TABLE B-1
PERFORMANCE INDICATOR MONITORING PROGRAM SURFACE WATER LOCATION INFORMATION

DUNTROON QUARRY - AMP REPORT (2017)
111-53312-00 A61

DESIGNATION	NAD27 EASTING	NAD27 NORTHING	APPROXIMATE GROUND ELEVATION (m ASL)	DESCRIPTION	CULVERT DIMENSIONS	MONITORING PROGRAM	MEASUREMENT TYPE
SW1	559102	4914051	513	Twin culverts located at southwest corner of quarry wetland at Grey County Road 31 (Townline Road)	South culvert dia. 0.62m, North culvert dia. 0.60m	Performance Indicator	V, M
SW2	559063	4914546	515	Single culvert located at northwest corner of quarry wetland	Oblong shaped culvert	Performance Indicator	V,M
SWB-1	559491	4914187	513	Single culvert located at southwest corner of quarry; outlet into quarry wetland	Oblong shaped culvert	Historical	-
QFSW1	559487	4914389	500	Quarry floor influx from west face	Stream Channel Flow	Historical	-
QFSW2	559810	4914354	499	Quarry floor surface water flow in channel prior to main sump pond	Stream Channel Flow	Long Term Trend	V
SWO-2	558414	4914264	510	Stream Channel west of SW1 on Osprey Quarry Property	Stream Channel Flow	Performance Indicator	V,M
SW3	558875	4915721	510	Single culvert located across Grey Rd 31 at north edge of proposed quarry property	Oblong shaped culvert	Performance Indicator	V,M,E
SW3A	558805	4915721	511	Single culvert located under Grey Rd 31, just south of intersection with 26/27 Sideroad	Oblong shaped culvert	Historical	V,B,E
SW4	558876	4913736	515	Single culvert located on Osprey 10th Line, east of Kenwell farm buildings	Culvert Diameter: 0.57 m	Historical	E,V
SW5	556683	4913070	499	Single concrete culvert located on Osprey 10th Line	4.91 m wide square concrete culvert	Historical	V
SW6	556103	4912881	500	Single concrete culvert located on Osprey 10th Line	4.78 m wide square concrete culvert	Historical	V
SW6A	555237	4912472	495	Double culvert on Osprey Sideroad 30, south of Osprey 10th Line	Stream Channel Flow	Performance Indicator	V
SW7	560196	4915307	512	Millar pond outlet	Stream Channel Flow	Long Term Trend	V,E
SW8	560343	4915276	510	Bridson pond outlet	Bucket Capture of Flow out of partial culvert	Long Term Trend	V,E
SW9	560440	4915421	508	Channel flow beneath walking path into sinkhole on Bridson property	Stream Channel Flow	Performance Indicator	V,M,E

NOTE:

- Ground Elevation data determined from Ontario Base Map elevation contours
- V indicates Valeport Electronic Flow Velocity Meter measurement
- M indicates manual velocity measurement
- - indicates SW location not currently monitored for discharge volumes
- * indicates historical surface water station that is not included in the Performance Indicator Monitoring Program.
- E indicates visual estimate velocity measurement
- B indicates bucket collection velocity measurement

TABLE B-1
PERFORMANCE INDICATOR MONITORING PROGRAM SURFACE WATER LOCATION INFORMATION

DUNTROON QUARRY - AMP REPORT (2017)
111-53312-00 A61

DESIGNATION	NAD27 EASTING	NAD27 NORTHING	APPROXIMATE GROUND ELEVATION (m ASL)	DESCRIPTION	CULVERT DIMENSIONS	MONITORING PROGRAM	MEASUREMENT TYPE
SW10	561192	4915418	477	Seep uphill of B. Franks' well tile catchment	Stream Channel Flow	Performance Indicator	V,M,E
SW11	561128	4915780	445	Culmination of B. Franks' seeps into a stream; taken near toe of scarp where stream passes beneath path	Stream Channel Flow	Performance Indicator	V,M,E
SW11A	561081	4915809	446	B. Franks' seep, located near toe of scarp in rock talus	Stream Channel Flow	Performance Indicator	V,M,E
SW11B	561065	4915819	446	B. Franks' seep, located near toe of scarp in rock talus	Stream Channel Flow	Performance Indicator	V,M,E
SW11C	561048	4915838	446	B. Franks' seep, located near toe of scarp in rock talus	Stream Channel Flow	Performance Indicator	V,M,E
SW11D	561038	4915866	446	B. Franks' seep, located near toe of scarp in rock talus	Stream Channel Flow	Performance Indicator	V,M,E
SW11E	561219	4915760	435	Stream from B. Franks' seeps into pond; downstream from SW11 and just upstream of pond	Stream Channel Flow	Performance Indicator	V,E,B
SW12	561273	4915694	435	Single culvert into B. Franks' pond from south	Bucket capture of flow out of culvert	Historical	V,E,B
SW12A	561471	4915441	450	Single culvert near B. Franks' barn	Stream Channel Flow	Historical	V,E
SW13	561283	4915824	427	B. Franks' pond outlet	Bucket capture of flow out of culvert	Long Term Trend	V,E,B
SW14	561574	4916032	410	Channel flow east of Conc. 10, from culvert crossing Conc. 10 south of H. Franks' driveway	Stream Channel Flow	Performance Indicator	V
SW15	561481	4916204	420	Channel flow east of Conc. 10, from culvert crossing Conc. 10 north of H. Franks' driveway	Stream Channel Flow	Performance Indicator	V
SW16	560955	4916433	415	Single culvert under 26/27 Sideroad east of F. Sestito's property	Stream Channel Flow	Performance Indicator	E
SW17	560592	4916314	431	Sestito pond outlet channel on south side of 26/27 Sideroad, measured just west Sestito property driveway	Stream Channel Flow	Performance Indicator	V,M,E
SW17A	560595	4916324	430	Stream channel on north side of 26/27 Sideroad, measured across from Sestito property driveway	Stream Channel Flow	Performance Indicator	V

NOTE:
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- M indicates manual velocity measurement
- - indicates SW location not currently monitored for discharge volumes
- * indicates historical surface water station that is not included in the Performance Indicator Monitoring Program
- E indicates visual estimate velocity measurement
- B indicates bucket collection velocity measurement

TABLE B-1
PERFORMANCE INDICATOR MONITORING PROGRAM SURFACE WATER LOCATION INFORMATION

DUNTROON QUARRY - AMP REPORT (2017)
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DESIGNATION	NAD27 EASTING	NAD27 NORTHING	APPROXIMATE GROUND ELEVATION (m ASL)	DESCRIPTION	CULVERT DIMENSIONS	MONITORING PROGRAM	MEASUREMENT TYPE
SW17B	560593	4916314	431	Stream channel on south side of 26/27 Sideroad, measured west of Sistito property driveway, upstream of where 17/17B join.	Stream Channel Flow	Historical	V
SW18	561392	4916787	390	Single culvert on Concession 10, north of 26/27 Sideroad	Stream Channel Flow	Performance Indicator	V
SW19	564260	4915281	335	Single large diameter culvert for Batteaux Creek on County Rd. 124	Stream Channel Flow	Long Term Trend	V
SW20	560010	4916161	495	Concrete crib north of 26/27 sideroad adjacent to Pretty River Provincial Park/Bruce Trail	Stream Channel Flow	Long Term Trend	V,E
SW21	561298	4916061	430	H. Franks' pond outlet	Bucket capture of flow out of culvert	Long Term Trend	V,E,B
SW21A	561236	4916039	433	H. Franks' pond inlet	Stream Channel Flow	Long Term Trend	V,E,B
SW21B	561013	4915969	449	Cistern overflow channel uphill of H. Franks' pond, feeds pond inlet	Stream Channel Flow Cistern outlet pipe diameter: 0.10 m	Long Term Trend	V,M,E
SW21C	560703	4916021	470	H. Franks' water supply system cistern inlet/overflow culvert	Stream channel Flow	Performance Indicator	V,E
SW21D	560949	4915928	450	Single culvert under H. Franks field access trail at base of scarp	Bucket capture of flow out of culvert	Historical	V,B,E
SW22	560645	4914445	492	Single culvert under ski trail west of Sampson fields	Bucket capture of flow out of culvert	Long Term Trend	V,B
SW22A	560950	4914876	485	Seep feeding small stream in northwest corner of Sampson fields	Stream Channel Flow	Long Term Trend	B,E
SW22B	560804	4914711	477	Swamp/seep area on north side of access trail from Sampson fields to ski trails	Stream Channel Flow	Historical	-
SW22C	560800	4914701	477	Culvert on south side of access trail from Sampson fields to ski trails. Culvert is infilled with sediment and channel is relatively flat. Treated as stream flow.	Stream Channel Flow just downstream of culvert	Long Term Trend	V
SW23	561197	4916509	410	Single culvert crossing 26/27 Sideroad west of Concession 10	Bucket capture of flow out of culvert	Historical	-
SW24	560603	4916157	445	F. Sestito's pond inlet from H. Franks' property	Stream Channel Flow	Historical	V,M,E

NOTE:
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- V indicates Valeport Electronic Flow Velocity Meter measurement
- M indicates manual velocity measurement
- - indicates SW location not currently monitored for discharge volumes
- * indicates historical surface water station that is not included in the Performance Indicator Monitoring Program
- E indicates visual estimate velocity measurement
- B indicates bucket collection velocity measurement

TABLE B-1
PERFORMANCE INDICATOR MONITORING PROGRAM SURFACE WATER LOCATION INFORMATION

DUNTROON QUARRY - AMP REPORT (2017)
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DESIGNATION	NAD27 EASTING	NAD27 NORTHING	APPROXIMATE GROUND ELEVATION (m ASL)	DESCRIPTION	CULVERT DIMENSIONS	MONITORING PROGRAM	MEASUREMENT TYPE
SW24A	560487	4916124	460	F. Sestito's water supply: barrel overflow and pipe discharges (below Manitoulin formation outcrop)	Bucket capture of flow out of pipes, Valeport measurement of stream channel	Performance Indicator	V,B,E
SW24B	560569	4916169	445	Seep channel just up from F. Sestito's garden	Bucket capture of flow out of pipes, Valeport measurement of stream channel	Historical	V,B,E
SW24C	560600	4916150	442	Stream just east of where SW24A and SW24B combine and upstream of outlet into Sistito pond.	Stream Channel Flow	Historical	V
SW25	559425	4912202	507	Single culvert outlet into swamp southwest of Edward Lake; fed by Edward Lake and open grate in the ditch north of SW25	Culvert Diameter: 0.62 m	Historical	-
SW25A	559435	4912359	508	Channel outlet from Edward Lake into a culvert which crosses beneath Grey Road 31. Only monitored when input from open grate/ditch is observed when monitoring SW25.	Stream Channel Flow	Historical	-
SW26	560781	4913072	507	Channel flow upstream of sinkhole on ski trails near unopened road allowance for 21/22 Sideroad	Stream Channel Flow	Historical	-
SW26A	560745	4913095	512	Two culverts upstream of SW26 sinkhole	East Culvert Diameter: 0.38 m West Culvert: Oblong Shaped	Historical	-
SW27	560266	4916323	462	Culmination of SW27A and SW27B	Stream Channel Flow	Historical	-
SW27A	560021	4916333	492	Groundwater seep, located east of SW28, east of Bruce Trail	Stream Channel Flow	Historical	-
SW27B	559989	4916364	497	Groundwater seep, located north-west of SW27A, east of Bruce Trail	Stream Channel Flow	Historical	-
SW77	560149	4916284	494	Groundwater seep, located south-east of SW20, west of Bruce Trail	Stream Channel Flow	Performance Indicator	V

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- * indicates historical surface water station that is not included in the Performance Indicator Monitoring Program
- E indicates visual estimate velocity measurement
- B indicates bucket collection velocity measurement

TABLE B-1
PERFORMANCE INDICATOR MONITORING PROGRAM SURFACE WATER LOCATION INFORMATION

DUNTROON QUARRY - AMP REPORT (2017)
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DESIGNATION	NAD27 EASTING	NAD27 NORTHING	APPROXIMATE GROUND ELEVATION (m ASL)	DESCRIPTION	CULVERT DIMENSIONS	MONITORING PROGRAM	MEASUREMENT TYPE
SW3B (RR3 KARST)	558854	4915346	510	RR3 Wetland Karst Sink Point Channel, west of Grey County Road 31, downstream of SW3 and SW3C.	Stream Channel Flow	Performance Indicator	V
SW3C (RR3 OUT)	558875	4915347	510	RR3 Wetland outflow from pond that is downstream of SW3. West of Grey County Road 31.	Stream Channel Flow	Long Term Trend	V
PR Control	558052	4918002	360	Pretty River Control Station on 30/31 Sideroad. Flow measured on south side of road, upstream of culvert.	Stream Channel Flow	Performance Indicator	V
BC Control	563207	4913957	405	Batteaux Creek Control Station on 21/22 Sideroad. Flow measured on north side of road, downstream of culvert.	Stream Channel Flow	Performance Indicator	V

NOTE:

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- M indicates manual velocity measurement
- \- indicates SW location not currently monitored for discharge volumes
- * indicates historical surface water station that is not included in the Performance Indicator Monitoring Program
- E indicates visual estimate velocity measurement
- B indicates bucket collection velocity measurement

TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
111-53312-00 A61

DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
8-Jul-96	3.4					
6-Sep-96	47.0	1.4				
23-Dec-96	11.3	11.3				
26-Feb-97	91.2	55.2				
8-May-97	42.1	24.0				
26-Aug-97	7.0	3.6				
19-Dec-97	4.5	9.4				
27-Feb-98	NA	NA				
8-Apr-98	32.2	2.7				
10-Aug-98	Dry	1.7				
29-Dec-98	NA	NA				
24-Feb-99	NA	NA				
28-Apr-99	7.1	5.8		29.1		
26-May-99	15.0	4.0		19.5		
29-Jun-99	1.0	2.0				
26-Jul-99	Dry	0.5				
17-Aug-99	Dry	1.0				
27-Sep-99	Dry	0.4				
25-Oct-99	18.0	1.8				
21-Nov-99	25.0	6.0				
21-Dec-99	NA	NA				
25-Jan-00	Frozen	14.3				
29-Feb-00	98.0	17.4				
31-Mar-00	41.0	8.0				
2-Jun-00	51.6	11.5	131.9			
8-Jun-00	35.0	8.9	110.5			
15-Jun-00	107.0	23.6	78.7			
22-Jun-00	93.6	15.8	70.5			
29-Jun-00	106.0	14.0	72.5			
7-Jul-00	57.0	12.0	69.0			
13-Jul-00	45.0	10.0	64.0			
20-Jul-00	54.0	13.0	55.0			
27-Jul-00	49.0	11.0	59.0			
3-Aug-00	58.8	17.0	43.4			
17-Aug-00	27.0	6.0	26.0			
24-Aug-00	29.0	5.0	25.0			
29-Aug-00	27.0	5.0	25.0			

NOTE:
- All surface water flow measurements recorded in L/s
- SW1 - 2 Culverts across Townline Road.
- SW2 - Culvert across County Road 63
- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
- QFSW2 - Stream flow measurement of surface water prior to main sump pond
- NA indicates flow not available
- Frozen indicates flow not measured due to snow accumulation or frozen water conditions
- Dry indicates no flow or ponded water at surface water station

TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
111-53312-00 A61

DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
7-Sep-00	23.0	5.0	37.0			
14-Sep-00	23.0	5.0	21.0			
21-Sep-00	13.0	1.0	NA			
28-Sep-00	16.0	5.0	17.0			
5-Oct-00	25.0	9.0	21.0			
12-Oct-00	29.0	9.0	43.0			
19-Oct-00	32.0	10.0	35.0			
26-Oct-00	24.0	6.0	22.0			
2-Nov-00	68.0	7.0	42.0			
9-Nov-00	40.0	8.0	42.0			
16-Nov-00	71.0	7.0	38.0			
18-Nov-00	46.1	NA	NA			
24-Nov-00	41.0	5.0	19.0			
30-Nov-00	45.7	13.2	14.1			
21-Dec-00	45.0	14.0	19.0			
16-Feb-01	35.0	11.9	31.6			
22-Feb-01	62.0	11.0	22.0			
1-Mar-01	99.0	11.1	24.6			
8-Mar-01	64.0	13.2	19.3			
15-Mar-01	72.0	12.5	23.6			
22-Mar-01	54.0	11.0	28.0			
29-Mar-01	53.0	9.0	20.8			
6-Apr-01	72.0	28.7	51.9			
12-Apr-01	152.0	35.0	82.8			
19-Apr-01	191.0	42.0	72.8			
26-Apr-01	110.0	19.0	56.0			
2-May-01	94.0	13.0	39.0			
10-May-01	76.0	8.0	26.0			
17-May-01	56.0	6.0	24.0			
24-May-01	74.0	6.0	26.0			
31-May-01	45.5	6.0	25.1			
7-Jun-01	47.0	5.0	30.2			
12-Jun-01	49.8	5.0	21.0			
21-Jun-01	Dry	3.9	76.3			
28-Jun-01	66.0	4.0	76.0			
5-Jul-01	30.0	11.0	20.0			
12-Jul-01	32.0	1.9	16.0			

NOTE:
- All surface water flow measurements recorded in L/s
- SW1 - 2 Culverts across Townline Road.
- SW2 - Culvert across County Road 63
- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
- QFSW2 - Stream flow measurement of surface water prior to main sump pond
- NA indicates flow not available
- Frozen indicates flow not measured due to snow accumulation or frozen water conditions
- Dry indicates no flow or ponded water at surface water station

TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
111-53312-00 A61

DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
19-Jul-01	16.0	2.0	25.0			
26-Jul-01	10.0	2.0	78.0			
30-Jul-01	13.0	2.0	80.0			
9-Aug-01	13.0	3.0	74.0			
16-Aug-01	14.0	1.0	76.0			
23-Aug-01	21.2	2.0	4.0			
30-Aug-01	35.3	1.5	7.1			
6-Sep-01	30.0	2.0	0.3			
13-Sep-01	46.0	2.0	Dry			
20-Sep-01	38.0	2.0	Dry			
27-Sep-01	35.8	2.2	Dry			
4-Oct-01	38.1	2.4	Dry			
11-Oct-01	34.4	2.2	Dry	9.2		
18-Oct-01	51.7	10.2	Dry			
24-Oct-01	73.0	13.0	81.0			
1-Nov-01	93.0	12.0	58.4			
6-Nov-01	85.9	11.7	73.4			
15-Nov-01	97.6	10.4	72.5			
29-Nov-01	81.4	12.8	59.6			
6-Dec-01	73.9					
12-Dec-01	72.6					
4-Jan-02	70.0	8.0	12.0			
10-Jan-02	60.0	6.0	7.0			
16-Jan-02	57.5	7.0	8.0			
24-Jan-02	53.0	8.0	5.0			
31-Jan-02	55.0	6.0	3.0			
7-Feb-02	58.5	7.0	1.0			
14-Feb-02	51.0	7.0	4.0			
21-Feb-02	64.0	21.0	29.0			
28-Feb-02	71.5	14.0	26.0			
7-Mar-02	74.0	15.0	29.0			
14-Mar-02	94.5	35.0	76.0			
21-Mar-02	80.5	24.0	49.0			
28-Mar-02	78.0	14.0	13.0			
4-Apr-02	86.5	17.0	19.0			
12-Apr-02	104.0	42.0	81.0			
18-Apr-02	92.5	25.0	67.0			
25-Apr-02	86.0	15.0	47.0			
16-May-02	79.0	18.0	66.0			

NOTE:
- All surface water flow measurements recorded in L/s
- SW1 - 2 Culverts across Townline Road.
- SW2 - Culvert across County Road 63
- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
- QFSW2 - Stream flow measurement of surface water prior to main sump pond
- NA indicates flow not available
- Frozen indicates flow not measured due to snow accumulation or frozen water conditions
- Dry indicates no flow or ponded water at surface water station

TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
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DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
23-May-02	62.5	15.0	76.0			
30-May-02	67.0	11.0	83.0			
6-Jun-02	46.0	7.5	78.0			
13-Jun-02	90.0	8.0	77.0			
20-Jun-02	45.0	5.0	75.0			
28-Jun-02	48.5	6.0	70.0			
4-Jul-02	<0.1	2.0	66.0			
11-Jul-02	38.0	3.0	69.0			
18-Jul-02	1.0	2.0	47.0			
25-Jul-02	19.5	3.6	82.0			
1-Aug-02	36.6	2.1	Dry			
8-Aug-02	16.5	1.3	82.8	2.2		
15-Aug-02	36.1	10.0	Dry			
23-Aug-02	40.3					
30-Aug-02	21.7	3.7	72.0			
6-Sep-02	16.0	1.5	10.0			
13-Sep-02	20.7	1.1	Dry			
19-Sep-02	1.0	1.0	Dry			
26-Sep-02	46.6	1.0	Dry			
3-Oct-02	56.4	1.0	Dry			
11-Oct-02	Dry	1.0	Dry			
17-Oct-02	Dry	1.0	Dry			
25-Oct-02	92.0	1.0	76.3			
1-Nov-02	62.2	1.0	63.0			
8-Nov-02	<0.1	1.0	72.3			
15-Nov-02	66.2	1.0	60.8			
22-Nov-02	56.1	1.0	Dry			
28-Nov-02	54.0	1.6	Dry			
6-Dec-02	36.6	1.0	Dry			
12-Dec-02	31.4	1.0	Dry			
20-Dec-02	20.2	5.5	Dry			
3-Jan-03	29.5	2.5	Dry			
10-Jan-03	20.8	2.3	Dry			
16-Jan-03	22.8	Frozen	Dry			
24-Jan-03	24.2	Frozen	Dry			
31-Jan-03	22.0	Frozen	Dry			
7-Feb-03	20.7	Frozen	Dry			
14-Feb-03	19.6	Frozen	Dry			

NOTE:

- All surface water flow measurements recorded in L/s
- SW1 - 2 Culverts across Townline Road.
- SW2 - Culvert across County Road 63
- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
- QFSW2 - Stream flow measurement of surface water prior to main sump pond
- NA indicates flow not available
- Frozen indicates flow not measured due to snow accumulation or frozen water conditions
- Dry indicates no flow or ponded water at surface water station

TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
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DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
21-Feb-03	17.1	Frozen	Dry			
28-Feb-03	18.5	Frozen	Dry			
7-Mar-03	16.4	Frozen	Dry			
14-Mar-03	17.8	Frozen	Dry			
21-Mar-03	23.0	26.7	Dry			
28-Mar-03	134.9	38.3	Dry			
4-Apr-03	119.5	26.7	65.5			
9-Apr-03	61.0	12.6	66.9			
17-Apr-03	94.6	27.0	67.4			
25-Apr-03	60.4	13.2	67.4			
2-May-03	88.9	21.1	75.3			
9-May-03	96.7	7.9	78.9			
15-May-03	87.7	5.7	0.0			
22-May-03	11.9	5.0	25.2			
29-May-03	Dry	11.8	62.9			
9-Jun-03	19.3	8.3	64.8			
13-Jun-03	17.3	9.6	73.3			
23-Jun-03	89.6	5.8	74.7			
4-Jul-03	69.8	4.0	78.1			
11-Jul-03	54.2	3.4	69.3			
18-Jul-03	42.7	3.6	78.9			
22-Jul-03	2.6	3.6	50.8			
24-Jul-03	4.5	2.8	52.6			
31-Jul-03	42.6	2.8	72.3			
8-Aug-03	3.6	4.3	19.6			
15-Aug-03	Dry	2.3	Dry			
20-Aug-03	Dry	2.6	6.9			
27-Aug-03	35.2	1.6	75.5			
5-Sep-03	Dry	2.3	76.4			
11-Sep-03	22.9	1.4	<1.0			
18-Sep-03	13.5	0.8	76.5			
25-Sep-03	0.7	0.5	Dry			
2-Oct-03	33.1	0.8	Dry			
9-Oct-03	Dry	0.4	Dry			
17-Oct-03	58.3	1.7	Dry			
23-Oct-03	<0.1	1.4	Dry			
31-Oct-03	49.5	3.2	Dry			

NOTE:
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- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
111-53312-00 A61

DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
7-Nov-03	46.6	8.0	73.2			
17-Nov-03	67.8	11.1	45.2			
28-Nov-03	60.4	13.3	29.5			
19-Dec-03	55.8	12.5	2.2			
31-Dec-03	55.8	15.7	5.5			
12-Jan-04	106.1	16.8	5.3			
16-Jan-04	76.9	13.0	6.2			
20-Jan-04	68.8	9.8	Frozen			
30-Jan-04	58.9	6.6	Dry			
6-Feb-04	49.2	5.4	5.1			
12-Feb-04	44.4	4.6	6.0			
27-Feb-04	39.9	3.9	Frozen			
4-Mar-04	66.1	12.8	5.6			
12-Mar-04	101.7	24.2	4.7			
19-Mar-04	73.9	12.8	19.0			
26-Mar-04	136.1	58.8	8.8			114.7
2-Apr-04	117.1	58.1	85.3			82.2
8-Apr-04	104.8	30.1	79.6			Flooded
16-Apr-04	86.7	19.9	80.2			Flooded
23-Apr-04	91.3	13.5	76.4		30.0	153.2
30-Apr-04	62.4	10.5	72.3			210.2
7-May-04	88.9	11.9	Dry			NA
14-May-04	4.1	9.8	27.9			217.0
19-May-04	18.2	7.6	78.4			278.6
28-May-04	112.8	26.6	72.7			308.7
4-Jun-04	95.6	10.6	71.0			242.3
11-Jun-04	9.8	6.9	Dry			172.2
17-Jun-04	84.6	6.9	Dry			179.5
24-Jun-04	Dry	5.9	Dry		34.0	125.1
1-Jul-04	44.7	3.8	Dry	7.7	23.0	108.3
9-Jul-04	Dry	3.7	74.9	3.5	29.0	NA
16-Jul-04	58.3	4.2	70.5	60.8	27.0	293.0
22-Jul-04	45.3	3.3	66.6	20.6		213.8
29-Jul-04	76.7	3.2	Dry	24.0		133.5
6-Aug-04	Dry	1.8	Dry	13.3		159.1
12-Aug-04	Dry	2.7	Dry	4.3		155.5
19-Aug-04	26.8					
20-Aug-04	36.5	6.6	Dry	19.8		84.2

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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
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DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
26-Aug-04	36.5	2.4	Dry	9.5		116.9
3-Sep-04	Dry	1.3	Dry	4.9		176.6
9-Sep-04	Dry	2.3	Dry	1.9		163.4
17-Sep-04	49.6	3.2	Dry	2.6		194.3
23-Sep-04	Dry					
26-Sep-04	Dry	2.1	Dry	9.5		126.7
1-Oct-04	Dry	<1.0	Dry	6.6		128.9
7-Oct-04	Dry	<1.0	Dry	0.1		86.9
14-Oct-04	Dry	3.2	Dry	1.2		77.1
20-Oct-04	Dry	0.9	Dry	31.3		122.7
24-Oct-04	42.4					
28-Oct-04	Dry	1.2	Dry	7.7		141.1
4-Nov-04	90.0	2.7	Dry	60.0		124.2
7-Nov-04	90.0					
11-Nov-04	Dry	1.7	Dry	42.4		78.0
19-Nov-04	Dry	1.8	42.4	10.2		97.6
25-Nov-04	Dry	0.4	79.5	0.0		88.8
2-Dec-04	Dry	0.3	66.3	23.3		87.8
9-Dec-04	Dry	3.9	69.9	23.8		71.9
17-Dec-04	0.6	Frozen	31.5	19.2		57.6
29-Dec-04	44.1	Frozen	Frozen	Frozen		Frozen
5-Jan-05	59.4	10.7	4.9	108.9		107.2
13-Jan-05	Dry	41.9	70.7	258.5		
20-Jan-05	79.2	18.1	Frozen	Frozen		121.1
28-Jan-05	45.5	9.3	4.7	Frozen		78.0
3-Feb-05	50.6	8.1	5.6	Frozen		71.3
10-Feb-05	Dry	5.5	64.9	Frozen		80.4
16-Feb-05	64.0	9.0	Dry	Frozen		80.2
24-Feb-05	9.0	3.8	Dry	Frozen		62.3
3-Mar-05	3.3	5.7	Dry	Frozen		59.5
10-Mar-05	Dry	9.4	Dry	Frozen		67.6
17-Mar-05	<1.0	9.4	Dry	Frozen		62.6
24-Mar-05	38.5	8.9	Dry	Frozen		68.5
30-Mar-05	71.4	15.6	Dry	124.3		77.0
7-Apr-05	15.2	46.6	46.3	Flooded		65.7
15-Apr-05	121.8	49.9	66.7	Flooded		233.4
21-Apr-05	90.8	39.8	73.1	253.6		319.3
28-Apr-05	70.3	43.1	44.3	348.6		323.8
6-May-05	60.1	19.4	67.1	116.2		268.9
13-May-05	21.7	11.3	Dry	73.4		272.0

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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
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DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
20-May-05	21.2	8.7	Dry	68.5		356.3
27-May-05	44.4	7.4	38.0	90.8		268.7
3-Jun-05	23.5	5.8	34.2	62.2		258.3
10-Jun-05	Dry	4.6	Dry	8.5		273.4
17-Jun-05	11.0	5.1	Dry	53.8		283.9
24-Jun-05	1.1	3.7	NA	4.9		313.2
30-Jun-05	9.3	3.8	42.3	3.6		346.8
7-Jul-05	4.6	3.1	32.5	10.6		244.5
15-Jul-05	25.0	2.7	57.8	Dry		238.6
21-Jul-05	16.2	1.8	56.1	Dry		226.1
28-Jul-05	Dry	1.7	54.4	Dry		251.2
2-Aug-05	Dry	1.7	53.7	Dry		256.0
12-Aug-05	Dry	1.4	59.3	Dry		309.1
19-Aug-05	Dry	1.4	NA	Dry		373.3
24-Aug-05	Dry	0.6	Dry	Dry		263.0
1-Sep-05	Dry	0.8	62.1	Dry		201.0
9-Sep-05	Dry	0.8	34.7	Dry		436.8
16-Sep-05	Dry	0.6	65.0	Dry		258.7
23-Sep-05	Dry	0.3	<0.1	Dry		317.2
30-Sep-05	Dry	1.0	<0.1	Dry		371.9
7-Oct-05	Dry	0.9	Dry	Dry		280.3
14-Oct-05	Dry	0.8	Dry	0.1		357.7
21-Oct-05	Dry	0.5	Dry	1.9		256.0
28-Oct-05	Dry	0.6	Dry	10.1		205.9
4-Nov-05	Dry	0.5	Dry	4.4		254.8
11-Nov-05	Dry	0.2	Dry	4.1		210.7
18-Nov-05	57.0	1.0	66.2	42.9		222.3
25-Nov-05	49.5	0.5	61.1			231.2
2-Dec-05	51.5	2.0	71.3	32.7		221.8
9-Dec-05	44.1	1.9	56.8	28.5		175.0
16-Dec-05	45.8	1.8				Flooded
22-Dec-05	39.0	1.3	62.3	56.6		220.0
30-Dec-05	55.4	2.5				
6-Jan-06	40.7	5.9	62.7	88.1		207.8
13-Jan-06	Dry	10.0	58.0	48.2		202.1
20-Jan-06	44.7	11.6	65.3	85.5		194.5
27-Jan-06	53.1	11.0	75.0	78.8		210.5

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SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
111-53312-00 A61

DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
3-Feb-06	53.5	16.7	63.8	154.3		179.6
10-Feb-06	52.8	11.4	Dry	94.6		194.5
20-Feb-06	51.9	10.2	Dry	Frozen		191.9
24-Feb-06	50.4	9.7	Dry	Frozen		153.2
3-Mar-06	55.3	7.9	Dry	Frozen		177.4
10-Mar-06	58.7	35.6	72.8	134.3		229.0
17-Mar-06	92.4	41.8	87.4	166.4		208.2
24-Mar-06	74.4	21.4	71.6	143.4		215.0
31-Mar-06	79.7	24.7	71.3	184.9		266.8
7-Apr-06	162.9	35.1	70.5	238.5		Flooded
10-Apr-06	111.0	29.3				
13-Apr-06	55.1	35.1	Dry	133.9		274.4
21-Apr-06	59.8	15.5	Dry	88.6		190.8
26-Apr-06	60.2	15.4	Dry	92.0		225.8
5-May-06	64.1	11.9	Dry	102.0		202.0
12-May-06	57.7	8.7	Dry	84.6		253.8
19-May-06	48.5	9.3	Dry	61.4		219.6
25-May-06	43.0	4.7	Dry	77.7		197.5
2-Jun-06	35.4	5.3	Dry	29.0		192.3
9-Jun-06	48.5	5.1	Dry	39.3		194.4
16-Jun-06	6.1	3.9	Dry	8.6		120.1
23-Jun-06	Dry	3.6	Dry	12.9		236.8
30-Jun-06	Dry	3.7	Dry	4.5		251.6
7-Jul-06		1.5	Dry	10.5		225.1
10-Jul-06	1.0					
14-Jul-06	Dry	1.3	Dry	5.2		249.6
21-Jul-06	Dry	1.7		12.7		226.0
28-Jul-06	Dry	2.5	Dry	7.2		214.4
4-Aug-06	32.8	5.1	Dry	10.8		245.0
11-Aug-06	Dry	0.3	Dry	2.7		232.7
18-Aug-06	Dry	0.9	Dry	4.4		197.2
25-Aug-06	4.4	0.1	Dry	3.8		197.9
1-Sep-06	13.8	<0.1	Dry	4.0		204.3
8-Sep-06	2.2	<0.1	Dry	8.9		192.7
15-Sep-06	33.8	<0.1	Dry	18.6		185.7
21-Sep-06	2.0	0.4	Dry	19.2		191.6
28-Sep-06	15.6	0.8		18.7		212.0

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SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
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DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
6-Oct-06		0.7		17.5		170.4
13-Oct-06		0.1	Dry	12.9		189.7
20-Oct-06	48.2	0.5	Dry	7.4		209.0
26-Oct-06		2.6	Dry	24.5		213.1
3-Nov-06	95.4	5.7	Dry	123.3		153.9
10-Nov-06	77.8	9.4	Dry	62.7		186.3
17-Nov-06	26.4	17.8	Dry	45.6		167.8
24-Nov-06	51.5	12.7	Dry	47.2		196.5
4-Dec-06	92.9	13.1	Dry	80.3		Flooded
8-Dec-06	70.2	11.5	Dry	Frozen		128.8
28-Dec-06	54.9	10.2		86.8		141.1
5-Jan-07	60.1	11.1		78.3		164.8
12-Jan-07	56.1	10.8		Frozen		150.0
19-Jan-07	58.8	9.3		Frozen		136.9
26-Jan-07	4.9	7.4		Frozen		125.7
2-Feb-07	63.4	7.4		Frozen		122.2
9-Feb-07	63.6	5.1		Frozen		102.9
16-Feb-07	60.0	4.8		Frozen		94.3
22-Feb-07	58.4	3.5		Frozen		114.8
2-Mar-07	60.8	4.2		Frozen		134.7
9-Mar-07	32.4	4.3		Frozen		105.4
16-Mar-07	105.0	27.6		Frozen		Flooded
23-Mar-07	53.6	38.8		112.0		109.8
30-Mar-07	106.9	41.1		118.4		Flooded
5-Apr-07	108.9	35.0		177.2		Flooded
13-Apr-07	74.5	16.8		89.1		223.9
20-Apr-07	95.2	14.0		109.9		172.0
28-Apr-07	7.4	11.6		150.4		214.0
4-May-07	80.5	8.1		91.5		111.5
11-May-07	43.3	7.0		34.7		165.5
18-May-07	74.8	6.4		68.9		141.8
25-May-07	61.2	4.2		46.9		138.9
1-Jun-07	0.1	4.8		25.8		100.5
8-Jun-07	58.1	3.6		20.3		90.4
14-Jun-07	47.9	3.1		31.6		103.2

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DUNTROON QUARRY - AMP MONITORING REPORT 2017
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DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
22-Jun-07	0.0	1.8		0.0		121.0
29-Jun-07	17.0	1.6		21.2		147.4
6-Jul-07	20.5	3.8		15.2		150.0
13-Jul-07	0.0	5.2		4.9		97.0
20-Jul-07	0.1	1.7		3.6		140.9
27-Jul-07	1.6	1.4		0.0		148.6
3-Aug-07	0.0	0.6		0.0		141.8
10-Aug-07	0.1	0.6		0.0		93.0
17-Aug-07	10.1	0.6		0.0		147.7
24-Aug-07	0.0	1.1		2.1		157.2
30-Aug-07	7.6	0.6		7.3		100.3
7-Sep-07	21.1	1.1		17.7		71.6
14-Sep-07	1.2	0.7		13.1		65.4
21-Sep-07	10.7	0.2		3.3		86.9
28-Sep-07	9.8	<0.1		13.4		84.1
5-Oct-07	27.4	<0.1		15.9		78.3
12-Oct-07	Dry	0.1		28.8		76.4
19-Oct-07	10.4	<0.1		20.7		169.1
26-Oct-07	0.9	<0.1		26.3		99.0
2-Nov-07	27.2	<0.1		32.1		118.2
9-Nov-07	47.1	1.8		32.2		118.9
16-Nov-07	45.3	<0.1		57.9		122.8
23-Nov-07	35.6	0.7		Frozen		172.8
30-Nov-07	36.1	N/A		Frozen		139.6
7-Dec-07	48.9	0.7		Frozen		128.2
14-Dec-07	19.3	4.2		N/A		117.3
20-Dec-07	18.2	Frozen		Frozen		138.3
28-Dec-07	56.5	5.7		Frozen		N/A
4-Jan-08	31.1	7.0		Frozen		165.0
11-Jan-08	38.4	81.9		194.5		284.3
18-Jan-08	41.5	30.9		Frozen		593.7
25-Jan-08	57.3	26.2		Frozen		172.2
1-Feb-08	57.6	8.9		Frozen		180.9
8-Feb-08	48.0	25.8		Frozen		160.4
15-Feb-08	41.5	11.0		Frozen		135.9
22-Feb-08	63.4	10.8		Frozen		153.8
29-Feb-08	55.9	16.8		Frozen		131.6

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SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
111-53312-00 A61

DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
7-Mar-08	61.3	12.0		Frozen		151.7
14-Mar-08	53.1	14.8		Frozen		146.3
20-Mar-08	58.5	2.8		Frozen		161.9
28-Mar-08	63.5	5.1		Frozen		132.9
4-Apr-08	86.5	41.8		125.8		N/A
11-Apr-08	145.7	93.3		295.2		N/A
15-Apr-08	91.8	50.0		N/A		N/A
18-Apr-08	88.1	66.2		265.7		N/A
25-Apr-08	74.1	18.5		77.7		183.3
2-May-08	92.0	22.0		138.4		177.6
8-May-08	74.4	12.8		103.9		184.5
15-May-08	75.6	11.6		181.9		82.1
23-May-08	59.5	12.6		66.7		184.1
30-May-08	64.9	51.1		16.1		104.3
6-Jun-08	67.2	32.6		93.8		165.4
13-Jun-08	12.7	8.3		36.7		277.3
20-Jun-08	Dry	6.5		36.5		169.0
27-Jun-08	42.5	5.0		55.4		95.0
4-Jul-08	Dry	2.2		9.8		256.1
11-Jul-08	Dry	3.3		1.7		153.7
18-Jul-08	30.7	3.9		10.8		291.4
25-Jul-08	41.7	1.2		30.6		156.9
1-Aug-08	3.0	1.8		15.9		97.2
8-Aug-08	Dry	15.3		57.4		287.6
15-Aug-08	8.9	4.0		28.8		184.1
22-Aug-08	Dry	7.1		61.5		166.6
28-Aug-08	21.2	5.1		10.8		159.1
5-Sep-08	Dry	9.3		5.1		259.7
12-Sep-08	4.2	2.9		27.5		149.3
19-Sep-08	Dry	2.3		35.9		236.1
26-Sep-08	7.2	0.6		19.6		168.1
3-Oct-08	48.2	13.3		67.2		185.5
10-Oct-08	46.5	17.9		29.5		396.5
17-Oct-08	45.2	15.5		27.1		188.4
24-Oct-08	1.7	18.9		17.7		162.3
31-Oct-08	30.7	6.9		51.0		184.8
7-Nov-08	34.8	6.2		48.8		347.1

NOTE:
- All surface water flow measurements recorded in L/s
- SW1 - 2 Culverts across Townline Road.
- SW2 - Culvert across County Road 63
- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
- QFSW2 - Stream flow measurement of surface water prior to main sump pond
- NA indicates flow not available
- Frozen indicates flow not measured due to snow accumulation or frozen water conditions
- Dry indicates no flow or ponded water at surface water station

TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
111-53312-00 A61

DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
13-Nov-08	34.8	13.2		85.5		204.8
21-Nov-08	12.0	Buried		Frozen		N/A
28-Nov-08	14.2	Frozen		Frozen		121.8
30-Nov-08	5.1	Buried		Frozen		Frozen
7-Dec-08	30.4	10.6		Frozen		154.9
19-Dec-08	26.8	N/A		Frozen		N/A
23-Dec-08	70.1	13.1		Frozen		151.5
29-Dec-08	103.2	69.3		Frozen		N/A
9-Jan-09	40.2	0.8		Frozen		Flooded
16-Jan-09	16.5	9.2		Frozen		193.2
23-Jan-09	0.9	11.0		Frozen		156.6
30-Jan-09	63.4	5.8		Frozen		N/A
6-Feb-09	<0.1	5.1		Frozen		77.5
13-Feb-09	53.7	35.0		Frozen		Flooded
20-Feb-09	67.1	14.6		Frozen		121.7
27-Feb-09	4.8	13.8		Frozen		128.6
6-Mar-09	0.6	13.0		Frozen		189.6
13-Mar-09	21.0	31.2		Frozen		179.6
20-Mar-09	55.3	26.3		88.0		142.3
27-Mar-09	40.5	19.2		104.3		139.1
3-Apr-09	109.6	28.3		166.7		226.5
9-Apr-09	92.3	26.6		Frozen		182.0
17-Apr-09	109.7	22.4		104.1		196.0
24-Apr-09	94.2	18.0		112.2		178.5
1-May-09	98.4	22.6		185.3		168.4
8-May-09	77.9	14.6		98.2		142.2
15-May-09	76.1	11.2		62.2		167.5
22-May-09	79.0	8.8		46.9		126.9
29-May-09	87.5	6.4		59.5		177.8
5-Jun-09	65.3	5.3		50.1		152.6
12-Jun-09	38.2	6.0		37.5		151.8
19-Jun-09	86.8	4.0		36.3		86.4
26-Jun-09	83.2	3.7		37.8		137.3
2-Jul-09	<0.1	2.0		63.4		131.2
10-Jul-09	4.0	1.3		9.6		141.6
17-Jul-09	0.2	2.2		3.3		150.1
24-Jul-09	<0.1	1.6		19.0		229.0

NOTE:
- All surface water flow measurements recorded in L/s
- SW1 - 2 Culverts across Townline Road.
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- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
- QFSW2 - Stream flow measurement of surface water prior to main sump pond
- NA indicates flow not available
- Frozen indicates flow not measured due to snow accumulation or frozen water conditions
- Dry indicates no flow or ponded water at surface water station

TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
111-53312-00 A61

DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
31-Jul-09	<0.1	0.5		11.8		167.8
7-Aug-09	Dry	1.4		6.7		268.3
14-Aug-09	Dry	6.4		129.9		18.7
21-Aug-09	Dry	4.8		21.0		161.5
28-Aug-09	0.5	0.9		20.1		271.0
4-Sep-09	Dry	0.8		11.8		151.4
11-Sep-09	Dry	4.0		8.4		168.1
18-Sep-09	Dry	1.0		8.6		209.0
25-Sep-09	Dry	0.8		8.0		188.8
2-Oct-09	2.5	0.9		26.8		166.0
9-Oct-09	51.3	0.4		47.3		238.6
16-Oct-09	10.3	0.5		29.0		207.6
23-Oct-09	69.3	3.1		33.0		130.1
30-Oct-09	73.5	4.2		32.8		257.2
6-Nov-09	54.4	1.3		25.9		311.6
13-Nov-09	39.7	1.5		15.2		181.5
20-Nov-09	2.9	1.5		24.0		236.7
27-Nov-09	17.4	2.7		10.5		370.2
4-Dec-09	35.2	6.9		27.1		141.8
11-Dec-09	47.4	2.7		Frozen		94.1
18-Dec-09	12.9	13.4		Frozen		104.6
22-Dec-09	54.8	2.8		Frozen		135.1
28-Dec-09	52.6	4.7		Frozen		N/A
8-Jan-10	52.8	4.9		Frozen		N/A
15-Jan-10	55.2	4.5		Frozen		114.4
22-Jan-10	13.8	3.7		Frozen		80.2
29-Jan-10	32.7	8.2		Frozen		N/A
5-Feb-10	55.5	7.5		Frozen		95.8
12-Feb-10	40.3	8.2		Frozen		71.9
19-Feb-10	26.8	3.0		Frozen		86.0
1-Mar-10	28.0	2.5		Frozen		122.6
5-Mar-10	42.4	2.2		Frozen		100.8
12-Mar-10	23.1	12.5		Frozen		133.5
19-Mar-10	32.5	68.9		156.8		129.2
26-Mar-10	35.3	26.9		69.3		135.6
2-Apr-10	75.2	28.2		102.1		N/A
9-Apr-10	61.2	6.5		78.0		140.5
16-Apr-10	48.0	10.1		50.0		123.5

NOTE:
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- SW1 - 2 Culverts across Townline Road.
- SW2 - Culvert across County Road 63
- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
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- N/A indicates flow not available
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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
111-53312-00 A61

DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
23-Apr-10	48.6	8.6		43.6		248.1
30-Apr-10	17.6	15.8		31.7		163.3
7-May-10	75.2	3.6		28.3		199.4
14-May-10	2.5	26.3		132.0		229.0
21-May-10	77.8	7.9		37.7		244.7
28-May-10	10.3	11.1		33.5		139.4
4-Jun-10	76.5	13.9		59.9		244.2
11-Jun-10	39.4	10.8		64.5		141.1
18-Jun-10	18.6	9.4		29.4		163.6
25-Jun-10	72.8	8.3		56.7		171.2
1-Jul-10	80.3	9.7		36.0		N/A
9-Jul-10	0.8	9.6		105.5		250.5
15-Jul-10	2.2	7.8		38.8		92.0
23-Jul-10	0.3	9.3		89.6		123.7
30-Jul-10	0.2	8.5		41.6		202.1
6-Aug-10	<0.1	9.7		26.0		118.3
13-Aug-10	0.0	4.6		21.1		182.7
20-Aug-10	0.0	2.8		17.1		153.8
27-Aug-10	0.0	3.5		14.0		117.2
3-Sep-10	0.0	5.9		1.4		162.1
10-Sep-10	0.0	5.4		2.0		172.0
17-Sep-10	0.0	5.3		21.3		302.9
24-Sep-10	0.2	3.2		41.7		199.9
1-Oct-10	3.6	7.8		53.5		276.6
8-Oct-10	17.6	6.6		33.5		285.1
15-Oct-10	4.2	5.6		45.2		151.5
22-Oct-10	7.2	2.6		24.2		182.7
29-Oct-10	1.3	4.2		27.1		169.8
5-Nov-10	1.3	6.2		68.8		162.8
12-Nov-10	6.4	11.1		40.3		182.8
19-Nov-10	11.5	22.6		83.3		139.1
26-Nov-10	16.6	13.8		106.6		150.7
3-Dec-10	5.0	12.7		68.3		140.0
9-Dec-10	15.5	9.3		Frozen		151.7
17-Dec-10	43.8	8.1		Frozen		106.0
23-Dec-10	10.4	6.3		Frozen		81.3
30-Dec-10	32.7	9.7		Frozen		N/A
7-Jan-11	34.0	23.6		Frozen		99.3

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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
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DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
14-Jan-11	43.7	10.5		Frozen		123.9
21-Jan-11	42.0	8.1		Frozen		118.4
28-Jan-11	42.4	8.3		Frozen		93.9
4-Feb-11	34.8	6.4		Frozen		107.8
11-Feb-11	46.6	7.4		Frozen		69.4
18-Feb-11	12.6	16.5		Frozen		112.5
25-Feb-11	63.1	12.5		Frozen		102.1
4-Mar-11	6.8	4.8		Frozen		117.7
11-Mar-11	17.4	13.9		Frozen		82.0
18-Mar-11	10.3	42.0		Frozen		293.8
22-Mar-11	N/A	31.4		N/A		N/A
25-Mar-11	9.7	24.3		Frozen		120.5
1-Apr-11	11.7	15.8		158.7		132.1
8-Apr-11	14.2	34.0		134.2		171.4
5-Apr-11	73.7					
8-Apr-11	14.2	34.0		134.2		171.4
15-Apr-11	53.3	30.0		124.6		172.6
21-Apr-11	86.0	26.3		148.1		278.8
29-Apr-11	51.0	18.7		123.7		
5-May-11	57.9	3.3		103.2		200.2
13-May-11	45.5	3.9		94.0		206.2
20-May-11	81.7	24.4		144.1		328.9
27-May-11	18.7	14.2		132.7		
3-Jun-11	13.1	5.5		74.4		239.5
10-Jun-11	39.9	14.0		77.5		279.7
17-Jun-11	66.3	7.0		70.3		184.7
24-Jun-11	3.0	4.9		52.2		158.6
30-Jun-11	17.7	5.0		71.2		158.6
8-Jul-11	Dry	5.0		37.6		113.5
14-Jul-11	Dry	6.4		34.7		304.6
22-Jul-11	Dry	4.7		22.4		95.4
29-Jul-11	Dry	4.4		36.9		105.2
5-Aug-11	Dry	4.6		20.3		105.3
12-Aug-11	Dry	4.9		7.5		73.5
19-Aug-11	Dry	0.9		5.1		110.6
26-Aug-11	Dry	3.4		12.3		81.0
2-Sep-11	Dry	2.5		9.3		91.3
9-Sep-11	Dry	1.7		6.0		136.2
16-Sep-11	0.6	1.7		4.4		119.2
23-Sep-11	Dry	3.9		12.2		N/A

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SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
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DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
30-Sep-11	Dry	3.1		15.5		105.0
6-Oct-11	40.2	1.7		20.5		57.7
14-Oct-11	Dry	3.3		41.2		177.6
20-Oct-11	-	9.4		-		-
21-Oct-11	42.0	4.4		79.3		258.3
28-Oct-11	10.6	4.9		50.4		326.5
4-Nov-11	32.6	1.6		43.8		111.2
11-Nov-11	0.3	7.3		43.6		91.8
18-Nov-11	32.5	2.5		39.6		N/A
25-Nov-11	45.1	2.6		28.9		85.6
2-Dec-11	45.3	9.7		56.9		N/A
9-Dec-11	52.9	13.4		75.7		142.7
16-Dec-11	18.0	13.7		65.5		116.8
23-Dec-11	36.8	14.0		Frozen		N/A
30-Dec-11	21.1	10.1		Frozen		N/A
6-Jan-12	17.7	1.1		Frozen		107.0
13-Jan-12	48.7	-		Frozen		-
20-Jan-12	41.0	15.5		Frozen		105.4
27-Jan-12	37.3	12.1		Frozen		92.7
3-Feb-12	56.7	12.7		Frozen		103.4
10-Feb-12	42.1	11.2		Frozen		85.4
17-Feb-12	30.1	5.5		Frozen		109.6
24-Feb-12	41.2	8.5		Frozen		N/A
1-Mar-12	46.5	4.1		Frozen		109.4
9-Mar-12	36.7	37.8		Frozen		Flooded
16-Mar-12	136.7	70.3		529.8		
23-Mar-12	26.7	29.0		131.3		146.3
30-Mar-12	42.1	11.1		180.4		128.7
6-Apr-12	47.5	9.8		N/A		N/A
13-Apr-12	16.6	8.0		163.8		296.9
20-Apr-12	37.0	18.2		185.5		388.5
27-Apr-12	1.5	7.9		218.5		167.7
4-May-12	5.0	9.5		290.7		208.7
11-May-12	4.0	5.8		121.9		181.5
18-May-12	32.7	8.1		191.8		173.5
25-May-12	24.8	6.8		170.1		204.3
1-Jun-12	7.9	6.3		54.5		162.0
8-Jun-12	23.2	6.2		43.3		141.0

NOTE:
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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
111-53312-00 A61

DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
15-Jun-12	10.8	5.4		31.7		119.0
22-Jun-12	28.5	1.7		29.9		77.4
28-Jun-12	1.1	2.1		27.7		136.6
6-Jul-12	2.4	5.1		10.1		59.0
13-Jul-12	0.0	6.3		16.4		201.6
20-Jul-12	0.0	3.0		16.3		130.7
27-Jul-12	0.0	1.9		27.6		141.7
3-Aug-12	0.0	2.0		12.5		165.2
10-Aug-12	1.3	2.1		67.0		457.5
17-Aug-12	30.8	8.7		82.8		254.4
24-Aug-12	0.0	4.9		31.7		222.2
31-Aug-12	0.9	4.3		34.6		222.1
7-Sep-12	0.0	3.5		19.6		183.1
14-Sep-12	1.2	5.5		30.7		149.1
21-Sep-12	0.0	3.5		41.2		130.8
28-Sep-12	1.0	3.9		12.4		206.1
5-Oct-12	3.6	3.4		29.0		246.5
12-Oct-12	1.3	4.9		43.0		121.2
19-Oct-12	7.7	5.0		21.4		145.2
26-Oct-12	2.8	3.2		40.8		117.4
2-Nov-12	11.7	36.3		120.0		136.3
9-Nov-12	14.7	16.8		103.7		146.8
16-Nov-12	2.2	16.5		83.3		127.0
23-Nov-12	23.4	15.7		66.9		165.1
30-Nov-12	9.9	14.5		60.8		152.7
7-Dec-12	35.0	11.3		73.7		149.6
14-Dec-12	42.7	7.8		56.8		140.0
21-Dec-12	39.9	8.5		67.5		148.6
28-Dec-12	49.3	7.7		Frozen		N/A
4-Jan-13	47.8	5.8		Frozen		102.5
11-Jan-13	62.4	11.8		Frozen		163.8
17-Jan-13	48.4	16.7		Frozen		133.4
25-Jan-13	24.7	14.0		Frozen		146.0
1-Feb-13	60.8	31.3		Frozen		N/A
8-Feb-13	53.7	9.9		Frozen		N/A
15-Feb-13	52.0	10.2		Frozen		123.5
22-Feb-13	52.0	6.2		Frozen		138.1
1-Mar-13	47.9	6.1		Frozen		138.5

NOTE:
- All surface water flow measurements recorded in L/s
- SW1 - 2 Culverts across Townline Road.
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- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
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- N/A indicates flow not available
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- Dry indicates no flow or ponded water at surface water station

TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
111-53312-00 A61

DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
8-Mar-13	49.8	7.5		Frozen		99.0
15-Mar-13	50.7	15.2		Frozen		96.8
22-Mar-13	50.4	12.7		Frozen		129.5
28-Mar-13	48.9	9.2		118.7		116.7
5-Apr-13	45.1	8.8		76.7		129.5
12-Apr-13	81.9	9.8		113.2		131.1
19-Apr-13	123.1	57.8		405.3		-
26-Apr-13	61.3	24.5		164.6		125.5
3-May-13	19.9	28.2		71.0		279.3
9-May-13	46.7	12.8		67.6		88.7
16-May-13	25.0	9.0		53.9		204.5
24-May-13	55.7	23.6		104.5		216.8
31-May-13	58.7	6.8		51.2		341.3
7-Jun-13	49.2	11.7		53.4		N/A
14-Jun-13	48.7	7.1		63.7		274.0
21-Jun-13	41.2	8.4		43.8		155.1
27-Jun-13	5.6	7.7		32.0		197.3
5-Jul-13	37.1	8.2		49.9		222.3
12-Jul-13	5.5	8.8		53.7		203.8
19-Jul-13	3.2	7.9		36.4		119.8
25-Jul-13	29.0	2.7		41.2		236.8
2-Aug-13	4.0	2.6		84.2		259.9
8-Aug-13	3.4	3.1		69.5		193.1
16-Aug-13	0.6	2.8		40.4		81.2
23-Aug-13	0.0	2.4		35.5		65.6
30-Aug-13	0.5	2.7		35.4		62.3
6-Sep-13	0.5	2.4		42.2		59.9
13-Sep-13	7.0	2.2		44.3		129.4
20-Sep-13	2.4	2.7		25.8		131.3
27-Sep-13	18.7	2.5		26.7		131.3
4-Oct-13	24.8	4.1		41.3		N/A
11-Oct-13	58.1	4.2		37.6		116.7
18-Oct-13	7.3	5.2		67.0		165.6
25-Oct-13	24.9	9.5		150.6		204.3
31-Oct-13	35.5	12.5		257.4		302.3
8-Nov-13	48.0	14.9		255.1		159.6
14-Nov-13	49.0	16.1		240.1		171.2
22-Nov-13	44.5	17.8		244.9		116.8

NOTE:
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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
111-53312-00 A61

DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
29-Nov-13	47.8	5.5		-		85.4
6-Dec-13	29.2	14.2		119.7		121.6
13-Dec-13	42.7	Frozen		Frozen		N/A
19-Dec-13	39.5	Frozen		Frozen		118.4
27-Dec-13	36.8	Frozen		Frozen		N/A
3-Jan-14	34.5					65.3
10-Jan-14	13.8	6.3				88.7
17-Jan-14	10.5	8.1				80.4
24-Jan-14	35.9					102.6
31-Jan-14	37.8	5.0				92.1
7-Feb-14	14.1	6.1				86.6
14-Feb-14	7.1	3.1				110.8
21-Feb-14	29.2	-				92.8
28-Feb-14						73.4
7-Mar-14	21.1	4.1				69.3
14-Mar-14	31.9	3.7				82.2
21-Mar-14	33.8	3.8				88.0
28-Mar-14	34.4	6.6				114.5
4-Apr-14	26.2	14.4				98.1
11-Apr-14	52.3	33.6				215.1
17-Apr-14	177.9	104.1		247.6		244.9
25-Apr-14	65.4	88.3		469.4		166.7
1-May-14	93.7	67.1		288.6		147.4
9-May-14	35.8	9.4		151.0		197.1
16-May-14	31.4	8.2		142.7		110.8
23-May-14	12.8	28.8		82.1		214.9
30-May-14	33.3	9.0		86.4		185.2
6-Jun-14	5.6	7.5		51.7		186.0
13-Jun-14	5.6	4.2		49.6		161.0
20-Jun-14	9.1	5.5		52.9		135.7
27-Jun-14	3.9	4.6		40.7		132.9
4-Jul-14	1.8	1.4		24.5		149.0
11-Jul-14	8.2	0.8		15.4		127.1
18-Jul-14	5.0	1.6		39.5		145.0
25-Jul-14	2.8	0.5		15.9		147.8
1-Aug-14	0.7	1.3		11.8		149.3
8-Aug-14	0.6	1.0		10.1		128.5
15-Aug-14	4.4	1.1		13.3		148.0

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- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
- QFSW2 - Stream flow measurement of surface water prior to main sump pond
- N/A indicates flow not available
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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
111-53312-00 A61

DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
22-Aug-14	2.9	0.3		12.8		237.3
29-Aug-14	1.4			11.2		147.8
5-Sep-14	4.0	0.1		N/A		167.3
12-Sep-14	1.2	0.8		15.1		91.5
19-Sep-14	4.3	0.9		17.7		88.9
26-Sep-14	3.9	0.8		20.4		98.5
3-Oct-14	4.7	0.3		21.9		81.3
10-Oct-14	8.4	0.1		25.1		85.1
16-Oct-14	5.4	0.2		39.1		102.0
24-Oct-14	1.6	2.9		10.8		124.2
31-Oct-14	11.5	1.8		14.8		156.0
7-Nov-14	51.6	6.0		20.8		92.8
14-Nov-14	14.4	9.2		26.2		71.9
28-Nov-14	65.3	2.8		Frozen		54.0
5-Dec-14	12.0	4.1		Frozen		52.8
12-Dec-14	13.7	2.1		Frozen		53.0
19-Dec-14	45.3	2.4		Frozen		48.4
26-Dec-14	84.6	5.2		169.2		-
2-Jan-15	36.4	2.4		Frozen		N/A
8-Jan-15	Frozen	2.3		Frozen		44.2
14-Jan-15	33.0	1.3		Frozen		45.2
22-Jan-15	28.4	2.4		Frozen		45.9
30-Jan-15	10.8	5.0		Frozen		N/A
6-Feb-15	15.8	1.8		Frozen		60.5
12-Feb-15	21.2	0.9		Frozen		N/A
27-Feb-15	24.5	0.6		Frozen		82.1
6-Mar-15	4.3	0.7		Frozen		103.1
13-Mar-15	7.5	2.4		Frozen		124.0
20-Mar-15	17.8	5.9		Frozen		87.8
26-Mar-15	6.8	3.6		Frozen		107.4
2-Apr-15	6.1	3.4		27.0		87.8
10-Apr-15	83.3	32.3		Flooded		164.0
17-Apr-15	63.3	23.6		Flooded		86.9
23-Apr-15	51.0	18.8		99.4		96.6
1-May-15	10.3	7.7		44.2		204.6
8-May-15	6.3	7.0		40.0		200.0
15-May-15	2.4	3.1		14.5		199.6
21-May-15	3.1	4.1		15.3		164.2
28-May-15	8.3	3.2		19.3		219.4
4-Jun-15	5.1	3.3		12.6		167.4

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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
111-53312-00 A61

DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
12-Jun-15	2.5	1.9		22.3		191.5
18-Jun-15	2.8	3.1		23.3		172.2
26-Jun-15	10.3	1.6		N/A		178.8
1-Jul-15	77.9	11.0		N/A		N/A
10-Jul-15	5.0	7.9		28.3		106.2
17-Jul-15	8.0	7.3		30.0		135.9
22-Jul-15	4.9	3.6		13.1		86.7
30-Jul-15	3.4	0.9		5.2		89.9
5-Aug-15	19.2	1.9		23.0		92.2
13-Aug-15	7.8	2.3		15.6		120.2
21-Aug-15	2.3	0.8		10.8		159.7
28-Aug-15	1.9	0.9		8.5		95.3
3-Sep-15	4.6	0.6		6.6		99.5
10-Sep-15	1.8	0.8		15.6		65.1
18-Sep-15	DRY	0.3		5.0		68.5
25-Sep-15	3.4	0.5		7.8		68.0
2-Oct-15	14.8	0.4		4.8		81.3
9-Oct-15	1.3	0.6		11.0		97.8
16-Oct-15	3.3	0.5		8.0		84.9
23-Oct-15	3.1	0.3		14.1		70.6
30-Oct-15	27.0	0.7		48.6		124.2
5-Nov-15	2.6	2.2		20.7		103.7
10-Nov-15	9.4					
13-Nov-15	61.5	1.5		78.0		70.3
19-Nov-15	17.1	1.1		33.3		86.0
26-Nov-15	0.8	1.3		36.6		81.6
4-Dec-15	2.3	0.9		24.0		100.5
10-Dec-15	12.3	1.4		20.9		102.9
17-Dec-15	21.2	2.2		41.5		127.2
23-Dec-15	32.0	3.9		49.7		63.7
30-Dec-15	34.4	1.7		63.5		67.5
8-Jan-16	11.8	2.6		30.4		73.9
14-Jan-16	12.1	2.1		FROZEN		70.8
22-Jan-16	12.1	2.0		FROZEN		58.2
29-Jan-16	16.7	1.2		FROZEN		38.0
5-Feb-16	77.1	10.4		FROZEN		65.6
11-Feb-16	53.4	3.9		FROZEN		104.1
18-Feb-16	19.2	5.7		FROZEN		83.6
25-Feb-16	10.2	3.9		FROZEN		136.2
4-Mar-16	66.8	9.7		FROZEN		93.6
10-Mar-16	160.7	53.4		388.1		48.6
18-Mar-16	54.8	19.2		156.6		169.1

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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
111-53312-00 A61

DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
28-Mar-16	233.3	93.3		576.7		107.1
1-Apr-16	253.8	36.9		509.4		26.7
7-Apr-16	168.5	19.7		301.6		258.2
15-Apr-16	61.9	11.5		130.6		180.8
22-Apr-16	50.9	12.8		84.3		149.7
29-Apr-16	41.6	8.6		36.6		230.6
6-May-16	40.3	6.7		25.4		129.0
13-May-16	30.2	5.3		36.6		135.4
20-May-16	23.6	5.3		20.2		183.7
27-May-16	22.7	3.9		22.6		224.5
2-Jun-16	18.8	3.9		28.5		73.1
10-Jun-16	11.7	2.7		15.4		194.2
17-Jun-16	10.4	2.2		5.2		82.9
24-Jun-16	6.3	1.7		3.9		169.4
28-Jun-16	6.9	1.8		6.2		132.0
5-Jul-16	5.0					
8-Jul-16	5.0	1.6		4.3		151.9
15-Jul-16	6.6	2.6		4.7		139.7
22-Jul-16	2.7	6.2		2.1		94.1
29-Jul-16	3.1	0.2		1.1		134.5
5-Aug-16	0.8	0.5		DRY		81.5
12-Aug-16	DRY	0.9		DRY		117.1
19-Aug-16	26.9	0.6		N/A		42.0
26-Aug-16	2.1	0.3		N/A		85.8
2-Sep-16	0.6	1.6		N/A		99.0
9-Sep-16	9.6	1.3		N/A		51.3
16-Sep-16	2.6	5.5		N/A		131.4
21-Sep-16	3.6	0.4		N/A		103.4
30-Sep-16	4.4	0.6		N/A		73.7
7-Oct-16	6.7	1.6		9.0		99.0
13-Oct-16	13.7	0.9		N/A		112.2
19-Oct-16	13.9	1.0		N/A		77.8
27-Oct-16	13.1	0.5		25.6		55.3
3-Nov-16	19.1	0.6		25.2		80.8
11-Nov-16	11.2	0.8		N/A		46.6

NOTE:

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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP MONITORING REPORT 2017
111-53312-00 A61

DATE	SW1	SW2	SWB-1	SWO-2	QFSW1	QFSW2
18-Nov-16	2.5	0.3		8.9		51.0
24-Nov-16	7.5	0.6		12.8		79.6
2-Dec-16	24.5	0.6		55.0		40.9
7-Dec-16	28.6	0.5		N/A		78.7
16-Dec-16	27.4	0.8		14.1		94.3
22-Dec-16	Frozen	0.2		Frozen		60.4
30-Dec-16	Frozen	0.7		Frozen		N/A
6-Jan-17	Frozen	3.4		Frozen		30.5
13-Jan-17	Frozen	2.1		Frozen		94.8
20-Jan-17	12.8	2.5		Frozen		65.4
26-Jan-17	55.9	8.5		94.6		65.7
3-Feb-17	Frozen	0.6		Frozen		49.5
10-Feb-17	Frozen	0.9		Frozen		49.0
17-Feb-17	Frozen	1.4		Frozen		61.7
19-Apr-17	53.7	8.0		58.5		160.6
3-May-17						122.8
16-May-17	95.5	4.4		99.4		136.2
28-Jun-17	34.0	3.6		53.6		141.7
18-Jul-17	8.9	2.6		40.7		63.7
15-Aug-17	14.4	1.4		36.2		107.8
18-Sep-17	21.8	0.6		26.8		53.8
18-Oct-17	37.3	2.6		58.6		118.8
14-Nov-17	33.2	1.1		44.5		84.9
13-Dec-17	Frozen	Frozen		Frozen		71.1

NOTE:

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- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
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FIGURE B-1

SURFACE WATER HYDROGRAPH
SW1

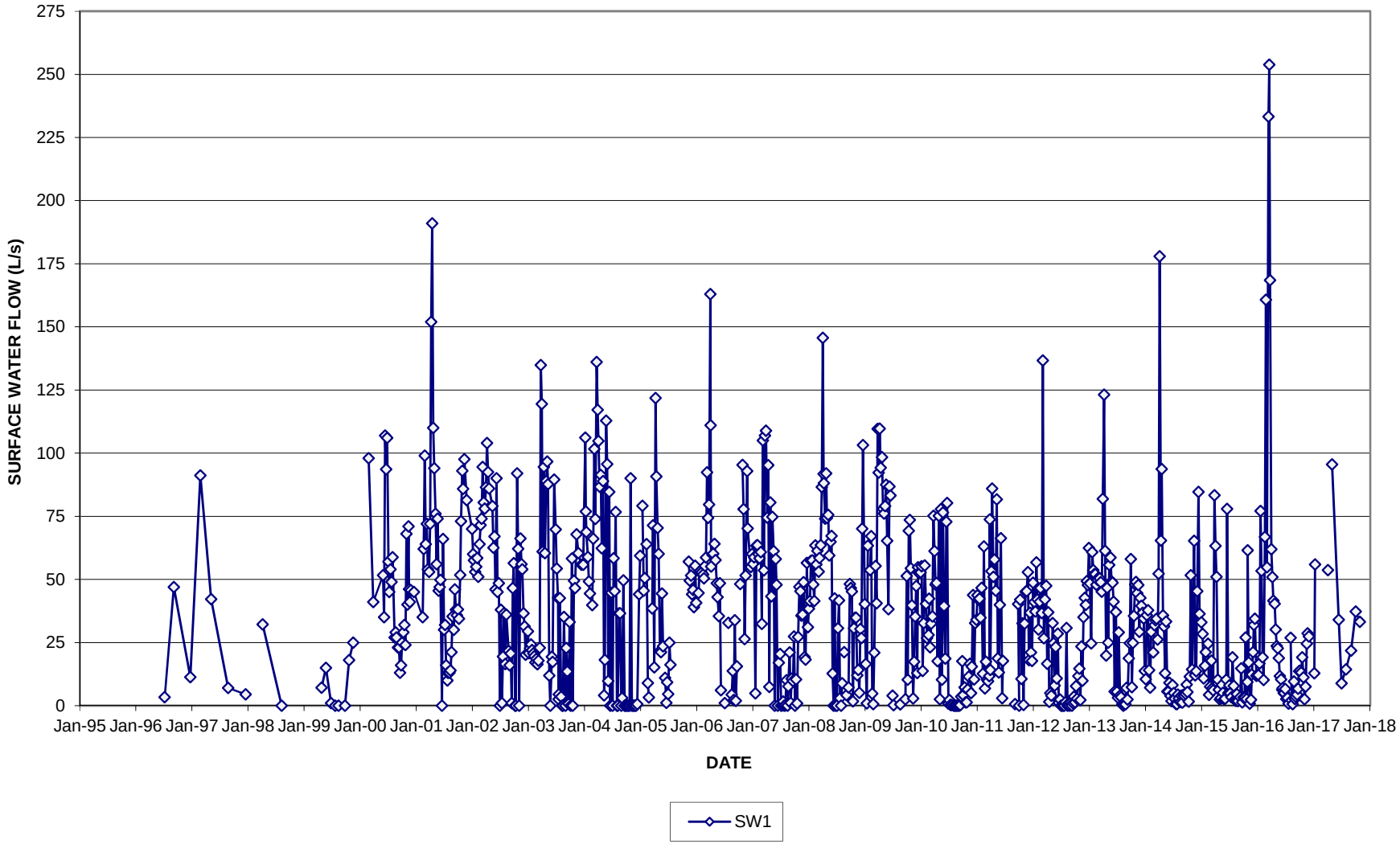


FIGURE B-1 (a)

SURFACE WATER HYDROGRAPH
SW1

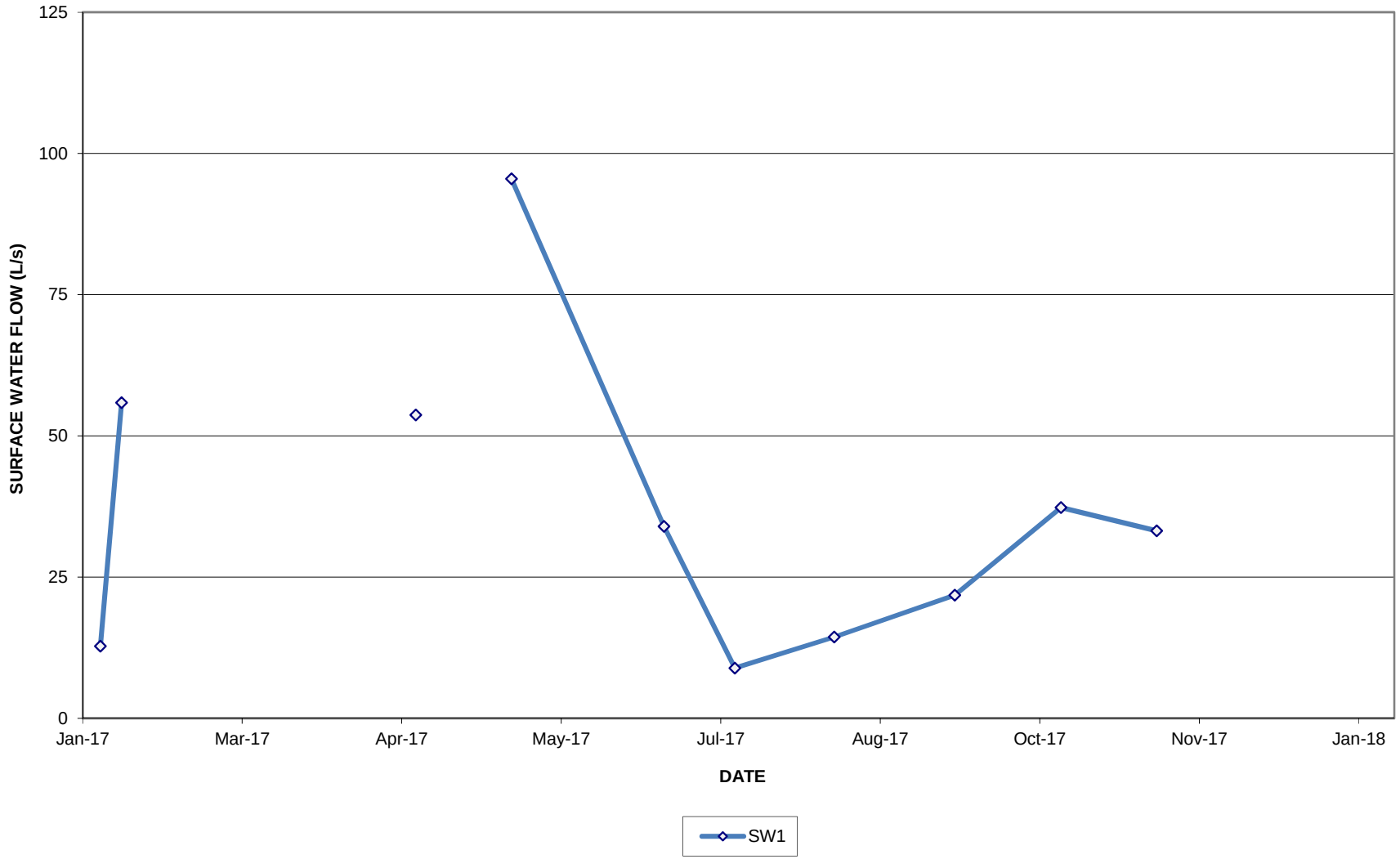


FIGURE B-1 (b)

SURFACE WATER ELEVATION (DATALOGGER)
SW1

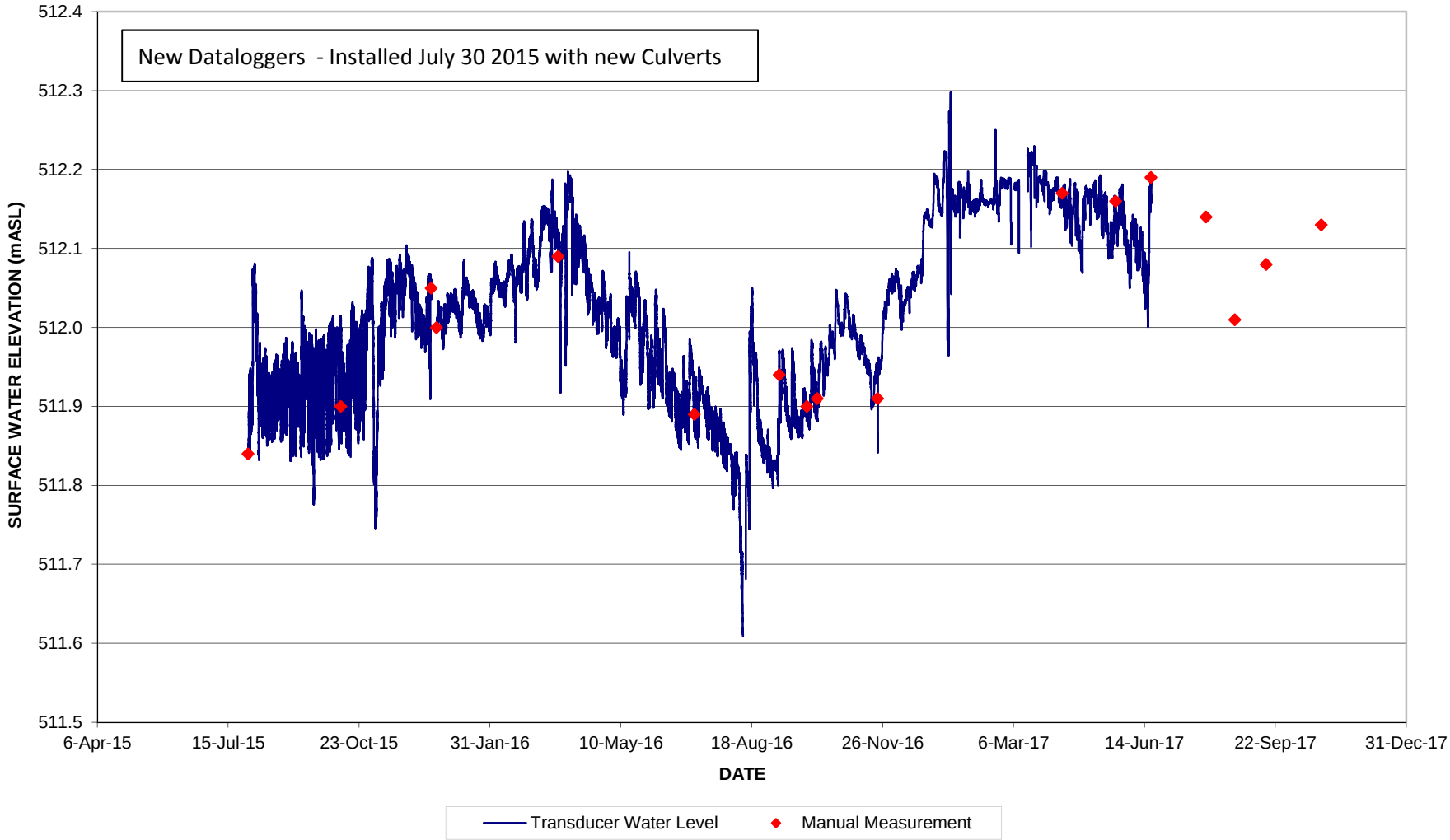


FIGURE B-1 (c)

