166	N/A	2021/12/21	Daniel Teclu
Total Ammonia-N	LACH/NH4	7736126	N/A	2021/12/20	Amanpreet Sappal
Nitrate & Nitrite as Nitrogen in Water	LACH	7732590	N/A	2021/12/20	Chandra Nandlal
Total Oil and Grease	BAL	7736936	2021/12/17	2021/12/17	Saumya Modh
Total Kjeldahl Nitrogen in Water	SKAL	7735168	2021/12/17	2021/12/20	Rajni Tyagi
Total Phosphorus (Colourimetric)	LACH/P	7735497	2021/12/17	2021/12/19	Shivani Shivani
Low Level Total Suspended Solids	BAL	7736524	2021/12/18	2021/12/20	Shivani Desai

Bureau Veritas ID: RJF530
Sample ID: SW13
Matrix: Water

Collected: 2021/12/14
Shipped:
Received: 2021/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7732729	N/A	2021/12/17	Surinder Rai
Chloride by Automated Colourimetry	KONE	7733859	N/A	2021/12/17	Alina Dobreanu
Hardness (calculated as CaCO3)		7727723	N/A	2021/12/22	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7742166	N/A	2021/12/21	Daniel Teclu
Total Ammonia-N	LACH/NH4	7736126	N/A	2021/12/20	Amanpreet Sappal
Nitrate & Nitrite as Nitrogen in Water	LACH	7732590	N/A	2021/12/20	Chandra Nandlal
Total Oil and Grease	BAL	7736936	2021/12/17	2021/12/17	Saumya Modh
Total Kjeldahl Nitrogen in Water	SKAL	7735168	2021/12/17	2021/12/20	Rajni Tyagi
Total Phosphorus (Colourimetric)	LACH/P	7735497	2021/12/17	2021/12/19	Shivani Shivani
Low Level Total Suspended Solids	BAL	7736524	2021/12/18	2021/12/20	Shivani Desai

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C1Z1795
Report Date: 2021/12/23

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: BL

TEST SUMMARY

Bureau Veritas ID: RJF530 Dup
Sample ID: SW13
Matrix: Water

Collected: 2021/12/14
Shipped:
Received: 2021/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Metals Analysis by ICPMS	ICP/MS	7742166	N/A	2021/12/21	Daniel Teclu

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.7°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C1Z1795
Report Date: 2021/12/23

QUALITY ASSURANCE REPORT

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: BL

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7732590	Nitrate (N)	2021/12/20	NC	80 - 120	104	80 - 120	<0.10	mg/L	0.25	20		
7732590	Nitrite (N)	2021/12/20	105	80 - 120	106	80 - 120	<0.010	mg/L	9.6	20		
7732729	Alkalinity (Total as CaCO3)	2021/12/17			97	85 - 115	<1.0	mg/L	0.10	20		
7733819	Nitrate (N)	2021/12/20	106	80 - 120	104	80 - 120	<0.10	mg/L	1.8	20		
7733819	Nitrite (N)	2021/12/20	106	80 - 120	107	80 - 120	<0.010	mg/L				
7733859	Dissolved Chloride (Cl-)	2021/12/17	NC	80 - 120	104	80 - 120	<1.0	mg/L	0.091	20		
7735168	Total Kjeldahl Nitrogen (TKN)	2021/12/20	102	80 - 120	105	80 - 120	<0.10	mg/L	1.7	20	101	80 - 120
7735497	Total Phosphorus	2021/12/19	104	80 - 120	103	80 - 120	<0.004	mg/L	3.9	20	102	80 - 120
7736126	Total Ammonia-N	2021/12/20	98	75 - 125	103	80 - 120	<0.050	mg/L	NC	20		
7736146	Total Ammonia-N	2021/12/21	98	75 - 125	101	80 - 120	<0.050	mg/L	4.0	20		
7736524	Total Suspended Solids	2021/12/20					<1	mg/L	19	25	95	85 - 115
7736936	Total Oil & Grease	2021/12/17			99	85 - 115	<0.50	mg/L	1.0	25		
7742166	Total Aluminum (Al)	2021/12/21	98	80 - 120	99	80 - 120	<4.9	ug/L	8.7	20		
7742166	Total Antimony (Sb)	2021/12/21	101	80 - 120	98	80 - 120	<0.50	ug/L	NC	20		
7742166	Total Arsenic (As)	2021/12/21	97	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		
7742166	Total Barium (Ba)	2021/12/21	94	80 - 120	97	80 - 120	<2.0	ug/L	4.6	20		
7742166	Total Beryllium (Be)	2021/12/21	96	80 - 120	96	80 - 120	<0.40	ug/L	NC	20		
7742166	Total Bismuth (Bi)	2021/12/21	88	80 - 120	92	80 - 120	<1.0	ug/L	NC	20		
7742166	Total Boron (B)	2021/12/21	100	80 - 120	99	80 - 120	<10	ug/L	NC	20		
7742166	Total Cadmium (Cd)	2021/12/21	98	80 - 120	94	80 - 120	<0.090	ug/L	NC	20		
7742166	Total Calcium (Ca)	2021/12/21	NC	80 - 120	96	80 - 120	<200	ug/L	0.085	20		
7742166	Total Chromium (Cr)	2021/12/21	94	80 - 120	94	80 - 120	<5.0	ug/L	NC	20		
7742166	Total Cobalt (Co)	2021/12/21	94	80 - 120	95	80 - 120	<0.50	ug/L	NC	20		
7742166	Total Copper (Cu)	2021/12/21	97	80 - 120	95	80 - 120	<0.90	ug/L	NC	20		
7742166	Total Iron (Fe)	2021/12/21	92	80 - 120	94	80 - 120	<100	ug/L	2.2	20		
7742166	Total Lead (Pb)	2021/12/21	89	80 - 120	93	80 - 120	<0.50	ug/L	NC	20		
7742166	Total Lithium (Li)	2021/12/21	94	80 - 120	96	80 - 120	<5.0	ug/L	NC	20		
7742166	Total Magnesium (Mg)	2021/12/21	92	80 - 120	96	80 - 120	<50	ug/L	0.38	20		
7742166	Total Manganese (Mn)	2021/12/21	96	80 - 120	97	80 - 120	<2.0	ug/L	2.9	20		
7742166	Total Molybdenum (Mo)	2021/12/21	99	80 - 120	96	80 - 120	<0.50	ug/L	NC	20		
7742166	Total Nickel (Ni)	2021/12/21	95	80 - 120	95	80 - 120	<1.0	ug/L	NC	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7742166	Total Potassium (K)	2021/12/21	97	80 - 120	97	80 - 120	<200	ug/L	1.2	20		
7742166	Total Selenium (Se)	2021/12/21	100	80 - 120	99	80 - 120	<2.0	ug/L	NC	20		
7742166	Total Silicon (Si)	2021/12/21	99	80 - 120	99	80 - 120	<50	ug/L	0.52	20		
7742166	Total Silver (Ag)	2021/12/21	98	80 - 120	96	80 - 120	<0.090	ug/L	NC	20		
7742166	Total Sodium (Na)	2021/12/21	93	80 - 120	96	80 - 120	<100	ug/L	0.093	20		
7742166	Total Strontium (Sr)	2021/12/21	94	80 - 120	95	80 - 120	<1.0	ug/L	0.45	20		
7742166	Total Tellurium (Te)	2021/12/21	102	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
7742166	Total Thallium (Tl)	2021/12/21	90	80 - 120	94	80 - 120	<0.050	ug/L	NC	20		
7742166	Total Tin (Sn)	2021/12/21	99	80 - 120	95	80 - 120	<1.0	ug/L	NC	20		
7742166	Total Titanium (Ti)	2021/12/21	93	80 - 120	98	80 - 120	<5.0	ug/L	NC	20		
7742166	Total Tungsten (W)	2021/12/21	94	80 - 120	95	80 - 120	<1.0	ug/L	NC	20		
7742166	Total Uranium (U)	2021/12/21	92	80 - 120	93	80 - 120	<0.10	ug/L	1.5	20		
7742166	Total Vanadium (V)	2021/12/21	96	80 - 120	95	80 - 120	<0.50	ug/L	NC	20		
7742166	Total Zinc (Zn)	2021/12/21	95	80 - 120	97	80 - 120	<5.0	ug/L	NC	20		
7742166	Total Zirconium (Zr)	2021/12/21	99	80 - 120	96	80 - 120	<1.0	ug/L	NC	20		

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

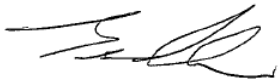
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your Project #: 19129150
Your C.O.C. #: 868520-01-01

Attention: Craig De Vito

Golder Associates Ltd
6925 Century Ave
Suite 100
Mississauga, ON
CANADA L5N 7K2

Report Date: 2022/03/31
Report #: R7067378
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C279893
Received: 2022/03/25, 08:35

