



AGNICO EAGLE

MELIADINE GOLD PROJECT

ENVIRONMENTAL REPORT: SEPTEMBER 2016

WATER LICENCE 2BB-MEL1424

SUBMITTED TO THE NUNAVUT WATER BOARD

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This monthly report is delivered under water license 2BB-MEL1424, PART J, item 13.

1. The Licensee shall maintain Monitoring Stations at the following locations:

Table 1: Monitoring stations

Monitoring Program Station Number	Description	Status
MEL-1	Raw water supply intake at Meliadine Lake	Active (Volume cubic metres)
MEL-2	Raw water supply intake at Pump, A8 or other Lakes	Active (Volume cubic metres)
MEL-5	Point of discharge for the Bermed Fuel Containment Facilities	Active
MEL-6	Effluent from the Landfarm Treatment Facility prior to release	New
MEL-7	Final Effluent Discharge from the BIODISK treatment system	Active
MEL-8	Point of discharge or runoff from the Non-Hazardous Waste Landfill	(New) Active

- 2. The Licensee shall measure and record, in cubic metres, the daily quantities of water utilized for camp, drilling and other purposes from all sources.**

The daily average consumption of fresh water for the site was 47.34 m³/day for the month of September; 13.23 m³/day for the drilling, 30.68 m³/day^{***} for the camp and 2.45 m³/day for the underground, as well 0.98 m³/day were used for construction.

^{***} The volume includes the indirect water use.

- 3. The Licensee shall measure and record the volume of all soil from all locations entering the Landfarm Treatment Facility.**

78 m³ of soil entered in September.

- 4. The Licensee shall assess and record the concentration of F1 – F4 fractions in petroleum hydrocarbon contaminated soil, according to the CCME Canada-Wide Standard for Petroleum Hydrocarbons (PHC) in Soil that is entering the Land Treatment Unit from all sources and excavations.**

Soil samples were taken on September 25, 2016 as per Part D Item 19 prior to removal from the Landfarm Facility. If results meet Government of Nunavut's criteria, soil will be removed from the Facility.

- 5. The Licensee shall provide the GPS coordinates of all locations where sources of water are utilized for all purposes. In UTM NAD 1983 zone 15.**

- Camp and construction water sources: East 541943.0 ; North 6989174.0
- Underground water source: East 540076.0 ; North 6987731.0

- 6. The Licensee shall provide the GPS coordinates (in decimal degrees) of all locations where wastes associated with camp operations and exploration activities are deposited.**

The landfill has not been constructed yet, so most of the waste continues to be managed in containers. These containers are transported by barge during the summer and disposed of in an approved southern facility.

- 7. Licensee shall sample at Monitoring Program Station MEL-7, monthly during wastewater effluent discharge. Samples shall be analyzed for the parameters listed under Part G Item 11.**

**Biochemical Oxygen Demand – BOD5
Total Suspended Solids
Oil and Grease (and visual)
Fecal Coliforms
pH**

All sewage treatment units are running correctly; population has been between 205 and 219 persons.

No exceedances in the month of September. No microbiological analysis were conducted on samples taken September 26 as the bottles got lost during transportation. When Agnico Eagle noticed, it was too late to take another sample for the month.

Station: STP-FINAL		September			
DATE	Limits	9/5/2016	9/12/2016	9/19/2016	9/26/2016
Ammonia as N (mg/L)		26.0	25.0	16.0	18.0
Biochemical Oxygen Demand	80	10.0	12.0	15.0	53.0
Kjeldahl nitrogen		27.0	30.0	20.0	19.0
pH	6.0 - 9.5	7.1	7.1	7.1	7.3
Phosphorus (P)-Total		16.0	14.0	12.0	11.0
Total Suspended Solids	100	3.0	5.0	5.0	7.0
Transmittance %		34.0	36.0	34.0	37.0
Nitrite-N		2.15	1.8	1.3	1.69
Nitrate-N		22.0	19.2	19.1	12.8
Nitrate and Nitrite as N		24.20	21.00	20.40	14.50
Oil & Grease-(IR)	5	1.8	1.9	0.8	0.6
Atypical		5000	1400	114000	-
Fecal Coliforms (CFU/100mL)	1000	<2	<2	<2	-
Heterotrophic Plate Count (AAHB) (CFU/100mL)		4,900.0	13,200.0	8,100.0	-
Total Coliforms (CFU/100mL)		100.0	200.0	1,000.0	-

- 8. The Licensee shall, prior to the release of effluent from the Bermed Fuel Containment Facilities at Monitoring Program Station Mel-5 and the Landfarm Treatment Facility at Monitoring Program Station MEL-6 for the purpose of demonstrating compliance, sample for the parameters listed under Part D item 15.**

➤ In September, no water was released from MEL-6 or MEL-5.

- 9. The Licensee shall obtain representative samples of the water column below any ice where required under part F, Items 5 and 6. Monitoring shall include but not limited to the following:**

Total Suspended Solids

pH

Electrical Conductivity, and

Total trace Metals as determined by a standard ICP Scan (to include at a minimum, the following elements: Al, Sb, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Li, Mn, Mo, Ni, Se, Sn, Sr, Tl, Ti, U, V, Zn), and Trace Arsenic and Mercury.

➤ No drilling was done in September on any lake.