SURFACE WATER TEMPERATURE (DATALOGGER)
SW1

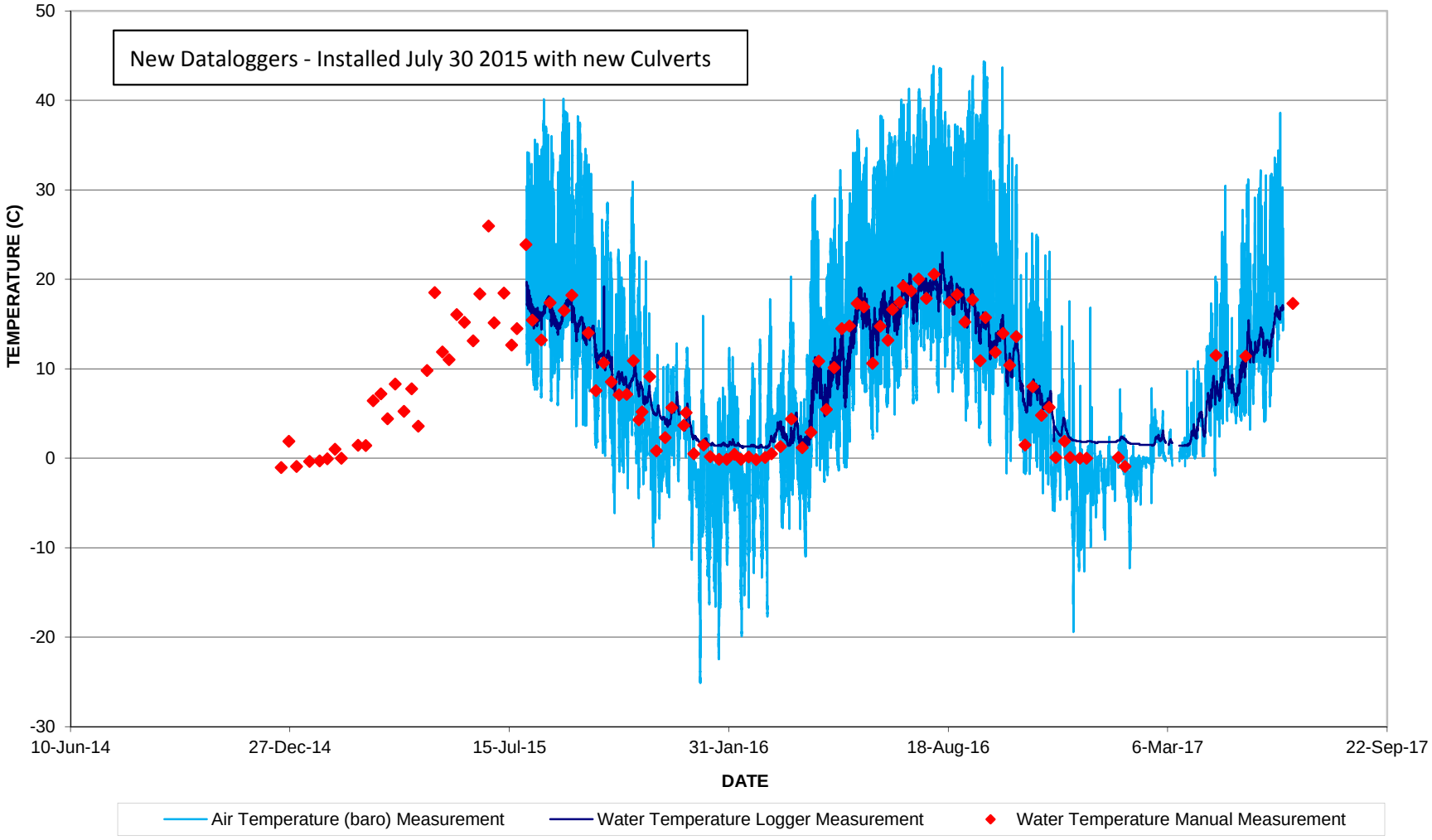


FIGURE B-2

SURFACE WATER HYDROGRAPH
SW2

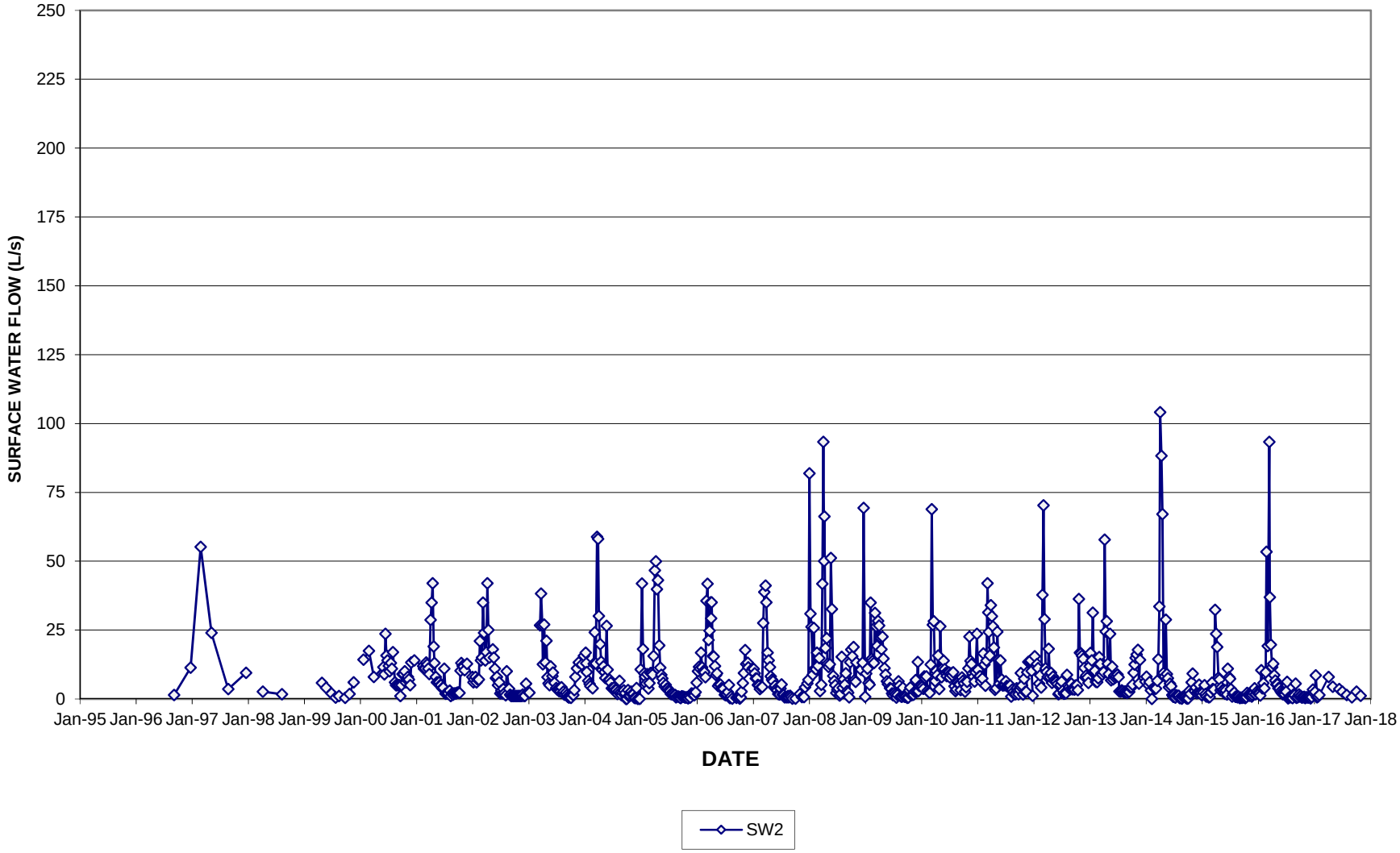


FIGURE B-2 (a)

SURFACE WATER HYDROGRAPH
SW2

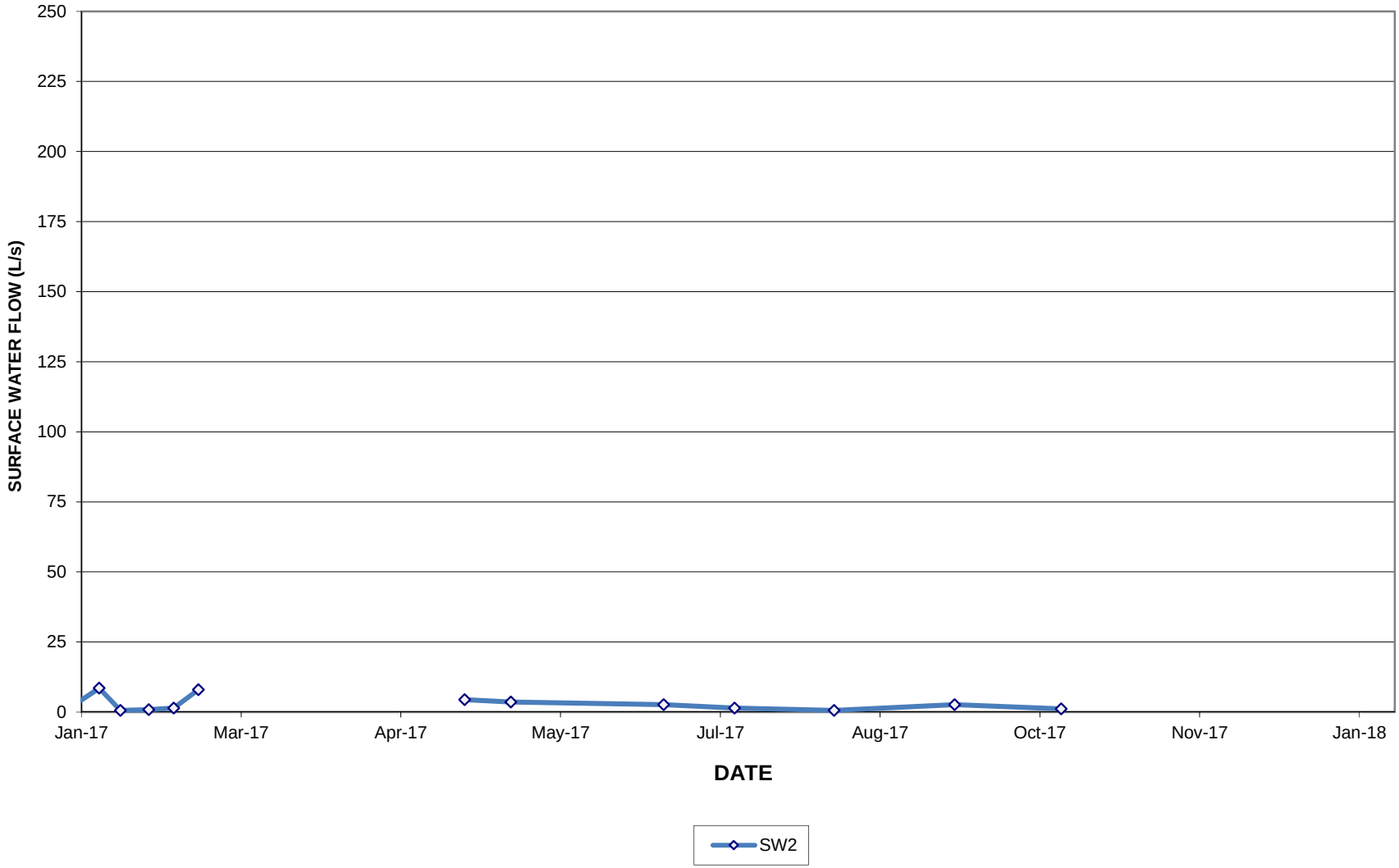


FIGURE B-2 (b)

SURFACE WATER ELEVATION (DATALOGGER)
SW2

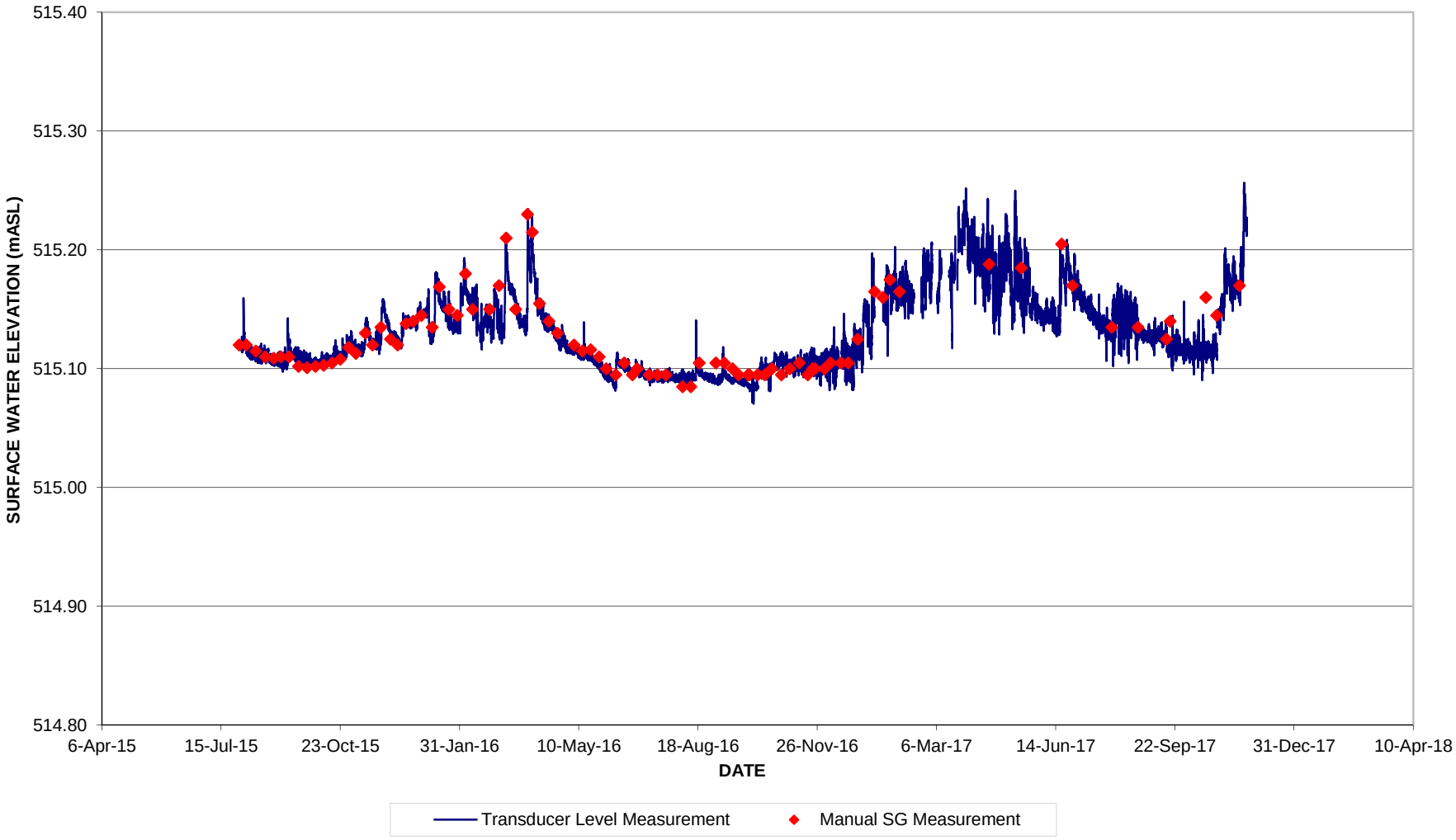


FIGURE B-2 (c)

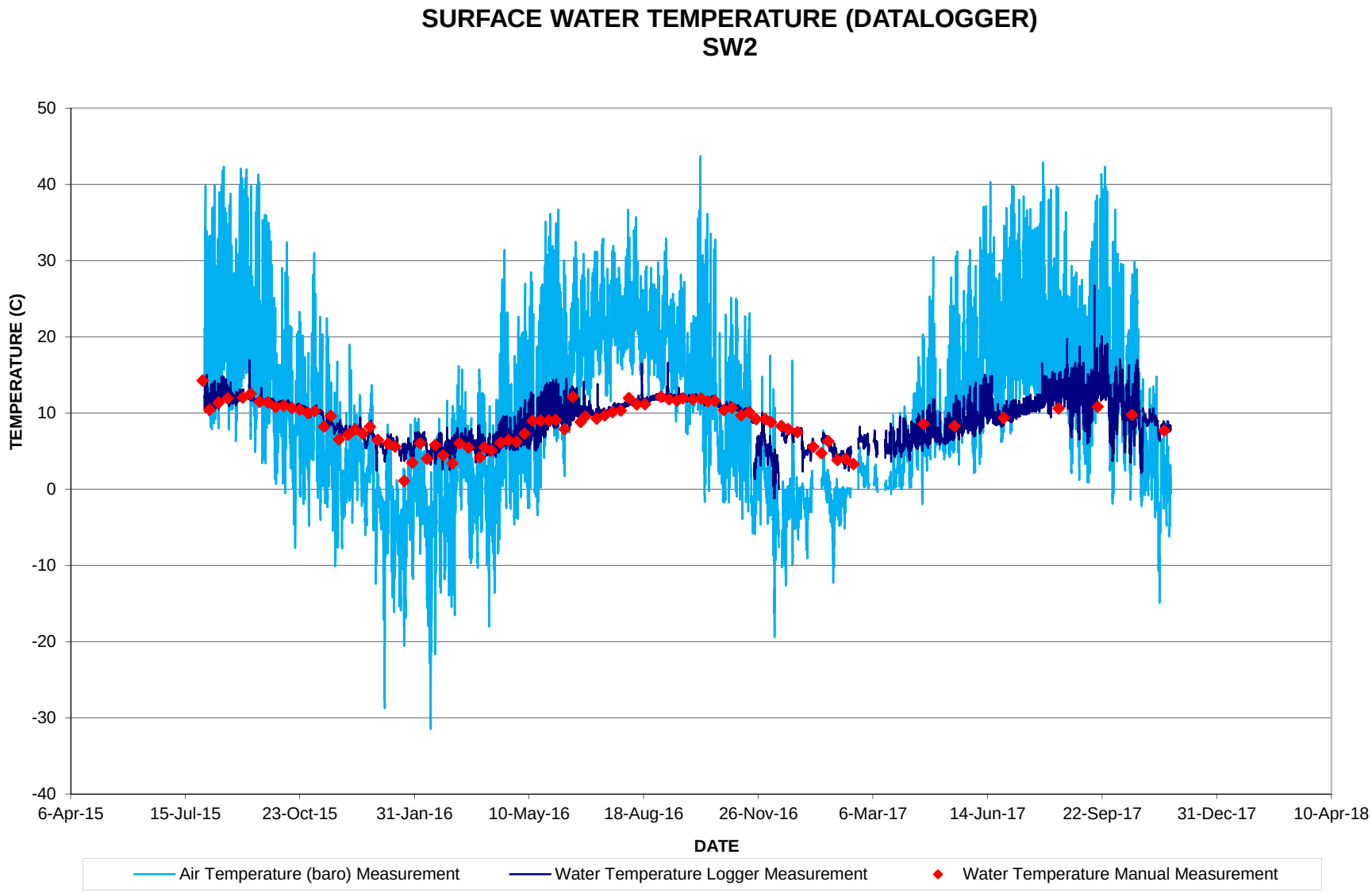

SURFACE WATER TEMPERATURE (DATALOGGER)
SW2
TEMPERATURE (C)
50
40
30
20
10
0
-10
-20
-30
-40
6-Apr-15
15-Jul-15
23-Oct-15
31-Jan-16
10-May-16
18-Aug-16
26-Nov-16
6-Mar-17
14-Jun-17
22-Sep-17
31-Dec-17
10-Apr-18
DATE
Air Temperature (baro) Measurement
Water Temperature Logger Measurement
Water Temperature Manual Measurement

FIGURE B-3

SURFACE WATER HYDROGRAPH
SWB-1

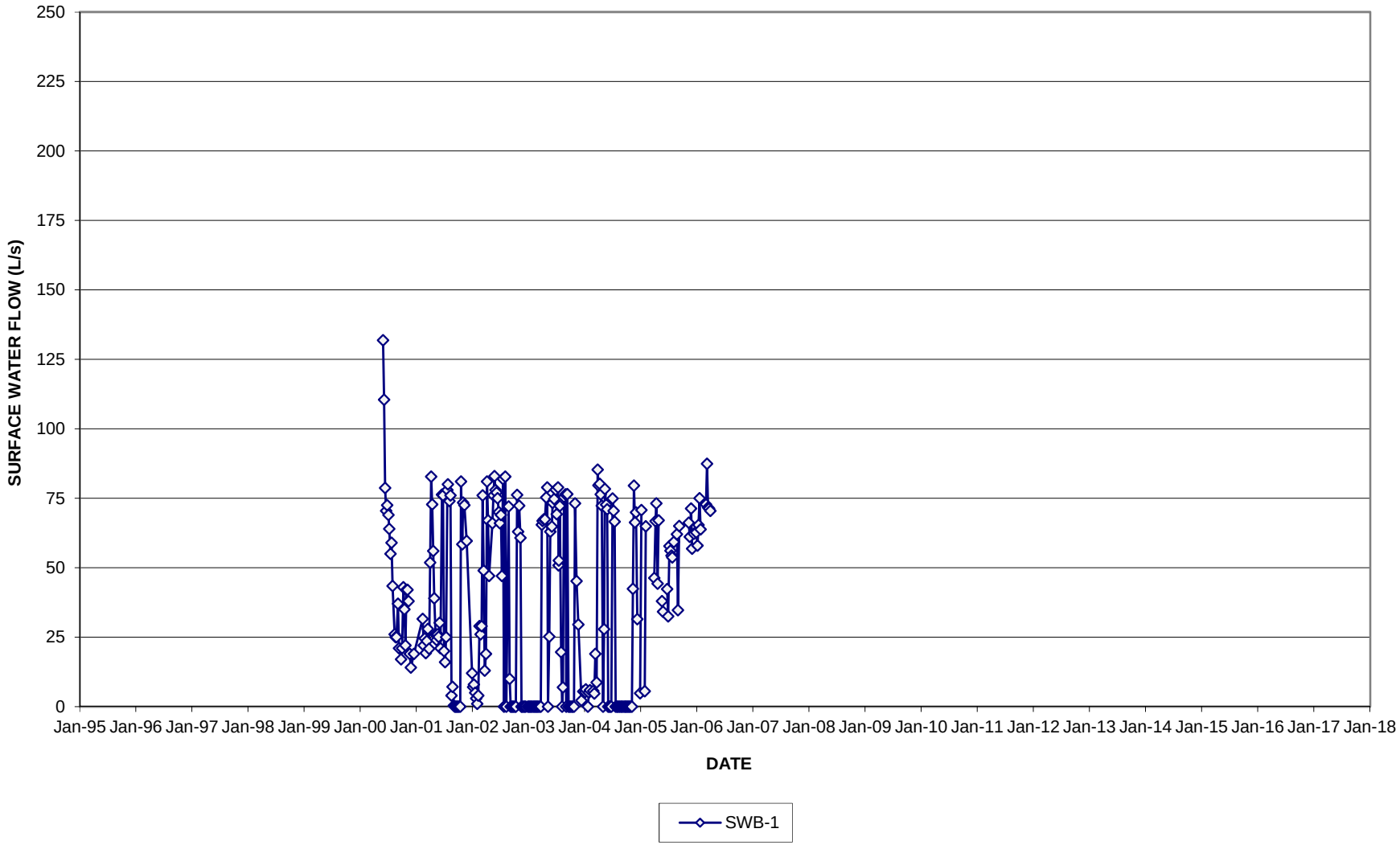


FIGURE B-4

SURFACE WATER HYDROGRAPH
SWO-2

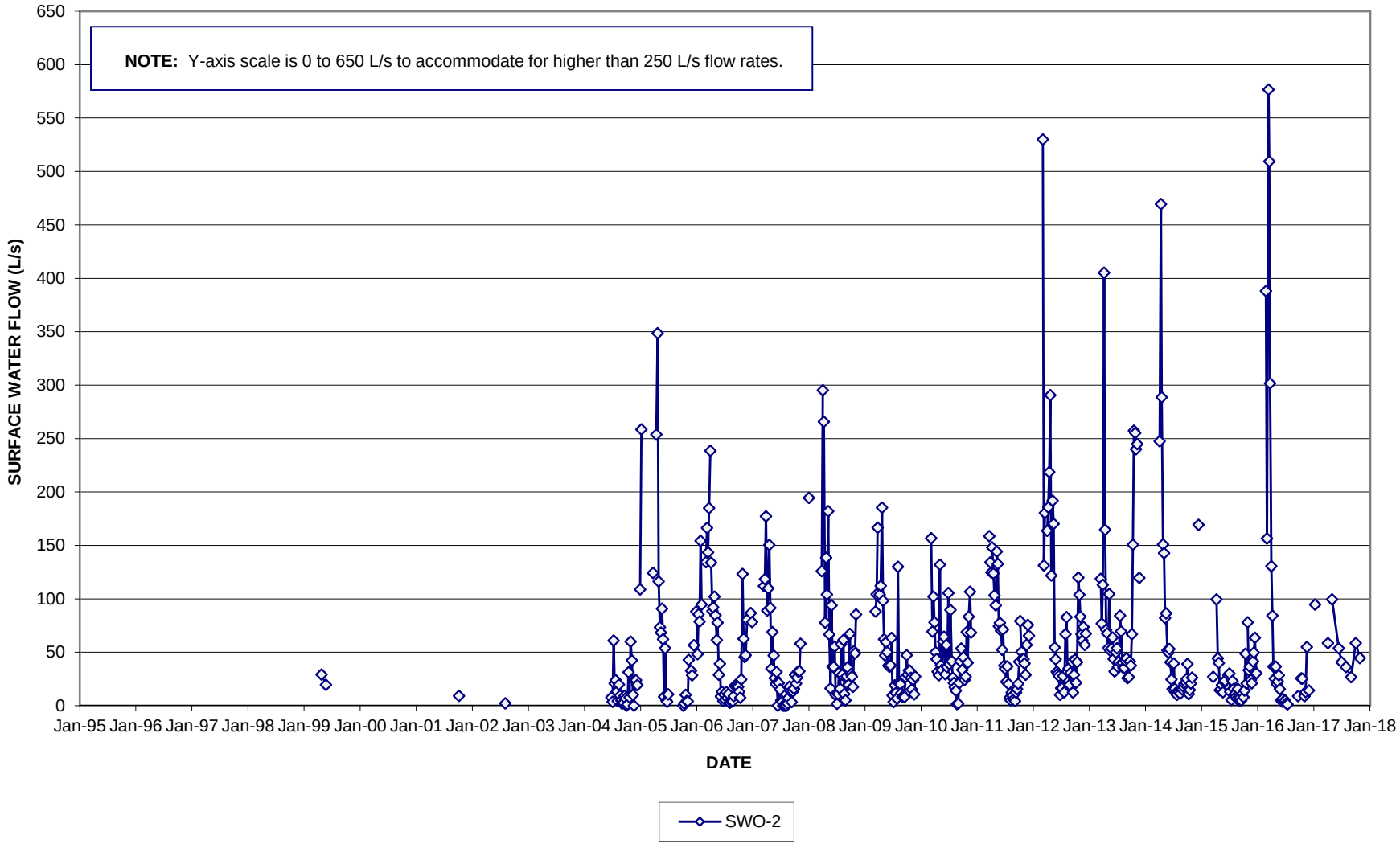


FIGURE B-4 (a)

SURFACE WATER HYDROGRAPH
SWO-2

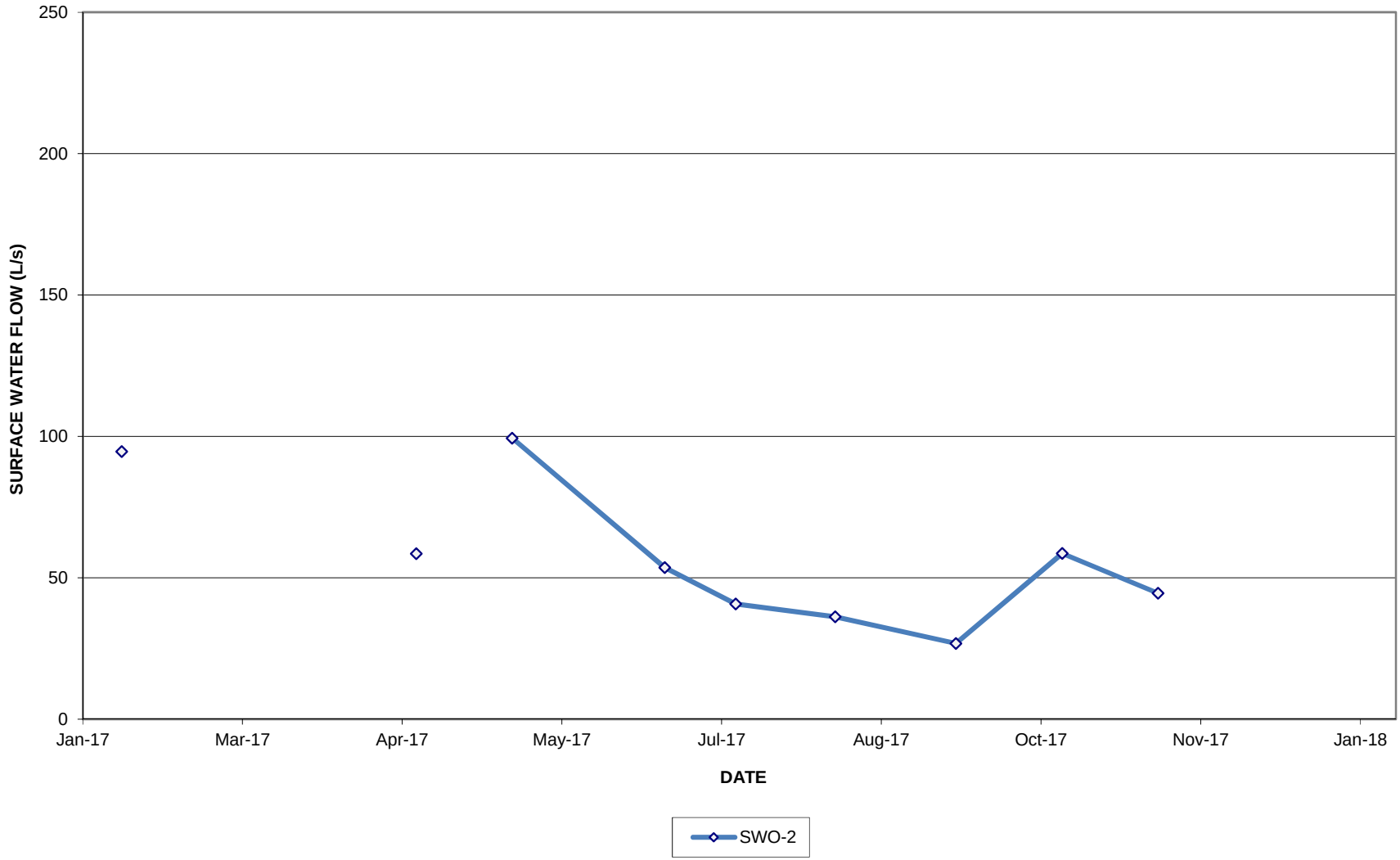
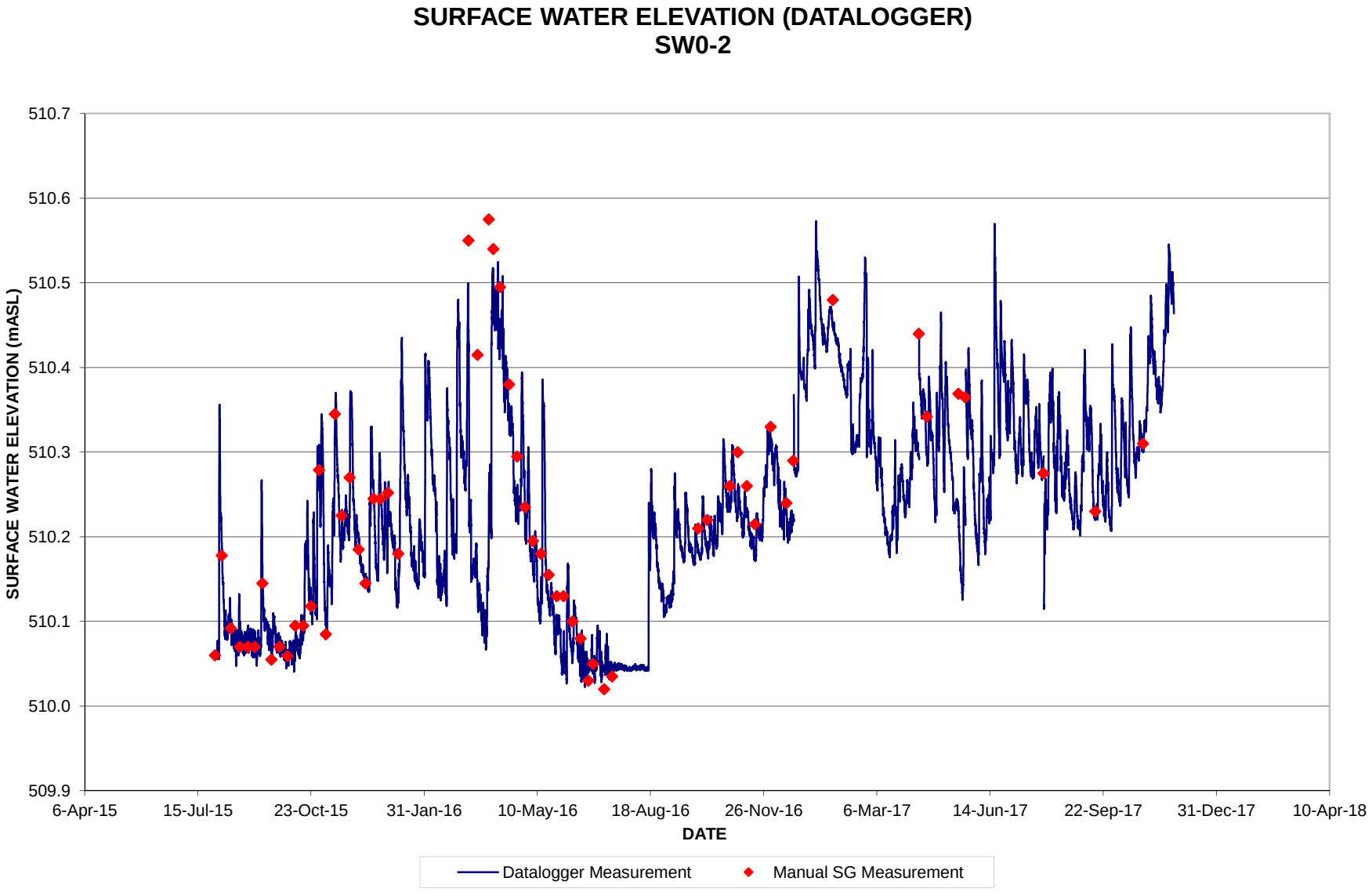


FIGURE B-4 (b)



C:\Users\sarah.watts\Desktop\2017 AMP Report\APPENDIX B - PERFORMANCE INDICATOR MONITORING PROGRAM RESULTS\Figure B-4 SW0-2 Datalogger Summary (2017).xlsx

FIGURE B-4 (c)

SURFACE WATER TEMPERATURE (DATALOGGER)
SW0-2

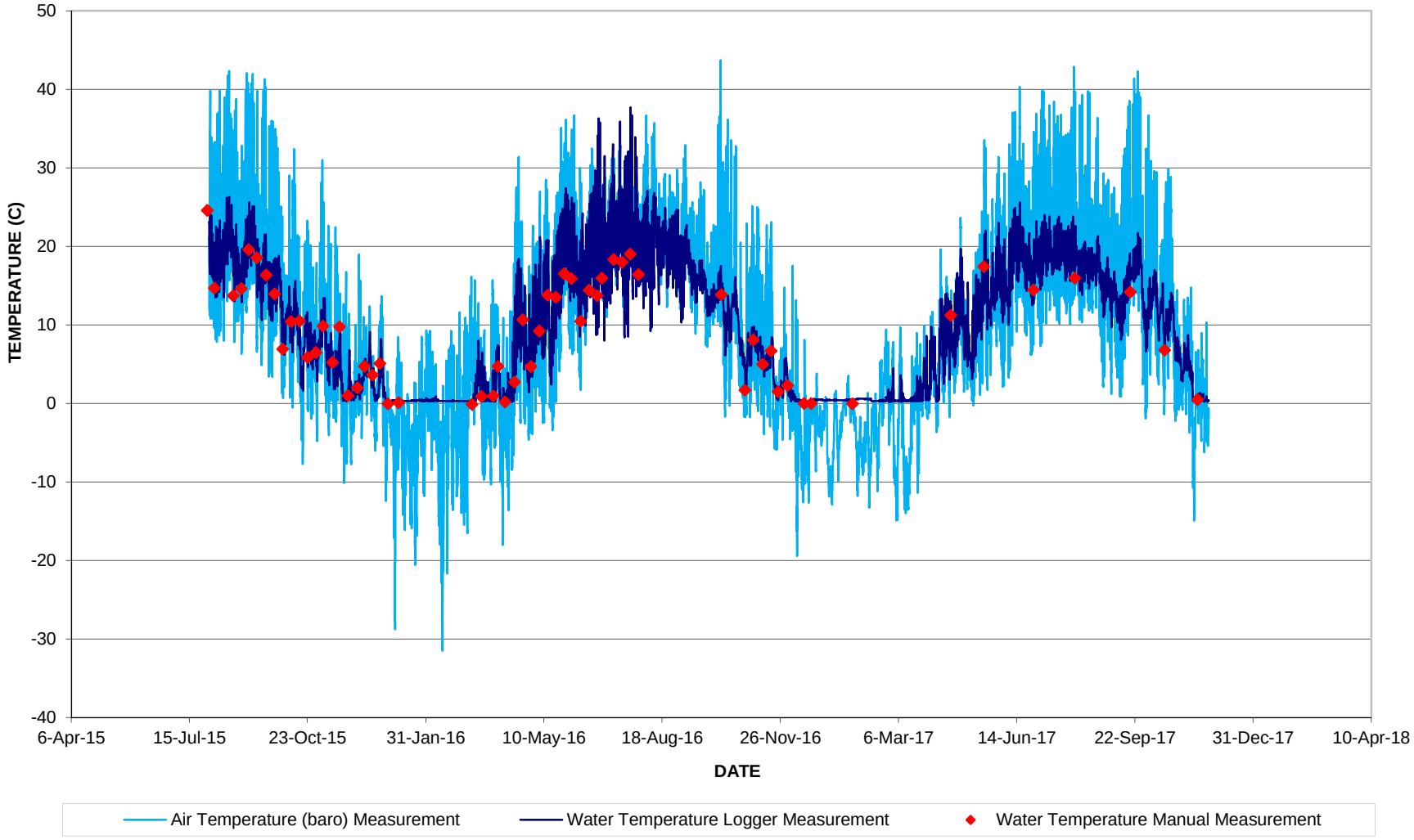


FIGURE B-5

SURFACE WATER HYDROGRAPH
QFSW1

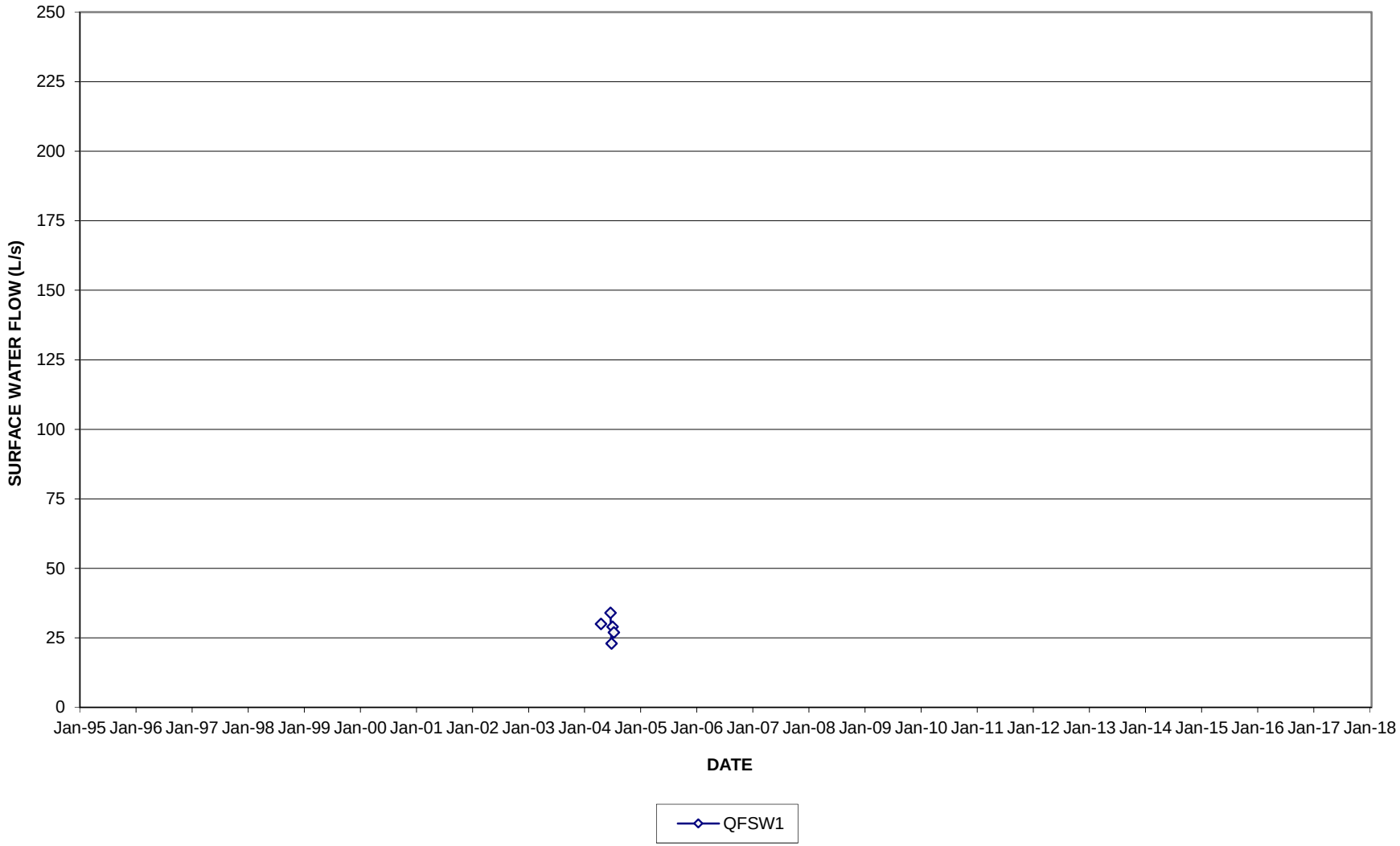


FIGURE B-6

SURFACE WATER HYDROGRAPH
QFSW2

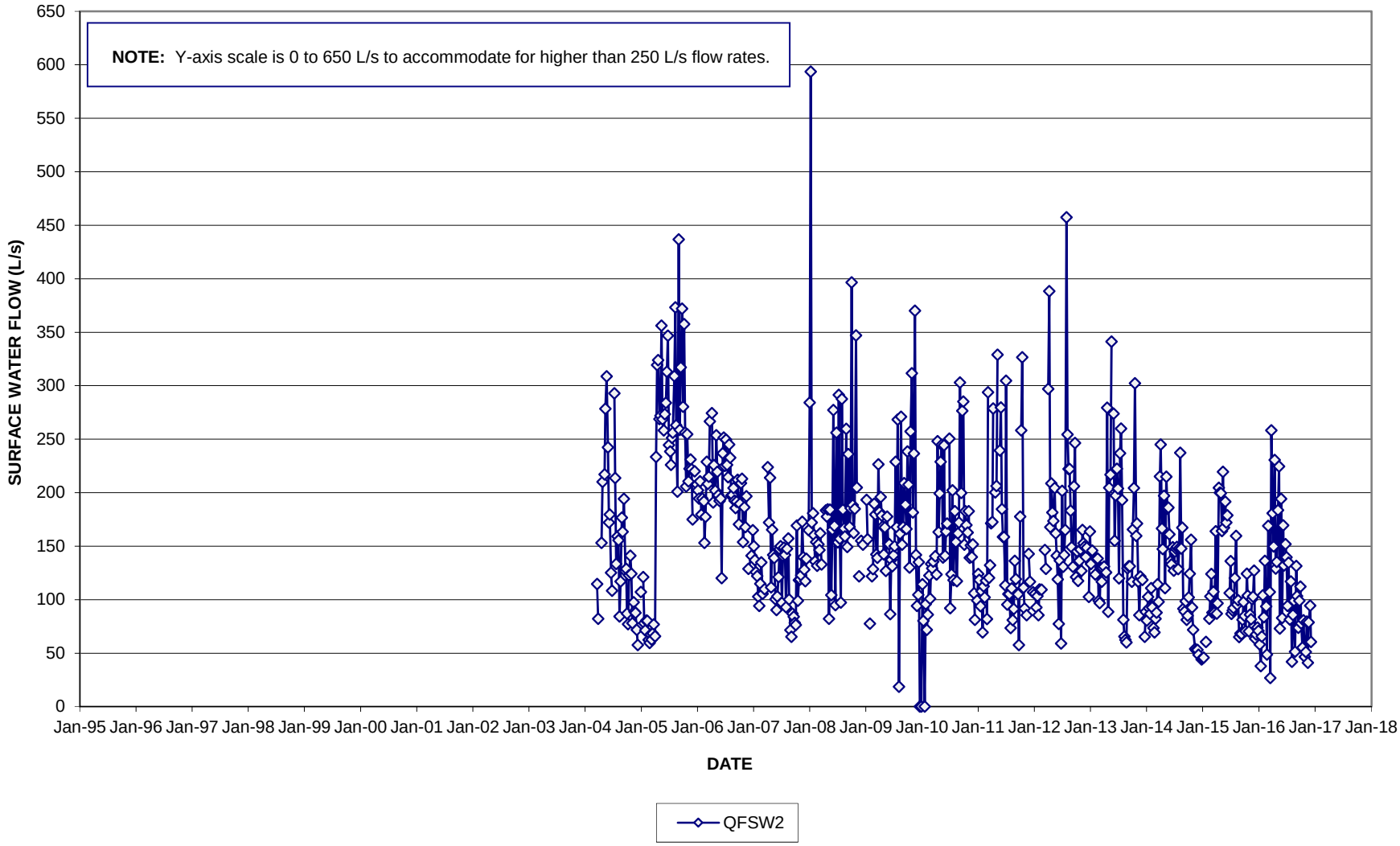


FIGURE B-6 (a)

SURFACE WATER HYDROGRAPH
QFSW2

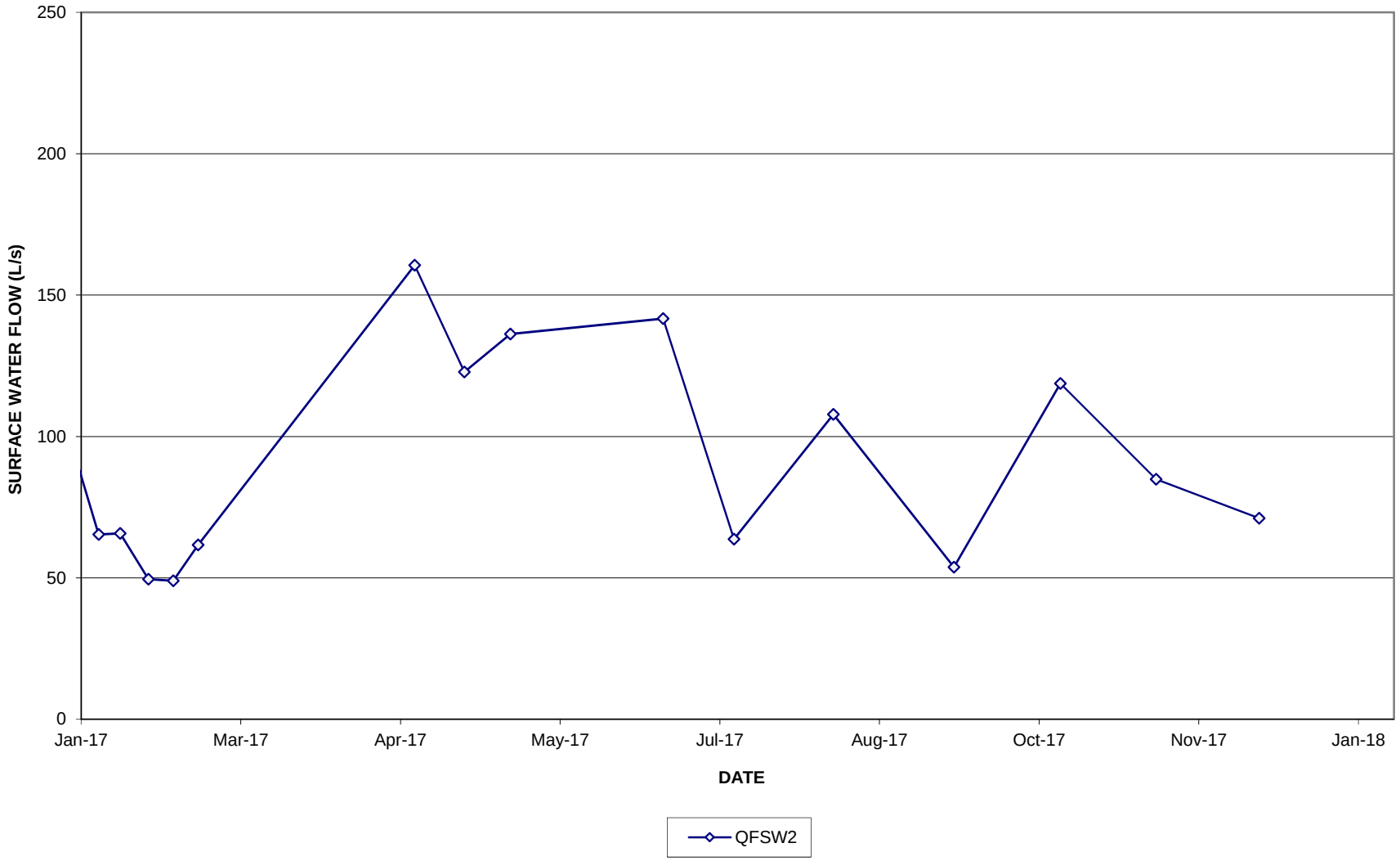


TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
22-May-03	0.0	E	4.1 (1)	B	0.0	E	112.8	V	46.0	V	164.4	V	0.1	E
23-Jun-03	0.0	E	0.0	E	0.0	E	(*)	(*)	18.6	V	58.3	V	0.5	E
22-Jul-03	0.0	E	0.0	E	0.0	E	(*)	(*)	59.6	V	92.5	V	0.3	E
20-Aug-03	0.0	E	0.0	E	0.0	E	9.8 (*)	V	14.9	V	57.6	V	0.0	E
25-Sep-03	0.0	E	0.0	E	0.0	E	3.6 (*)	V	<0.1	E	9.0	V	0.0	E
22-Oct-03	0.0	E	1.5	B	0.0	E	19.0	V	14.6	V	50.8	V	0.0	E
28-Nov-03	0.0	E	1.4	B	0.0	E	116.9	V	183.4	V	214.9	V	0.5	E
19-Dec-03	0.2	M	2.8	B	0.0	E	184.5	V	Frozen	E	266.5	V	Frozen	E
10-Feb-04	Frozen	E	Frozen	E	0.0	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
18-Mar-04	2.8	V	1.8	B	0.0	E	246.5	V	Frozen	E	473.4	V	0.5	E
19-Apr-04	14.4	V	4.9	B	0.0	E	225.2	V	371.1	V	606.6	V	0.6	E
19-May-04	0.8	V	1.0	V	0.0	E	78.3	V	182.0	V	291.5	V	0.4	E
24-Jun-04	0.0	E	<0.1	E	0.0	E	68.9	V	111.9	V	185.9	V	1.0	E
29-Jul-04	0.0	E	0.0	E	0.0	E	22.6	V	32.1	V	100.5	V	0.5	E
23-Aug-04	0.0	E	0.0	E	0.0	E	12.3	V	7.3	V	24.9	V	0.0	E
21-Sep-04	0.0	E	0.0	E	0.0	E	8.5	V	7.0	V	41.3	V	0.0	E
21-Oct-04	0.0	E	0.0	E	0.0	E	11.0	V	12.7	V	41.5	V	0.0	E
17-Nov-04	0.0	E	0.0	E	0.0	E	24.7	V	26.9	V	69.8	V	0.5	E
15-Dec-04	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E

NOTE:

- - indicates measurement not available
- E indicates estimated flow value
- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.
- (1) indicates measurement taken on June 9, 2003.
- (*) indicates flow not measureable/affected due to beaver activity

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-05	Frozen	E	Frozen	E	63.2	V	Frozen	E	Frozen	E	Frozen	E	Frozen	E
13-Feb-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
27-Mar-05	0.8	V	3.1	B/E	Frozen	E	98.8	V	Frozen	E	220.0	V	Frozen	E
10-Apr-05	31.4	V	7.5	B/E	Frozen	E	742.4	V	1376.5	V	1671.0	V	Frozen	E
22-May-05	0.0	E	0.8	B/E	0.0	E	120.4	V	184.8	V	286.6	V	<0.1	E
26-Jun-05	0.0	E	0.0	E	0.0	E	33.0	V	61.6	V	123.0	V	<0.1	E
10-Jul-05	0.0	E	0.0	E	0.0	E	21.3	V	30.6	V	87.5	V	0.0	E
21-Aug-05	0.0	E	0.0	E	0.0	E	7.6	V	20.9	V	53.2	V	0.0	E
25-Sep-05	0.0	E	0.0	E	0.0	E	1.0	V	26.2	V	14.7	V	0.0	E
23-Oct-05	0.0	E	0.0	E	0.0	E	8.3	V	19.8	V	46.0	V	0.0	E
13-Nov-05	0.0	E	0.0	E	0.0	E	3.4	V	12.3	V	32.8	V	0.0	E
11-Dec-05	0.0	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	166.9	E/V/M	Frozen	E
15-Jan-06	2.4	V	3.8	B/E	Frozen	E	Frozen	E	Frozen	E	133.0	E/V/M	Frozen	E
19-Feb-06	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
19-Mar-06	39.7	V	2.7	V	6.0	E	389.2	V	Frozen	E	966.1	V	Frozen	E
16-Apr-06	5.2	V	1.1	V	0.0	E	223.2	V	366.7	V	569.4	V	0.4	B/E
21-May-06	0.8	V	1.0	V	0.0	E	203.3	V	215.6	V	407.6	V	<0.1	E
18-Jun-06	0.0	E	<0.1	V	0.0	E	16.8	V	2.6	V	83.4	V	0.0	E
9-Jul-06	0.0	E	0.0	E	0.0	E	9.4	V	4.6	V	55.6	V	0.0	E

NOTE:

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- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.
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- (*) indicates flow not measureable/affected due to beaver activity

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Aug-06	0.0	E	0.0	E	0.0	E	<0.1	E	<0.1	E	32.0	V	0.0	E
17-Sep-06	0.0	E	0.0	E	0.0	E	1.2	V	<0.1	E	36.4	V	0.0	E
15-Oct-06	0.0	E	0.0	E	0.0	E	54.1	V	57.9	V	124.8	V	0.0	E
19-Nov-06	0.0	E	1.0	V	0.0	E	134.7	V	152.0	V	286.8	V	<0.1	V
17-Dec-06	1.3	V	1.0	V	0.0	E	167.8	V	212.3	V	382.9	V	0.5	V
21-Jan-07	0.1	V	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
18-Feb-07	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
18-Mar-07	Frozen	E	Frozen	E	9.1	V	281.9	V	Frozen	E	492.0	V	Frozen	E
16-Apr-07	4.3	V	1.2	V	0.0	E	227.0	V	286.4	V	574.2	V	1.4	V
13-May-07	0.0	E	0.3	V	0.0	E	71.5	V	97.7	V	170.1	V	0.5	V
17-Jun-07	0.0	E	0.0	E	0.0	E	24.7	V	55.9	V	92.8	V	0.0	E
15-Jul-07	0.0	E	0.0	E	0.0	E	9.7	V	0.0	E	47.5	E	0.0	E
19-Aug-07	0.0	E	0.0	E	0.0	E	0.0	E	0.0	E	32.1	V	0.0	E
16-Sep-07	0.0	E	0.0	E	0.0	E	0.0	E	0.0	E	14.2	V	0.0	E
14-Oct-07	0.0	E	0.0	E	0.0	E	4.6	V	0.0	E	47.0	V	0.0	E
18-Nov-07	0.0	E	0.0	E	0.0	E	97.0	V	85.1	V	123.9	V	0.0	E
9-Dec-07	Frozen	E	Frozen	E	Frozen	E	110.7	V	Frozen	E	Frozen	E	Frozen	E
20-Jan-08	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	883.4	V	Frozen	E
17-Feb-08	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E

NOTE:

- - indicates measurement not available
- E indicates estimated flow value
- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry or ponded.
- $^{(1)}$ indicates measurement taken on June 9, 2003.
- $^{(*)}$ indicates flow not measureable/affected due to beaver activity

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-08	Frozen	E	Frozen	E	Frozen	E	145.4	V	Frozen	E	178.8	V	Frozen	E
30-Mar-08	12.9	V	9.6	V	8.8	V	525.3	V	1637.1	V	964.1	V	2.8	V
20-Apr-08	11.1	V	0.9	V	0.0	E	184.7	V	395.2	V	624.1	V	0.7	V
18-May-08	0.4	V	2.1	V	0.0	E	141.7	V	173.8	V	283.7	V	0.2	V
15-Jun-08	0.0	E	0.5	B	0.0	E	33.1	V	43.8	V	158.4	V	0.0	E
13-Jul-08	0.0	E	Dry	E	0.0	E	7.3	V	28.9	V	56.2	V	0.0	E
17-Aug-08	0.0	E	<0.1	E	0.0	E	31.8	V	42.7	V	105.1	V	0.0	E
14-Sep-08	0.0	E	Dry	E	0.0	E	150.0	V	200.0	V	60.7	V	0.0	E
19-Oct-08	0.0	E	0.3	V	0.0	E	14.5	V	44.9	V	119.3	V	0.0	E
23-Nov-08	Frozen	E	Frozen	E	Frozen	E	280.2	V/E	Frozen	E	357.9	V	Frozen	E
14-Dec-08	Frozen	E	Frozen	E	0.0	E	Frozen	E	Frozen	E	474.6	V	Frozen	E
18-Jan-09	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	261.7	V	Frozen	E
8-Feb-09	Buried	E	Buried	E	Dry	E	361.4	V	Frozen	E	545.2	V	Buried	E
15-Mar-09	8.8	V	2.4	V	4.4	V	491.0	V	675.0	V	1095.0	V	0.4	V
12-Apr-09	9.1	V	2.8	V	1.3	V	197.4	V	332.6	V	382.7	V	0.9	V
17-May-09	0.8	V	0.3	V	Dry	E	109.8	V	222.4	V	393.6	V	0.9	V
14-Jun-09	Dry	E	<0.1	V	Dry	E	71.5	V	88.7	V	155.8	V	Dry	E
12-Jul-09	Dry	E	Dry	E	Dry	E	30.4	V	39.1	V	106.6	V	Dry	E
9-Aug-09	Dry	E	Dry	E	Dry	E	82.4	V	123.8	V	169.3	V	Dry	E

NOTE:

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- 0.0 indicates no flow, surface water location dry.
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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
13-Sep-09	Dry	E	Dry	E	Dry	E	9.4	V	6.2	V	44.4	V	Dry	E
11-Oct-09	Dry	E	0.2	V	Dry	E	84.6	V	56.8	V	150.7	V	Dry	E
15-Nov-09	Dry	E	<0.1	V	Dry	E	45.9	V	44.5	V	123.9	V	Dry	E
13-Dec-09	Buried	E	Buried	E	Dry	E	Frozen	E	Frozen	E	151.0	V	Buried	E
17-Jan-10	Buried	E	Buried	E	Buried	E	Frozen	E	Frozen	E	113.0	V	Buried	E
7-Feb-10	Frozen	E	Frozen	E	Buried	E	Frozen	E	Frozen	E	134.9	V	Frozen	E
14-Mar-10	26.4	V	3.0	V	8.1	V	662.8	V	810.2	V	1499.6	V	0.8	V
4-Apr-10	6.7	V	0.6	V	-	-	-	-	-	-	-	-	-	-
11-Apr-10	3.4	V	0.4	V	Ponded	E	151.2	V	240.9	V	303.4	V	1.1	V
16-May-10	1.3	V	0.3	V	Dry	E	187.1	V	116.4	V	247.0	V	0.3	V
23-May-10	Dry	E	<0.1	V	-	-	-	-	-	-	-	-	-	-
13-Jun-10	3.0	V	0.5	V	Dry	E	115.9	V	169.6	V	240.0	V	0.1	V
18-Jul-10	3.1	V	7.4	V	1.1	V	156.6	V	197.4	V	287.1	V	Dry	E
15-Aug-10	Dry	E	Dry	E	Dry	E	55.6	V	48.0	V	106.9	V	Dry	E
12-Sep-10	Dry	E	Dry	E	Dry	E	12.5	V	21.1	V	89.1	V	Dry	E
17-Oct-10	Dry	E	<0.1	V	Dry	E	103.6	V	82.5	V	99.5	V	Dry	E
14-Nov-10	0.3	V	0.6	V	Ponded	E	181.5	V	187.0	V	276.6	V	Dry	E
19-Dec-10	Buried	E	Buried	E	Buried	E	Frozen	E	Frozen	E	241.2	V	Buried	E

NOTE:

- - indicates measurement not available
- E indicates estimated flow value
- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.
- (1) indicates measurement taken on June 9, 2003.
- (*) indicates flow not measureable/affected due to beaver activity

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-11	1.7	V		E		E		E		E	305.3	V		E
20-Feb-11	Buried	E	Buried	E		E		E		E	418.7	V		E
13-Mar-11	6.0	V	Buried	E	Buried	E	141.1	V	Buried	E	387.8	V	Buried	E
17-Mar-11	11.2	V	-	-	-	-	-	-	-	-	-	-	-	-
18-Mar-11	59.8	V	-	-	-	-	-	-	-	-	-	-	-	-
20-Mar-11	15.8	V	Buried	E	Buried	E	-	-	-	-	962.9	V	Buried	E
1-Apr-11	4.4	V	-	-	-	-	-	-	-	-	-	-	-	-
5-Apr-11	32.4	V	-	-	-	-	-	-	-	-	-	-	-	-
8-Apr-11	17.1	V	-	-	-	-	-	-	-	-	-	-	-	-
12-Apr-11	48.7	V	-	-	-	-	-	-	-	-	-	-	-	-
15-Apr-11	18.0	V	-	-	-	-	-	-	-	-	-	-	-	-
17-Apr-11	14.0	V	1.1	V	Ponded	E	368.0	V	515.8	V	699.4	V	3.7	V
20-Apr-11	33.3	V	-	-	-	-	-	-	-	-	-	-	-	-
21-Apr-11	20.9	V	-	-	-	-	-	-	-	-	-	-	-	-
26-Apr-11	14.0	V	-	-	-	-	-	-	-	-	-	-	-	-
29-Apr-11	19.5	V	-	-	-	-	-	-	-	-	-	-	-	-
3-May-11	8.4	V	-	-	-	-	-	-	-	-	-	-	-	-
6-May-11	4.2	V	-	-	-	-	-	-	-	-	-	-	-	-
10-May-11	1.5	V	-	-	-	-	-	-	-	-	-	-	-	-
13-May-11	8.1	V	-	-	-	-	-	-	-	-	-	-	-	-

NOTE:
- - indicates measurement not available
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- M indicates manual flow value
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- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

13 march is 2011 spring monitoring event, additional melt measurements performed on 17, 18 and 22nd.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-May-11	95.3	V	1.2	V	Ponded	E	315.3	V	426.0	V	577.0	V	1.8	V
16-May-11	28.8	V	-	-	-	-	-	-	-	-	-	-	-	-
18-May-11	22.5	V	-	-	-	-	-	-	-	-	-	-	-	-
19-May-11	23.1	V	-	-	-	-	-	-	-	-	-	-	-	-
20-May-11	16.8	V	-	-	-	-	-	-	-	-	-	-	-	-
27-May-11	17.8	V	-	-	-	-	-	-	-	-	-	-	-	-
3-Jun-11	3.8	V	-	-	-	-	-	-	-	-	-	-	-	-
12-Jun-11	1.5	V	0.1	V	Ponded	-	149.6	V	160.8	V	296.3	V	<0.1	V
17-Jul-11	Dry	E	Dry	E	Dry	E	45.9	V	33.9	V	89.5	V	Dry	E
14-Aug-11	Dry	E	Dry	E	Dry	E	31.3	V	9.7	V	61.5	V	Dry	E
18-Sep-11	Dry	E	Dry	E	Dry	E	7.9	V	12.6	V	42.5	V	Dry	E
16-Oct-11	Dry	E	0.3	E	Dry	E	85.6	V	74.9	V	90.1	V	Dry	E
20-Nov-11		E	0.1	V		E	53.1	V	50.6	V	96.9	V		E
18-Dec-11	3.7	V	2.3	V	Dry	E	151.7	V	Frozen	E	284.5	V	Buried	E
15-Jan-12	Buried	E	Buried	E	Buried	E	Frozen	E	Frozen	E	174.6	V	Buried	E
19-Feb-12	Buried	E	Buried	E	Buried	E	Frozen	E	Frozen	E	164.9	V	Buried	E
18-Mar-12	13.7	V	1.4	V	Dry	E	486.3	V	735.1	V	981.3	V	0.9	V
15-Apr-12	0.0	E	0.2	V	Dry	E	79.5	V	122.1	V	200.0	V	0.0	V
13-May-12	0.0	E	0.1	V	Dry	E	139.1	V	87.5	V	168.9	V	0.0	E
17-Jun-12	0.0	E	0.0	E	0.0	E	34.2	V	31.7	V	81.0	V	0.0	E

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-Jul-12	0.0	E	0.0	E	0.0	E	2.1	V	16.7	V	48.1	V	0.0	E
12-Aug-12	0.0	E	0.7	V	0.0	E	98.7	V	64.0	V	126.6	V	0.0	E
16-Sep-12	0.0	E	0.0	E	0.0	E	48.0	V	65.3	V	79.3	V	0.0	E
14-Oct-12	0.0	E	0.4	V	0.0	E	72.6	V	40.3	V	85.1	V	0.0	E
18-Nov-12	4.7	V	0.6	V	0.0	E	178.2	V	175.1	V	245.1	V	0.0	E
16-Dec-12	5.2	V	1.6	V	2.1	V	113.4	V	-	Frozen	257.4	V	0.0	E
13-Jan-13	9.8	V	0.0	E	0.2	V	384.3	V	-	Frozen	557.6	V	0.0	E
17-Feb-13	-	Frozen	-	Frozen	-	Frozen	-	Frozen	-	Frozen	190.7	V	-	Frozen
17-Mar-13	5.5	V	-	Frozen	-	Frozen	-	Frozen	-	Frozen	363.6	V	-	Frozen
14-Apr-13	18.3	V	2.6	V	1.3	V	365.2	V	653.3	V	901.3	V	1.3	V
12-May-13	7.2	V	0.6	V	Dry	E	249.4	V	100.8	V	394.8	V	0.3	V
16-Jun-13	Dry	E	Dry	E	Dry	E	118.2	V	117.2	V	252.6	V	0.0	E
14-Jul-13	Dry	E	Dry	E	Dry	E	38.7	V	57.2	V	157.3	V	0.0	E
18-Aug-13	Dry	E	Dry	E	Dry	E	30.9	V	12.9	V	63.0	V	0.0	E
15-Sep-13	Dry	E	Dry	E	Dry	E	34.6	V	38.1	V	84.1	V	0.0	E
13-Oct-13	Dry	E	Dry	E	Dry	E	75.5	V	121.4	V	183.8	V	0.0	E
17-Nov-13	6.2	V	0.6	V	1.0	V	157.7	V	95.5	V	369.5	V	0.0	E
15-Dec-13	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	262.4	V	Frozen	E
19-Jan-14	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
16-Feb-14	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-14	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
13-Apr-14	50.5	V	9.1	V	14.0	V	1082.8	V	1833.9	V	1147.5	V	Frozen	E
11-May-14	2.4	V	0.4	V	<0.1	E	134.2	V	244.0	V	413.9	V	0.3	V
15-Jun-14	Dry	E	Dry	E	Dry	E	35.5	V	74.5	V	113.2	V	Dry	V
13-Jul-14	Dry	E	Dry	E	Dry	E	51.7	V	75.0	V	131.8	V	Dry	E
17-Aug-14	Dry	E	0.1	B	Dry	E	26.8	V	<0.1	E	72.4	V	Dry	E
7-Sep-14	Dry	E	0.1	B	Dry	E	29.9	V	52.5	V	61.0	V	Dry	E
19-Oct-14	Ponded	E	0.4	V	1.1	V	22.1	V	40.1	V	208.0	V	Dry	E
16-Nov-14	Buried	E	Buried	E	Buried	E	Frozen	E	Frozen	E	Frozen	E	Buried	E
14-Dec-14	3.0	V	Buried	E	Buried	E	Frozen	E	Frozen	E	277.6	V	Buried	E
18-Jan-15	Buried	E	Buried	E	Buried	E	Frozen	E	Frozen	E	Frozen	E	Buried	E
15-Feb-15	Buried	E	Buried	E	Buried	E	Frozen	E	Frozen	E	Frozen	E	Buried	E
15-Mar-15	Buried	E	Buried	E	Buried	E	Frozen	E	Frozen	E	172.4	D	Buried	E
19-Apr-15	5.4	V	1.5	V	0.6	V	250.6	V	389.3	V	535.0	V	0.4	V
17-May-15	Ponded	E	0.3	V	Dry	E	44.3	V	78.6	V	163.3	V	Ponded	E
14-Jun-15	2.3	V	2.1	V	Ponded	E	105.8	V	169.6	V	233.4	V	Ponded	E
19-Jul-15	Dry	E	0.1	E	Dry	E	30.9	V	52.7	V	64.2	V	Ponded	E
9-Aug-15	Dry	E	<0.1	E	Dry	E	20.2	V	22.5	V	57.4	V	Dry	E
23-Aug-15	Dry	E	-	-	-	-	-	-	-	-	59.4	V	-	-
6-Sep-15	Dry	E	Dry	E	Dry	-	18.9	V	7.3	V	31.3	V	Dry	E

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
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DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
11-Oct-15	Dry	E	Dry	E	Dry	E	7.2	V	23.5	V	21.7	V	Dry	E
8-Nov-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Nov-15	Dry	E	0.2	V	Dry	E	58.9	V	84.2	V	110.6	V	Dry	E
6-Dec-15	Dry	E	0.2	V	Dry	E	69.0	V	77.7	V	101.1	V	Dry	E
17-Jan-16	22.0	V	Frozen	E	Buried	E	Frozen	E	Frozen	E	227.6	V	Buried	E
14-Feb-16	3.0	V	Buried	E	Buried	E	Frozen	E	Frozen	E	Frozen	E	Buried	E
13-Mar-16	48.1	V	6.9	V	10.1	V	567.6	V	914.5	V	951.7	V	2.5	V
17-Apr-16	10.6	V	0.9	V	0.4	V	182.7	V	273.3	V	409.5	V	2.9	V
15-May-16	4.0	V	1.0	V	0.6	V	174.0	V	219.0	V	302.8	V	0.9	V
19-Jun-16	Dry	E	0.1	V	Dry	E	26.8	V	48.0	V	86.7	V	Dry	E
3-Jul-16	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Jul-16	Dry	-	Dry	-	Dry	-	18.7	V	25.3	V	47.8	V	Dry	-
7-Aug-16	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Aug-16	Dry	-	Dry	-	Dry	-	20.9	V	14.5	V	38.2	V	Dry	-
18-Sep-16	Dry	-	Dry	-	Dry	-	13.5	V	17.9	V	30.9	V	Dry	-
16-Oct-16	Dry	-	Dry	-	Dry	-	34.5	V	27.7	V	48.9	V	Dry	-
18-Nov-16	Dry	-	Dry	-	Dry	-	34.4	V	27.5	V	46.9	V	Dry	-
12-Dec-16	Dry	-	Dry	-	Dry	-	Frozen	-	Frozen	-	54.4	V	Dry	-
22-Jan-17	Buried	-	0.4	V	4.4	V	Frozen	-	Frozen	-	340.4	V	Buried	-
15-Feb-17	Buried	-	Buried	-	Buried	-	Buried	-	Buried	-	163.3	V	Buried	-
19-Mar-17	3.2	V	1.9	V	1.0	V	120.9	V	181.3	V	298.7	V	6.3	V
16-Apr-17	7.7	V	1.6	V	0.2	V	178.3	V	271.9	V	380.1	V	0.7	V
14-May-17	5.5	V	1.0	V	0.6	V	224.3	V	389.9	V	487.2	V	2.2	V

NOTE:

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- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
28-Jun-17	2.5	V	1.4	V	1.4	V	212.1	V	325.0	V	457.4	V	0.3	V
7-Jul-17	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Jul-17	1.1	V	0.5	V	Dry	E	76.5	V	132.8	V	236.7	V	Dry	E
27-Jul-17	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Aug-17	Ponded	E	0.4	V	Dry	E	63.4	V	98.8	V	148.7	V	Dry	E
17-Sep-17	Dry	E	0.1	V	Dry	E	18.0	V	54.2	V	100.2	V	Dry	E
17-Oct-17	2.3	V	1.5	V	2.5	V	93.7	V	137.4	V	204.0	V	Dry	E
14-Nov-17	0.9	V	0.5	V	3.1	V	60.9	V	135.1	V	190.9	V	Dry	E
12-Dec-17	Frozen	E	0.4	V	Frozen	E	Frozen	E	Frozen	E	219.0	V	Frozen	E

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
22-May-03	0.2	B	0.0	E	0.6	E	23.0	M	2.1 (1)	B/E	12.0 (1)	B/E	2.4 (1)	B/E
23-Jun-03	0.0	B	0.0	E	0.3	E	3.8	M	0.8	E	1.0	E	0.4	E
22-Jul-03	0.0	E	0.0	E	1.1	E	0.8	M	1.4	E	0.8	E	0.0	E
20-Aug-03	0.0	E	0.0	E	<0.1	E	3.2	M	0.0	E	0.4	E	0.0	E
25-Sep-03	0.0	E	0.0	E	<0.1	M/V	1.0	M	0.1	E	0.1	E	0.0	E
22-Oct-03	0.0	E	0.0	E	0.7	E	-	-	0.2	B	1.3	B	0.1	E
28-Nov-03	0.1	B	2.0	V	<0.1	E	6.9	V	0.3	B/E	0.3	B/E	0.6	B/E
19-Dec-03	Frozen	E	4.5	V	2.0	E	13.1	V	0.5	E	0.6	E	1.0	E
10-Feb-04	Frozen	E	2.1	V	0.3	E	6.7	V	1.5	E	0.8	E	0.5	E
18-Mar-04	Frozen	E	5.2	V	0.2	B	22.4	M	1.7	B/E	0.8	B/E	0.6	B/E
19-Apr-04	0.5	B	7.0	V	1.1	B/E	27.4	M	12.2	B/E	5.8	M	1.8	B/E
19-May-04	0.2	B	1.4	V	0.2	B/E	11.1	M	2.7	M	0.9	B	0.6	B
24-Jun-04	0.1	B	0.6	V	0.1	B/E	4.0	M	0.4	B/E	0.3	B/E	0.1	B/E
29-Jul-04	0.0	E	0.0	E	<0.1	B/E	3.0	M	0.5	E	1.5	E	<0.1	E
23-Aug-04	0.0	E	0.0	E	<0.1	B/E	0.2	M	<0.1	E	0.3	E	DRY	E
21-Sep-04	0.0	E	0.0	E	<0.1	B/E	0.2	M	<0.1	E	0.1	E	DRY	E
21-Oct-04	0.0	E	0.0	E	<0.1	B/E	1.1	M	<0.1	E	0.1	E	DRY	E
17-Nov-04	0.0	E	0.0	E	<0.1	B/E	5.9	M	<0.1	E	0.1	E	DRY	E
15-Dec-04	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E

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- 0.0 indicates no flow, surface water location dry.
- (1) indicates surface water station monitored on June 9, 2003
- SW11A to SW11E March 2004 flow data are recorded as estimates due to snow and ice accumulation hindering measurement accuracy.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
13-Feb-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
27-Mar-05	Frozen	E	4.2	V	0.4	B/E	18.4	M	15.0	E	10.0	E	4.0	E
10-Apr-05	Frozen	E	41.7	V	3.2	B/E	62.1	M	12.0	E	10.0	E	8.0	E
22-May-05	0.1	B/E	1.1	V	0.2	B/E	10.4	V	5.3	V	2.2	V	1.4	V
26-Jun-05	0.0	E	0.0	E	0.1	E	3.2	V	0.1	B/E	0.9	V	0.0	E
10-Jul-05	0.0	E	0.0	E	<0.1	E	5.0	E	1.0	E	2.0	E	0.0	E
21-Aug-05	0.0	E	0.0	E	<0.1	E	0.9	V	0.1	E	0.4	E	0.0	E
25-Sep-05	0.0	E	0.0	E	0.1	E	0.9	M	<0.1	E	0.5	E	0.0	E
23-Oct-05	0.0	E	0.0	E	0.5	E	0.8	V	0.0	E	0.1	E	0.0	E
13-Nov-05	0.0	E	0.0	E	0.1	B/E	2.2	V	0.2	V	1.7	V	0.1	E
11-Dec-05	Frozen	E	0.0	E	0.1	E	3.5	E	0.3	V	0.9	V	0.0	E
15-Jan-06	Frozen	E	5.5	V	2.7	V	20.2	V	7.6	E/V/M	6.3	E/V/M	9.7	E/V/M
19-Feb-06	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
19-Mar-06	Frozen	E	15.3	V	2.0	V	29.2	V	11.4	V	3.5	V	1.7	V
16-Apr-06	0.3	B/E	5.6	V	3.8	V	22.1	V	5.2	V	4.1	V	2.1	V
21-May-06	0.1	B	2.4	V	<0.1	V	10.7	V	3.3	V	1.1	V	2.2	V
18-Jun-06	0.0	E	0.0	E	<0.1	V	3.0	V	0.5	V	1.6	V	0.0	E
9-Jul-06	0.0	E	0.0	E	0.4	V	2.6	V	0.3	V	2.0	V	<0.1	E

NOTE:

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- [(1)] indicates surface water station monitored on June 9, 2003

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Aug-06	0.0	E	0.0	E	<0.1	E	1.0	V	0.7	V	0.5	V	0.0	E
17-Sep-06	0.0	E	0.0	E	<0.1	V	1.5	V	0.3	E	0.6	E	0.0	E
15-Oct-06	0.0	E	0.0	E	<0.1	V	2.2	V	0.9	V	1.6	V	0.1	E
19-Nov-06	0.0	E	2.4	V	1.5	M	16.8	V	3.8	V	1.9	V	3.3	V
17-Dec-06	0.1	V	3.9	V	0.5	V	19.8	V	5.4	V	7.0	V	3.7	V
21-Jan-07	Frozen	E	Frozen	E	Frozen	E	35.0	E	15.0	E	4.0	E	3.0	E
18-Feb-07	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
18-Mar-07	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
15-Apr-07	1.0	V	7.2	V	1.7	V	26.2	V	6.3	V	4.9	V	1.4	V
13-May-07	<0.1	E	2.0	V	0.2	V	11.1	V	4.6	V	2.3	V	0.6	V
17-Jun-07	0.0	E	0.0	E	0.1	V	2.8	V	0.1	V	0.0	E	2.1	V
15-Jul-07	0.0	E	0.0	E	<0.1	E	1.0	V	<0.1	E	0.5	E	0.6	V
19-Aug-07	0.0	E	0.0	E	<0.1	E	0.6	V	0.0	E	0.0	E	0.2	V
16-Sep-07	0.0	E	0.0	E	<0.1	E	0.5	V	0.0	E	0.0	E	1.3	V
14-Oct-07	0.0	E	0.0	E	0.1	E	0.4	V	0.0	E	0.0	E	0.0	E
18-Nov-07	0.0	E	0.0	E	0.2	V	1.4	V	0.0	E	0.0	E	1.5	V
9-Dec-07	Frozen	E	Frozen	E	Frozen	E	2.8	V	2.5	V	0.6	V	2.5	V
20-Jan-08	Frozen	E	Frozen	E	Frozen	E	73.6	V	1.1	V	7.3	V	5.6	V
17-Feb-08	Frozen	E	Frozen	E	Frozen	E	15.3	V	4.3	V	4.7	V	4.1	V