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	5	N/A	2022/03/28	CAM SOP-00448	SM 23 2320 B m
Chloride by Automated Colourimetry	5	N/A	2022/03/28	CAM SOP-00463	SM 23 4500-Cl E m
Hardness (calculated as CaCO3)	3	N/A	2022/03/29	CAM SOP 00102/00408/00447	SM 2340 B
Hardness (calculated as CaCO3)	2	N/A	2022/03/30	CAM SOP 00102/00408/00447	SM 2340 B
Total Metals Analysis by ICPMS	5	N/A	2022/03/30	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	5	N/A	2022/03/30	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	2	N/A	2022/03/27	CAM SOP-00440	SM 23 4500-NO3I/NO2B
Nitrate & Nitrite as Nitrogen in Water (1)	3	N/A	2022/03/29	CAM SOP-00440	SM 23 4500-NO3I/NO2B
Total Oil and Grease	5	2022/03/29	2022/03/29	CAM SOP-00326	EPA1664B m,SM5520B m
Total Kjeldahl Nitrogen in Water	5	2022/03/29	2022/03/30	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	5	2022/03/29	2022/03/29	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids	5	2022/03/28	2022/03/29	CAM SOP-00428	SM 23 2540D m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope

Your Project #: 19129150
Your C.O.C. #: 868520-01-01

Attention: Craig De Vito

Golder Associates Ltd
6925 Century Ave
Suite 100
Mississauga, ON
CANADA L5N 7K2

Report Date: 2022/03/31
Report #: R7067378
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C279893
Received: 2022/03/25, 08:35

dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ankita Bhalla, Project Manager
Email: Ankita.Bhalla@bureauveritas.com
Phone# (905) 817-5700
==========
This report has been generated and distributed using a secure automated process.
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For Service Group specific validation please refer to the Validation Signature Page.

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		SES283		SES284			SES284		
Sampling Date		2022/03/24 17:30		2022/03/24 11:30			2022/03/24 11:30		
COC Number		868520-01-01		868520-01-01			868520-01-01		
	UNITS	SW8	QC Batch	SW10	RDL	QC Batch	SW10 Lab-Dup	RDL	QC Batch
Calculated Parameters									
Hardness (CaCO3)	mg/L	220	7903799	280	1.0	7903799			
Inorganics									
Total Ammonia-N	mg/L	<0.050	7909691	<0.050	0.050	7910207			
Total Kjeldahl Nitrogen (TKN)	mg/L	0.20	7909303	0.12	0.10	7909303	<0.10	0.10	7909303
Total Phosphorus	mg/L	0.014	7909659	0.008	0.004	7909659			
Total Suspended Solids	mg/L	<1	7905830	<1	1	7905830	1	1	7905830
Alkalinity (Total as CaCO3)	mg/L	200	7905833	240	1.0	7905833			
Dissolved Chloride (Cl-)	mg/L	36	7905356	42	1.0	7905356			
Nitrite (N)	mg/L	<0.010	7905642	<0.010	0.010	7905733			
Nitrate (N)	mg/L	1.26	7905642	1.08	0.10	7905733			
Nitrate + Nitrite (N)	mg/L	1.26	7905642	1.08	0.10	7905733			
Petroleum Hydrocarbons									
Total Oil & Grease	mg/L	<0.50	7908938	0.80	0.50	7908938			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C279893
Report Date: 2022/03/31

Golder Associates Ltd
Client Project #: 19129150
Sampler Initials: BC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		SES285			SES286	SES287		
Sampling Date		2022/03/24 09:30			2022/03/24 12:00	2022/03/24 09:00		
COC Number		868520-01-01			868520-01-01	868520-01-01		
	UNITS	SW11	RDL	QC Batch	SW9	SW13	RDL	QC Batch
Calculated Parameters								
Hardness (CaCO3)	mg/L	230	1.0	7903799	230	210	1.0	7903799
Inorganics								
Total Ammonia-N	mg/L	1.2	0.050	7910207	0.099	0.087	0.050	7910207
Total Kjeldahl Nitrogen (TKN)	mg/L	1.6	0.10	7909303	0.30	0.27	0.10	7909303
Total Phosphorus	mg/L	0.37	0.02	7909659	0.020	0.009	0.004	7909659
Total Suspended Solids	mg/L	5	1	7905830	18	2	1	7905830
Alkalinity (Total as CaCO3)	mg/L	210	1.0	7905833	200	190	1.0	7905833
Dissolved Chloride (Cl-)	mg/L	37	1.0	7905356	30	31	1.0	7905356
Nitrite (N)	mg/L	0.059	0.010	7905733	<0.010	<0.010	0.010	7905642
Nitrate (N)	mg/L	1.14	0.10	7905733	1.00	0.26	0.10	7905642
Nitrate + Nitrite (N)	mg/L	1.20	0.10	7905733	1.00	0.26	0.10	7905642
Petroleum Hydrocarbons								
Total Oil & Grease	mg/L	0.70	0.50	7908938	0.60	0.70	0.50	7908938

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		SES283	SES284	SES285	SES286	SES287		
Sampling Date		2022/03/24 17:30	2022/03/24 11:30	2022/03/24 09:30	2022/03/24 12:00	2022/03/24 09:00		
COC Number		868520-01-01	868520-01-01	868520-01-01	868520-01-01	868520-01-01		
	UNITS	SW8	SW10	SW11	SW9	SW13	RDL	QC Batch
Metals								
Total Aluminum (Al)	ug/L	23	7.0	27	13	18	4.9	7911690
Total Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	7911690
Total Arsenic (As)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7911690
Total Barium (Ba)	ug/L	16	63	19	97	28	2.0	7911690
Total Beryllium (Be)	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7911690
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7911690
Total Boron (B)	ug/L	<10	<10	10	16	<10	10	7911690
Total Cadmium (Cd)	ug/L	<0.090	<0.090	<0.090	<0.090	<0.090	0.090	7911690
Total Calcium (Ca)	ug/L	62000	77000	66000	59000	58000	200	7911690
Total Chromium (Cr)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	7911690
Total Cobalt (Co)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	7911690
Total Copper (Cu)	ug/L	<0.90	1.8	1.4	<0.90	<0.90	0.90	7911690
Total Iron (Fe)	ug/L	<100	<100	290	<100	130	100	7911690
Total Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	7911690
Total Lithium (Li)	ug/L	<5.0	<5.0	<5.0	5.3	<5.0	5.0	7911690
Total Magnesium (Mg)	ug/L	16000	16000	13000	16000	12000	50	7911690
Total Manganese (Mn)	ug/L	4.6	3.9	130	13	41	2.0	7911690
Total Molybdenum (Mo)	ug/L	<0.50	<0.50	<0.50	0.59	<0.50	0.50	7911690
Total Nickel (Ni)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7911690
Total Potassium (K)	ug/L	1800	1200	6400	1100	1200	200	7911690
Total Selenium (Se)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	7911690
Total Silicon (Si)	ug/L	2000	3300	2500	3800	2100	50	7911690
Total Silver (Ag)	ug/L	<0.090	<0.090	<0.090	<0.090	<0.090	0.090	7911690
Total Sodium (Na)	ug/L	18000	24000	17000	16000	16000	100	7911690
Total Strontium (Sr)	ug/L	110	130	100	180	100	1.0	7911690
Total Tellurium (Te)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7911690
Total Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	7911690
Total Tin (Sn)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7911690
Total Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	7911690
Total Tungsten (W)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7911690
Total Uranium (U)	ug/L	0.54	0.19	0.26	0.59	0.18	0.10	7911690

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		SES283	SES284	SES285	SES286	SES287		
Sampling Date		2022/03/24 17:30	2022/03/24 11:30	2022/03/24 09:30	2022/03/24 12:00	2022/03/24 09:00		
COC Number		868520-01-01	868520-01-01	868520-01-01	868520-01-01	868520-01-01		
	UNITS	**SW8**	**SW10**	**SW11**	**SW9**	**SW13**	**RDL**	**QC Batch**
Total Vanadium (V)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	7911690
Total Zinc (Zn)	ug/L	<5.0	<5.0	6.6	<5.0	<5.0	5.0	7911690
Total Zirconium (Zr)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7911690

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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TEST SUMMARY