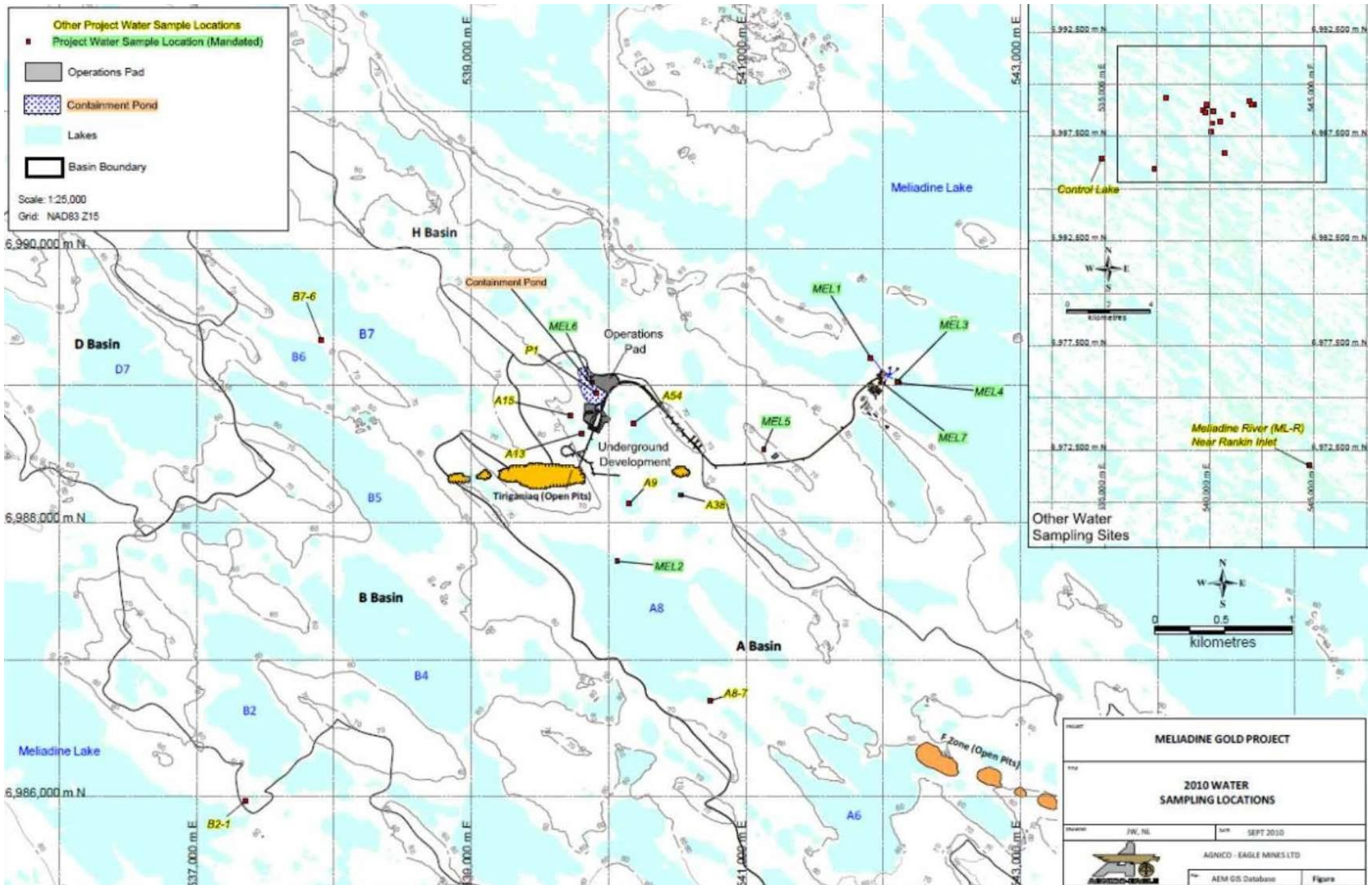
- 10. The inspector, Christine Wilson (INAC inspector), requested AEM to continue monitoring the ponded water at the rear of these facilities during times of flow with the same parameters as MEL-8 and the result must be included in the monthly monitoring report provided to the Nunavut Water Board ("the Board") and the Inspector.**

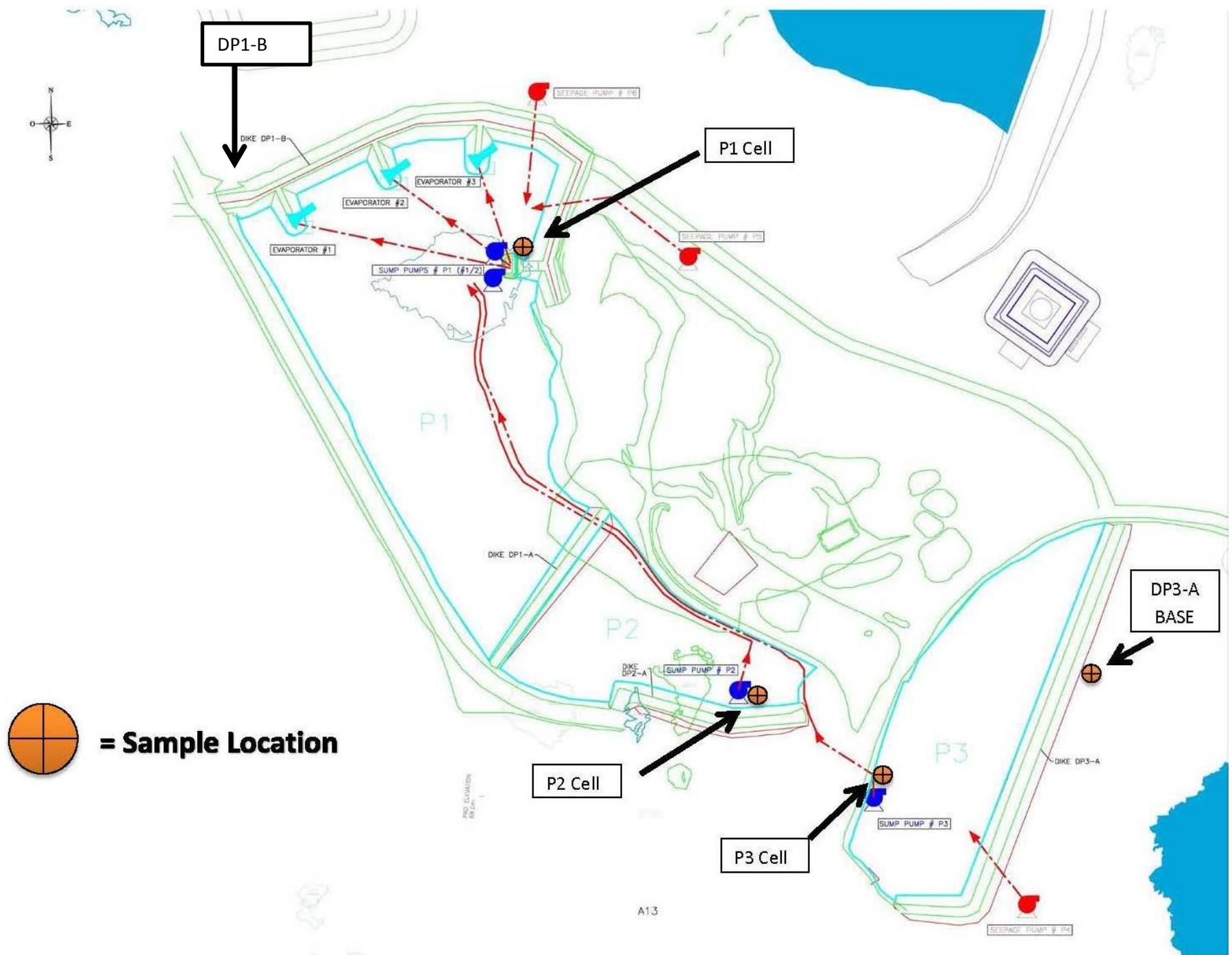
➤ No samples were collected for MEL-8 this month.

As per Section 2 of INAC Water License Inspection Dated April 12, 2016:

III. Amend the 2BB-MEL1424 monitoring program to include, at a minimum, a regular compliance point at DP3-A and A54.

- See maps below for sample locations. A54 is taken at the same location as in past years.





IV. Modify the monthly monitoring reports, starting April 2016, to include, at a minimum, an update of the construction of the containment structures, waste water treatment options; modifications of the freshet action plan, sampling, and analysis of those results.