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MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-08	Frozen	E	Frozen	E	Frozen	E	2.1	V	1.2	V	7.2	V	2.9	V
30-Mar-08	<0.1	V	0.1	V	2.8	V	100.8	V	3.3	V	11.1	V	8.9	V
20-Apr-08	0.3	E	12.5	V	0.2	V	32.6	V	2.0	V	6.0	V	3.1	V
18-May-08	<0.1	E	2.8	V	0.4	V	13.1	V	0.5	V	3.8	V	1.4	V
15-Jun-08	0.0	E	0.0	E	0.1	V	13.1	V	0.3	V	4.3	V	1.1	V
13-Jul-08	0.0	E	0.0	E	<0.1	V	0.8	V	<0.1	E	0.4	V	0.5	V
17-Aug-08	0.0	E	0.0	E	0.3	V	7.3	V	0.2	V	0.2	V	0.9	V
14-Sep-08	0.0	E	0.0	E	0.3	V	7.5	V	1.6	V	1.4	V	1.4	V
19-Oct-08	0.0	E	0.0	E	0.4	V	0.8	V	0.2	V	1.3	V	1.6	V
23-Nov-08	Frozen	E	Frozen	E	0.9	V	7.5	V	2.2	V	3.0	V	1.6	V
14-Dec-08	Frozen	E	Frozen	E	0.6	V	17.4	V	1.9	V	5.7	V	10.7	V
18-Jan-09	Frozen	E	Frozen	E	Frozen	E	11.0	V	1.3	V	2.8	V	0.5	V
8-Feb-09	Buried	E	Buried	E	1.8	V	51.1	V	5.3	V	10.8	V	7.5	V
15-Mar-09	0.3	V	0.4	V	1.7	V	43.8	V	4.8	V	9.6	V	4.6	V
12-Apr-09	2.4	V	17.2	V	0.7	V	27.3	V	3.8	V	10.4	V	6.1	V
17-May-09	0.3	V	5.9	V	0.2	V	5.1	V	0.2	V	4.5	V	1.8	V
14-Jun-09	Dry	E	Dry	E	0.1	V	2.3	V	0.1	V	1.8	V	1.3	V
12-Jul-09	Dry	E	Dry	E	<0.1	V	0.8	V	0.2	V	0.5	V	1.6	V
9-Aug-09	Dry	E	Dry	E	0.2	V	0.8	V	0.1	V	0.5	V	1.2	V

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DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
13-Sep-09	Dry	E	Dry	E	<0.1	E	0.8	V	<0.1	E	<0.1	E	0.5	V
11-Oct-09	Dry	E	Dry	E	0.1	V	1.1	V	<0.1	V	0.2	V	0.5	V
15-Nov-09	Dry	E	Dry	E	0.4	V	2.4	V	0.1	V	1.0	V	0.7	V
13-Dec-09	Dry	E	Buried	E	<0.1	V	0.9	V	0.8	V	1.1	V	1.1	V
17-Jan-10	Buried	E	Buried	E	Buried	E	1.2	V	0.2	V	4.0	V	0.7	V
7-Feb-10	Frozen	E	Frozen	E	Buried	E	1.4	V	0.2	V	1.0	V	0.9	V
14-Mar-10	Buried	E	25.4	V	2.0	V	19.5	V	2.3	V	15.0	V	4.4	V
4-Apr-10	-	-	11.2	V	-	-	-	-	-	-	-	-	-	-
11-Apr-10	0.1	V	8.3	V	0.5	V	9.0	V	0.6	V	6.7	V	2.3	V
16-May-10	Dry	E	5.4	V	0.3	V	12.0	V	0.4	V	4.1	V	0.6	V
23-May-10	-	-	0.6	V	-	-	-	-	-	-	-	-	-	-
13-Jun-10	Dry	E	2.6	V	0.7	V	8.0	V	0.6	V	2.5	V	0.5	V
18-Jul-10	Dry	E	1.6	V	<0.1	V	6.2	V	1.5	V	5.5	V	1.8	V
15-Aug-10	Dry	E	Dry	E	0.2	V	1.3	V	<0.1	V	0.4	V	0.5	V
12-Sep-10	Dry	E	Dry	E	<0.1	V	0.2	V	<0.1	E	<0.1	E	0.3	V
17-Oct-10	Dry	E	0.8	V	0.2	V	6.0	V	0.2	V	1.9	V	0.8	V
14-Nov-10	Dry	E	1.7	V	1.4	V	16.9	V	1.4	V	6.2	V	2.7	V
19-Dec-10	Buried	E	Buried	E	Buried	E	5.3	V	Buried	E	Buried	E	Buried	E

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DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-11		E		E		E	10.3	V	0.5	V		E		E
20-Feb-11		E		E	0.4	V	4.6	V	0.4	V	4.0	V	1.6	V
13-Mar-11	Buried	E	Buried	E	0.2	V	9.5	V	1.0	V	5.8	V	1.2	V
17-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Mar-11	-	-	17.1	V	-	-	-	-	-	-	-	-	-	-
1-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Apr-11	0.7	V	45.3	V	0.9	V	8.2	V	0.7	V	6.4	V	2.6	V
20-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-May-11	0.5	V	16.9	V	2.1	V	41.7	V	8.2	V	12.8	V	6.5	V
16-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Jun-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Jun-11	<0.1	V	1.2	V	0.1	V	3.6	V	0.2	V	3.3	V	1.2	V
17-Jul-11	Dry	E	Dry	E	0.1	V	0.9	V	<0.1	E	0.3	E	0.2	E
14-Aug-11	Dry	E	Dry	E	<0.1	E	0.1	V	<0.1	E	<0.1	E	<0.1	E
18-Sep-11	Dry	E	Dry	E	<0.1	V	<0.1	V	<0.1	E	<0.1	E	<0.1	E
16-Oct-11	Dry	E	Dry	E	2.2	V	7.0	V	0.6	V	4.3	V	0.8	V
20-Nov-11		E		E	0.1	V	5.2	V	0.2	V	0.7	V	0.1	V
18-Dec-11	Buried	E	Buried	E	0.6	V	3.8	V	0.8	V	1.6	V	1.2	V
15-Jan-12	Buried	E	Buried	E	-	-	17.6	V	Buried	E	Buried	E	Buried	E
19-Feb-12	Buried	E	Buried	E	0.5	V	4.4	V	Buried	E	Buried	E	Buried	E
18-Mar-12	0.1	V	12.2	V	1.2	V	22.7	V	5.1	V	5.1	V	1.3	V
15-Apr-12	0.0	V	0.3	V	0.4	V	5.8	V	0.3	V	0.7	V	0.2	V
13-May-12	0.0	E	<0.1	V	0.7	V	2.5	V	0.2	V	0.9	V	0.1	V
17-Jun-12	0.0	E	0.0	E	0.1	V	1.9	V	<0.1	V	0.5	V	0.2	V

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DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-Jul-12	0.0	E	0.0	E	0.1	V	1.1	V	0.0	E	<0.1	E	0.2	V
12-Aug-12	0.0	E	0.0	E	0.6	V	1.7	V	0.2	V	0.4	V	0.4	V
16-Sep-12	0.0	E	0.0	E	0.2	V	1.3	V	<0.1	E	<0.1	E	0.1	V
14-Oct-12	0.0	E	0.0	E	0.3	V	1.1	V	<0.1	E	<0.1	E	<0.1	E
18-Nov-12	0.0	E	0.0	E	0.3	V	10.1	V	1.0	V	1.3	V	0.9	V
16-Dec-12	0.0	E	10.1	V	0.1	V	6.1	V	0.4	V	1.1	V	0.6	V
13-Jan-13	0.0	E	5.1	V	0.8	V	19.8	V	0.9	V	3.6	V	0.9	V
17-Feb-13	-	Frozen	-	Frozen	-	Frozen	-	Frozen	-	Frozen	-	Frozen	-	Frozen
17-Mar-13	-	Frozen	-	Frozen	-	Frozen	19.8	V	0.3	V	1.3	V	1.2	V
14-Apr-13	0.1	V	24.4	V	1.1	V	42.8	V	5.1	V	12.5	V	4.8	V
12-May-13	<0.1	V	11.8	V	0.1	V	15.3	V	0.2	V	2.6	V	0.4	V
16-Jun-13	0.0	E	0.8	V	<0.1	V	4.0	V	0.1	V	0.5	V	0.2	V
14-Jul-13	0.0	E	0.0	E	<0.1	V	1.7	V	<0.1	V	<0.1	E	<0.1	E
18-Aug-13	0.0	E	0.0	E	0.1	V	1.0	V	<0.1	E	<0.1	E	<0.1	E
15-Sep-13	0.0	E	0.0	E	<0.1	V	0.5	V	<0.1	E	<0.1	E	<0.1	E
13-Oct-13	0.0	E	0.0	E	0.7	V	3.2	V	0.4	V	2.4	V	0.7	V
17-Nov-13	0.0	E	6.4	V	4.6	V	5.5	V	0.3	V	2.6	V	0.5	V
15-Dec-13	Frozen	E	Frozen	E	Buried	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
19-Jan-14	Frozen	E	Frozen	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E
16-Feb-14	Frozen	E	Frozen	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E

NOTE:

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- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-14	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
13-Apr-14	Frozen	E	58.0	V/E	6.7	V	47.5	V	1.3	V	10.9	V	23.9	V
11-May-14	0.1	V	6.4	V	0.2	V	10.9	V	0.5	V	2.7	V	1.6	V
15-Jun-14	Dry	E	Dry	E	0.5	V	12.5	V	2.6	V	7.1	V	4.5	V
13-Jul-14	Dry	E	Dry	E	<0.1	V	1.1	V	<0.1	E	<0.1	E	<0.1	E
17-Aug-14	Dry	E	Dry	E	Ponded	E	1.0	V	<0.1	E	<0.1	E	<0.1	E
7-Sep-14	Dry	E	Dry	E	<0.1	E	0.3	V	<0.1	E	<0.1	E	<0.1	E
19-Oct-14	Dry	E	1.5	V	<0.1	V	2.3	V	<0.1	V	0.1	V	0.4	V
16-Nov-14	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E
14-Dec-14	Buried	E	Buried	E	Buried	E	2.8	V	0.6	V	0.1	V	0.4	V
18-Jan-15	Buried	E	Buried	E	Buried	E	0.3	V	Buried	E	Buried	E	Buried	E
15-Feb-15	Buried	E	Buried	E	Buried	E	N/A	E	N/A	E	N/A	E	N/A	E
15-Mar-15	Buried	E	Buried	E	Frozen	E	5.3	V	0.2	V	0.9	V	<0.1	E
19-Apr-15	0.2	V	7.7	V	0.2	V	25.7	V	1.5	V	2.7	V	2.9	V
17-May-15	Dry	E	Ponded	E	<0.1	V	1.5	V	0.1	V	0.5	V	0.1	V
14-Jun-15	Dry	E	0.8	V	0.1	V	6.6	V	0.3	V	0.6	V	0.4	V
19-Jul-15	Dry	E	Dry	E	0.2	V	5.3	V	0.3	V	0.2	V	0.3	V
9-Aug-15	Dry	E	Dry	E	0.3	V	2.7	V	<0.1	V	0.2	V	0.2	V
23-Aug-15	-	-	Dry	E	0.2	E	0.4	V	<0.1	E	<0.1	E	0.3	E
6-Sep-15	Dry	E	Dry	E	<0.1	E	0.8	V/E	0.3	E	0.2	V	0.1	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
11-Oct-15	Dry	E	Dry	E	0.2	E	0.6	E/V	0.2	E	0.3	E	0.5	E
8-Nov-15	-	-	-	-	0.4	-	-	-	-	-	-	-	-	-
15-Nov-15	Dry	E	Dry	E	<0.1	V	1.6	V	0.2	V	0.3	V	0.5	V
6-Dec-15	Dry	E	Dry	E	0.3	V	1.1	V	0.1	V	1.0	V	0.3	V
17-Jan-16	Buried	E	Buried	E	0.5	V	5.2	V	0.4	V	2.4	V	0.6	V
14-Feb-16	Buried	E	Buried	E	0.6	V	8.1	V	1.9	V	2.0	V	1.1	V
13-Mar-16	0.3	V	30.7	V	3.5	V	51.9	V	3.5	V	2.2	V	5.1	V
17-Apr-16	<0.1	E	8.5	V	1.0	V	23.4	V	1.0	V	1.9	V	4.3	V
15-May-16	DRY	E	5.5	V	0.1	V	13.3	V	0.2	V	1.8	V	2.1	V
19-Jun-16	Dry	E	Dry	E	0.2	V	4.3	V	0.2	V	1.0	V	0.1	V
3-Jul-16	-	-	-	-	0.2	V	12.2	V	0.1	V	0.8	V	0.1	V
17-Jul-16	Dry	-	Dry	-	0.2	V	2.1	V	0.1	V	0.7	V	0.1	V
7-Aug-16	-	-	-	-	<0.1	E	0.4	E/V	0.1	E	0.2	E	0.3	E
21-Aug-16	Dry	-	Dry	-	<0.1	E	0.8	V	<0.1	E	0.4	V	0.3	V
18-Sep-16	Dry	-	Dry	-	0.1	V	1.1	V	<0.1	E	0.2	E	0.4	V
16-Oct-16	Dry	-	Dry	-	0.2	V	0.4	V	<0.1	E	<0.1	E	0.3	V
18-Nov-16	Dry	-	Dry	-	0.2	V	0.9	V	<0.1	E	0.9	V	0.1	V
12-Dec-16	Dry	-	Dry	-	0.9	V	2.5	V	0.1	V	0.7	V	0.5	V
22-Jan-17	Buried	-	4.0	V	1.5	V	12.9	V	4.7	V	3.8	V	1.3	V
15-Feb-17	Buried	-	Buried	-	0.7	V	8.5	V	0.1	V	1.7	V	0.7	V
21-Mar-17	Buried	-	7.7	V	1.6	V	23.4	V	0.6	V	2.6	V	0.5	V
19-Apr-17	Dry	-	20.1	V	0.5	V	18.8	V	0.6	V	1.6	V	0.9	V
14-May-17	Dry	-	5.0	V	1.7	V	33.4	V	0.8	V	0.3	V	2.0	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
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DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
28-Jun-17	Dry	E	2.1	V	1.7	V	21.5	V	0.2	V	1.4	V	1.1	V
7-Jul-17	-	-	-	-	0.4	V	2.4	V	0.2	V	3.0	V	0.1	V
18-Jul-17	Dry	E	Dry	E	0.4	V	4.2	V	0.4	V	1.6	V	0.4	V
27-Jul-17	-	-	-	-	0.4	V	0.9	V	0.2	V	0.4	V	0.2	V
13-Aug-17	Dry	E	Dry	E	0.5	V	2.5	V	0.2	V	0.5	V	0.7	V
17-Sep-17	Dry	E	Dry	E	0.2	V	1.3	V	0.1	V	0.4	V	0.4	V
17-Oct-17	Dry	E	Dry	E	0.5	V	7.4	V	0.2	V	0.7	V	0.7	V
14-Nov-17	Dry	E	0.2	V	0.5	V	5.5	V	0.1	V	0.9	V	0.3	V
12-Dec-17	Frozen	E	Frozen	E	0.2	V	5.7	V	0.5	V	1.7	V	0.8	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
22-May-03	2.4 (1)	B/E	27.8 (1)	B/E	1.7	B	0.0	E	6.0	B	15.0	V	1.8	B
23-Jun-03	0.8	E	2.5	B	0.9	B	0.0	E	4.7	B	6.2	V	0.5	B
22-Jul-03	0.8	E	1.4	B	0.6	B	0.0	E	2.8	B	2.8	V	2.9	E
20-Aug-03	0.1	E	1.9	E	0.3	B	0.0	E	2.2	B	2.2	V	1.2	M
25-Sep-03	0.2	E	0.4	E	0.3	B	0.0	E	1.9	B	3.0	V	0.8	B
22-Oct-03	0.1	B	2.2	E	1.9	B	0.0	E	2.7	B	6.2	V	1.1	B
28-Nov-03	0.8	B/E	12.5	B/E	4.3	B	-(**)	E	8.0	B/E	17.1	V	8.2	B/E
19-Dec-03	1.2	E	26.5	B/E	4.7	B	10.0	E	25.0	E	12.8	M	12.9	M
10-Feb-04	0.8	E	3.5	B	1.7	B	Frozen	E	10.0	E	3.0	V	Frozen	E
18-Mar-04	0.9	B/E	11.9	B/E	3.7	B	Frozen	E	8.0	E	49.0	V	Frozen	E
19-Apr-04	8.4	B	22.0	B/E	11.4	B	4.4	M	30.0	E	46.3	V	1.9	V
19-May-04	6.7	M	5.9	B	3.0	B	-(**)	E	11.2	B,E	14.2	V	1.6	V
24-Jun-04	0.2	B/E	3.4	BE	1.1	B	0.0	E	6.4	BE	1.8	V	1.4	BE
29-Jul-04	1.0	E	0.8	BE	0.7	B	0.0	E	3.3	BE	1.1	V	1.4	BE
23-Aug-04	<0.1	E	0.3	BE	0.3	B	0.0	E	1.6	BE	1.6	V	0.7	BE
21-Sep-04	<0.1	E	0.2	BE	0.2	B	0.0	E	0.6	BE	<0.1	V	<0.1	E
21-Oct-04	<0.1	E	0.2	BE	0.2	B	0.0	E	0.9	BE	0.8	V	0.8	BE
17-Nov-04	<0.1	E	0.4	BE	0.3	B	0.0	E	1.1	BE	1.3	V	1.0	BE
15-Dec-04	Frozen	E	1.05	BE	Frozen	E	Frozen	E	Frozen	E	2.53	V	1.52	BE

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- -(**) indicates slight flow through culvert - immeasureable
- SW11A to SW11E March 2004 flow data are recorded as estimates due to snow and ice accumulation hindering measurement accuracy.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
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DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
13-Feb-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
27-Mar-05	10.0	E	33.0	B/E	0.8	E	4.9	B/E	50.0	E	5.5	V	Frozen	E
10-Apr-05	5.7	E	61.0	B/E	16.1	B/E	6.7	B/E	80.0	E	70.7	V	5.3	B/E
22-May-05	2.8	V	13.4	B/E	2.1	B/E	0.0	E	8.2	B/E	7.4	V	3.5	B/E
26-Jun-05	0.2	E	3.0	B/E	1.0	B/E	0.0	E	10.0	B/E	2.9	V	0.2	B/E
10-Jul-05	1.5	E	6.0	B/E	0.7	B/E	0.0	E	5.0	E	2.1	V	1.0	B/E
21-Aug-05	0.3	E	1.0	B/E	0.3	B/E	0.0	E	1.1	B/E	1.1	V	1.4	B/E
25-Sep-05	0.1	E	0.9	E	0.2	B	0.0	E	0.0	E	1.3	V	0.4	B
23-Oct-05	0.1	E	2.0	B/E	0.2	B	0.0	E	1.5	E	1.7	V	1.9	B
13-Nov-05	1.2	V/E	1.4	B/E	1.0	B	0.0	E	8.8	E/V/M	6.7	V	1.0	B/E
11-Dec-05	0.2	V	1.4	V	0.9	B	Frozen	E	6.5	E/V/M	5.1	V	3.4	B
15-Jan-06	9.8	E/V/M	22.4	V	5.6	B	Frozen	E	19.6	V	15.6	V	Frozen	E
19-Feb-06	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
19-Mar-06	4.2	V	30.4	V	5.5	B	0.5	V	37.3	VB	25.1	V	Frozen	E
16-Apr-06	8.6	V	29.4	V	3.2	V	0.5	V	30.0	V	19.5	V	5.7	V
21-May-06	3.4	V	19.9	V	1.3	V	0.2	V	13.8	V	8.8	V	3.5	V
18-Jun-06	0.3	V	16.7	V	0.7	V	0.0	E	3.4	V	1.6	V	2.5	V
9-Jul-06	0.4	V	3.7	V	0.9	V	0.0	E	2.4	E/V/M	3.0	V	1.5	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

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DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Aug-06	0.7	V	1.9	V	0.2	V	0.0	E	0.8	V	0.4	V	1.0	V
17-Sep-06	0.2	V	1.9	V	0.4	V	0.0	E	0.9	V	1.9	V	2.2	V
15-Oct-06	0.6	V	5.2	V	0.7	V	0.0	E	2.2	V	5.0	V	1.8	V
19-Nov-06	4.9	V	17.2	V	3.3	V	0.1	V	26.5	V	10.6	V	1.5	V
17-Dec-06	2.6	V	23.2	V	3.7	V	0.9	V	37.4	V	17.8	V	1.3	V
21-Jan-07	15.0	E	37.0	E	8.0	E	Frozen	E	48.0	E	Frozen	E	Frozen	E
18-Feb-07	Frozen	E	6.2	V	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
18-Mar-07	Frozen	E	17.5	E/V/M	5.1	V	0.8	V	Frozen	E	Frozen	E	Frozen	E
15-Apr-07	3.3	V	59.3	V	6.9	V	0.6	V	33.8	V	14.3	V	2.1	V
13-May-07	1.6	V	15.3	V	0.4	V	0.0	E	5.6	V	4.1	V	2.2	V
17-Jun-07	0.4	V	0.9	V	0.3	V	0.0	E	5.6	V	1.7	V	1.3	V
15-Jul-07	0.3	V	0.7	V	3.0	V	0.0	E	3.9	V	0.5	V	0.8	V
19-Aug-07	0.1	V	3.5	V	0.2	V	0.0	E	1.7	V	1.1	V	0.7	V
16-Sep-07	0.2	V	2.3	V	0.1	V	0.0	E	1.5	V	1.3	V	0.4	V
14-Oct-07	0.0	V	0.6	V	0.1	V	0.0	E	0.2	V	0.3	V	0.5	V
18-Nov-07	0.2	V	0.3	V	0.4	V	0.0	E	1.6	V	6.9	V	1.1	V
9-Dec-07	0.9	V	3.2	V	0.6	V	Frozen	E	Frozen	E	Frozen	E	0.7	V
20-Jan-08	8.1	V	10.4	V	2.4	V	Frozen	E	Frozen	E	12.6	V	Frozen	E
17-Feb-08	14.5	V	17.4	V	3.7	V	Frozen	E	35.3	V	Frozen	E	Frozen	E

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

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DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-08	12.5	V	12.8	V	Frozen	E	Frozen	E	20.9	V	Frozen	V	Frozen	E
30-Mar-08	2.7	V	50.2	V	17.2	V	5.0	V	107.8	V	67.1	V	34.5	V
20-Apr-08	3.1	V	65.4	V	4.2	V	0.6	V	98.0	V	41.4	V	1.5	V
18-May-08	2.3	V	20.2	V	0.7	V	0.8	V	36.5	V	14.4	V	0.5	V
15-Jun-08	0.1	V	9.8	V	1.2	B	0.0	E	11.5	V	4.0	V	0.3	V
13-Jul-08	0.0	E	0.2	V	0.5	B	0.0	E	3.3	V	0.6	V	0.0	V
17-Aug-08	0.0	E	1.8	V	0.4	V	0.0	E	4.0	V	6.1	V	0.1	V
14-Sep-08	<0.1	V	6.3	V	0.6	V	0.0	E	10.2	V	7.0	V	0.6	V
19-Oct-08	0.1	V	2.2	V	0.4	V	0.0	E	20.4	V	10.2	V	0.5	V
23-Nov-08	3.5	V	12.2	V	2.8	V	1.1	V	35.6	V	13.4	V	Frozen	E
14-Dec-08	2.9	V	41.0	V	4.2	V	9.7	V	55.8	V	54.0	V	Frozen	E
18-Jan-09	Frozen	E	3.4	V	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
8-Feb-09	0.9	V	46.5	V	26.4	V	3.8	V	142.7	V	Buried	E	Buried	E
15-Mar-09	1.6	V	109.7	V	16.5	V	16.5	V	107.6	V	43.4	V	4.6	V
12-Apr-09	3.4	V	55.2	V	7.5	V	0.9	V	60.7	V	44.7	V	5.4	V
17-May-09	0.8	V	18.1	V	1.6	V	0.2	V	29.9	V	11.2	V	0.3	V
14-Jun-09	Dry	E	2.1	V	0.4	V	Dry	E	9.8	V	7.1	V	<0.1	V
12-Jul-09	Dry	E	0.7	V	0.3	V	Dry	E	3.4	V	1.9	V	0.2	V
9-Aug-09	Dry	E	1.0	V	0.3	V	Dry	E	18.8	V	3.8	V	0.1	V

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- -(**) indicates slight flow through culvert - immeasureable

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
13-Sep-09	Dry	E	0.2	V	0.2	V	Dry	E	1.3	V	0.5	V	<0.1	V
11-Oct-09	Dry	E	3.5	V	0.4	V	Dry	E	8.3	V	3.6	V	0.3	V
15-Nov-09	Dry	E	0.7	V	0.5	V	Dry	E	4.6	V	0.9	V	0.2	V
13-Dec-09	Buried	E	1.2	V	0.5	V	Buried	E	4.9	V	6.2	V	0.6	V
17-Jan-10	Buried	E	3.6	V	0.6	V	Buried	E	Frozen	E	Buried	E	Buried	E
7-Feb-10	Buried	E	1.1	V	Frozen	E	Buried	E	Frozen	E	Buried	E	Buried	E
14-Mar-10	0.5	V	57.5	V	14.3	V	2.5	V	125.8	V	100.6	V	15.9	V
4-Apr-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Apr-10	0.5	V	18.2	V	1.5	V	0.4	V	29.6	V	15.7	V	0.5	V
16-May-10	0.6	V	21.0	V	2.2	V	0.2	V	36.4	V	28.6	V	0.6	V
23-May-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Jun-10	0.6	V	10.6	V	1.1	V	0.1	V	24.3	V	27.6	V	0.6	V
18-Jul-10	0.3	V	21.8	V	2.7	V	0.4	V	31.4	V	45.0	V	0.7	V
15-Aug-10	Dry	E	0.6	V	0.4	V	Dry	E	3.0	V	1.3	V	Dry	E
12-Sep-10	Dry	E	0.8	V	0.2	V	Dry	E	2.1	V	0.8	V	Dry	E
17-Oct-10	<0.1	V	2.3	V	0.9	V	Dry	E	18.5	V	5.6	V	0.7	V
14-Nov-10	0.4	V	32.1	V	7.3	V	2.3	V	54.9	V	16.6	V	0.5	V
19-Dec-10	Buried	E	8.7	V	Buried	E	Buried	E	Frozen	E	Buried	E	Buried	E

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	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-11		E	3.0	V		E		E		E		E		E
20-Feb-11		E	4.6	V		E		E		E		E		E
13-Mar-11	0.6	V	22.5	V	7.4	V	Frozen	E	72.6	V	38.2	V	Frozen	E
17-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Mar-11	-	-	-	-	8.4	V	2.0	V	76.8	V	47.8	V	5.9	V
1-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Apr-11	1.3	V	28.0	V	2.5	V	0.9	V	28.2	V	31.1	V	0.6	V
20-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-May-11	3.3	V	48.3	V	6.4	V	4.2	V	80.4	V	49.5	V	1.6	V
16-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Jun-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Jun-11	0.5	V	8.1	V	0.6	V	Ponded	E	8.6	V	10.0	V	0.4	V
17-Jul-11	<0.1	E	1.1	V	0.2	V	Dry	E	6.6	V	1.1	V	Dry	V
14-Aug-11	Dry	E	0.1	V	0.1	V	Dry	E	0.6	V	0.6	V	Dry	V
18-Sep-11	Dry	E	1.0	V	0.1	V	Dry	E	1.3	V	0.5	V	Dry	V
16-Oct-11	0.3	V	42.5	V	15.2	V	5.2	V	131.0	V	98.4	V	0.1	V
20-Nov-11	0.04	V	2.5	V	0.4	V		E	12.5	V	3.1	V	0.6	V
18-Dec-11	0.6	V	15.5	V	2.0	V	3.5	V	36.0	V	23.3	V	0.8	V
15-Jan-12	Buried	E	24.1	V	2.0	V	Frozen	E	21.3	V	Buried	E	Buried	E
19-Feb-12	Buried	E	11.1	V	0.7	V	Buried	E	12.8	V	Buried	E	Buried	E
18-Mar-12	4.6	V	47.7	V	5.8	V	1.7	V	71.8	V	37.9	V	1.5	V
15-Apr-12	<0.1	V	7.4	V	0.3	V	Dry	E	7.7	V	6.5	V	<0.1	V
13-May-12	0.3	V	6.3	V	0.6	V	Dry	E	15.4	V	11.6	V	<0.1	V
17-Jun-12	0.0	E	3.1	V	0.4	V	0.0	E	4.3	V	2.8	V	0.0	E

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	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-Jul-12	0.0	E	1.8	V	0.1	V	0.0	E	2.4	V	1.2	V	0.0	E
12-Aug-12	<0.1	V	12.9	V	1.8	V	0.6	V	13.2	V	7.7	V	0.6	V
16-Sep-12	0.0	E	0.4	V	0.3	V	0.0	E	3.8	V	4.3	V	0.1	V
14-Oct-12	0.0	E	0.5	V	0.4	V	0.0	E	4.9	V	11.1	V	0.3	V
18-Nov-12	0.2	V	14.9	V	1.1	V	0.4	V	10.9	V	19.6	V	0.8	V
16-Dec-12	0.3	V	13.9	V	1.8	V	0.3	V	15.4	V	17.5	V	1.2	V
13-Jan-13	0.9	V	29.1	V	5.2	V	1.7	V	111.9	V	35.7	V	6.8	V
17-Feb-13	-	Frozen	-	Frozen	-	Frozen	-	Frozen	-	Frozen	-	Frozen	-	Frozen
17-Mar-13	0.5	V	17.9	V	5.2	V	1.7	V	32.8	V	25.1	V	-	Frozen
14-Apr-13	4.3	V	47.4	V	11.3	V	2.3	V	131.3	V	66.5	V	2.9	V
12-May-13	0.3	V	16.6	V	1.1	V	0.1	V	14.8	V	19.9	V	0.7	V
16-Jun-13	0.2	V	7.9	V	0.4	V	0.0	E	8.4	V	17.0	V	0.2	V
14-Jul-13	<0.1	E	1.4	V	0.3	V	0	E	6.9	V	10.9	V	<0.1	E
18-Aug-13	<0.1	E	2.0	V	0.1	V	0.0	E	0.9	V	3.4	V	<0.1	E
15-Sep-13	<0.1	E	0.9	V	0.1	V	0.0	E	1.2	V	0.9	V	0.0	E
13-Oct-13	0.9	V	6.5	V	0.9	V	0.2	V	12.4	V	10.9	V	0.8	V
17-Nov-13	1.1	V	19.0	V	2.2	V	1.7	V	28.1	V	20.3	V	0.9	V
15-Dec-13	Frozen	E	12.9	V	0.6	V	Frozen	E	9.2	V	Frozen	E	Frozen	E
19-Jan-14	Buried	E	9.5	V	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E
16-Feb-14	Buried	E	3.9	V	Buried	E	Buried	E	11.1	V	Buried	E	Buried	E

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DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-14	Frozen	E	5.5	V	Frozen	E	Frozen	E	7.1	V	Frozen	E	Frozen	E
13-Apr-14	2.2	V	51.4	V	17.0	V	5.3	V	108.5	V	108.6	V	6.7	V
11-May-14	1.2	V	13.5	V	2.8	V	0.5	V	45.5	V	29.3	V	0.4	V
15-Jun-14	8.0	V	10.5	V	0.5	V	DRY	E	6.4	V	2.1	V	DRY	E
13-Jul-14	<0.1	E	2.3	V	0.2	V	DRY	E	5.2	V	2.6	V	<0.1	E
17-Aug-14	<0.1	E	0.2	V	0.1	V	DRY	E	1.2	V	DRY	V	3.2	V
7-Sep-14	<0.1	E	1.1	V	0.1	V	DRY	E	1.5	V	0.6	V	0.1	V
19-Oct-14	0.2	V	11.2	V	1.7	V	0.2	V	21.2	V	0.8	V	0.1	V
16-Nov-14	Buried	E	5.4	V	Buried	E	Buried	E	4.5	V	Buried	E	Buried	E
14-Dec-14	0.3	V	9.7	V	0.1	V	Buried	E	0.1	V	Buried	E	1.1	V
18-Jan-15	Buried	E	19.2	V	0.2	V	Buried	E	7.9	V	Buried	E	Buried	E
15-Feb-15	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E
15-Mar-15	Buried	E	19.2	V	Buried	E	Buried	E	Frozen	E	Buried	E	Buried	E
19-Apr-15	1.0	V	28.9	V	9.8	V	3.3	V	28.7	V	16.4	V	2.5	V
17-May-15	0.3	V	25.9	V	0.5	V	Dry	E	3.4	V	6.8	V	1.0	E
14-Jun-15	2.5	V	25.9	V	2.4	V	Dry	E	17.9	V	12.6	V	0.8	V
19-Jul-15	0.1	V	25.9	V	0.4	V	DRY	E	6.1	V	4.3	V	0.3	V
9-Aug-15	0.4	V	1.2	V	0.3	V	DRY	E	3.4	V	5.3	V	DRY	V
23-Aug-15	<0.1	E	0.9	V	-	-	-	-	-	-	1.3	V	DRY	E
6-Sep-15	0.2	V	0.7	V	1.0	E	DRY	E	3.5	V	1.9	V	DRY	E

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11-Oct-15	<0.1	V	0.3	V	0.1	V	Dry	E	0.6	V	0.4	V	Dry	E
8-Nov-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Nov-15	0.2	V	2.7	V	0.4	V	Dry	E	13.9	V	3.9	V	0.4	V
6-Dec-15	0.1	V	2.3	V	1.5	V	Dry	E	3.6	V	2.5	V	0.5	V
17-Jan-16	3.4	V	6.9	V	2.7	V	Buried	E	Frozen	E	11.5	V	1.1	V
14-Feb-16	3.5	V	5.2	V	4.3	V	Buried	E	Frozen	E	Buried	E	Buried	E
13-Mar-16	12.9	V	77.0	V	50.4	V	23.6	V	166.1	V	175.4	V	5.3	V
17-Apr-16	10.5	V	35.4	V	5.5	V	1.3	V	74.6	V	64.7	V	1.2	V
15-May-16	5.4	V	11.2	V	3.0	V	0.1	V	19.5	V	30.3	V	0.8	V
19-Jun-16	0.9	V	17.0	V	0.6	V	Dry	E	7.9	V	1.2	V	Dry	V
3-Jul-16	0.4	V	2.0	V	-	-	-	-	-	-	-	-	-	-
17-Jul-16	0.3	V	2.7	V	Dry	-	0.4	V	1.3	V	3.5	V	Dry	-
7-Aug-16	0.4	E	1.5	E	-	-	-	-	-	-	-	-	-	-
21-Aug-16	0.3	V	1.2	V	0.2	V	Dry	E	2.9	V	1.5	V	0.1	V
18-Sep-16	0.3	V	1.0	V	0.3	V	Dry	E	5.4	V	2.3	V	0.5	V
16-Oct-16	0.1	V	1.0	V	0.1	V	Dry	E	1.8	V	1.9	V	0.6	V
18-Nov-16	0.4	V	1.6	V	0.2	V	Dry	E	2.1	V	2.3	V	0.5	V
12-Dec-16	0.1	V	1.9	V	0.3	V	Dry	E	0.3	V	3.7	V	1.8	V
22-Jan-17	10.3	V	19.5	V	6.2	V	0.8	V	26.9	V	39.6	V	3.8	V
15-Feb-17	3.3	V	6.5	V	1.1	V	Buried	-	Frozen	-	Buried	-	Buried	-
21-Mar-17	7.5	V	10.9	V	2.2	V	Frozen	V	3.6	V	19.6	V	1.2	V
19-Apr-17	20.7	V	32.0	V	4.2	V	3.0	V	51.6	V	46.1	V	1.3	V
14-May-17	14.5	V	19.5	V	2.6	V	0.1	V	13.0	V	23.1	V	1.9	V

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	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
28-Jun-17	5.5	V	17.9	V	2.3	V	0.1	V	34.0	V	43.9	V	2.2	V
7-Jul-17	0.8	V	8.9	V	-	-	-	-	-	-	-	-	-	-
18-Jul-17	1.1	V	4.9	V	1.3	V	Dry	E	11.6	V	6.1	V	0.4	V
27-Jul-17	0.4	V	4.3	V	-	-	-	-	-	-	-	-	-	-
13-Aug-17	1.0	V	1.8	V	0.5	V	Dry	E	7.2	V	5.8	V	0.3	V
17-Sep-17	0.2	V	1.8	V	0.7	V	Dry	E	6.7	V	10.7	V	0.5	V
17-Oct-17	0.3	V	3.1	V	1.2	V	Dry	E	7.3	V	18.4	V	1.9	V
14-Nov-17	0.8	V	6.0	V	1.4	V	Dry	E	11.2	V	13.8	V	1.3	V
12-Dec-17	2.0	V	7.8	V	1.6	V	Dry	E	18.7	V	14.5	V	Frozen	V

NOTE:

- - indicates measurement not available
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- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- D indicates doppler flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
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DATE	SW16		SW17		SW17A		SW17B		SW18		SW19		SW20	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
22-May-03	1.0	B	2.2	B	12.0	V			46.0	V	95.6	V	0.3	E
23-Jun-03	1.6	E	1.5	B	10.4	V			11.8	V	40.5	V	3.0	B
22-Jul-03	0.3	E	1.6	B	9.5	B			13.3	V	19.1	V	0.7	B
20-Aug-03	<0.1	E	1.0	B	4.1	B			4.0	V	38.3	V	0.2	E
25-Sep-03	<0.1	E	0.1	B	1.9	V			1.6	V	21.3	V	0.0	E
22-Oct-03	2.5	E	2.6	B	3.3	B			25.8	V	68.3	V	0.4	E
28-Nov-03	2.5	E	6.9	B/E	10.6	V			36.7	V	104.2	V	0.3	E
19-Dec-03	2.0	E	5.0	B/E	18.5	V			33.7	V	- (na)	- (na)	1.5	E
10-Feb-04	Frozen	E	1.9	B	9.2	B			47.9	V	71.6	V	2.0	E
18-Mar-04	2.0	E	4.3	B	19.4	V			48.7	V	209.3	V	5.0	E
19-Apr-04	40.4	V	13.3	B	72.4	V			123.6	V	507.9	V	18.9	M
19-May-04	3.4	B,E	4.6	B	15.4	V			31.3	V	133.2	V	4.0	M
24-Jun-04	0.6	BE	1.9	BE	12.0	V			20.5	V	48.2	V	1.5	V
29-Jul-04	1.9	M	0.5	BE	5.9	V			9.2	V	25.1	V	2.5	V
23-Aug-04	<0.1	E	0.5	BE	2.9	BE			7.2	V	12.5	V	<0.1	M
21-Sep-04	<0.1	E	0.4	BE	3.5	V			3.8	V	9.3	V	<0.1	M
21-Oct-04	0.3	E	0.4	BE	3.2	V	0.2	B/E	4.0	V	17.7	V	DRY	E
17-Nov-04	2.3	E	0.5	BE	4.3	V	-	-	4.6	V	28.8	V	DRY	E
15-Dec-04	Frozen	E	1.93	BE	5.42	V	Frozen	E	Frozen	E	82.08	V	Frozen	E

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SURFACE WATER FLOW SUMMARY SW3 TO SW27

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DATE	SW16		SW17		SW17A		SW17B		SW18		SW19		SW20	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
13-Feb-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
27-Mar-05	4.1	V	3.2	B/E	14.7	V	Frozen	E	Frozen	E	171.4	V	3.3	V
10-Apr-05	27.0	V	17.5	B/E	68.6	V	18.6	V	207.2	V	700.0	E	19.3	V
22-May-05	3.6	V	6.0	B/E	22.6	V	9.0	V	27.7	V	140.0	V	10.9	V
26-Jun-05	0.4	V	2.3	B/E	7.2	V	1.4	V	11.5	V	29.0	V	2.4	V
10-Jul-05	0.5	V	1.4	B/E	6.1	V	1.0	V	6.6	V	9.6	V	0.7	V
21-Aug-05	0.0	V	0.2	B/E	5.2	V	0.5	V	4.4	V	8.1	V	0.5	E
25-Sep-05	0.1	E	0.2	B/E	3.1	V	0.9	V	6.3	V	9.3	V	0.1	E
23-Oct-05	0.0	E	0.2	B/E	3.6	V	1.0	V	5.9	V	15.5	V	0.0	E
13-Nov-05	0.0	E	0.3	B/E	2.9	V	1.8	V	7.9	V	9.1	V	0.0	E
11-Dec-05	0.6	V	1.4	B/E	11.7	V	Frozen	E	Frozen	E	27.6	V	0.1	E
15-Jan-06	13.0	V	3.7	B/E	17.3	V	3.9	V	31.6	V	201.8	V	3.4	V
19-Feb-06	Frozen	E	Frozen	E	Frozen	E	Frozen	E	10.0	V	Frozen	E	Frozen	E
19-Mar-06	12.4	V	13.2	V	37.2	V	11.2	V	78.2	V	429.2	V	11.2	V
16-Apr-06	4.6	V	24.5	V	48.8	V	9.2	V	80.7	V	229.9	V	10.7	V
21-May-06	3.4	V	6.4	V	17.1	V	6.4	V	44.8	V	144.9	V	5.1	V
18-Jun-06	0.9	V	4.4	V	8.6	V	1.6	V	11.9	V	35.5	V	3.8	V
9-Jul-06	0.1	E	1.7	V	5.6	V	0.3	V	8.3	V	15.2	V	2.2	V

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- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

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DATE	SW16		SW17		SW17A		SW17B		SW18		SW19		SW20	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Aug-06	0.0	E	1.0	V	3.3	V	0.1	V	3.5	V	3.8	V	0.6	V
17-Sep-06	0.0	E	2.9	V	6.3	V	2.0	V	15.9	V	15.0	V	0.7	V
15-Oct-06	0.6	V	1.4	V	6.5	V	1.3	V	12.9	V	66.7	V	0.3	V
19-Nov-06	7.1	V	4.4	V	14.1	V	0.8	V	33.5	V	107.5	V	4.0	V
17-Dec-06	12.3	V	6.7	V	19.9	V	1.8	V	62.5	V	183.8	V	7.4	V
21-Jan-07	Frozen	E	2.4	V	15.5	E/V/M	Frozen	E	Frozen	E	79.9	V	7.7	V
18-Feb-07	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	2.7	V
18-Mar-07	Frozen	E	9.2	V	27.4	V	Frozen	E	50.5	V	408.9	V	8.6	V
15-Apr-07	10.5	V	28.7	V	34.7	V	4.2	V	102.5	V	346.6	V	19.0	V
13-May-07	2.4	V	2.8	V	24.6	V	9.4	V	30.9	V	228.3	V	9.6	V
17-Jun-07	0.1	V	0.6	V	10.5	V	0.2	V	21.0	V	49.5	V	1.9	V
15-Jul-07	0.0	E	0.3	V	2.9	V	0.3	V	7.1	V	12.8	V	3.6	V
19-Aug-07	0.0	E	0.1	V	0.9	V	0.4	V	5.4	V	5.3	V	0.4	V
16-Sep-07	0.0	E	0.3	V	1.2	V	0.1	V	4.3	V	10.2	V	0.1	E
14-Oct-07	0.0	E	0.4	V	2.3	V	0.3	V	3.3	V	21.7	V	0.0	E
18-Nov-07	0.1	V	0.6	V	2.2	V	0.6	V	33.5	V	228.5	V	0.0	E
9-Dec-07	Frozen	E	Frozen	E	2.6	V	Frozen	E	11.3	V	106.9	V	Frozen	V
20-Jan-08	39.5	V	1.4	V	35.1	V	Frozen	E	36.1	V	243.1	V	22.2	V
17-Feb-08	16.7	V	7.6	V	21.8	V	Frozen	E	77.1	V	1019.2	V	10.8	V

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- 0.0 indicates no flow, surface water location dry.
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SURFACE WATER FLOW SUMMARY SW3 TO SW27

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DATE	SW16		SW17		SW17A		SW17B		SW18		SW19		SW20	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-08	15.6	E/V/M	1.8	V	11.7	V	Frozen	E	66.0	V	229.2	V	6.2	V
30-Mar-08	167.3	V	7.0	V	50.1	V	23.5	V	159.6	V	580.3	V	24.5	V
20-Apr-08	34.0	V	5.5	V	35.2	V	3.9	V	178.3	V	427.1	V	13.9	V
18-May-08	4.5	V	1.3	V	9.6	V	1.8	V	41.5	V	226.4	V	8.7	V
15-Jun-08	1.9	V	2.9	V	11.0	V	1.1	V	15.6	V	120.1	V	3.0	V
13-Jul-08	0.4	V	0.2	V	2.4	V	0.1	V	11.7	V	31.0	V	1.1	V
17-Aug-08	0.6	V	1.1	V	5.9	V	0.3	V	14.6	V	74.8	V	2.6	V
14-Sep-08	0.9	V	3.2	V	5.9	V	0.7	V	31.6	V	202.7	V	0.6	V
19-Oct-08	0.7	V	2.7	V	4.1	V	0.8	V	13.6	V	104.9	V	2.7	V
23-Nov-08	Frozen	E	5.1	V	24.5	V	1.7	V	44.3	V	Frozen	E	2.7	V
14-Dec-08	7.0	V	2.4	V	14.4	V	3.1	V	114.8	V	446.9	V	14.2	V
18-Jan-09	Frozen	E	1.8	V	35.4	V	Frozen	E	Frozen	E	Frozen	E	25.6	V
8-Feb-09	9.7	V	1.9	V	16.4	V	Buried	E	73.7	V	Flooded	E	3.6	V
15-Mar-09	12.1	V	6.6	V	23.2	V	2.6	V	150.6	V	1522.2	V	13.9	V
12-Apr-09	8.1	V	6.1	V	16.6	V	8.4	V	203.8	V	794.0	V	29.3	V
17-May-09	3.2	V	2.7	V	12.5	V	2.6	V	65.3	V	157.1	V	2.6	V
14-Jun-09	5.7	V	1.6	V	3.9	V	0.8	V	30.0	V	109.4	V	1.5	V
12-Jul-09	0.6	V	0.5	V	15.3	V	0.1	V	23.5	V	26.4	V	1.4	V
9-Aug-09	Dry	E	1.0	V	2.5	V	0.3	V	7.0	V	93.3	V	3.0	V

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DATE	SW16		SW17		SW17A		SW17B		SW18		SW19		SW20	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
13-Sep-09	Dry	E	1.8	V	1.1	V	0.2	V	4.6	V	6.7	V	0.2	V
11-Oct-09	1.0	V	1.7	V	2.6	V	0.1	V	13.0	V	164.4	V	0.4	V
15-Nov-09	4.2	V	3.5	V	5.2	V	0.6	V	8.8	V	71.2	V	2.4	V
13-Dec-09	Frozen	E	1.1	V	1.8	V	Buried	E	18.1	V	174.8	V	2.4	V
17-Jan-10	Buried	E	Buried	E	0.6	V	Buried	E	Buried	E	227.8	V	3.9	V
7-Feb-10	Buried	E	0.9	V	2.6	V	Buried	E	Frozen	E	Frozen	E	6.7	V
14-Mar-10	26.0	V	6.9	V	12.8	V	2.4	V	332.6	V	1785.5	V	4.8	V
4-Apr-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Apr-10	2.9	V	3.3	V	15.1	V	3.9	V	67.6	V	227.1	V	14.0	V
16-May-10	5.7	V	4.6	V	26.8	V	1.8	V	128.1	V	299.3	V	7.8	V
23-May-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Jun-10	6.3	V	4.6	V	10.5	V	0.8	V	78.5	V	441.1	V	8.6	V
18-Jul-10	7.3	V	2.7	V	7.3	V	2.1	V	58.4	V	101.7	V	3.0	V
15-Aug-10	0.7	V	2.6	V	6.4	V	0.4	V	10.3	V	26.4	V	7.8	V
12-Sep-10	Ponded	E	1.1	V	2.3	V	0.3	V	2.4	V	36.0	V	0.7	V
17-Oct-10	0.2	V	1.9	V	5.4	V	0.3	V	26.6	V	249.1	V	1.4	V
14-Nov-10	1.0	V	4.1	V	6.2	V	1.7	V	25.2	V	705.7	V	6.6	V
19-Dec-10	2.4	V	1.1	V	5.5	V	Buried	E	9.3	V	328.4	V	0.8	V

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	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-11	6.1	V	4.1	V	12.3	V		E		E		E	7.0	V
20-Feb-11		E		E	11.6	V		E		E	361.0	V	10.2	V
13-Mar-11	17.4	V	5.7	V	14.1	V	Buried	E	115.1	V	385.2	V	9.1	V
17-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Mar-11	-	-	7.8	V	48.3	V	8.2	V	108.6	V	901.9	V	-	-
1-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Apr-11	4.9	V	2.9	V	29.9	V	3.4	V	102.3	V	1452.8	V	11.0	V
20-Apr-11	-	-	-	-	-	-	-	-	243.0	V	-	-	-	-
21-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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DATE	SW16		SW17		SW17A		SW17B		SW18		SW19		SW20	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-May-11	11.1	V	2.7	V	30.7	V	5.9	V	144.0	V	686.4	V	21.3	V
16-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Jun-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Jun-11	2.7	V	0.5	V	22.1	V	2.7	V	23.8	V	198.1	V	6.6	V
17-Jul-11	4.0	V	0.3	V	4.7	V	0.2	V	12.0	V	23.4	V	2.1	V
14-Aug-11	3.0	V	0.3	V	0.5	V	0.1	V	3.0	V	14.5	V	0.8	V
18-Sep-11	3.7	V	1.5	V	1.2	V	0.1	V	3.1	V	27.5	V	0.4	V
16-Oct-11	1.8	V	2.4	V	1.5	V	0.5	V	9.3	V	101.6	V	0.3	V
20-Nov-11	2.8	V	1.2	V	4.1	V	0.84	V	8.6	V	87.3	V	0.37	V
18-Dec-11	7.8	V	3.1	V	4.5	V	1.6	V	37.4	V	277.9	V	3.1	V
15-Jan-12	Frozen	E	5.6	V	27.5	V	Buried	E	Frozen	E	Frozen	E	2.1	V
19-Feb-12	6.5	V	1.9	V	2.4	V	Buried	E	15.5	V	178.0	V	2.0	V
18-Mar-12	15.7	V	11.0	V	53.6	V	3.1	V	95.4	V	426.3	V	8.8	V
15-Apr-12	3.0	V	1.6	V	14.7	V	0.2	V	29.5	V	105.0	V	2.9	V
13-May-12	6.9	V	1.9	V	10.7	V	1.2	V	25.3	V	87.1	V	2.7	V
17-Jun-12	1.8	V	0.3	V	6.9	V	0.4	V	15.0	B	40.7	V	0.6	V

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- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW16		SW17		SW17A		SW17B		SW18		SW19		SW20	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-Jul-12	0.5	V	0.2	V	1.7	V	0.1	V	3.8	V	14.4	V	0.3	V
12-Aug-12	3.5	V	2.8	V	3.1	V	0.4	V	23.2	V	117.3	V	1.0	V
16-Sep-12	3.0	V	0.9	V	2.0	V	0.1	V	13.1	V	46.3	V	0.6	V
14-Oct-12	2.8	V	0.9	V	4.5	V	0.8	V	14.6	V	82.0	V	1.2	V
18-Nov-12	5.1	V	2.3	V	14.5	V	0.4	V	46.3	V	219.4	V	6.9	V
16-Dec-12	4.5	V	1.9	V	11.0	V	1.4	V	57.6	V	291.9	V	2.8	V
13-Jan-13	21.8	V	8.0	V	23.4	V	1.3	V	78.1	V	447.7	V	6.9	V
17-Feb-13	-	Frozen	8.0	V	17.0	V	-	Frozen	-	Frozen	-	Frozen	4.0	V
17-Mar-13	-	Frozen	4.0	V	36.1	V	-	Frozen	-	Frozen	288.0	Frozen	6.8	V
14-Apr-13	100.4	V	3.1	V	58.7	V	6.1	V	166.7	V	1180.9	V	11.8	V
12-May-13	1.6	V	2.0	V	27.6	V	1.5	V	25.6	V	234.5	V	2.8	V
16-Jun-13	1.0	V	0.4	V	5.4	V	0.1	V	28.0	V	120.0	V	2.6	V
14-Jul-13	0.9	V	0.3	V	5.7	V	0.2	V	14.1	V	124.4	V	2.4	V
18-Aug-13	1.4	V	1.3	V	3.4	V	0.4	V	3.3	V	21.3	V	0.4	V
15-Sep-13	1.3	V	0.9	V	2.6	V	0.3	V	10.7	V	43.1	V	0.8	V
13-Oct-13	3.4	V	0.7	V	4.3	V	2.6	V	32.2	V	137.6	V	3.5	V
17-Nov-13	7.9	V	7.1	V	12.8	V	1.4	V	50.5	V	207.1	V	9.9	V
15-Dec-13	3.8	V	Frozen	E	11.3	V	Frozen	E	Frozen	E	Frozen	E	1.9	V
19-Jan-14	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Frozen	E	3.1	V
16-Feb-14	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Frozen	E	10.4	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW16		SW17		SW17A		SW17B		SW18		SW19		SW20	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-14	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	1.6	V
13-Apr-14	17.2	V	7.2	V	123.5	V	0.6	V	261.7	V	1825.7	V	17.1	V
11-May-14	10.3	V	7.3	V	32.5	V	3.4	V	64.3	V	284.6	V	10.0	V
15-Jun-14	0.9	V	1.7	V	8.0	V	1.1	V	31.7	V	222.2	V	1.6	V
13-Jul-14	7.1	V	0.9	V	18.3	V	2.3	V	47.4	V	225.6	V	0.7	V
17-Aug-14	1.6	V	0.6	V	2.2	V	0.2	V	6.1	V	52.9	V	0.5	V
7-Sep-14	0.2	V	1.0	V	2.3	V	0.3	V	2.3	V	31.5	V	0.2	V
19-Oct-14	1.2	V	2.6	V	3.7	V	0.9	V	16.3	V	117.1	V	0.1	V
16-Nov-14	Buried	E	Buried	E	Buried	E	Buried	E	Frozen	E	N/A	E	0.2	V
14-Dec-14	1.3	V	1.4	V	7.0	V	1.7	V	61.1	V	N/A	E	6.1	V
18-Jan-15	Buried	E	Buried	E	4.9	V	Buried	E	Frozen	E	N/A	E	3.6	V
15-Feb-15	Buried	E	N/A	E	N/A	E	N/A	E	Frozen	E	N/A	E	N/A	E
15-Mar-15	Buried	E	Buried	E	15.6	V	Buried	E	Frozen	E	N/A	E	4.6	V
19-Apr-15	2.0	V	3.5	V	32.8	V	6.4	V	99.4	V	556.5	V	12.7	V
17-May-15	0.6	V	2.6	V	7.1	V	0.6	V	40.0	V	138.8	V	2.6	V
14-Jun-15	5.0	V	2.0	V	8.9	V	0.9	V	22.4	V	155.5	V	5.2	V
19-Jul-15	0.5	V	0.6	V	8.5	V	1.1	V	13.3	V	78.0	V	1.7	V
9-Aug-15	0.3	V	1.4	V	3.3	V	0.5	V	8.4	V	52.4	V	0.6	V
23-Aug-15	0.3	V	0.8	V	4.8	V	-	-	8.2	V	-	-	-	-
6-Sep-15	0.4	V	0.7	V	2.2	V	0.3	V	4.4	V	185.0	V	0.7	V

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- D indicates doppler flow meter value
- Frozen indicates surface water frozen or snow covered
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- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW16		SW17		SW17A		SW17B		SW18		SW19		SW20	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
11-Oct-15	0.3	V	0.9	V	1.2	V	0.1	V	2.5	V	17.4	V	0.1	V
8-Nov-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Nov-15	2.5	V	2.2	V	1.8	V	0.9	V	25.5	V	47.6	V	0.6	V
6-Dec-15	4.1	V	1.4	V	3.8	V	0.9	V	11.3	V	120.6	V	0.9	V
17-Jan-16	7.8	V	3.1	V	4.2	V	1.4	V	Frozen	E	395.1	V	2.2	V
14-Feb-16	2.3	V	2.9	V	13.0	V	2.6	V	39.5	V	Frozen	E	3.6	V
13-Mar-16	28.5	V	57.3	V	64.3	V	14.6	V	218.8	V	Flooded	E	20.0	V/E
17-Apr-16	14.1	V	3.8	V	29.6	V	4.9	V	136.8	V	514.8	V	27.0	V/E
15-May-16	9.3	V	2.9	V	25.3	V	3.9	V	57.2	V	394.9	V	7.2	V
19-Jun-16	1.9	V	2.0	V	9.6	V	0.8	V	19.5	V	46.0	V	3.5	V
3-Jul-16	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Jul-16	0.2	V	0.6	V	4.0	V	0.1	V	5.9	V	35.8	V	1.1	V
7-Aug-16	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Aug-16	1.8	V	0.7	V	6.6	V	0.1	V	5.2	V	11.7	V	0.5	V
18-Sep-16	1.4	V	1.9	V	3.2	V	0.6	V	3.6	V	9.4	V	0.4	V
16-Oct-16	4.5	V	0.7	V	4.9	V	0.4	V	5.5	V	15.8	V	0.3	V
18-Nov-16	1.2	V	0.8	V	1.8	V	0.5	V	9.3	V	12.5	V	0.2	V
12-Dec-16	0.8	V	0.8	V	4.8	V	0.8	V	17.4	V	41.2	V	0.6	V
22-Jan-17	7.9	V	4.4	V	21.6	V	4.3	V	76.8	V	440.5	V	4.9	V
15-Feb-17	4.4	V	3.3	V	13.8	V	7.7	V	Frozen	-	131.1	V	1.9	V
21-Mar-17	6.3	V	2.6	V	20.6	V	2.1	V	70.7	V	300.9	V	8.0	V
19-Apr-17	12.2	V	8.8	V	37.1	V	5.8	V	77.7	V	420.3	V	10.5	V
14-May-17	2.5	V	19.6	V	45.0	V	2.1	V	79.0	V	200.4	V	14.8	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW16		SW17		SW17A		SW17B		SW18		SW19		SW20	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
28-Jun-17	5.2	V	14.5	V	55.3	V	4.4	V	49.4	V	210.8	V	9.3	V
7-Jul-17	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Jul-17	2.2	V	2.1	V	19.1	V	0.6	V	28.5	V	100.5	V	3.2	V
27-Jul-17	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Aug-17	0.8	V	0.6	V	8.4	V	0.7	V	13.8	V	32.1	V	2.1	V
17-Sep-17	1.5	V	0.6	V	7.0	V	0.3	V	10.5	V	33.1	V	1.1	V
17-Oct-17	4.4	V	3.8	V	7.9	V	1.2	V	22.6	V	90.9	V	1.4	V
14-Nov-17	6.3	V	4.0	V	8.7	V	1.7	V	29.3	V	147.1	V	2.3	V
12-Dec-17	Frozen	E	6.0	V	16.3	V	Frozen	E	27.8	E	119.4	V	2.3	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
22-May-03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Jun-03	-	-	-	-	-	-	-	-	-	-	1.6	B	2.0	B
22-Jul-03	1.9	B	1.5	B	1.9	M	2.0	E	0.0	E	1.5	B	1.1	B
20-Aug-03	1.6	B	1.5	B	0.9	M	0.8	E	0.0	E	1.2	B	0.5	E
25-Sep-03	1.4	B	0.9	B	1.2	M	1.2	E	0.0	E	0.2	B	0.6	E
22-Oct-03	2.1	B	1.0	B	1.0	M	2.0	B	<0.1	B	0.3	B	1.0	E
28-Nov-03	1.8	B	0.4	B/E	2.3	M	2.8	B/E	0.2	B	2.1	B	1.9	B
19-Dec-03	1.7	B	Frozen	E	3.0	M	2.0	E	Frozen	E	3.2	B	1.6	B/E
10-Feb-04	0.9	B	Frozen	E	3.0	M	2.0	E	Frozen	E	2.1	B	2.5	E
18-Mar-04	1.0	B	Frozen	E	Frozen	E	3.0	E	Frozen	E	3.8	B	2.2	B
19-Apr-04	1.4	B	0.3	E	0.1	E	4.0	B/E	1.4	B	8.4	B	3.0	B/E
19-May-04	2.1	B	1.8	B,E	0.8	M	4.8	B,E	0.2	B	3.9	B	1.9	B,E
24-Jun-04	1.1	V	0.4	V	4.0	M	2.5	BE	0.0	E	2.4	B	1.0	BE
29-Jul-04	1.8	B	0.9	BE	4.7	M	1.2	BE	0.0	E	1.3	B	0.2	BE
23-Aug-04	1.4	BE	0.9	BE	1.1	V	0.1	BE	DRY	E	0.9	BE	0.3	BE
21-Sep-04	0.2	BE	DRY	E	0.3	E	0.7	BE	DRY	E	0.4	BE	0.1	BE
21-Oct-04	1.0	BE	0.2	BE	4.2	M	0.7	BE	DRY	E	0.3	BE	0.3	BE
17-Nov-04	1.0	BE	0.4	BE	1.3	M	1.4	BE	DRY	E	0.3	BE	0.2	BE
15-Dec-04	Frozen	E	0.7	BE	Frozen	E	Frozen	E	Frozen	E	0.4	BE	Frozen	E

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
13-Feb-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
27-Mar-05	2.0	E	1.2	B/E	5.1	M	2.8	B/E	Frozen	E	1.6	B/E	2.2	B/E
10-Apr-05	3.9	B/E	5.8	B/E	3.1	M	16.6	B/E	Frozen	E	9.5	B/E	4.9	B/E
22-May-05	1.3	B/E	0.2	B/E	3.4	V	4.8	B/E	<0.1	E	4.2	B/E	1.8	V
26-Jun-05	0.8	B/E	0.1	B/E	0.1	E	2.1	B/E	0.0	E	2.3	B/E	1.0	V
10-Jul-05	1.8	B/E	1.3	B/E	6.0	M	4.5	B/E	0.0	E	1.6	B/E	0.9	V
21-Aug-05	1.7	B/E	1.0	B/E	2.7	V	2.6	B/E	0.0	E	1.1	B/E	0.9	V
25-Sep-05	1.4	B/E	1.3	B/E	2.7	B/E	1.2	E	0.0	E	0.4	B/E	0.7	V
23-Oct-05	1.8	B	2.0	V	2.2	V	1.2	B/E	0.0	E	0.3	B/E	0.2	V
13-Nov-05	1.0	B	1.2	V	2.3	V	1.3	B/E	0.0	E	0.3	B/E	0.4	V
11-Dec-05	2.3	B/E	4.7	V	2.4	V	1.5	B/E	Frozen	E	0.3	B/E	0.2	V
15-Jan-06	12.1	V	9.8	V	0.7	V	2.8	V	Frozen	E	10.4	V	3.8	V
19-Feb-06	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
19-Mar-06	1.0	V	0.5	V	Frozen	E	1.7	B/E	Frozen	E	9.4	V	3.5	V
16-Apr-06	4.1	V	3.4	V	5.6	V	6.4	V	0.6	V	10.9	V	6.0	V
21-May-06	3.4	V	4.7	V	2.3	V	3.5	V	0.2	V	3.9	V	1.5	V
18-Jun-06	3.6	V	3.8	V	2.5	V	6.1	V	0.0	E	2.9	V	1.4	V
9-Jul-06	2.5	V	3.5	V	1.4	V	3.3	V	0.0	E	1.6	V	1.4	V

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- 0.0 indicates no flow, surface water location dry.
- Monthly monitoring of SW22B discontinued commencing January 2005 as no flowing water was observed at location from May 2003 to December 2004.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
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DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Aug-06	2.1	V	3.0	V	1.0	V	2.9	V	0.0	E	0.6	V	0.5	V
17-Sep-06	4.3	V	4.0	V	1.3	V	3.5	V	0.0	E	0.5	V	0.7	V
15-Oct-06	4.2	V	2.6	V	3.2	V	1.9	V	0.0	E	0.5	V	0.7	V
19-Nov-06	2.0	V	2.1	V	1.6	V	4.6	V	0.0	E	1.6	V	1.5	V
17-Dec-06	1.0	V	0.7	V	0.8	V	4.2	V	0.0	E	4.7	V	1.9	V
21-Jan-07	Frozen	E	Frozen	E	3.6	V	2.9	V	Frozen	E	3.6	V	4.2	V
18-Feb-07	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	2.2	V	Frozen	E
18-Mar-07	Frozen	E	Frozen	E	Frozen	E	4.5	V	Frozen	E	3.4	V	3.1	V
15-Apr-07	1.2	V	1.0	V	3.3	V	8.3	V	0.1	V	7.7	V	1.4	V
13-May-07	2.6	V	2.5	V	3.4	V	11.4	V	<0.1	E	6.5	V	1.5	V
17-Jun-07	1.5	V	1.2	V	6.0	V	0.6	V	0.0	E	2.0	V	6.8	V
15-Jul-07	2.8	V	1.9	V	1.6	V	0.7	V	0.0	E	1.8	V	3.6	V
19-Aug-07	1.1	V	0.8	V	1.3	V	0.3	V	0.0	E	1.5	V	0.2	V
16-Sep-07	1.7	V	2.4	V	1.2	V	0.7	V	0.0	E	1.2	V	0.6	V
14-Oct-07	0.7	V	1.4	V	4.1	V	2.7	V	0.0	E	0.2	V	0.3	V
18-Nov-07	4.3	V	0.8	V	4.0	V	1.6	V	0.0	E	1.1	V	1.0	V
9-Dec-07	2.5	V	0.2	V	1.8	V	2.0	V	Frozen	E	0.4	V	0.1	V
20-Jan-08	1.1	V	Frozen	E	7.8	V	8.0	V	Frozen	E	7.0	V	0.6	V
17-Feb-08	1.2	V	Frozen	E	0.4	V	2.3	V	Frozen	E	3.3	V	2.2	V

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- 0.0 indicates no flow, surface water location dry.
- Monthly monitoring of SW22B discontinued commencing January 2005 as no flowing water was observed at location from May 2003 to December 2004.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-08	2.7	V	Frozen	E	Frozen	E	0.7	V	Frozen	E	1.2	V	1.5	V
30-Mar-08	68.8	V	Frozen	V	Frozen	E	23.4	V	Frozen	E	7.4	V	2.9	V
20-Apr-08	3.5	V	1.7	V	1.4	V	9.9	V	1.0	V	2.0	V	2.5	V
18-May-08	1.8	V	0.3	V	1.5	V	6.7	V	0.0	E	7.9	V	2.2	V
15-Jun-08	0.5	B	0.2	V	1.2	V	2.3	V	0.0	E	4.3	V	0.4	V
13-Jul-08	0.1	V	<0.1	V	0.4	V	2.2	V	0.0	E	3.2	V	0.7	V
17-Aug-08	0.2	B	<0.1	V	0.4	V	4.5	V	0.0	E	1.8	V	0.9	V
14-Sep-08	1.2	V	<0.1	E	0.2	V	1.9	V	0.0	E	2.7	V	0.5	V
19-Oct-08	1.4	V	0.7	V	1.3	V	1.5	V	0.0	E	0.6	V	0.6	V
23-Nov-08	3.0	V	0.8	V	0.8	V	4.6	V	Frozen	E	Frozen	E	0.3	V
14-Dec-08	0.5	V	0.2	V	1.4	V	8.8	V	Frozen	E	1.9	V	1.8	V
18-Jan-09	0.8	V	Frozen	E	Frozen	E	5.2	V	Frozen	E	2.8	V	1.3	V
8-Feb-09	2.2	V	Buried	E	Buried	E	2.2	V	Buried	E	0.7	V	2.7	V
15-Mar-09	2.8	V	0.8	V	Frozen	E	7.4	V	Dry	E	3.9	V	3.2	V
12-Apr-09	2.5	V	0.4	V	0.2	V	3.7	V	0.2	V	3.4	V	1.8	V
17-May-09	1.6	V	0.1	V	0.2	V	3.7	V	0.1	V	3.7	V	2.3	V
14-Jun-09	0.7	V	Dry	E	0.1	V	2.2	V	Dry	E	1.8	V	0.7	V
12-Jul-09	0.8	V	Dry	E	0.4	V	1.8	V	Dry	E	0.4	V	0.4	V
9-Aug-09	8.1	V	Dry	E	0.1	V	2.2	V	Dry	E	0.5	V	0.9	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
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DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
13-Sep-09	0.6	V	0.3	V	1.0	V	1.6	V	Dry	E	0.3	V	<0.1	V
11-Oct-09	1.4	V	0.4	V	0.8	V	1.4	V	Dry	E	1.1	V	0.6	V
15-Nov-09	1.9	V	<0.1	V	0.4	V	2.0	V	Dry	E	0.3	V	3.1	V
13-Dec-09	0.2	V	Frozen	E	Buried	E	0.4	V	Dry	E	2.4	V	0.7	V
17-Jan-10	Buried	E	Buried	E	Buried	E	0.5	V	Buried	E	0.9	V	0.8	V
7-Feb-10	0.2	V	Buried	E	Buried	E	0.7	V	Buried	E	1.2	V	0.7	V
14-Mar-10	7.3	V	0.9	V	Buried	E	4.3	V	Buried	E	6.5	V	5.0	V
4-Apr-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Apr-10	1.2	V	0.5	V	0.9	V	2.3	V	0.1	V	7.1	V	2.1	V
16-May-10	1.6	V	0.3	V	1.4	V	5.6	V	0.1	V	6.4	V	1.5	V
23-May-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Jun-10	1.1	V	Dry	E	0.0	V	2.2	V	0.3	V	9.5	V	1.5	V
18-Jul-10	2.8	V	0.3	V	<0.1	E	2.2	V	0.5	V	4.4	V	1.5	V
15-Aug-10	0.2	V	Ponded	E	0.6	V	2.1	V	Dry	E	1.9	V	0.7	V
12-Sep-10	0.2	V	0.1	V	0.4	V	2.0	V	Dry	E	1.2	V	0.6	V
17-Oct-10	0.5	V	<0.1	V	0.5	V	1.5	V	Dry	E	1.5	V	0.8	V
14-Nov-10	1.4	V	0.6	V	0.4	V	2.3	V	0.1	V	5.0	V	1.7	V
19-Dec-10	Buried	E	Buried	E	Buried	E	6.2	V	Buried	E	1.9	V	0.6	V

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DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-11		E		E		E	4.5	V		E	5.5	V	0.5	V
20-Feb-11	0.1	V		E		E	1.4	V		E	2.3	V	1.0	V
13-Mar-11	3.6	V	Buried	E	Buried	E	2.7	V	Buried	E	5.9	V	1.7	V
17-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	V
18-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	V
20-Mar-11	-	-	-	-	-	-	-	-	-	-	9.3	V	2.7	V
1-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Apr-11	0.8	V	0.2	V	<0.1	V	3.3	V	0.2	V	6.9	V	2.5	V
20-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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- V indicates valeport electromagnetic flow meter value
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SURFACE WATER FLOW SUMMARY SW3 TO SW27

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DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-May-11	3.3	V	1.1	V	1.4	V	5.4	V	0.5	V	12.8	V	1.4	V
16-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Jun-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Jun-11	0.8	V	0.5	V	0.7	V	2.4	V	No Flow	E	2.6	V	1.8	V
17-Jul-11	<0.1	V	0.1	V	0.3	V	1.6	V	Dry	E	2.0	V	0.4	V
14-Aug-11	<0.1	V	0.2	V	0.2	V	1.0	V	0.0	E	0.3	V	0.2	V
18-Sep-11	Dry	E	Dry	E	0.2	V	0.8	V	Dry	E	1.2	V	0.3	V
16-Oct-11	0.2	V	<0.1	V	0.2	V	0.8	V	Dry	E	0.3	V	0.3	V
20-Nov-11	0.2	V	0.08	V	0.11	V	0.5	V		E	1.3	V	0.5	V
18-Dec-11	1.5	V	0.2	V	Buried	E	2.8	V	Dry	E	4.4	V	1.3	V
15-Jan-12	Buried	E	Buried	E	Buried	E	2.1	V	Buried	E	1.2	V	4.1	V
19-Feb-12	Buried	E	Buried	E	Buried	E	2.2	V	Buried	E	1.7	V	1.8	V
18-Mar-12	1.6	V	2.5	V	1.2	V	4.5	V	1.2	V	22.6	V	5.1	V
15-Apr-12	0.1	V	0.1	V	0.4	V	1.9	V	0.0	E	4.0	V	1.1	V
13-May-12	0.1	V	0.3	V	0.4	V	2.6	V	0.0	E	1.1	V	0.7	V
17-Jun-12	0.0	E	0.0	E	0.4	V	1.2	V	0.0	E	1.9	V	0.3	V

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DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-Jul-12	0.0	E	0.0	E	0.1	V	1.1	V	0.0	E	1.4	V	0.3	V
12-Aug-12	0.7	V	<0.1	V	0.1	V	1.5	V	<0.1	V	1.0	V	1.3	V
16-Sep-12	0.2	V	0.1	V	0.2	V	0.9	V	0.0	E	1.1	V	0.5	V
14-Oct-12	0.6	V	0.5	V	0.4	V	1.4	V	0.0	E	1.1	V	0.7	V
18-Nov-12	0.4	V	0.2	V	0.1	V	2.6	V	0.0	E	0.8	V	1.2	V
16-Dec-12	0.8	V	0.1	V	0.3	V	1.7	V	<0.1	V	4.1	V	0.7	V
13-Jan-13	1.3	V	1.7	V	-	Frozen	8.5	V	0.1	V	3.9	V	1.2	V
17-Feb-13	-	Frozen	-	Frozen	-	Frozen	-	Frozen	-	Frozen	3.9	V	2.1	V
17-Mar-13	-	Frozen	-	Frozen	-	Frozen	1.0	V	-	Frozen	2.8	V	2.2	V
14-Apr-13	1.6	V	0.6	V	-	Frozen	5.6	V	1.6	V	7.9	V	5.0	V
12-May-13	0.7	V	<0.1	V	<0.1	V	7.5	V	0.1	V	2.4	V	0.8	V
16-Jun-13	0.5	V	0.5	V	0.9	V	6.0	V	0.0	E	1.2	V	1.0	V
14-Jul-13	<0.1	V	0	E	0.1	V	1.3	V	0.0	E	0.6	V	0.2	V
18-Aug-13	0.3	V	<0.1	E	0.1	V	0.6	V	0.0	E	0.5	V	0.4	V
15-Sep-13	0.1	V	<0.1	E	0.1	V	3.0	V	0.0	E	0.4	V	0.3	V
13-Oct-13	0.4	V	0.1	V	0.1	V	1.7	V	<0.1	V	1.3	V	2.9	V
17-Nov-13	4.7	V	0.2	V	0.1	V	5.3	V	0.1	V	1.9	V	2.6	V
15-Dec-13	Frozen	E	0.7	V	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
19-Jan-14	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	0.7	V	Buried	E
16-Feb-14	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E

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DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-14	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	0.7	V	Frozen	E
13-Apr-14	4.9	V	1.1	V	Frozen	E	14.5	V	Frozen	E	24.8	V	2.3	V
11-May-14	0.2	V	0.1	V	0.2	V	3.5	V	0.2	V	0.8	V	1.9	V
15-Jun-14	<0.1	E	DRY	E	0.1	V	1.4	V	DRY	E	1.5	V	0.2	V
13-Jul-14	0.1	V	<0.1	V	0.4	V	1.7	V	0.1	V	0.3	V	0.1	V
17-Aug-14	0.2	V	<0.1	E	0.1	V	0.5	V	Dry	V	0.3	V	0.1	V
7-Sep-14	0.1	V	Ponded	E	0.2	V	0.5	V	DRY	V	0.1	V	0.1	V
19-Oct-14	0.5	V	0.1	V	<0.1	V	1.6	V	0.7	V	0.9	V	0.2	V
16-Nov-14	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E
14-Dec-14	0.4	V	<0.1	V	<0.1	E	1.4	V	1.1	V	4.0	V	2.5	V
18-Jan-15	Buried	E	Buried	E	Buried	E	0.9	V	Buried	E	3.7	V	0.9	V
15-Feb-15	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E
15-Mar-15	Buried	E	Buried	E	Buried	E	1.9	V	Buried	E	0.8	E	0.6	D
19-Apr-15	1.5	V	0.2	B	<0.1	E	5.6	V	1.0	V	4.6	V	2.5	V
17-May-15	<0.1	E	Dry	E	Dry	E	1.9	V	0.3	E	2.5	V	1.7	V
14-Jun-15	0.8	V	DRY	E	Dry	E	4.8	V	0.2	V	1.0	V	1.0	V
19-Jul-15	0.5	E	DRY	E	Dry	E	2.7	V	Dry	E	1.2	V	0.2	V
9-Aug-15	<0.1	E	DRY	E	0.3	V	4.7	V	DRY	E	0.3	V	0.5	V
23-Aug-15	-	-	-	-	-	-	1.1	V	-	-	-	-	-	-
6-Sep-15	<0.1	E	DRY	E	0.1	V	2.7	V	DRY	E	0.5	V	0.4	V

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- D indicates doppler flow meter value
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- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
11-Oct-15	Dry	E	Dry	E	<0.1	E	0.6	V	Dry	E	0.3	V	0.2	V
8-Nov-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Nov-15	0.4	V	Dry	E	0.1	V	0.9	V	Dry	E	0.4	V	1.1	V
6-Dec-15	0.6	V	Dry	E	0.1	V	0.8	V	Dry	E	0.3	V	1.5	V
17-Jan-16	2.2	V	Frozen	E	Buried	E	2.1	V	Frozen	E	2.1	V	2.3	V
14-Feb-16	2.1	V	Frozen	E	Buried	E	1.8	V	Buried	E	1.2	V	1.1	V
13-Mar-16	1.9	V	0.5	V	Buried	E	7.2	V	1.4	V	20.8	V	11.9	V
17-Apr-16	2.0	V	0.1	V	DRY	E	8.1	V	0.5	V	18.3	V	4.3	V
15-May-16	2.2	V	Dry	V	0.1	V	2.3	V	0.4	V	5.7	V	2.3	V
19-Jun-16	<0.1	E	Dry	E	0.1	V	1.9	V	Dry	V	2.8	V	1.2	V
3-Jul-16	-	-	-	-	-	-	1.4	V	-	-	-	-	-	-
17-Jul-16	0.1	V	0.5	V	1.7	V	1.5	V	DRY	V	1.8	V	0.5	V
7-Aug-16	-	-	-	-	-	-	0.3	E	-	-	-	-	-	-
21-Aug-16	0.7	V	0.5	V	1	V	2.3	V	Dry	E	1	V	0.5	V
18-Sep-16	0.7	V	1.3	V	2.0	V	1.5	V	Dry	E	0.8	V	0.6	V
16-Oct-16	0.6	V	2.8	V	0.7	V	3.5	V	Dry	E	0.5	V	1.4	V
18-Nov-16	1.0	V	1.9	V	1.1	V	2.0	V	Dry	E	0.5	V	0.1	V
12-Dec-16	2.4	V	2.8	V	3.8	V	2.4	V	Dry	E	0.2	V	1.5	V
22-Jan-17	3.7	V	3.2	V	6.2	V	4.6	V	<0.1	E	1.3	V	1.9	V
15-Feb-17	Frozen	-	0.4	V	Buried	-	4.6	V	Buried	-	2.8	V	2.6	V
21-Mar-17	3.8	V	1.3	V	0.3	V	5.1	V	Frozen	-	6.6	V	0.9	V
19-Apr-17	2.8	V	1.3	V	1.6	V	5.3	V	0.5	V	16.6	V	1.0	V
14-May-17	4.5	V	2.0	V	1.6	V	3.5	V	0.1	V	3.3	V	12.8	V

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- D indicates doppler flow meter value
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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
28-Jun-17	1.7	V	2.2	V	1.2	V	1.4	V	0.2	V	6.4	V	2.1	V
7-Jul-17	-	-	-	-	-	-	5.5	V	-	-	-	-	-	-
18-Jul-17	1.4	V	0.4	V	0.5	V	3.8	V	Dry	E	3.7	V	1.0	V
27-Jul-17	-	-	-	-	-	-	2.4	V	-	-	-	-	-	-
13-Aug-17	1.0	V	0.9	V	0.9	V	7.2	V	Dry	E	1.9	V	1.1	V
17-Sep-17	0.9	V	1.5	V	0.8	V	5.7	V	Dry	E	0.8	V	0.6	V
17-Oct-17	2.3	V	1.0	V	0.6	V	1.1	V	Dry	E	0.9	V	1.9	V
14-Nov-17	1.4	V	2.6	V	1.5	V	2.4	V	0.1	E	2.1	V	2.6	V
12-Dec-17	2.5	V	0.8	V	1.3	V	5.6	V	Frozen	E	3.4	V	2.6	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
22-May-03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Jun-03	-	-	-	-	0.5	E	-	-	-	-	-	-	-	-
22-Jul-03	0.0	E	-	-	-	-	0.0	E	0.8	B	-	-	-	-
20-Aug-03	0.0	E	-	-	<0.1	B	0.0	E	0.6	B/E	0.1	B	-	-
25-Sep-03	0.0	E	-	-	0.1	B	0.0	E	0.2	B	0.2	B	-	-
22-Oct-03	0.0	E	-	-	1.4	B	0.4	B	0.4	B	0.4	B	-	-
28-Nov-03	0.0	E	-	-	2.1	B	4.0	M	1.4	B	1.5	B	-	-
19-Dec-03	0.0	E	-	-	1.7	B/E	6.7	M	5.8	B/E	1.2	B	-	-
10-Feb-04	0.0	E	-	-	0.8	B	0.8	M	0.9	B	0.6	B	-	-
18-Mar-04	0.0	E	-	-	1.4	B	6.3	M	2.5	E	1.4	B	-	-
19-Apr-04	0.0	E	-	-	1.4	B	3.7	M	3.3	B	1.7	B	-	-
19-May-04	0.0	E	-	-	1.0	B	1.7	M	1.7	M	1.0	B	-	-
24-Jun-04	0.0	E	-	-	0.1	BE	5.6	M	1.1	BE	0.6	BE	-	-
29-Jul-04	0.0	E	-	-	0.1	B	0.0	E	0.9	B	0.5	B	-	-
23-Aug-04	DRY	E	-	-	<0.1	BE	DRY	E	0.2	BE	0.2	BE	-	-
21-Sep-04	DRY	E	-	-	<0.1	BE	<0.1	E	0.3	BE	0.2	BE	-	-
21-Oct-04	DRY	E	-	-	0.2	BE	<0.1	E	0.5	BE	0.2	BE	-	-
17-Nov-04	DRY	E	-	-	0.2	BE	<0.1	E	0.5	BE	0.3	BE	-	-
15-Dec-04	Frozen	E	-	-	Frozen	E	Frozen	E	0.5	BE	0.3	BE	-	-