Bureau Veritas ID: SES283 **Collected:** 2022/03/24
Sample ID: SW8 **Shipped:**
Matrix: Water **Received:** 2022/03/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7905833	N/A	2022/03/28	Surinder Rai
Chloride by Automated Colourimetry	KONE	7905356	N/A	2022/03/28	Alina Dobreanu
Hardness (calculated as CaCO3)		7903799	N/A	2022/03/29	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7911690	N/A	2022/03/30	Azita Fazaeli
Total Ammonia-N	LACH/NH4	7909691	N/A	2022/03/30	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	7905642	N/A	2022/03/29	Samuel Law
Total Oil and Grease	BAL	7908938	2022/03/29	2022/03/29	Jay Bhadresh Doshi
Total Kjeldahl Nitrogen in Water	SKAL	7909303	2022/03/29	2022/03/30	Massarat Jan
Total Phosphorus (Colourimetric)	LACH/P	7909659	2022/03/29	2022/03/29	Nimarta Singh
Low Level Total Suspended Solids	BAL	7905830	2022/03/28	2022/03/29	Shaneil Hall

Bureau Veritas ID: SES284 **Collected:** 2022/03/24
Sample ID: SW10 **Shipped:**
Matrix: Water **Received:** 2022/03/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7905833	N/A	2022/03/28	Surinder Rai
Chloride by Automated Colourimetry	KONE	7905356	N/A	2022/03/28	Alina Dobreanu
Hardness (calculated as CaCO3)		7903799	N/A	2022/03/29	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7911690	N/A	2022/03/30	Azita Fazaeli
Total Ammonia-N	LACH/NH4	7910207	N/A	2022/03/30	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	7905733	N/A	2022/03/27	Raiq Kashif
Total Oil and Grease	BAL	7908938	2022/03/29	2022/03/29	Jay Bhadresh Doshi
Total Kjeldahl Nitrogen in Water	SKAL	7909303	2022/03/29	2022/03/30	Massarat Jan
Total Phosphorus (Colourimetric)	LACH/P	7909659	2022/03/29	2022/03/29	Nimarta Singh
Low Level Total Suspended Solids	BAL	7905830	2022/03/28	2022/03/29	Shaneil Hall

Bureau Veritas ID: SES284 Dup **Collected:** 2022/03/24
Sample ID: SW10 **Shipped:**
Matrix: Water **Received:** 2022/03/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Kjeldahl Nitrogen in Water	SKAL	7909303	2022/03/29	2022/03/30	Massarat Jan
Low Level Total Suspended Solids	BAL	7905830	2022/03/28	2022/03/29	Shaneil Hall

Bureau Veritas ID: SES285 **Collected:** 2022/03/24
Sample ID: SW11 **Shipped:**
Matrix: Water **Received:** 2022/03/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7905833	N/A	2022/03/28	Surinder Rai
Chloride by Automated Colourimetry	KONE	7905356	N/A	2022/03/28	Alina Dobreanu
Hardness (calculated as CaCO3)		7903799	N/A	2022/03/30	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7911690	N/A	2022/03/30	Azita Fazaeli
Total Ammonia-N	LACH/NH4	7910207	N/A	2022/03/30	Raiq Kashif

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

Bureau Veritas ID: SES285
Sample ID: SW11
Matrix: Water

Collected: 2022/03/24
Shipped:
Received: 2022/03/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate & Nitrite as Nitrogen in Water	LACH	7905733	N/A	2022/03/27	Raiq Kashif
Total Oil and Grease	BAL	7908938	2022/03/29	2022/03/29	Jay Bhadresh Doshi
Total Kjeldahl Nitrogen in Water	SKAL	7909303	2022/03/29	2022/03/30	Massarat Jan
Total Phosphorus (Colourimetric)	LACH/P	7909659	2022/03/29	2022/03/29	Nimarta Singh
Low Level Total Suspended Solids	BAL	7905830	2022/03/28	2022/03/29	Shaneil Hall

Bureau Veritas ID: SES286
Sample ID: SW9
Matrix: Water

Collected: 2022/03/24
Shipped:
Received: 2022/03/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7905833	N/A	2022/03/28	Surinder Rai
Chloride by Automated Colourimetry	KONE	7905356	N/A	2022/03/28	Alina Dobreanu
Hardness (calculated as CaCO3)		7903799	N/A	2022/03/30	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7911690	N/A	2022/03/30	Azita Fazaeli
Total Ammonia-N	LACH/NH4	7910207	N/A	2022/03/30	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	7905642	N/A	2022/03/29	Samuel Law
Total Oil and Grease	BAL	7908938	2022/03/29	2022/03/29	Jay Bhadresh Doshi
Total Kjeldahl Nitrogen in Water	SKAL	7909303	2022/03/29	2022/03/30	Massarat Jan
Total Phosphorus (Colourimetric)	LACH/P	7909659	2022/03/29	2022/03/29	Nimarta Singh
Low Level Total Suspended Solids	BAL	7905830	2022/03/28	2022/03/29	Shaneil Hall

Bureau Veritas ID: SES287
Sample ID: SW13
Matrix: Water

Collected: 2022/03/24
Shipped:
Received: 2022/03/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7905833	N/A	2022/03/28	Surinder Rai
Chloride by Automated Colourimetry	KONE	7905356	N/A	2022/03/28	Alina Dobreanu
Hardness (calculated as CaCO3)		7903799	N/A	2022/03/29	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	7911690	N/A	2022/03/30	Azita Fazaeli
Total Ammonia-N	LACH/NH4	7910207	N/A	2022/03/30	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	7905642	N/A	2022/03/29	Samuel Law
Total Oil and Grease	BAL	7908938	2022/03/29	2022/03/29	Jay Bhadresh Doshi
Total Kjeldahl Nitrogen in Water	SKAL	7909303	2022/03/29	2022/03/30	Massarat Jan
Total Phosphorus (Colourimetric)	LACH/P	7909659	2022/03/29	2022/03/29	Nimarta Singh
Low Level Total Suspended Solids	BAL	7905830	2022/03/28	2022/03/29	Shaneil Hall

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.3°C

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7905356	Dissolved Chloride (Cl-)	2022/03/28	NC	80 - 120	106	80 - 120	<1.0	mg/L	0.17	20		
7905642	Nitrate (N)	2022/03/29	100	80 - 120	102	80 - 120	<0.10	mg/L	0.043	20		
7905642	Nitrite (N)	2022/03/29	107	80 - 120	107	80 - 120	<0.010	mg/L	NC	20		
7905733	Nitrate (N)	2022/03/27	103	80 - 120	104	80 - 120	<0.10	mg/L	NC	20		
7905733	Nitrite (N)	2022/03/27	105	80 - 120	105	80 - 120	<0.010	mg/L	NC	20		
7905830	Total Suspended Solids	2022/03/29					<1	mg/L	0	25	97	85 - 115
7905833	Alkalinity (Total as CaCO3)	2022/03/28			96	85 - 115	<1.0	mg/L	1.4	20		
7908938	Total Oil & Grease	2022/03/29			98	85 - 115	<0.50	mg/L	0.26	25		
7909303	Total Kjeldahl Nitrogen (TKN)	2022/03/30	105	80 - 120	102	80 - 120	<0.10	mg/L	19	20	94	80 - 120
7909659	Total Phosphorus	2022/03/29	105	80 - 120	108	80 - 120	<0.004	mg/L	NC	20	110	80 - 120
7909691	Total Ammonia-N	2022/03/30	50 (1)	75 - 125	99	80 - 120	<0.050	mg/L	NC	20		
7910207	Total Ammonia-N	2022/03/30	47 (1)	75 - 125	100	80 - 120	<0.050	mg/L	1.7	20		
7911690	Total Aluminum (Al)	2022/03/30	99	80 - 120	98	80 - 120	<4.9	ug/L				
7911690	Total Antimony (Sb)	2022/03/30	102	80 - 120	98	80 - 120	<0.50	ug/L				
7911690	Total Arsenic (As)	2022/03/30	99	80 - 120	96	80 - 120	<1.0	ug/L				
7911690	Total Barium (Ba)	2022/03/30	98	80 - 120	95	80 - 120	<2.0	ug/L				
7911690	Total Beryllium (Be)	2022/03/30	96	80 - 120	95	80 - 120	<0.40	ug/L				
7911690	Total Bismuth (Bi)	2022/03/30	94	80 - 120	94	80 - 120	<1.0	ug/L				
7911690	Total Boron (B)	2022/03/30	94	80 - 120	91	80 - 120	<10	ug/L	NC	20		
7911690	Total Cadmium (Cd)	2022/03/30	99	80 - 120	97	80 - 120	<0.090	ug/L				
7911690	Total Calcium (Ca)	2022/03/30	NC	80 - 120	95	80 - 120	<200	ug/L	0.82	20		
7911690	Total Chromium (Cr)	2022/03/30	97	80 - 120	94	80 - 120	<5.0	ug/L				
7911690	Total Cobalt (Co)	2022/03/30	102	80 - 120	97	80 - 120	<0.50	ug/L				
7911690	Total Copper (Cu)	2022/03/30	96	80 - 120	92	80 - 120	<0.90	ug/L				
7911690	Total Iron (Fe)	2022/03/30	99	80 - 120	95	80 - 120	<100	ug/L	NC	20		
7911690	Total Lead (Pb)	2022/03/30	97	80 - 120	95	80 - 120	<0.50	ug/L				
7911690	Total Lithium (Li)	2022/03/30	96	80 - 120	94	80 - 120	<5.0	ug/L				
7911690	Total Magnesium (Mg)	2022/03/30	98	80 - 120	97	80 - 120	<50	ug/L	1.3	20		
7911690	Total Manganese (Mn)	2022/03/30	99	80 - 120	96	80 - 120	<2.0	ug/L				
7911690	Total Molybdenum (Mo)	2022/03/30	99	80 - 120	94	80 - 120	<0.50	ug/L				
7911690	Total Nickel (Ni)	2022/03/30	98	80 - 120	96	80 - 120	<1.0	ug/L				