An update of the construction of the containment structures: Construction of the P Area containment structures was completed June 28th. A Construction Summary Report was submitted to the NWB on September 28, 2016.

Waste water treatment options: Water contained in P3 and P2 was pumped to P1 in 2016. Daily inspections were completed by environmental technicians. Evaporators were in operation until September 17. They were winterized afterwards.

Regular inspections took place to check on direction of evaporation curtain to ensure the evaporation curtain is remaining inside the P1 containment area.

In September, underground water was pumped to P2.

Modifications of the freshet action plan: Currently no modifications to the freshet action plan are noted.

Sampling and analysis of those results: Below are the sampling results related to the P1 containment area for the month of September.

Seep: In the month of July a seep was noted at the toe of the DP1-B berm. Immediately a sump was dug to catch the seep and a pump was installed to pump the seep water back into the P1 containment. The pump was in operation throughout the month of August.

In the month of June a seep was noted at the toe of the DP3-A berm. Immediately a sump was dug to catch the seep and a pump was installed to pump the seep water back into the P3 containment.

P1 Cell

P1 cell				
Date	6-Sep-16	13-Sep-16	19-Sep-16	27-Sep-16
field pH	8.00	7.97	8.23	7.97
field cond.	11	11.7	11.26	9.82
field temp	8.6	7.3	6.4	5.2
Project		B6J8696		
Sample	P1-Cell	P1-Cell	P1-Cell	P1-Cell
Sampling location	P1-Cell	P1-Cell	P1-Cell	P1-Cell
Sampling date	6-Sep-16	13-Sep-16	19-Sep-16	27-Sep-16
Sampler name	AG	AG	JM & JT	PR
Bicarbonate (HCO3) mg CaCO3/L	93	120	110	93
Carbonate (CO3) mg CaCO3/L	<1.0	<1.0	<1.0	<1.0
Ammonia nitrogen (NH3-NH4) mg N/L	78	78	63	55
Conductivity µmhos/cm	13000	14000	12000	11000
Dissolved Solids mg/L	9110	9180	7910	8540
Free Cyanide mg/L	0.0019	0.0059	0.0026	0.002
Kjeldahl nitrogen mg N/L	75	77	63	50
Dissolved organic carbon (D.O.C.) mg/L	14	18	18	16
Total organic carbon (T.O.C.) mg/L	14	19	19	17
Ortho-Phosphate (O-PO4) mg P/L	<0.010	<0.010	<0.010	<0.010
pH	7.63	7.64	7.71	7.73
Total Phosphorus (P) mg P/L	0.033	0.05	0.03	0.031
Total Suspended Solids mg/L	10	30	6	10
Dissolved Sulphate (SO4) mg/L	180	410	370	310
Cyanide (CN) mg/L	<0.0050	0.011	0.0061	0.0052
Turbidity UTN	1.8	3.1	2.5	3
Alkalinity mg CaCO3/L	93	120	110	94
Dissolved Chloride (Cl) mg/L	4400	4500	4000	3500
Nitrite (NO2) mg N/L	0.585	1.3	0.926	0.672
Nitrate (NO3) mg N/L	59.7	77	69.6	63.4
Nitrite-Nitrate mg N/L	60.2	78.3	70.5	64
Mercury (Hg) mg/L	0.00001	<0.00001	0.00001	<0.00001
Dissolved Mercury (Hg) mg/L	<0.00001	0.00001	0.00001	0.00001
Reactive Silica (Si) mg/L	39	13	36	0.93
BTEX (L)	<25			
Benzene ug/L	<0.20	<0.20	<0.20	<0.20
Toluene ug/L	<0.20	<0.20	<0.20	<0.20
Ethylbenzene ug/L	<0.20	<0.20	<0.20	<0.20
o-Xylene ug/L	<0.20	<0.20	<0.20	<0.20
p+m-Xylene ug/L	<0.40	<0.40	<0.40	<0.40
Total Xylenes ug/L	<0.40	<0.40	<0.40	<0.40
F1 (C6-C10) - BTEX - ug/L		<25	<25	<25
Hydrocarbons (L) (Fraction F1 (C6-C10)) µg/L	<25	<25	<25	<25
Hydrocarbons (L) (Fraction F2 - F4)				
- Petroleum Hydrocarbons F2 (C10-C16) µg/L	<100	<100	<100	<100
- Petroleum Hydrocarbons F3 (C16-34) µg/L	<200	<200	<200	<200
- Petroleum Hydrocarbons F4 (C34-50) µg/L	<200	<200	<200	<200
Reached Baseline at C50 ug/L	Yes	Yes	Yes	Yes
Surrogate Recovery (%)				
1,4-Difluorobenzene %	89	103	99	103
4-Bromofluorobenzene %	102	104	105	96
D10-Ethylbenzene %	113	122	101	103
D4-1,2-Dichloroethane %	92	95	101	101
o-Terphenyl %	106	106	105	104

P1 Cell (Continued)

Dissolved Hardness mg/L	5180	5350	4610	3680
Dissolved Aluminium (Al) mg/L	0.012	0.033	0.0117	0.059
Dissolved Antimony (Sb) mg/L	<0.0010	<0.0020	<0.0010	<0.0020
Dissolved Arsenic (As) mg/L	0.00318	0.00478	0.00344	0.00402
Dissolved Barium (Ba) mg/L	0.709	0.663	0.566	0.506
Dissolved Beryllium (Be) mg/L	<0.00020	<0.00040	<0.00020	<0.00040
Dissolved Boron (B) mg/L	0.79	0.81	0.608	0.54
Dissolved Cadmium (Cd) mg/L	0.000314	0.000515	0.00029	0.000269
Dissolved Chromium (Cr) mg/L	<0.0020	<0.0040	<0.0020	<0.0040
Dissolved Copper (Cu) mg/L	0.00166	0.00204	0.0018	0.00197
Dissolved Iron (Fe) mg/L	0.13	0.07	0.083	0.318
Dissolved Lead (Pb) mg/L	<0.00040	<0.00080	<0.00040	<0.00080
Dissolved Lithium (Li) mg/L	2.05	1.87	1.56	1.43
Dissolved Manganese (Mn) mg/L	0.759	1.47	0.997	0.741
Dissolved Molybdenum (Mo) mg/L	<0.0020	0.004	0.0029	<0.0040
Dissolved Nickel (Ni) mg/L	0.0091	0.0293	0.0161	0.0111
Dissolved Selenium (Se) mg/L	0.00025	<0.00040	0.00044	0.00049
Dissolved Silver (Ag) mg/L	<0.000040	<0.000080	<0.00004	<0.000080
Dissolved Strontium (Sr) mg/L	45.5	38	36.5	29.8
Dissolved thallium (Tl) mg/L	0.00035	0.00033	0.00024	0.00027
Dissolved Tin (Sn) mg/L	<0.010	<0.020	<0.010	<0.020
Dissolved titanium (Ti) mg/L	<0.010	<0.020	<0.010	<0.020
Dissolved Uranium (U) mg/L	0.00449	0.0197	0.0149	0.00975
Dissolved Vanadium mg/L	<0.010	<0.020	<0.010	<0.020
Dissolved Zinc mg/L	<0.010	<0.020	0.011	<0.020
Dissolved Calcium (Ca) mg/L	1870	1850	1600	1270
Dissolved Magnesium (Mg) mg/L	122	177	150	123
Dissolved Potassium (K) mg/L	96	113	89.6	79
Dissolved Sodium (Na) mg/L	511	673	570	470