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
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DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-05	-	-	-	-	Frozen	E	Frozen	E	Frozen	E	Frozen	E	-	-
13-Feb-05	-	-	-	-	Frozen	E	Frozen	E	Frozen	E	Frozen	E	-	-
27-Mar-05	-	-	-	-	0.8	B/E	6.4	B/E	0.2	B/E	0.9	B/E	-	-
10-Apr-05	-	-	-	-	2.1	B/E	17.8	B/E	7.9	B/E	4.5	B/E	-	-
22-May-05	-	-	-	-	0.8	B/E	3.0	M	1.4	B/E	1.4	B/E	-	-
26-Jun-05	-	-	-	-	0.1	B/E	1.6	M	0.5	B/E	0.5	B/E	-	-
10-Jul-05	-	-	-	-	0.0	B/E	0.5	M	0.4	B/E	0.6	B/E	-	-
21-Aug-05	-	-	-	-	0.2	B/E	0.0	E	0.1	B/E	0.4	B/E	-	-
25-Sep-05	-	-	-	-	<0.1	B	0.0	E	0.1	E	0.3	B	-	-
23-Oct-05	-	-	-	-	0.2	B	0.0	E	0.1	E	0.3	B/E	-	-
13-Nov-05	-	-	-	-	0.1	B	0.0	E	0.1	B/E	0.3	B	-	-
11-Dec-05	-	-	-	-	0.9	B/E	Frozen	E	2.1	V	1.2	B/E	-	-
15-Jan-06	-	-	-	-	4.9	B	5.3	V	1.5	B	5.8	V	-	-
19-Feb-06	-	-	-	-	Frozen	E	Frozen	E	Frozen	E	Frozen	E	-	-
19-Mar-06	-	-	-	-	0.8	B	2.9	V	3.0	V	3.6	V	-	-
16-Apr-06	-	-	-	-	0.6	V	2.2	V	3.7	V	4.9	V	-	-
21-May-06	-	-	-	-	0.6	M/V	0.5	V	12.3	V	1.2	V	-	-
18-Jun-06	-	-	-	-	0.2	V	<0.1	E	2.3	V	2.5	V	-	-
9-Jul-06	-	-	-	-	<0.1	M/V	0.0	E	0.5	V	1.4	M/V	-	-

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SURFACE WATER FLOW SUMMARY SW3 TO SW27

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111-53312-00 A52.1

DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Aug-06	-	-	-	-	<0.1	B	0.0	E	0.3	V	0.6	V	-	-
17-Sep-06	-	-	-	-	<0.1	B	0.0	E	0.6	V	0.4	V	-	-
15-Oct-06	-	-	-	-	0.2	V	0.1	E	0.3	V	0.5	V	-	-
19-Nov-06	-	-	-	-	0.6	V	2.9	V	1.3	V	1.9	V	-	-
17-Dec-06	-	-	-	-	0.6	V	2.9	V	1.3	V	2.9	V	-	-
21-Jan-07	-	-	-	-	Frozen	E	0.6	V	2.2	V	1.6	V	-	-
18-Feb-07	-	-	-	-	Frozen	E	Frozen	E	Frozen	E	Frozen	E	-	-
18-Mar-07	-	-	Frozen	E	0.9	V	2.0	V	2.5	V	2.1	V	-	-
15-Apr-07	-	-	11.5	V	0.1	V	1.3	V	5.5	V	1.6	V	-	-
13-May-07	-	-	7.7	V	0.7	V	0.1	V	1.4	V	2.5	V	-	-
17-Jun-07	-	-	9.8	V	0.1	B	0.0	E	0.2	V	0.7	V	-	-
15-Jul-07	-	-	2.7	V	0.2	E	0.0	E	0.4	V	0.3	V	-	-
19-Aug-07	0.0	E	1.6	V	0.0	E	0.0	E	0.4	V	0.1	V	-	-
16-Sep-07	-	-	3.0	V	0.0	E	0.0	E	0.3	V	0.1	V	-	-
14-Oct-07	2.8	V	2.2	V	0.0	E	0.0	E	0.2	V	0.1	V	-	-
18-Nov-07	-	-	4.4	V	0.7	V	Frozen	E	2.1	V	0.1	V	-	-
9-Dec-07	-	-	Frozen	E	1.2	V	Frozen	E	0.5	V	0.2	V	-	-
20-Jan-08	2.6	V	2.6	V	Frozen	E	Frozen	E	1.5	V	1.7	V	-	-
17-Feb-08	Frozen	E	16.9	V	1.8	V	11.0	V	1.6	V	2.7	V	7.7	V

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MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-08	-	-	5.6	V	Frozen	E	7.8	V	0.8	V	0.9	V	7.6	V
30-Mar-08	-	-	17.6	V	73.5	V	34.6	V	0.8	V	13.1	V	7.6	V
20-Apr-08	-	-	12.4	V	1.4	V	6.8	V	1.9	V	3.9	V	16.2	V
18-May-08	-	-	3.9	V	1.2	V	2.8	V	1.4	V	2.2	V	6.9	V
15-Jun-08	-	-	3.1	V	0.3	B	1.4	V	0.4	V	2.3	V	5.6	V
13-Jul-08	-	-	4.1	V	<0.01	B	0.5	V	0.3	V	0.9	V	0.4	V
17-Aug-08	-	-	3.1	V	0.1	B	0.3	V	1.4	V	1.6	V	3.1	V
14-Sep-08	-	-	3.8	V	0.4	B	0.8	V	0.5	V	0.5	V	3.2	V
19-Oct-08	-	-	3.2	V	0.3	V	3.7	V	0.8	V	0.3	V	2.7	V
23-Nov-08	-	-	8.3	V	Frozen	E	2.6	V	0.6	V	1.4	V	3.0	V
14-Dec-08	-	-	8.6	V	Frozen	E	4.9	V	1.8	V	2.4	V	5.8	V
18-Jan-09	-	-	3.9	V	Frozen	E	1.7	V	3.9	V	1.7	V	4.9	V
8-Feb-09	-	-	13.3	V	Frozen	E	3.0	V	0.7	V	2.1	V	5.4	V
15-Mar-09	-	-	26.9	V	0.6	V	7.8	V	1.5	V	5.3	V	6.9	V
12-Apr-09	-	-	21.6	V	1.3	V	6.0	V	3.4	V	2.4	V	7.0	V
17-May-09	-	-	8.2	V	0.3	V	2.1	V	1.0	V	1.2	V	6.6	V
14-Jun-09	-	-	0.8	V	0.2	V	0.5	V	0.4	V	1.6	V	1.2	V
12-Jul-09	-	-	1.1	V	0.1	V	0.2	V	0.3	V	<0.1	V	1.2	V
9-Aug-09	-	-	1.7	V	2.1	V	0.4	V	0.4	V	0.2	V	0.9	V

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DUNTROON QUARRY - AMP MONITORING REPORT (2016)
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DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
13-Sep-09	-	-	0.7	V	<0.1	V	0.1	V	0.4	V	0.3	V	0.6	V
11-Oct-09	-	-	4.3	V	0.7	V	0.4	V	0.4	V	0.1	V	1.4	V
15-Nov-09	-	-	2.5	V	0.8	V	1.0	V	0.3	V	0.5	V	1.6	V
13-Dec-09	-	-	1.2	V	1.1	V	1.2	V	0.1	V	0.1	V	0.8	V
17-Jan-10	-	-	0.3	V	Buried	E	2.7	V	1.2	V	1.4	V	1.6	V
7-Feb-10	-	-	1.7	V	Buried	E	Buried	E	1.2	V	0.8	V	1.4	V
14-Mar-10	-	-	20.8	V	3.3	V	10.8	V	1.5	V	7.5	V	10.1	V
4-Apr-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Apr-10	-	-	6.4	V	0.9	V	2.1	V	3.9	V	5.5	V	3.3	V
16-May-10	-	-	7.8	V	1.0	V	3.5	V	1.5	V	6.7	V	8.3	V
23-May-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Jun-10	-	-	6.5	V	0.5	V	5.5	V	1.0	V	4.5	V	3.2	V
18-Jul-10	-	-	8.0	V	2.4	V	4.9	V	0.4	V	2.5	V	1.1	V
15-Aug-10	-	-	3.7	V	0.2	V	1.6	V	0.5	V	0.3	V	1.7	V
12-Sep-10	-	-	<0.1	V	<0.1	E	1.1	V	0.3	V	0.3	V	1.3	V
17-Oct-10	-	-	5.0	V	0.2	V	0.2	V	0.5	V	0.5	V	1.6	V
14-Nov-10	-	-	13.2	V	1.1	V	3.7	V	0.6	V	0.8	V	2.6	V
19-Dec-10	-	-	3.0	V	Buried	E	0.4	V	0.8	V	1.2	V	0.7	V

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DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-11	-	-	7.6	V		E	2.4	V	1.5	V	3.1	V	2.9	V
20-Feb-11	-	-	5.0	V		E	1.4	V	1.9	V	1.0	V	4.6	V
13-Mar-11	Buried	E	10.2	V	Frozen	E	3.4	V	2.6	V	1.7	V	6.2	V
17-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Mar-11	-	-	14.0	V	-	-	-	-	-	-	-	-	-	-
1-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Apr-11	-	-	21.2	V	1.2	V	4.6	V	1.3	V	1.5	V	6.7	V
20-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-May-11	-	-	15.1	V	1.6	V	5.8	V	2.9	V	1.2	V	5.7	V
16-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Jun-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Jun-11	-	-	6.1	V	0.8	V	0.8	V	1.7	V	0.2	V	2.3	V
17-Jul-11	-	-	2.1	V	0.2	V	0.6	V	0.7	V	0.3	V	0.9	V
14-Aug-11	-	-	1.9	V	<0.1	E	0.6	V	0.4	V	0.2	V	0.4	V
18-Sep-11	-	-	1.4	V	0.1	V	0.3	V	0.1	V	0.1	V	0.4	V
16-Oct-11	-	-	2.9	V	0.3	V	0.3	V	1.1	V	0.4	V	1.1	V
20-Nov-11	-	-	2.5	V	0.4	V	0.8	V	0.7	V	0.3	V	0.1	V
18-Dec-11	-	-	6.7	V	1.3	V	0.4	V	0.4	V	1.4	V	3.6	V
15-Jan-12	-	-	5.2	V	Frozen	E	4.6	V	1.4	V	6.0	V	6.2	V
19-Feb-12	-	-	5.1	V	Frozen	E	3.4	V	0.3	V	0.3	V	2.3	V
18-Mar-12	-	-	6.6	V	0.9	V	6.4	V	2.0	V	12.9	V	15.4	V
15-Apr-12	-	-	2.4	V	0.3	V	0.5	V	0.4	V	0.8	V	0.9	V
13-May-12	-	-	3.5	V	0.1	V	1.4	V	1.6	V	0.7	V	2.4	V
17-Jun-12	-	-	1.3	V	<0.1	E	1.3	V	0.3	V	1.5	V	4.5	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-Jul-12	-	-	2.3	V	<0.1	V	0.3	V	0.2	V	0.2	V	0.8	V
12-Aug-12	-	-	3.5	V	0.5	V	2.6	V	0.9	V	2.5	V	5.1	V
16-Sep-12	-	-	2.2	V	1.2	V	0.5	V	0.2	V	0.4	V	1.0	V
14-Oct-12	-	-	2.2	V	0.4	V	0.7	V	0.1	V	0.5	V	0.7	V
18-Nov-12	-	-	8.6	V	0.5	V	2.6	V	4.8	V	1.2	V	3.9	V
16-Dec-12	-	-	3.8	V	0.8	V	3.5	V	1.3	V	1.4	V	4.7	V
13-Jan-13	-	-	12.1	V	0.2	V	5.4	V	1.8	V	3.1	V	4.6	V
17-Feb-13	-	-	6.7	V	-	Frozen	1.3	V	1.4	V	1.9	V	5.0	V
17-Mar-13	-	-	4.8	V	-	Frozen	2.9	V	2.7	V	5.1	V	4.6	V
14-Apr-13	-	-	15.9	V	2.2	V	16.3	V	18.4	V	12.9	V	26.3	V
12-May-13	-	-	2.3	V	1.0	V	0.9	V	0.2	V	0.7	V	1.8	V
16-Jun-13	-	-	2.7	V	0.1	V	0.6	V	0.5	V	2.1	V	2.4	V
14-Jul-13	-	-	1.4	V	<0.1	V	0.2	V	0.3	V	0.3	V	3.3	V
18-Aug-13	-	-	0.0	E	<0.1	V	0.4	V	0.2	V	0.2	V	0.6	V
15-Sep-13	-	-	1.4	V	<0.1	E	0.7	V	1.0	V	0.3	V	1.4	V
13-Oct-13	-	-	4.7	V	0.4	V	1.6	V	0.8	V	0.1	V	4.7	V
17-Nov-13	-	-	4.8	V	0.6	V	1.2	V	0.9	V	1.1	V	4.0	V
15-Dec-13	-	-	Frozen	E	Frozen	E	Frozen	E	1.1	V	0.6	V	1.4	V
19-Jan-14	-	-	1.0	V	Buried	E	Buried	E	1.6	V	0.6	V	2.2	V
16-Feb-14	-	-	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-14	-	-	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	2.3	V
13-Apr-14	-	-	16.5	V	Frozen	E	11.9	V	3.5	V	15.4	V	17.6	V
11-May-14	-	-	12.3	V	0.4	V	3.2	V	1.5	V	2.7	V	5.8	V
15-Jun-14	-	-	4.8	V	0.1	V	2.2	V	0.2	V	0.8	V	3.2	V
13-Jul-14	-	-	1.5	V	4.8	V	2.1	V	0.3	V	0.3	V	2.1	V
17-Aug-14	-	-	0.6	V	0.2	V	0.3	V	<0.1	V	0.2	V	1.2	V
7-Sep-14	-	-	0.6	V	0.1	V	0.1	V	<0.1	V	0.2	V	0.5	V
19-Oct-14	-	-	1.6	V	0.1	V	2.9	V	0.1	V	0.3	V	2.1	V
16-Nov-14	-	-	Buried	E	Frozen	E	Buried	E	Buried	E	Buried	E	Buried	E
14-Dec-14	-	-	4.6	V	1.2	V	2.0	V	1.4	V	0.3	V	1.5	V
18-Jan-15	-	-	16.2	V	Frozen	E	0.1	V	0.2	V	0.1	V	1.7	V
15-Feb-15	-	-	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E
15-Mar-15	-	-	Frozen	E	Frozen	E	2.9	V	0.2	V	1.3	V	6.4	V
19-Apr-15	-	-	11.2	V	2.7	B	3.2	V	2.4	V	10.4	V	14.1	V
17-May-15	-	-	1.6	V	3.0	E	0.6	V	1.2	V	0.2	V	0.9	V
14-Jun-15	-	-	3.6	V	1.1	V	1.7	V	0.1	V	2.1	V	1.8	V
19-Jul-15	-	-	1.4	V	0.8	V	0.6	V	0.2	V	1.2	V	2.0	V
9-Aug-15	-	-	1.6	V	0.3	V	1.0	V	0.1	V	1.1	V	2.7	V
23-Aug-15	-	-	-	-	-	-	-	-	0.3	V	-	-	-	-
6-Sep-15	-	-	1.2	V	<0.1	E	0.6	V	0.1	V	0.1	V	0.5	V

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SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
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DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
11-Oct-15	-	-	1.6	V	3.5	V	0.6	V	0.1	V	0.1	V	0.5	V
8-Nov-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Nov-15	-	-	3.8	V	0.5	V	2.1	V	0.4	V	0.4	V	0.4	V
6-Dec-15	-	-	2.5	V	0.5	V	2.0	V	1.1	V	0.7	V	1.4	V
17-Jan-16	-	-	5.3	V	Frozen	E	2.4	V	1.0	V	1.9	V	1.6	V
14-Feb-16	-	-	7.0	V	Frozen	E	9.0	V	1.2	V	1.7	V	3.8	V
13-Mar-16	-	-	29.5	V	2.5	V	18.2	V	4.9	V	19.9	V	21.8	V
17-Apr-16	-	-	14.5	V	2.1	V	14.0	V	1.8	V	0.9	V	9.3	V
15-May-16	-	-	6.5	V	1.8	V	2.9	V	0.5	V	1.1	V	6.6	V
19-Jun-16	-	-	2.4	V	0.5	V	1.6	V	2.4	V	1.8	V	1.8	V
3-Jul-16	-	-	-	-	-	-	-	-	0.6	V	-	-	-	-
17-Jul-16	-	-	2.2	V	0.1	V	0.6	V	0.5	V	0.9	V	1.0	V
7-Aug-16	-	-	-	-	-	-	-	-	0.1	V	-	-	-	-
21-Aug-16	-	-	0.9	V	<0.1	V	0.2	V	0.4	V	0.9	V	1.7	V
18-Sep-16	-	-	1.8	V	0.8	V	1.0	V	0.5	V	0.2	V	1.4	V
16-Oct-16	-	-	2.1	V	0.2	V	0.5	V	0.7	V	0.5	V	1.1	V
18-Nov-16	-	-	3.2	V	0.3	V	1.7	V	0.4	V	0.5	V	1.6	V
12-Dec-16	-	-	7.8	V	0.4	V	2.2	V	0.2	V	0.3	V	2.0	V
22-Jan-17	-	-	8.1	V	39.3	V	1.4	V	3.7	V	1.6	V	6.8	V
15-Feb-17	-	-	7.9	V	Frozen	-	1.6	V	0.6	V	3.4	V	5.0	V
21-Mar-17	-	-	13.5	V	2.7	V	4.3	V	0.3	V	3.7	V	5.5	V
19-Apr-17	-	-	12.0	V	2.7	V	4.5	V	3.6	V	3.6	V	14.2	V
14-May-17	-	-	9.0	V	0.9	V	2.3	V	1.5	V	7.0	V	19.2	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
28-Jun-17	-	-	6.9	V	0.8	V	6.7	V	1.2	V	3.5	V	7.4	V
7-Jul-17	-	-	-	-	-	-	-	-	0.1	V	1.9	V	-	-
18-Jul-17	-	-	6.6	V	0.3	V	1.0	V	1.1	V	0.7	V	2.1	V
27-Jul-17	-	-	-	-	-	-	-	-	0.6	V	-	-	-	-
13-Aug-17	-	-	2.8	V	0.2	V	0.7	V	0.1	V	0.7	V	2.8	V
17-Sep-17	-	-	6.8	V	0.2	V	0.3	V	0.2	V	1.3	V	2.3	V
17-Oct-17	-	-	5.3	V	0.9	V	1.6	V	0.8	V	1.0	V	3.4	V
14-Nov-17	-	-	5.3	V	1.8	V	1.0	V	0.2	V	0.3	V	3.5	V
12-Dec-17	-	-	7.9	V	Frozen	V	0.6	V	0.5	V	1.9	V	5.7	V

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MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
22-May-03	-	-	-	-	-	-	-	-						
23-Jun-03	-	-	-	-	-	-	-	-						
22-Jul-03	-	-	-	-	-	-	-	-						
20-Aug-03	-	-	-	-	-	-	-	-						
25-Sep-03	-	-	-	-	-	-	-	-						
22-Oct-03	12.9 [2]	V	16.0 [3]	V	9.8	V	-	-						
28-Nov-03	30.8	V	17.6	V	4.9	V	-	-						
19-Dec-03	31.4	V	20.8	V	4.3	V	-	-						
10-Feb-04	20.7	V	42.7	V	0.9	V	-	-						
18-Mar-04	35.8	V	24.7	V	7.3	V	-	-						
19-Apr-04	49.6	V	183.7	V	101.6	V	-	-						
19-May-04	23.4	V	18.8	V	3.4	V	-	-						
24-Jun-04	29.6	V	0.6	M	0.2	BE	-	-						
29-Jul-04	22.1	V	1.3	V	0.1	V	-	-						
23-Aug-04	0.5	E	DRY	E	DRY	E	-	-						
21-Sep-04	<0.1	E	DRY	E	DRY	E	-	-						
21-Oct-04	0.1	E	DRY	E	1.5	E	1.5	V						
17-Nov-04	0.9	V	1.7	M	0.9	V	0.9	V						
15-Dec-04	17.7	V	Frozen	E	Frozen	E	0.5	B/E						

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- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.
- [2] indicates measurement taken on October 31, 2003.
- [3] indicates measurement taken on November 9, 2003.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E						
13-Feb-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E						
27-Mar-05	17.1	V	10.0	M	3.2	V	5.9	V						
10-Apr-05	80.1	V	111.4	V	59.9	V	39.7	V						
22-May-05	21.8	V	6.0	V	2.6	V	9.5	V						
26-Jun-05	4.9	V	1.2	M	1.6	M	5.2	V						
10-Jul-05	0.4	M	0.0	E	0.0	E	3.3	V						
21-Aug-05	0.2	M	0.0	E	0.0	E	0.9	V						
25-Sep-05	0.0	E	0.0	E	0.0	E	0.7	V						
23-Oct-05	0.0	E	0.0	E	0.0	E	0.3	V						
13-Nov-05	0.2	V	0.0	E	0.0	E	0.4	V						
11-Dec-05	16.1	V	2.9	V	2.0	V	2.8	V						
15-Jan-06	Frozen	E	Frozen	E	6.1	V	3.9	V						
19-Feb-06	Frozen	E	Frozen	E	Frozen	E	Frozen	E						
19-Mar-06	90.1	V	42.1	V	27.2	V	18.7	V						
16-Apr-06	2.7	V	58.7	V	60.0	V	20.4	V						
21-May-06	0.7	V	14.8	V	6.2	V	30.5	V						
18-Jun-06	0.0	E	0.6	V	0.5	V	1.2	V						
9-Jul-06	0.0	E	0.0	E	0.0	E	1.5	V						

NOTE:

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- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.
- (2) indicates measurement taken on October 31, 2003.
- (3) indicates measurement taken on November 9, 2003.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Aug-06	0.0	E	0.0	E	0.0	E	0.8	V						
17-Sep-06	0.0	E	0.0	E	0.0	E	1.7	V						
15-Oct-06	3.1	V	1.4	V	0.9	V	0.5	V						
19-Nov-06	24.7	V	9.3	V	8.9	V	5.2	V						
17-Dec-06	40.1	V	16.2	V	11.9	V	7.5	V						
21-Jan-07	18.6	V	Frozen	E	5.3	V	9.0	V						
18-Feb-07	Frozen	E	Frozen	E	Frozen	E	Frozen	E						
18-Mar-07	Frozen	E	Frozen	E	Frozen	E	7.5	V						
15-Apr-07	36.5	V	22.7	V	14.9	V	14.2	V						
13-May-07	23.1	V	9.8	V	6.7	V	9.4	V						
17-Jun-07	4.1	V	0.1	V	1.6	V	6.2	V						
15-Jul-07	0.0	E	0.0	E	0.0	E	1.5	V						
19-Aug-07	0.0	E	0.0	E	0.0	E	1.2	V						
16-Sep-07	0.0	E	0.0	E	0.0	E	0.6	V						
14-Oct-07	0.0	E	0.0	E	0.0	E	0.3	V						
18-Nov-07	0.2	E	0.0	E	0.0	E	0.9	V						
9-Dec-07	12.0	V	1.3	V	Frozen	E	Frozen	E						
20-Jan-08	163.7	V	Frozen	E	Frozen	E	10.9	V						
17-Feb-08	39.0	V	17.1	V	24.0	V	10.4	V						

NOTE:

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- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.
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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-08	20.3	V	8.9	V	14.8	V	7.6	V						
30-Mar-08	58.1	V	135.0	V	74.0	V	97.1	V						
20-Apr-08	48.0	V	156.0	V	165.4	V	42.9	V						
18-May-08	20.4	V	9.8	V	10.1	V	15.0	V						
15-Jun-08	8.9	V	6.2	V	2.6	V	6.6	V						
13-Jul-08	0.2	V	<0.1	V	0.1	V	8.2	V						
17-Aug-08	0.0	E	3.2	V	2.4	V	22.2	V						
14-Sep-08	13.2	V	19.3	V	23.1	V	3.1	V						
19-Oct-08	10.7	V	3.9	V	3.1	V	11.1	V						
23-Nov-08	32.0	V	Frozen	E	Frozen	E	10.9	V						
14-Dec-08	42.4	V	Frozen	E	Frozen	E	13.7	V						
18-Jan-09	33.5	V	Frozen	E	Frozen	E	17.8	V						
8-Feb-09	18.2	V	7.8	V	Buried	E	10.1	V						
15-Mar-09	40.4	V	5.3	V	44.2	V	23.0	V						
12-Apr-09	36.2	V	51.0	V	47.4	V	18.8	V						
17-May-09	18.5	V	6.0	V	5.7	V	16.9	V						
14-Jun-09	7.1	V	1.7	V	1.6	V	6.3	V						
12-Jul-09	0.5	V	0.2	V	0.2	V	6.5	V						
9-Aug-09	12.0	V	2.3	V	10.6	V	2.4	V						

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- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
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- [(3)] indicates measurement taken on November 9, 2003.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
13-Sep-09	0.2	V	Dry	E	Dry	E	1.9	V						
11-Oct-09	17.8	V	7.7	V	8.0	V	1.4	V	0.4	V				
15-Nov-09	10.8	V	3.3	V	3.5	V	4.3	V	<0.1	V				
13-Dec-09	38.8	V	Buried	E	Buried	E	0.8	V	Buried	E				
17-Jan-10	35.3	V	Buried	E	Buried	E	3.1	V	0.2	V				
7-Feb-10	37.5	V	Buried	E	Buried	E	1.3	V	0.2	V				
14-Mar-10	54.0	V	73.5	V	51.7	V	5.5	V	0.7	V				
4-Apr-10	-	-	-	-	-	-	-	-	-	-				
11-Apr-10	36.5	V	24.0	V	23.0	V	24.3	V	0.5	V				
16-May-10	21.2	V	31.6	V	27.4	V	11.1	V	0.2	V				
23-May-10	-	-	-	-	-	-	-	-	-	-				
13-Jun-10	15.1	V	9.5	V	7.6	V	28.3	V	0.3	V				
18-Jul-10	31.6	V	34.2	V	53.3	V	8.5	V	0.6	V				
15-Aug-10	9.0	V	1.7	V	1.8	V	3.9	V	0.2	V				
12-Sep-10	2.5	V	0.1	V	0.3	V	3.3	V	0.1	V				
17-Oct-10	7.0	V	1.0	V	1.7	V	2.7	V	<0.1	V				
14-Nov-10	12.3	V	24.1	V	15.1	V	6.6	V	0.2	V				
19-Dec-10	16.3	V	Buried	E	Buried	E	9.2	V	Buried	E				

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- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
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- [3] indicates measurement taken on November 9, 2003.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-11	53.0	V		E		E	3.9	V	Buried	E				
20-Feb-11	36.2	V		E		E	13.5	V	Buried	E				
13-Mar-11	42.2	V	26.3	V	17.9	V	36.5	V	Buried	E				
17-Mar-11	-	-	-	-	-	-	-	-	-	-				
18-Mar-11	-	-	-	-	-	-	-	-	-	-				
20-Mar-11	-	-	-	-	-	-	-	-	-	-				
1-Apr-11	-	-	-	-	-	-	-	-	-	-				
5-Apr-11	-	-	-	-	-	-	-	-	-	-				
8-Apr-11	-	-	-	-	-	-	-	-	-	-				
12-Apr-11	-	-	-	-	-	-	-	-	-	-				
15-Apr-11	-	-	-	-	-	-	-	-	-	-				
17-Apr-11	86.3	V	54.5	V	36.6	V	43.1	V	0.8	V				
20-Apr-11	-	-	-	-	-	-	-	-	-	-				
21-Apr-11	-	-	-	-	-	-	-	-	-	-				
26-Apr-11	-	-	-	-	-	-	-	-	-	-				
29-Apr-11	-	-	-	-	-	-	-	-	-	-				
3-May-11	-	-	-	-	-	-	-	-	-	-				
6-May-11	-	-	-	-	-	-	-	-	-	-				
10-May-11	-	-	-	-	-	-	-	-	-	-				
13-May-11	-	-	-	-	-	-	-	-	-	-				

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- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-May-11	39.4	V	53.8	V	61.7	V	45.5	V	0.5	V				
16-May-11	-	-	-	-	-	-	-	-	-	-				
18-May-11	-	-	-	-	-	-	-	-	-	-				
19-May-11	-	-	-	-	-	-	-	-	-	-				
20-May-11	-	-	-	-	-	-	-	-	-	-				
27-May-11	-	-	-	-	-	-	-	-	-	-				
3-Jun-11	-	-	-	-	-	-	-	-	-	-				
12-Jun-11	25.4	V	15.1	V	10.1	V	12.9	V	0.2	V				
17-Jul-11	0.6	V	Dry	E	Dry	E	5.5	V	0.2	V				
14-Aug-11	0.4	V	Dry	E	Dry	E	1.9	V	0.2	V				
18-Sep-11	0.2	V	Dry	E	Dry	E	1.4	V	0.1	V				
16-Oct-11	12.4	V	3.7	V	4.5	V	2.4	V	0.1	V				
20-Nov-11	13.1	V	2.2	V	2.5	V	1.95	V	0.13	V				
18-Dec-11	36.5	V	Frozen	E	Frozen	V	12.8	V	0.2	V				
15-Jan-12	19.8	V	Frozen	E	Frozen	E	15.5	V	0.4	V				
19-Feb-12	18.6	V	Frozen	E	Frozen	E	10.5	V	0.3	V				
18-Mar-12	64.5	V	97.4	V	65.7	V	46.5	V	1.0	V				
15-Apr-12	16.0	V	4.1	V	3.7	V	11.4	V	0.3	V				
13-May-12	16.5	V	4.8	V	6.8	V	7.3	V	0.2	V				
17-Jun-12	0.8	V	0.8	V	0.4	V	5.9	V	0.2	V				

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- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-Jul-12	0.3	V	0.0	E	0.0	E	2.2	V	0.1	V				
12-Aug-12	25.0	V	0.0	E	0.0	E	1.9	V	0.1	V				
16-Sep-12	5.7	V	2.1	V	0.8	V	3.6	V	0.1	V				
14-Oct-12	9.9	V	1.6	V	2.6	V	3.5	V	0.2	V				
18-Nov-12	44.2	V	21.2	V	10.8	V	10.2	V	0.3	V				
16-Dec-12	36.0	V	15.4	V	24.0	V	19.9	V	0.8	V				
13-Jan-13	33.0	V	43.4	V	52.0	V	30.0	V	0.2	V				
17-Feb-13	23.6	V	-	Frozen	-	Frozen	14.9	V	0.3	V				
17-Mar-13	34.4	V	-	Frozen	-	Frozen	15.4	V	0.3	V				
14-Apr-13	59.6	V	138.1	V	120.2	V	42.9	V	1.3	V				
12-May-13	34.1	V	21.7	V	38.0	V	14.0	V	0.3	V				
16-Jun-13	21.1	V	5.8	V	4.8	V	5.3	V	0.1	V				
14-Jul-13	22.6	V	4.5	V	2.8	V	5.5	V	<0.1	V				
18-Aug-13	9.9	V	0.9	V	0.4	V	6.3	V	<0.1	V				
15-Sep-13	1.3	V	2.5	V	0.5	V	2.0	V	<0.1	E				
13-Oct-13	16.5	V	5.4	V	2.7	V	8.2	V	0.1	V				
17-Nov-13	10.0	V	15.1	V	21.8	V	15.6	V	0.8	V				
15-Dec-13	28.9	V	Frozen	E	Frozen	E	10.8	V	0.4	V				
19-Jan-14	Buried	E	Buried	E	Buried	E	11.0	V	0.3	V				
16-Feb-14	Buried	E	Buried	E	Buried	E	1.4	V	0.1	V				

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- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-14	Frozen	E	Frozen	E	Frozen	E	8.5	V	0.2	V				
13-Apr-14	96.3	V	227.8	V	Frozen	E	92.7	V	1.4	V				
11-May-14	26.7	V	22.6	V	17.4	V	40.2	V	0.6	V				
15-Jun-14	5.2	V	10.2	V	13.1	V	25.9	V	0.1	V				
13-Jul-14	8.1	V	5.4	V	6.1	V	4.9	V	<0.1	V				
17-Aug-14	4.9	V	5.4	V	1.8	V	4.1	V	<0.1	V				
7-Sep-14	2.3	V	0.4	V	0.5	V	1.1	V	<0.1	V				
19-Oct-14	15.6	V	1.1	V	4.3	V	4.5	V	<0.1	V				
16-Nov-14	9.5	V	Buried	E	Buried	E	0.4	V	0.1	V				
14-Dec-14	16.8	V	Frozen	E	Frozen	E	3.9	V	Buried	E				
18-Jan-15	Buried	E	Frozen	E	Frozen	E	1.4	V	Buried	E				
15-Feb-15	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E				
15-Mar-15	Buried	E	Buried	E	Buried	E	13.9	M	0.1	V				
19-Apr-15	24.0	V	67.4	V	39.2	V	17.5	V	0.9	V				
17-May-15	7.9	V	3.0	V	4.5	V	3.2	V	0.1	V				
14-Jun-15	13.4	V	8.5	V	8.5	V	3.2	V	1.3	V				
19-Jul-15	4.0	V	7.2	V	1.1	V	0.4	V	0.1	V				
9-Aug-15	3.0	V	1.8	V	0.7	V	2.2	V	0.1	V				
23-Aug-15	-	-	-	-	-	-	-	-	<0.1	V	DRY	E	DRY	E
6-Sep-15	0.3	V	1.1	V	2.2	V	0.9	V	<0.1	V	DRY	E	DRY	E

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- V indicates valeport electromagnetic flow meter value
- D indicates doppler flow meter value
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- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
11-Oct-15	0.1	V	Dry	V	Dry	V	1.1	V	<0.1	V	DRY	E	DRY	E
8-Nov-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Nov-15	7.5	V	8.1	V	8.2	V	2.7	V	0.1	V	0.7	V	0.1	V
6-Dec-15	8.6	V	4.3	V	1.8	V	3.0	V	0.1	V	0.9	V	0.3	V
17-Jan-16	32.0	V	Frozen	E	5.8	V	6.3	V	0.3	V	8.3	V	0.8	V
14-Feb-16	31.0	V	Frozen	E	6.7	V	6.0	V	1.0	V	6.5	V	1.5	V
13-Mar-16	68.6	V	125.0	V	128.1	V	28.9	V	2.5	V	16.2	V	6.2	V
17-Apr-16	38.7	V	49.5	V	37.5	V	24.6	V/E	1.4	V	10.5	V	3.3	V
15-May-16	15.6	V	10.1	V	14.7	V	13.5	V	0.7	V	20.3	V	6.2	V
19-Jun-16	1.1	V	0.9	V	0.1	V	2.9	V	0.2	V	0.8	V	0.3	V
3-Jul-16	-	-	-	-	-	-	-	-	0.5	V	-	-	-	-
17-Jul-16	PONDED	E	DRY	E	DRY	E	2.6	V	0.1	V	DRY	E	DRY	E
7-Aug-16	-	-	-	-	-	-	-	-	0.5	E	-	-	-	-
21-Aug-16	DRY	E	DRY	E	DRY	E	2.3	V	0.1	V	DRY	E	DRY	E
18-Sep-16	DRY	E	DRY	E	DRY	E	2.9	V	0.1	V	DRY	E	DRY	E
16-Oct-16	DRY	E	DRY	E	DRY	E	1.5	V	0.1	V	DRY	E	DRY	E
18-Nov-16	0.7	V	2.4	V	0.2	V	2.1	V	0.5	V	DRY	E	DRY	E
12-Dec-16	14.4	V	0.8	V	0.3	V	1.7	V	0.3	V	DRY	E	DRY	E
22-Jan-17	29.9	V	79.2	V	21.1	V	6.2	V	0.4	V	6.0	V	0.7	V
15-Feb-17	13.4	V	Frozen	-	7.1	V	5.3	V	0.9	V	0.9	V	1.8	V
21-Mar-17	34.2	V	54.6	V	18.0	V	21.7	V	0.9	V	1.7	V	2.6	V
19-Apr-17	94.0	V	28.4	V	33.2	V	15.4	V	1.4	V	14.3	V	2.7	V
14-May-17	77.1	V	12.8	V	15.3	V	18.7	V	0.9	V	1.3	V	0.9	V

NOTE:
- - indicates measurement not available
- E indicates estimated flow value
- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- D indicates doppler flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
28-Jun-17	61.2	V	19.1	V	18.7	V	14.5	V	0.8	V	9.9	V	1.0	V
7-Jul-17	-	-	-	-	-	-	-	-	0.9	V	-	-	-	-
18-Jul-17	25.0	V	10.7	V	8.6	V	5.4	V	0.4	V	11.8	V	0.7	V
27-Jul-17	-	-	-	-	-	-	-	-	0.3	V	-	-	-	-
13-Aug-17	23.1	V	3.2	V	4.4	V	3.8	V	0.3	V	0.5	V	0.5	V
17-Sep-17	9.9	V	1.4	V	3.1	V	3.1	V	0.2	V	0.6	V	<0.1	V
17-Oct-17	20.2	V	18.1	V	12.5	V	3.1	V	0.2	V	5.4	V	0.8	V
14-Nov-17	15.4	V	9.8	V	7.5	V	4.1	V	0.3	V	1.2	V	0.2	V
12-Dec-17	12.2	V	Frozen	V	5.6	V	6.4	V	0.6	V	4.7	V	1.6	V

NOTE:

- - indicates measurement not available
- E indicates estimated flow value
- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- D indicates doppler flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
22-May-03				
23-Jun-03				
22-Jul-03				
20-Aug-03				
25-Sep-03				
22-Oct-03				
28-Nov-03				
19-Dec-03				
10-Feb-04				
18-Mar-04				
19-Apr-04				
19-May-04				
24-Jun-04				
29-Jul-04				
23-Aug-04				
21-Sep-04				
21-Oct-04				
17-Nov-04				
15-Dec-04				

NO DATA

NOTE:

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-05				
13-Feb-05				
27-Mar-05				
10-Apr-05				
22-May-05				
26-Jun-05				
10-Jul-05				
21-Aug-05				
25-Sep-05				
23-Oct-05				
13-Nov-05				
11-Dec-05				
15-Jan-06				
19-Feb-06				
19-Mar-06				
16-Apr-06				
21-May-06				
18-Jun-06				
9-Jul-06				

NO DATA

NOTE:

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Aug-06				
17-Sep-06				
15-Oct-06				
19-Nov-06				
17-Dec-06				
21-Jan-07				
18-Feb-07				
18-Mar-07				
15-Apr-07				
13-May-07				
17-Jun-07				
15-Jul-07				
19-Aug-07				
16-Sep-07				
14-Oct-07				
18-Nov-07				
9-Dec-07				
20-Jan-08				
17-Feb-08				

NO DATA

NOTE:

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-08				
30-Mar-08				
20-Apr-08				
18-May-08				
15-Jun-08				
13-Jul-08				
17-Aug-08				
14-Sep-08				
19-Oct-08				
23-Nov-08				
14-Dec-08				
18-Jan-09				
8-Feb-09				
15-Mar-09				
12-Apr-09				
17-May-09				
14-Jun-09				
12-Jul-09				
9-Aug-09				

NO DATA

NOTE:

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
13-Sep-09				
11-Oct-09				
15-Nov-09				
13-Dec-09				
17-Jan-10				
7-Feb-10				
14-Mar-10				
4-Apr-10				
11-Apr-10				
16-May-10				
23-May-10				
13-Jun-10				
18-Jul-10				
15-Aug-10				
12-Sep-10				
17-Oct-10				
14-Nov-10				
19-Dec-10				

NO DATA

NOTE:

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-11				
20-Feb-11				
13-Mar-11				
17-Mar-11				
18-Mar-11				
20-Mar-11				
1-Apr-11				
5-Apr-11				
8-Apr-11				
12-Apr-11				
15-Apr-11				
17-Apr-11				
20-Apr-11				
21-Apr-11				
26-Apr-11				
29-Apr-11				
3-May-11				
6-May-11				
10-May-11				
13-May-11				

NO DATA

NOTE:

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-May-11				
16-May-11				
18-May-11				
19-May-11				
20-May-11				
27-May-11				
3-Jun-11				
12-Jun-11				
17-Jul-11				
14-Aug-11				
18-Sep-11				
16-Oct-11				
20-Nov-11				
18-Dec-11				
15-Jan-12				
19-Feb-12				
18-Mar-12				
15-Apr-12				
13-May-12				
17-Jun-12				

NO DATA

NOTE:

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-Jul-12				
12-Aug-12				
16-Sep-12				
14-Oct-12				
18-Nov-12				
16-Dec-12				
13-Jan-13				
17-Feb-13				
17-Mar-13				
14-Apr-13				
12-May-13				
16-Jun-13				
14-Jul-13				
18-Aug-13				
15-Sep-13				
13-Oct-13				
17-Nov-13				
15-Dec-13				
19-Jan-14				
16-Feb-14				

NO DATA

NOTE:

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-14				
13-Apr-14				
11-May-14				
15-Jun-14				
13-Jul-14				
17-Aug-14				
7-Sep-14				
19-Oct-14				
16-Nov-14				
14-Dec-14				
18-Jan-15				
15-Feb-15				
15-Mar-15				
19-Apr-15				
17-May-15				
14-Jun-15				
19-Jul-15				
9-Aug-15				
23-Aug-15	7.4	V	0.4	V
6-Sep-15	8.3	V	7.5	V

NOTE:

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
11-Oct-15	0.2	V	6.0	V
8-Nov-15	-	-	-	-
15-Nov-15	13.3	V	6.4	V
6-Dec-15	9.2	V	1.8	V
17-Jan-16	30.8	V	Frozen	E
14-Feb-16	18.7	V	Frozen	E
13-Mar-16	148.4	V	192.0	V
17-Apr-16	86.0	V	41.5	V
15-May-16	59.4	V	17.3	V
19-Jun-16	25.5	V	1.4	V
3-Jul-16	-	-	-	-
17-Jul-16	11.5	V	0.4	V
7-Aug-16	-	-	-	-
21-Aug-16	6.3	V	0.2	V
18-Sep-16	8.5	V	0.3	V
16-Oct-16	6.1	V	0.2	V
18-Nov-16	11.1	V	0.4	V
12-Dec-16	10.5	V	1.2	V
22-Jan-17	44.6	V	37.3	V
15-Feb-17	18.3	V	Frozen	-
21-Mar-17	40.3	V	14.6	V
19-Apr-17	93.8	V	35.1	V
14-May-17	77.2	V	17.1	V

NOTE:

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP MONITORING REPORT (2016)
111-53312-00 A52.1

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
28-Jun-17	60.3	V	25.1	V
7-Jul-17	-	-	-	-
18-Jul-17	25.9	V	5.3	V
27-Jul-17	-	-	-	-
13-Aug-17	24.8	V	2.3	V
17-Sep-17	9.9	V	1.1	V
17-Oct-17	27.3	V	8.8	V
14-Nov-17	40.1	V	21.4	V
12-Dec-17	37.5	V	11.2	V

NOTE:

FIGURE B-7

SURFACE WATER HYDROGRAPH
SW3

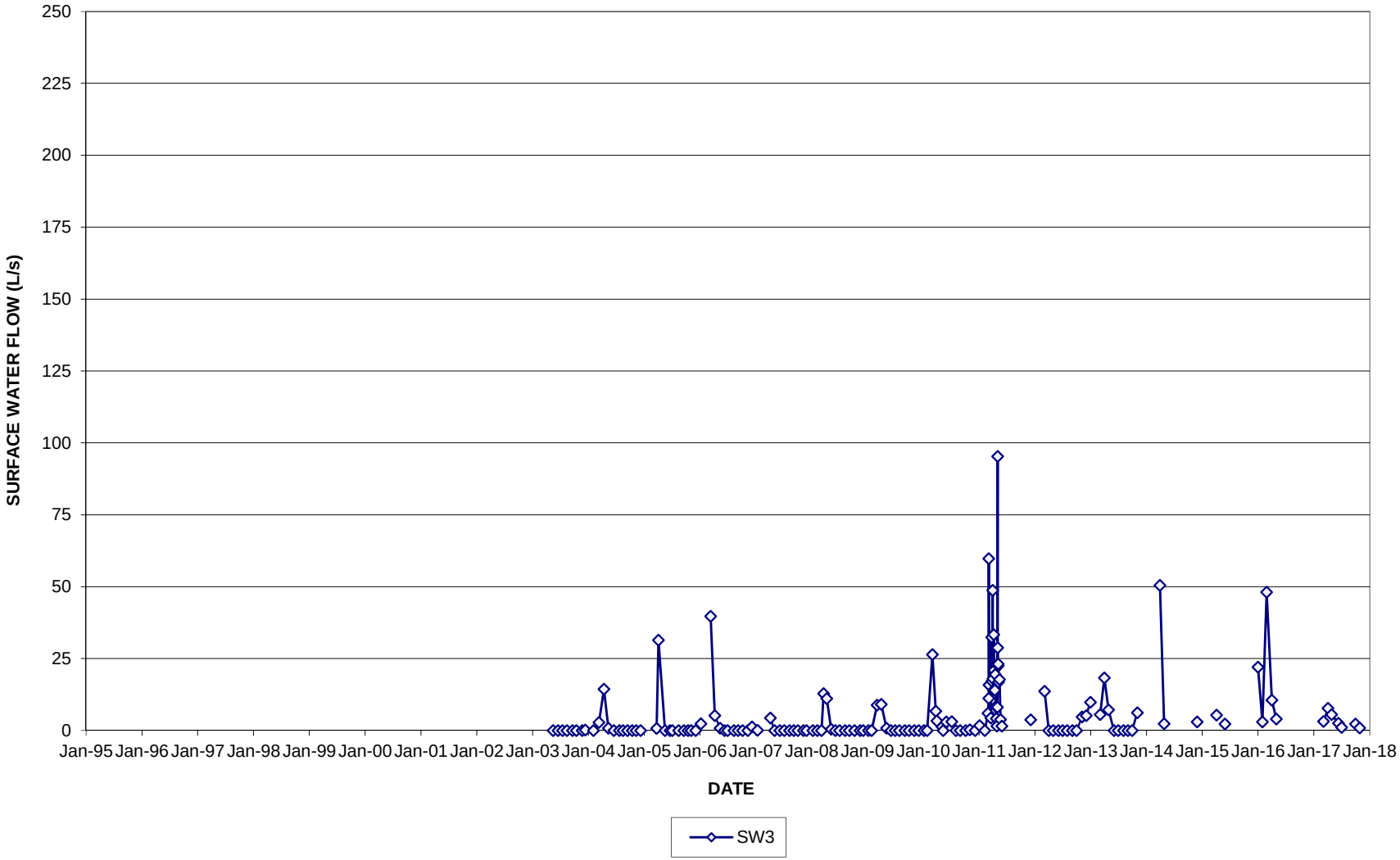


FIGURE B-7 (a)

SURFACE WATER ELEVATION (DATALOGGER)
SW3

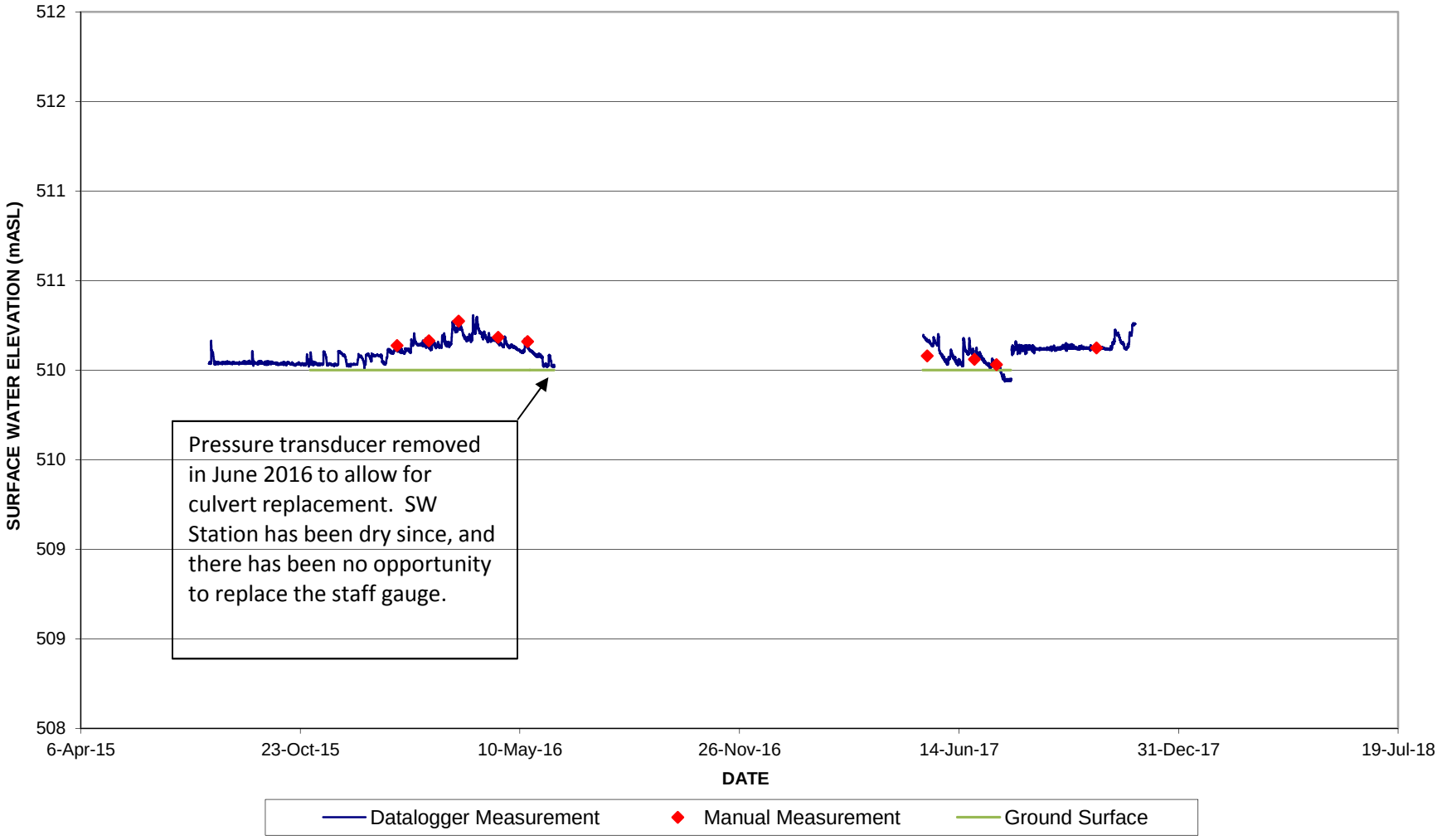
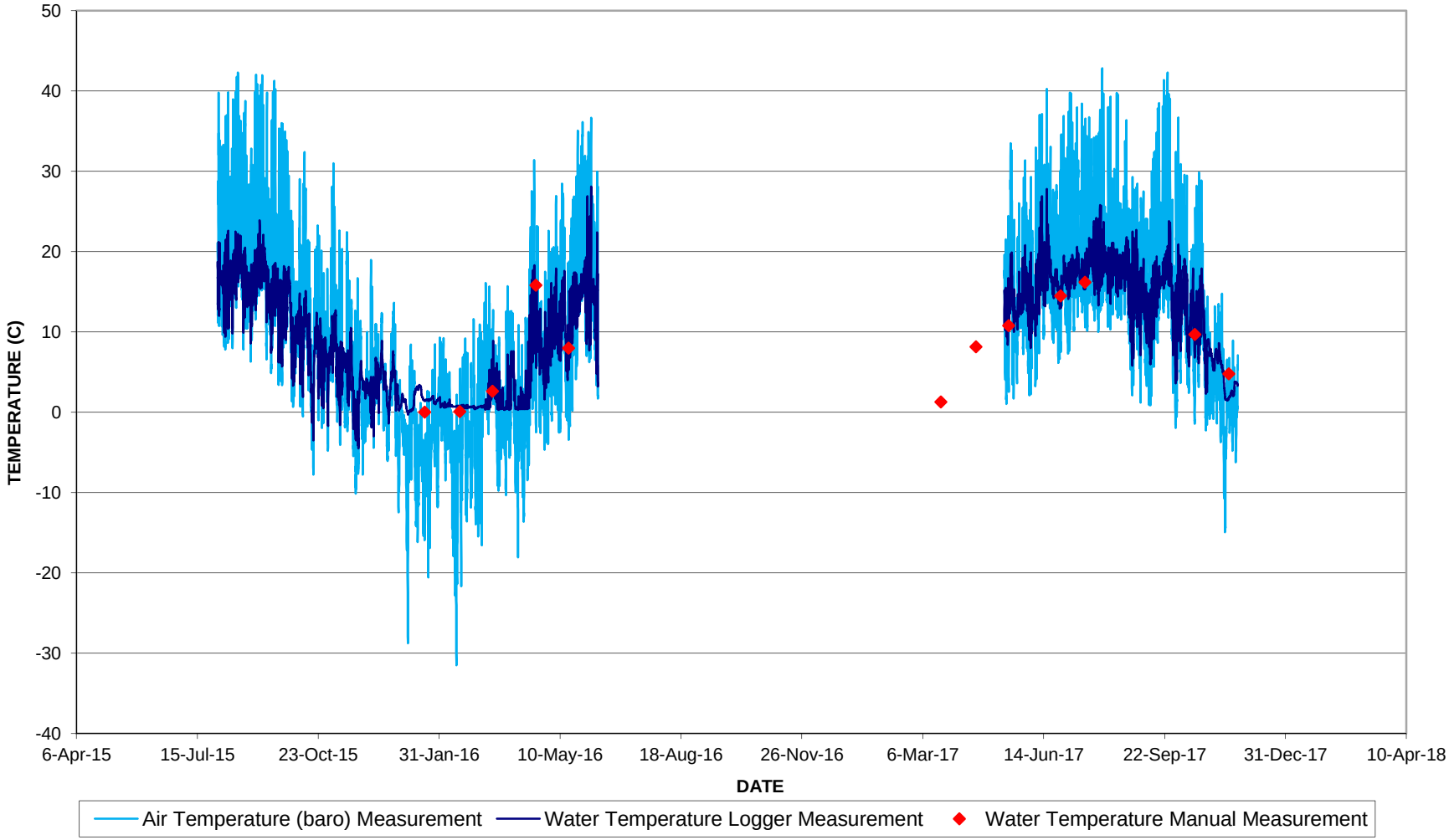


FIGURE B-7 (b)

SURFACE WATER TEMPERATURE (DATALOGGER)
SW3



C:\Users\sarah.watts\Desktop\2017 AMP Report\APPENDIX B - PERFORMANCE INDICATOR MONITORING PROGRAM RESULTS\Figure B-7 SW3 Datalogger Summary (2017).xlsx

FIGURE B-8

SURFACE WATER HYDROGRAPH
SW3A

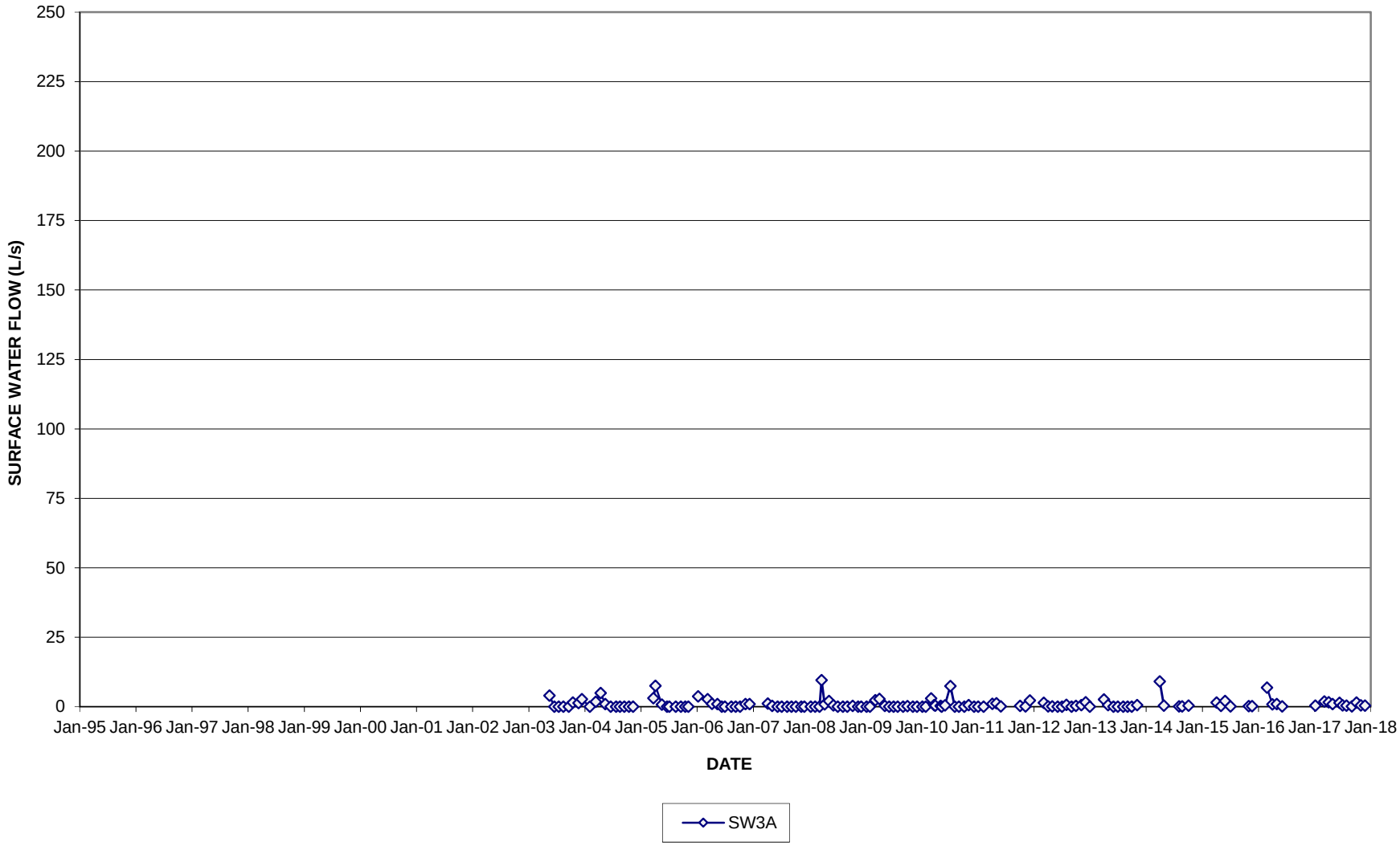


FIGURE B-9

SURFACE WATER HYDROGRAPH
SW4

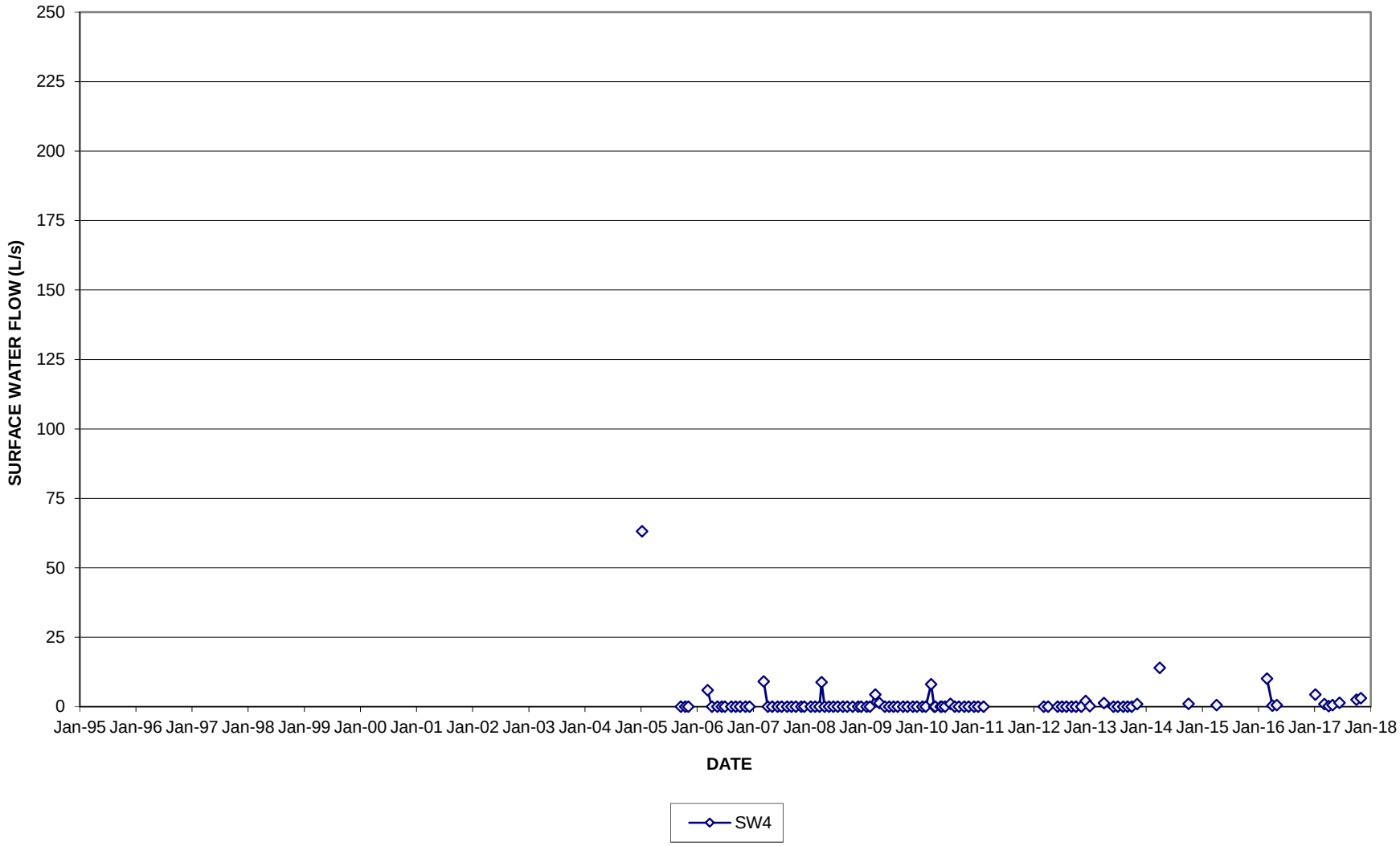


FIGURE B-10

SURFACE WATER HYDROGRAPH
SW5

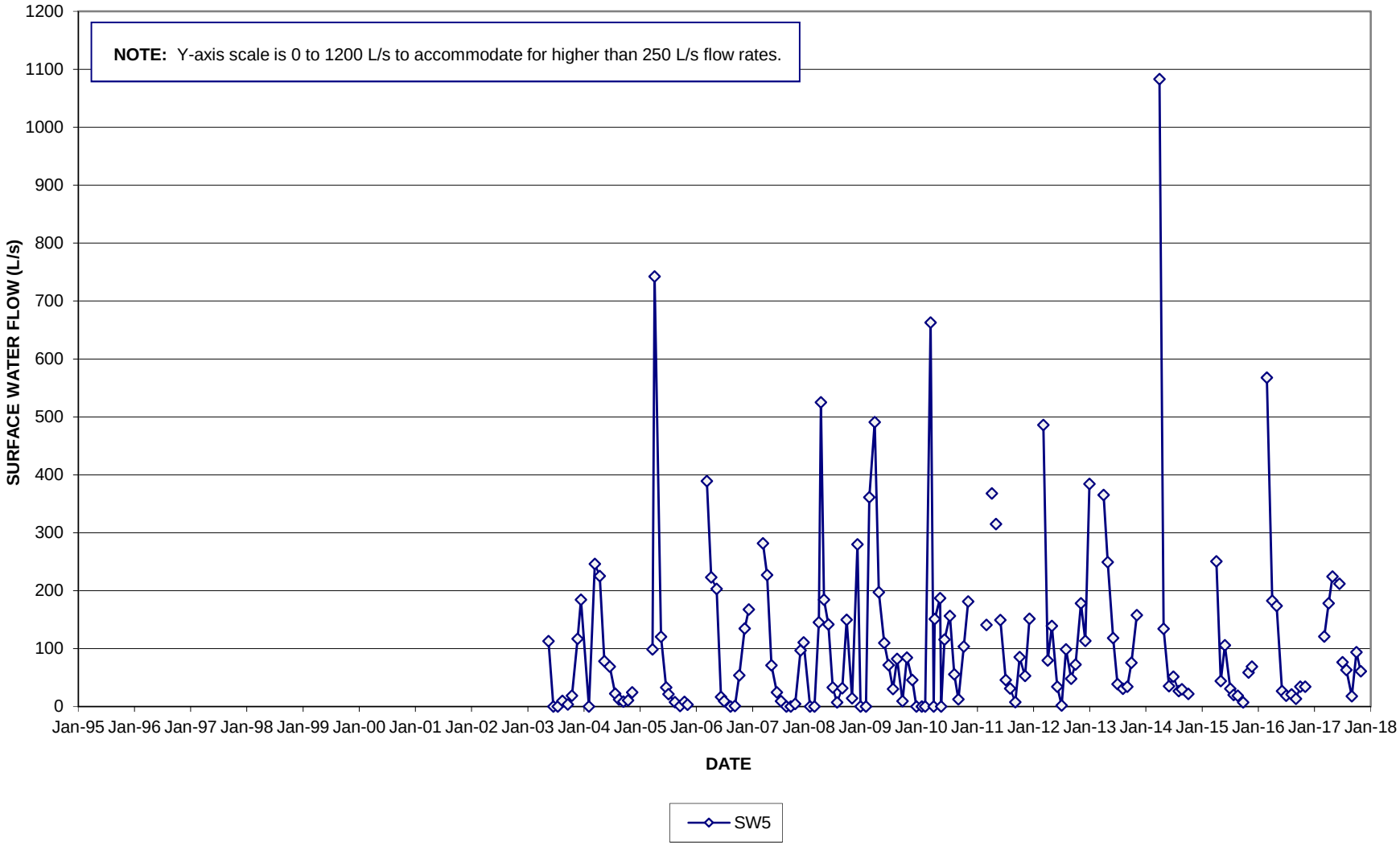


FIGURE B-11

SURFACE WATER HYDROGRAPH
SW6

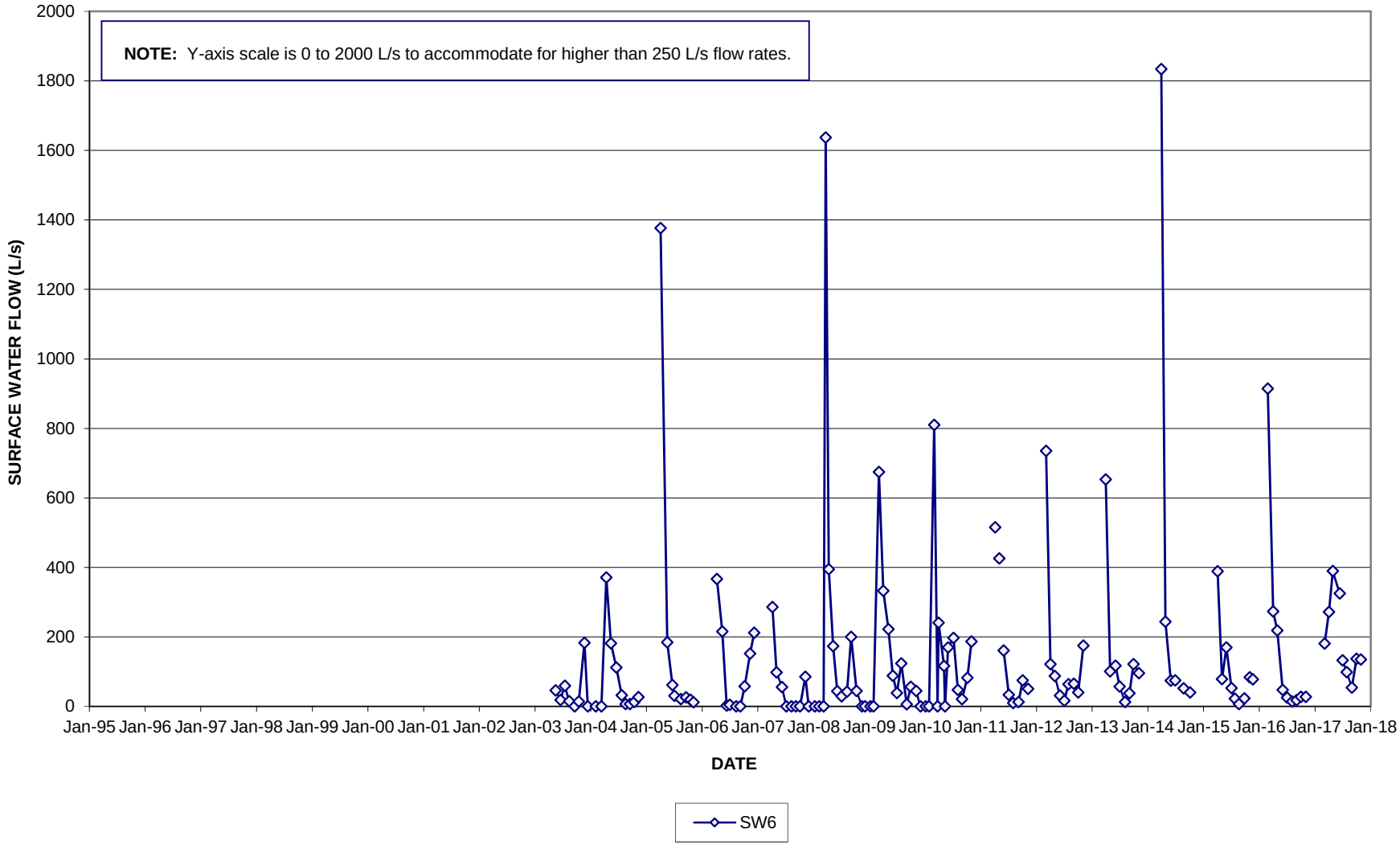


FIGURE B-12

SURFACE WATER HYDROGRAPH
SW6A

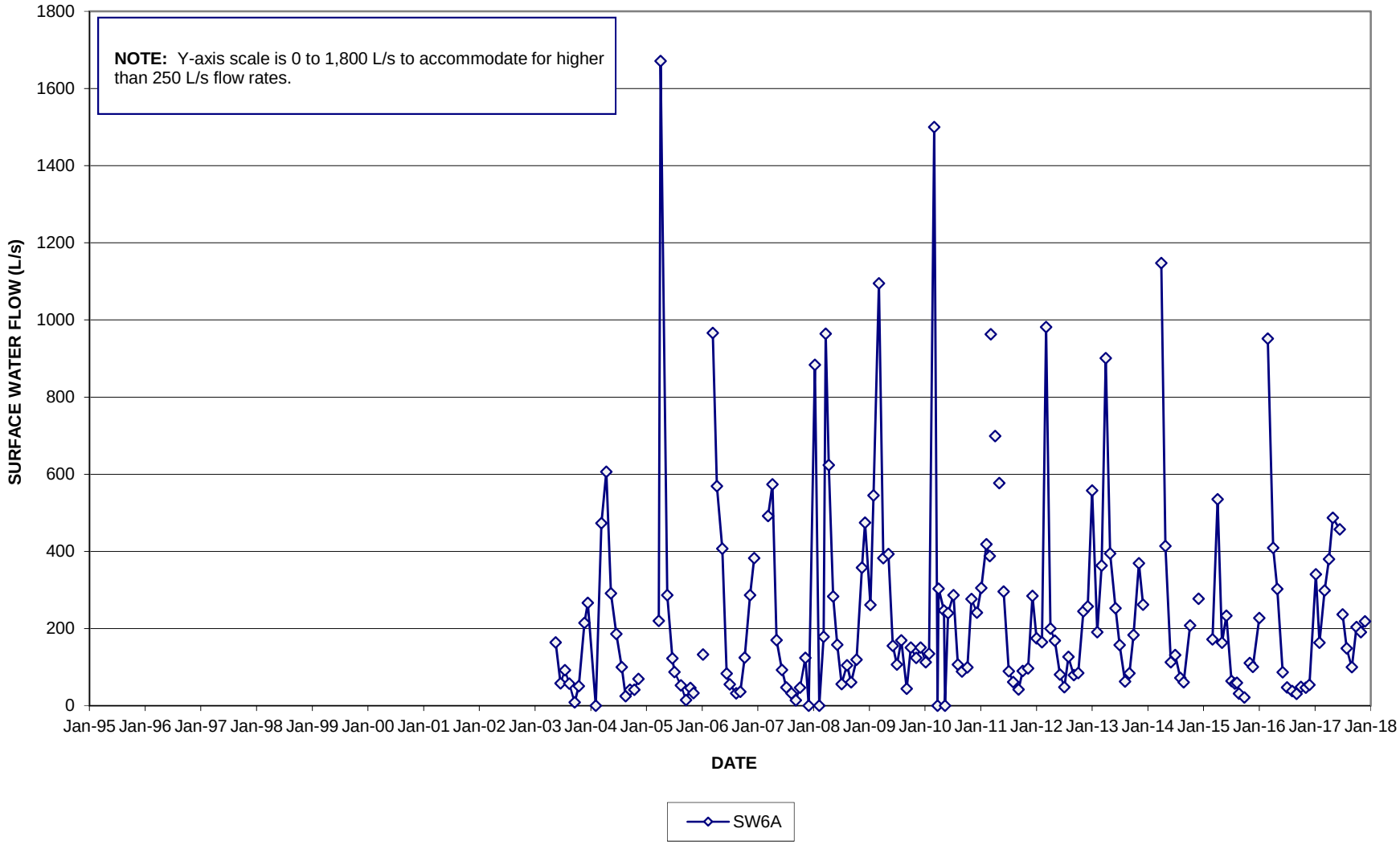


FIGURE B-12 (a)

SURFACE WATER ELEVATION (DATALOGGER)
SW6A

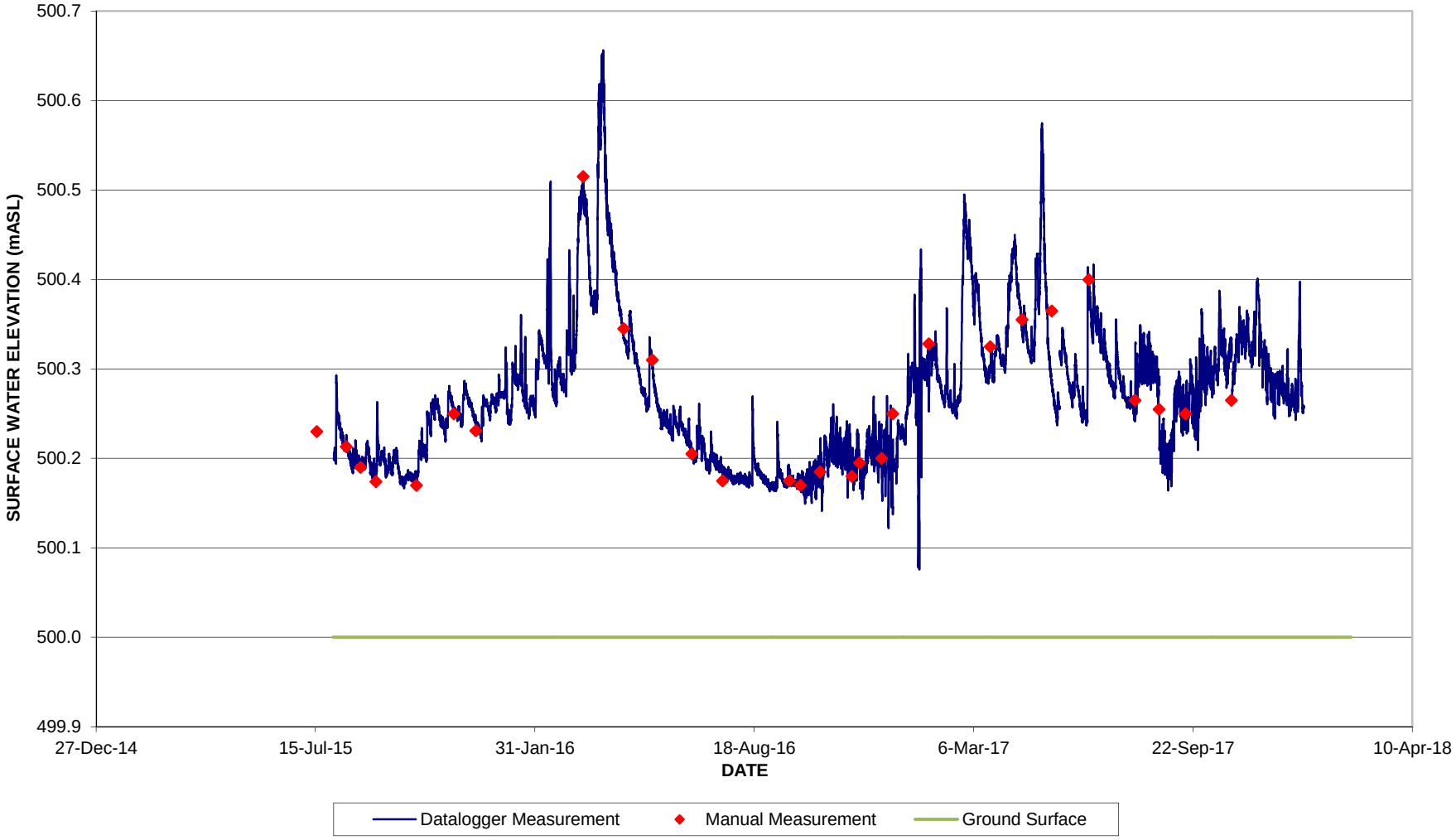


FIGURE B-12 (b)