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7911690	Total Potassium (K)	2022/03/30	99	80 - 120	97	80 - 120	<200	ug/L	1.4	20		
7911690	Total Selenium (Se)	2022/03/30	102	80 - 120	101	80 - 120	<2.0	ug/L				
7911690	Total Silicon (Si)	2022/03/30	98	80 - 120	96	80 - 120	<50	ug/L				
7911690	Total Silver (Ag)	2022/03/30	95	80 - 120	93	80 - 120	<0.090	ug/L				
7911690	Total Sodium (Na)	2022/03/30	NC	80 - 120	95	80 - 120	<100	ug/L	1.5	20		
7911690	Total Strontium (Sr)	2022/03/30	96	80 - 120	93	80 - 120	<1.0	ug/L				
7911690	Total Tellurium (Te)	2022/03/30	99	80 - 120	96	80 - 120	<1.0	ug/L				
7911690	Total Thallium (Tl)	2022/03/30	103	80 - 120	98	80 - 120	<0.050	ug/L				
7911690	Total Tin (Sn)	2022/03/30	101	80 - 120	96	80 - 120	<1.0	ug/L				
7911690	Total Titanium (Ti)	2022/03/30	94	80 - 120	93	80 - 120	<5.0	ug/L				
7911690	Total Tungsten (W)	2022/03/30	102	80 - 120	98	80 - 120	<1.0	ug/L				
7911690	Total Uranium (U)	2022/03/30	95	80 - 120	92	80 - 120	<0.10	ug/L				
7911690	Total Vanadium (V)	2022/03/30	97	80 - 120	94	80 - 120	<0.50	ug/L				
7911690	Total Zinc (Zn)	2022/03/30	101	80 - 120	100	80 - 120	<5.0	ug/L	0.42	20		
7911690	Total Zirconium (Zr)	2022/03/30	103	80 - 120	97	80 - 120	<1.0	ug/L				

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

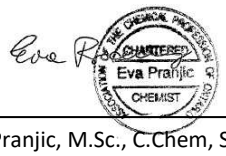
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Page of

25-Mar-22 08:35
Ankita Bhalla
C279893
KTN ENV-1171
C#868520-01-01

Bottle Order #: 868520
Project Manager: Ankita Bhalla

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name:	#1326 Golder Associates Ltd	Company Name:		Quotation #:	C20239
Attention:	Accounts Payable	Attention:	Craig De Vito	P.O. #:	
Address:	6925 Century Ave Suite 100	Address:		Project:	19129150
	Mississauga ON L5N 7K2			Project Name:	
Tel:	(905) 567-4444 Fax: (905) 567-6561	Tel:	(905) 567-6100 Ext: 1507 Fax:	Site #:	
Email:	CanadaAccountsPayableInvoices@golder.com	Email:	Craig_DeVito@golder.com	Sampled By:	

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
- ☐ Table 1 ☐ Res/Park ☐ Medium/Fine
- ☐ Table 2 ☐ Ind/Comm ☐ Coarse
- ☐ Table 3 ☐ Agri/Other ☐ For RSC
- ☐ Table ___

Other Regulations
- ☐ CCME ☐ Sanitary Sewer Bylaw
- ☐ Reg 558 ☐ Storm Sewer Bylaw
- ☐ MISA Municipality ___
- ☐ PWQO ☐ Reg 406 Table ___
- ☐ Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

Field Filtered (please circle): Metals / Hg / Cr VI

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Total Metals Analysis by ICPMS	Chloride, Nitrate & Nitrite	Total Ammonia-N, TKN, Total P	Alkalinity, Hardness	Low Level Total Suspended Solids	Total Oil and Grease	# of Bottles	Comments
1		SW8	Mar 24 2022	1730	SW	X	X	X	X	X	X	6	
2		SW10		1130		X	X	X	X	X	X	6	
3		SW11		930		X	X	X	X	X	X	6	
4		SW9		1200		X	X	X	X	X	X	6	
5		SW13		900		X	X	X	X	X	X	6	
6													
7													
8													
9													
10													

REC'D IN WATERLOO

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Brian Cingel	22 03 24	20:20	Sarah Webster	2022/03/25	0835	
			Ray Mousseau	2022/03/25	1546	

Laboratory Use Only
Time Sensitive
Temperature (°C) on Recei: 1/4/2.
Custody Seal: Present ☑ Intact ☑ — Yes ☑ No ☐

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/TERMS-AND-CONDITIONS.
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.
** SAMPLE CHAIN OF CUSTODY, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT HTTPS://WWW.BVNA.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

White: Bureau Veritas Yellow: Client

on ice.

Bureau Veritas Canada (2019) Inc.

1|0|3, 2|0|0 BV - [illegible]

APPENDIX P

Water Balance Calculations

Table P-1
Land Use Designations and Infiltration Factors

Existing Conditions

Type	WHC	Type of Land Use	Soil Type	Infiltration Factor (%)			
				Topo	Soils	Cover	Total
Forested Swamp	250 mm	Wetland / Mature Forest	Silt Loam / Organics	0.00	0.00	0.00	0.00
Local Pond	Precip-Lake Evap.	Open Aquatic	Silt Loam / Organics	0.00	0.00	0.00	0.00
Marsh / Wet Meadow	Precip. - Lake Evap.	Wetland	Silt Loam / Organics	0.00	0.00	0.00	0.00
Forested Area	300 mm	Mature Forest	Fine Sandy Loam	0.10	0.40	0.20	0.70
Pervious Built-Up Area	75 mm	Urban Lawns	Fine Sandy Loam	0.20	0.40	0.10	0.70
Impervious Built up Areas	3 mm	Roadway	n/a	n/a	0.00	0.00	0.00
Moderately Rooted Agricultural Land / Meadow	150 mm	Tilled / Pasture & Shrubs	Fine Sandy Loam	0.15	0.40	0.10	0.65

Operational Conditions (Phases 1 - 7)

Type	WHC	Type of Land Use	Soil Type	Infiltration Factor (%)			
				Topo	Soils	Cover	Total
Forested Swamp	250 mm	Wetland / Mature Forest	Silt Loam / Organics	0.00	0.00	0.00	0.00
Local Pond	Precip-Lake Evap.	Open Aquatic	Silt Loam / Organics	0.00	0.00	0.00	0.00
Marsh / Wet Meadow	Precip. - Lake Evap.	Wetland	Silt Loam / Organics	0.00	0.00	0.00	0.00
Forested Area	300 mm	Mature Forest	Fine Sandy Loam	0.10	0.40	0.20	0.70
Impervious Built up Areas	90% Precip	Roadway / Buildings	n/a	n/a	0.00	0.00	0.00
Moderately Rooted Agricultural Land / Meadow	150 mm	Tilled / Pasture & Shrubs	Fine Sandy Loam	0.15	0.40	0.10	0.65
Till / Rehab Area	100 mm	Tilled	Fine Sandy Loam	0.20	0.40	0.10	0.70
Quarry Sump	Precip. - Lake Evap.	Ponded Area	n/a	0.00	0.00	0.00	0.00
Quarry Extraction Area	10 mm	Quarry (Dewatered)	Bedrock	0.00	0.00	0.00	0.00

Rehabilitated Conditions

Type	WHC	Type of Land Use	Soil Type	Infiltration Factor (%)			
				Topo	Soils	Cover	Total
Forested Swamp	250 mm	Wetland / Mature Forest	Silt Loam / Organics	0.00	0.00	0.00	0.00
Marsh / Wet Meadow / Wetland	Precip. - Lake Evap.	Wetland	Silt Loam / Organics	0.00	0.00	0.00	0.00
Forested Area	300 mm	Mature Forest	Fine Sandy Loam	0.10	0.40	0.20	0.70
Post-Agricultural land / Meadow / Grassland / Island	150 mm	Pastures and Shrubs	Fine Sandy Loam	0.15	0.40	0.10	0.65
Lake / Local Pond	Precip.- Lake Evap	Open Aquatic	n/a	0.00	0.00	0.00	0.00