P2 Cell

P2 Cell				
Date	6-Sep-16	13-Sep-16	19-Sep-16	27-Sep-16
field pH	7.66	7.69	7.93	7.8
field cond.	18.8	18.92	15.91	11.87
field temp	10.2	8.1	6.8	4.8
Project				
Sample	P2-Cell	P2-Cell	P2-Cell	P2-Cell
Sampling location	P2-Cell	P2-Cell	P2-Cell	P2-Cell
Water distribution system	494982	B6J8696	494982	
Sampling date	9/6/2016	9/13/2016	9/19/2016	9/27/2016
Sampler name	AG	AG	JM & JT	PR
Bicarbonate (HCO3) mg CaCO3/L	110	130	100	82
Carbonate (CO3) mg CaCO3/L	<1.0	<1.0	<1.0	<1.0
Ammonia nitrogen (NH3-NH4) mg N/L	140	160	120	88
Conductivity µmhos/cm	23000	23000	18000	14000
Dissolved Solids mg/L	16300	15200	10600	9640
Free Cyanide mg/L	0.014	0.0066	0.0066	0.0089
Kjeldahl nitrogen mg N/L	160	150	110	78
Dissolved organic carbon (D.O.C.) mg/L	12	13	14	12
Total organic carbon (T.O.C.) mg/L	12	14	14	12
Ortho-Phosphate (O-PO4) mg P/L	<0.010	0.036	<0.010	<0.010
pH	7.46	7.51	7.56	7.61
Total Phosphorus (P) mg P/L	0.03	0.04	0.03	0.036
Total Suspended Solids mg/L	15	15	10	13
Dissolved Sulphate (SO4) mg/L)	300	320	280	230
Cyanide (CN) mg/L	0.062	0.034	0.021	0.026
Turbidity UTN	1.1	2	4.2	2.4
Alkalinity mg CaCO3/L	110	130	100	83
Dissolved Chloride (Cl) mg/L	7900	7800	5800	4200
Nitrite (NO2) mg N/L	2.06	1.35	1.39	2.07
Nitrate (NO3) mg N/L	184	180	147	105
Nitrite-Nitrate mg N/L	186	181	148	107
Mercury (Hg) mg/L	<0.00001	0.00001	0.00002	<0.00001
Dissolved Mercury (Hg) mg/L	<0.00001	<0.00001	0.00001	0.00001
Reactive Silica (Si) mg/L	4.9	13	7.1	3.7
BTEX (L) 	<25			
Benzene ug/L	<0.20	<0.20	<0.20	<0.20
Toluene ug/L	<0.20	<0.20	<0.20	<0.20
Ethylbenzene ug/L	<0.20	<0.20	<0.20	<0.20
o-Xylene ug/L	<0.20	<0.20	<0.20	<0.20
p+m-Xylene ug/L	<0.40	<0.40	<0.40	<0.40
Total Xylenes ug/L	<0.40	<0.40	<0.40	<0.40
F1 (C6-C10) - BTEX - ug/L		<25	<25	<25
Hydrocarbons (L) (Fraction F1 (C6-C10)) µg/L		<25	<25	<25
Hydrocarbons (L) (Fraction F2 - F4))				
- Petroleum Hydrocarbons F2 (C10-C16) µg/L		<100	<100	<100
- Petroleum Hydrocarbons F3 (C16-34) µg/L		<200	<200	<200
- Petroleum Hydrocarbons F4 (C34-50) µg/L		<200	<200	<200
Reached Baseline at C50 ug/L		Yes	Yes	Yes
Surrogate Recovery (%)				
1,4-Difluorobenzene %	90	100	97	103
4-Bromofluorobenzene %	113	103	104	97
D10-Ethylbenzene %	129	123	106	105
D4-1,2-Dichloroethane %	96	93	97	101
o-Terphenyl %	91	104	102	104
Dissolved Hardness mg/L	8410	10100	6560	4370
Dissolved Aluminium (Al) mg/L	0.017	0.021	0.0111	0.087
Dissolved Antimony (Sb) mg/L	<0.0020	<0.0020	<0.0010	<0.0020
Dissolved Arsenic (As) mg/L	0.00299	0.00394	0.00385	0.00467
Dissolved Barium (Ba) mg/L	0.913	1.3	0.711	0.514
Dissolved Beryllium (Be) mg/L	<0.00040	<0.00040	<0.00020	<0.00040
Dissolved Boron (B) mg/L	1.19	1.2	0.791	0.86
Dissolved Cadmium (Cd) mg/L	0.00153	0.00125	0.000729	0.000703
Dissolved Chromium (Cr) mg/L	<0.0040	<0.0040	<0.0020	<0.0040
Dissolved Copper (Cu) mg/L	0.00266	0.00209	0.00197	0.00342
Dissolved Iron (Fe) mg/L	0.043	0.169	0.059	0.266
Dissolved Lead (Pb) mg/L	<0.00080	<0.00080	<0.00040	<0.00080
Dissolved Lithium (Li) mg/L	2.81	3.27	2.06	1.52

P2 Cell (Continued)