SURFACE WATER TEMPERATURE (DATALOGGER)
SW6A

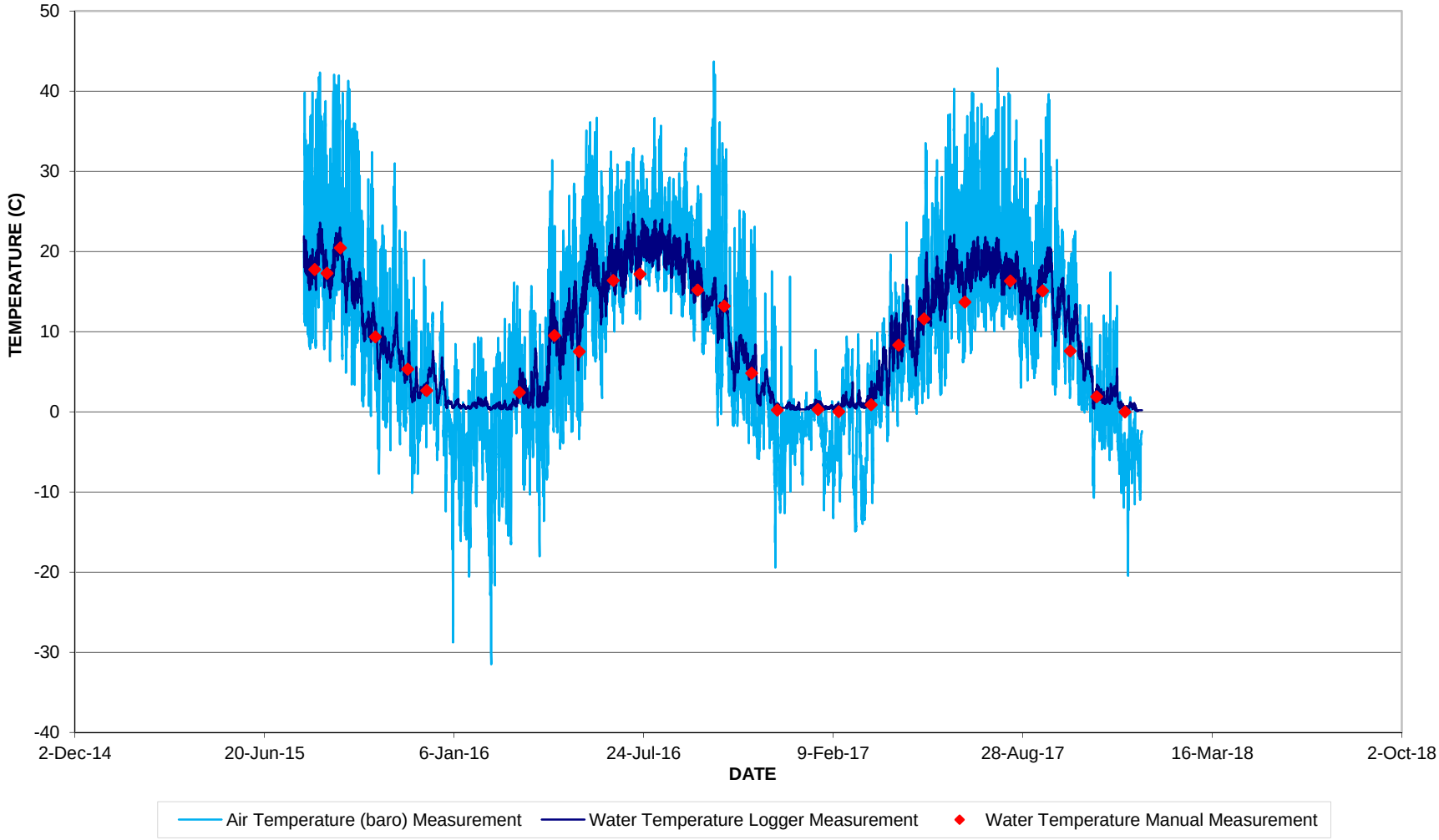


FIGURE B-13

SURFACE WATER HYDROGRAPH
SW7

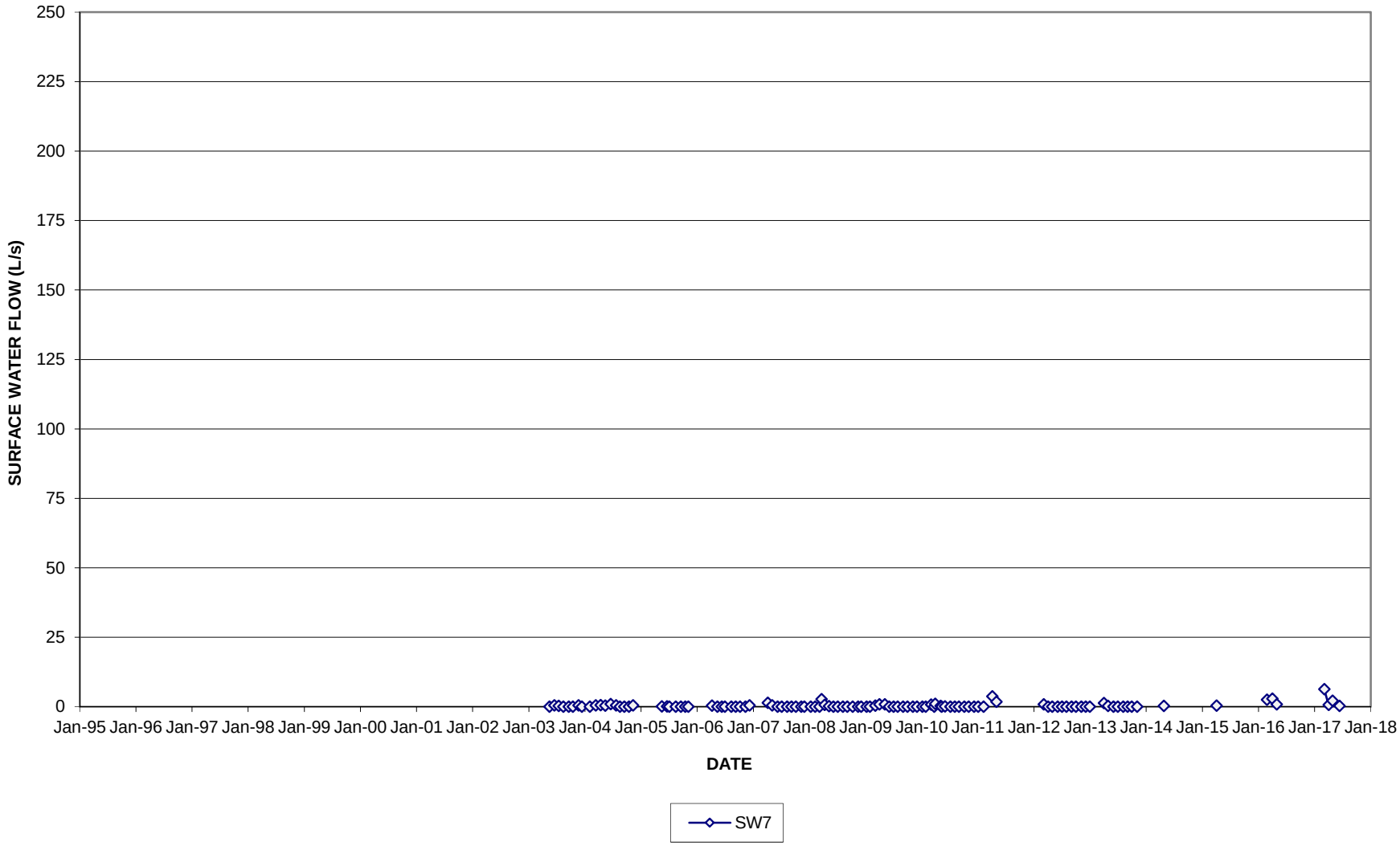


FIGURE B-14

SURFACE WATER HYDROGRAPH
SW8

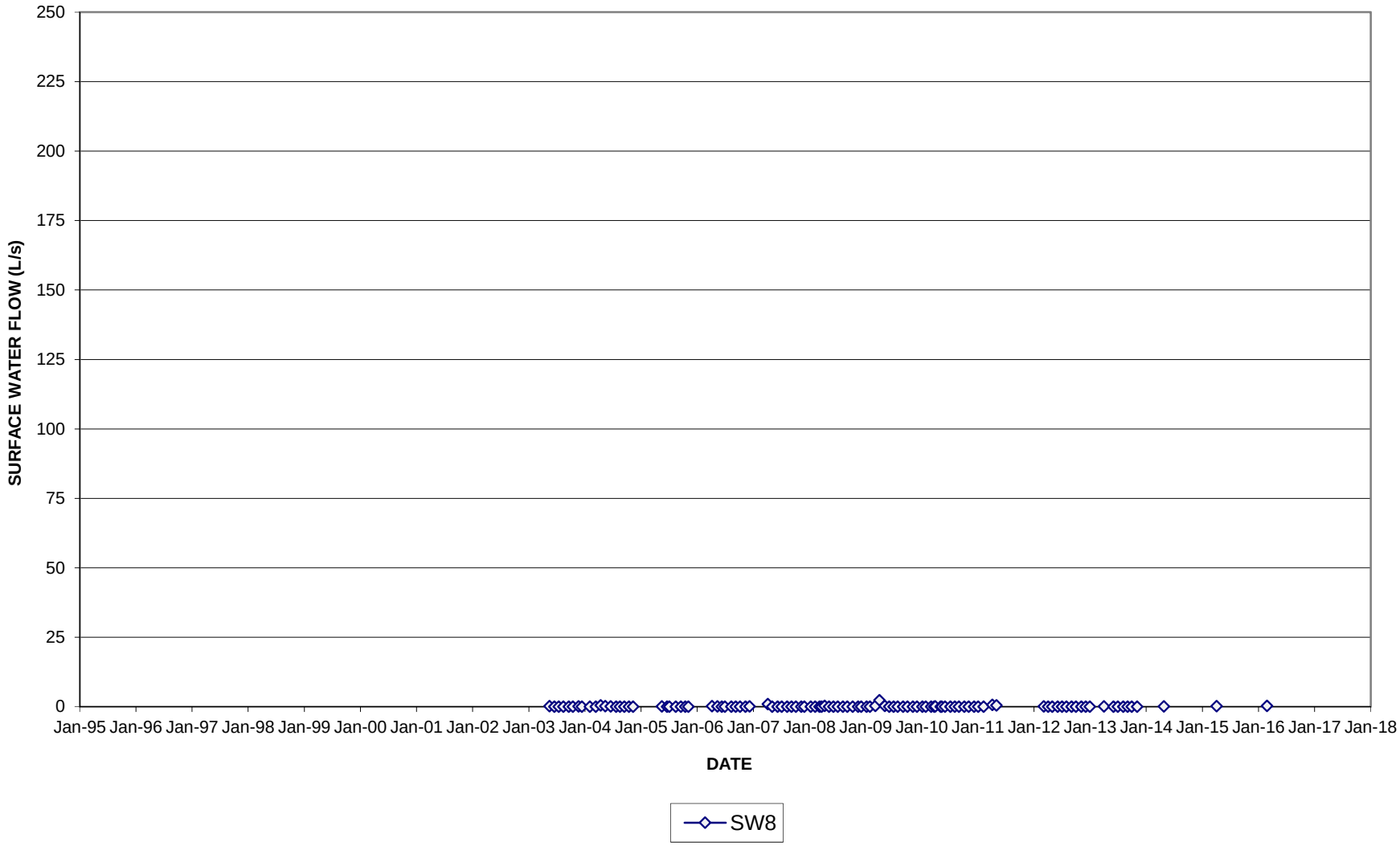


FIGURE B-15

SURFACE WATER HYDROGRAPH
SW9

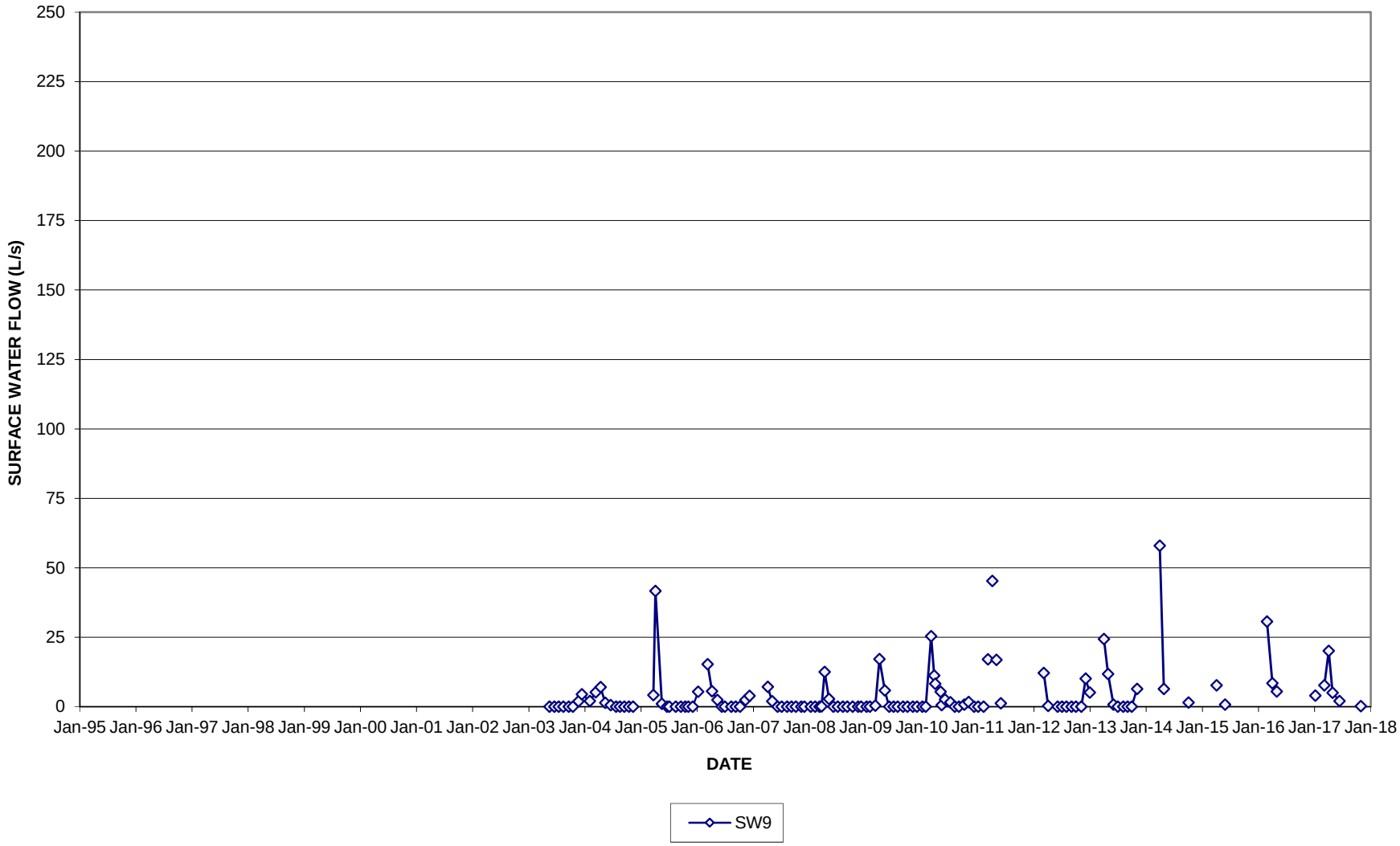


FIGURE B-15 (a)

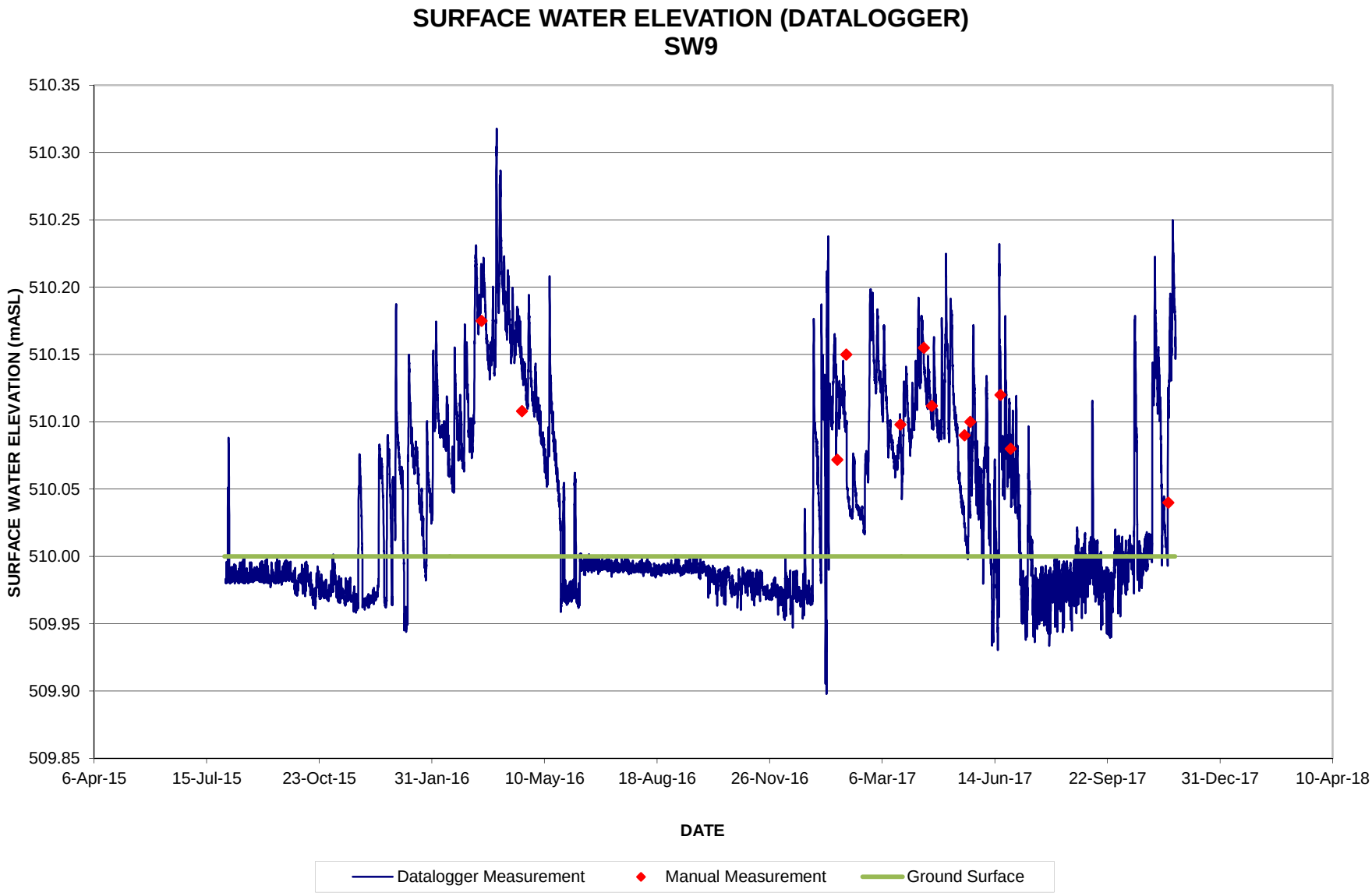

SURFACE WATER ELEVATION (DATALOGGER)
SW9
SURFACE WATER ELEVATION (mASL)
510.35
510.30
510.25
510.20
510.15
510.10
510.05
510.00
509.95
509.90
509.85
6-Apr-15
15-Jul-15
23-Oct-15
31-Jan-16
10-May-16
18-Aug-16
26-Nov-16
6-Mar-17
14-Jun-17
22-Sep-17
31-Dec-17
10-Apr-18
DATE
Datalogger Measurement
Manual Measurement
Ground Surface

FIGURE B-15 (b)

SURFACE WATER TEMPERATURE (DATALOGGER)
SW9

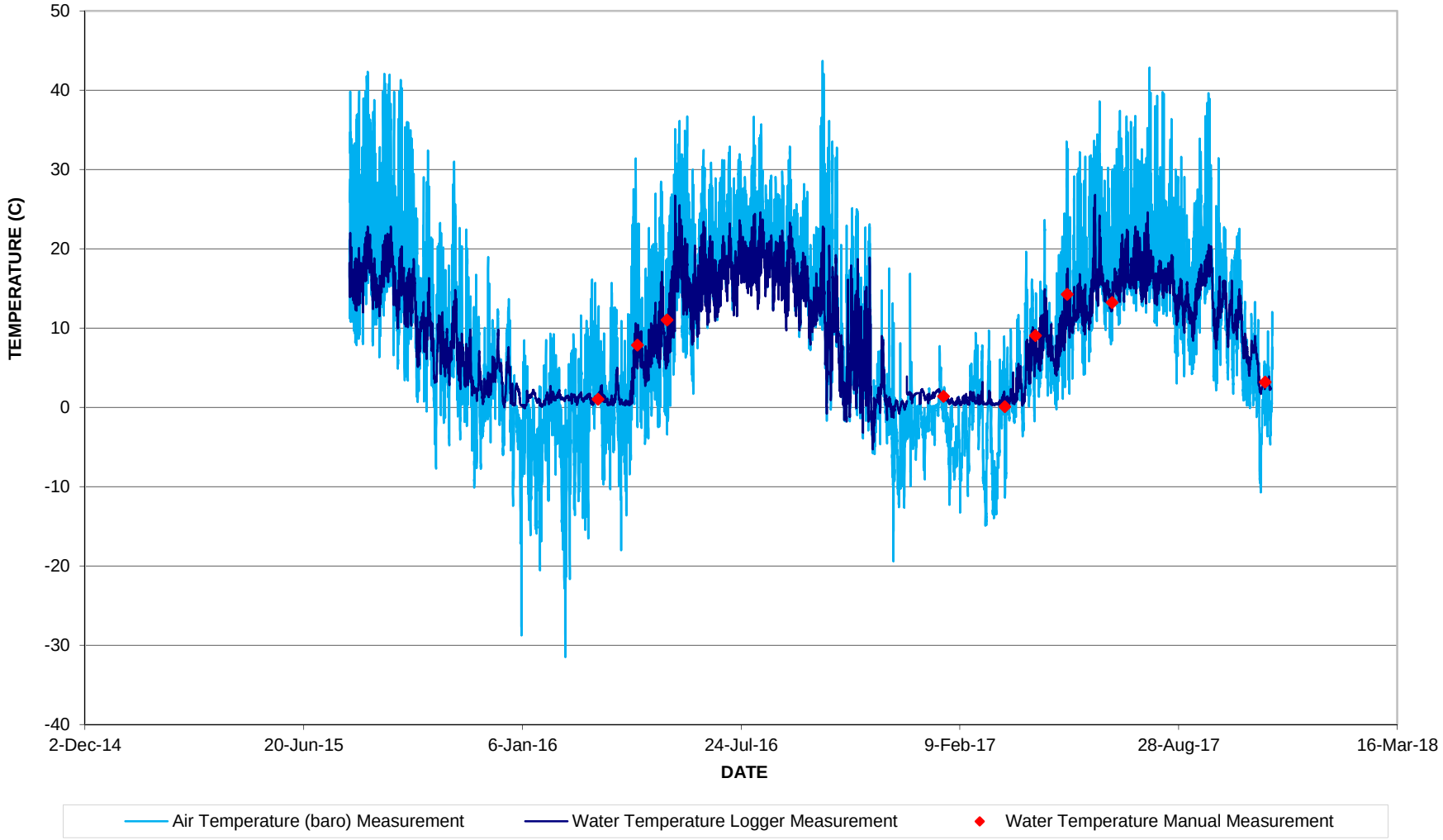


FIGURE B-16

SURFACE WATER HYDROGRAPH
SW10

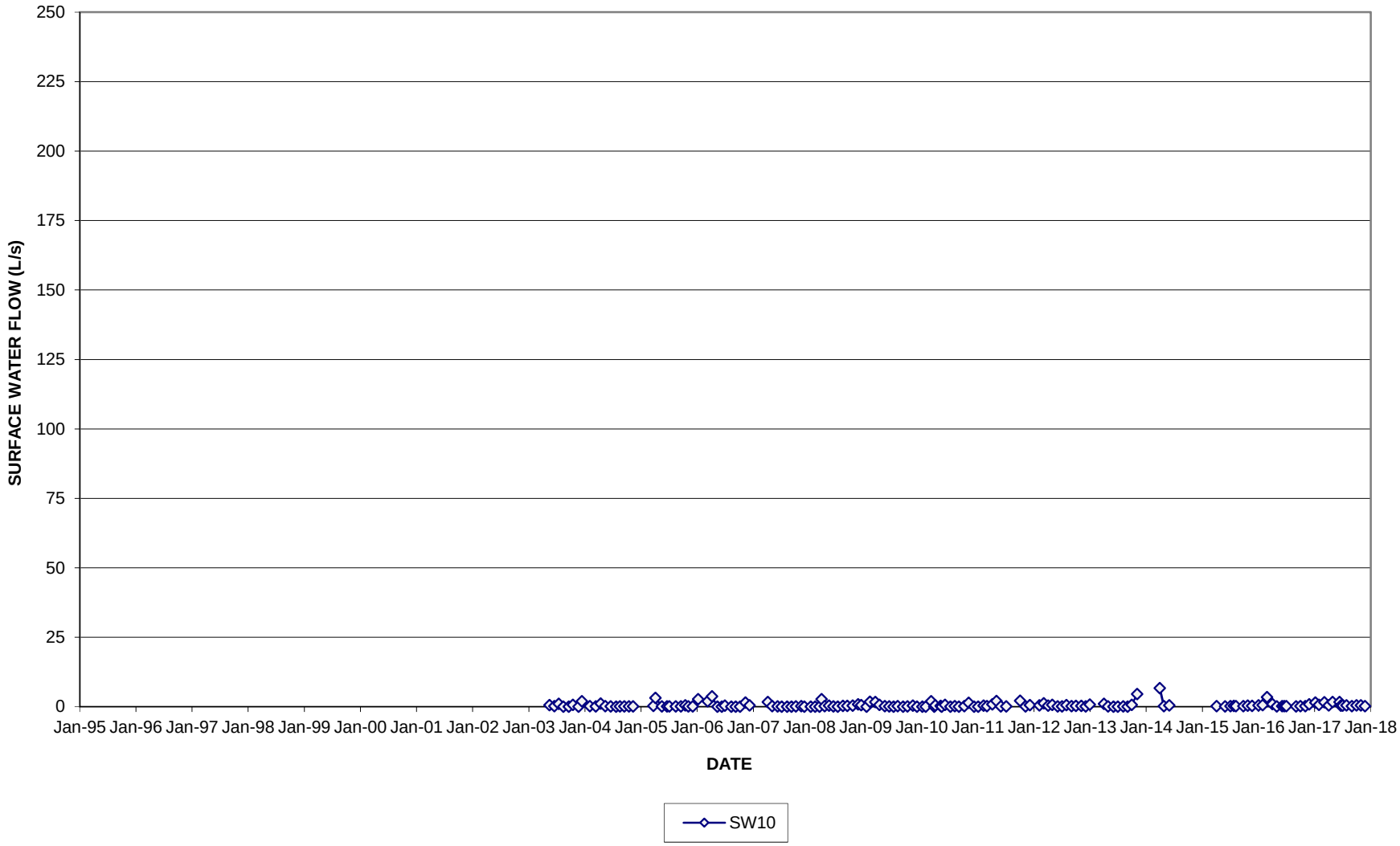


FIGURE B-17

SURFACE WATER HYDROGRAPH
SW11

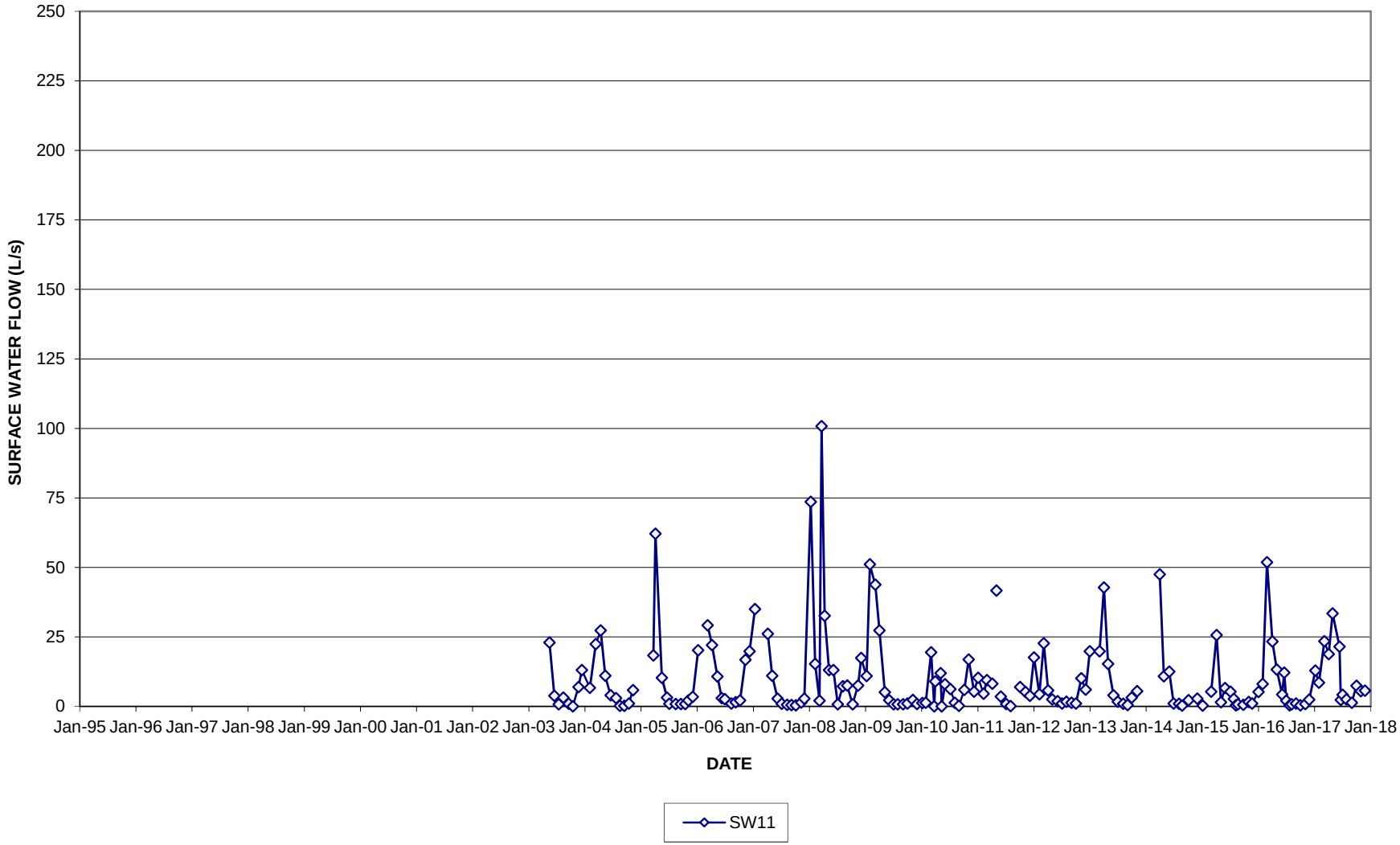


FIGURE B-18

SURFACE WATER HYDROGRAPH
SW11A

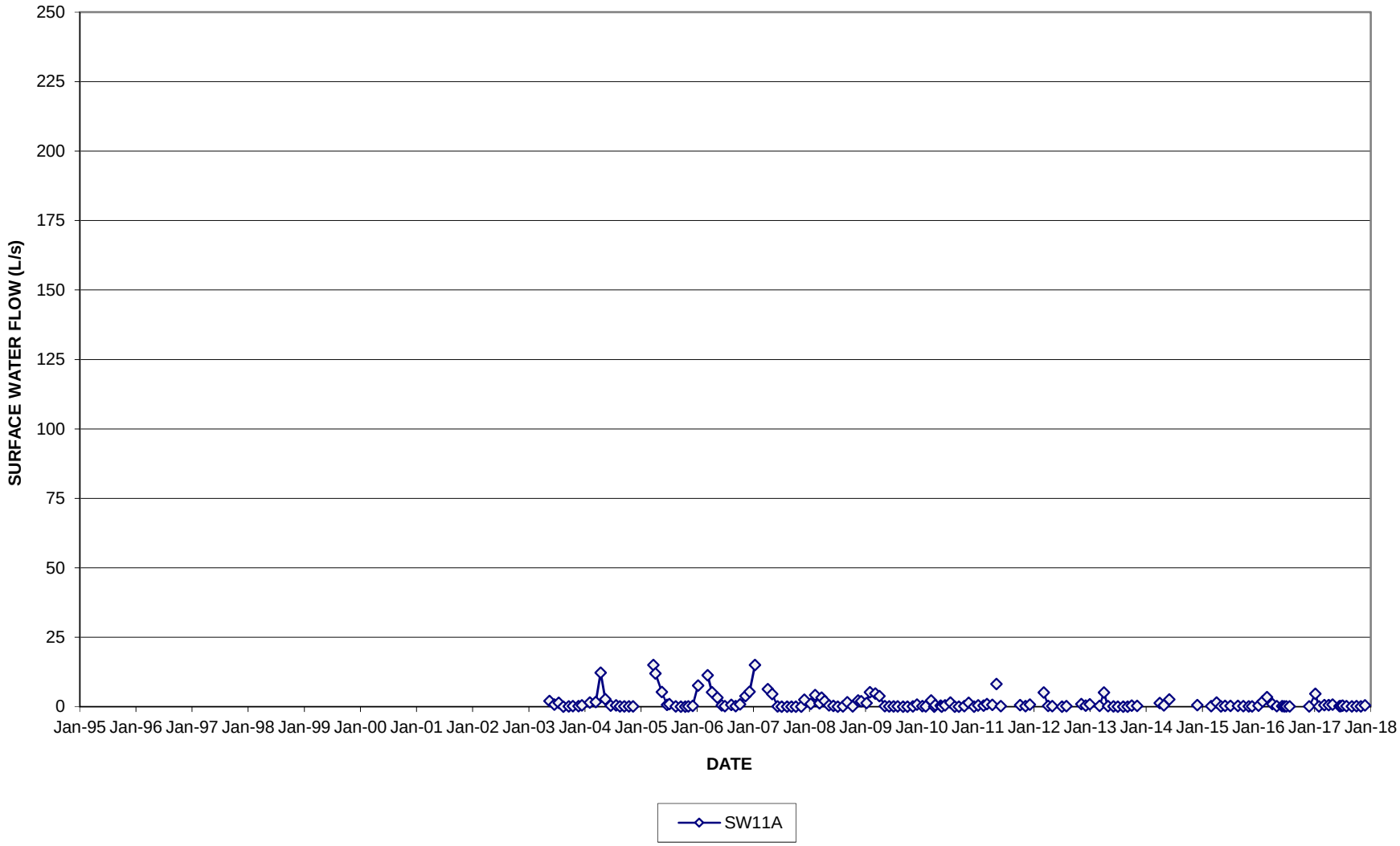


FIGURE B-19

SURFACE WATER HYDROGRAPH
SW11B

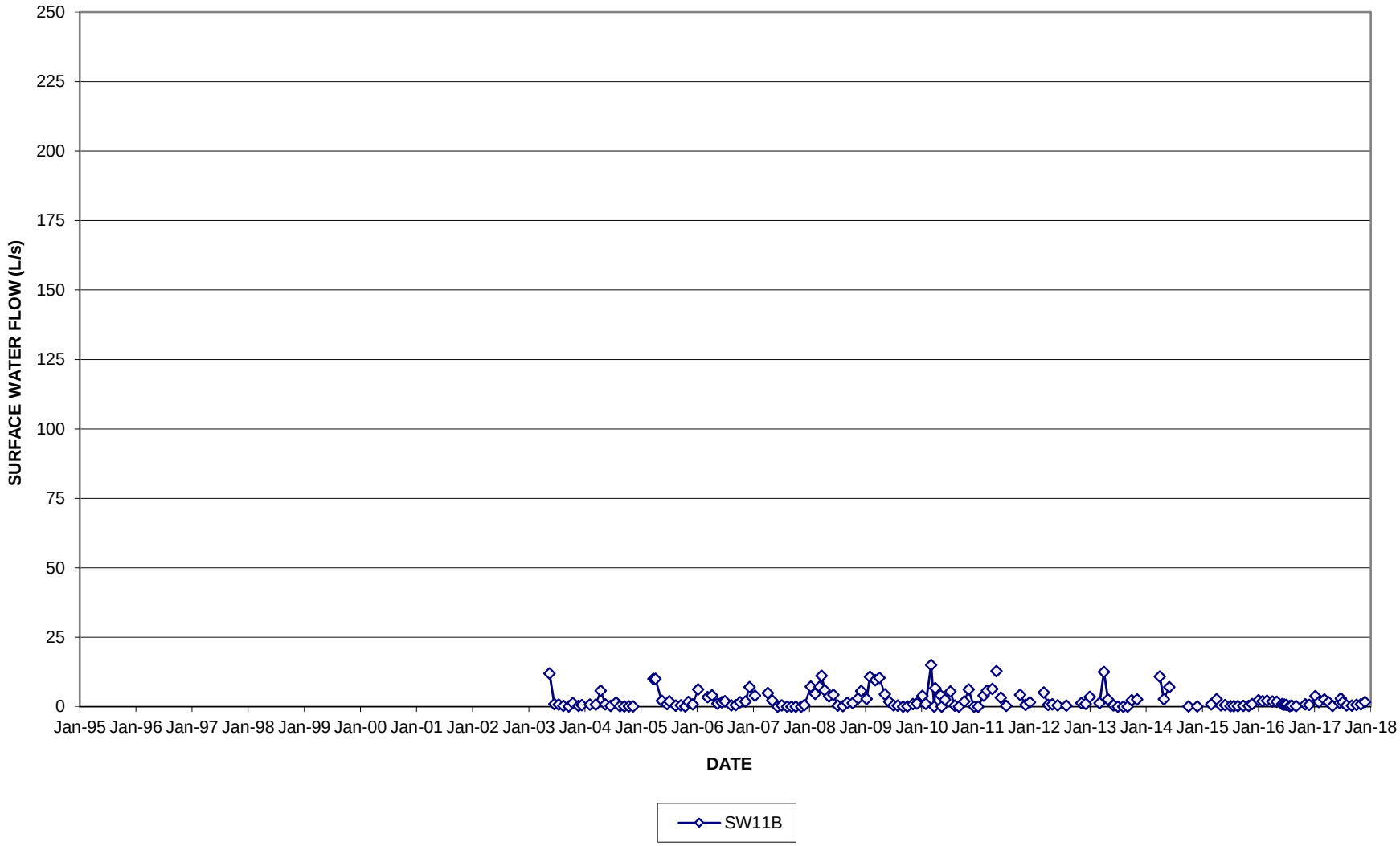


FIGURE B-20

SURFACE WATER HYDROGRAPH
SW11C

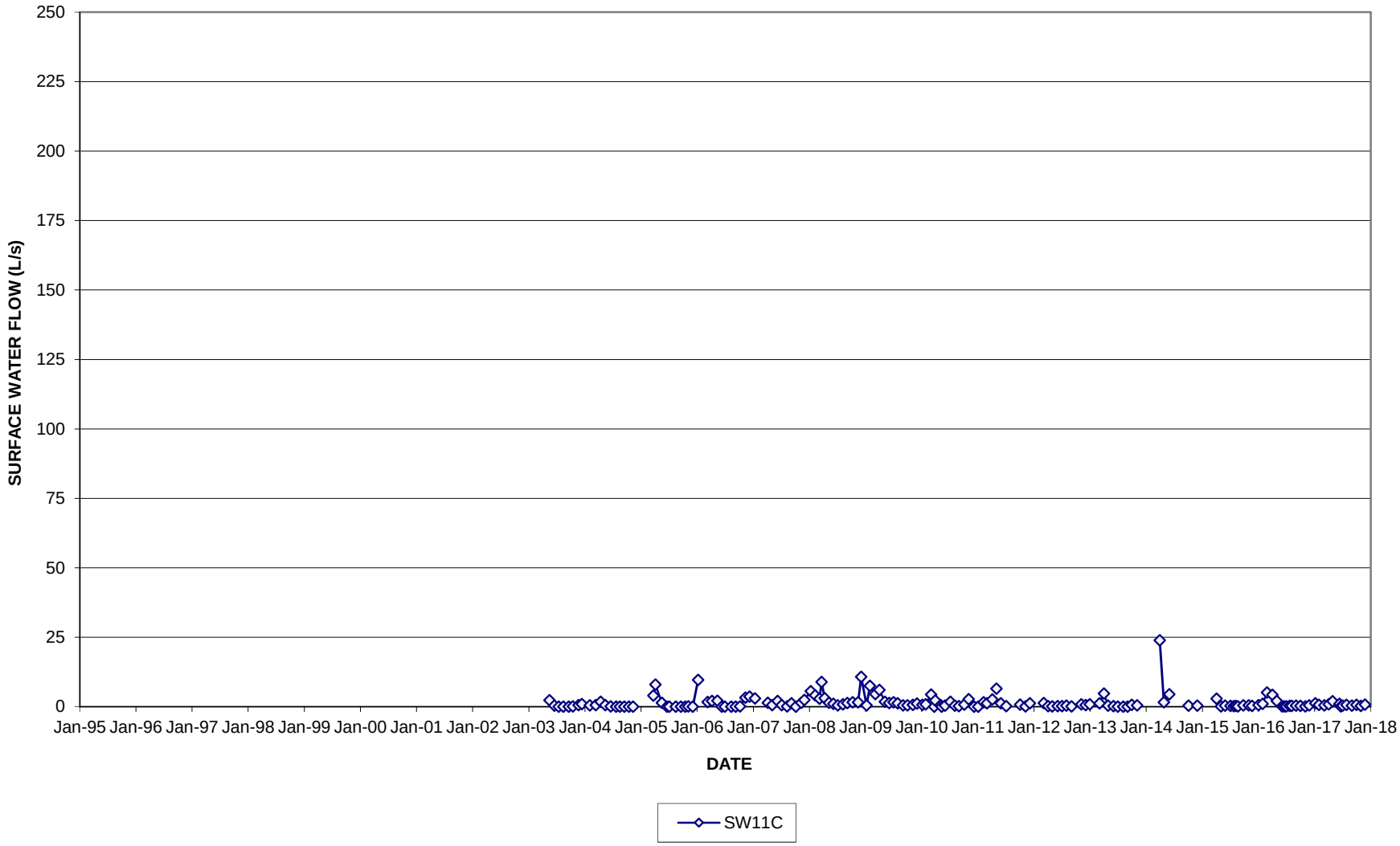


FIGURE B-21

SURFACE WATER HYDROGRAPH
SW11D

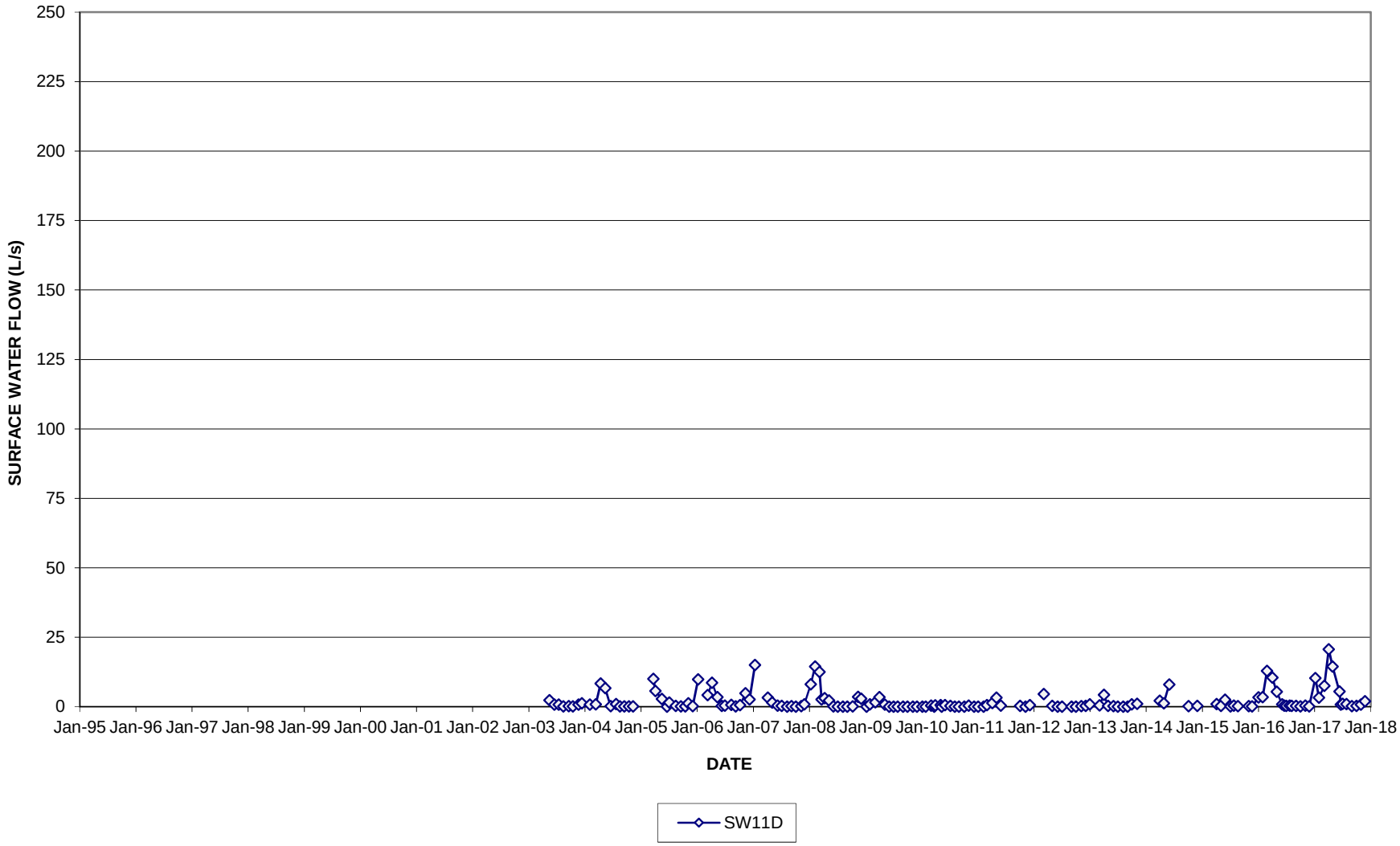


FIGURE B-22

SURFACE WATER HYDROGRAPH
SW11E

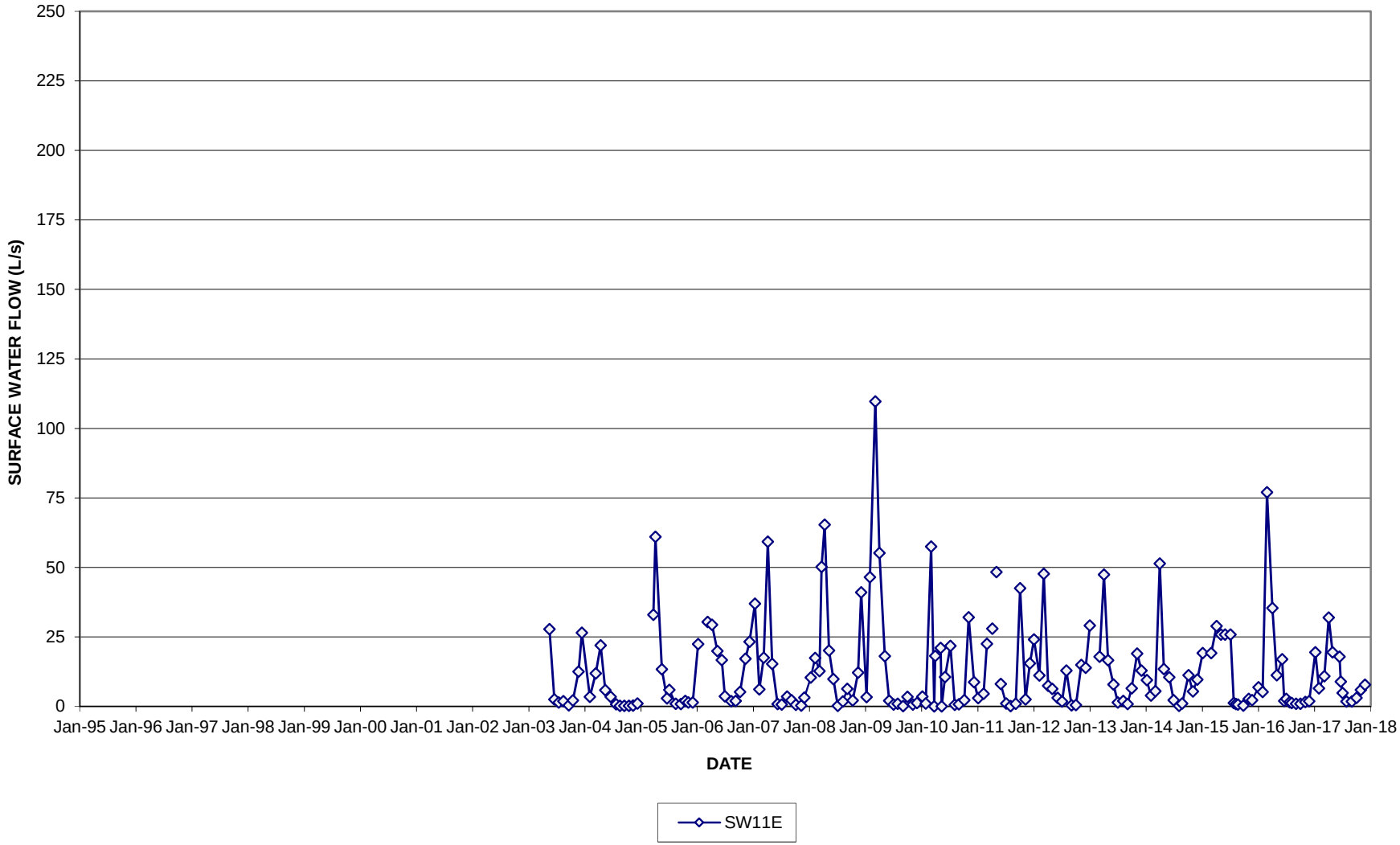


FIGURE B-23

SURFACE WATER HYDROGRAPH
SW12

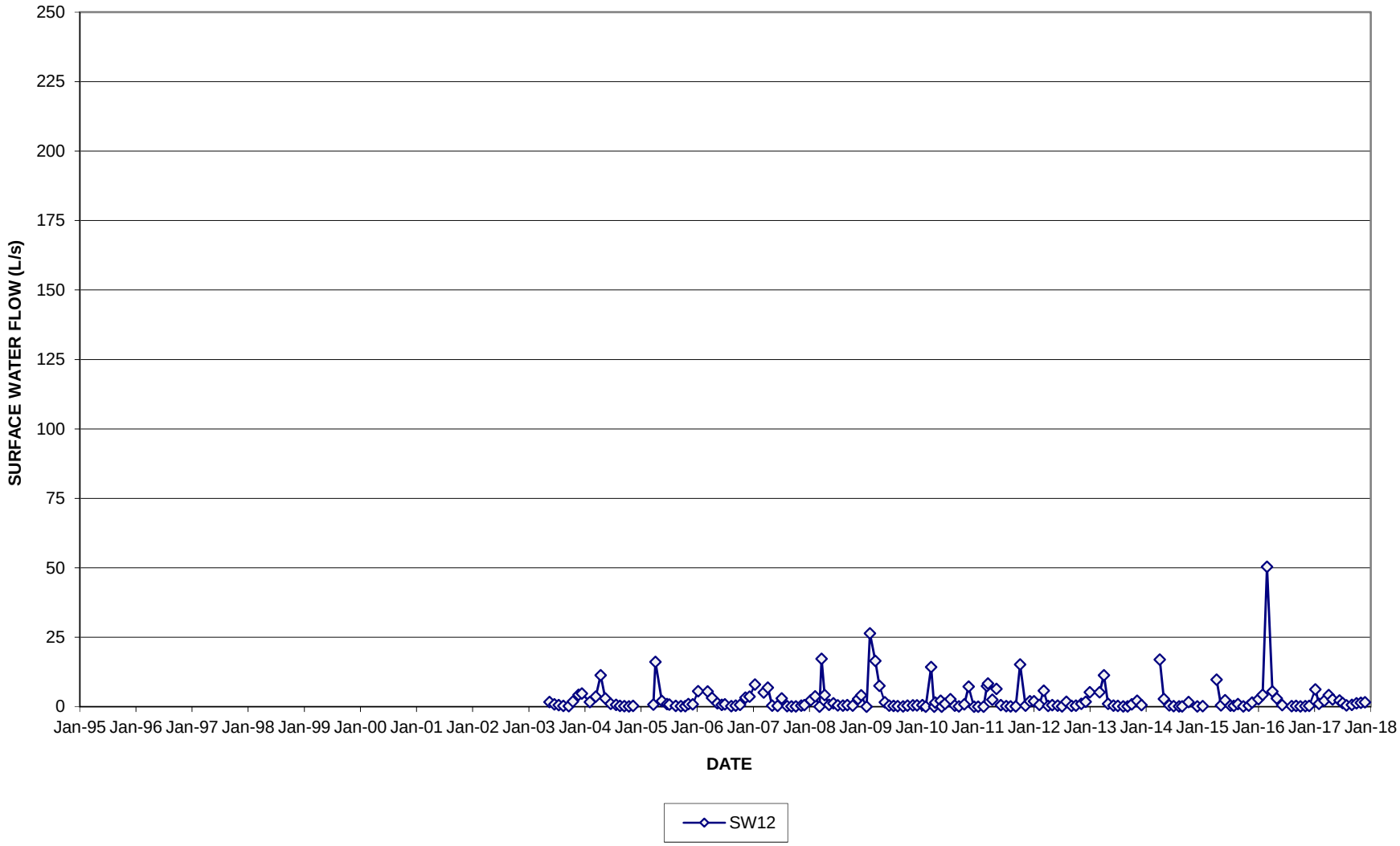


FIGURE B-24

SURFACE WATER HYDROGRAPH
SW12A

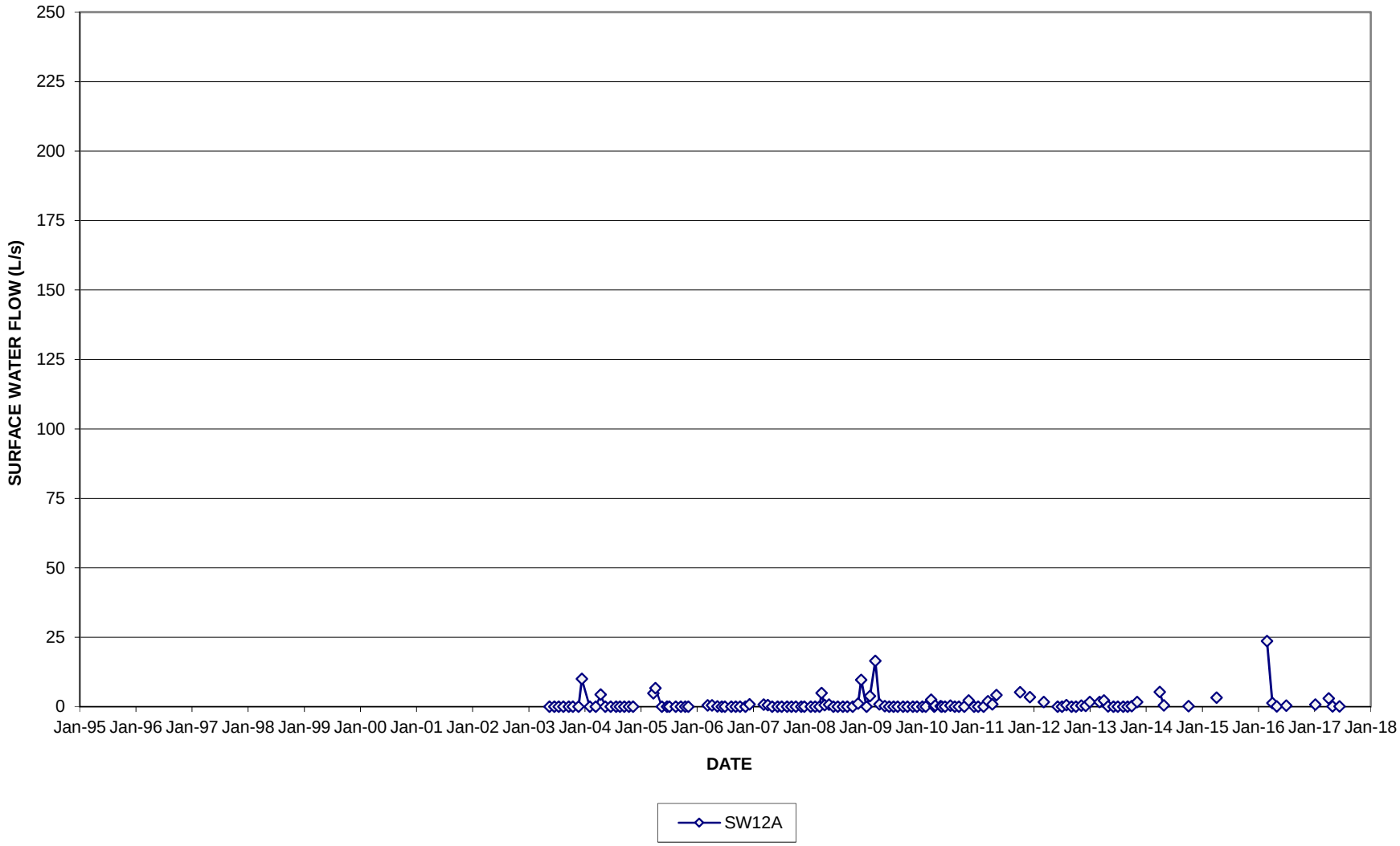


FIGURE B-25

SURFACE WATER HYDROGRAPH
SW13

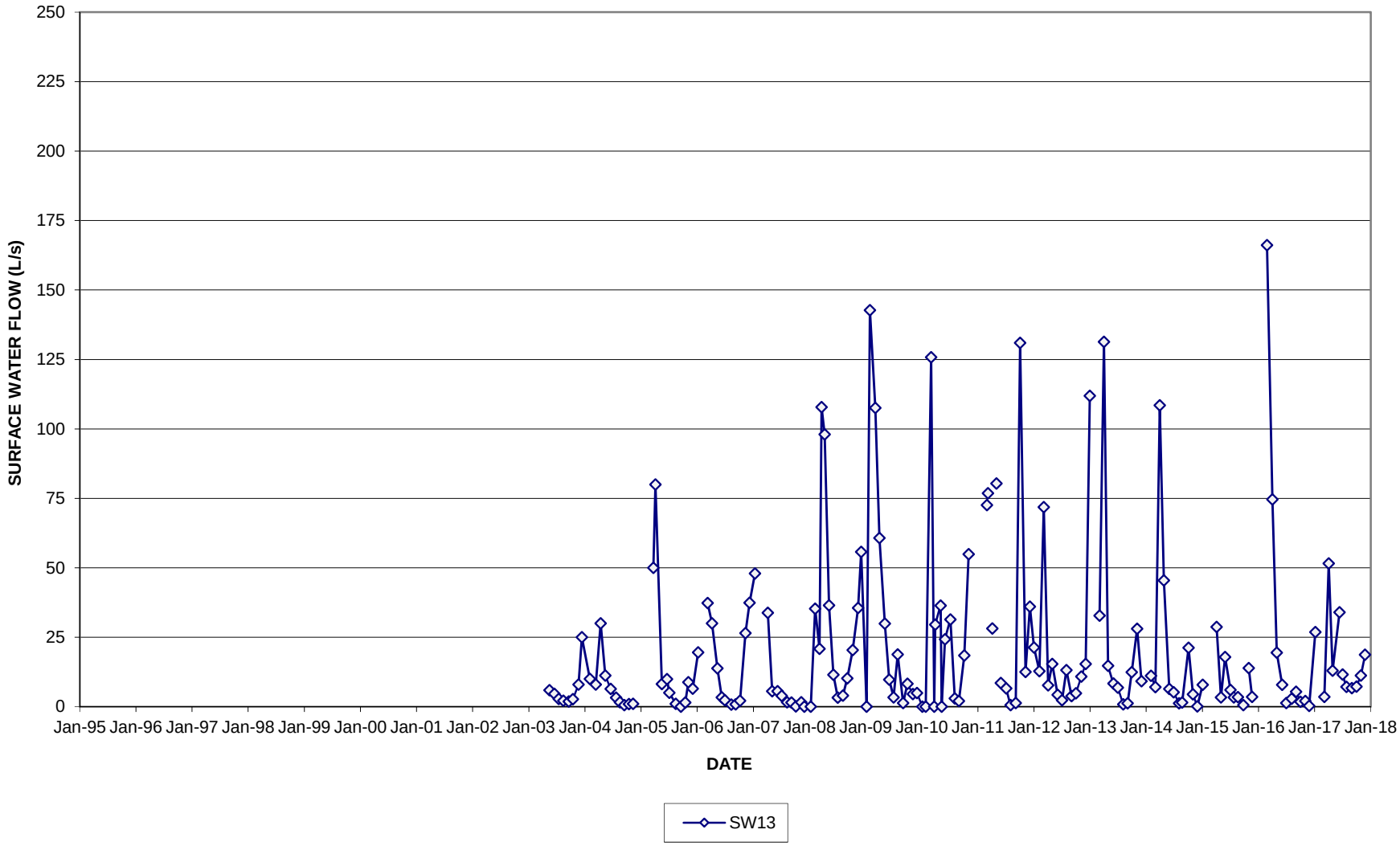


FIGURE B-26

SURFACE WATER HYDROGRAPH
SW14

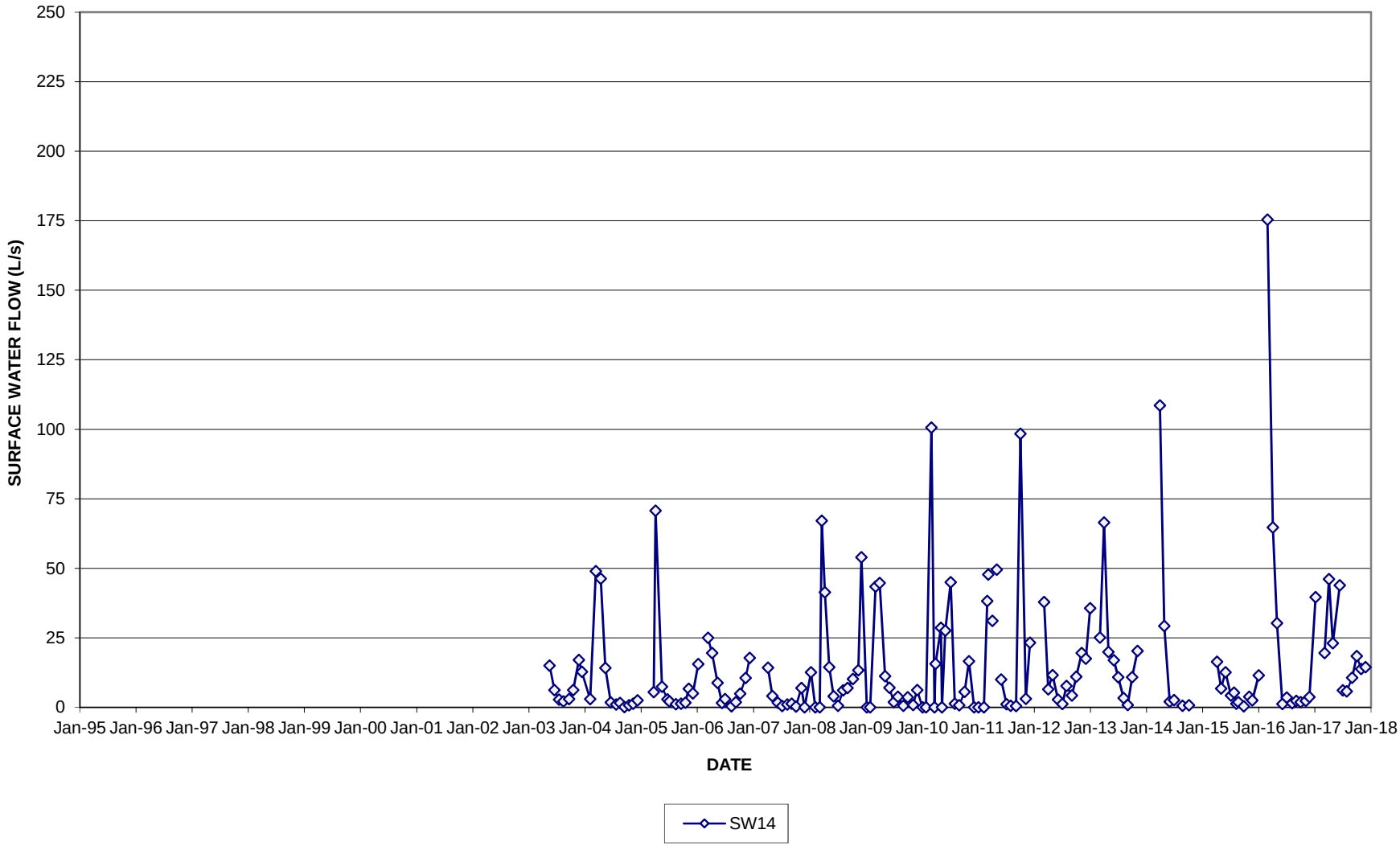


FIGURE B-27

SURFACE WATER HYDROGRAPH
SW15

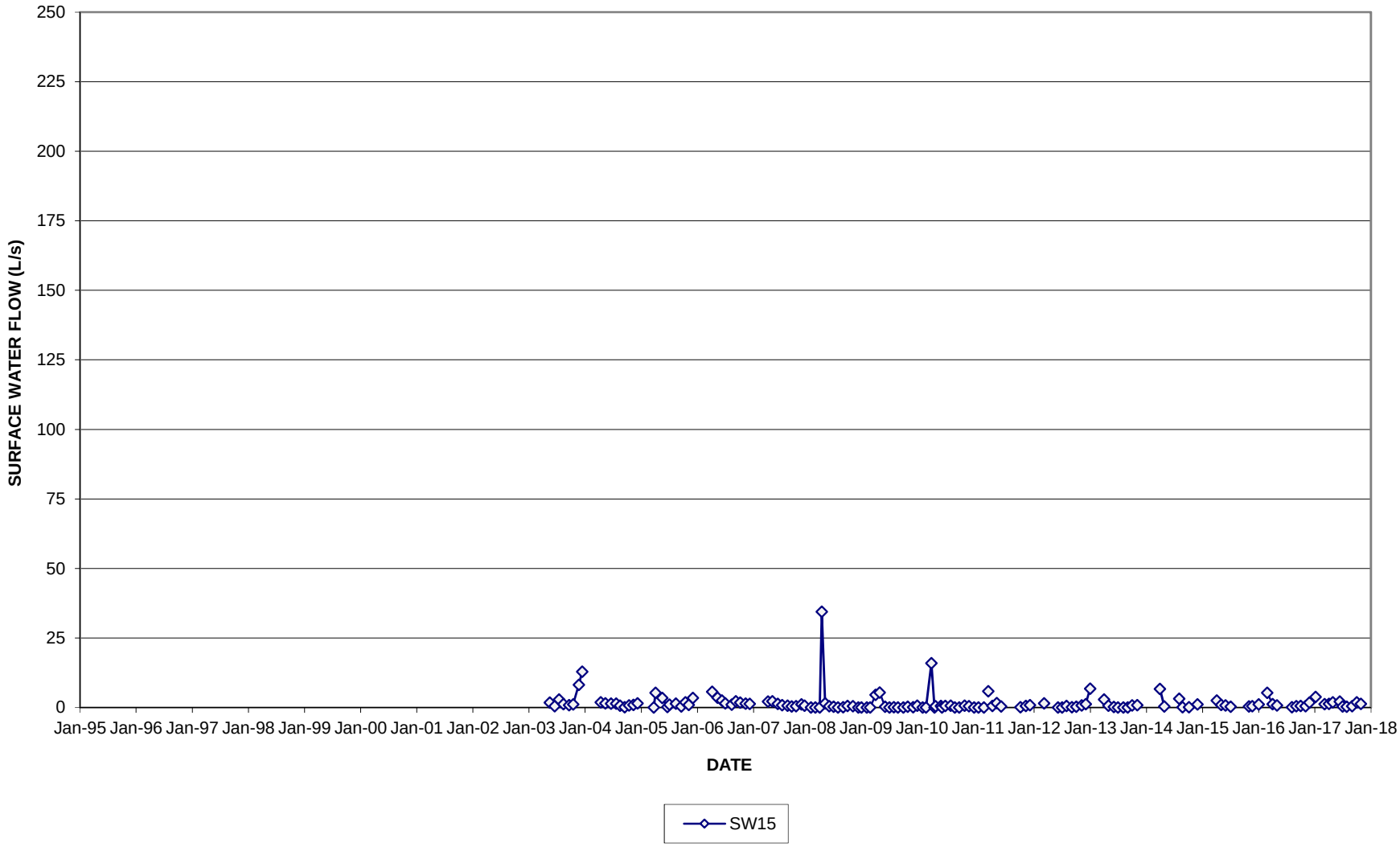


FIGURE B-27 (a)

SURFACE WATER ELEVATION (DATALOGGER)
SW15

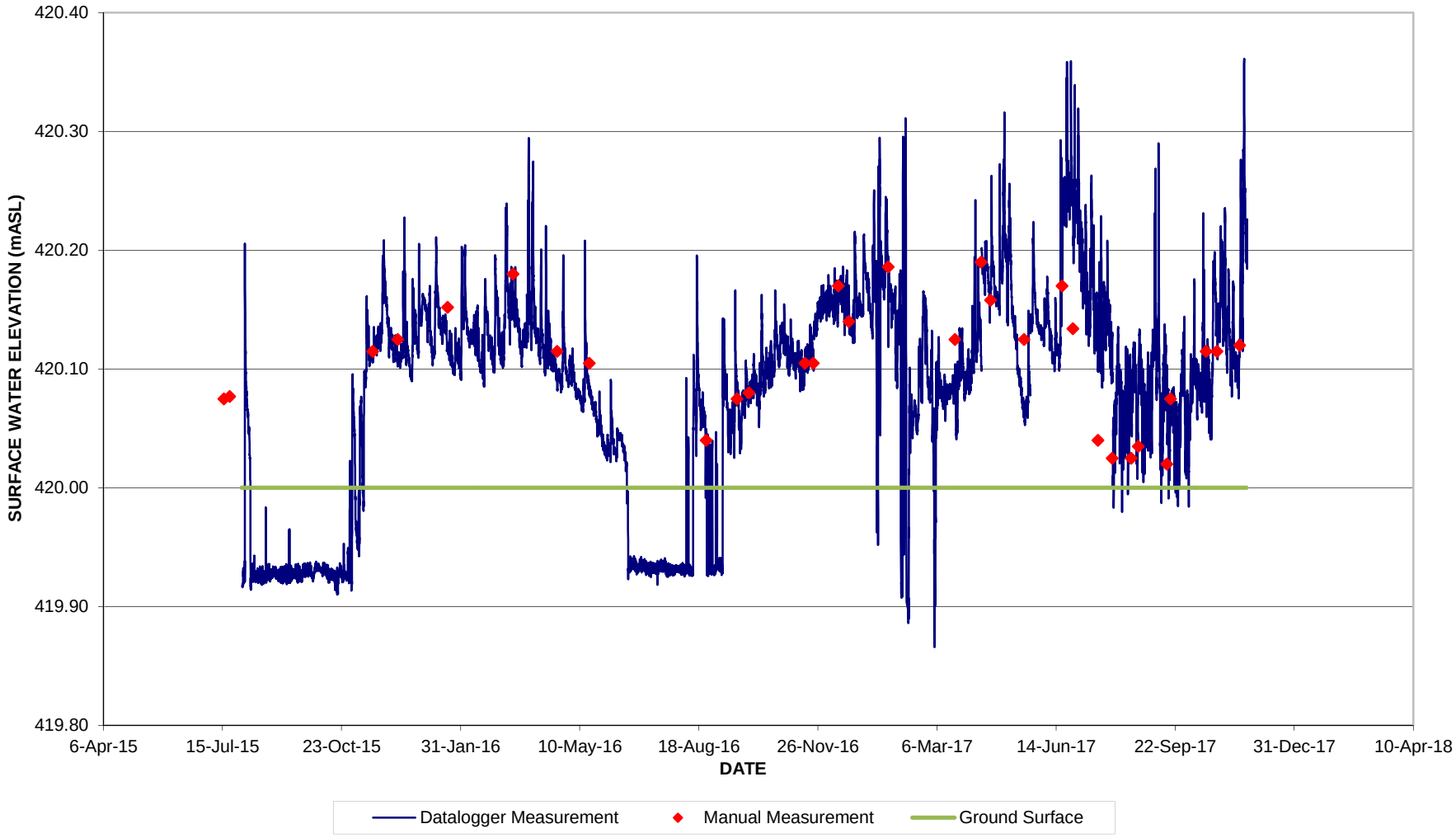


FIGURE B-27 (b)

SURFACE WATER TEMPERATURE (DATALOGGER)
SW15

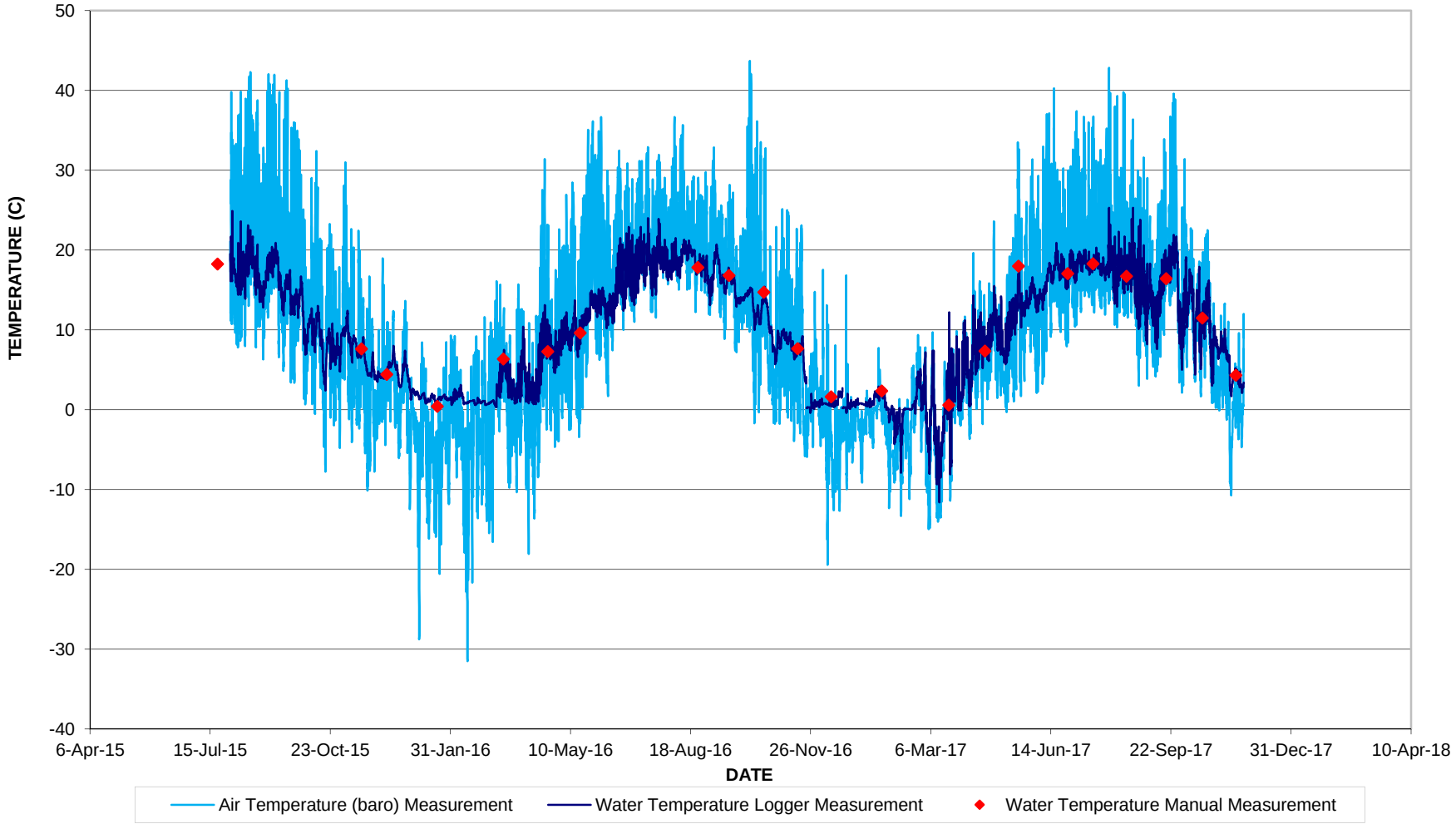


FIGURE B-28

SURFACE WATER HYDROGRAPH
SW16

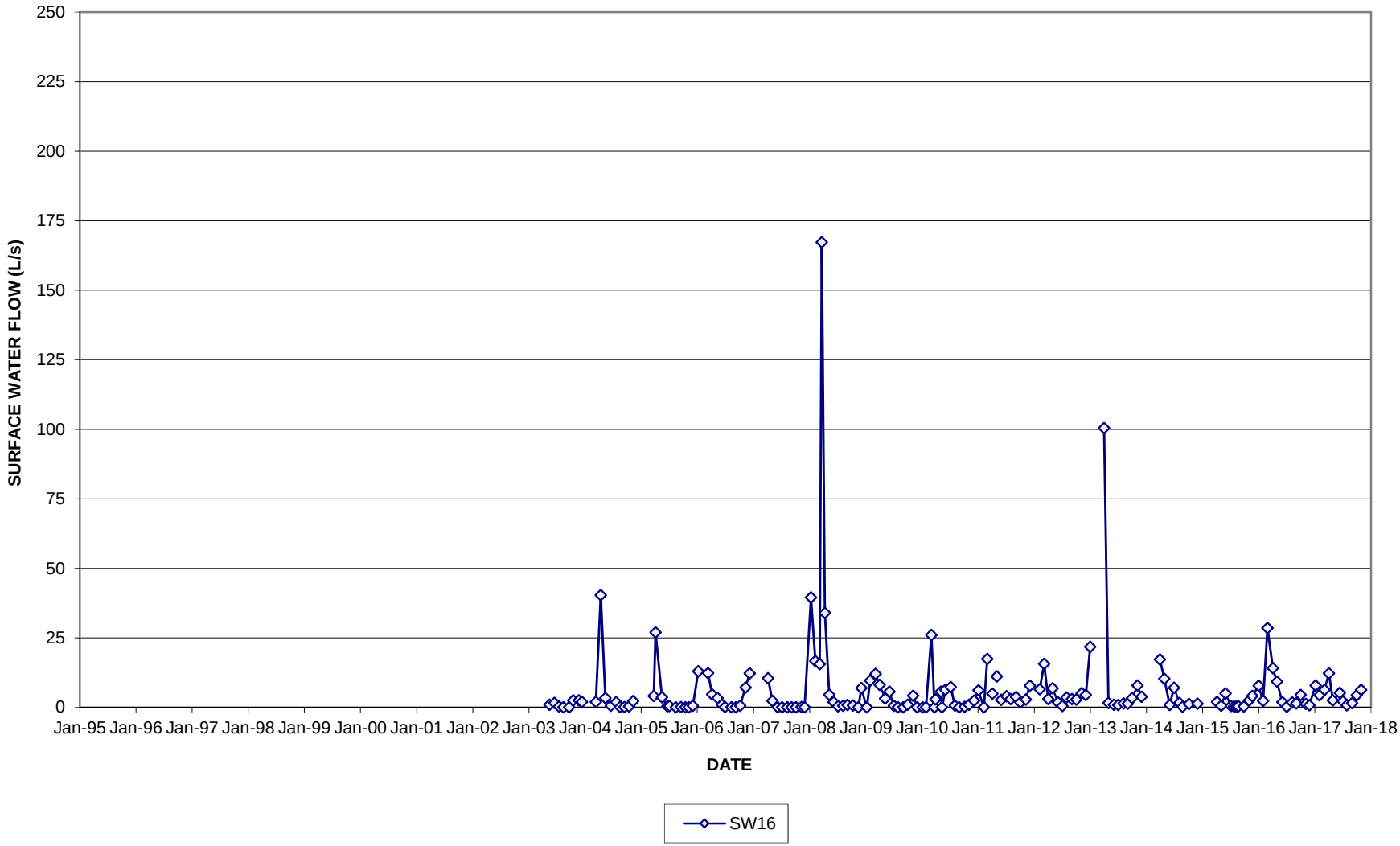
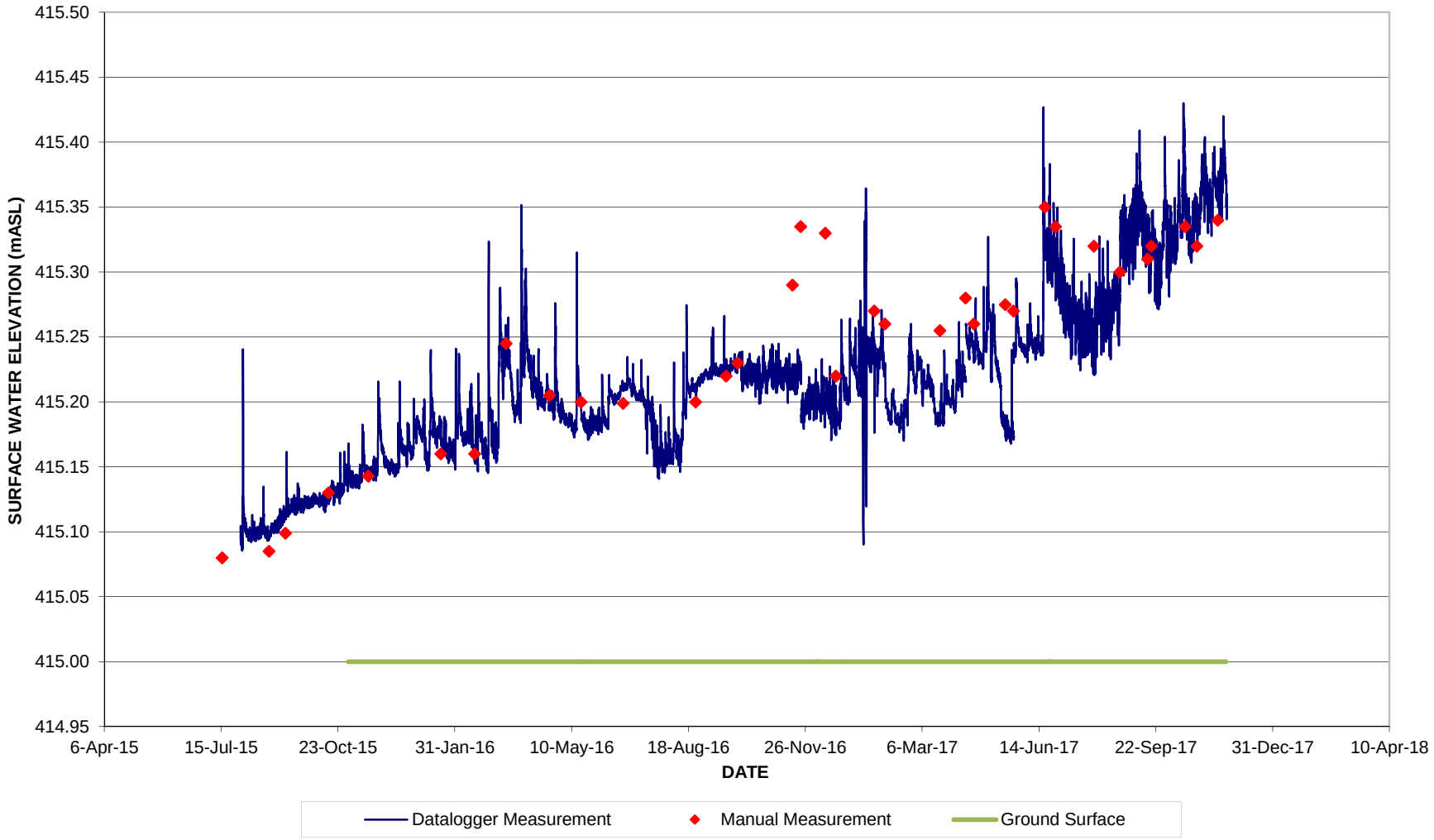