Note:
WHC - Water Holding Capacity
The infiltration factor is estimated by summing a factor for topography, soils and cover (MOE Stormwater Management Planning and Design Manual, 2003-Table 3.1)

Existing Condition - Estimated Annual Average Water Balance											
Land Use	Area	Precipitation		ET		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	11,065	898	9940	578	6400	319	3530	0	0	319	3530
Wet Meadow	8,244	898	7,400	664	5,470	382	3150	0	0	382	3150
Impervious Built-Up Areas	120	898	110	444	50	452	55	0	0	452	50
Pervious Built-Up Areas	21,106	898	18,950	514	10,850	382	8065	267	5645	115	2420
Forested Area	229,498	898	206,090	578	132,650	319	73210	223	51245	96	21965
Moderately Rooted Agricultural Land / Meadow	2,349,774	898	2,110,100	556	1,306,470	342	803620	222	522355	120	281270
TOTAL	**2,619,807**	**898**	**2,352,590**	**558**	**1,461,890**	**340**	**891,630**	**221**	**579,245**	**119**	**312,385**

Operational Condition (Phase 1) - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	11,065	898	9,940	514	5,690	382	4,225	0	0	382	4,225
Wet Meadow	8,244	898	7,400	664	5,470	234	1,930	0	0	234	1,930
Impervious Built-Up Areas	120	898	110	444	50	452	55	0	0	452	50
Pervious Built-Up Areas	17,934	898	16,100	556	9,970	347	6,225	243	4,360	104	1,865
Forested Area	178,785	898	160,550	578	103,340	319	57,030	223	39,920	96	17,110
Moderately Rooted Agricultural Land / Meadow	1,778,535	898	1,597,120	556	988,870	342	608,260	222	395,370	120	212,890
Till / Rehab Area	186,269	898	167,270	532	99,100	365	67,990	256	47,590	110	20,400
Quarry Sump	27,900	898	25,050	664	18,530	234	6,525	0	0	234	6,530
Quarry Extraction Area	410,956	898	369,040	453	186,160	446	183,285	0	0	446	183,290
TOTAL	**2,619,807**	**898**	**2,352,580**	**541**	**1,417,180**	**357**	**935,525**	**186**	**487,240**	**171**	**448,290**

Operational Condition (Phases 2A & 2B) - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	11,065	898	9,940	514	5,690	382	4,225	0	0	382	4,225
Wet Meadow	8,244	898	7,400	664	5,470	234	1,930	0	0	234	1,930
Impervious Built-Up Areas	120	898	110	444	50	452	50	0	0	452	55
Pervious Built-Up Areas	16,822	898	15,110	514	8,650	382	6,430	267	4,500	115	1,930
Forested Area	161,010	898	144,590	578	93,060	319	51,360	223	35,950	96	15,410
Moderately Rooted Agricultural Land / Meadow	1,578,321	898	1,417,330	556	877,550	342	539,790	222	350,860	120	188,925
Till / Rehab Area	337,364	898	302,950	532	179,480	365	123,140	256	86,200	110	36,940
Quarry Sump	27,900	898	25,050	664	18,530	234	6,530	0	0	234	6,525
Quarry Extraction Area	478,961	898	430,110	453	216,970	446	213,620	0	0	446	213,620
TOTAL	**2,619,807**	**898**	**2,352,590**	**536**	**1,405,450**	**362**	**947,075**	**182**	**477,510**	**179**	**469,560**

Operational Condition (Phase 3) - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	11,065	898	9,940	514	5,690	382	4,225	0	0	382	4,230
Wet Meadow	8,244	898	7,400	664	5,470	234	1,930	0	0	234	1,930
Impervious Built-Up Areas	120	898	110	444	50	452	50	0	0	452	50
Pervious Built-Up Areas	15,901	898	14,280	514	8,170	382	6,075	267	4,250	115	1,820
Forested Area	146,280	898	131,360	578	84,550	319	46,665	223	32,660	96	14,000
Moderately Rooted Agricultural Land / Meadow	1,412,398	898	1,268,330	556	785,290	342	483,040	222	313,980	120	169,060
Till / Rehab Area	436,300	898	391,800	532	232,110	365	159,250	256	111,470	110	47,770
Quarry Sump	27,900	898	25,050	664	18,530	234	6,530	0	0	234	6,530
Quarry Extraction Area	561,600	898	504,320	453	254,400	446	250,470	0	0	446	250,470
TOTAL	**2,619,807**	**898**	**2,352,590**	**532**	**1,394,260**	**366**	**958,235**	**176**	**462,360**	**189**	**495,860**

Operational Condition (Phase 4) - Estimated Average Annual Water Balance										
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	11,065	898	9,940	514	5,690	382	4,230	0	0	382	4,230
Wet Meadow	8,244	898	7,400	664	5,470	234	1,930	0	0	234	1,930
Impervious Built-Up Areas	120	898	110	444	50	452	50	0	0	452	50
Pervious Built-Up Areas	14,892	898	13,370	514	7,650	382	5,690	267	3,980	115	1,710
Forested Area	130,160	898	116,880	578	75,230	319	41,520	223	29,060	96	12,455
Moderately Rooted Agricultural Land / Meadow	1,230,826	898	1,105,280	556	684,340	342	420,940	222	273,610	120	147,330
Till / Rehab Area	490,700	898	440,650	532	261,050	365	179,105	256	125,370	110	53,730
Quarry Sump	27,900	898	25,050	664	18,530	234	6,530	0	0	234	6,525
Quarry Extraction Area	705,900	898	633,900	453	319,770	446	314,830	0	0	446	314,830
TOTAL	**2,619,807**	**898**	**2,352,580**	**526**	**1,377,780**	**372**	**974,825**	**165**	**432,020**	**207**	**542,790**

Operational Condition (Phase 5) - Estimated Average Annual Water Balance										
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	11,065	898	9,940	514	5,690	382	4,230	0	0	382	4,230
Wet Meadow	8,244	898	7,400	664	5,470	234	1,930	0	0	234	1,930
Impervious Built-Up Areas	120	898	110	444	50	452	55	0	0	452	55
Pervious Built-Up Areas	13,251	898	11,900	514	6,810	382	5,060	267	3,545	115	1,520
Forested Area	103,932	898	93,330	578	60,070	319	33,155	223	23,210	96	9,945
Moderately Rooted Agricultural Land / Meadow	935,394	898	839,980	556	520,080	342	319,905	222	207,940	120	111,965
Till / Rehab Area	558,675	898	501,690	532	297,220	365	203,915	256	142,740	110	61,175
Quarry Sump	27,900	898	25,050	664	18,530	234	6,525	0	0	234	6,525
Quarry Extraction Area	961,225	898	863,180	453	435,430	446	428,705	0	0	446	428,705
TOTAL	**2,619,807**	**898**	**2,352,580**	**515**	**1,349,350**	**383**	**1,003,480**	**144**	**377,435**	**239**	**626,050**

Operational Condition (Phase 6) - Estimated Average Annual Water Balance										
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	11,065	898	9,940	514	5,690	382	4,230	0	0	382	4,230
Wet Meadow	8,244	898	7,400	664	5,470	234	1,930	0	0	234	1,930
Impervious Built-Up Areas	120	898	110	444	50	452	50	0	0	452	50
Pervious Built-Up Areas	12,028	898	10,800	514	6,180	382	4,595	267	3,220	115	1,380
Forested Area	84,377	898	75,770	578	48,770	319	26,920	223	18,840	96	8,075
Moderately Rooted Agricultural Land / Meadow	715,123	898	642,180	556	397,610	342	244,570	222	158,970	120	85,600
Till / Rehab Area	621,189	898	557,830	532	330,470	365	226,730	256	158,710	110	68,020
Quarry Sump	32,650	898	29,320	664	21,680	234	7,640	0	0	234	7,640
Quarry Extraction Area	1,135,011	898	1,019,240	453	514,160	446	506,210	0	0	446	506,215
TOTAL	**2,619,807**	**898**	**2,352,590**	**508**	**1,330,080**	**390**	**1,022,875**	**130**	**339,740**	**261**	**683,140**

Operational Condition (Phase 7) - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	11,065	898	9,935	514	5,690	382	4,230	0	0	382	4,230
Wet Meadow	8,244	898	7,405	664	5,470	234	1,930	0	0	234	1,930
Impervious Built-Up Areas	120	898	110	444	50	452	50	0	0	452	50
Pervious Built-Up Areas	10,923	898	9,810	514	5,610	382	4,170	267	2,920	115	1,250
Forested Area	66,704	898	59,900	578	38,550	319	21,280	223	14,895	96	6,385
Moderately Rooted Agricultural Land / Meadow	516,052	898	463,415	556	286,920	342	176,490	222	114,720	120	61,770
Till / Rehab Area	581,995	898	522,630	532	309,620	365	212,430	256	148,700	110	63,730
Quarry Sump	32,650	898	29,320	664	21,680	234	7,640	0	0	234	7,640
Quarry Extraction Area	1,392,055	898	1,250,065	453	630,600	446	620,855	0	0	446	620,855
TOTAL	**2,619,807**	**898**	**2,352,590**	**498**	**1,304,190**	**400**	**1,049,075**	**107**	**281,235**	**293**	**767,840**