Dissolved Manganese (Mn) mg/L	3.34	3.9	2.2	1.51
Dissolved Molybdenum (Mo) mg/L	<0.0040	<0.0040	0.0027	<0.0040
Dissolved Nickel (Ni) mg/L	0.0325	0.0316	0.0266	0.0278
Dissolved Selenium (Se) mg/L	0.00047	0.00073	0.00042	0.00078
Dissolved Silver (Ag) mg/L	0.000126	<0.000080	<0.000040	<0.000080
Dissolved Strontium (Sr) mg/L	74.2	79.7	57.7	37.9
Dissolved thallium (Tl) mg/L	0.00067	0.00048	0.0003	0.00045
Dissolved Tin (Sn) mg/L	<0.020	<0.020	<0.010	<0.020
Dissolved titanium (Ti) mg/L	<0.020	<0.020	<0.010	<0.020
Dissolved Uranium (U) mg/L	0.0105	0.0164	0.00921	0.00574
Dissolved Vanadium mg/L	<0.020	<0.020	<0.010	<0.020
Dissolved Zinc mg/L	0.049	0.036	0.022	0.019
Dissolved Calcium (Ca) mg/L	2990	3610	2350	1520
Dissolved Magnesium (Mg) mg/L	227	268	169	140
Dissolved Potassium (K) mg/L	161	198	133	91.2
Dissolved Sodium (Na) mg/L	1070	1130	695	568
Dissolved Sulphur (S) mg/L)			94.1	
Hardness mg CaCO3/L	6960	9530	7150	4420
Aluminium (Al) mg/L	0.0591	0.147	0.099	0.0106
Antimony (Sb) mg/L	<0.0010	<0.0020	<0.0050	0.00076
Arsenic (As) mg/L	0.00477	0.00521	0.0044	0.00365
Barium (Ba) mg/L	0.94	1.08	0.84	0.555
Beryllium (Be) mg/L	<0.00020	<0.00040	<0.0010	<0.00010
Boron (B) mg/L	1.09	1	0.874	0.895
Cadmium (Cd) mg/L	0.00143	0.00096	0.00097	0.00063
Chromium (Cr) mg/L	<0.0020	<0.0040	<0.010	<0.0010
Copper (Cu) mg/L	0.0025	0.0027	<0.0050	0.00194
Iron (Fe) mg/L	0.201	0.619	0.374	0.046
Lead (Pb) mg/L	0.00052	<0.00080	<0.0020	<0.00020
Lithium (Li) mg/L	2.72	2.98	2.36	1.5
Manganese (Mn) mg/L	3.11	3.45	2.46	1.5
Molybdenum (Mo) mg/L	0.0037	<0.0040	<0.010	0.003
Nickel (Ni) mg/L	0.031	0.0271	0.028	0.0256
Selenium (Se) mg/L	0.00053	0.00057	<0.0010	0.00043
Silver (Ag) mg/L	0.000103	<0.000080	<0.00020	0.000047
Strontium (Sr) mg/L	67.7	84.6	54.3	40.1
Thallium (Tl) mg/L	0.00055	0.00041	<0.00050	0.00043
Tin (Sn) mg/L	<0.010	<0.020	<0.050	<0.0050
Titanium (Ti) mg/L	<0.010	<0.020	<0.050	<0.0050
Uranium (U) mg/L	0.0101	0.0141	0.0094	0.00561
Vanadium (V) mg/L	<0.010	<0.020	<0.050	<0.0050
Zinc (Zn) mg/L	0.071	0.04	<0.050	0.0194
Calcium (Ca) mg/L	2430	3450	2550	1530
Magnesium (Mg) mg/L	217	220	189	145
Potassium (K) mg/L	164	163	129	99.8
Sodium (Na) mg/L	1090	912	745	588

P3 Cell

c				
Date	6-Sep-16	13-Sep-16	19-Sep-16	27-Sep-16
field pH	7.97	7.3	7.6	7.75
field cond.	7.45	10.05	7.42	9.57
field temp	10.5	7.2	5.2	5.5
Project				
Sample	P3-Cell	P3-Cell	P3-Cell	P3-Cell
Sampling location	P3-Cell	P3-Cell	P3-Cell	P3-Cell
Water distribution system		B6J8696		
Sampling date	6-Sep-16	13-Sep-16	19-Sep-16	27-Sep-16
Sampler name	AG	AG	JM & JT	PR
Bicarbonate (HCO3) mg CaCO3/L	130	180	100	93
Carbonate (CO3) mg CaCO3/L	<1.0	<1.0	<1.0	<1.0
Ammonia nitrogen (NH3-NH4) mg N/L	43	62	35	61
Conductivity μmhos/cm	9000	12000	8300	11000
Dissolved Solids mg/L	7020	8660	5620	7940
Free Cyanide mg/L	0.0025	0.015	0.0041	0.0045
Kjeldahl nitrogen mg N/L	36	60	35	56
Dissolved organic carbon (D.O.C.) mg/L	20	28	12	15
Total organic carbon (T.O.C.) mg/L	20	29	15	14
Ortho-Phosphate (O-PO4) mg P/L	<0.010	<0.010	<0.010	<0.010
pH	7.73	7.65	7.56	7.66
Total Phosphorus (P) mg P/L	0.049	0.075	0.09	0.041
Total Suspended Solids mg/L	7	24	14	25
Dissolved Sulphate (SO4) mg/L	470	720	350	350
Cyanide (CN) mg/L	<0.0050	0.029	0.011	0.019
Turbidity UTN	2.6	4	3.2	3.4
Alkalinity mg CaCO3/L	130	180	100	94
Dissolved Chloride (Cl) mg/L	2600	3500	2400	3100
Nitrite (NO2) mg N/L	1.09	2.34	2.36	2.18
Nitrate (NO3) mg N/L	44.7	53.4	75.1	85.1
Nitrite-Nitrate mg N/L	45.8	55.8	77.5	87.3
Mercury (Hg) mg/L	<0.00001	<0.00001	0.00001	<0.00001
Dissolved Mercury (Hg) mg/L	<0.00001	<0.00001	<0.00001	0.00001
Reactive Silica (Si) mg/L	12	0.45	4.5	2.8
BTEX (L)	<25			
Benzene ug/L	<0.20	<0.20	<0.20	<0.20
Toluene ug/L	<0.20	<0.20	<0.20	<0.20
Ethylbenzene ug/L	<0.20	<0.20	<0.20	<0.20
o-Xylene ug/L	<0.20	<0.20	<0.20	<0.20
p+m-Xylene ug/L	<0.40	<0.40	<0.40	<0.40
Total Xylenes ug/L	<0.40	<0.40	<0.40	<0.40
F1 (C6-C10) - BTEX - ug/L		<25	<25	<25
Hydrocarbons (L) (Fraction F1 (C6-C10)) μg/L	<25	<25	<25	<25
Hydrocarbons (L) (Fraction F2 - F4))				
- Petroleum Hydrocarbons F2 (C10-C16) μg/L	<100	<100	<100	<100
- Petroleum Hydrocarbons F3 (C16-34) μg/L	<200	<200	<200	<200
- Petroleum Hydrocarbons F4 (C34-50) μg/L	<200	<200	<200	<200
Reached Baseline at C50 ug/L	Yes	Yes	Yes	Yes
Surrogate Recovery (%)				
1,4-Difluorobenzene %	93	100	97	102
4-Bromofluorobenzene %	102	108	107	96
D10-Ethylbenzene %	128	122	104	104
D4-1,2-Dichloroethane %	89	94	96	101
o-Terphenyl %	94	108	102	103
Dissolved Hardness mg/L	3470	4230	2630	3470
Dissolved Aluminium (Al) mg/L	0.0096	0.017	0.0078	0.206
Dissolved Antimony (Sb) mg/L	0.00069	<0.0020	0.00131	<0.0020
Dissolved Arsenic (As) mg/L	0.0127	0.00545	0.00787	0.0127
Dissolved Barium (Ba) mg/L	0.32	0.363	0.175	0.344
Dissolved Beryllium (Be) mg/L	<0.00010	<0.00040	<0.00010	<0.00040
Dissolved Boron (B) mg/L	0.391	0.57	0.528	0.59
Dissolved Cadmium (Cd) mg/L	0.000278	0.000537	0.000379	0.000552
Dissolved Chromium (Cr) mg/L	<0.0010	<0.0040	<0.0010	<0.0040
Dissolved Copper (Cu) mg/L	0.00317	0.00339	0.00277	0.00401
Dissolved Iron (Fe) mg/L	0.0301	0.147	0.035	0.712
Dissolved Lead (Pb) mg/L	<0.00020	<0.00080	<0.00020	0.00205
Dissolved Lithium (Li) mg/L	0.977	1.16	0.45	1.2