FIGURE B-28 (a)

SURFACE WATER ELEVATION (DATALOGGER)
SW16



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FIGURE B-28 (b)

SURFACE WATER TEMPERATURE (DATALOGGER)
SW16

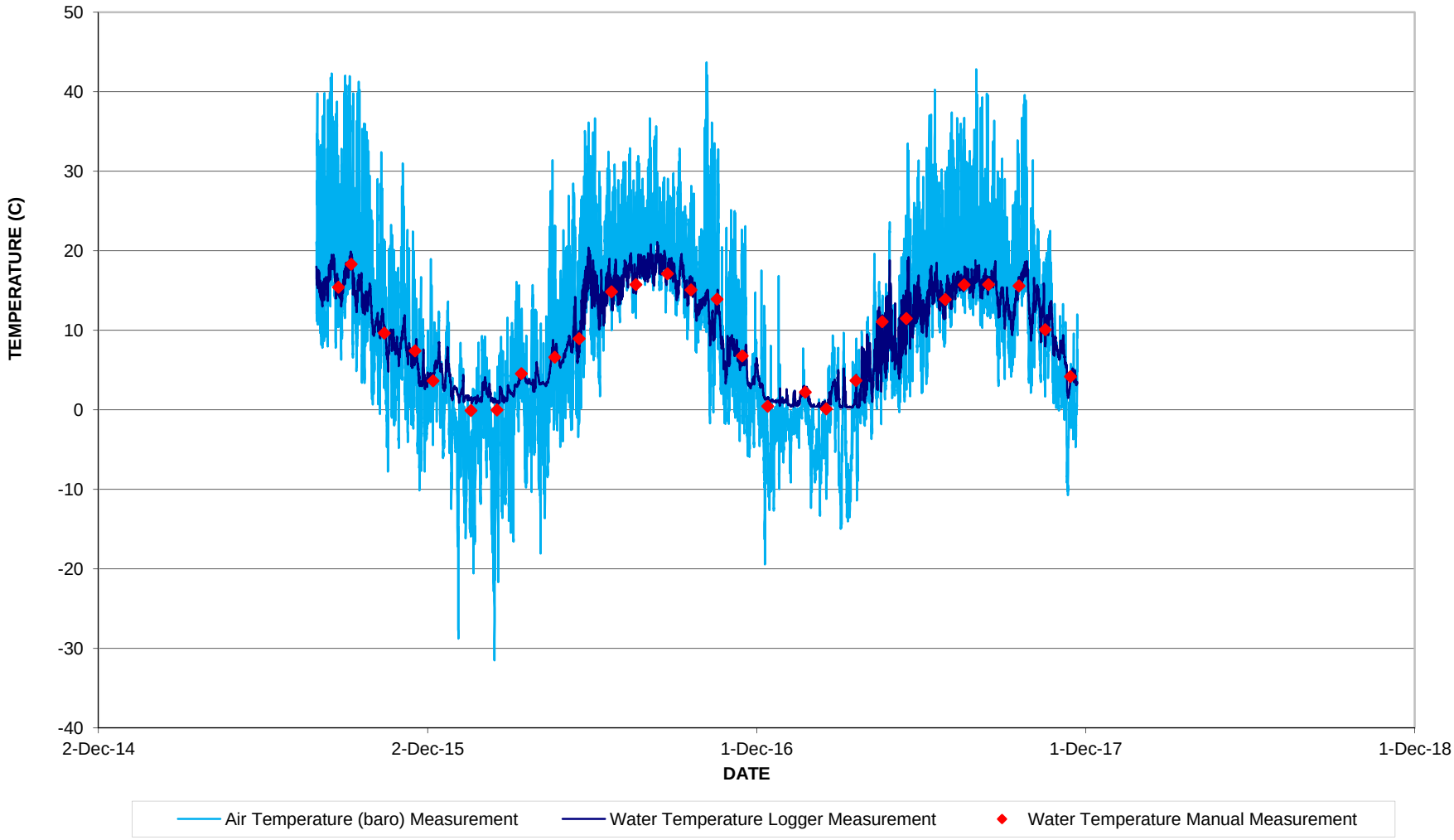


FIGURE B-29

SURFACE WATER HYDROGRAPH
SW17

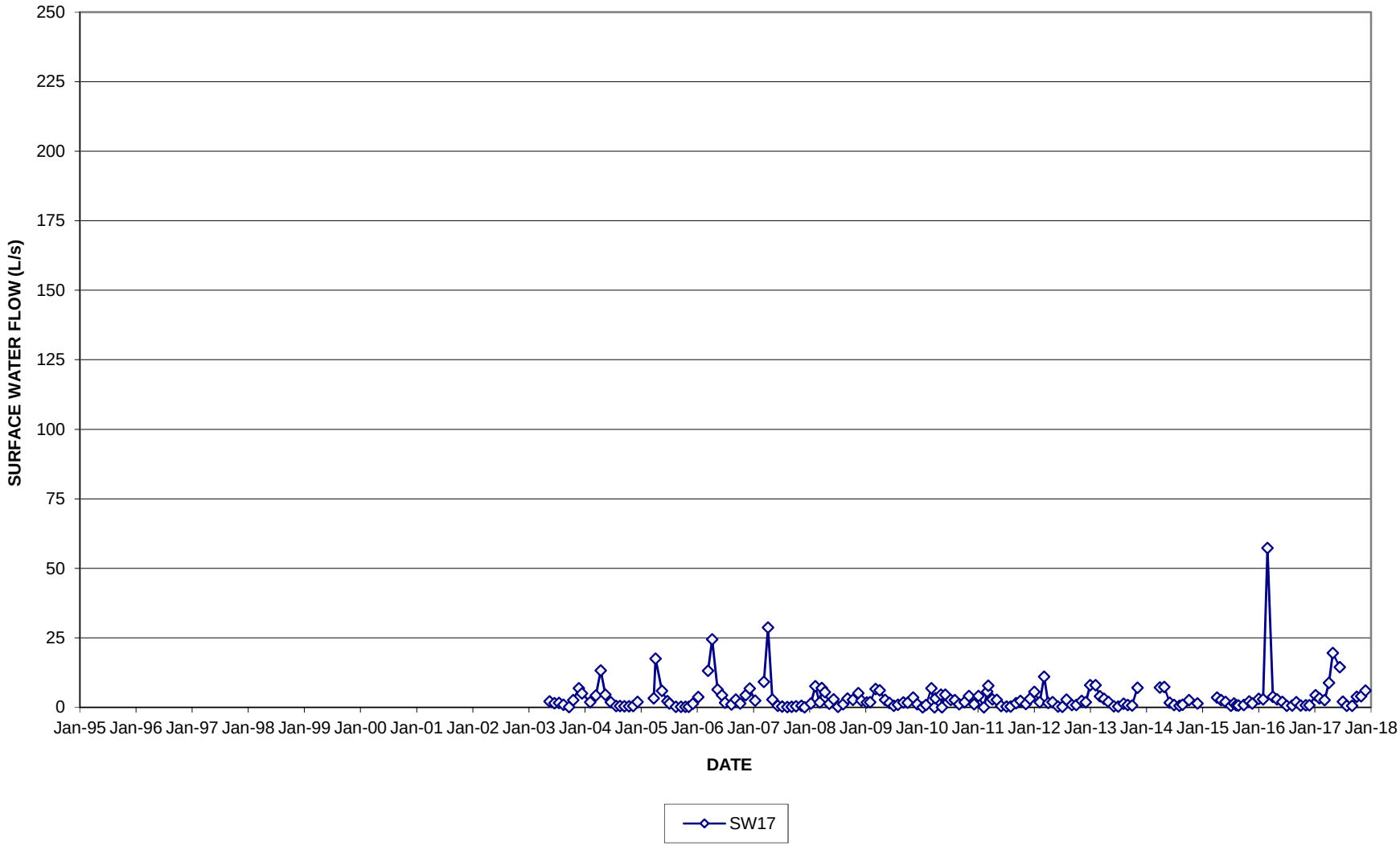


FIGURE B-30

SURFACE WATER HYDROGRAPH
SW17A

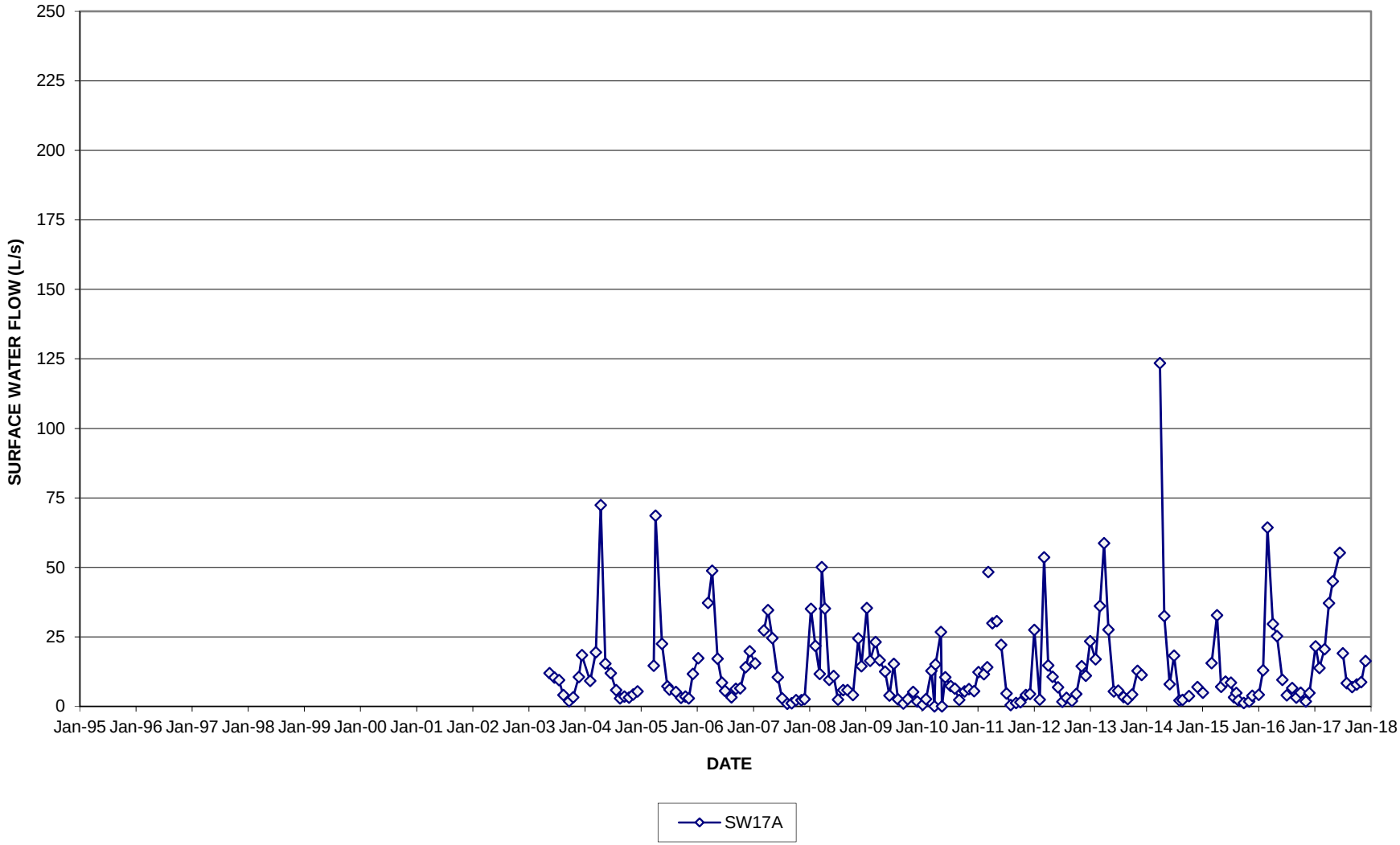


FIGURE B-31

SURFACE WATER HYDROGRAPH
SW17B

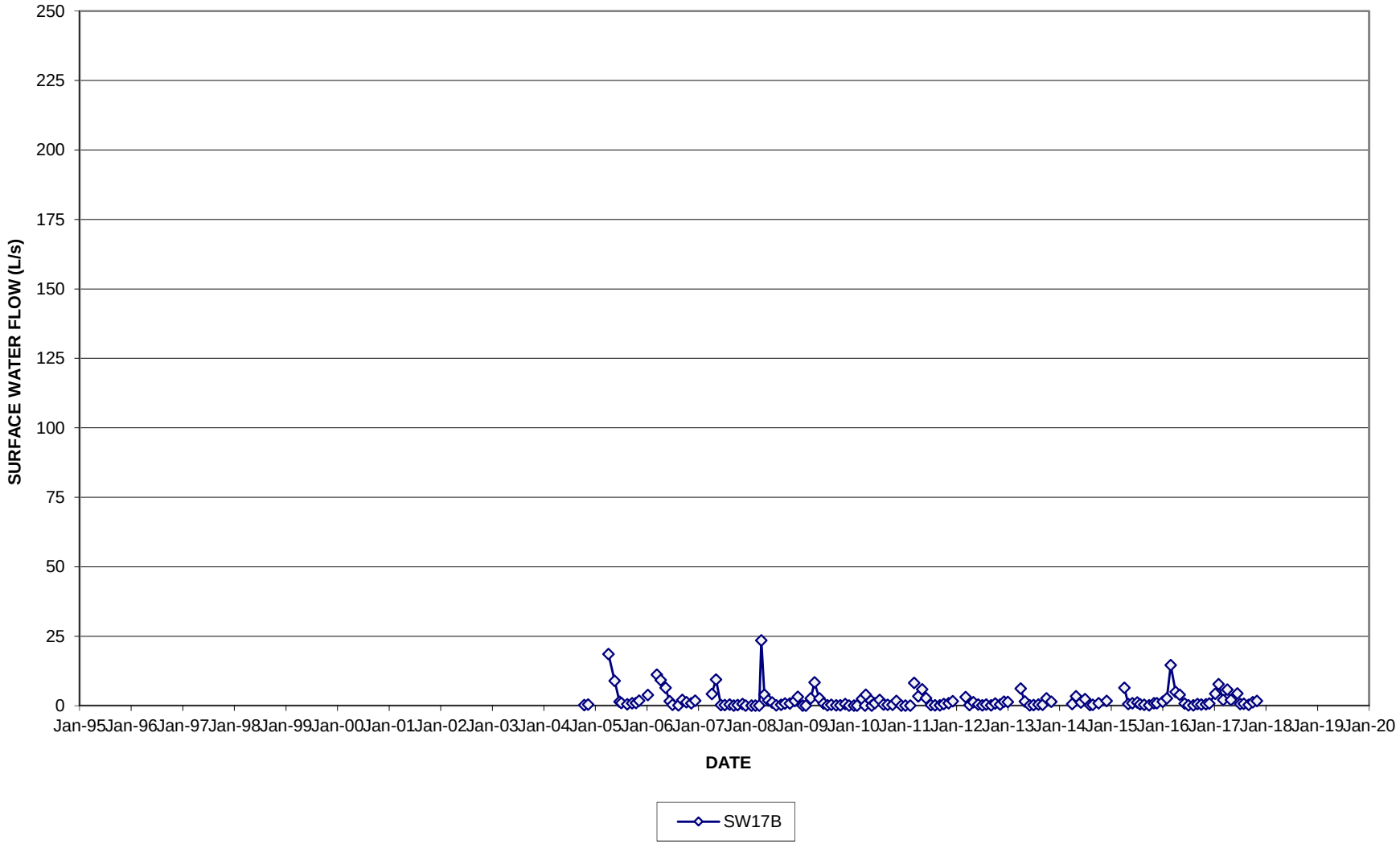


FIGURE B-32

SURFACE WATER HYDROGRAPH
SW18

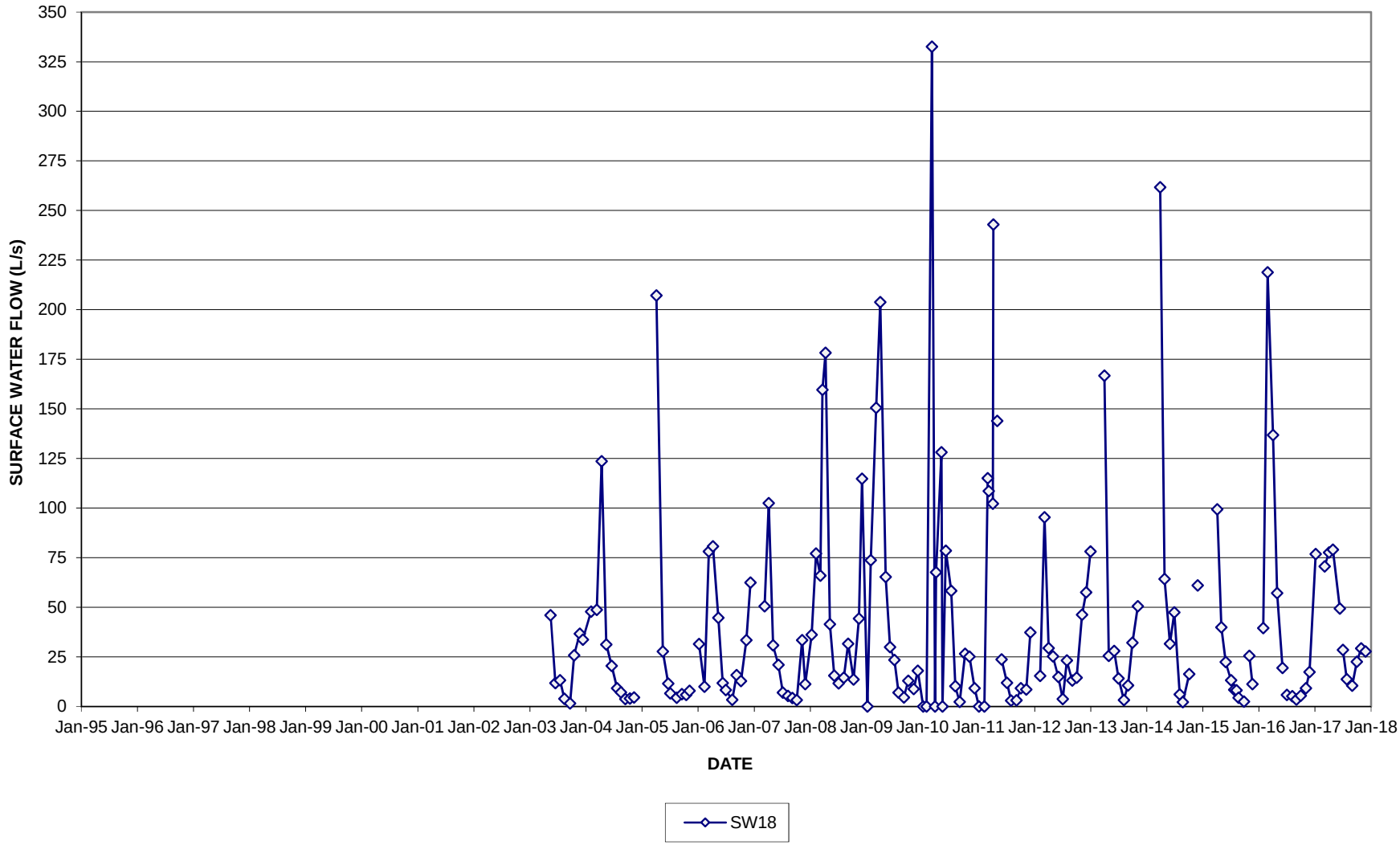


FIGURE B-33

SURFACE WATER HYDROGRAPH
SW19

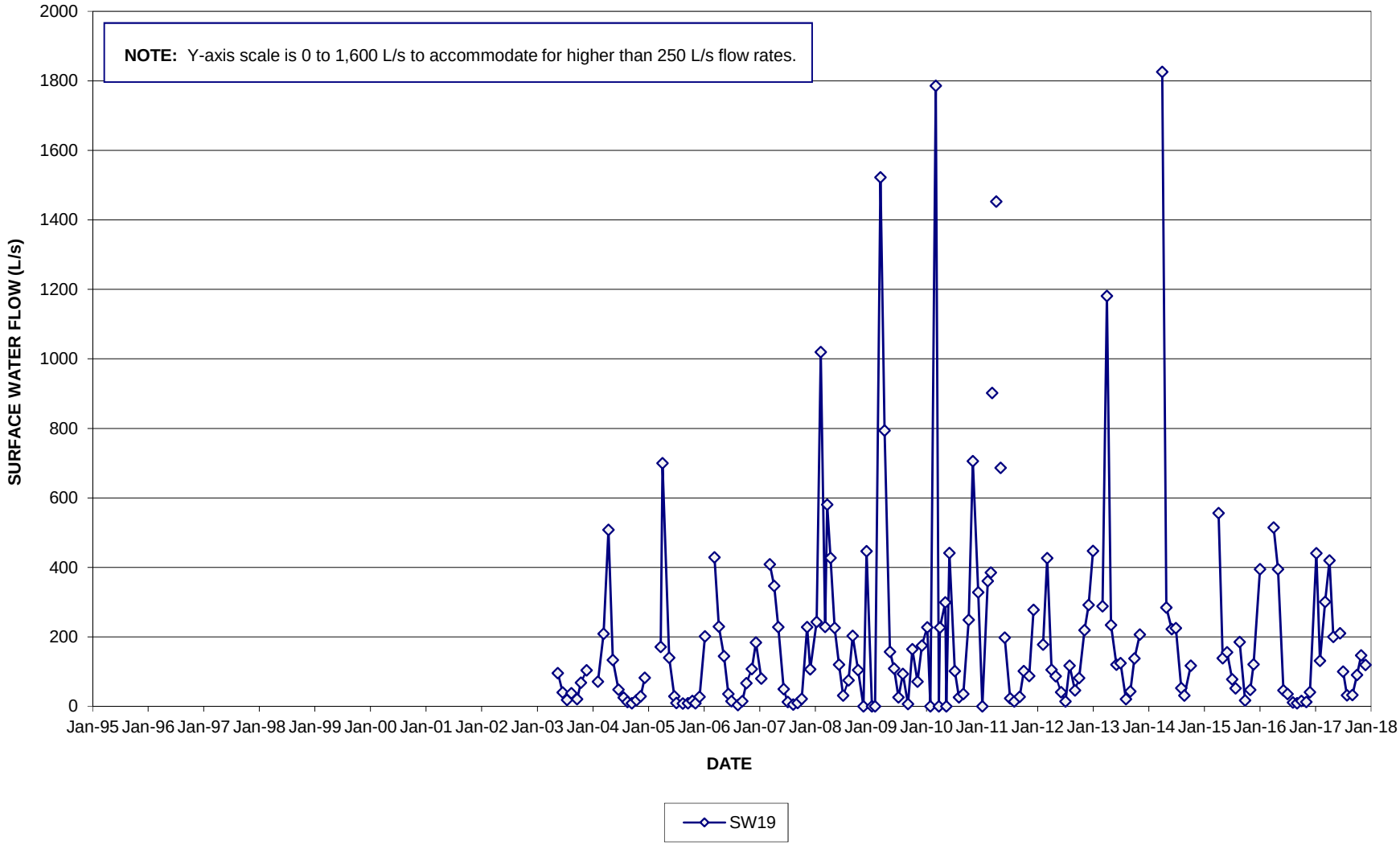


FIGURE B-34

SURFACE WATER HYDROGRAPH
SW20

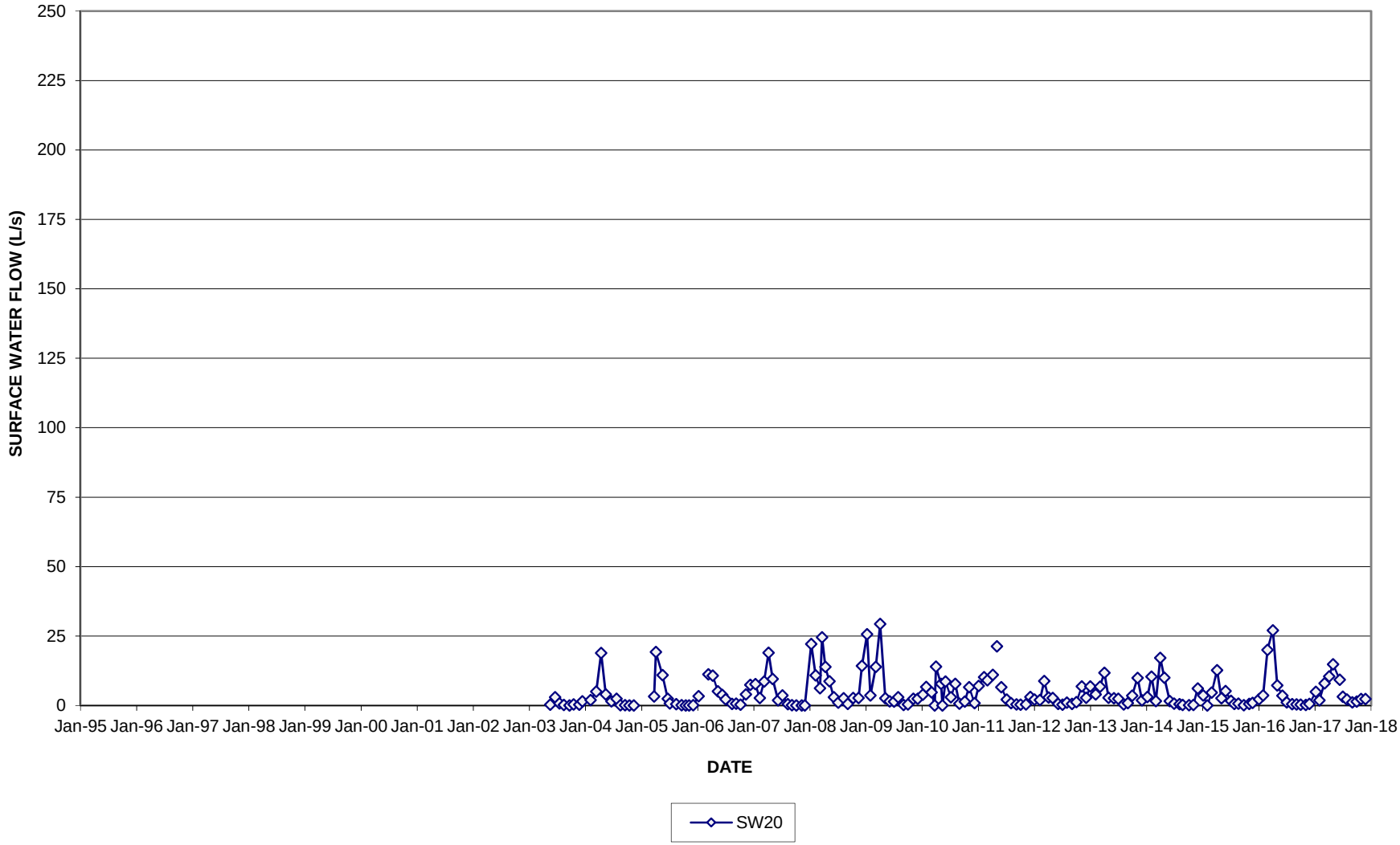


FIGURE B-35

SURFACE WATER HYDROGRAPH
SW21

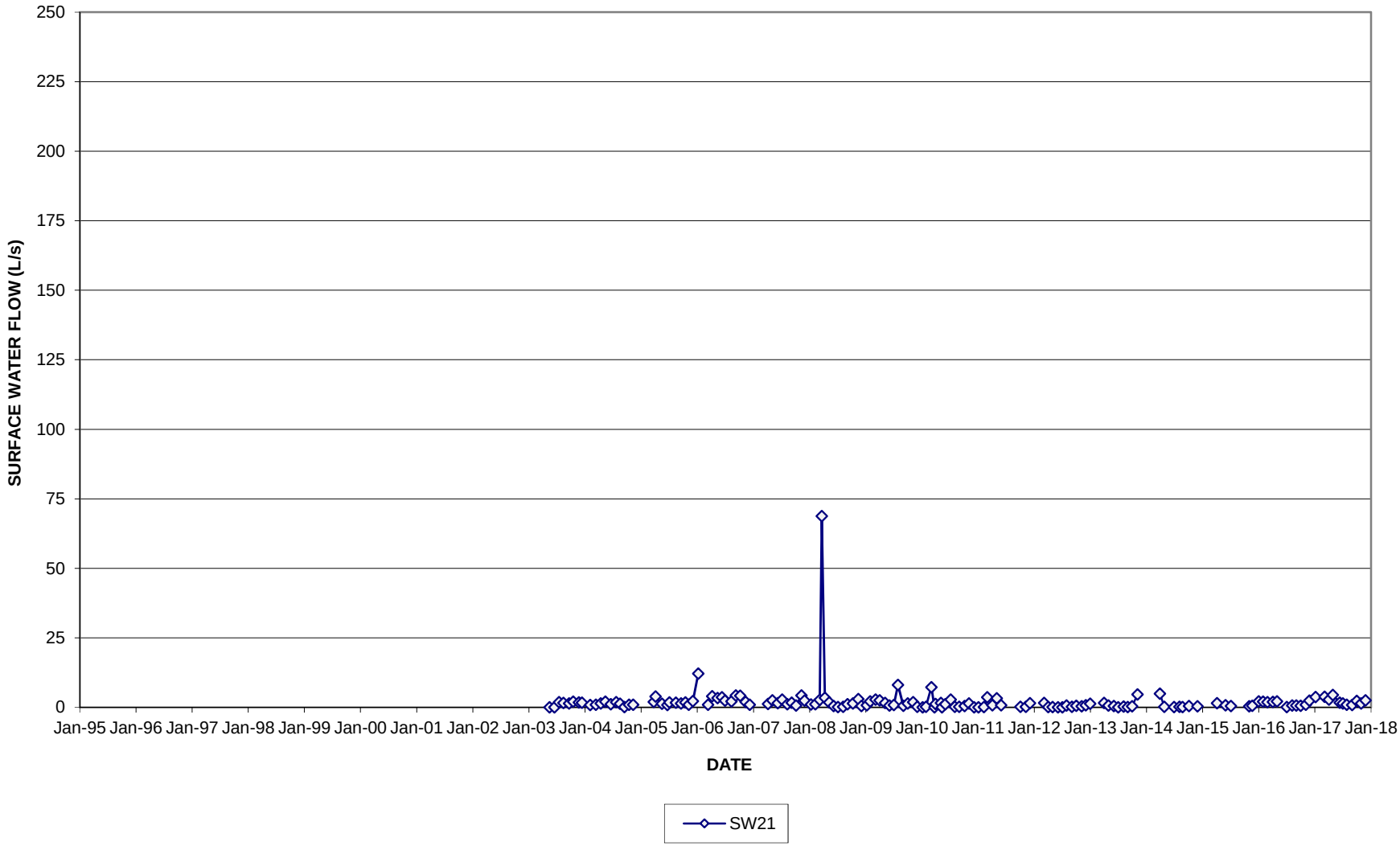


FIGURE B-36

SURFACE WATER HYDROGRAPH
SW21A

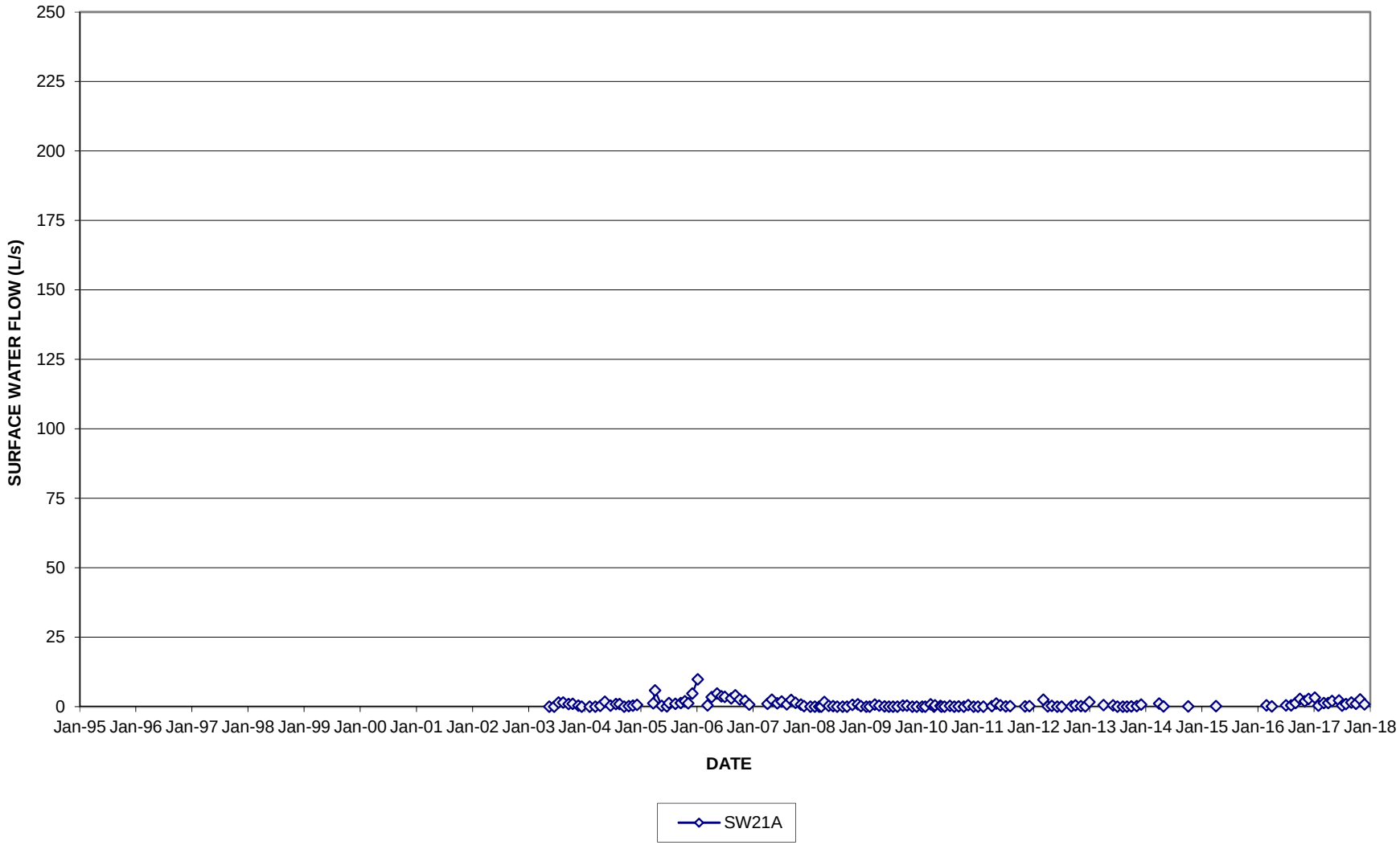


FIGURE B-37

SURFACE WATER HYDROGRAPH
SW21B

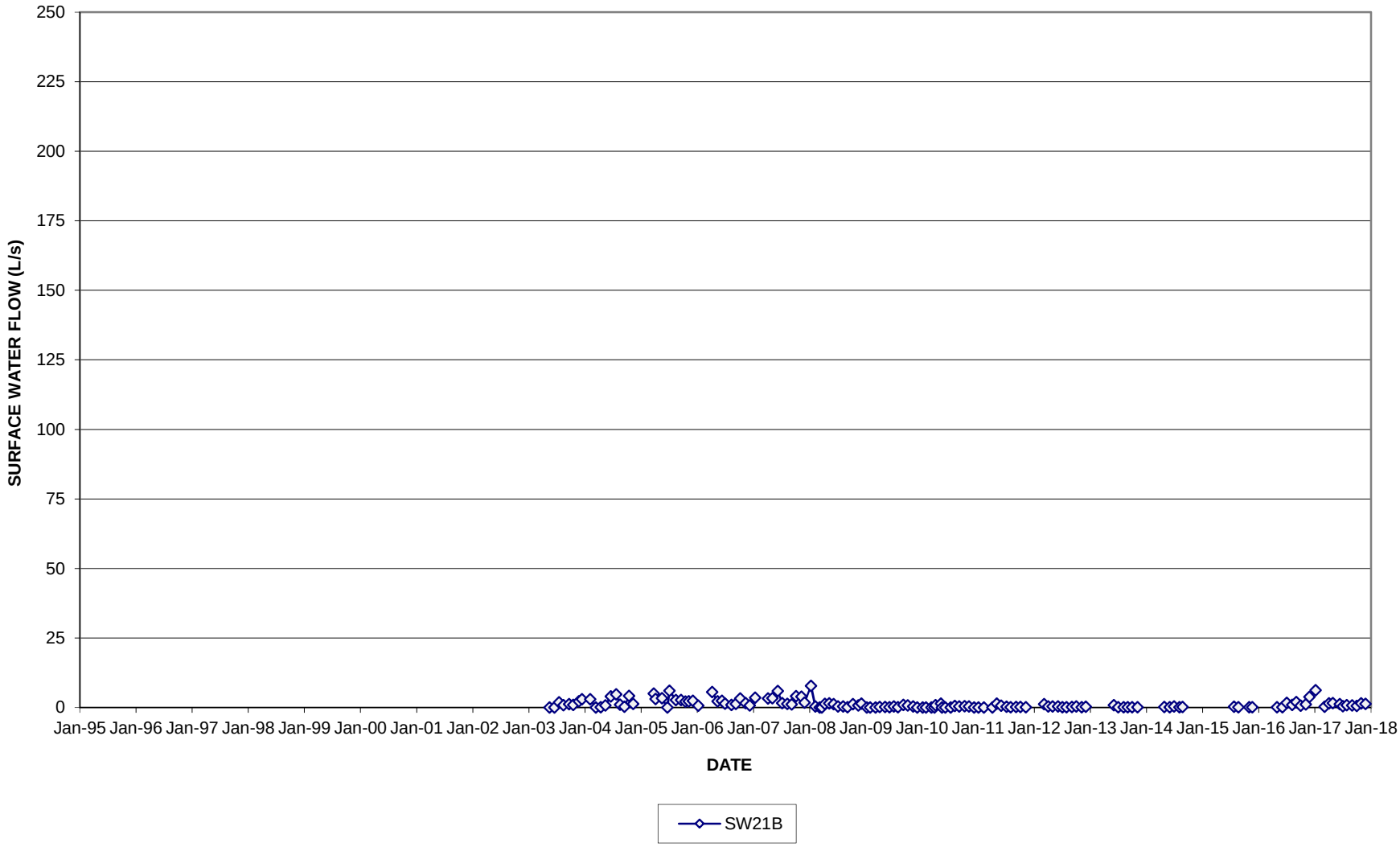


FIGURE B-38

SURFACE WATER HYDROGRAPH
SW21C

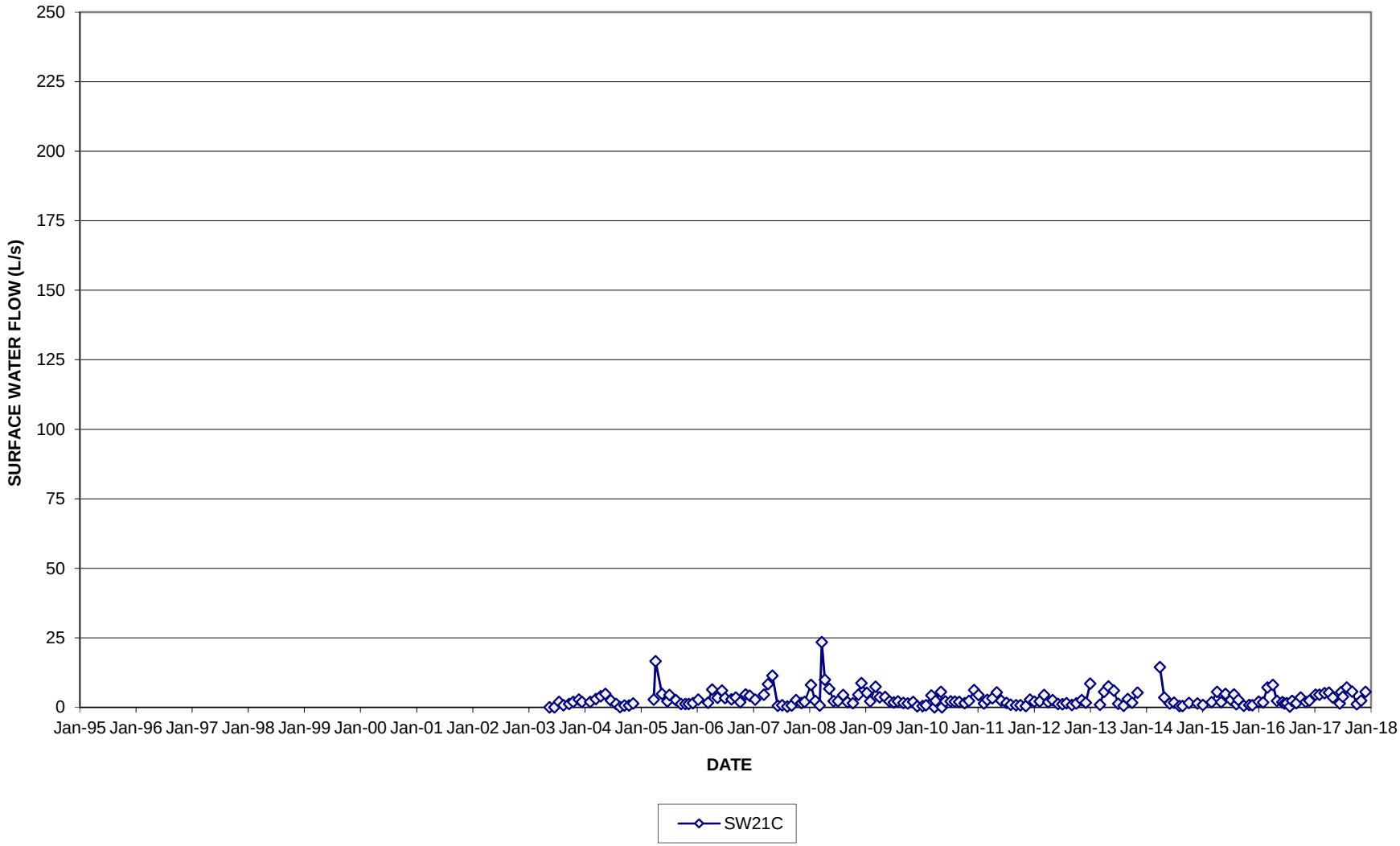


FIGURE B-39

SURFACE WATER HYDROGRAPH
SW21D

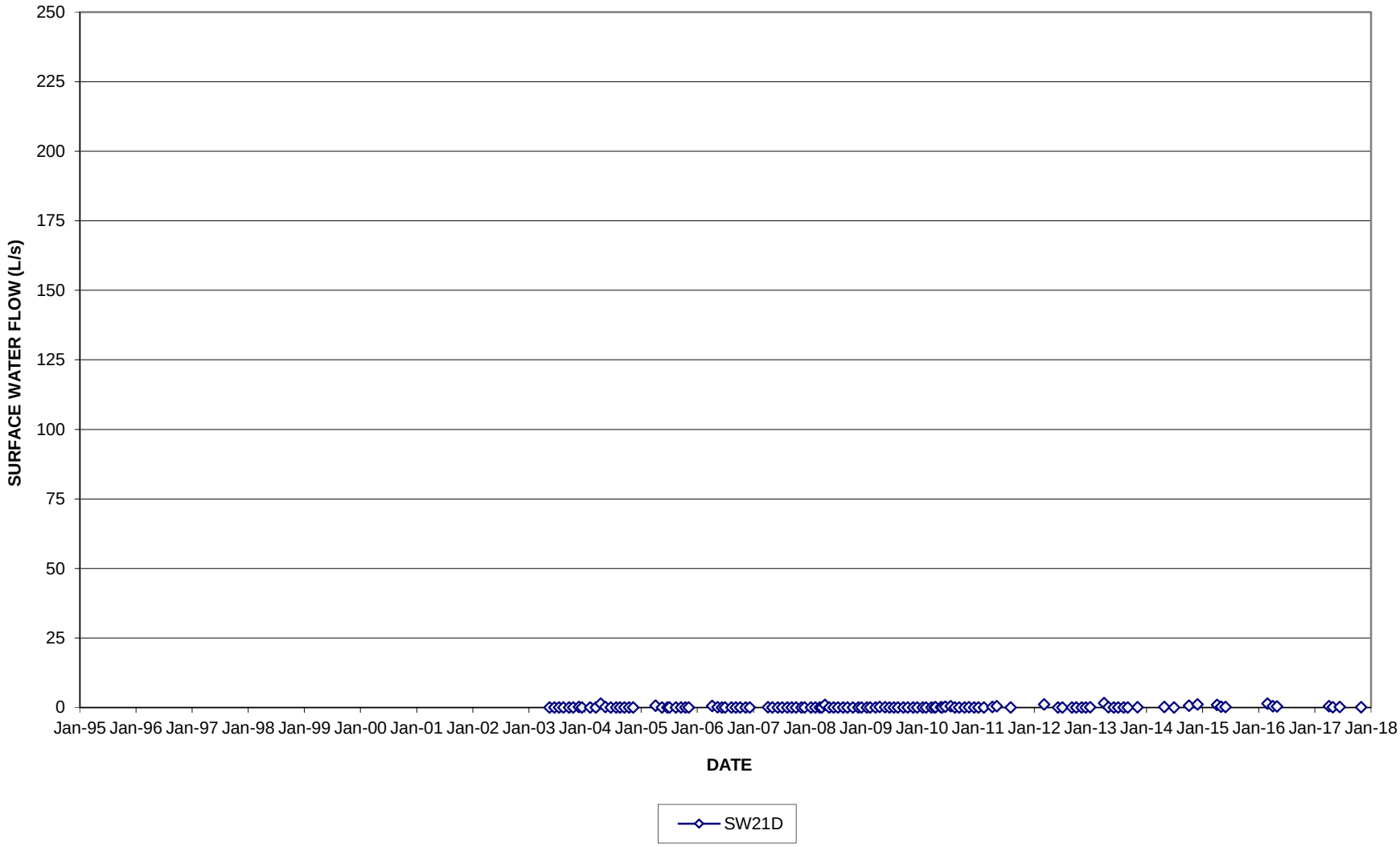


FIGURE B-40

SURFACE WATER HYDROGRAPH
SW22

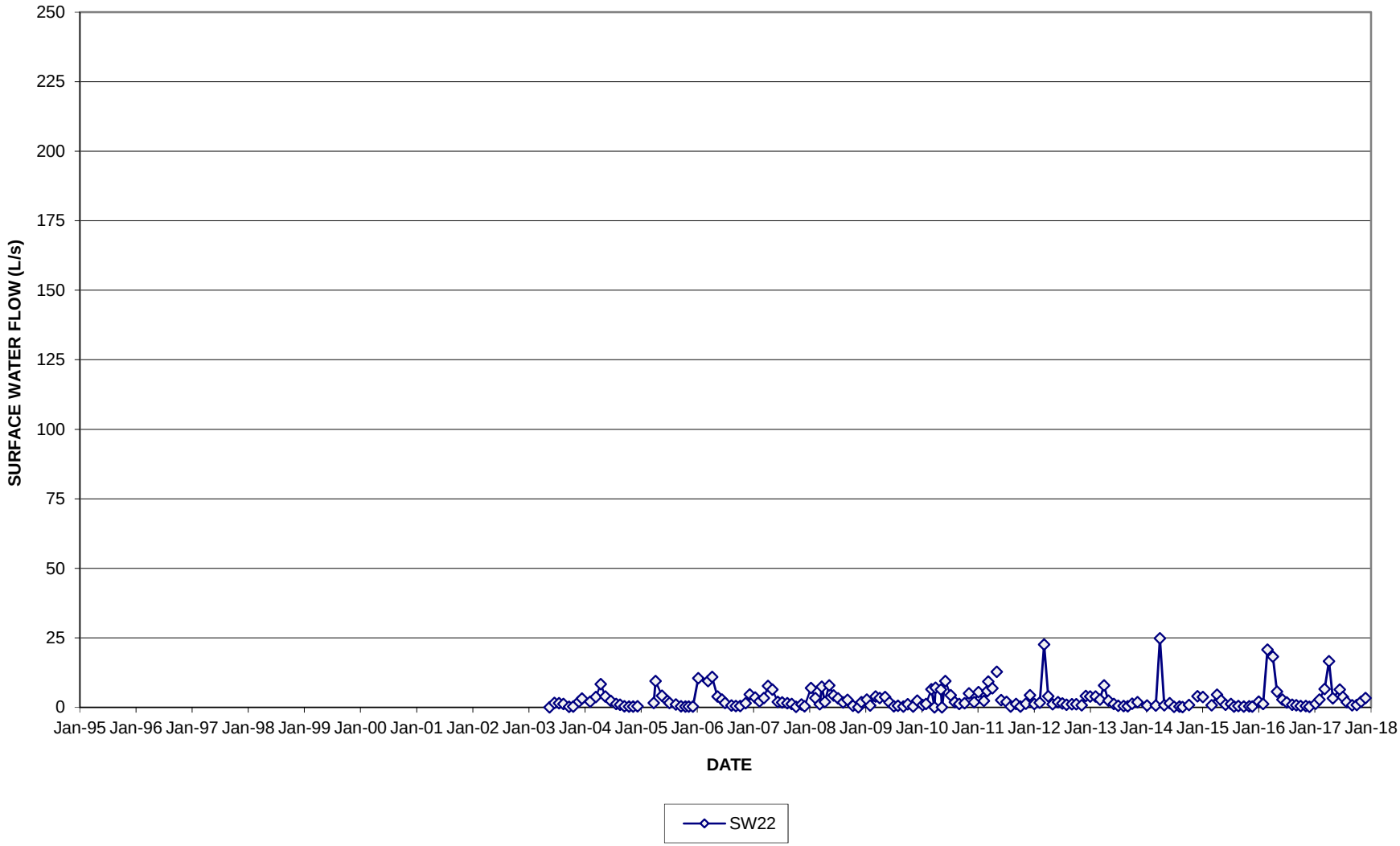


FIGURE B-41

SURFACE WATER HYDROGRAPH
SW22A

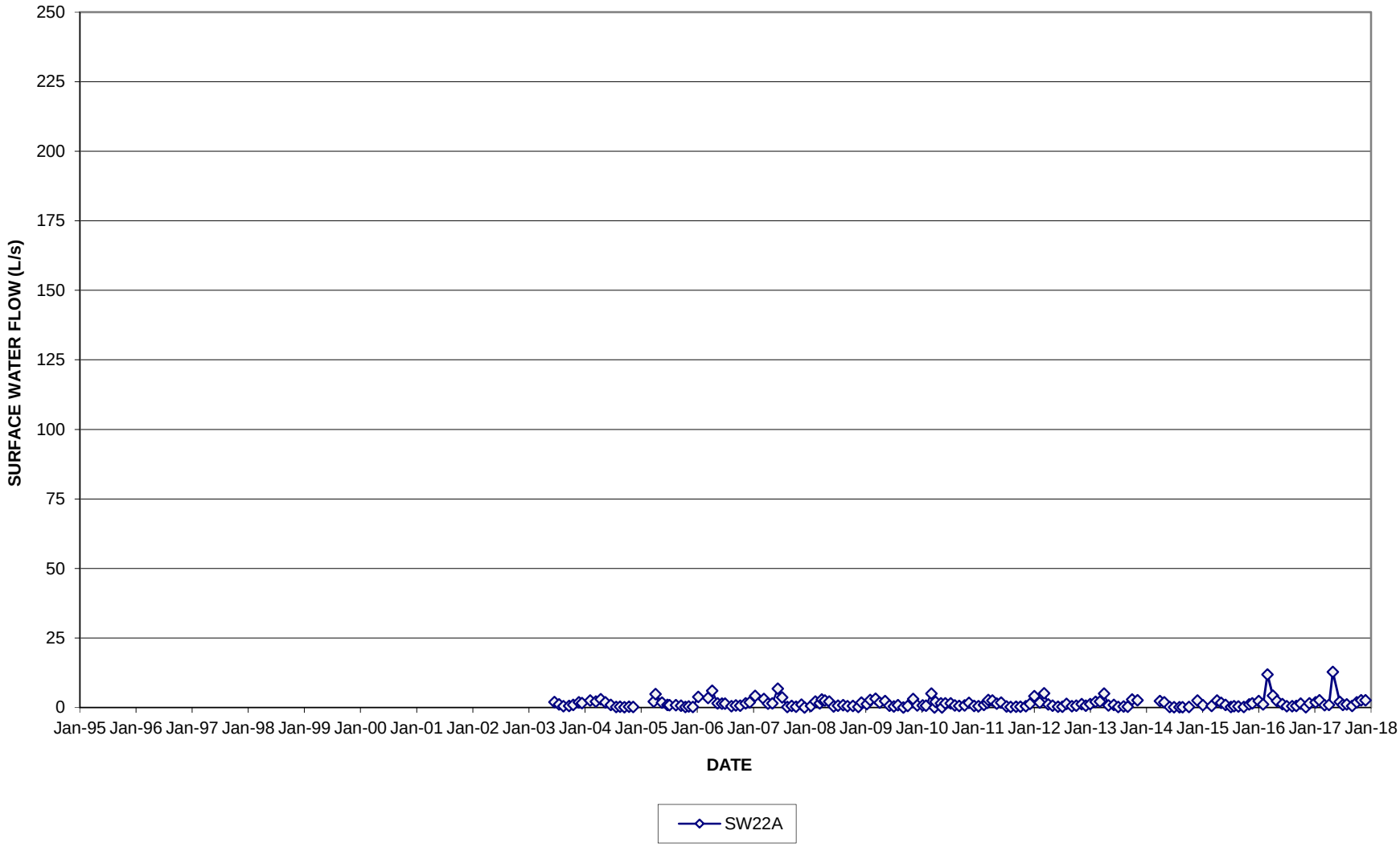


FIGURE B-42

SURFACE WATER HYDROGRAPH
SW22B



FIGURE B-43

SURFACE WATER HYDROGRAPH
SW22C

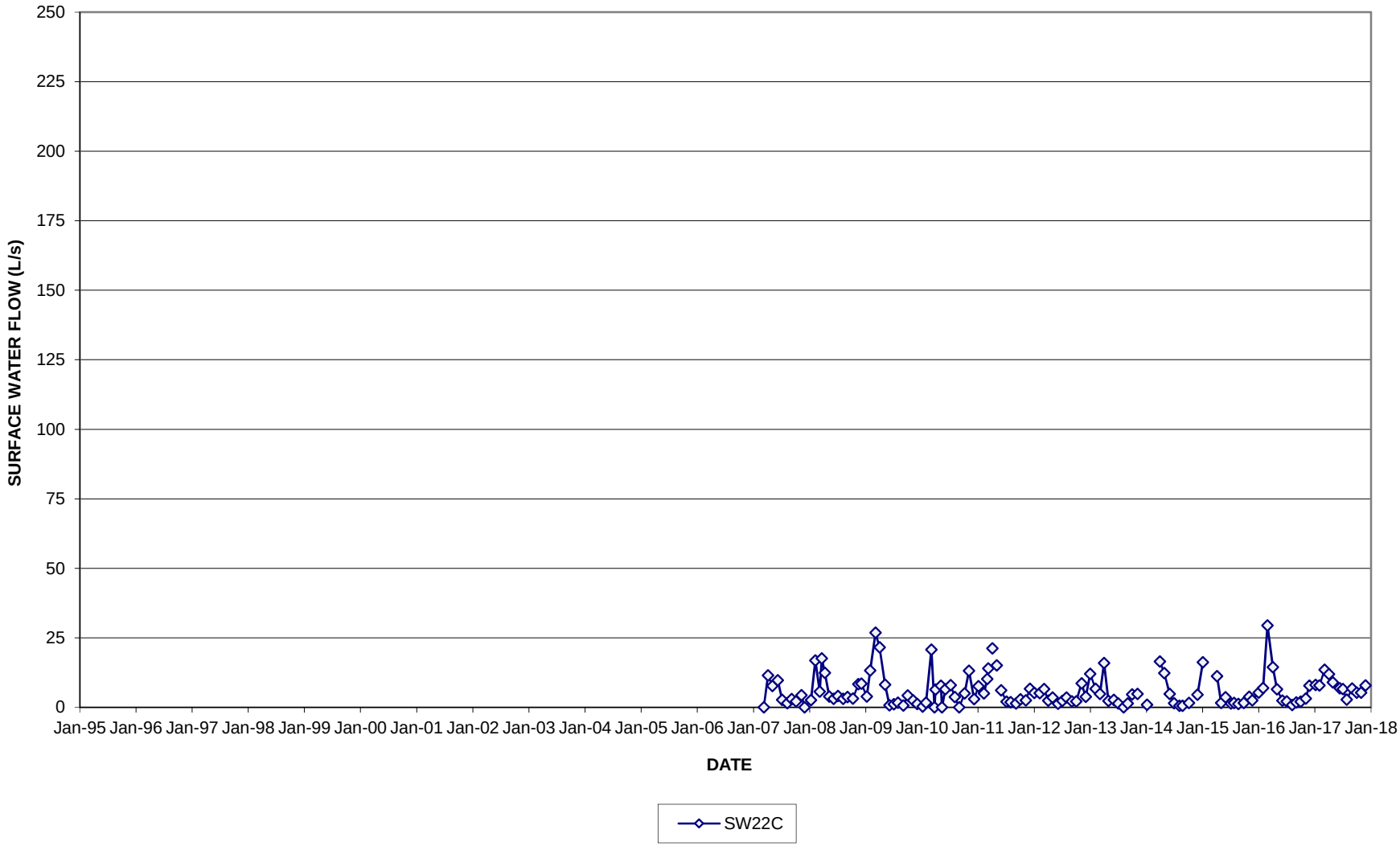


FIGURE B-44

SURFACE WATER HYDROGRAPH
SW23

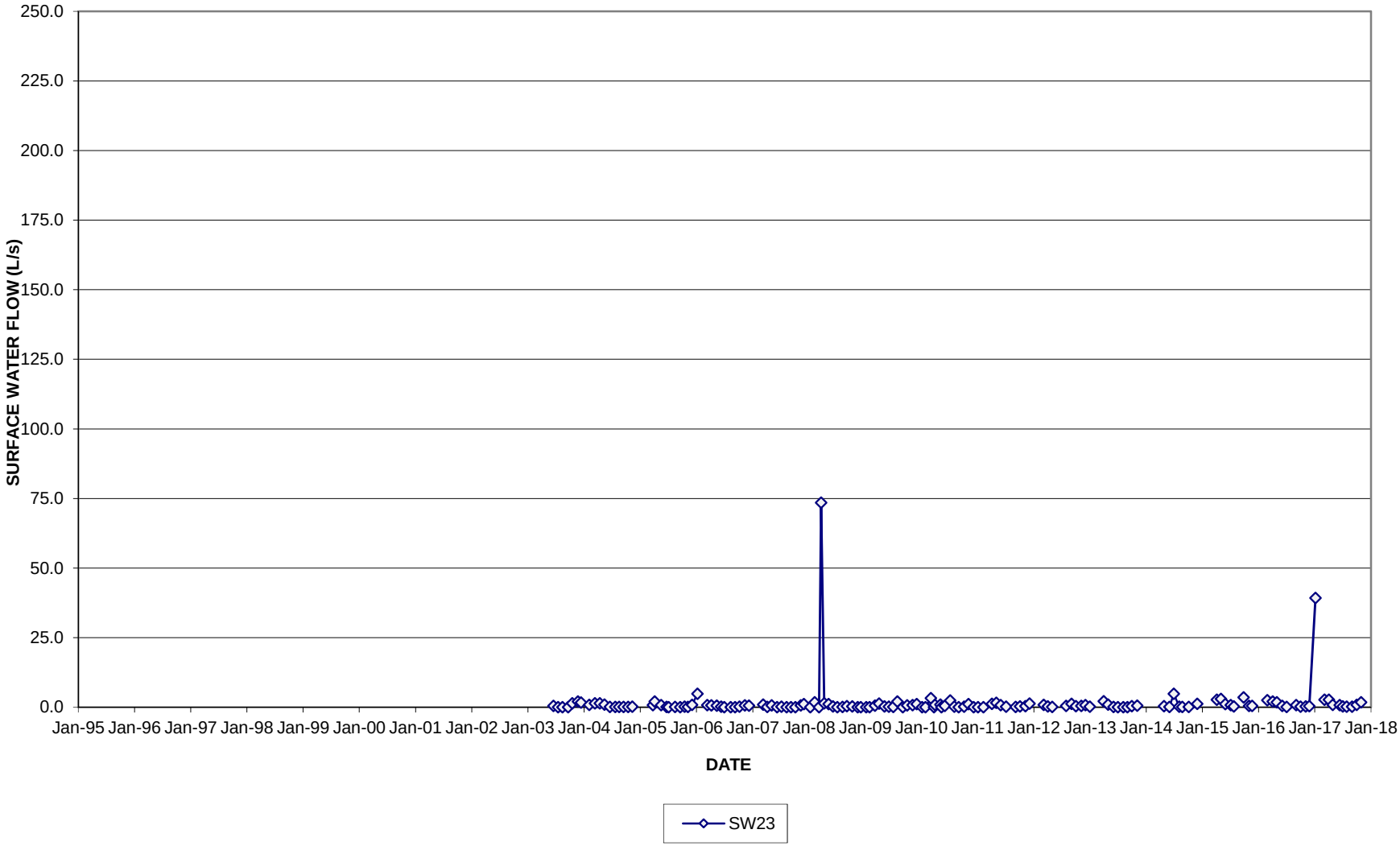


FIGURE B-45

SURFACE WATER HYDROGRAPH
SW24

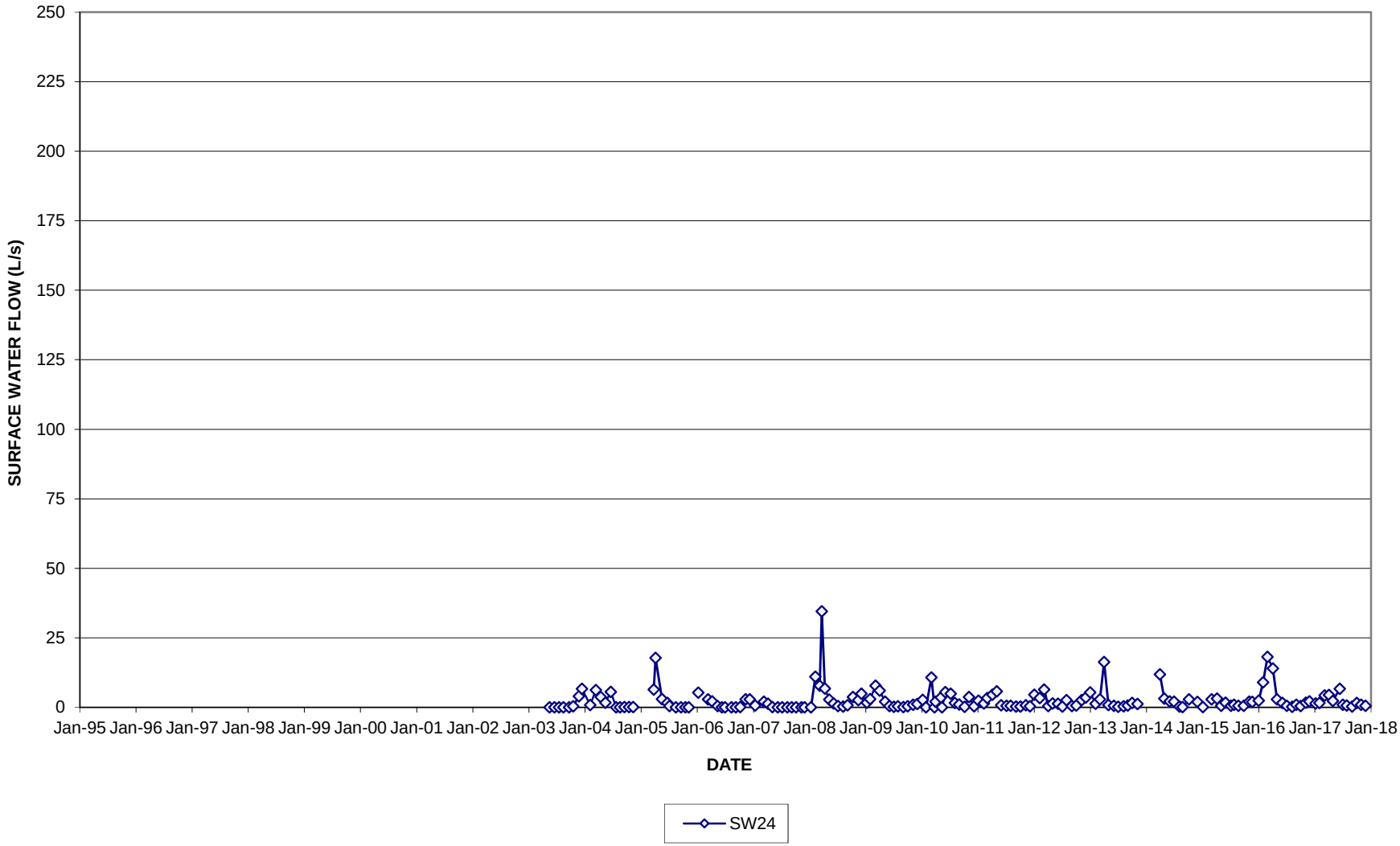


FIGURE B-46

SURFACE WATER HYDROGRPAH
SW24A

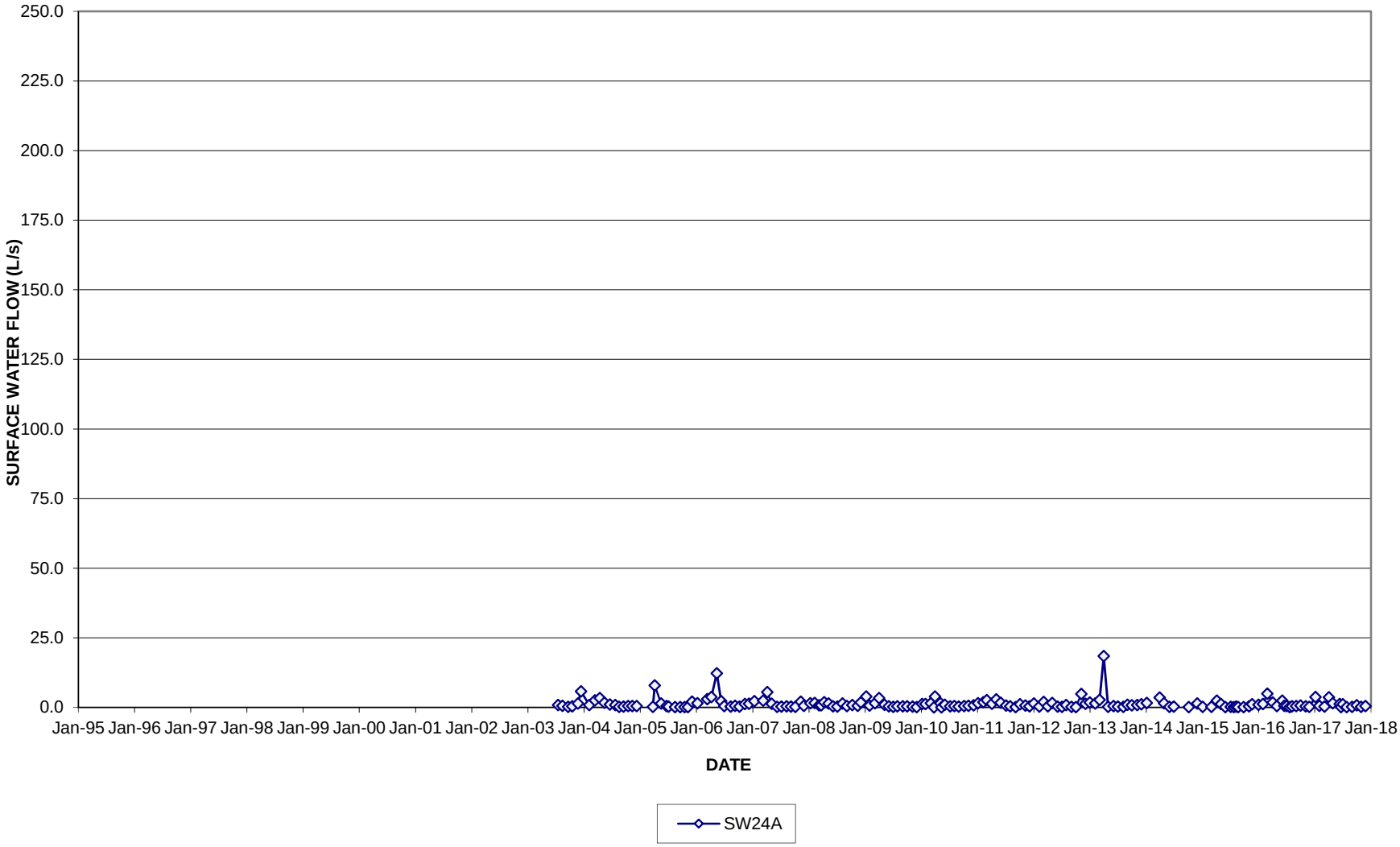


FIGURE B-47

SURFACE WATER HYDROGRAPH
SW24B

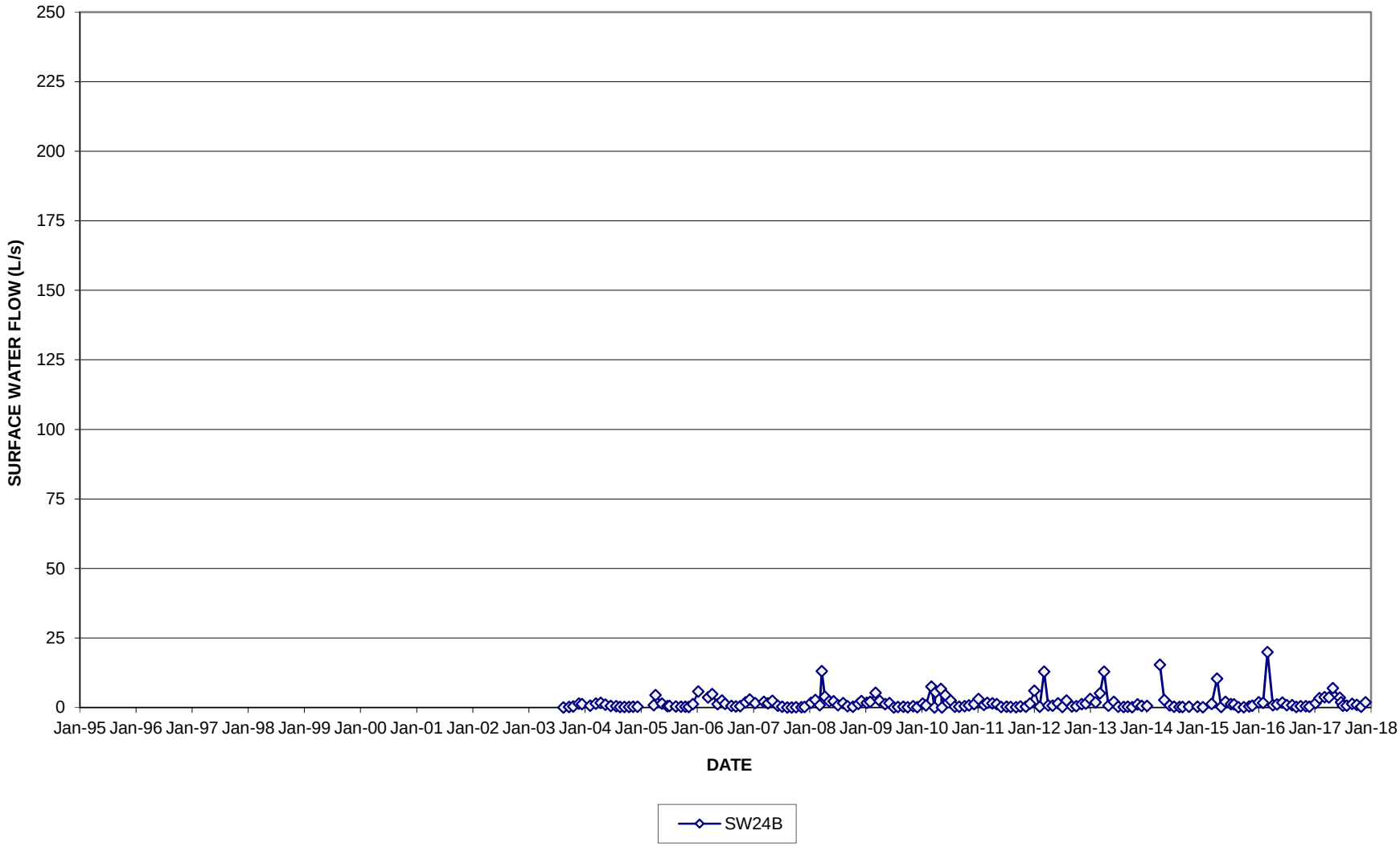


FIGURE B-48

SURFACE WATER HYDROGRAPH
SW24C

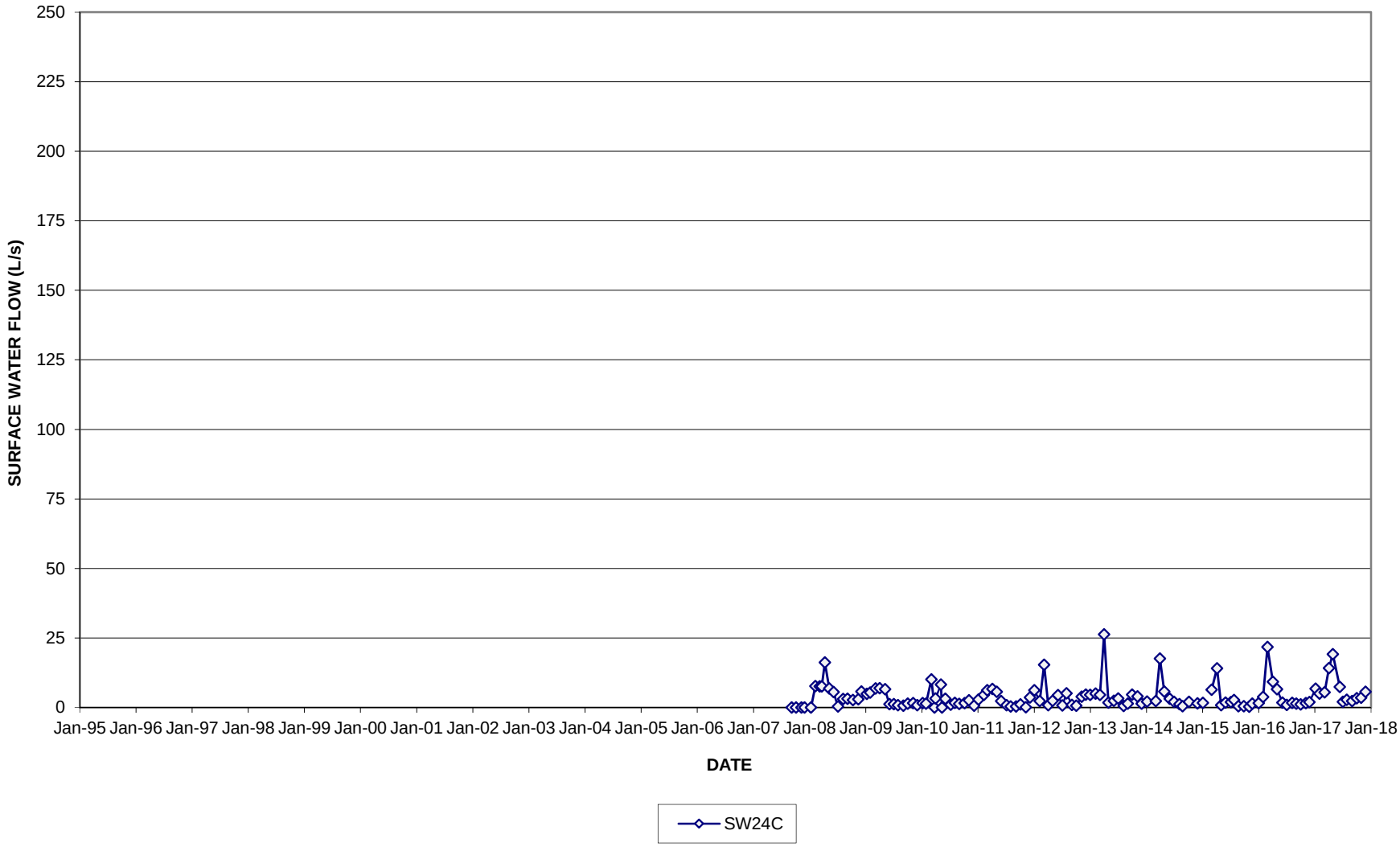


FIGURE B-49

SURFACE WATER HYDROGRAPH
SW25

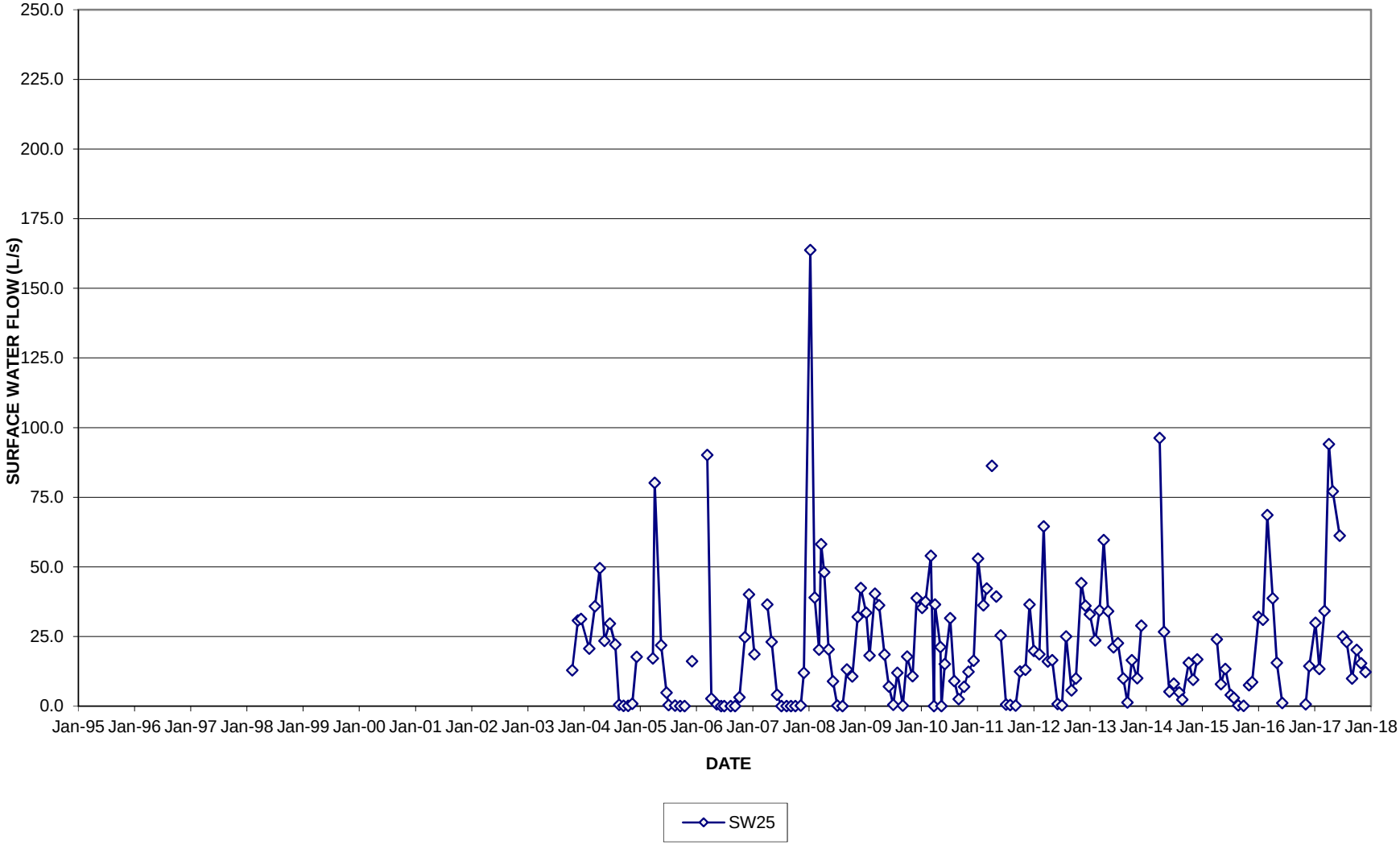


FIGURE B-50

SURFACE WATER HYDROGRAPH
SW26

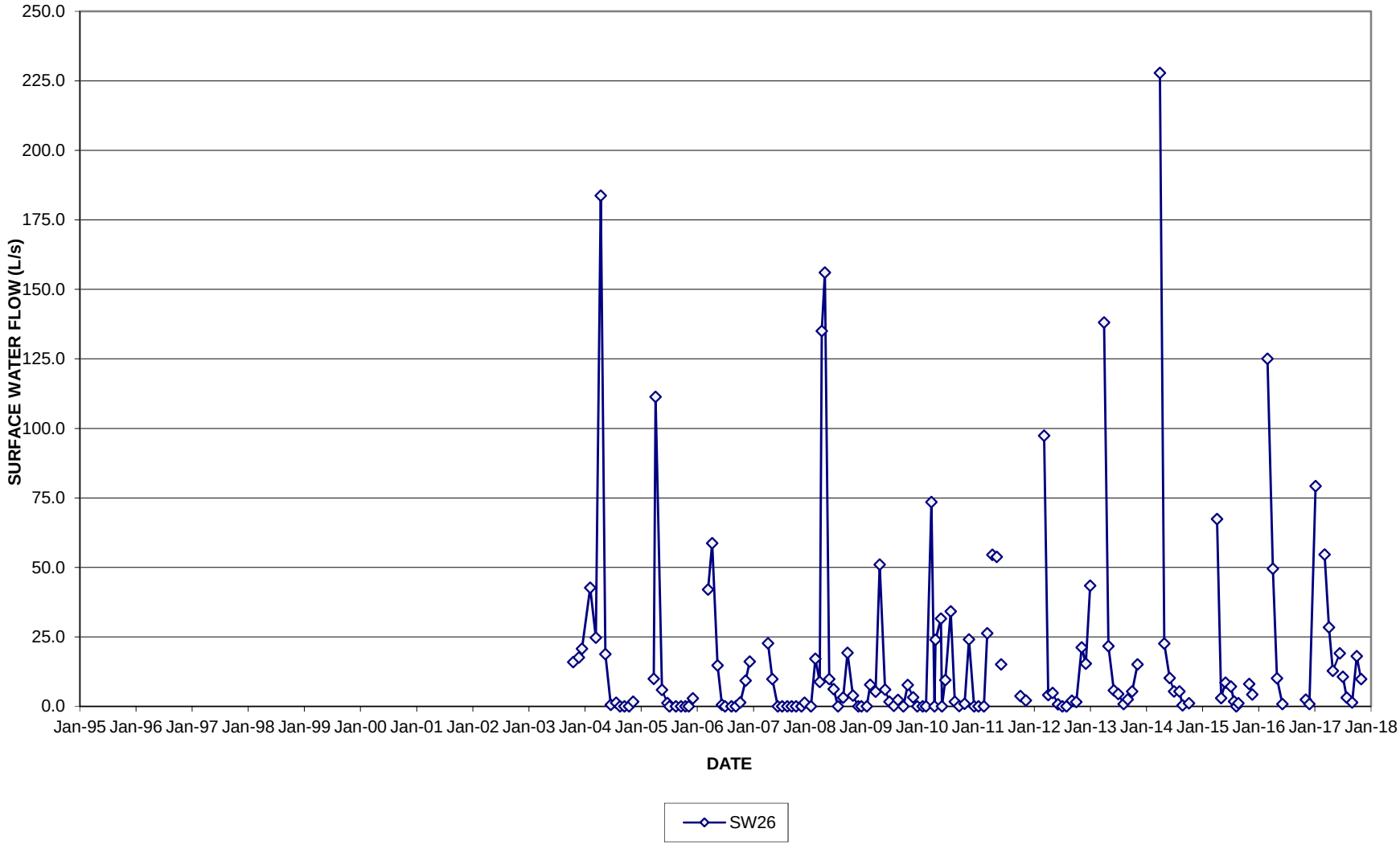


FIGURE B-51

SURFACE WATER HYDROGRAPH
SW26A

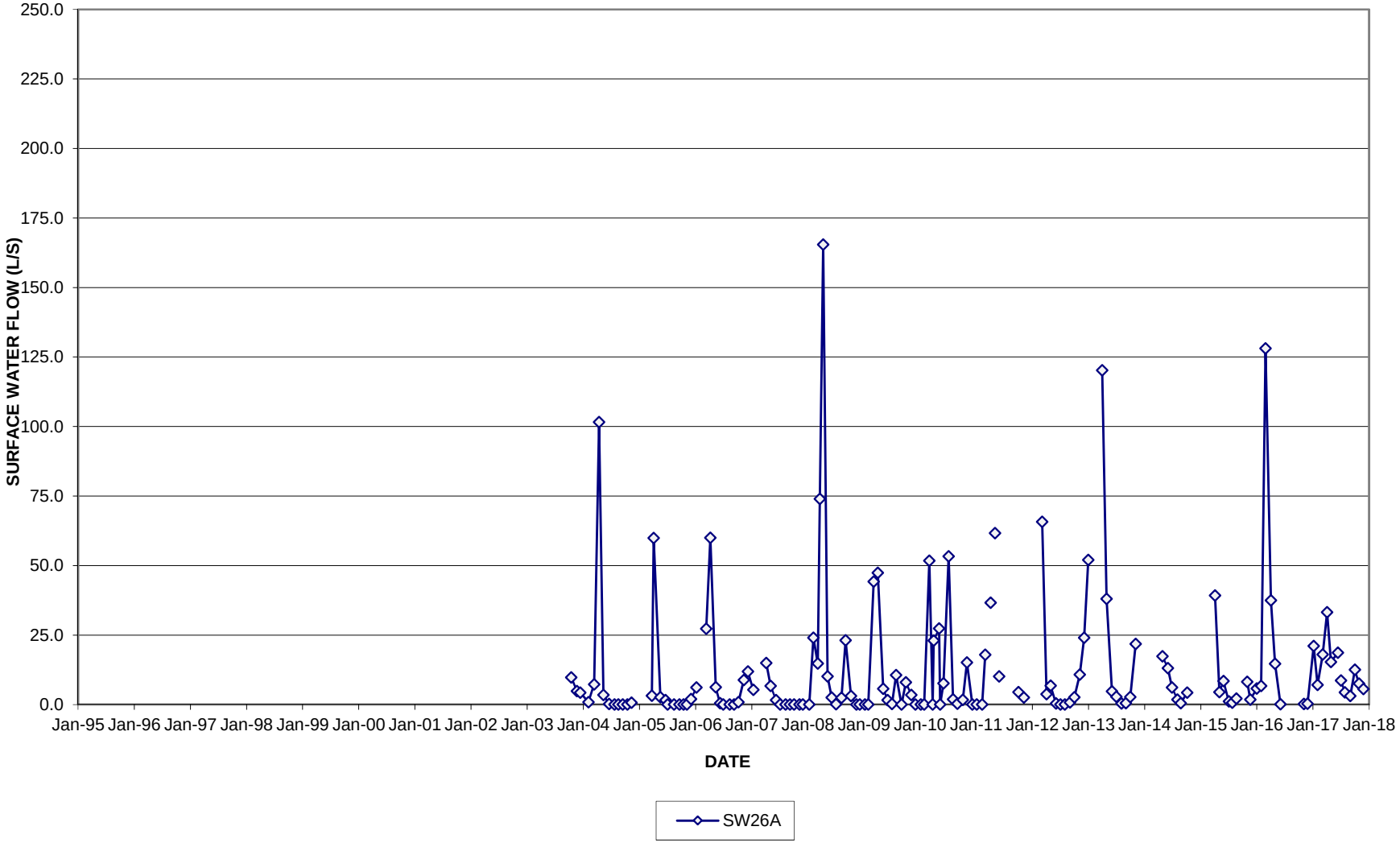


FIGURE B-52

SURFACE WATER HYDROGRAPH
SW27

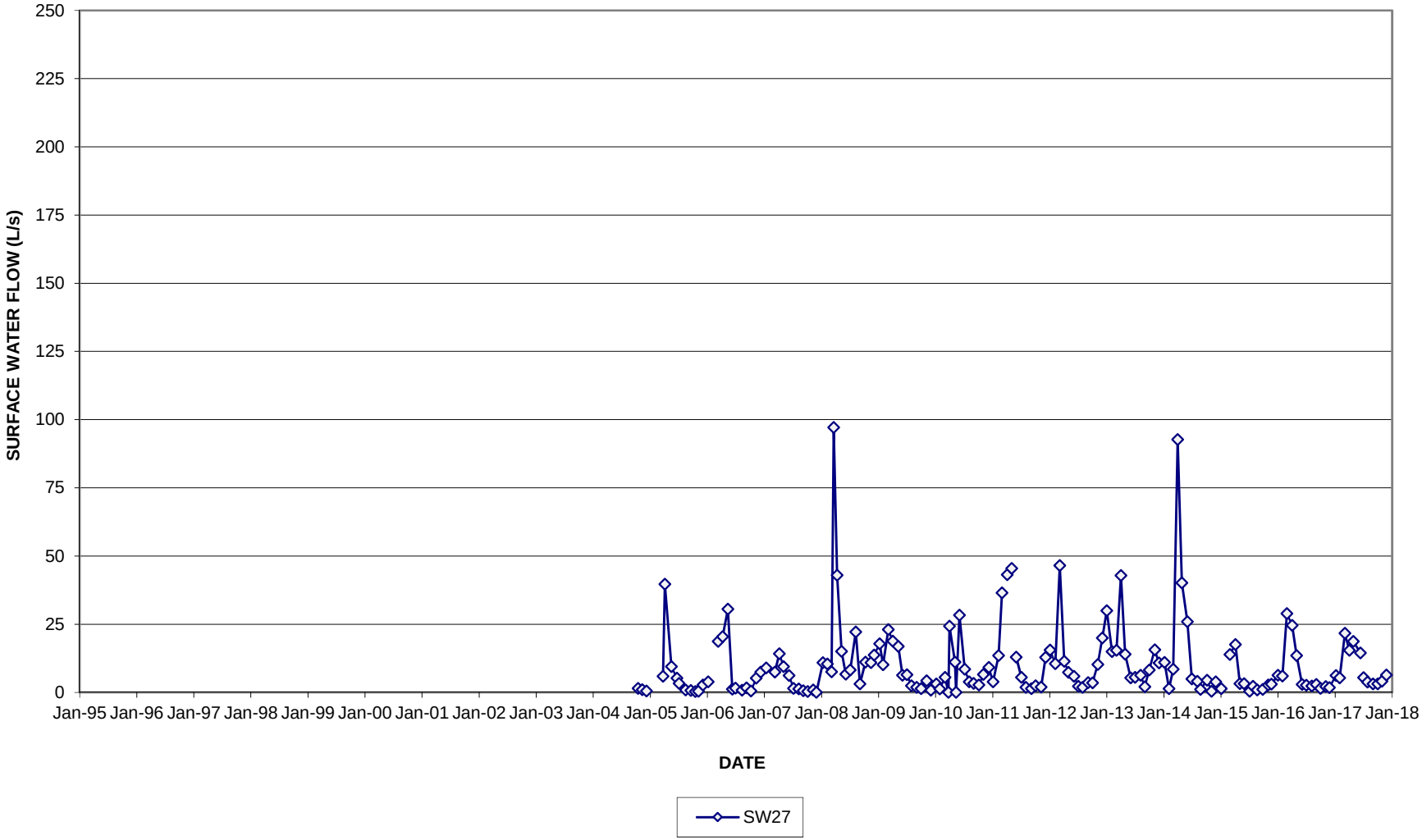


FIGURE B-53

SURFACE WATER HYDROGRAPH
SW77

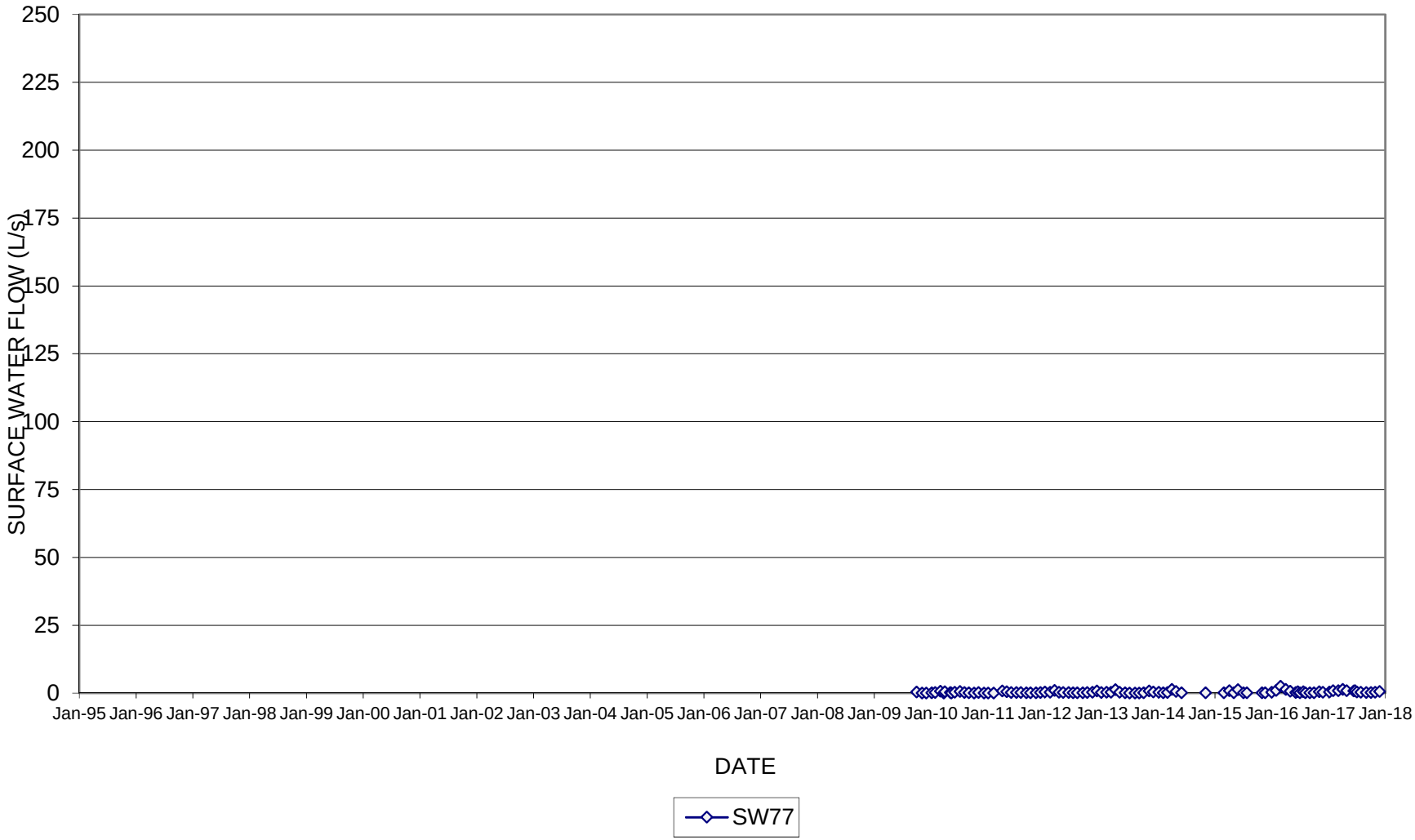


FIGURE B-54

SURFACE WATER HYDROGRAPH
SW3C "RR3 OUT"



FIGURE B-55

SURFACE WATER HYDROGRAPH
SW3B "RR3 KARST"



FIGURE B-55 (a)

SURFACE WATER ELEVATION (DATALOGGER)
RR3 KARST (SW3B)

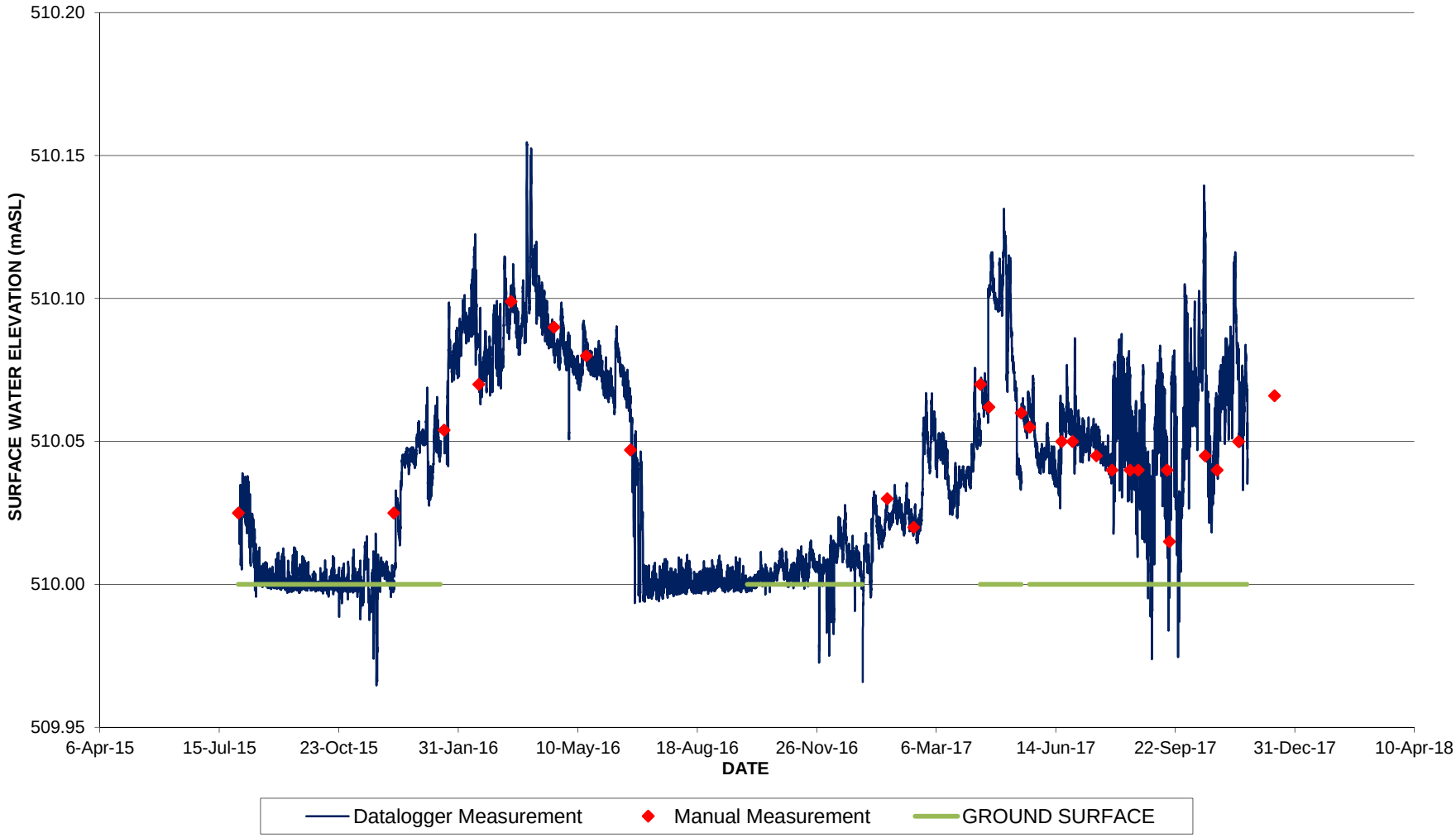
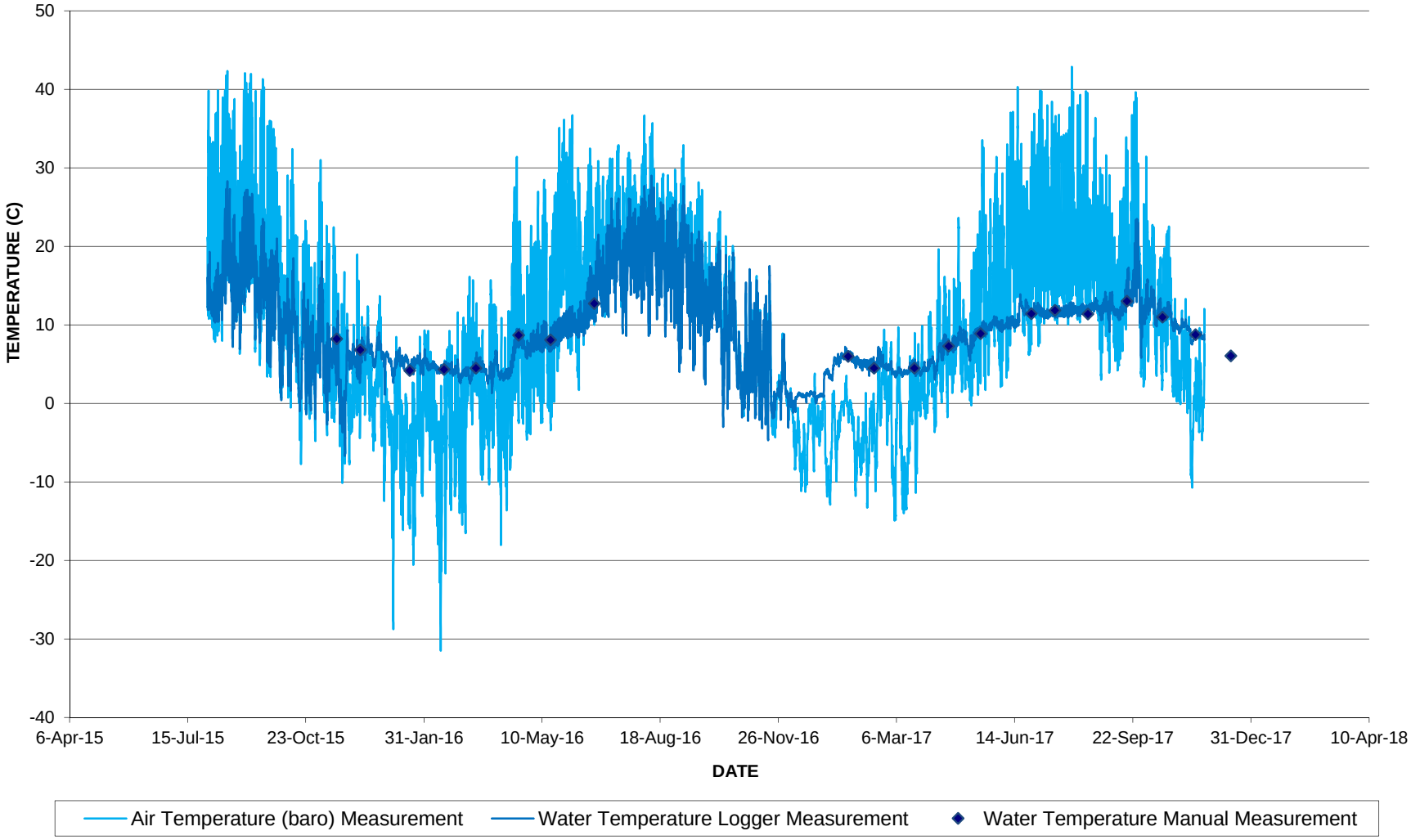


FIGURE B-55 (b)

SURFACE WATER TEMPERATURE (DATALOGGER)
RR3 KARST (SW3B)



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FIGURE B-56

SURFACE WATER HYDROGRAPH
Pretty River Control



FIGURE B-57

SURFACE WATER HYDROGRAPH
Batteaux Creek Control



TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
DUNTROON QUARRY - 2017 AMP SUMMARY REPORT
111-53312.00 A61

Flow (L/s)	SW1													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	136.1	121.8	162.9	108.9	145.7	109.7	80.3	86.0	136.7	123.1	177.9	83.3	233.3	95.5
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	8.9
Winter Average	63.8	34.6	45.4	53.3	50.5	30.8	39.6	39.9	39.4	50.2	22.9	24.3	26.6	34.4
Spring Average	72.5	34.0	58.7	56.9	63.8	67.5	43.6	34.6	29.4	50.5	39.7	17.1	59.4	61.1
Summer Average	22.8	3.3	8.1	7.9	12.7	0.6	7.0	0.6	2.9	8.6	3.2	11.7	5.6	15.0
Fall Average	14.8	26.3	51.5	29.0	35.0	40.1	12.7	31.5	18.8	37.5	26.5	16.2	15.3	35.3

Flow (L/s)	QFSW2													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	308.7	436.8	274.4	223.9	593.7	370.2	302.9	328.9	457.5	341.3	244.9	219.4	258.2	160.6
Low	0.0	0.0	0.0	0.0	0.0	18.7	71.9	57.7	59.0	59.9	48.4	44.2	38.0	30.5
Winter Average	-	73.3	190.4	122.7	226.6	135.5	89.7	103.4	100.6	134.6	88.1	55.6	78.8	59.5
Spring Average	182.7	227.0	207.3	114.4	130.1	159.8	166.5	193.9	176.1	170.2	151.9	150.3	150.7	140.3
Summer Average	150.0	290.3	213.4	111.6	191.9	176.3	173.1	120.1	194.1	145.9	140.5	98.9	100.4	75.1
Fall Average	86.1	219.6	159.0	120.4	212.5	200.8	167.7	152.0	149.7	156.2	83.8	90.2	73.1	91.6

Flow (L/s)	SW3A													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	4.9	7.5	3.8	1.2	9.6	2.8	7.4	2.3	1.6	2.6	9.1	2.1	6.9	1.9
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.1	0.0	0.0	0.1
Winter Average	Frozen	Frozen	3.8	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Buried	Frozen	0.4
Spring Average	2.0	2.8	1.2	0.5	3.3	1.4	1.0	0.8	0.4	1.1	4.8	0.9	2.2	1.5
Summer Average	0.0	0.0	0.0	0.0	0.0	0.0	7.4	0.0	0.2	0.0	0.1	1.1	0.0	0.3
Fall Average	0.0	0.0	0.6	0.0	0.3	0.2	0.6	0.9	0.9	0.6	0.4	0.0	0.0	0.8

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
DUNTROON QUARRY - 2017 AMP SUMMARY REPORT
111-53312.00 A61

Flow (L/s)	SW6													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	371.1	1,376.5	366.7	286.4	1,637.1	675.0	810.2	515.8	735.1	653.3	1,833.9	389.3	914.5	389.9
Low	7.0	12.3	<0.1	0.0	28.9	6.2	21.1	9.7	16.7	12.9	40.1	7.3	14.5	54.2
Winter Average	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Buried
Spring Average	221.7	541.0	194.9	146.7	562.4	329.7	334.3	367.5	244.1	290.4	717.5	234.0	363.7	292.0
Summer Average	15.5	25.9	1.6	0.0	90.5	56.4	88.8	18.7	48.7	36.1	63.8	63.0	19.2	95.3
Fall Average	19.8	16.1	140.7	42.6	44.9	50.7	134.8	62.8	107.7	108.5	40.1	61.8	27.6	136.3

Flow (L/s)	SW8													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	0.5	<0.1	0.3	1.0	0.3	2.4	0.1	0.7	0.1	0.1	0.1	0.2	0.3	N/A
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.0	0.0	0.1	0.0	0.0	N/A
Winter Average	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	0.0	Frozen	Buried	Buried	Buried
Spring Average	0.3	<0.1	<0.1	0.4	<0.1	0.8	0.1	0.6	0.0	0.1	0.1	0.2	0.3	Dry
Summer Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Dry	0.0	0.0	Dry
Fall Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Buried	0.0	0.0	Dry

Flow (L/s)	SW11													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	27.4	62.1	29.2	35.0	100.8	51.1	19.5	41.7	22.7	42.8	47.5	25.7	51.9	33.4
Low	0.2	0.8	1.0	0.4	0.8	0.8	0.2	0.1	1.1	0.5	0.3	0.3	0.4	0.9
Winter Average	6.7	Frozen	20.2	35.0	44.5	31.1	1.3	7.5	11.0	19.8	Buried	0.3	6.7	10.7
Spring Average	16.2	23.5	16.3	13.4	32.3	19.6	12.1	15.8	8.2	20.5	23.6	10.8	23.2	24.3
Summer Average	1.1	0.9	1.7	0.7	5.2	0.8	2.6	0.5	1.4	1.1	0.8	3.2	1.1	2.2
Fall Average	3.5	2.2	12.9	1.5	8.6	1.5	9.4	5.3	5.8	4.4	2.6	1.1	1.3	6.2

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
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Flow (L/s)	SW11C													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	1.8	8.0	9.7	3.0	10.7	7.5	4.4	6.5	1.3	4.8	23.9	2.9	5.1	2.0
Low	0.0	0.0	0.0	0.0	0.5	0.5	0.3	0.1	0.1	0.2	0.4	<0.1	0.1	0.1
Winter Average	0.5	Frozen	9.7	3.0	4.9	4.0	0.8	1.6	Frozen	0.9	Buried	Buried	0.9	1.0
Spring Average	0.8	3.4	1.5	1.4	3.5	3.5	1.9	2.9	0.5	1.7	10.0	1.5	2.9	1.1
Summer Average	0.0	0.0	0.0	0.7	0.9	1.1	0.8	0.2	0.2	<0.1	<0.1	0.3	0.3	0.4
Fall Average	0.0	0.0	2.3	1.3	4.6	0.8	1.8	0.7	0.8	0.6	0.4	0.4	0.3	0.6

Flow (L/s)	SW12													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	11.4	16.1	5.6	8.0	17.2	26.4	14.3	15.2	5.8	11.3	17.0	9.8	50.4	6.2
Low	0.2	0.2	0.2	<0.1	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.5
Winter Average	1.7	Frozen	5.6	8.0	3.0	26.4	0.6	Frozen	1.4	5.2	Buried	0.2	3.5	3.7
Spring Average	4.8	5.0	2.7	3.2	5.8	6.5	4.8	5.1	1.8	4.5	6.8	5.2	14.9	2.8
Summer Average	0.4	0.4	0.5	1.1	0.5	0.2	1.1	0.1	0.7	0.2	0.1	1.0	0.3	0.8
Fall Average	0.2	0.7	2.5	0.3	2.5	0.5	4.1	5.9	1.1	1.2	0.9	0.7	0.2	1.4

Flow (L/s)	SW14													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	49.0	70.7	25.1	14.3	67.1	44.7	100.6	98.4	37.9	66.5	108.6	16.4	175.4	46.1
Low	<0.1	1.1	0.4	0.3	0.6	0.5	0.8	0.5	1.2	0.9	0.6	0.4	1.2	5.8
Winter Average	3.0	Frozen	15.6	Frozen	12.6	Frozen	Frozen	Frozen	Frozen	35.7	Buried	Buried	11.5	39.6
Spring Average	27.8	21.6	13.7	6.7	31.7	26.6	43.1	35.3	14.7	32.1	46.7	11.6	67.9	33.2
Summer Average	0.9	1.5	1.7	1.0	4.6	2.1	15.7	0.7	4.4	5.1	1.6	5.1	2.4	7.5
Fall Average	1.5	4.5	11.1	3.6	25.9	3.6	11.1	41.6	16.1	15.6	0.8	2.3	2.6	15.6

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
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Flow (L/s)	SW17													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	13.3	17.5	24.5	28.7	7.6	6.6	6.9	7.8	11.0	8.0	7.3	3.5	57.3	19.6
Low	0.4	0.2	1.0	<0.1	0.2	0.5	0.9	0.3	0.2	0.3	0.6	0.6	0.6	0.6
Winter Average	1.9	Frozen	3.7	2.4	4.5	1.8	0.9	4.1	3.8	8.0	Buried	Buried	3.0	3.9
Spring Average	6.0	7.2	12.1	10.3	3.7	4.3	4.9	3.9	3.7	2.4	5.4	3.1	16.5	11.4
Summer Average	0.5	0.6	1.9	0.2	1.5	1.1	2.1	0.7	1.3	0.8	0.8	1.1	1.1	1.1
Fall Average	0.9	0.6	4.2	0.5	3.4	2.1	2.4	2.2	1.7	3.9	2.0	1.5	0.8	4.6

Flow (L/s)	SW18													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	123.6	207.2	80.7	102.5	178.3	203.8	332.6	243.0	95.4	166.7	261.7	99.4	218.8	79.0
Low	3.8	4.4	3.5	3.3	11.7	4.6	2.4	3.0	3.8	3.3	2.3	2.5	3.6	10.3
Winter Average	47.9	Frozen	20.8	Frozen	56.6	73.7	Frozen	Frozen	15.5	78.1	Buried	Frozen	39.5	76.8
Spring Average	56.0	82.1	53.9	51.2	92.2	112.4	151.7	122.8	41.3	73.4	119.2	69.7	108.1	69.2
Summer Average	6.7	5.8	9.2	5.6	19.3	11.7	23.7	6.0	13.4	9.4	18.6	11.3	4.9	17.6
Fall Average	4.3	6.9	36.3	16.0	57.6	13.3	20.4	18.4	39.5	41.4	38.7	13.1	10.7	26.6

Flow (L/s)	SW21													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	2.1	3.9	12.1	4.3	68.8	8.1	7.3	3.6	1.6	4.7	4.9	1.5	2.4	4.5
Low	0.2	0.8	1.0	0.7	<0.1	0.2	0.2	0.1	0.0	0.1	0.1	<0.1	<0.1	0.7
Winter Average	0.9	Frozen	12.1	Frozen	1.1	1.5	0.2	0.1	Frozen	1.3	Buried	Buried	2.2	3.7
Spring Average	1.4	2.0	3.0	1.8	15.5	1.9	2.8	2.1	0.5	0.9	2.6	1.5	2.0	3.2
Summer Average	1.1	1.7	3.0	1.9	0.5	3.2	1.1	0.0	0.3	0.2	0.1	7.0	0.5	1.1
Fall Average	1.0	1.7	2.4	2.5	1.6	1.2	1.0	0.6	0.6	2.6	0.5	0.5	1.3	2.1

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
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Flow (L/s)	SW21C													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	4.8	16.6	6.4	11.4	23.4	7.4	6.2	5.4	4.5	8.5	14.5	5.6	8.1	7.2
Low	<0.1	1.2	1.7	0.3	0.7	0.4	0.5	0.5	0.9	0.6	0.5	0.6	0.3	1.1
Winter Average	2.0	Frozen	2.8	2.9	5.2	3.7	0.6	3.0	2.2	8.5	Buried	0.9	2.0	4.6
Spring Average	3.6	6.6	4.4	6.2	8.6	4.2	3.6	3.5	2.6	5.0	6.5	3.1	4.9	3.8
Summer Average	0.7	2.8	3.2	0.6	2.9	1.9	2.1	1.1	1.2	1.6	0.9	3.2	1.4	4.0
Fall Average	1.0	1.3	3.6	2.1	5.0	1.3	3.3	1.4	1.9	3.5	1.5	0.8	2.6	3.0

Flow (L/s)	SW22A													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	3.0	4.9	6.0	6.8	2.9	3.2	5.0	2.7	5.1	5.0	2.5	2.5	11.9	12.8
Low	<0.1	0.2	0.5	<0.1	0.3	<0.1	0.6	0.2	0.3	0.2	0.1	0.2	0.1	0.6
Winter Average	2.5	Frozen	3.8	4.2	1.4	2.0	0.7	0.8	3.0	1.7	Buried	0.9	1.7	2.3
Spring Average	2.0	2.4	3.1	3.2	1.9	2.0	2.5	2.0	1.8	2.3	1.5	1.6	4.9	4.2
Summer Average	0.2	0.8	0.9	1.5	0.7	0.5	0.9	0.3	0.7	0.3	0.1	0.5	0.5	0.9
Fall Average	0.2	0.3	1.3	0.5	0.9	1.5	1.0	0.7	0.9	2.8	1.4	0.9	1.0	2.4

Flow (L/s)	SW23													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	1.4	2.1	4.9	1.2	73.5	2.1	3.3	1.6	1.2	2.2	4.8	3.5	2.5	39.3
Low	<0.1	0.0	<0.1	0.0	<0.1	<0.1	0.2	0.1	0.1	0.1	0.1	<0.1	<0.1	0.2
Winter Average	0.8	Frozen	4.9	Frozen	1.8	Frozen	Frozen	Frozen	Frozen	0.2	Buried	Frozen	Frozen	39.3
Spring Average	1.0	0.9	0.6	0.4	19.1	0.6	1.4	1.2	0.4	1.1	0.3	2.9	1.7	1.8
Summer Average	<0.1	<0.1	<0.1	<0.1	0.2	0.8	1.3	0.2	0.9	<0.1	1.7	0.7	0.5	0.2
Fall Average	0.2	0.4	0.5	0.6	0.3	0.9	0.7	0.7	0.6	0.5	0.7	1.5	0.3	1.4

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

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SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
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Flow (L/s)	SW24B													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	1.7	4.5	5.8	2.5	13.1	5.3	7.5	3.1	12.9	12.9	15.4	10.4	19.9	7.0
Low	0.2	0.3	0.4	<0.1	0.3	<0.1	0.3	0.1	0.2	0.1	0.2	0.1	0.2	0.3
Winter Average	0.6	Frozen	5.8	1.6	2.2	1.9	1.1	2.1	3.2	2.5	0.6	0.1	1.8	2.5
Spring Average	1.2	1.8	3.0	1.7	4.5	2.6	6.1	1.2	4.0	5.2	6.3	4.0	5.9	4.5
Summer Average	0.3	0.4	0.8	<0.1	1.0	0.2	1.0	0.2	1.0	0.3	0.2	1.1	0.7	0.9
Fall Average	0.3	0.6	1.8	<0.1	1.4	0.3	0.8	0.7	1.0	0.6	0.3	0.4	0.4	1.1

Flow (L/s)	SW26													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	183.7	111.4	58.7	22.7	156.0	51.0	73.5	54.5	97.4	138.1	227.8	67.4	125.0	79.2
Low	0.0	0.0	0.0	0.0	<0.1	0.0	0.1	2.2	0.0	0.9	0.4	0.0	0.0	1.4
Winter Average	42.7	Frozen	Frozen	Frozen	17.1	7.8	Frozen	Frozen	Frozen	43.4	Buried	Frozen	Frozen	79.2
Spring Average	57.0	32.1	29.0	10.9	63.2	16.0	34.7	37.4	26.8	55.2	86.9	35.2	46.4	28.7
Summer Average	0.4	0.0	0.0	0.0	7.5	0.9	12.0	0.0	0.7	2.6	3.7	4.7	0.0	5.1
Fall Average	0.9	1.0	8.9	0.4	3.9	5.5	12.6	3.0	12.7	10.3	1.1	6.2	1.6	14.0

Flow (L/s)	SW77								RR3 OUT			RR3 KARST		
	2010	2011	2012	2013	2014	2015	2016	2017	2015	2016	2017	2015	2016	2017
High	0.7	0.8	1.0	1.3	1.4	1.3	2.5	1.4	0.9	20.3	14.3	0.3	6.2	2.7
Low	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.5	0.0	0.0	0.1
Winter Average	0.2	-	0.4	0.3	0.2	Buried	0.7	0.7	-	7.4	3.5	-	1.2	1.3
Spring Average	0.4	0.5	0.4	0.5	0.6	0.4	1.2	1.0	-	12.0	6.8	-	4.0	1.8
Summer Average	0.3	0.2	0.1	<0.1	<0.1	0.5	0.2	0.3	Dry	0.0	4.3	0.0	0.0	0.4
Fall Average	0.2	0.1	0.4	0.4	0.1	0.1	0.3	0.4	0.8	0.0	3.8	0.2	0.0	0.9

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Sep), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
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Flow (L/s)	SW2													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	58.8	49.9	41.8	41.1	93.3	35.0	68.9	42.0	70.3	57.8	104.1	32.3	93.3	8.5
Low	0.0	0.2	0.0	<0.1	0.6	0.4	2.2	0.9	1.1	2.2	0.1	0.3	0.2	0.6
Winter Average	8.6	13.3	10.8	7.4	24.3	11.9	5.7	11.7	9.5	13.2	5.7	2.1	4.0	2.8
Spring Average	19.3	16.6	16.7	13.0	26.0	15.0	15.2	17.9	13.8	14.8	23.7	7.4	15.4	5.3
Summer Average	3.3	1.4	1.1	1.4	4.5	2.0	6.6	3.6	4.2	3.9	0.9	3.0	1.7	1.5
Fall Average	1.5	1.1	8.9	1.2	18.5	3.5	9.0	7.0	11.7	10.4	3.1	1.3	0.7	1.9

Flow (L/s)	SWO-2													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	60.8	348.6	238.5	177.2	295.2	185.3	156.8	158.7	529.8	405.3	469.4	99.4	576.7	99.4
Low	0.0	0.0	0.0	0.0	1.7	3.3	1.4	4.4	10.1	25.8	10.1	4.8	1.1	26.8
Winter Average	-	183.7	91.6	Frozen	194.5	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	30.4	94.6
Spring Average	7.7	86.3	93.7	73.2	107.4	83.5	64.9	109.5	158.1	101.4	151.2	31.8	114.9	70.5
Summer Average	13.2	0.8	9.7	6.9	28.7	21.9	35.1	17.2	31.0	45.0	17.3	14.1	3.1	34.6
Fall Average	19.9	19.7	46.1	33.0	43.3	27.2	55.1	49.6	63.9	157.1	41.0	32.5	21.5	51.6

Flow (L/s)	SW4													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	0.0	63.2	0.0	9.1	8.8	4.4	8.1	0.0	2.1	1.3	14.0	0.6	10.1	4.4
Low	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	1.1	0.0	0.0	0.2
Winter Average	0.0	63.2	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	0.2	Frozen	Buried	Buried	4.4
Spring Average	0.0	0.0	0.0	2.3	2.2	1.4	8.1	0.0	0.0	1.3	14.0	0.6	3.7	0.8
Summer Average	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	Dry	Dry	0.0	Dry
Fall Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.0	1.1	0.0	0.0	2.8

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
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Flow (L/s)	SW6A													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	606.6	1,671.0	966.1	574.2	964.1	1,095.0	1,499.6	962.9	981.3	901.3	1,147.5	535.0	951.7	487.2
Low	24.9	14.7	32.0	14.2	56.2	44.4	89.1	42.5	48.1	63.0	61.0	21.7	30.9	100.2
Winter Average	Frozen	Frozen	133.0	Frozen	883.4	403.5	124.0	362.0	169.8	374.2	Frozen	Frozen	227.6	251.9
Spring Average	389.3	575.1	506.6	332.3	441.8	506.8	572.5	584.7	357.8	478.1	558.2	290.2	437.7	405.9
Summer Average	55.6	51.8	41.3	31.3	74.0	106.8	161.0	64.5	84.7	101.5	88.4	89.1	39.0	161.9
Fall Average	55.7	81.9	264.8	85.5	317.3	141.9	205.8	157.2	195.9	271.9	242.8	77.8	50.1	204.6

Flow (L/s)	SW9													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	7.0	41.7	15.3	7.2	12.5	17.2	25.4	45.3	12.2	24.4	58.0	7.7	30.7	20.1
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	0.0	0.0	1.5	0.8	5.5	0.2