Rehabilitated - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	11,065	898	9940	574	6350	321	3550	0	0	321	3550
Wet Meadow / Wetland	56,244	898	50,510	664	37350	234	13160	0	0	234	13160
Forested Area	540,353	898	485,240	453	244780	446	241000	312	168700	134	72300
Post-Agricultural land / Meadow / Grasslan	429,145	898	385,370	578	248050	319	136895	207	88980	112	47915
Lake	1,583,000	898	1,421,530	664	1051210	234	370320	234	370320	0	0
TOTAL	**2,619,807**	**898**	**2,352,590**	**606**	**1,587,740**	**292**	**764,925**	**240**	**628,000**	**52**	**136,925**

Existing Condition - Estimated Annual Average Water Balance											
Land Use	Area	Precipitation		ET		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	1,278,334	898	1147940	574	733760	321	410345	0	0.0	321	410345
Wet Meadow	476,174	898	427,600	664	316,210	234	111,390	0	0	234	111,395
Impervious Built-Up Areas	420,044	898	377,200	444	186,500	452	189,860	0	0	452	189,860
Pervious Built-Up Areas	741,375	898	665,750	90	66,580	382	283,205	267	198,240	115	84,960
Forested Area	3,436,450	898	3,085,930	578	1,986,270	319	1,096,230	223	767,360	96	328,870
Moderately Rooted Agricultural Land / Meadow	11,044,239	898	9,917,730	556	6,140,600	342	3,777,130	222	2,455,135	120	1,321,995
TOTAL	**17,396,615**	**898**	**15,622,150**	**542**	**9,429,920**	**337**	**5,868,160**	**197**	**3,420,735**	**141**	**2,447,425**

Operational Condition (At the End of Phase 7) - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	1,278,334	898	1,147,940	574	733,760	321	410,345	0	0	321	410,345
Wet Meadow	476,174	898	427,600	664	316,210	234	111,395	0	0	234	111,395
Impervious Built-Up Areas	397,295	898	356,770	444	176,400	452	179,575	0	0	452	179,575
Pervious Built-Up Areas	732,473	898	657,760	514	376,490	382	279,805	267	195,865	115	83,940
Forested Area	3,344,279	898	3,003,160	578	1,932,990	319	1,066,825	223	746,775	96	320,050
Moderately Rooted Agricultural Land / Meadow	9,480,140	898	8,513,170	556	5,270,960	342	3,242,210	222	2,107,435	120	1,134,770
TOTAL	**15,708,695**	**898**	**14,106,400**	**561**	**8,806,810**	**337**	**5,290,155**	**194**	**3,050,075**	**143**	**2,240,075**

Rehabilitated - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	1,278,334	898	1147940	574	733760	321	410345	0	0	321	410345
Wet Meadow	476,174	898	427,600	664	316210	234	111395	0	0	234	111390
Impervious Built-Up Areas	397,295	898	356,770	444	176400	452	179575	0	0	452	179580
Pervious Built-Up Areas	732,473	898	657,760	514	376490	382	279805	267	195865	115	83940
Forested Area	3,344,279	898	3,003,160	578	1932990	319	1066825	223	746775	96	320050
Post-Agricultural Land / Meadow / Grassland	9,480,140	898	8,513,170	556	5270960	342	3242210	222	2107435	120	1134770
TOTAL	**15,708,695**	**898**	**14,106,400**	**549**	**8,806,810**	**325**	**5,290,155**	**194**	**3,050,075**	**131**	**2,240,075**

Existing Condition - Estimated Annual Average Water Balance											
Land Use	Area	Precipitation		ET		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Marsh	19,474	898	17490	664	12930	234	4555	0	0.0	233.935	4560
Impervious Built-Up Areas	11,931	898	10,710	444	5,300	452	5,395	0	0	452	5,390
Pervious Built-Up Areas	16,805	898	15,090	514	8,640	382	6,420	248	4,175	134	2,245
Forested Area	47,247	898	42,430	578	27,310	319	15,070	223	10,550	96	4,520
Moderately Rooted Agricultural Land / Meadow	168,513	898	151,320	556	93,690	342	57,630	222	37,460	120	20,170
TOTAL	**263,969**	**898**	**237,040**	**560**	**147,870**	**337**	**89,070**	**198**	**52,185**	**140**	**36,885**

Operational Condition (At the End of Phase 7) - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Marsh	19,474	898	17,490	664	12,930	234	4,560	0	0	234	4,560
Impervious Built-Up Areas	113,283	898	101,730	444	50,300	452	51,205	0	0	452	51,205
Pervious Built-Up Areas	20,425	898	18,340	514	10,500	382	7,800	267	5,460	115	2,340
Forested Area	55,211	898	49,580	578	31,910	319	17,610	223	12,330	96	5,280
Moderately Rooted Agricultural Land / Meadow	302,992	898	272,090	556	168,460	342	103,620	222	67,355	120	36,270
TOTAL	**511,385**	**898**	**459,230**	**536**	**274,100**	**361**	**184,795**	**166**	**85,145**	**195**	**99,655**

Rehabilitated - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Marsh	19,474	898	17490	664	12930	234	4560	0	0	234	4560
Impervious Built-Up Areas	113,283	898	101,730	453	51320	446	50525	0	0	446	50525
Pervious Built-Up Areas	20,425	898	18,340	514	10500	382	7800	248	5070	134	2730
Forested Area	55,211	898	49,580	578	31910	319	17610	223	12330	96	5280
Post-Agricultural Land / Meadow	302,992	898	272,090	556	168460	342	103620	222	67355	120	36270
TOTAL	**511,385**	**898**	**459,230**	**538**	**275,120**	**360**	**184,115**	**166**	**84,755**	**194**	**99,365**

Existing Condition - Estimated Annual Average Water Balance											
Land Use	Area	Precipitation		ET		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Local Pond	7,775	898	6980	664	5160	234	1820	0	0.0	233.935	1820
Impervious Built-Up Areas	560	898	500	444	250	452	255	0	0	452	250
Pervious Built-Up Areas	736	898	660	514	380	382	280	267	200	115	85
Forested Area	49,373	898	44,340	578	28,540	319	15,750	223	11,025	96	4,725
Moderately Rooted Agricultural Land / Mea	225,235	898	202,260	556	125,230	342	77,030	222	50,070	120	26,960.0
TOTAL	**283,679**	**898**	**254,740**	**562**	**159,560**	**335**	**95,135**	**216**	**61,295**	**119**	**33,840**

Operational Condition (At the End of Phase 7) - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Local Pond	7,775	898	6,980	664	5,160	234	1,820	0	0	234	1,820
Impervious Built-Up Areas	886	898	800	444	390	452	400	0	0	452	400
Pervious Built-Up Areas	736	898	660	514	380	382	280	267	200	115	85
Forested Area	49,373	898	44,340	578	28,540	319	15,750	223	11,020	96	4,725
Moderately Rooted Agricultural Land / Meadow	224,583	898	201,680	556	124,870	342	76,805	222	49,920	120	26,885
TOTAL	**283,353**	**898**	**254,460**	**562**	**159,340**	**335**	**95,055**	**216**	**61,140**	**120**	**33,915**

Rehabilitated - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Local Pond	7,775	898	6,980	664	5160	234	1820	0	0	234	1820
Impervious Built-Up Areas	886	898	800	444	390	452	400	0	0	452	400
Pervious Built-Up Areas	736	898	660	514	380	382	280	267	200	115	85
Forested Area	49,373	898	44,340	578	28540	319	15750	223	11020	96	4725
Post-Agricultural Land / Meadow	224,583	898	201,680	556	124870	342	76805	222	49920	120	26885
TOTAL	**283,353**	**898**	**254,460**	**562**	**159,340**	**335**	**95,055**	**216**	**61,140**	**120**	**33,915**

Existing Condition - Estimated Annual Average Water Balance											
Land Use	Area	Precipitation		ET		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Impervious Built-Up Areas	6,462	898	5,800	444	2,870	452	2,920	0	0	452	2,920
Moderately Rooted Agricultural Land / Meadow	57,134	898	51,310	556	31,770	342	19,540	222	12,700	120	6,840
TOTAL	**63,596**	**898**	**57,110**	**545**	**34,640**	**353**	**22,460**	**200**	**12,700**	**153**	**9,760**