P3 Cell (Continued)

Dissolved Manganese (Mn) mg/L	1.29	2.78	1.64	1.78
Dissolved Molybdenum (Mo) mg/L	0.0059	0.0075	0.0067	0.0044
Dissolved Nickel (Ni) mg/L	0.0284	0.0792	0.0451	0.0532
Dissolved Selenium (Se) mg/L	0.00074	0.00094	0.00054	0.00088
Dissolved Silver (Ag) mg/L	0.000048	<0.000080	<0.000020	<0.000080
Dissolved Strontium (Sr) mg/L	23.4	24.6	18.2	26.6
Dissolved thallium (Tl) mg/L	0.000131	<0.00020	0.000111	0.00022
Dissolved Tin (Sn) mg/L	<0.0050	<0.020	<0.0050	<0.020
Dissolved titanium (Ti) mg/L	<0.0050	<0.020	<0.0050	<0.020
Dissolved Uranium (U) mg/L	0.0295	0.0429	0.0109	0.0146
Dissolved Vanadium mg/L	<0.0050	<0.020	<0.0050	<0.020
Dissolved Zinc mg/L	0.01	<0.020	0.0162	<0.020
Dissolved Calcium (Ca) mg/L	2990	1360	857	1160
Dissolved Magnesium (Mg) mg/L	227	205	119	141
Dissolved Potassium (K) mg/L	161	95.2	63.6	77.7
Dissolved Sodium (Na) mg/L	1070	672	448	524
Dissolved Sulphur (S) mg/L			106	
Hardness mg CaCO3/L	3370	4610	2450	3500
Aluminium (Al) mg/L	0.0804	0.449	0.244	0.009
Antimony (Sb) mg/L	<0.0010	0.0017	0.00139	0.00102
Arsenic (As) mg/L	0.0167	0.0144	0.0132	0.00893
Barium (Ba) mg/L	0.306	0.372	0.159	0.359
Beryllium (Be) mg/L	<0.00020	<0.00020	<0.00010	<0.00010
Boron (B) mg/L	0.4	0.59	0.549	0.615
Cadmium (Cd) mg/L	0.000261	0.000507	0.000435	0.000516
Chromium (Cr) mg/L	<0.0020	<0.0020	0.0014	<0.0010
Copper (Cu) mg/L	0.0037	0.0057	0.00442	0.00219
Iron (Fe) mg/L	0.24	1.48	0.589	0.139
Lead (Pb) mg/L	0.00059	0.00127	0.00103	<0.00020
Lithium (Li) mg/L	1.02	1.26	0.384	1.09
Manganese (Mn) mg/L	1.35	2.91	1.71	1.64
Molybdenum (Mo) mg/L	0.0059	0.0074	0.0071	0.0045
Nickel (Ni) mg/L	0.0319	0.0796	0.0496	0.0458
Selenium (Se) mg/L	0.0007	0.00086	0.0006	0.00082
Silver (Ag) mg/L	<0.000040	<0.000040	0.000021	0.000029
Strontium (Sr) mg/L	21.5	31.8	20.1	28.5
Thallium (Tl) mg/L	0.00012	0.00012	0.000137	0.000211
Tin (Sn) mg/L	<0.010	<0.010	<0.0050	<0.0050
Titanium (Ti) mg/L	<0.010	0.021	0.0056	<0.0050
Uranium (U) mg/L	0.029	0.0448	0.00758	0.0144
Vanadium (V) mg/L	<0.010	<0.010	<0.0050	<0.0050
Zinc (Zn) mg/L	0.02	0.031	0.0209	0.0118
Calcium (Ca) mg/L	1130	1510	779	1160
Magnesium (Mg) mg/L	136	204	122	147
Potassium (K) mg/L	72.8	92.5	65.4	80.8
Sodium (Na) mg/L	447	652	466	525

DP3-A Base

Field Data			
field pH	7.98	7.96	7.89
field cond. mS/cm	19.9	6.02	10.68
field temp : °C	8.4	7.6	4
Project			
Sample	DP3-A Base	DP3-A Base	DP3-A Base
Sampling location	Meliadine	Meliadine	Meliadine
Water distibution system	B6J8696	PO# 494982	
Sampling date	13-Sep-16	19-Sep-16	27-Sep-16
Sampler name	AG	JM & JT	PR
Bicarbonate (HCO3) mg CaCO3/L	130	90	92
Carbonate (CO3) mg CaCO3/L	<1.0	<1.0	<1.0
Ammonia nitrogen (NH3-NH4) mg N/L	140	27	71
Conductivity µmhos/cm	24000	6600	12000
Dissolved Solids mg/L	16000	4490	8920
Free Cyanide (CN) mg/L	0.014	0.0041	0.0059
Kjeldahl nitrogen mg N/L	150	27	61
Dissolved organic carbon (D.O.C.) mg/L	16	11	15
Total organic carbon (T.O.C.) mg/L	16	11	16
Ortho-Phosphate (O-PO4) mg P/L	<0.010	<0.010	<0.010
pH	7.52	7.67	7.6
Total Phosphorus (P) mg P/L	0.06	0.019	0.041
Total Suspended Solids mg/L	22	4	30
Dissolved Sulphate (SO4) mg/L	390	250	370
Cyanide (CN) mg/L	0.066	0.0082	0.026
Turbidity UTN	1.8	1.6	8.4
Alkalinity mg CaCO3/L	130	90	92
Dissolved Chloride (Cl) mg/L	7900	2000	3600
Nitrite (NO2) mg N/L	0.868	0.266	2.52
Nitrate (NO3) mg N/L	181	42.7	93.9
Nitrite-Nitrate mg N/L	182	43	96.4
Mercury (Hg) mg/L	<0.00001	0.00001	<0.00001
Dissolved Mercury (Hg) mg/L	<0.00001	0.00001	0.00001
Reactive Silica (Si) mg/L	12	2.6	0.35
BTEX & F1 Hydrocarbons			
Benzene ug/L	<0.20	<0.20	<0.20
Toluene ug/L	<0.20	<0.20	<0.20
Ethylbenzene ug/L	<0.20	<0.20	<0.20
o-Xylene ug/L	<0.20	<0.20	<0.20
p+m-Xylene ug/L	<0.40	<0.40	<0.40
Total Xylenes ug/L	<0.40	<0.40	<0.40
F1 (C6-C10) - BTEX - ug/L	<25	<25	<25
Hydrocarbons (L) (Fraction F1 (C6-C10)) µg/L	<25	<25	<25
Hydrocarbons (L) (Fraction F2 - F4))			
- Petroleum Hydrocarbons F2 (C10-C16) µg/L	<100	<100	<100
- Petroleum Hydrocarbons F3 (C16-34) µg/L	<200	<200	<200
- Petroleum Hydrocarbons F4 (C34-50) µg/L	<200	<200	<200
Reached Baseline at C50 ug/L	Yes	Yes	Yes
Surrogate Recovery (%)			
1,4-Difluorobenzene %	97	97	102
4-Bromofluorobenzene %	98	106	97
D10-Ethylbenzene %	121	99	103
D4-1,2-Dichloroethane %	94	105	99
o-Terphenyl %	106	101	104