Winter Average	2.1	Frozen	5.5	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	5.1	Frozen	Buried	Buried	4.0
Spring Average	3.6	11.7	5.8	3.1	3.9	5.9	8.9	20.1	4.2	12.3	32.2	7.7	14.9	8.7
Summer Average	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	Dry	0.8	0.0	Dry
Fall Average	0.0	0.0	2.1	0.0	0.0	0.0	1.3	0.0	3.4	0.0	1.5	0.0	0.0	0.2

Flow (L/s)	SW11A													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	12.2	15.0	11.4	15.0	4.3	5.3	2.3	8.2	5.1	5.1	2.6	1.5	3.5	4.7
Low	<0.1	0.0	0.3	0.0	<0.1	<0.1	0.2	0.2	0.0	0.1	0.5	<0.1	<0.1	0.1
Winter Average	1.5	Frozen	7.6	15.0	2.7	3.3	0.2	0.5	Frozen	0.9	Buried	Buried	1.2	2.4
Spring Average	4.3	8.3	5.1	3.7	1.5	2.2	1.0	2.5	1.9	1.4	1.5	0.6	1.2	0.6
Summer Average	0.2	0.4	0.4	0.0	0.6	0.1	1.5	0.1	0.1	<0.1	<0.1	0.3	0.1	0.2
Fall Average	<0.1	0.2	3.4	0.8	1.4	0.3	0.8	0.5	0.7	0.4	0.6	0.2	0.1	0.3

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
DUNTROON QUARRY - 2017 AMP SUMMARY REPORT
111-53312.00 A61

Flow (L/s)	SW11D													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	8.4	10.0	9.8	15.0	14.5	3.4	0.6	3.3	4.6	4.3	8.0	2.5	12.9	20.7
Low	<0.1	0.0	0.2	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.2	<0.1	0.1	0.2
Winter Average	0.8	Frozen	9.8	15.0	11.3	0.9	Frozen	Frozen	Frozen	0.9	Buried	Buried	3.5	6.8
Spring Average	4.1	4.6	4.2	1.8	4.1	1.9	0.5	1.4	1.6	1.3	3.8	0.7	7.4	12.1
Summer Average	0.4	0.6	0.4	0.2	0.0	0.0	0.3	0.0	0.0	<0.1	<0.1	0.8	0.3	0.7
Fall Average	<0.1	0.5	2.7	0.4	2.2	0.0	0.4	0.3	0.2	1.0	0.3	0.2	0.2	1.0

Flow (L/s)	SW12A													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	4.4	6.7	0.9	0.8	9.7	16.5	2.5	5.2	1.7	2.3	5.3	3.3	23.6	3.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.9	0.0	0.0	0.2	0.0	0.0	0.1
Winter Average	Frozen	Frozen	Frozen	Frozen	Frozen	3.8	Frozen	Frozen	Frozen	1.7	Buried	Buried	Buried	0.8
Spring Average	2.2	2.9	0.3	0.4	1.6	4.4	0.8	2.4	0.9	1.0	2.9	3.3	8.3	1.1
Summer Average	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.2	0.0	Dry	0.0	0.4	Dry
Fall Average	0.0	0.0	0.3	0.0	3.6	0.0	2.3	4.4	0.2	1.0	0.2	0.0	0.0	Dry

Flow (L/s)	SW15													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	1.9	5.3	5.7	2.2	34.5	5.4	15.9	5.9	1.5	6.8	6.7	2.5	5.3	3.8
Low	<0.1	0.2	1.0	0.4	0.0	<0.1	0.5	0.1	0.0	0.0	0.1	0.0	0.0	0.3
Winter Average	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	6.8	Buried	Buried	1.1	3.8
Spring Average	1.6	3.0	3.9	1.9	9.2	2.6	4.4	2.1	0.8	1.3	3.6	1.8	2.4	1.7
Summer Average	0.7	1.0	1.6	0.7	0.2	0.1	0.7	0.0	0.2	0.0	1.7	0.6	0.3	0.4
Fall Average	1.1	2.1	1.5	0.8	0.5	0.4	0.6	0.5	0.8	0.9	0.6	0.5	1.0	1.6

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
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Flow (L/s)	SW17A													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	72.4	68.6	48.8	34.7	65.8	35.4	26.8	48.3	53.6	58.7	123.5	32.8	64.3	55.3
Low	2.9	2.9	3.3	0.9	2.4	1.1	0.6	0.5	1.7	2.6	2.2	1.2	1.8	7.0
Winter Average	9.2	Frozen	17.3	15.5	28.5	25.9	1.6	12.0	15.0	20.2	Buried	4.9	8.6	17.7
Spring Average	29.8	28.3	27.9	24.3	26.7	14.1	16.3	29.0	21.5	32.0	54.7	18.5	32.2	39.5
Summer Average	4.1	4.8	5.0	1.7	4.7	6.3	5.3	2.1	2.3	3.9	7.6	5.5	4.6	11.5
Fall Average	4.3	6.1	13.5	2.4	14.3	3.2	5.7	3.4	10.0	9.5	5.4	2.3	3.8	11.0

Flow (L/s)	SW19													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	507.9	700.0	429.2	408.9	1,019.2	1,522.2	1,785.5	1,452.8	426.3	1,180.9	1,825.7	556.5	514.8	440.5
Low	9.3	8.1	3.8	5.3	31.0	6.7	26.4	14.5	14.4	21.3	31.5	17.4	9.4	32.1
Winter Average	71.6	Frozen	201.8	79.9	631.2	Frozen	227.8	361.0	178.0	447.7	Frozen	Frozen	395.1	285.8
Spring Average	224.7	260.1	209.9	258.3	316.6	645.7	688.3	724.9	164.8	455.9	777.5	347.7	318.6	283.1
Summer Average	15.6	9.0	11.3	9.4	102.8	42.1	54.7	21.8	59.3	62.9	103.3	117.7	19.0	55.2
Fall Average	42.9	17.4	119.4	119.0	275.9	136.8	427.7	155.6	197.8	172.4	117.1	61.9	23.2	119.1

Flow (L/s)	SW21A													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	1.8	5.8	9.8	2.5	1.7	0.8	0.9	1.1	2.5	1.7	1.1	0.2	2.8	3.2
Low	0.0	<0.1	0.5	0.2	<0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.4
Winter Average	Frozen	Frozen	9.8	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	1.7	Buried	Buried	Frozen	1.8
Spring Average	0.8	1.8	3.1	1.6	0.7	0.3	0.6	0.6	0.7	0.6	0.6	0.2	0.3	1.7
Summer Average	0.6	1.2	3.5	1.7	<0.1	0.1	0.2	0.1	0.1	0.0	<0.1	0.0	0.8	0.9
Fall Average	0.4	2.6	1.8	0.8	0.6	0.2	0.6	0.1	0.3	0.3	0.1	0.0	2.5	1.5

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

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Flow (L/s)	SW21D													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	1.4	<0.1	0.6	<0.1	1.0	0.2	0.5	0.5	1.2	1.6	1.1	1.0	1.4	0.5
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Winter Average	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	0.1	Buried	Buried	Frozen	Frozen
Spring Average	0.5	<0.1	0.2	<0.1	0.3	0.1	0.2	0.4	0.3	0.6	0.2	0.7	0.8	0.3
Summer Average	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.1	0.2	0.0	Dry
Fall Average	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.9	0.0	0.0	0.1

Flow (L/s)	SW22B					
	2004	2005	2006	2007	2008	2009
High	0.0	-	-	2.8	2.6	-
Low	0.0	-	-	0.0	2.6	-
Winter Average	0.0	-	-	-	2.6	-
Spring Average	0.0	-	-	-	-	-
Summer Average	0.0	-	-	0.0	-	-
Fall Average	0.0	-	-	2.8	-	-

Flow (L/s)	SW24													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	6.3	17.8	5.3	2.0	34.6	7.8	10.8	5.8	6.4	16.3	11.9	3.2	18.2	6.7
Low	0.0	0.0	0.0	0.0	0.3	0.1	0.2	0.3	0.3	0.2	0.1	0.1	0.2	0.3
Winter Average	0.8	Frozen	5.3	0.6	11.0	2.4	2.7	1.9	4.0	3.4	Buried	0.1	5.7	1.5
Spring Average	4.3	7.2	1.4	0.9	10.7	4.1	5.5	3.7	2.4	5.2	5.8	2.2	9.2	4.5
Summer Average	0.0	0.2	0.0	0.0	0.6	0.2	2.5	0.5	1.1	0.4	0.8	1.0	0.6	0.7
Fall Average	<0.1	0.0	2.0	0.0	3.7	0.9	1.4	0.5	2.3	1.4	2.5	1.6	1.5	1.1

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

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Flow (L/s)	SW24C													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	-	-	-	-	16.2	7.0	10.1	6.7	15.4	26.3	17.6	14.1	21.8	19.2
Low	-	-	-	-	0.4	0.6	0.7	0.1	0.7	0.6	0.5	0.4	1.0	2.1
Winter Average	-	-	-	-	7.7	5.2	1.5	3.8	4.3	4.8	2.2	1.7	2.7	5.9
Spring Average	-	-	-	-	8.8	5.4	6.2	5.2	5.8	8.8	7.2	7.1	9.9	11.6
Summer Average	-	-	-	-	2.2	0.9	1.4	0.6	2.3	1.8	1.3	1.8	1.4	2.4
Fall Average	-	-	-	-	3.8	1.3	1.6	1.6	3.1	3.4	1.8	0.8	1.6	4.2

Flow (L/s)	SW26A													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	101.6	59.9	60.0	14.9	165.4	47.4	53.3	61.7	65.7	120.2	17.4	39.2	128.1	33.2
Low	0.0	0.0	0.0	0.0	<0.1	0.0	0.3	2.5	0.0	0.4	0.5	0.0	0.0	3.1
Winter Average	0.9	Frozen	6.1	5.3	24.0	Frozen	Frozen	Frozen	Frozen	52.0	Buried	Frozen	6.7	14.1
Spring Average	28.1	16.8	23.5	7.7	53.4	24.7	27.4	31.6	19.2	54.3	15.3	21.9	45.1	21.3
Summer Average	0.0	0.0	0.0	0.0	8.5	3.6	18.5	0.0	0.3	1.2	2.8	3.1	0.0	5.4
Fall Average	1.2	0.7	7.2	0.0	3.1	5.8	8.4	3.5	12.5	12.3	4.3	5.0	0.3	8.5

Flow (L/s)	PR CONTROL			BC CONTROL		
	2015	2016	2017	2015	2016	2017
High	13.3	148.4	93.8	7.5	192.0	37.3
Low	0.2	6.1	9.9	0.4	0.2	1.1
Winter Average	-	24.8	31.5	-	Frozen	37.3
Spring Average	-	79.8	67.9	-	63.1	23.0
Summer Average	7.9	8.8	20.2	4.0	0.3	2.9
Fall Average	7.6	9.2	35.0	4.7	0.6	13.8

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Sep), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
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Flow (L/s)	SWB-1			
	2004	2005	2006	2007
High	85.3	73.1	87.4	0.0
Low	0.0	0.0	0.0	0.0
Winter Average	4.7	18.8	32.5	0.0
Spring Average	42.3	22.9	20.8	0.0
Summer Average	16.3	34.0	0.0	0.0
Fall Average	29.0	31.4	0.0	0.0

Flow (L/s)	SW3													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	14.4	31.4	39.7	4.3	12.9	9.1	26.4	95.3	13.7	18.3	50.5	5.4	48.1	7.7
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.5	0.0	0.0	2.4	0.0	0.0	0.9
Winter Average	Frozen	Frozen	2.4	<0.1	Frozen	Frozen	Frozen	1.7	Frozen	9.8	Frozen	Buried	12.5	Buried
Spring Average	4.5	8.0	11.4	1.4	6.1	4.7	8.2	21.0	3.4	7.8	26.5	5.4	20.9	4.7
Summer Average	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0	Dry	2.3	0.0	1.1
Fall Average	0.0	0.0	0.4	0.0	0.0	0.0	0.3	3.7	3.3	3.1	3.0	0.0	0.0	1.6

Flow (L/s)	SW5													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	246.5	742.4	389.2	281.9	525.3	491.0	662.8	368.0	486.3	384.3	1,082.8	250.6	567.6	224.3
Low	8.5	1.0	<0.1	0.0	7.3	9.4	12.5	7.9	2.1	30.9	22.1	7.2	13.5	17.3
Winter Average	Frozen	Frozen	Frozen	Frozen	Frozen	361.4	Frozen	Frozen	Frozen	384.3	Frozen	Frozen	Frozen	Buried
Spring Average	154.7	248.7	208.1	151.3	206.0	217.4	279.3	243.5	184.8	244.3	417.5	147.5	237.8	183.9
Summer Average	14.5	10.0	3.6	3.2	63.0	40.7	74.9	28.4	49.6	34.7	36.1	44.0	17.7	52.6
Fall Average	17.9	5.9	118.8	70.8	147.3	65.3	142.6	96.8	121.4	116.6	22.1	45.0	34.5	77.3

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
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Flow (L/s)	SW7													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	1.0	<0.1	0.5	1.4	2.8	0.9	1.1	3.7	0.9	1.3	0.3	0.4	2.9	6.3
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.8	0.0	0.0	0.3	0.0	0.0	0.3
Winter Average	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Buried	Buried	Buried
Spring Average	0.6	<0.1	0.2	0.6	0.9	0.6	0.6	2.8	0.2	0.5	0.3	0.4	2.1	2.4
Summer Average	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Dry	0.0	0.0	Dry
Fall Average	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Buried	0.0	0.0	Dry

Flow (L/s)	SW10													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	1.1	3.2	3.8	1.7	2.8	1.8	2.0	2.2	1.2	4.6	6.7	0.4	3.5	1.7
Low	0.0	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.1	0.0	0.1	0.2	<0.1	<0.1	0.2
Winter Average	0.3	Frozen	2.7	Frozen	Frozen	1.8	Frozen	0.4	0.5	0.8	Buried	Buried	0.6	1.1
Spring Average	0.4	0.9	1.5	0.7	0.9	0.7	0.9	0.8	0.6	0.6	2.5	0.2	1.2	1.4
Summer Average	<0.1	<0.1	0.2	<0.1	0.2	0.1	0.2	0.1	0.3	0.1	<0.1	0.2	0.2	0.4
Fall Average	<0.1	0.2	0.7	0.2	0.6	0.2	0.8	1.0	0.2	2.7	Buried	0.3	0.4	0.4

Flow (L/s)	SW11B													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	5.8	10.0	7.0	4.9	11.1	10.8	15.0	12.8	5.1	12.5	10.9	2.7	2.4	3.8
Low	<0.1	<0.1	0.5	0.0	0.2	<0.1	0.4	0.3	0.4	0.5	0.1	<0.1	<0.1	0.3
Winter Average	0.8	Frozen	6.3	4.0	6.0	6.8	2.5	4.0	Frozen	3.6	Buried	Buried	2.2	2.8
Spring Average	1.9	5.8	2.6	2.4	6.5	6.6	7.1	7.1	1.8	4.2	6.9	1.4	1.7	1.5
Summer Average	0.6	1.0	1.0	0.2	0.7	0.4	3.0	0.3	0.4	<0.1	<0.1	0.3	0.4	0.7
Fall Average	0.1	0.9	3.5	0.2	3.3	0.8	4.1	2.2	1.2	2.5	0.1	0.5	0.8	1.1

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
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Flow (L/s)	SW11E													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	22.0	61.0	30.4	59.3	65.4	109.7	57.5	48.3	47.7	47.4	51.4	28.9	77.0	32.0
Low	0.2	0.9	1.9	0.3	0.2	0.2	0.6	0.1	0.4	0.9	0.2	0.3	1.0	1.8
Winter Average	3.5	Frozen	22.4	21.6	13.9	25.0	2.3	3.8	17.6	29.1	6.7	19.2	6.1	13.0
Spring Average	10.8	27.6	24.1	23.2	31.7	46.3	26.8	26.7	16.1	22.5	20.2	24.7	35.2	20.1
Summer Average	0.4	2.6	2.5	2.2	2.8	0.6	7.7	0.7	5.0	1.4	1.2	10.9	1.6	3.2
Fall Average	0.5	1.6	15.2	1.4	18.5	1.8	14.4	20.2	9.8	12.8	8.8	1.8	1.5	5.6

Flow (L/s)	SW13													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	30.0	80.0	37.4	48.0	107.8	142.7	125.8	131.0	71.8	131.3	108.5	28.7	166.1	51.6
Low	0.6	0.0	0.8	0.2	3.3	1.3	2.1	0.6	2.4	0.9	0.1	0.6	0.3	3.6
Winter Average	10.0	Frozen	19.6	48.0	35.3	142.7	Frozen	Frozen	17.1	111.9	Buried	7.9	Frozen	26.9
Spring Average	13.9	37.0	21.1	15.0	55.0	52.0	54.0	53.3	24.8	46.8	41.9	16.1	67.0	25.6
Summer Average	1.8	2.0	1.4	2.3	5.8	7.8	12.2	2.8	6.5	3.0	2.6	7.7	3.2	8.5
Fall Average	1.0	5.6	22.0	0.9	37.3	5.9	36.7	59.8	10.4	16.6	8.6	6.0	1.4	12.4

Flow (L/s)	SW16													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	40.4	27.0	13.0	10.5	167.3	12.1	26.0	17.4	15.7	100.4	17.2	5.0	28.5	12.2
Low	<0.1	0.0	0.0	0.0	0.4	0.0	0.2	1.8	0.5	0.9	0.2	0.3	0.2	0.8
Winter Average	Frozen	Frozen	13.0	Frozen	28.1	9.7	Frozen	6.1	6.5	21.8	Buried	Buried	5.1	6.2
Spring Average	11.6	8.8	5.3	4.3	44.7	7.3	10.2	9.0	6.9	34.3	9.5	1.3	13.5	6.6
Summer Average	0.7	0.2	0.0	0.0	0.6	0.2	4.0	3.6	2.3	1.2	3.0	1.3	1.1	1.5
Fall Average	1.3	0.2	6.7	0.1	3.9	2.6	1.2	4.1	4.1	5.0	1.3	2.3	2.2	5.4

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
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Flow (L/s)	SW17B													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	0.2	18.6	11.2	9.4	23.5	8.4	3.9	8.2	3.1	6.1	3.4	6.4	14.6	7.7
Low	0.2	0.5	<0.1	<0.1	<0.1	0.1	0.3	0.1	0.1	0.1	0.2	0.1	0.1	0.3
Winter Average	-	Frozen	3.9	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	1.3	Buried	Buried	2.0	6.0
Spring Average	-	9.7	7.1	4.6	7.6	3.6	2.2	5.1	1.2	2.6	1.7	3.5	6.1	3.6
Summer Average	-	0.8	0.8	0.2	0.4	0.2	0.9	0.1	0.2	0.3	0.9	0.7	0.3	0.5
Fall Average	0.2	1.4	1.3	0.4	1.9	0.4	1.0	1.0	0.9	2.0	1.3	0.6	0.6	1.5

Flow (L/s)	SW20													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	18.9	19.3	11.2	19.0	24.5	29.3	14.0	21.3	8.8	11.8	17.1	12.7	27.0	14.8
Low	0.0	0.0	0.3	0.0	0.6	0.2	0.7	0.3	0.3	0.4	0.1	0.1	0.2	1.1
Winter Average	2.0	Frozen	3.4	5.2	16.5	14.6	5.3	8.6	2.1	5.5	6.8	3.6	2.9	3.4
Spring Average	7.4	9.0	7.7	9.8	11.2	11.8	8.8	12.0	3.7	6.0	7.6	6.6	14.4	10.7
Summer Average	0.9	0.4	1.2	1.4	1.4	1.5	3.8	1.1	0.6	1.2	0.5	2.1	0.7	2.1
Fall Average	0.0	0.0	3.9	0.0	6.5	1.7	2.9	1.2	3.6	5.1	2.1	0.5	0.4	2.0

Flow (L/s)	SW21B													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	4.7	6.0	5.6	6.0	7.8	1.0	1.4	1.4	1.2	0.9	0.4	0.3	3.8	6.2
Low	<0.1	0.0	0.7	1.2	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.3
Winter Average	3.0	Frozen	0.7	3.6	4.1	Frozen	Frozen	Frozen	Frozen	Frozen	Buried	Buried	Buried	6.2
Spring Average	1.6	2.9	3.4	4.2	1.3	0.2	0.8	1.0	0.6	0.9	0.2	<0.1	0.1	1.2
Summer Average	2.0	3.8	1.2	1.4	0.3	0.5	0.5	0.2	0.1	0.1	0.2	0.2	1.6	0.7
Fall Average	2.8	2.3	1.9	3.3	1.2	0.6	0.4	0.2	0.3	0.1	<0.1	0.1	1.9	1.1

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
DUNTROON QUARRY - 2017 AMP SUMMARY REPORT
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Flow (L/s)	SW22													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	8.4	9.5	10.9	7.7	7.9	3.9	9.5	12.8	22.6	7.9	24.8	4.6	20.8	16.6
Low	0.3	0.3	0.5	0.2	0.6	0.3	0.9	0.3	0.8	0.4	0.1	0.3	0.2	0.8
Winter Average	2.1	Frozen	10.4	2.9	5.1	1.7	1.1	3.9	1.5	3.9	0.7	3.7	1.7	2.1
Spring Average	4.6	4.4	6.8	4.9	4.6	3.2	7.4	7.5	7.4	3.6	7.0	2.6	11.9	8.2
Summer Average	0.8	1.0	0.9	1.5	2.6	0.4	2.5	1.2	1.2	0.5	0.2	0.8	1.2	2.1
Fall Average	0.4	0.3	2.2	0.6	1.2	1.3	2.8	2.0	2.0	1.6	2.5	0.3	0.4	2.1

Flow (L/s)	SW22C													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	-	-	-	11.5	17.6	26.9	20.8	21.2	8.6	15.9	16.5	16.2	29.5	13.5
Low	-	-	-	1.6	2.6	0.7	0.3	1.4	1.3	0.0	0.6	1.2	0.9	2.8
Winter Average	-	-	-	Frozen	9.8	8.6	1.0	6.3	5.2	9.4	1.0	16.2	6.2	8.0
Spring Average	-	-	-	9.7	8.5	14.4	10.4	13.3	3.5	6.4	11.2	6.4	13.2	10.4
Summer Average	-	-	-	2.4	3.7	1.2	5.9	1.8	2.7	0.9	0.9	2.0	1.6	5.4
Fall Average	-	-	-	3.3	6.7	2.7	7.1	4.0	4.9	4.8	3.1	2.6	4.4	6.2

Flow (L/s)	SW24A													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	3.3	7.9	12.3	5.5	1.9	3.9	3.9	2.9	4.8	16.3	3.5	2.4	4.9	3.7
Low	0.2	<0.1	0.3	0.2	0.3	0.1	0.3	0.1	0.1	0.2	0.1	0.1	0.1	0.1
Winter Average	0.9	Frozen	1.5	2.2	1.6	2.3	1.2	1.7	0.9	3.4	1.6	1.7	1.1	2.2
Spring Average	2.1	2.5	5.3	2.4	1.0	1.6	2.0	2.1	1.1	5.2	1.7	1.3	2.4	1.7
Summer Average	0.5	0.2	0.4	0.3	0.7	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.4	0.5
Fall Average	0.4	0.8	1.0	0.9	1.1	0.3	0.6	0.7	2.1	1.4	0.8	0.5	0.4	0.5

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
DUNTROON QUARRY - 2017 AMP SUMMARY REPORT
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Flow (L/s)	SW25													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	49.6	80.1	90.1	36.5	163.7	40.4	54.0	86.3	64.5	59.6	96.3	24.0	68.6	94.0
Low	<0.1	0.0	0.0	0.0	0.0	0.2	2.5	0.2	0.3	1.3	2.3	0.1	0.0	9.9
Winter Average	20.7	Frozen	Frozen	18.6	101.3	25.9	36.4	44.6	19.2	28.3	Buried	Buried	31.5	21.7
Spring Average	34.6	31.0	23.4	21.2	31.2	25.6	31.7	48.3	24.5	37.3	42.7	16.0	31.0	66.6
Summer Average	7.6	0.2	0.0	0.0	4.5	4.2	14.4	0.4	10.3	11.3	5.1	5.2	0.0	19.3
Fall Average	6.2	5.4	22.7	4.1	28.4	22.5	11.9	20.7	30.0	18.5	14.0	5.4	7.6	15.9