Operational Condition (At the End of Phase 7) - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Impervious Built-Up Areas	6,462	898	5,800	444	2,870	452	2,920	0	0	452	2,920
Moderately Rooted Agricultural Land / Meadow	19,515	898	17,520	556	10,850	342	6,675	222	4,340	120	2,335
TOTAL	**25,977**	**898**	**23,320**	**528**	**13,720**	**369**	**9,595**	**167**	**4,340**	**202**	**5,255**

Rehabilitated - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Impervious Built-Up Areas	6,462	898	5,800	444	2870	452	2920	0	0	452	2920
Post-Agricultural Land / Meadow	19,515	898	17,520	556	10850	342	6675	222	4340	120	2335
TOTAL	**25,977**	**898**	**23,320**	**528**	**13,720**	**369**	**9,595**	**167**	**4,340**	**202**	**5,255**

Existing Condition - Estimated Annual Average Water Balance											
Land Use	Area	Precipitation		ET		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	397,020	898	356520	574	227890	321	127440	0	0.0	321	127445
Marsh	16,352	898	14,680	664	10,860	234	3,830	0	0	234	3,825
Local Pond	1,281	898	1,150	664	850	234	300	0	0	234	300
Impervious Built-Up Areas	4,080	898	3,660	444	1,810	452	1,840	0	0	452	1,845
Pervious Built-Up Areas	16,745	898	15,040	514	8,610	382	6,400	267	4,480	115	1,920
Forested Area	556,118	898	499,390	578	321,440	319	177,400	223	124,180	96	53,220
Moderately Rooted Agricultural Land / Meadow	420,517	898	377,620	556	233,810	342	143,820	222	93,480	120	50,335
TOTAL	**1,412,112**	**898**	**1,268,060**	**570**	**805,270**	**326**	**461,030**	**157**	**222,140**	**169**	**238,890**

Operational Condition (Phase 2A) - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	397,020	898	356,520	574	227,890	321	127,445	0	0	321	127,445
Marsh	16,352	898	14,680	664	10,860	234	3,825	0	0	234	3,825
Local Pond	1,281	898	1,150	664	850	234	300	0	0	234	300
Impervious Built-Up Areas	4,458	898	4,000	444	1,980	452	2,015	0	0	452	2,015
Pervious Built-Up Areas	16,745	898	15,040	514	8,610	382	6,395	267	4,480	115	1,920
Forested Area	556,118	898	499,390	578	321,440	319	177,400	223	124,180	96	53,220
Moderately Rooted Agricultural Land / Meadow	402,935	898	361,840	556	224,030	342	137,805	222	89,570	120	48,230
TOTAL	**1,394,909**	**898**	**1,252,620**	**570**	**795,660**	**326**	**455,185**	**156**	**218,230**	**170**	**236,955**

Rehabilitated - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	397,020	898	356520	574	227890	321	127445	0	0	321	127445
Marsh	16,352	898	14,680	664	10860	234	3825	0	0	234	3825
Local Pond	1,281	898	1,150	664	850	234	300	0	0	234	300
Impervious Built-Up Areas	4,458	898	4,000	444	1980	452	2015	0	0	452	2015
Pervious Built-Up Areas	16,745	898	15,040	514	8610	382	6395	267	4480	115	1920
Forested Area	556,118	898	499,390	578	321440	319	177400	223	124180	96	53220
Post-Agricultural Land / Meadow	402,935	898	361,840	556	224030	342	137805	222	89570	120	48230
TOTAL	**1,394,909**	**898**	**1,252,620**	**570**	**795,660**	**326**	**455,185**	**156**	**218,230**	**170**	**236,955**

Existing Condition - Estimated Annual Average Water Balance											
Land Use	Area	Precipitation		ET		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	612,941	898	550420	574	351830	321	196750	0	0.0	321	196755
Wet Meadow	84,057	898	75,480	664	55,820	234	19,665	0	0	234	19,665
Impervious Built-Up Areas	149,595	898	134,340	444	66,420	452	67,620	0	0	452	67,615
Pervious Built-Up Areas	123,867	898	111,230	90	11,120	382	47,315	267	33,120	115	14,195
Forested Area	1,223,295	898	1,098,520	578	707,060	319	390,230	223	273,160	96	117,070
Moderately Rooted Agricultural Land / Meadow	3,743,097	898	3,361,300	556	2,081,160	342	1,280,140	222	832,090	120	448,050
TOTAL	**5,936,853**	**898**	**5,331,290**	**551**	**3,273,410**	**337**	**2,001,720**	**192**	**1,138,370**	**145**	**863,350**

Operational Condition (At the End of Phase 7) - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	612,941	898	550,420	574	351,830	321	196,755	0	0	321	196,755
Wet Meadow	84,057	898	75,480	664	55,820	234	19,665	0	0	234	19,665
Impervious Built-Up Areas	126,846	898	113,910	444	56,320	452	57,335	0	0	452	57,335
Pervious Built-Up Areas	114,956	898	103,230	514	59,090	382	43,915	267	30,740	115	13,175
Forested Area	1,131,124	898	1,015,750	578	653,790	319	360,830	223	252,580	96	108,250
Moderately Rooted Agricultural Land / Meadow	2,178,998	898	1,956,740	556	1,211,520	342	745,220	222	484,390	120	260,825
TOTAL	**4,248,922**	**898**	**3,815,530**	**562**	**2,388,370**	**335**	**1,423,720**	**181**	**767,710**	**154**	**656,005**

Rehabilitated - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Swamp	612,941	898	550420	574	351830	321	196755	0	0	321	196755
Wet Meadow	84,057	898	75,480	664	55820	234	19665	0	0	234	19665
Impervious Built-Up Areas	126,846	898	113,910	444	56320	452	57335	0	0	452	57335
Pervious Built-Up Areas	114,956	898	103,230	514	59090	382	43915	267	30740	115	13175
Forested Area	1,131,124	898	1,015,750	578	653790	319	360830	223	252580	96	108250
Post-Agricultural Land / Meadow	2,178,998	898	1,956,740	556	1211520	342	745220	222	484390	120	260825
TOTAL	**4,248,922**	**898**	**3,815,530**	**549**	**2,388,370**	**322**	**1,423,720**	**181**	**767,710**	**141**	**656,005**

Table P-9
Summary of Results - South Area Internally Draining Catchment Water Balance

Existing Condition - Estimated Annual Average Water Balance											
Land Use	Area	Precipitation		ET		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Moderately Rooted Agricultural Land	115,593	898	103,800	556	64,270	342	39,530	222	25,695	120	13,835.0
TOTAL	**115,593**	**898**	**103,800**	**556**	**64,270**	**342**	**39,530**	**222**	**25,695**	**120**	**13,835**

Operational Condition (At the End of Phase 7) - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Moderately Rooted Agricultural Land	31,694	898	28,460	556	17,620	342	10,840	222	7,045	120	3,795
TOTAL	**31,694**	**898**	**28,460**	**556**	**17,620**	**342**	**10,840**	**222**	**7,045**	**120**	**3,795**

Rehabilitated - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Post-Agricultural Land / Grassland	15,847	898	14,230	556	8810	342	5420	222	3525	120	1895
Forested Area	15,847	898	14,230	578	9160	319	5055	239	3790	80	1265
TOTAL	**31,694**	**898**	**28,460**	**567**	**17,970**	**331**	**10,475**	**231**	**7,315**	**100**	**3,160**

Entered by: NP
Checked by: CDV

Existing Condition - Estimated Annual Average Water Balance											
Land Use	Area	Precipitation		ET		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Pervious Built-Up Areas	11,538	898	10,360	514	5,930	382	4,405	267	3,085	115	1,320
Forested Area	84,754	898	76,110	578	48,990	319	27,035	223	18,925	96	8,110
Moderately Rooted Agricultural Land / Meadow	368,884	898	331,260	556	205,100	342	126,160	222	82,005	120	44,155
TOTAL	**465,175**	**898**	**417,730**	**559**	**260,020**	**339**	**157,600**	**224**	**104,015**	**115**	**53,585**

Operational Condition (At the End of Phase 7) - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Pervious Built-Up Areas	2,068	898	1,860	514	1,060	382	790	267	550	115	240
Forested Area	8,589	898	7,710	578	4,960	319	2,740	223	1,920	96	820
Moderately Rooted Agricultural Land / Meadow	53,542	898	48,080	556	29,770	342	18,310	222	11,900	120	6,410
TOTAL	**64,199**	**898**	**57,650**	**558**	**35,790**	**340**	**21,840**	**224**	**14,370**	**116**	**7,470**

Rehabilitated - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Area	42,799	898	38,430	578	24740	319	13650	223	9560	96	4095
Grassland	21,400	898	19,220	556	11900	342	7320	222	4755	120	2560
TOTAL	**64,199**	**898**	**57,650**	**571**	**36,640**	**327**	**20,970**	**223**	**14,315**	**104**	**6,655**