DP3-A Base (Continued)

Dissolved Hardness mg/L	12200	2440	3800
Dissolved Aluminium (Al) mg/L	0.02	0.0072	0.064
Dissolved Antimony (Sb) mg/L	<0.0020	<0.00050	<0.0020
Dissolved Arsenic (As) mg/L	0.00616	0.00246	0.0101
Dissolved Barium (Ba) mg/L	0.807	0.312	0.327
Dissolved Beryllium (Be) mg/L	<0.00040	<0.00010	<0.00040
Dissolved Boron (B) mg/L	4.27	0.742	0.77
Dissolved Cadmium (Cd) mg/L	0.000659	0.000157	0.000465
Dissolved Chromium (Cr) mg/L	<0.0040	<0.0010	<0.0040
Dissolved Copper (Cu) mg/L	0.00361	0.00157	0.00344
Dissolved Iron (Fe) mg/L	0.098	0.0516	0.177
Dissolved Lead (Pb) mg/L	<0.00080	<0.00020	<0.00080
Dissolved Lithium (Li) mg/L	7.14	1.34	1.33
Dissolved Manganese (Mn) mg/L	3.77	0.692	1.57
Dissolved Molybdenum (Mo) mg/L	0.0049	<0.0010	0.005
Dissolved Nickel (Ni) mg/L	0.0553	0.0099	0.0548
Dissolved Selenium (Se) mg/L	0.00084	0.00021	0.00081
Dissolved Silver (Ag) mg/L	0.000131	<0.000020	<0.000080
Dissolved Strontium (Sr) mg/L	141	23.5	29.9
Dissolved thallium (Tl) mg/L	0.00146	0.000305	0.00043
Dissolved Tin (Sn) mg/L	<0.020	<0.0050	<0.020
Dissolved titanium (Ti) mg/L	<0.020	<0.0050	<0.020
Dissolved Uranium (U) mg/L	0.026	0.00272	0.0145
Dissolved Vanadium mg/L	<0.020	<0.0050	<0.020
Dissolved Zinc mg/L	<0.020	0.0086	<0.020
Dissolved Calcium (Ca) mg/L	4330	832	1290
Dissolved Magnesium (Mg) mg/L	327	88.1	142
Dissolved Potassium (K) mg/L	232	40.6	86.1
Dissolved Sodium (Na) mg/L	1110	232	571
Dissolved Sulphur (S) mg/L		83.4	
Hardness mg CaCO3/L	10200	2460	4010
Aluminium (Al) mg/L	0.146	0.0265	0.0118
Antimony (Sb) mg/L	<0.0020	<0.0010	0.00147
Arsenic (As) mg/L	0.00647	0.00321	0.00892
Barium (Ba) mg/L	0.621	0.329	0.348
Beryllium (Be) mg/L	<0.00040	<0.00020	<0.00010
Boron (B) mg/L	3.33	0.686	0.765
Cadmium (Cd) mg/L	0.00049	0.000167	0.000443
Chromium (Cr) mg/L	<0.0040	<0.0020	<0.0010
Copper (Cu) mg/L	0.0037	0.0022	0.00304
Iron (Fe) mg/L	0.44	0.247	0.041
Lead (Pb) mg/L	<0.00080	<0.00040	<0.00020
Lithium (Li) mg/L	5.57	1.3	1.31
Manganese (Mn) mg/L	3.02	0.75	1.59
Molybdenum (Mo) mg/L	<0.0040	<0.0020	0.005
Nickel (Ni) mg/L	0.0428	0.0108	0.0523
Selenium (Se) mg/L	0.00072	<0.00020	0.00093
Silver (Ag) mg/L	<0.000080	0.000052	0.000026
Strontium (Sr) mg/L	132	21	32.5
Thallium (Tl) mg/L	0.00109	0.00038	0.000386
Tin (Sn) mg/L	<0.020	<0.010	<0.0050
Titanium (Ti) mg/L	<0.020	<0.010	<0.0050
Uranium (U) mg/L	0.0204	0.00272	0.0143
Vanadium (V) mg/L	<0.020	<0.010	<0.0050
Zinc (Zn) mg/L	<0.020	<0.010	0.0056
Calcium (Ca) mg/L	3680	834	1340
Magnesium (Mg) mg/L	242	92.7	164
Potassium (K) mg/L	182	41.8	94.6
Sodium (Na) mg/L	818	238	609