Table P-11
Summary of Results - North Area Internally Draining Catchment Water Balance

Existing Condition - Estimated Annual Average Water Balance											
Land Use	Area	Precipitation		ET		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Pervious Built-Up Areas	1,232	898	1,110	514	630	382	470	267	330	115	140
Forested Area	21,698	898	19,480	578	12,540	319	6,920	223	4,845	96	2,075
Moderately Rooted Agricultural Land / Meadow	279,479	898	250,970	556	155,390	342	95,580	222	62,130	120	33,450
TOTAL	**302,408**	**898**	**271,560**	**557**	**168,560**	**341**	**102,970**	**223**	**67,305**	**118**	**35,665**

Operational Condition (At the End of Phase 7) - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Pervious Built-Up Areas	1,232	898	1,110	514	630	382	470	267	330	115	140
Forested Area	19,040	898	17,100	578	11,010	319	6,070	223	4,250	96	1,820
Moderately Rooted Agricultural Land / Meadow	121,926	898	109,490	556	67,790	342	41,700	222	27,105	120	14,595
TOTAL	**142,198**	**898**	**127,700**	**559**	**79,430**	**339**	**48,240**	**223**	**31,685**	**116**	**16,555**

Rehabilitated - Estimated Average Annual Water Balance											
Land use	Area	Precipitation		Evapotranspiration		Surplus		Infiltration		Runoff	
	(m^2)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Forested Area	41,198	898	37,000	578	23810	319	13140	223	9200	96	3940
Post-Agricultural Land / Meadow / Grassland	101,000	898	90,700	556	56160	342	34540	222	22450	120	12090
TOTAL	**142,198**	**898**	**127,700**	**562**	**79,970**	**335**	**47,680**	**223**	**31,650**	**113**	**16,030**

Entered by: NP
Checked by: CDV

Summary of Changes to Water Balance Results Based on Operational Phases 1- 7

SW Station / Internally Draining Catchments	Parameters	Operational Phases													
		Phase 1		Phase 2A & 2B		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7	
		(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)	(mm/a)	(m^3/a)
Site-Wide	Total Site Area (m^2)	2,619,807		2,619,807		2,619,807		2,619,807		2,619,807		2,619,807		2,619,807	
	Precipitation	898	2,352,580	898	2,352,590	898	2,352,590	898	2,352,580	898	2,352,580	898	2,352,590	898	2,352,590
	Evapotranspiration	541	1,417,180	536	1,405,450	532	1,394,260	526	1,377,780	515	1,349,350	508	1,330,080	498	1,304,190
	Surplus	357	935,525	362	947,075	366	958,235	372	974,825	383	1,003,480	390	1,022,875	400	1,049,075
	Infiltration	186	487,240	182	477,510	176	462,360	165	432,020	144	377,435	130	339,740	107	281,235
	Runoff	171	448,290	179	469,560	189	495,860	207	542,790	239	626,050	261	683,140	293	767,840
SW8	Catchment Area Under Operational Phase (m^2)	16,541,534		16,541,160		-		-		16,461,075		16,056,240		15,708,695	
	Precipitation	898	14,854,298	898	14,853,962	-	-	-	-	898	14,782,045	898	14,418,503	898	14,106,408
	Evapotranspiration	560	9,269,433	560	9,269,225	-	-	-	-	560	9,224,740	561	8,999,866	561	8,806,815
	Surplus	337	5,575,349	337	5,575,221	-	-	-	-	337	5,547,797	337	5,409,166	337	5,290,154
	Infiltration	195	3,232,965	195	3,232,882	-	-	-	-	195	3,215,296	195	3,126,396	194	3,050,076
	Runoff	142	2,342,385	142	2,342,339	-	-	-	-	142	2,332,501	142	2,282,771	143	2,240,078
SW10	Catchment Area Under Operational Phase (m^2)	-		-		-		-		-		-		511,385	
	Precipitation	-	-	-	-	-	-	-	-	-	-	-	-	898	459,230
	Evapotranspiration	-	-	-	-	-	-	-	-	-	-	-	-	536	274,100
	Surplus	-	-	-	-	-	-	-	-	-	-	-	-	361	184,795
	Infiltration	-	-	-	-	-	-	-	-	-	-	-	-	166	85,145
	Runoff	-	-	-	-	-	-	-	-	-	-	-	-	195	99,655
SW11	Catchment Area Under Operational Phase (m^2)	-		283,353		-		-		-		-		-	
	Precipitation	-	-	898	254,460	-	-	-	-	-	-	-	-	-	-
	Evapotranspiration	-	-	562	159,340	-	-	-	-	-	-	-	-	-	-
	Surplus	-	-	335	95,055	-	-	-	-	-	-	-	-	-	-
	Infiltration	-	-	216	61,140	-	-	-	-	-	-	-	-	-	-
	Runoff	-	-	120	33,915	-	-	-	-	-	-	-	-	-	-
SW12	Catchment Area Under Operational Phase (m^2)	-		-		-		-		25,977		-		-	
	Precipitation	-	-	-	-	-	-	-	-	898	23,320	-	-	-	-
	Evapotranspiration	-	-	-	-	-	-	-	-	528	13,720	-	-	-	-
	Surplus	-	-	-	-	-	-	-	-	369	9,595	-	-	-	-
	Infiltration	-	-	-	-	-	-	-	-	167	4,340	-	-	-	-
	Runoff	-	-	-	-	-	-	-	-	202	5,255	-	-	-	-
SW14	Catchment Area Under Operational Phase (m^2)	1,397,307		1,394,909		-		-		-		-		-	
	Precipitation	898	1,254,781	898	1,252,620	-	-	-	-	-	-	-	-	-	-
	Evapotranspiration	570	797,055	570	795,660	-	-	-	-	-	-	-	-	-	-
	Surplus	326	455,938	326	455,185	-	-	-	-	-	-	-	-	-	-
	Infiltration	157	218,900	156	218,230	-	-	-	-	-	-	-	-	-	-
	Runoff	170	237,038	170	236,955	-	-	-	-	-	-	-	-	-	-
SW16	Catchment Area Under Operational Phase (m^2)	5,081,772		5,079,050		-		-		5,001,313		4,596,478		4,248,922	
	Precipitation	898	4,563,431	898	4,560,987	-	-	-	-	898	4,491,179	898	4,127,637	898	3,815,532
	Evapotranspiration	561	2,850,990	561	2,849,478	-	-	-	-	561	2,806,298	562	2,581,424	562	2,388,367
	Surplus	336	1,708,911	336	1,707,978	-	-	-	-	336	1,681,358	336	1,542,727	335	1,423,711
	Infiltration	187	950,601	187	950,004	-	-	-	-	187	932,933	63	288,048	181	767,710
	Runoff	149	758,309	149	757,975	-	-	-	-	150	748,425	273	1,254,680	154	656,001
South Area	Catchment Area Under Operational Phase (m^2)	-		-		-		-		31,694		-		-	
	Precipitation	-	-	-	-	-	-	-	-	898	28,460	-	-	-	-
	Evapotranspiration	-	-	-	-	-	-	-	-	556	17,620	-	-	-	-
	Surplus	-	-	-	-	-	-	-	-	342	10,840	-	-	-	-
	Infiltration	-	-	-	-	-	-	-	-	222	7,045	-	-	-	-
	Runoff	-	-	-	-	-	-	-	-	120	3,795	-	-	-	-
Main Area	Catchment Area Under Operational Phase (m^2)	64,199		-		-		-		-		-		-	
	Precipitation	898	57,650	-	-	-	-	-	-	-	-	-	-	-	-
	Evapotranspiration	558	35,790	-	-	-	-	-	-	-	-	-	-	-	-
	Surplus	340	21,840	-	-	-	-	-	-	-	-	-	-	-	-
	Infiltration	224	14,370	-	-	-	-	-	-	-	-	-	-	-	-
	Runoff	116	7,470	-	-	-	-	-	-	-	-	-	-	-	-
North Area	Catchment Area Under Operational Phase (m^2)	142,198		-		-		-		-		-		-	
	Precipitation	898	127,700	-	-	-	-	-	-	-	-	-	-	-	-
	Evapotranspiration	559	79,430	-	-	-	-	-	-	-	-	-	-	-	-
	Surplus	339	48,240	-	-	-	-	-	-	-	-	-	-	-	-
	Infiltration	223	31,685	-	-	-	-	-	-	-	-	-	-	-	-
	Runoff	116	16,555	-	-	-	-	-	-	-	-	-	-	-	-

Note:
"-" represents no changes in the surface water station / internally draining catchment water balance estimates or catchment area under that particular phase to either the existing condition or the previous phase.