DP1-B Base

Field Data				
field pH	6.91	7.66	7.32	7.92
field cond. mS/cm	12.8	11.67	7.86	3.59
field temp : °C	11.5	7.7	6.4	5.6
Project				
Sample	DP1B-Base	DP1B-Base	DP1B-Base	DP1B-Base
Sampling location	DP1B-Base	DP1B-Base	DP1B-Base	DP1B-Base
Water distribution system	494982	B6J8696		
Sampling date	9/6/2016	9/13/2016	9/19/2016	9/27/2016
Sampler name	AG	AG	JM & JT	PR
Bicarbonate (HCO3) mg CaCO3/L	85	110	120	99
Carbonate (CO3) mg CaCO3/L	<1.0	<1.0	<1.0	<1.0
Ammonia nitrogen (NH3-NH4) mg N/L	150	66	38	15
Conductivity µmhos/cm	19000	14000	8700	3800
Dissolved Solids mg/L	13400	9420	6110	3040
Free Cyanide mg/L	0.0079	0.0028	0.0016	0.0015
Kjeldahl nitrogen mg N/L	130	73	42	14
Dissolved organic carbon (D.O.C.) mg/L	16	16	15	13
Total organic carbon (T.O.C.) mg/L	19	17	16	16
Ortho-Phosphate (O-PO4) mg P/L	<0.010	<0.010	<0.010	<0.010
pH	7.01	7.52	7.61	7.56
Total Phosphorus (P) mg P/L	0.054	0.036	0.03	0.053
Total Suspended Solids mg/L	36	19	7	40
Dissolved Sulphate (SO4) mg/L	230	330	210	81
Cyanide (CN) mg/L		0.0066	<0.0050	<0.0050
Turbidity UTN	27	3.4	12	14
Alkalinity mg CaCO3/L	85	110	120	100
Dissolved Chloride (Cl) mg/L	6500	4400	2600	1000
Nitrite (NO2) mg N/L	1.35	1.18	0.776	0.321
Nitrate (NO3) mg N/L	120	74.3	42.3	19.9
Nitrite-Nitrate mg N/L	121	75.5	43.1	20.2
Mercury (Hg) mg/L	0.00001	<0.00001	0.00001	<0.00001
Dissolved Mercury (Hg) mg/L	<0.00001	0.00001	0.00001	0.00001
Reactive Silica (Si) mg/L	1.1	16	35	4.3
BTEX & F1 Hydrocarbons				
Benzene	<0.20	<0.20	<0.20	<0.20
Toluene	0.46	<0.20	<0.20	<0.20
Ethylbenzene	<0.20	<0.20	<0.20	<0.20
o-Xylene	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	<0.40	<0.40	<0.40	<0.40
Total Xylenes	<0.40	<0.40	<0.40	<0.40
F1 (C6-C10) - BTEX - ug/L		<25	<25	<25
Hydrocarbons (L) (Fraction F1 (C6-C10)) µg/L		<25	<25	<25
Hydrocarbons (L) (Fraction F2 - F4))				
- Petroleum Hydrocarbons F2 (C10-C16) µg/L	<100	<100	<100	<100
- Petroleum Hydrocarbons F3 (C16-34) µg/L	<200	<200	<200	<200
- Petroleum Hydrocarbons F4 (C34-50) µg/L	<200	<200	<200	<200
Reached Baseline at C50	Yes	Yes	Yes	Yes
Surrogate Recovery (%)				
1,4-Difluorobenzene	89	99	105	103
4-Bromofluorobenzene	101	98	108	96
D10-Ethylbenzene	117	128	106	104
D4-1,2-Dichloroethane	90	93	100	100
o-Terphenyl	96	106	102	103

DP1-B Base (continued)

Dissolved Hardness mg/L	7390	6010	3130	951
Dissolved Aluminium (Al) mg/L	0.0135	0.027	0.0082	0.197
Dissolved Antimony (Sb) mg/L	<0.0010	<0.0020	<0.00050	<0.00050
Dissolved Arsenic (As) mg/L	0.00275	0.00256	0.00331	0.00981
Dissolved Barium (Ba) mg/L	1.13	0.84	0.486	0.236
Dissolved Beryllium (Be) mg/L	<0.00020	<0.00040	<0.00010	<0.00010
Dissolved Boron (B) mg/L	2.06	1.03	0.544	0.15
Dissolved Cadmium (Cd) mg/L	0.000979	0.00047	0.000301	0.000213
Dissolved Chromium (Cr) mg/L	<0.0020	<0.0040	<0.0010	<0.0010
Dissolved Copper (Cu) mg/L	0.00261	0.00198	0.00232	0.00614
Dissolved Iron (Fe) mg/L	7.04	0.578	0.439	2.51
Dissolved Lead (Pb) mg/L	<0.00040	<0.00080	<0.00020	0.00035
Dissolved Lithium (Li) mg/L	3.81	2.32	1.15	0.244
Dissolved Manganese (Mn) mg/L	1.95	1.46	1.88	1.94
Dissolved Molybdenum (Mo) mg/L	<0.0020	<0.0040	0.0015	<0.0010
Dissolved Nickel (Ni) mg/L	0.0178	0.0169	0.0127	0.0131
Dissolved Selenium (Se) mg/L	0.00053	0.00057	0.00023	0.00017
Dissolved Silver (Ag) mg/L	0.000077	<0.000080	<0.000020	0.000024
Dissolved Strontium (Sr) mg/L	84.7	47.1	27.8	6.4
Dissolved thallium (Tl) mg/L	0.00106	0.00054	0.000249	0.000094
Dissolved Tin (Sn) mg/L	<0.010	<0.020	<0.0050	<0.0050
Dissolved titanium (Ti) mg/L	<0.010	<0.020	<0.0050	0.0065
Dissolved Uranium (U) mg/L	0.00409	0.0114	0.00651	0.00135
Dissolved Vanadium mg/L	<0.010	<0.020	<0.0050	<0.0050
Dissolved Zinc mg/L	0.015	<0.020	0.0063	0.0067
Dissolved Calcium (Ca) mg/L	2680	2120	1090	319
Dissolved Magnesium (Mg) mg/L	172	175	95.6	37.7
Dissolved Potassium (K) mg/L	148	119	63.7	17.9
Dissolved Sodium (Na) mg/L	723	676	331	94.1
Dissolved Sulphur (S) mg/L			68.9	
Hardness mg CaCO3/L	6870	5400	3150	915
Aluminium (Al) mg/L	0.0403	0.114	0.044	0.02
Antimony (Sb) mg/L	<0.0010	<0.0010	<0.0020	<0.00050
Arsenic (As) mg/L	0.00368	0.00491	0.0054	0.00647
Barium (Ba) mg/L	1.13	0.736	0.524	0.235
Beryllium (Be) mg/L	<0.00020	<0.00020	<0.00040	<0.00010
Boron (B) mg/L	2.05	0.9	0.568	0.143
Cadmium (Cd) mg/L	0.00103	0.000417	0.000393	0.000154
Chromium (Cr) mg/L	<0.0020	<0.0020	<0.0040	<0.0010
Copper (Cu) mg/L	0.0019	0.0028	0.0037	0.00472
Iron (Fe) mg/L	9	1.04	1.8	1.28
Lead (Pb) mg/L	<0.00040	0.0004	<0.00080	<0.00020
Lithium (Li) mg/L	3.8	2.02	1.21	0.213
Manganese (Mn) mg/L	1.79	1.27	2.06	1.6
Molybdenum (Mo) mg/L	<0.0020	0.0023	<0.0040	<0.0010
Nickel (Ni) mg/L	0.0174	0.0138	0.0154	0.011
Selenium (Se) mg/L	0.00048	0.00043	<0.00040	0.00013
Silver (Ag) mg/L	0.000087	0.000041	<0.000080	<0.000020
Strontium (Sr) mg/L	73.9	51.9	24.9	6.35
Thallium (Tl) mg/L	0.00111	0.00048	0.00028	0.00008
Tin (Sn) mg/L	<0.010	<0.010	<0.020	<0.0050
Titanium (Ti) mg/L	<0.010	<0.010	<0.020	<0.0050
Uranium (U) mg/L	0.00413	0.0103	0.00632	0.00147
Vanadium (V) mg/L	<0.010	<0.010	<0.020	<0.0050
Zinc (Zn) mg/L	0.025	<0.010	<0.020	<0.0050
Calcium (Ca) mg/L	2470	1920	1100	309
Magnesium (Mg) mg/L	169	146	99	34.8
Potassium (K) mg/L	131	102	61.4	16.9
Sodium (Na) mg/L	721	567	354	82.2