Flow (L/s)	SW27													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	1.5	39.7	30.5	14.2	97.1	23.0	28.3	45.5	46.5	42.9	92.7	17.5	28.9	21.7
Low	0.5	0.3	0.5	0.3	3.1	0.8	1.3	1.4	1.9	2.0	0.4	0.4	1.5	3.1
Winter Average	-	Frozen	3.9	9.0	10.7	14.0	2.2	8.7	13.0	22.5	6.2	1.4	6.2	5.8
Spring Average	-	15.1	17.7	9.3	33.8	16.3	17.3	34.5	17.8	19.4	41.8	11.5	17.5	17.6
Summer Average	-	1.6	1.3	1.1	11.2	3.6	5.2	2.9	2.6	4.6	3.4	1.7	2.6	4.1
Fall Average	1.0	1.2	4.4	0.6	11.9	2.1	6.2	5.7	11.2	11.5	2.9	2.3	1.8	4.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
SW1					
	22-May-03	10.0			
	23-Jun-03	16.8			
	12-Feb-04	2.4		436	
	4-Mar-04	3.5		652	
	19-Mar-04	3.5		629	10.6
	2-Apr-04	4.8	7.8	281	
	8-Apr-04	4.3	7.7	286	
	7-May-04	11.4	8.1	521	
	14-May-04	17.7	7.9	609	
	20-May-04	13.3	8.0	592	
	28-May-04	10.4	7.9	497	11.0
	4-Jun-04	12.3	7.8	555	
	11-Jun-04	14.6	7.8	630	
	17-Jun-04	14.6	7.7	666	
	1-Jul-04	15.1	7.9	717	8.7
	16-Jul-04	15.7	7.8	644	9.2
	22-Jul-04	20.4	7.9		8.5
	29-Jul-04	15.8	7.7	647	
	19-Aug-04	15.8	7.7	731	
	26-Aug-04	17.8	7.8	713	
	9-Sep-04	14.7	8.1	705	7.9
	17-Sep-04	14.7	7.7	764	7.7
	7-Nov-04	7.1	7.8	604	11.4
	17-Dec-04	1.1	7.8	472	
	29-Dec-04	3.4	7.6	600	
	5-Jan-05	3.0	7.7	467	12.7
	20-Jan-05	1.0	7.5	409	
	28-Jan-05	0.7	7.5	422	
	3-Feb-05	2.7	7.5	450	
	16-Feb-05	3.3	7.8	454	12.3
	24-Feb-05	1.1	8.0	440	
	3-Mar-05	0.4	7.6	415	12.9
	24-Mar-05	3.9	7.4	448	12.4
	30-Mar-05	6.2	7.7	470	
	7-Apr-05	3.3	7.5	356	12.1
	15-Apr-05	1.5	6.9	330	9.1
	21-Apr-05	10.4	7.5	451	11.1
	28-Apr-05	7.0	7.5	398	
	6-May-05	14.6	7.7	610	
	13-May-05	11.0	8.2	514	
	20-May-05	10.1	7.2	522	7.8
	27-May-05	18.6	7.7	653	
	3-Jun-05	18.0	7.3	662	7.5
	17-Jun-05	15.2	7.2	601	7.7
	24-Jun-05	22.7	7.7	776	
	30-Jun-05	23.4	7.5	835	7.6
	7-Jul-05	20.4	6.6	731	
	15-Jul-05	23.6	7.1	1148	6.4
	21-Jul-05	24.1	7.6	1524	
	18-Nov-05	4.1	8.5	943	
	25-Nov-05	2.5	8.3	524	12.0
	2-Dec-05	4.1	8.9	545	10.9
	9-Dec-05	3.8	9.4	538	11.0
	16-Dec-05	3.6	8.3	602	11.8
	22-Dec-05	2.8	8.2	592	12.8
	6-Jan-06	2.3	8.4	929	
	20-Jan-06	3.3	7.5	507	11.8
	27-Jan-06	3.5	6.9	547	13.3
	3-Feb-06	3.7	8.2	503	
	10-Feb-06	2.9	8.3	495	13.4
	20-Feb-06	2.4	8.3	493	
	24-Feb-06	2.3	8.2	485	
	3-Mar-06	2.7	8.1	534	
	10-Mar-06	3.3	8.1	483	13.1
	17-Mar-06	2.8	8.2	471	12.9
	24-Mar-06	4.3	8.2	440	
	31-Mar-06	7.5	8.2	601	
	7-Apr-06	5.3	8.1	596	
	10-Apr-06	9.1	8.1	591	
	13-Apr-06	10.7	8.2	594	
	21-Apr-06	11.3	8.3	602	
	26-Apr-06	9.5	8.6	627	
	5-May-06	10.8	8.2	655	
	12-May-06	10.6	8.5	735	
	19-May-06	10.1	8.0	705	
	25-May-06	11.1	7.8	732	
	2-Jun-06	12.5	7.8	754	
	9-Jun-06	12.3	7.9	604	
	16-Jun-06	14.6	8.0	805	
	23-Jun-06	15.2	8.0	794	
	4-Aug-06	19.7	7.8	736	
	25-Aug-06	16.2	7.5	896	
	1-Sep-06	19.0	7.6	871	
	8-Sep-06	18.2	7.7	877	
	15-Sep-06	15.3	7.4	897	
	21-Sep-06	12.3	7.5	895	
	28-Sep-06	11.6	7.5	924	
	20-Oct-06	9.3	7.6	908	
	3-Nov-06	6.7	7.7	898	10.9
	10-Nov-06	8.0	7.8	874	
	17-Nov-06	6.7	7.8	867	10.7
	24-Nov-06	6.1	7.9	867	10.8
	4-Dec-06	3.9	7.7	853	11.9
	8-Dec-06	4.1	7.7	841	12.7
	14-Dec-06	5.5	7.8	886	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	21-Dec-06	4.8	7.9	852	12.0
	28-Dec-06	4.8	7.9	862	11.9
	5-Jan-07	5.6	7.9	853	10.7
	12-Jan-07	4.6	7.8	783	10.7
	19-Jan-07	3.0	8.1	791	12.2
	26-Jan-07	1.9	8.2	797	13.0
	2-Feb-07	3.4	8.0	768	11.7
	9-Feb-07	3.5	8.1	707	12.2
	16-Feb-07	3.2	8.1	808	11.9
	22-Feb-07	3.6	8.0	805	11.2
	2-Mar-07	3.4	8.1	800	12.0
	9-Mar-07	4.4	8.0	668	12.4
	16-Mar-07	3.6	7.9	709	12.0
	23-Mar-07	5.2	7.9	719	11.6
	30-Mar-07	5.7	8.0	669	12.4
	5-Apr-07	3.1	7.6	328	
	13-Apr-07	4.0	8.1	652	13.1
	20-Apr-07	9.0	8.2	613	
	28-Apr-07	9.6	8.1	598	10.9
	4-May-07	11.0	8.2	582	
	11-May-07	10.7	8.0	677	
	18-May-07	10.6	8.1	667	11.1
	25-May-07	11.7	7.9	645	10.6
	1-Jun-07	14.6	8.0	676	7.3
	8-Jun-07	15.4	8.1	757	9.4
	14-Jun-07	14.0	8.2	768	9.2
	29-Jun-07	15.9	8.0	706	8.2
	6-Jul-07	15.5	7.9	745	9.4
	20-Jul-07	15.0	7.6	751	9.0
	27-Jul-07	14.6	7.5	694	7.6
	17-Aug-07	14.4	7.5	797	7.3
	24-Aug-07	17.4	7.9	810	6.2
	30-Aug-07	15.4	7.9	813	7.5
	7-Sep-07	16.3	7.5	822	7.6
	14-Sep-07	13.9	7.5	782	7.3
	21-Sep-07	15.4	7.8	793	8.1
	28-Sep-07	13.6	8.5	820	8.2
	5-Oct-07	13.6	7.5	884	8.1
	19-Oct-07	13.9	7.7	803	7.7
	26-Oct-07	11.9	7.2	801	7.6
	2-Nov-07	10.1	7.6	836	8.7
	9-Nov-07	8.4	7.5	819	9.0
	16-Nov-07	6.9	7.4	862	9.7
	23-Nov-07	4.7	7.9	863	10.0
	7-Dec-07	3.9	7.9	784	10.9
	14-Dec-07	4.0	7.8	781	10.9
	20-Dec-07	3.8	7.7	769	10.8
	28-Dec-07	5.3	6.8		7.7
	4-Jan-08	2.3	7.0	832	11.4
	11-Jan-08	3.5	7.3	719	10.3
	18-Jan-08	1.2	6.9	684	12.4
	25-Jan-08	1.2	8.0	689	12.6
	1-Feb-08	1.3	7.2	706	12.2
	8-Feb-08	2.6	6.9	735	12.1
	15-Feb-08	1.7	6.6	728	12.5
	22-Feb-08	2.0	6.9	731	
	29-Feb-08	1.9	7.0	738	
	7-Mar-08	2.3	7.0	721	13.2
	14-Mar-08	2.4	6.6	713	
	20-Mar-08	2.4	7.6	711	13.4
	28-Mar-08	3.4	7.3	592	
	4-Apr-08	3.9	7.1	629	12.5
	11-Apr-08	3.0	7.2	496	11.5
	15-Apr-08	6.5	7.1	563	
	18-Apr-08	6.0	6.8	374	
	25-Apr-08	9.2	7.7	581	8.8
	2-May-08	7.8	6.7	607	8.8
	8-May-08	8.7	7.1	651	11.4
	15-May-08	13.1	7.7	663	10.4
	23-May-08	10.4	7.5	610	9.4
	30-May-08	10.8	7.1	723	8.1
	6-Jun-08	17.0	7.1	748	6.8
	13-Jun-08	13.9	6.7	693	6.5
	27-Jun-08	14.4	7.1	815	7.9
	18-Jul-08	16.5	7.2	857	5.4
	25-Jul-08	16.2	7.5	891	5.1
	1-Aug-08	17.2	7.5	845	4.9
	15-Aug-08	16.3	6.8	949	5.2
	28-Aug-08	16.4	7.6		6.2
	5-Sep-08	17.2	7.8	864	6.2
	12-Sep-08	15.3	7.8	869	4.9
	26-Sep-08	14.0	7.6	870	5.1
	3-Oct-08	10.4	7.5	863	6.7
	10-Oct-08	11.2	7.2	864	7.0
	17-Oct-08	9.6	7.2	800	5.6
	24-Oct-08	7.7	7.8	804	5.9
	31-Oct-08	7.5	7.8	815	5.4
	2-Nov-08	9.2	6.7	478	7.0
	9-Nov-08	8.3	7.8	678	7.1
	16-Nov-08	1.2	7.4	828	10.7
	23-Nov-08	3.4		647	7.5
	30-Nov-08	1.2		487	12.0
	7-Dec-08	3.1		738	9.1
	19-Dec-08	1.2	7.4	639	8.7
	23-Dec-08	2.5	8.1	649	9.5
	29-Dec-08	0.5	8.3	549	12.2
	9-Jan-09	1.3		616	9.7
	16-Jan-09	0.7	8.1	684	10.0
	23-Jan-09	1.3	8.1	657	7.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	30-Jan-09	2.1	8.1	663	8.8
	13-Feb-09	1.1	8.2	578	7.6
	20-Feb-09	2.0	8.3	606	
	27-Feb-09	2.9	8.1	570	
	6-Mar-09	4.7		556	12.1
	13-Mar-09	0.6	8.5	557	
	20-Mar-09	2.5	8.4	540	
	27-Mar-09	4.2	7.4	624	
	3-Apr-09	5.7	7.7	588	
	9-Apr-09	3.1	7.8	535	
	17-Apr-09	6.4	8.3	590	
	24-Apr-09	7.4	8.2	585	
	1-May-09	10.9	8.5	435	10.8
	8-May-09	11.8	7.9	564	9.4
	15-May-09	11.5	8.1	483	10.5
	22-May-09	10.9	8.1	511	9.0
	29-May-09	11.0	7.4	621	9.9
	5-Jun-09	11.6	7.9	582	10.1
	12-Jun-09	12.5	8.0	556	9.5
	19-Jun-09	12.7	7.7	1277	9.8
	26-Jun-09	16.0	8.3	707	10.0
	2-Jul-09	13.9	7.6	621	8.8
	10-Jul-09	14.0		1179	8.5
	17-Jul-09	13.2	8.9	713	8.0
	24-Jul-09	14.8	7.9	738	9.4
	31-Jul-09	14.7	7.6	760	6.8
	7-Aug-09	14.4	7.7	776	6.5
	14-Aug-09	15.7	8.3	729	7.8
	21-Aug-09	16.6	8.4	820	4.6
	28-Aug-09	14.5	8.4	746	8.3
	2-Oct-09	10.8	8.1	858	
	9-Oct-09	11.0	6.4	881	10.6
	16-Oct-09	6.1	7.8	861	11.5
	23-Oct-09	7.8	6.7	776	11.1
	30-Oct-09	9.0	7.5	795	10.5
	6-Nov-09	7.1	6.4	793	
	13-Nov-09	7.1	7.3	860	
	20-Nov-09	7.0	7.3	731	11.9
	27-Nov-09	6.4	7.6	747	11.5
	11-Dec-09	1.4	7.7	632	11.9
	18-Dec-09	2.4	7.4	765	12.3
	22-Dec-09	3.0	7.9	734	13.6
	28-Dec-09	2.8	7.6	793	11.5
	8-Jan-10	2.2	7.8	694	12.1
	15-Jan-10	3.8	7.7	744	10.8
	22-Jan-10	2.3	8.1	768	12.2
	29-Jan-10	0.5	7.8	781	12.2
	5-Feb-10	3.1	6.5	494	11.6
	12-Feb-10	3.2	7.0	486	11.6
	19-Feb-10	2.0	8.2	586	11.8
	1-Mar-10	3.2	7.3	647	11.8
	5-Mar-10	5.6	7.4	631	11.4
	12-Mar-10	5.0	7.3	707	12.2
	19-Mar-10	8.8	7.5	667	12.5
	26-Mar-10	3.1	7.1	565	12.6
	2-Apr-10	8.4	6.9	569	12.0
	9-Apr-10	6.7	7.4	659	12.8
	16-Apr-10	10.2	8.0	500	11.2
	23-Apr-10	9.0	8.0	471	11.5
	30-Apr-10	9.9	7.9	464	10.7
	7-May-10	10.2	8.0	456	11.4
	14-May-10	10.2	7.8	389	9.1
	21-May-10	11.9	7.9	513	10.0
	28-May-10	15.4	7.9	503	8.8
	4-Jun-10	13.7	7.8	549	6.5
	11-Jun-10	13.4	7.9	476	6.7
	18-Jun-10	14.4	7.9	587	11.2
	25-Jun-10	14.4	7.9	560	9.4
	1-Jul-10	13.4	7.8	508	8.7
	9-Jul-10	18.4	7.6	545	8.3
	15-Jul-10	19.3	7.8	689	7.7
	23-Jul-10	17.8	7.1	606	8.4
	30-Jul-10	16.7	7.8	530	8.3
	24-Sep-10	16.2	7.9	-	7.2
	1-Oct-10	12.1	7.7	611	7.1
	8-Oct-10	11.2	7.7	599	7.6
	15-Oct-10	11.2	7.6	569	7.6
	22-Oct-10	6.9	7.8	566	9.4
	29-Oct-10	7.8	7.8	490	9.1
	5-Nov-10	4.1	7.9	453	9.4
	12-Nov-10	6.3	7.8	588	9.6
	19-Nov-10	4.8	8.0	474	11.4
	26-Nov-10	3.1	7.9	428	11.4
	3-Dec-10	2.8	7.8	428	10.2
	9-Dec-10	0.5	7.8	352	15.4
	17-Dec-10	0.5	7.6	335	12.0
	23-Dec-10	1.9	8.1	380	11.1
	30-Dec-10	3.3	7.9	431	10.9
	7-Jan-11	1.8	7.8	369	12.1
	14-Jan-11	2.7	7.8	356	11.8
	21-Jan-11	1.3	7.7	355	11.0
	28-Jan-11	3.1	8.0	392	11.2
	4-Feb-11	0.4	7.9	335	11.6
	11-Feb-11	2.1	7.7	411	11.5
	18-Feb-11	3.0	7.7	379	12.3
	25-Feb-11	3.0	7.8	388	12.1
	4-Mar-11	2.5	7.7	371	12.3
	11-Mar-11	0.7	7.7	304	12.6
	18-Mar-11	2.7	7.8	266	15.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	25-Mar-11	4.8	7.9	398	13.2
	1-Apr-11	4.3	7.8	359	12.0
	8-Apr-11	4.2	7.6	359	12.4
	15-Apr-11	4.4	7.7	288	10.4
	21-Apr-11	4.2	8.1	366	12.3
	29-Apr-11	5.7	7.2	372	-
	6-May-11	7.7	8.2	318	10.4
	13-May-11	10.6	8.0	485	11.9
	20-May-11	11.5	8.0	399	10.1
	27-May-11	10.3	8.0	387	8.4
	3-Jun-11	13.9	7.9	459	8.0
	10-Jun-11	14.5	7.8	534	8.5
	17-Jun-11	13.8	7.9	483	9.6
	24-Jun-11	15.1	7.8	571	7.2
	30-Jun-11	14.9	7.7	507	10.0
	16-Sep-11	12.0	8.1	529	8.3
	6-Oct-11	10.6	8.0	692	9.0
	21-Oct-11	9.4	8.0	593	9.6
	28-Oct-11	8.6	8.3	492	9.9
	4-Nov-11	7.9	8.1	518	10.1
	11-Nov-11	5.9	7.6	558	4.8
	18-Nov-11	5.7	7.5	547	11.0
	25-Nov-11	6.8	7.5	557	9.6
	2-Dec-11	5.1	8.1	484	11.6
	9-Dec-11	4.8	7.4	424	9.8
	16-Dec-11	4.0	7.6	396	12.8
	23-Dec-11	3.5	7.5	369	4.8
	30-Dec-11	3.5	9.2	355	11.3
	6-Jan-12	4.0	7.5	432	13.7
	13-Jan-12	2.9	8.1	344	-
	20-Jan-12	2.2	8.0	344	10.5
	27-Jan-12	8.4	8.1	309	12.8
	3-Feb-12	3.6	7.9	274	11.2
	10-Feb-12	2.6	7.9	308	13.7
	17-Feb-12	3.5	7.7	370	14.0
	24-Feb-12	1.0	8.1	320	14.2
	1-Mar-12	2.6	7.8	359	-
	9-Mar-12	1.4	8.0	212	12.9
	16-Mar-12	4.4	7.5	300	10.9
	23-Mar-12	10.5	7.6	-	6.3
	30-Mar-12	5.2	8.0	369	12.4
	6-Apr-12	7.7	8.3	420	6.1
	13-Apr-12	6.4	8.0	408	9.0
	20-Apr-12	8.5	8.0	452	7.9
	27-Apr-12	4.5	8.4	350	12.4
	4-May-12	12.4	8.0	482	6.9
	11-May-12	9.2	7.8	285	9.5
	18-May-12	10.8	7.9	492	7.5
	25-May-12	14.8	7.3	570	6.7
	1-Jun-12	11.0	7.8	4.93	6.1
	8-Jun-12	14.0	8.2	547	7.8
	15-Jun-12	14.7	8.0	633	5.9
	22-Jun-12	16.2	7.9	664	6.4
	28-Jun-12	16.6	8.1	660	6.4
	6-Jul-12	17.9	8.0	769	5.6
	10-Aug-12	16.2	8.1	542	5.8
	17-Aug-12	16.3	8.2	520	5.7
	31-Aug-12	18.0	7.6	749	6.7
	14-Sep-12	14.8	7.4	661	5.5
	28-Sep-12	10.6	6.8	723	8.3
	5-Oct-12	13.5	7.3	808	8.6
	12-Oct-12	7.4	7.8	638	10.0
	19-Oct-12	10.8	8.5	613	7.2
	26-Oct-12	10.7	7.0	615	9.2
	2-Nov-12	4.2	5.8	567	6.6
	9-Nov-12	5.0	6.3	444	9.8
	16-Nov-12	5.4	7.2	541	9.1
	23-Nov-12	7.5	7.6	511	7.5
	30-Nov-12	5.3	8.7	515	5.0
	7-Dec-12	5.3	7.6	536	6.6
	14-Dec-12	3.8	8.3	462	9.1
	21-Dec-12	4.2	7.6	494	10.2
	28-Dec-12	3.8	7.5	434	12.1
	4-Jan-13	2.1	7.6	4.65	9.9
	11-Jan-13	3.7	7.7	547	9.1
	17-Jan-13	2.3	7.7	463	10.6
	25-Jan-13	1.6	7.7	458	4.5
	1-Feb-13	0.4	7.9	308	11.7
	8-Feb-13	0.7	7.6	322	13.4
	15-Feb-13	2.4	7.6	653	12.2
	22-Feb-13	2.0	7.3	335	8.6
	1-Mar-13	1.9	7.6	484	9.8
	8-Mar-13	5.2	7.9	381	12.1
	15-Mar-13	2.0	-	-	-
	22-Mar-13	2.1	7.8	405	12.5
	28-Mar-13	4.8	7.9	370	11.5
	5-Apr-13	3.0	7.9	358	6.5
	12-Apr-13	2.9	7.4	382	3.8
	19-Apr-13	7.5	7.5	219	6.7
	26-Apr-13	4.8	7.6	288	9.3
	3-May-13	13.4	7.6	389	8.3
	9-May-13	10.4	7.8	439	9.5
	16-May-13	10.0	7.9	408	7.3
	24-May-13	8.2	7.7	439	8.2
	31-May-13	15.2	7.9	490	8.4
	7-Jun-13	10.2	-	411	6.5
	14-Jun-13	15.1	7.9	497	6.4
	21-Jun-13	13.1	7.9	530	7.7
	27-Jun-13	15.8	7.9	486	8.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	5-Jul-13	14.9	7.7	584	7.8
	12-Jul-13	16.4	7.7	621	5.2
	19-Jul-13	19.7	7.7	621	5.2
	25-Jul-13	14.4	7.6	570	7.9
	2-Aug-13	16.3	8.1	587	9.0
	8-Aug-13	16.4	7.5	538	8.4
	16-Aug-13	13.8	7.9	621	4.9
	23-Aug-13	-	-	-	-
	30-Aug-13	14.3	7.9	613	4.8
	6-Sep-13	13.4	7.8	598	5.0
	13-Sep-13	12.5	8.4	530	8.1
	20-Sep-13	15.1	8.3	556	4.1
	27-Sep-13	11.8	7.9	491	6.9
	4-Oct-13	10.2	7.8	483	5.9
	11-Oct-13	9.2	7.6	458	3.9
	18-Oct-13	9.2	7.5	426	4.0
	25-Oct-13	7.3	7.6	438	4.3
	31-Oct-13	9.7	7.6	421	4.3
	8-Nov-13	7.0	7.4	403	4.5
	14-Nov-13	2.9	7.4	415	4.1
	22-Nov-13	3.5	7.4	405	4.1
	29-Nov-13	3.9	8.4	393	7.5
	6-Dec-13	3.0	7.8	340	5.4
	13-Dec-13	7.6	8.3	256	4.6
	19-Dec-13	3.5	8.8	386	6.3
	27-Dec-13	2.9	8.6	382	5.2
	3-Jan-14	0.9	8.5	360	3.2
	10-Jan-14	-0.9	7.5	360	4.1
	17-Jan-14	1.5	8.1	356	4.3
	24-Jan-14	0.8	7.5	369	11.4
	31-Jan-14	1.7	7.1	398	4.0
	7-Feb-14	0.6	7.1	382	3.9
	14-Feb-14	1.9	7.4	254	4.4
	21-Feb-14	2.0	7.1	399	9.1
	7-Mar-14	0.1	7.4	389	7.8
	14-Mar-14	1.5	6.5	408	11.9
	21-Mar-14	1.4	7.3	408	3.8
	28-Mar-14	3.7	7.4	421	11.5
	4-Apr-14	3.2	7.8	403	11.2
	11-Apr-14	1.7	7.8	297	9.7
	17-Apr-14	3.8	7.7	485	9.0
	25-Apr-14	3.6	7.6	480	7.0
	1-May-14	4.2	7.5	473	5.8
	9-May-14	11.1	7.8	425	10.4
	16-May-14	10.2	7.2	328	10.3
	23-May-14	11.0	7.2	382	10.1
	30-May-14	11.0	7.3	375	10.0
	6-Jun-14	11.0	7.2	392	8.0
	13-Jun-14	11.2	7.2	402	8.1
	20-Jun-14	12.5	7.2	412	8.1
	27-Jun-14	12.5	7.2	423	8.1
	4-Jul-14	12.7	7.5	481	7.4
	11-Jul-14	14.3	7.3	424	6.9
	18-Jul-14	13.2	8.4	598	-
	25-Jul-14	13.1	8.7	603	-
	1-Aug-14	13.9	8.5	485	6.2
	8-Aug-14	13.8	8.5	460	6.2
	15-Aug-14	12.2	8.5	423	6.2
	22-Aug-14	14.3	8.8	693	-
	29-Aug-14	14.0	8.7	682	-
	5-Sep-14	16.3	8.9	717	-
	12-Sep-14	11.8	7.5	645	6.9
	19-Sep-14	9.2	7.9	422	6.1
	26-Sep-14	10.7	7.9	429	6.4
	3-Oct-14	13.8	7.7	473	6.0
	10-Oct-14	10.1	7.5	470	6.3
	16-Oct-14	12.8	7.9	666	6.3
	24-Oct-14	7.2	8.0	571	6.5
	31-Oct-14	6.0	7.9	423	6.0
	7-Nov-14	0.5	7.3	456	6.9
	14-Nov-14	-1.9	7.3	446	6.6
	20-Nov-14	-2.6	7.2	420	6.2
	28-Nov-14	-1.0	7.3	423	7.0
	5-Dec-14	0.3	7.3	425	4.3
	12-Dec-14	0.9	7.2	467	6.9
	19-Dec-14	-1.0	7.2	453	6.9
	26-Dec-14	1.9	7.3	413	6.3
	2-Jan-15	-0.9	7.2	418	7.0
	14-Jan-15	-0.4	7.2	428	6.3
	23-Jan-15	-0.3	7.1	420	6.3
	30-Jan-15	0.0	8.1	283	11.9
	6-Feb-15	1.0	8.1	570	12.5
	12-Feb-15	0.0	7.9	545	11.9
	27-Feb-15	1.5	8.0	577	120.1
	6-Mar-15	1.4	8.1	576	12.6
	13-Mar-15	6.4	8.1	569	11.9
	20-Mar-15	7.2	8.0	364	11.9
	26-Mar-15	4.4	8.1	331	12.3
	2-Apr-15	8.3	7.9	369	10.8
	10-Apr-15	5.2	7.8	260	9.5
	17-Apr-15	7.8	8.4	353	-
	23-Apr-15	3.6	8.1	369	14.2
	1-May-15	9.8	7.7	482	7.5
	8-May-15	18.5	9.1	555	-
	15-May-15	11.9	7.6	437	7.7
	21-May-15	11.0	7.7	432	9.4
	28-May-15	16.1	7.7	519	7.3
	4-Jun-15	15.2	7.6	519	7.3
	12-Jun-15	13.1	7.5	551	5.1
	18-Jun-15	18.4	7.5	517	5.7
	26-Jun-15	26.0	8.1	617	-
	1-Jul-15	15.2	7.8	463	-
	10-Jul-15	18.5	7.7	595	-
	17-Jul-15	12.7	8.1	558	-
	22-Jul-15	14.5	7.8	665	-
	30-Jul-15	23.9	8.1	749	-
	5-Aug-15	15.4	7.4	564	6.0
	13-Aug-15	13.2	7.6	647	5.7
	21-Aug-15	17.4	7.3	608	4.7
	28-Aug-15	-	8.2	598	-
	3-Sep-15	16.5	7.6	741	5.9
	10-Sep-15	18.2	7.6	705	5.6
	25-Sep-15	14.0	7.6	640	7.6
	2-Oct-15	7.6	7.5	522	8.2
	9-Oct-15	10.7	7.3	558	6.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-Oct-15	8.5	7.7	514	8.6
	23-Oct-15	7.1	7.6	523	9.4
	30-Oct-15	7.1	7.5	480	10.8
	5-Nov-15	10.9	7.8	572	7.6
	10-Nov-15	4.3	7.5	468	9.3
	13-Nov-15	5.2	7.3	432	6.7
	19-Nov-15	9.1	7.7	586	13.0
	26-Nov-15	0.8	7.3	443	11.1
	4-Dec-15	2.3	7.6	482	15.9
	10-Dec-15	5.7	7.6	538	12.8
	17-Dec-15	3.7	7.8	420	11.5
	23-Dec-15	5.1	7.6	445	13.9
	30-Dec-15	0.5	7.4	391	10.4
	8-Jan-16	1.5	7.4	410	11.9
	14-Jan-16	0.2	7.2	383	10.8
	22-Jan-16	-0.1	7.3	431	9.8
	29-Jan-16	-0.1	7.2	401	8.8
	5-Feb-16	0.5	7.4	392	11.5
	11-Feb-16	-0.1	7.3	416	8.7
	18-Feb-16	0.2	7.3	407	11.0
	25-Feb-16	-0.2	7.5	255	6.4
	4-Mar-16	0.1	7.1	376	9.1
	10-Mar-16	0.5	7.3	244	9.4
	18-Mar-16	1.3	7.7	299	10.6
	28-Mar-16	4.4	7.3	189	9.4
	7-Apr-16	1.2	7.3	254	10.1
	15-Apr-16	2.9	7.4	265	11.9
	22-Apr-16	10.8	7.9	434	6.7
	29-Apr-16	5.5	8.0	380	10.8
	6-May-16	10.1	8.0	460	7.0
	13-May-16	14.5	7.7	598	-
	20-May-16	14.8	7.8	616	9.0
	27-May-16	17.3	7.5	602	2.7
	2-Jun-16	16.9	7.5	593	2.3
	10-Jun-16	10.6	7.6	696	4.6
	17-Jun-16	14.8	7.5	655	3.9
	24-Jun-16	13.2	7.4	521	4.1
	28-Jun-16	16.6	7.5	667	3.8
	5-Jul-16	17.4	7.6	665	6.6
	8-Jul-16	19.2	7.6	648	4.3
	15-Jul-16	18.7	7.6	623	4.1
	22-Jul-16	20.0	7.4	820	3.7
	29-Jul-16	17.9	7.6	744	4.2
	5-Aug-16	20.6	7.5	747	2.4
	19-Aug-16	17.4	7.6	595	2.7
	26-Aug-16	18.3	7.4	781	2.7
	2-Sep-16	15.3	7.1	653	3.8
	9-Sep-16	17.7	7.4	619	3.0
	16-Sep-16	10.9	7.7	618	5.6
	21-Sep-16	15.7	7.1	635	5.8
	30-Sep-16	11.9	7.4	620	4.8
	7-Oct-16	14.0	7.4	657	5.5
	13-Oct-16	10.4	7.0	506	6.1
	19-Oct-16	13.6	7.6	676	9.0
	27-Oct-16	1.5	7.2	418	10.4
	3-Nov-16	8.0	7.7	556	8.3
	11-Nov-16	4.8	7.3	450	10.2
	18-Nov-16	5.7	7.3	789	8.0
	24-Nov-16	0.1	7.2	412	10.8
	2-Dec-16	1.9	7.9	373	7.9
	7-Dec-16	0.1	7.6	364	7.9
	16-Dec-16	0.0	7.5	518	8.7
	20-Jan-17	0.1	7.4	405	8.1
	26-Jan-17	-0.9	7.5	400	6.7
	19-Apr-17	11.5	7.4	457	12.8
	16-May-17	11.4	7.9	636	7.9
	28-Jun-17	17.3	7.6	620	3.2
	18-Jul-17	20.2	7.4	737	2.5
	15-Aug-17	16.1	7.8	557	1.2
	18-Sep-17	16.3	6.6	735	2.2
	18-Oct-17	8.3	7.7	525	4.3
	15-Nov-17	0.7	7.7	447	10.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
SW2					
	22-May-03	8.0			
	12-Feb-04	5.4		394	11.6
	19-Mar-04	5.1		571	9.3
	7-May-04	8.8	7.5	406	
	14-May-04	8.6	7.6	419	
	20-May-04	7.3	7.6	409	
	28-May-04	7.1	7.5	358	
	4-Jun-04	9.0	7.5	393	
	11-Jun-04	9.3	7.6	425	
	17-Jun-04	8.2	7.4	410	
	24-Jun-04	9.9	7.7	442	11.2
	1-Jul-04	9.8	7.6	439	10.5
	16-Jul-04	10.0	7.5	458	10.2
	22-Jul-04	14.6	7.6		8.5
	29-Jul-04	10.3	7.6	422	
	6-Aug-04	13.6	7.8	491	10.1
	12-Aug-04	10.2	7.6	445	
	19-Aug-04	10.8	7.5	463	10.8
	26-Aug-04	13.7		478	
	3-Sep-04	13.7	7.6	426	7.7
	9-Sep-04	11.7	8.0	460	9.2
	17-Sep-04	10.9	7.4	450	8.1
	23-Sep-04	13.2	7.4	481	6.8
	1-Oct-04	11.6	7.4	469	7.3
	7-Oct-04	12.2	7.3	468	7.2
	14-Oct-04	10.6	7.4	446	8.0
	20-Oct-04	9.7	7.4	447	7.4
	28-Oct-04	9.8	7.3	509	6.9
	4-Nov-04	7.5	7.5	390	10.0
	11-Nov-04	8.2	7.3	435	7.8
	19-Nov-04	8.5	7.2	460	7.6
	25-Nov-04	6.0	7.3	454	7.7
	2-Dec-04	4.5	7.3	419	10.1
	9-Dec-04	6.0	7.6	427	10.8
	5-Jan-05	6.3	7.4	404	11.5
	13-Jan-05	6.1	7.2	375	11.5
	10-Feb-05	6.1	7.4	411	
	16-Feb-05	6.4	7.8	406	12.2
	24-Feb-05	4.4	8.0	398	
	3-Mar-05	4.4	7.6	392	
	10-Mar-05	6.9	7.5	430	12.0
	17-Mar-05	6.5	7.5	404	12.4
	24-Mar-05	7.4	7.5	449	11.8
	30-Mar-05	7.7	7.6	521	11.9
	7-Apr-05	4.8	7.3	406	12.3
	15-Apr-05	5.8	7.1	341	12.5
	21-Apr-05	7.0	7.0	323	11.7
	29-Apr-05	6.0	7.3	329	12.1
	6-May-05	8.1	6.8	506	
	13-May-05	6.4	8.6	377	12.1
	20-May-05	7.1	7.7	392	12.1
	27-May-05	8.9	6.6	420	
	3-Jun-05	9.7	6.9	443	
	10-Jun-05	10.3	7.1	449	
	17-Jun-05	8.6	6.8	472	10.9
	24-Jun-05	13.1	7.1	511	
	30-Jun-05	11.2	7.0	487	
	7-Jul-05	10.7	5.0	454	9.9
	15-Jul-05	12.8	6.9	674	9.7
	21-Jul-05	14.8	6.3	959	9.3
	28-Jul-05	11.1	7.3	874	9.4
	2-Aug-05	12.4	8.8	511	9.4
	12-Aug-05	12.5	7.7	798	
	19-Aug-05	12.2	7.6	488	9.5
	24-Aug-05	11.1	7.4	480	9.3
	1-Sep-05	12.0		475	8.9
	9-Sep-05	11.8	6.7	473	8.0
	16-Sep-05	13.1	7.3	555	
	23-Sep-05	12.4	7.5	505	7.5
	30-Sep-05	12.2	7.5	520	7.9
	7-Oct-05	11.5	7.6	657	
	14-Oct-05	12.0	7.6	535	7.9
	21-Oct-05	10.5	8.4	510	8.4
	28-Oct-05	9.5	7.5	541	8.4
	4-Nov-05	10.6	7.5	552	7.9
	11-Nov-05	9.5	7.6	549	7.3
	18-Nov-05	5.4	7.6	777	
	25-Nov-05	6.8	7.5	506	7.2
	2-Dec-05	5.9	8.6	467	10.0
	9-Dec-05	5.3	8.7	447	10.0
	16-Dec-05	5.0	7.8	484	10.9
	22-Dec-05	4.0	8.0	469	11.6
	6-Jan-06	5.3	7.8	426	
	13-Jan-06	7.4	7.7	443	10.9
	20-Jan-06	6.7	7.5	428	11.4
	27-Jan-06	6.3	6.9	441	12.0
	3-Feb-06	6.4	7.7	421	11.6
	10-Feb-06	6.1	7.9	419	
	20-Feb-06	6.2	8.8	422	
	24-Feb-06	4.4	7.9	397	
	3-Mar-06	4.3	8.3	410	
	10-Mar-06	5.5	6.9	419	11.6
	17-Mar-06	4.8	7.4	364	12.2
	24-Mar-06	5.9	7.9	378	
	31-Mar-06	7.3	7.7	517	
	7-Apr-06	5.3	7.7	461	
	10-Apr-06	7.5	7.8	460	
	13-Apr-06	7.4	7.7	439	
	21-Apr-06	7.6	7.8	466	
	26-Apr-06	6.6	8.4	493	
	5-May-06	8.2	7.8	507	
	12-May-06	8.9	8.1	605	
	19-May-06	8.4	7.6	572	
	25-May-06	7.9	7.8	594	
	2-Jun-06	7.9	8.0	591	
	9-Jun-06	9.3	7.8	480	
	16-Jun-06	9.6	7.7	570	
	23-Jun-06	9.8	7.6	613	
	30-Jun-06	11.2	8.7	623	
	7-Jul-06	13.9	8.2	554	
	14-Jul-06	12.0	7.8	546	
	21-Jul-06	15.9	7.8	563	
	28-Jul-06	17.4	7.7	598	
	4-Aug-06	17.3	7.9	551	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	11-Aug-06	11.7	8.2	526	
	18-Aug-06	13.9	7.3	549	
	25-Aug-06	12.8	7.3	542	
	1-Sep-06	14.2	7.2	542	
	8-Sep-06	14.1	7.4	563	
	15-Sep-06	12.3	7.1	575	
	21-Sep-06	11.2	7.4	595	
	28-Sep-06	10.5	7.2	617	
	6-Oct-06	11.5	7.3	634	
	13-Oct-06	7.3	7.1	643	
	20-Oct-06	9.0	7.3	668	
	26-Oct-06	9.0	7.7	711	
	3-Nov-06	8.1	7.6	634	11.0
	10-Nov-06	9.2	7.3	588	
	17-Nov-06	8.3	7.5	595	10.4
	24-Nov-06	7.6	7.7	582	11.6
	4-Dec-06	7.1	7.6	588	11.9
	8-Dec-06	6.8	7.4	588	12.1
	14-Dec-06	7.8	7.5	602	
	21-Dec-06	7.2	7.6	604	11.9
	28-Dec-06	7.4	7.6	619	11.5
	5-Jan-07	7.5	7.6	620	11.0
	12-Jan-07	6.8	7.6	587	11.1
	19-Jan-07	5.2	7.8	580	12.1
	26-Jan-07	4.4	8.1	584	11.1
	2-Feb-07	5.5	8.0	559	
	9-Feb-07	5.7	8.0	510	
	16-Feb-07	4.3	8.0	576	12.6
	22-Feb-07	5.4	8.1	575	11.8
	2-Mar-07	5.3	8.7	568	
	9-Mar-07	4.4	8.0	479	12.7
	16-Mar-07	6.0	7.0	521	11.9
	23-Mar-07	5.6	7.6	532	
	30-Mar-07	5.6	7.7	492	12.6
	5-Apr-07	5.1	7.1	520	12.5
	13-Apr-07	5.2	7.8	549	
	20-Apr-07	7.1	7.8	493	
	28-Apr-07	6.5	8.0	517	
	4-May-07	7.1	7.6	470	
	11-May-07	7.4	7.6	549	
	18-May-07	8.0	8.2	555	
	25-May-07	8.8	7.9	510	
	1-Jun-07	9.5	7.9	524	
	8-Jun-07	9.7	7.6	603	10.7
	14-Jun-07	8.6	7.6	597	11.0
	22-Jun-07	8.2	7.6	554	10.6
	29-Jun-07	13.5	8.4	547	9.4
	6-Jul-07	11.5	8.0	584	10.3
	13-Jul-07	10.9	8.9	575	9.6
	20-Jul-07	11.0	8.4	629	10.4
	27-Jul-07	11.1	7.4	530	9.3
	3-Aug-07	13.1	7.6	562	8.3
	10-Aug-07	11.7	7.3	556	8.9
	17-Aug-07	11.2	7.3	615	8.5
	24-Aug-07	13.4	7.9	598	7.8
	30-Aug-07	12.7	7.7	624	7.4
	7-Sep-07	12.9	7.4	629	6.4
	14-Sep-07	11.9	7.2	630	7.6
	21-Sep-07	12.1	8.4	619	7.4
	28-Sep-07	12.3	8.5	615	6.4
	5-Oct-07	12.2	7.1	671	2.5
	12-Oct-07	10.6	7.1	687	7.4
	19-Oct-07	12.4	7.7	669	6.2
	26-Oct-07	12.0	7.7	670	6.4
	2-Nov-07	10.9	7.3	732	5.8
	9-Nov-07	9.1	7.3	752	7.0
	16-Nov-07	8.0	7.1	852	7.7
	23-Nov-07	3.8	8.2	781	10.5
	7-Dec-07	5.2	8.2	640	11.1
	14-Dec-07	4.6	8.0	646	11.6
	28-Dec-07	6.6	6.4		9.7
	4-Jan-08	4.8	7.0	612	12.5
	11-Jan-08	5.6	7.1	418	12.0
	18-Jan-08	5.0	7.1	525	12.2
	25-Jan-08	5.2	7.7	517	11.9
	1-Feb-08	5.0	7.3	533	11.7
	8-Feb-08	5.7	6.8	563	11.9
	15-Feb-08	4.9	7.3	564	
	22-Feb-08	5.5	7.2	535	
	29-Feb-08	4.1	7.0	511	
	7-Mar-08	5.3	6.8	454	
	14-Mar-08	5.1	6.0	552	
	20-Mar-08	5.1	7.7	578	11.9
	28-Mar-08	5.3	7.3	485	
	4-Apr-08	4.7	6.9	476	12.5
	11-Apr-08	4.4	6.9	412	12.9
	15-Apr-08	5.5	7.7	427	12.2
	15-Apr-08	5.5	7.7	427	12.2
	18-Apr-08	6.1	6.5	434	10.1
	25-Apr-08	6.5	8.3	463	11.1
	2-May-08	6.3	7.3	560	11.4
	8-May-08	6.4	6.7	544	
	15-May-08	9.8	7.4	551	10.5
	23-May-08	7.6	8.0	497	9.4
	30-May-08	13.7	6.7	700	7.3
	6-Jun-08	11.9	6.7	611	7.6
	13-Jun-08	9.0	6.2	518	9.2
	20-Jun-08	8.7	8.2	540	8.6
	27-Jun-08	9.3	6.7	587	8.1
	4-Jul-08	9.2	7.4	609	7.5
	11-Jul-08	9.9	6.9	565	8.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Jul-08	10.7	7.2	593	6.8
	25-Jul-08	9.4	7.9	628	7.1
	1-Aug-08	10.2	7.8	580	7.0
	8-Aug-08	10.8	7.3	599	6.2
	15-Aug-08	9.6	7.1	657	7.0
	22-Aug-08	12.9	6.1	651	5.2
	28-Aug-08	10.5	6.9		8.8
	5-Sep-08	11.6	7.5	570	7.8
	12-Sep-08	11.0	7.6	575	6.2
	19-Sep-08	9.8	7.9	401	5.6
	26-Sep-08	10.0	7.5	585	5.8
	3-Oct-08	9.0	7.2	604	8.6
	10-Oct-08	9.2	7.3	598	8.7
	17-Oct-08	8.7	7.4	536	6.0
	24-Oct-08	7.9	7.7	549	6.2
	31-Oct-08	8.6	8.4	520	7.1
	7-Nov-08	9.5	6.6	526	9.2
	14-Nov-08	9.2	7.3	475	9.0
	12-Dec-08	6.7	8.7	548	9.4
	23-Dec-08	4.5	7.8	475	7.9
	29-Dec-08	5.1	7.6	449	9.9
	16-Jan-09	4.7	7.8	542	9.7
	23-Jan-09	5.5	7.8	530	8.9
	30-Jan-09	4.9	8.0	526	9.1
	6-Feb-09	4.8		477	9.6
	13-Feb-09	5.0	7.8	444	6.2
	20-Feb-09	5.1	8.0	476	
	27-Feb-09	4.5	7.9	515	
	6-Mar-09	6.0		503	
	13-Mar-09	4.3	7.9	441	
	20-Mar-09	4.5	7.8	442	
	27-Mar-09			544	
	3-Apr-09	5.5	7.4	493	
	9-Apr-09	4.7	7.6	458	
	17-Apr-09	5.2	7.8	513	
	24-Apr-09	5.8	7.7	507	
	1-May-09	8.2	7.3	396	11.6
	8-May-09	7.4	7.4	509	
	15-May-09	7.7	7.7	440	11.5
	22-May-09	7.0	8.1	344	11.6
	29-May-09	7.3	7.7	556	
	5-Jun-09	7.5	7.0	496	11.9
	12-Jun-09	8.5	8.2	564	11.6
	19-Jun-09	8.9	7.5	1022	11.7
	26-Jun-09	13.0	7.6	565	10.0
	2-Jul-09	8.8	7.6	490	11.3
	10-Jul-09	9.1			11.6
	17-Jul-09	9.1	9.4	544	10.2
	24-Jul-09	10.7	8.1	551	9.9
	31-Jul-09	10.1	7.7	545	10.8
	7-Aug-09	10.1	8.0	597	8.5
	14-Aug-09	10.4	9.0	554	10.4
	21-Aug-09	12.1	8.2	621	9.6
	28-Aug-09	10.7	8.5	559	9.2
	4-Sep-09	10.5	8.3	580	9.0
	11-Sep-09	11.4	8.8	538	9.0
	18-Sep-09	11.2	8.1	611	8.1
	25-Sep-09	11.3	7.4	542	9.3
	2-Oct-09	9.4	8.8	676	
	9-Oct-09	9.9	7.8	659	11.0
	16-Oct-09	6.5	8.1	636	12.2
	23-Oct-09	7.3	8.0	587	10.9
	30-Oct-09	9.2	7.9	595	11.5
	6-Nov-09	7.3	7.2	623	
	13-Nov-09	7.8	7.7	634	
	20-Nov-09	7.7	7.7	544	
	27-Nov-09	7.0	7.8	523	
	4-Dec-09	6.5	7.5	524	11.7
	11-Dec-09	4.8	7.9	483	
	18-Dec-09	4.2	7.9	561	12.1
	22-Dec-09	4.5	8.7	557	
	28-Dec-09	5.0	7.6	585	
	8-Jan-10	2.4	8.5	512	12.1
	15-Jan-10	5.5	8.8	487	12.7
	22-Jan-10	3.8	8.3	548	12.7
	29-Jan-10	3.7	8.2	581	12.7
	5-Feb-10	5.2	6.4	553	12.6
	12-Feb-10	5.3	6.6	562	12.6
	19-Feb-10	4.9	7.6	504	11.3
	1-Mar-10	4.7	8.2	377	12.4
	5-Mar-10	5.6	7.4	522	11.7
	12-Mar-10	6.2	7.9	659	12.1
	19-Mar-10	5.4	7.6	464	12.8
	26-Mar-10	4.6	7.5	423	12.6
	2-Apr-10	6.0	7.0	440	
	9-Apr-10	5.6	7.2	543	12.2
	16-Apr-10	6.5	7.6	370	12.4
	23-Apr-10	6.1	7.7	344	12.7
	30-Apr-10	7.0	7.6	346	12.1
	7-May-10	7.2	7.7	348	
	14-May-10	10.0	7.7	345	11.4
	21-May-10	7.9	7.6	357	11.8
	28-May-10	9.0	7.6	339	11.8
	4-Jun-10	7.9	7.7	395	7.8
	11-Jun-10	8.1	7.6	337	8.3
	18-Jun-10	8.3	7.6	407	13.8
	25-Jun-10	8.7	7.7	391	11.5
	1-Jul-10	8.6	7.7	362	11.4
	9-Jul-10	9.8	7.7	441	10.8
	15-Jul-10	10.9	7.6	434	10.4
	23-Jul-10	10.2	7.6	449	13.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	30-Jul-10	9.9	7.6	366	10.5
	6-Aug-10	10.3	7.7	423	
	13-Aug-10	10.5	7.6	436	7.8
	20-Aug-10	10.4	7.5	435	9.5
	27-Aug-10	10.9	7.5	306	9.6
	3-Sep-10	12.4	7.7	452	9.3
	10-Sep-10	11.3	7.6	367	9.8
	17-Sep-10	10.3	7.6	385	9.5
	24-Sep-10	12.4	7.6		9.1
	1-Oct-10	10.2	7.6	443	9.9
	8-Oct-10	10.1	7.4	446	9.1
	15-Oct-10	10.1	7.4	436	9.2
	22-Oct-10	7.8	7.6	429	10.3
	29-Oct-10	8.9	7.5	376	9.3
	5-Nov-10	7.9	7.6	477	10.3
	12-Nov-10	9.1	7.5	484	10.5
	19-Nov-10	8.6	7.7	385	10.9
	26-Nov-10	7.7	7.5	377	10.8
	3-Dec-10	7.8	7.5	399	10.1
	9-Dec-10	6.8	7.5	337	10.8
	17-Dec-10	7.1	7.7	406	11.3
	23-Dec-10	5.0	8.0	339	11.0
	30-Dec-10	7.0	7.9	385	10.5
	7-Jan-11	6.1	7.7	307	12.2
	14-Jan-11	6.3	7.5	321	11.5
	21-Jan-11	5.0	7.6	318	10.4
	28-Jan-11	5.9	7.8	333	11.3
	4-Feb-11	2.3	7.8	290	10.4
	11-Feb-11	2.3	7.8	310	10.6
	18-Feb-11	2.5	7.8	329	11.3
	25-Feb-11	4.2	7.6	316	12.3
	4-Mar-11	5.9	7.5	332	12.1
	11-Mar-11	5.0	7.5	341	12.5
	18-Mar-11	5.6	7.6	298	-
	22-Mar-11	5.3	7.7	356	10.8
	25-Mar-11	5.8	7.7	342	12.3
	1-Apr-11	5.4	7.4	327	12.4
	8-Apr-11	5.2	7.4	320	12.8
	15-Apr-11	5.4	7.4	249	10.8
	21-Apr-11	5.3	7.8	338	10.6
	29-Apr-11	5.5	-	328	13.2
	6-May-11	6.4	8.0	265	11.6
	13-May-11	7.6	8.0	274	11.8
	20-May-11	7.1	7.6	298	12.0
	27-May-11	7.1	-	299	12.1
	3-Jun-11	7.9	7.6	309	13.6
	10-Jun-11	7.7	8.4	362	11.3
	17-Jun-11	8.7	6.7	321	11.3
	24-Jun-11	8.7	7.6	386	12.4
	30-Jun-11	9.0	7.6	289	11.9
	8-Jul-11	10.1	7.5	400	12.0
	14-Jul-11	9.3	6.3	403	10.8
	22-Jul-11	11.3	7.8	415	13.0
	29-Jul-11	11.4	6.7	385	10.2
	5-Aug-11	12.0	6.9	416	10.5
	12-Aug-11	10.9	7.9	435	9.1
	19-Aug-11	11.4	8.0	246	8.6
	26-Aug-11	12.2	7.7	388	8.2
	2-Sep-11	3.3	7.8	398	8.7
	9-Sep-11	11.7	7.7	421	7.8
	16-Sep-11	10.5	7.6	374	7.8
	23-Sep-11	11.7	7.9	396	5.9
	30-Sep-11	11.6	8.0	416	9.6
	6-Oct-11	10.0	7.8	490	8.7
	14-Oct-11	11.9	7.8	402	7.9
	21-Oct-11	9.9	7.8	461	9.5
	28-Oct-11	9.7	9.8	433	9.6
	4-Nov-11	8.7	7.8	365	9.8
	11-Nov-11	7.9	7.6	409	4.5
	18-Nov-11	6.8	8.3	401	10.8
	25-Nov-11	7.7	7.8	410	9.8
	2-Dec-11	8.0	8.2	373	12.1
	9-Dec-11	7.9	7.6	309	9.3
	16-Dec-11	7.6	7.4	327	11.9
	23-Dec-11	6.8	8.2	299	5.1
	30-Dec-11	7.0	8.4	280	11.1
	6-Jan-12	7.4	7.4	357	12.4
	20-Jan-12	5.5	8.0	293	10.1
	27-Jan-12	6.5	8.1	265	11.9
	3-Feb-12	6.5	7.8	233	11.3
	10-Feb-12	6.0	8.1	292	11.6
	17-Feb-12	6.2	7.7	320	13.3
	24-Feb-12	4.0	8.3	273	12.4
	1-Mar-12	5.6	8.0	323	-
	9-Mar-12	6.7	7.8	283	11.3
	16-Mar-12	6.7	7.8	283	11.3
	23-Mar-12	6.3	7.3	268	12.4
	30-Mar-12	6.2	8.4	328	12.8
	6-Apr-12	7.5	8.6	363	5.6
	13-Apr-12	6.6	8.0	358	10.5
	20-Apr-12	7.4	8.1	367	9.1
	27-Apr-12	6.4	7.9	349	12.4
	4-May-12	8.3	7.9	416	9.0
	11-May-12	7.4	7.6	232	12.0
	18-May-12	8.7	7.7	356	10.0
	25-May-12	10.0	6.5	383	8.6
	1-Jun-12	7.9	7.6	334	8.3
	8-Jun-12	9.1	8.1	354	9.5
	15-Jun-12	9.6	7.6	346	8.0
	22-Jun-12	7.0	7.9	486	9.1
	28-Jun-12	10.6	7.8	547	6.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	6-Jul-12	11.1	7.7	345	6.2
	13-Jul-12	10.7	8.3	409	6.1
	20-Jul-12	11.3	7.9	440	6.9
	27-Jul-12	11.4	7.8	465	6.5
	3-Aug-12	12.0	7.5	460	7.4
	10-Aug-12	13.1	7.7	480	7.5
	17-Aug-12	11.0	7.9	414	6.6
	24-Aug-12	11.4	7.9	430	9.6
	31-Aug-12	12.2	7.3	468	6.7
	7-Sep-12	11.7	6.9	456	6.7
	14-Sep-12	11.7	7.0	466	8.5
	21-Sep-12	10.9	7.1	486	8.8
	28-Sep-12	9.8	6.6	497	9.3
	5-Oct-12	12.0	7.1	535	7.7
	12-Oct-12	8.4	8.3	487	9.8
	19-Oct-12	9.6	8.4	5.26	9.9
	26-Oct-12	10.0	7.4	460	10.2
	2-Nov-12	8.7	6.5	410	6.9
	9-Nov-12	8.9	8.2	378	9.8
	16-Nov-12	8.9	8.3	403	10.1
	23-Nov-12	8.7	7.6	388	7.1
	30-Nov-12	8.4	7.5	363	6.0
	7-Dec-12	7.9	7.4	452	6.8
	14-Dec-12	7.8	7.7	384	10.6
	21-Dec-12	6.7	7.3	424	11.7
	28-Dec-12	6.8	7.4	381	11.4
	4-Jan-13	5.9	7.6	422	10.1
	11-Jan-13	5.4	7.5	623	9.9
	17-Jan-13	6.0	7.7	400	10.4
	25-Jan-13	6.2	7.7	416	4.0
	1-Feb-13	5.5	7.9	298	12.0
	8-Feb-13	4.9	7.6	314	13.1
	15-Feb-13	5.0	7.5	509	11.7
	22-Feb-13	4.6	7.5	331	9.4
	1-Mar-13	5.8	7.7	413	9.0
	8-Mar-13	6.7	7.7	362	11.8
	15-Mar-13	5.4	-	342	9.5
	22-Mar-13	4.9	7.6	411	12.5
	28-Mar-13	6.1	7.7	340	11.8
	5-Apr-13	5.3	7.7	389	10.0
	12-Apr-13	5.3	7.7	373	10.0
	19-Apr-13	6.8	7.3	311	5.9
	26-Apr-13	5.8	7.4	309	10.1
	3-May-13	7.8	7.9	312	9.9
	9-May-13	7.0	7.6	358	-
	16-May-13	7.4	7.6	342	11.3
	24-May-13	6.3	7.7	393	10.4
	31-May-13	8.4	7.7	364	8.5
	7-Jun-13	7.5	-	330	9.5
	14-Jun-13	10.3	7.7	393	8.5
	21-Jun-13	8.6	7.9	409	12.6
	27-Jun-13	8.6	7.9	423	11.1
	5-Jul-13	9.5	7.6	427	10.7
	12-Jul-13	9.6	7.5	447	10.6
	19-Jul-13	9.5	7.5	456	10.0
	25-Jul-13	9.4	7.5	451	8.5
	2-Aug-13	9.3	7.5	502	9.1
	8-Aug-13	9.2	7.6	508	8.6
	16-Aug-13	9.3	7.7	512	8.3
	23-Aug-13	9.2	7.6	523	8.3
	30-Aug-13	9.3	7.6	546	8.1
	6-Sep-13	9.2	7.5	523	8.0
	13-Sep-13	7.6	7.5	506	8.1
	20-Sep-13	9.3	7.6	523	8.1
	27-Sep-13	9.4	7.6	523	7.9
	4-Oct-13	9.0	7.5	521	7.6
	11-Oct-13	9.5	7.6	530	8.0
	18-Oct-13	9.2	7.5	525	7.0
	25-Oct-13	8.0	7.4	521	3.9
	31-Oct-13	7.6	7.3	516	3.8
	8-Nov-13	7.6	7.2	510	5.3
	14-Nov-13	6.7	7.2	503	5.1
	22-Nov-13	6.8	7.1	510	4.9
	29-Nov-13	7.1	8.3	389	2.5
	6-Dec-13	7.3	7.6	396	3.7
	10-Jan-14	4.3	8.2	350	4.1
	17-Jan-14	5.4	7.8	276	7.1
	31-Jan-14	2.7	7.1	380	4.3
	7-Feb-14	4.6	7.0	394	3.3
	7-Mar-14	2.0	7.3	370	7.0
	14-Mar-14	3.6	6.3	402	9.3
	21-Mar-14	4.1	7.3	276	5.4
	28-Mar-14	4.6	6.8	591	11.6
	4-Apr-14	4.8	7.6	387	10.8
	11-Apr-14	5.2	7.5	429	11.5
	17-Apr-14	5.4	7.6	533	9.9
	25-Apr-14	5.3	7.5	530	9.9
	1-May-14	5.6	7.5	486	10.0
	9-May-14	7.6	7.2	473	6.9
	16-May-14	7.5	7.2	456	6.2
	23-May-14	7.6	7.2	463	6.3
	30-May-14	7.8	7.6	450	6.8
	6-Jun-14	9.0	7.2	461	6.2
	13-Jun-14	8.9	7.2	460	6.4
	20-Jun-14	8.9	7.2	456	7.0
	28-Jun-14	9.8	7.1	450	7.6
	4-Jul-14	9.8	7.1	448	7.8
	11-Jul-14	9.9	7.1	426	7.9
	18-Jul-14	9.7	8.4	535	-
	25-Jul-14	10.2	8.7	532	-
	1-Aug-14	10.2	8.6	478	7.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	8-Aug-14	10.2	8.5	463	7.6
	15-Aug-14	10.0	8.2	456	7.5
	22-Aug-14	11.1	8.7	598	-
	29-Aug-14	11.1	8.5	608	-
	5-Sep-14	12.7	8.8	635	-
	12-Sep-14	10.5	8.1	625	6.2
	19-Sep-14	10.0	8.0	420	6.2
	26-Sep-14	10.0	8.1	427	6.9
	3-Oct-14	9.9	7.6	463	4.9
	10-Oct-14	10.2	7.5	460	5.6
	16-Oct-14	9.9	7.5	456	5.9
	24-Oct-14	7.9	7.6	416	6.9
	31-Oct-14	7.6	7.4	423	6.0
	7-Nov-14	0.5	7.2	428	4.0
	14-Nov-14	1.0	7.3	431	4.2
	20-Nov-14	0.2	7.2	420	4.1
	28-Nov-14	0.1	7.2	416	5.3
	5-Dec-14	4.4	7.3	425	7.0
	12-Dec-14	3.3	7.2	431	6.9
	19-Dec-14	3.5	7.2	425	6.2
	26-Dec-14	4.5	7.2	469	7.9
	2-Jan-15	1.4	7.2	432	7.9
	8-Jan-15	1.3	7.3	432	6.9
	14-Jan-15	2.3	7.2	416	7.1
	23-Jan-15	3.4	7.2	402	7.1
	30-Jan-15	2.7	8.0	503	12.5
	6-Feb-15	4.0	7.9	513	11.7
	12-Feb-15	2.0	7.6	508	11.5
	27-Feb-15	3.2	7.8	379	13.0
	6-Mar-15	2.3	7.7	509	11.9
	13-Mar-15	6.1	7.7	361	10.3
	20-Mar-15	7.1	7.8	431	10.1
	26-Mar-15	5.9	7.9	409	10.8
	2-Apr-15	5.8	7.8	406	11.4
	10-Apr-15	6.2	7.6	270	11.5
	17-Apr-15	5.7	8.5	299	-
	23-Apr-15	5.0	7.8	386	13.9
	1-May-15	6.1	7.6	257	12.8
	8-May-15	8.5	8.9	400	-
	15-May-15	7.9	7.7	358	12.6
	21-May-15	7.2	7.8	355	14.4
	28-May-15	9.0	7.7	390	11.5
	4-Jun-15	8.8	7.8	389	11.3
	12-Jun-15	8.8	7.6	440	9.5
	18-Jun-15	10.2	7.7	494	9.4
	26-Jun-15	13.5	7.5	495	-
	1-Jul-15	9.0	7.6	420	-
	10-Jul-15	9.1	7.7	409	-
	17-Jul-15	9.2	7.9	401	-
	22-Jul-15	12.2	7.5	478	-
	30-Jul-15	14.3	7.9	463	-
	5-Aug-15	10.4	7.6	492	9.0
	13-Aug-15	11.4	8.0	497	9.1
	21-Aug-15	11.9	7.6	431	8.8
	28-Aug-15	-	8.4	444	-
	3-Sep-15	12.0	8.1	487	11.6
	10-Sep-15	12.5	7.5	513	9.4
	18-Sep-15	11.5	7.5	484	9.7
	25-Sep-15	11.4	7.5	487	9.0
	2-Oct-15	10.8	7.1	461	8.0
	9-Oct-15	11.0	7.1	457	7.0
	16-Oct-15	10.7	7.5	454	7.8
	23-Oct-15	10.5	7.3	467	8.0
	30-Oct-15	10.0	7.1	556	7.7
	5-Nov-15	10.3	7.9	518	7.5
	13-Nov-15	8.2	7.3	230	8.0
	19-Nov-15	9.6	7.4	563	10.5
	26-Nov-15	6.5	7.2	523	12.5
	4-Dec-15	7.2	7.3	460	12.2
	10-Dec-15	7.8	7.1	526	9.9
	17-Dec-15	7.3	7.6	460	10.9
	23-Dec-15	8.2	7.5	470	11.3
	30-Dec-15	6.5	7.5	439	12.1
	8-Jan-16	6.0	7.3	427	12.3
	14-Jan-16	5.6	7.2	360	12.2
	22-Jan-16	1.1	7.5	443	13.0
	29-Jan-16	3.5	7.3	430	12.1
	5-Feb-16	6.0	7.2	458	12.0
	11-Feb-16	4.0	7.4	438	12.9
	18-Feb-16	5.8	7.7	474	13.0
	25-Feb-16	4.5	7.6	450	12.4
	4-Mar-16	3.4	7.1	430	12.7
	10-Mar-16	6.0	7.2	243	12.4
	18-Mar-16	5.5	7.5	379	13.1
	28-Mar-16	4.2	6.9	229	11.8
	1-Apr-16	5.5	7.2	234	11.5
	7-Apr-16	5.1	7.2	313	10.9
	15-Apr-16	6.1	7.2	314	11.9
	22-Apr-16	6.5	7.8	344	12.1
	29-Apr-16	6.2	7.9	397	13.6
	6-May-16	7.3	7.9	397	11.9
	13-May-16	9.0	7.8	546	-
	20-May-16	9.0	7.8	546	n/a
	27-May-16	9.0	7.8	423	10.1
	2-Jun-16	9.1	7.8	427	9.6
	10-Jun-16	7.9	7.7	587	10.5
	17-Jun-16	12.1	7.6	486	9.1
	24-Jun-16	8.8	7.5	445	9.3
	28-Jun-16	9.6	7.6	460	14.0
	8-Jul-16	9.3	7.5	491	12.0
	15-Jul-16	9.7	7.7	405	9.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	22-Jul-16	10.1	7.4	475	9.5
	29-Jul-16	10.3	7.4	453	9.2
	5-Aug-16	12.0	7.9	209	9.9
	12-Aug-16	11.1	7.6	489	9.0
	19-Aug-16	11.2	7.6	486	7.9
	26-Aug-16	11.5	7.6	468	8.5
	2-Sep-16	12.1	7.1	126	4.0
	9-Sep-16	11.8	7.6	444	8.0
	16-Sep-16	11.6	7.6	436	8.5
	21-Sep-16	11.9	7.3	346	9.5
	30-Sep-16	11.8	7.5	437	8.2
	7-Oct-16	11.9	7.5	439	8.9
	13-Oct-16	11.5	7.5	400	9.5
	19-Oct-16	11.6	7.7	486	11.8
	27-Oct-16	10.4	7.8	433	8.3
	3-Nov-16	10.7	7.6	595	10.4
	11-Nov-16	9.7	6.1	421	11.2
	18-Nov-16	10.1	7.6	616	9.3
	24-Nov-16	9.2	7.6	448	9.7
	2-Dec-16	9.2	7.7	540	5.9
	7-Dec-16	8.8	7.7	520	6.2
	16-Dec-16	8.3	7.6	719	10.5
	22-Dec-16	7.9	7.2	7.4	10.9
	30-Dec-16	7.5	7.1	600	10.4
	6-Jan-17	4.3	7.6	256	11.7
	13-Jan-17	5.6	7.5	498	11.6
	20-Jan-17	4.7	7.8	520	12.6
	26-Jan-17	6.3	7.8	544	11.8
	3-Feb-17	3.8	7.9	460	12.5
	10-Feb-17	4.0	7.8	424	13.5
	17-Feb-17	3.3	7.9	510	12.8
	19-Apr-17	8.6	7.0	461	15.2
	16-May-17	8.3	7.9	612	11.6
	28-Jun-17	9.4	7.6	456	10.1
	18-Jul-17	11.8	7.7	496	12.3
	15-Aug-17	10.6	8.2	403	9.7
	18-Sep-17	10.8	6.5	513	8.9
	18-Oct-17	9.8	7.7	509	9.1
	15-Nov-17	7.7	7.6	498	8.9
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	22-May-03	9.0			
	12-Feb-04	4.4		364	12.6
	19-Mar-04	4.0		545	10.1
	14-May-04	12.8	7.9	536	
	20-May-04	10.9	7.9	558	
	28-May-04	10.9	8.0	501	
	4-Jun-04	13.2	7.9	560	
	16-Jul-04	15.3	7.7	621	9.0
	22-Jul-04	19.8	8.0		9.2
	19-Nov-04	7.9	7.8	628	
	25-Nov-04	4.0	7.7	598	11.8
	2-Dec-04	4.7	7.6	536	12.5
	9-Dec-04	5.1	7.6	512	
	17-Dec-04	2.8	7.7	718	
	5-Jan-05	3.9	7.7	403	
	13-Jan-05	5.0	7.6	418	12.6
	28-Jan-05	3.3	7.7	370	
	3-Feb-05	2.8	7.7	407	
	10-Feb-05	2.8	7.4	453	12.8
	7-Apr-05	4.3	7.6	360	
	15-Apr-05	4.7	7.1	409	11.7
	21-Apr-05	5.9	7.3	413	12.0
	29-Apr-05	5.8	7.3	407	12.1
	6-May-05	10.1	7.1	617	
	27-May-05	12.2	6.1	555	
	3-Jun-05	12.1	7.1	572	
	30-Jun-05	17.0	7.4	678	
	7-Jul-05	16.6	5.5	635	
	15-Jul-05	18.6	7.0	967	9.0
	21-Jul-05	18.4	7.9	1313	8.4
	28-Jul-05	16.7	7.3	800	8.9
	2-Aug-05	18.5	8.8	720	
	12-Aug-05	17.6	7.4	1144	
	1-Sep-05	17.1		690	9.3
	9-Sep-05	17.3	6.5	696	
	16-Sep-05	17.0	7.4	732	
	18-Nov-05	6.1	8.2	906	
	25-Nov-05	5.9	8.1	573	11.0
	2-Dec-05	5.2	9.2	563	10.7
	9-Dec-05	4.5	9.1	552	12.2
	16-Dec-05	3.9	8.1	597	13.2
	22-Dec-05	3.8	8.0	596	12.6
	6-Jan-06	4.4	8.0	560	
	13-Jan-06	5.4	8.0	524	
	20-Jan-06	5.0	6.4	497	12.5
	27-Jan-06	3.7	7.3	535	13.2
	3-Feb-06	4.2	7.5	505	
	10-Mar-06	3.3	8.1	395	
	17-Mar-06	3.6	8.2	483	12.9
	24-Mar-06	5.1	8.1	453	
	31-Mar-06	7.3	8.0	607	
	7-Apr-06	5.1	8.1	601	
QFSW1					
	23-Apr-04	4.7	7.6	334	
	30-Apr-04	6.9	7.8	622	
	14-May-04	15.9	7.9	608	8.9
	20-May-04	7.5	7.5	483	8.3
	28-May-04	12.1	7.9	546	9.0
	4-Jun-04	15.4	8.0	626	9.4
	11-Jun-04	18.3	8.1	702	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
QFSW2					
	23-Apr-04	5.9	7.8	374	
	30-Apr-04	11.9	8.1	640	
	14-May-04	11.8	7.8	538	10.6
	20-May-04	11.2	7.9	559	11.0
	28-May-04	9.7	7.9	477	11.0
	4-Jun-04	15.7	7.8	590	9.9
	11-Jun-04	16.0	7.8	652	9.2
	17-Jun-04	14.0	7.7	649	
	23-Jun-04	15.2	7.9	701	
	1-Jul-04	13.1	7.7	662	7.8
	22-Jul-04	19.6	7.8		8.4
	29-Jul-04	16.3	7.6	659	9.6
	6-Aug-04	16.6	7.8	708	9.0
	12-Aug-04	15.5	7.8	712	
	19-Aug-04	17.3	7.7	757	9.6
	26-Aug-04	17.0	7.7	712	
	3-Sep-04	17.2	7.8	679	8.1
	9-Sep-04	14.3	8.0	713	7.9
	17-Sep-04	13.7	7.7	732	8.2
	23-Sep-04	16.3	7.6	803	8.1
	1-Oct-04	14.6	7.6	783	8.4
	7-Oct-04	14.3	7.8	774	9.2
	14-Oct-04	11.4	7.6	712	9.0
	20-Oct-04	9.8	7.7	692	10.0
	28-Oct-04	10.7	7.7	809	9.5
	4-Nov-04	8.0	7.6	595	9.6
	11-Nov-04	7.3	7.7	611	10.7
	19-Nov-04	7.9	7.6	641	10.7
	25-Nov-04	5.4	7.6	624	10.5
	2-Dec-04	5.9	7.6	564	10.8
	9-Dec-04	4.6	7.5	477	10.6
	17-Dec-04	3.3	7.6	814	
	5-Jan-05	4.6	7.5	492	11.0
	13-Jan-05	3.4	7.3	373	11.3
	20-Jan-05	2.7	7.1	430	11.0
	28-Jan-05	3.0	7.3	447	10.3
	3-Feb-05	3.2	7.3	452	10.6
	10-Feb-05	4.4	7.1	477	10.3
	16-Feb-05	3.9	7.6	467	10.8
	24-Feb-04	4.1	7.8	482	10.8
	3-Mar-05	2.9	7.2	469	10.8
	10-Mar-05	4.5	7.4	500	10.7
	17-Mar-05	4.1	7.2	457	10.3
	24-Mar-05	4.9	7.2	477	10.3
	30-Mar-05	6.1	7.5	477	10.4
	7-Apr-05	4.2	7.4	376	10.5
	15-Apr-05	4.9	6.9	410	10.5
	21-Apr-05	5.6	7.1	417	9.2
	29-Apr-05	6.1	7.2	414	10.4
	6-May-05	9.9	7.0	634	
	13-May-05	8.8	7.9	509	10.0
	20-May-05	10.9	7.6	530	9.6
	27-May-05	12.2	7.3	570	9.1
	3-Jun-05	12.3	6.7	585	8.5
	10-Jun-05	14.9	7.3	626	8.4
	17-Jun-05	13.0	7.2	610	7.7
	24-Jun-05	18.0	7.6	701	9.4
	30-Jun-05	17.1	7.2	690	
	7-Jul-05	16.9	6.6	852	8.0
	15-Jul-05	18.1	6.5	977	7.6
	21-Jul-05	19.1	8.1	1361	7.1
	28-Jul-05	17.1	6.9	1270	7.3
	2-Aug-05	17.8	8.1	802	5.7
	12-Aug-05	17.6	7.0	1176	9.5
	19-Aug-05	18.0	7.5	729	
	24-Aug-05	18.1	7.7	734	8.8
	1-Sep-05	17.9		712	8.7
	9-Sep-05	18.5	6.9	722	9.0
	16-Sep-05	17.4	7.3	739	
	23-Sep-05	17.9	7.8	718	9.0
	30-Sep-05	16.1	8.0	701	9.1
	7-Oct-05	14.9	8.6	815	
	14-Oct-05	15.0	8.2	695	9.0
	21-Oct-05	13.7	8.4	689	
	28-Oct-06	11.6	7.9	705	10.7
	4-Nov-05	11.0	8.2	708	
	11-Nov-05	9.4	8.4	681	10.6
	18-Nov-05	6.4	8.6	943	
	25-Nov-05	6.3	8.4	592	10.0
	2-Dec-05	5.8	9.2	583	10.3
	9-Dec-05	5.5	9.1	583	9.8
	16-Dec-05	4.7	8.2	620	9.4
	22-Dec-05	4.6	8.2	635	10.7
	6-Jan-06	5.7	8.1	592	10.7
	13-Jan-06	5.9	7.0	553	10.4
	20-Jan-06	4.9	7.2	524	10.3
	27-Jan-06	5.0	7.5	582	10.8
	3-Feb-06	4.8	7.7	526	10.9
	10-Feb-06	4.4	8.1	530	11.1
	20-Feb-06	4.6	8.6	539	
	24-Feb-06	3.7	8.0	519	
	3-Mar-06	2.0	7.9	523	
	10-Mar-06	3.4	8.1	447	12.6
	20-Mar-06	3.2	8.3	703	
	24-Mar-06	5.0	8.1	463	
	31-Mar-06	7.7	8.0	617	
	13-Apr-06	8.2	8.0	623	
	21-Apr-06	9.0	8.1	634	
	26-Apr-06	8.6	8.2	693	
	5-May-06	9.9	8.0	662	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	12-May-06	10.2	8.6	724	
	19-May-06	9.5	7.4	854	
	25-May-06	11.6	7.9	756	
	2-Jun-06	12.6	7.8	741	
	9-Jun-06	12.8	7.9	609	
	19-Jun-06	12.1	7.8	654	
	23-Jun-06	12.5	7.9	672	
	30-Jun-06	17.6	8.5	787	
	7-Jul-06	17.5	8.3	765	
	14-Jul-06	18.5	7.8	779	
	21-Jul-06	17.9	8.0	781	
	28-Jul-06	19.9	7.8	815	
	4-Aug-06	21.1	7.9	599	
	11-Aug-06	19.8	7.7	783	
	18-Aug-06	19.2	7.9	870	
	25-Aug-06	16.7	7.4	917	
	1-Sep-06	18.4	7.5	902	
	8-Sep-06	18.1	7.5	888	
	15-Sep-06	16.5	7.5	895	
	21-Sep-06	15.4	7.7	885	
	28-Sep-06	13.1	7.5	933	
	6-Oct-06	14.2	7.7	889	
	13-Oct-06	10.2	7.6	907	
	20-Oct-06	9.9	7.7	911	
	26-Oct-06	9.9	7.8	931	
	3-Nov-06	8.6	8.6	903	10.7
	10-Nov-06	9.3	7.9	872	
	17-Nov-06	7.5	7.8	829	10.4
	24-Nov-06	8.0	8.4	865	11.0
	4-Dec-06	6.0	7.6	853	10.4
	8-Dec-06	5.7	7.2	840	11.2
	14-Dec-06	5.9	7.7	889	12.3
	21-Dec-06	5.6	7.9	859	11.4
	28-Dec-06	5.0	7.7	876	11.3
	5-Jan-07	5.4	7.5	873	10.7
	12-Jan-07	4.8	7.3	795	11.5
	19-Jan-07	4.4	7.6	790	11.2
	26-Jan-07	4.6	8.1	796	10.3
	2-Feb-07	4.6	7.8	779	10.4
	9-Feb-07	4.6	7.7	723	9.9
	16-Feb-07	4.2	7.6	816	10.0
	22-Feb-07	4.6	8.1	816	9.4
	2-Mar-07	4.6	8.1	824	10.2
	9-Mar-07	5.3	7.3	673	9.6
	23-Mar-07	5.1	7.5	749	9.9
	30-Mar-07	6.1	7.7	671	10.7
	13-Apr-07	4.2	7.7	657	12.0
	20-Apr-07	6.6	7.7	630	11.1
	28-Apr-07	6.7	8.1	690	9.1
	4-May-07	8.1	7.9	635	8.9
	11-May-07	8.4	7.9	767	8.1
	18-May-07	9.1	8.2	674	8.2
	25-May-07	9.5	7.8	663	8.4
	1-Jun-07	10.5	7.7	703	7.7
	8-Jun-07	12.3	7.8	738	7.2
	14-Jun-07	12.3	8.0	753	7.4
	22-Jun-07	11.7	7.9	693	8.9
	29-Jun-07	14.1	8.1	697	8.5
	6-Jul-07	14.7	8.1	729	8.5
	13-Jul-07	14.5	8.2	746	8.2
	20-Jul-07	14.5	7.8	749	8.0
	27-Jul-07	14.2	7.6	683	8.1
	3-Aug-07	17.2	7.7	794	8.2
	10-Aug-07	16.5	7.6	728	8.0
	17-Aug-07	15.6	7.6	784	7.9
	24-Aug-07	15.9	7.9	803	7.5
	30-Aug-07	16.8	7.9	793	7.9
	7-Sep-07	16.9	7.7	803	8.2
	14-Sep-07	16.0	7.6	760	7.9
	21-Sep-07	16.1	7.8	770	8.6
	28-Sep-07	14.1	8.3	821	8.2
	5-Oct-07	15.1	7.5	865	8.6
	12-Oct-07	13.1	7.4	784	7.7
	19-Oct-07	13.5	8.1	598	7.6
	26-Oct-07	11.7	7.2	789	8.4
	2-Nov-07	11.1	7.4	813	9.4
	9-Nov-07	9.2	7.2	797	8.2
	16-Nov-07	8.3	7.4	838	7.8
	23-Nov-07	7.9	8.0	840	8.9
	7-Dec-07	7.0	7.8	758	8.3
	14-Dec-07	6.6	7.3	763	7.9
	20-Dec-07	4.5	7.3	786	
	4-Jan-08	6.2	7.2	807	9.1
	11-Jan-08	5.1	7.5	676	11.3
	18-Jan-08	3.4	7.2	651	12.2
	25-Jan-08	3.5	7.7	667	12.4
	1-Feb-08	3.5	7.4	703	12.0
	8-Feb-08	3.9	7.2	713	11.6
	15-Feb-08	2.9	7.2	650	12.0
	22-Feb-08	3.5	7.4	752	
	29-Feb-08	3.6	7.4	723	
	7-Mar-08	3.3	7.4	737	
	14-Mar-08	3.7	7.1	725	
	20-Mar-08	3.2	7.7	732	12.8
	28-Mar-08	4.1	7.4	608	
	25-Apr-08	9.3	7.9	559	8.9
	2-May-08	7.5	6.9	530	8.2
	8-May-08	9.0	7.3	638	
	15-May-08	17.9	7.6	648	8.6
	23-May-08	10.4	7.7	576	8.4
	30-May-08	10.5	7.3	698	8.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	6-Jun-08	15.5	7.3	798	6.6
	13-Jun-08	13.8	7.7	686	6.5
	20-Jun-08	13.2	7.7	726	6.4
	27-Jun-08	14.9	7.1	781	6.8
	4-Jul-08	14.2	7.1	783	
	11-Jul-08	15.4	7.0	763	7.1
	18-Jul-08	16.2	7.7	826	5.2
	25-Jul-08	16.8	7.0	843	5.8
	1-Aug-08	17.2	6.9	827	5.6
	8-Aug-08	16.3	7.4	814	4.8
	15-Aug-08	16.4	7.3	936	5.5
	22-Aug-08	17.4	7.5	937	4.7
	28-Aug-08	16.1	7.4		6.5
	5-Sep-08	16.4	7.8	852	6.3
	12-Sep-08	15.5	7.9	864	5.6
	19-Sep-08	15.0	8.0	882	
	26-Sep-08	15.0	7.5	859	5.7
	3-Oct-08	12.1	7.7	835	6.7
	10-Oct-08	12.2	7.2	850	7.6
	17-Oct-08	11.8		785	5.3
	24-Oct-08	10.0	7.9	820	5.4
	31-Oct-08	9.5	7.7	814	5.8
	7-Nov-08	9.7	7.5	467	8.3
	14-Nov-08	8.6		584	8.8
	28-Nov-08	5.5		412	7.1
	12-Dec-08	4.6	6.4	759	8.8
	23-Dec-08	4.0	8.0	654	8.1
	16-Jan-09	3.7		656	9.7
	23-Jan-09	3.9	8.0	666	8.3
	6-Feb-09	4.2		611	8.8
	20-Feb-09	3.3	8.1	610	13.3
	27-Feb-09	2.7	8.1	599	13.5
	6-Mar-09	3.7		519	12.6
	13-Mar-09	3.4	8.4	552	
	20-Mar-09	4.3	8.3	554	
	27-Mar-09	5.0	7.4	640	
	3-Apr-09	5.5	7.5	583	
	9-Apr-09	4.4	7.8	530	
	17-Apr-09	6.4	8.3	596	
	24-Apr-09	7.5	8.1	589	
	1-May-09	10.5	8.2	431	10.5
	8-May-09	11.1	7.5	575	10.0
	15-May-09	11.9	8.1	480	10.5
	22-May-09	11.4	8.1	497	9.5
	29-May-09	11.4	8.0	627	
	5-Jun-09	11.8	7.1	569	10.3
	12-Jun-09	12.1	8.3	575	9.6
	19-Jun-09	13.3	7.6	1229	9.7
	26-Jul-09	14.9	7.9	692	9.2
	2-Jul-09	13.4	7.6	609	9.3
	10-Jul-09	14.3			9.6
	17-Jul-09	14.1	9.1	693	9.1
	24-Jul-09	13.7	7.9	714	8.8
	31-Jul-09	14.8	8.0	739	8.9
	7-Aug-09	14.5	7.9	760	7.6
	14-Aug-09	17.5	8.3	675	6.1
	21-Aug-09	16.0	9.0	801	8.6
	28-Aug-09	15.4	8.4	738	8.8
	4-Sep-09	15.5	8.9	763	8.6
	11-Sep-09	14.8	8.3	737	8.8
	18-Sep-09	13.9	7.7	829	6.9
	25-Sep-09	13.7	7.7	731	9.9
	2-Oct-09	12.0	8.4	851	9.7
	9-Oct-09	10.8	7.7	894	11.2
	16-Oct-09	9.4	8.2	846	
	23-Oct-09	8.6	7.6	767	10.9
	30-Oct-09	9.0	7.7	804	
	6-Nov-09	7.1	6.5	808	
	13-Nov-09	8.2	7.4	858	
	20-Nov-09	7.2	7.4	737	12.1
	27-Nov-09	7.5	7.5	739	11.0
	4-Dec-09	4.8	7.6	707	12.9
	11-Dec-09	4.8	7.6	662	11.0
	18-Dec-09	4.8	7.6	758	11.2
	22-Dec-09	4.9	7.6	757	11.5
	15-Jan-10	5.0	7.6	741	10.6
	22-Jan-10	4.5	7.5	756	10.6
	5-Feb-10	5.0	7.0	742	8.4
	12-Feb-10	4.8	7.0	736	9.4
	19-Feb-10	4.9	7.9	738	10.3
	1-Mar-10	5.1	7.3	649	10.5
	5-Mar-10	5.9	7.4	542	9.2
	12-Mar-10	5.4	7.2	721	9.6
	19-Mar-10	7.3	7.6	622	10.8
	26-Mar-10	5.4	7.2	566	10.6
	9-Apr-10	7.2	7.5	666	11.9
	16-Apr-10	9.3	8.0	484	10.1
	23-Apr-10	8.7	7.0	471	11.2
	30-Apr-10	9.9	7.9	463	10.5
	7-May-10	9.7	7.9	448	10.1
	14-May-10	10.3	7.9	454	10.0
	21-May-10	11.1	7.8	498	9.4
	28-May-10	13.7	7.8	484	9.2
	4-Jun-10	13.2	7.8	541	6.2
	11-Jun-10	12.8	7.8	465	6.1
	18-Jun-10	13.5	7.7	565	11.3
	25-Jun-10	14.0	7.8	543	9.2
	9-Jul-10	15.7	7.7	541	8.8
	15-Jul-10	16.4	7.7	627	8.0
	23-Jul-10	15.6	7.6	614	9.1
	30-Jul-10	16.3	7.7	529	7.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	6-Aug-10	15.7	7.6	606	10.8
	13-Aug-10	16.4	7.6	640	8.5
	20-Aug-10	15.7	7.6	654	6.7
	27-Aug-10	15.4	7.3	606	6.4
	3-Sep-10	16.3	7.7	674	7.7
	10-Sep-10	15.1	7.7	555	8.9
	17-Sep-10	14.3	7.7	563	8.0
	24-Sep-10	14 69	7.7		7.5
	1-Oct-10	13.2	7.7	631	7.5
	8-Oct-10	12.8	7.8	636	8.7
	15-Oct-10	11.0	7.6	596	8.3
	22-Oct-10	10.4	7.7	625	8.4
	29-Oct-10	10.2	7.8	523	7.5
	5-Nov-10	7.6	7.6	599	8.2
	12-Nov-10	8.6	7.6	630	8.4
	19-Nov-10	7.7	8.0	516	9.4
	26-Nov-10	6.2	7.6	469	10.1
	3-Dec-10	0.1	7.7	485	8.8
	9-Dec-10	4.7	7.6	413	13.0
	17-Dec-10	5.2	8.1	485	10.8
	23-Dec-10	4.8	8.1	414	8.3
	7-Jan-11	3.6	7.8	404	12.5
	14-Jan-11	4.6	7.7	380	10.2
	21-Jan-11	3.7	8.1	378	9.3
	28-Jan-11	4.5	7.7	372	8.7
	4-Feb-11	3.9	7.7	372	8.8
	11-Feb-11	4.8	8.0	443	9.1
	18-Feb-11	4.6	8.3	429	10.1
	25-Feb-11	4.4	7.4	404	12.7
	4-Mar-11	4.9	7.5	400	10.9
	11-Mar-11	2.4	7.6	362	11.6
	18-Mar-11	2.4	8.2	209	-
	25-Mar-11	5.4	8.4	402	12.0
	1-Apr-11	4.6	7.2	362	10.7
	8-Apr-11	4.6	7.9	376	9.7
	15-Apr-11	5.4	8.1	321	12.0
	21-Apr-11	4.9	8.1	373	12.1
	6-May-11	7.4	8.4	314	10.9
	13-May-11	9.7	8.2	474	12.6
	20-May-11	10.2	7.9	395	11.0
	3-Jun-11	12.9	7.9	432	9.1
	10-Jun-11	13.1	7.7	501	7.8
	17-Jun-11	13.3	6.6	481	7.9
	24-Jun-11	13.1	7.8	527	7.3
	30-Jun-11	13.8	7.5	486	9.2
	8-Jul-11	15.2	7.7	589	7.4
	14-Jul-11	15.1	8.0	593	7.3
	22-Jul-11	17.4	7.7	629	9.5
	29-Jul-11	15.4	7.9	542	6.3
	5-Aug-11	16.6	7.7	613	8.5
	12-Aug-11	15.5	7.9	644	6.8
	19-Aug-11	15.5	8.0	458	6.8
	26-Aug-11	15.2	7.8	661	7.2
	2-Sep-11	15.56	7.43	552	7.41
	9-Sep-11	15.57	8.31	632	7.17
	16-Sep-11	13.29	8.53	557	6.73
	30-Sep-11	12.88	8.17	618	8.03
	6-Oct-11	11.27	7.9	694	7.97
	14-Oct-11	13.3	7.7	580	8.6
	21-Oct-11	10.0	8.1	643	9.4
	28-Oct-11	9.6	7.7	594	8.2
	4-Nov-11	8.2	8.1	520	9.8
	11-Nov-11	7.7	8.0	591	4.0
	25-Nov-11	7.4	8.7	554	7.8
	9-Dec-11	6.6	8.1	438	7.4
	16-Dec-11	6.2	7.3	422	10.9
	6-Jan-12	5.5	7.3	448	10.7
	20-Jan-12	4.7	8.4	368	8.0
	27-Jan-12	4.6	9.0	315	11.7
	3-Feb-12	4.8	8.2	284	9.2
	10-Feb-12	4.2	8.5	360	10.6
	17-Feb-12	4.7	8.6	372	11.4
	1-Mar-12	4.7	8.9	216	-
	23-Mar-12	7.4	7.6	-	8.6
	30-Mar-12	6.1	9.0	379	9.8
	13-Apr-12	6.7	8.5	409	10.1
	20-Apr-12	7.8	8.8	445	6.8
	27-Apr-12	6.0	8.7	345	9.0
	4-May-12	8.4	8.1	515	6.8
	11-May-12	9.1	7.7	315	9.4
	18-May-12	9.1	7.6	449	6.1
	25-May-12	11.4	6.4	512	5.5
	1-Jun-12	13.2	7.8	581	7.3
	8-Jun-12	13.2	8.3	545	7.8
	15-Jun-12	13.1	7.7	587	5.4
	22-Jun-12	13.2	7.7	580	7.4
	28-Jun-12	14.7	8.0	640	6.1
	6-Jul-12	15.1	7.8	688	5.5
	13-Jul-12	14.7	8.3	627	4.4
	20-Jul-12	17.4	8.1	739	6.8
	27-Jul-12	14.9	7.9	686	5.3
	3-Aug-12	17.3	7.8	741	7.9
	10-Aug-12	15.2	8.3	375	7.3
	17-Aug-12	14.2	8.8	450	5.3
	24-Aug-12	15.9	7.7	660	8.2
	31-Aug-12	16.3	7.3	723	6.9
	7-Sep-12	15.8	7.7	722	6.0
	14-Sep-12	14.6	7.0	715	7.4
	21-Sep-12	12.6	7.5	671	6.7
	28-Sep-12	11.9	7.6	722	7.6
	5-Oct-12	13.1	8.1	769	8.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	12-Oct-12	9.8	8.5	666	6.8
	19-Oct-12	9.3	8.6	672	6.8
	26-Oct-12	10.7	7.6	710	10.6
	2-Nov-12	7.4	8.3	632	6.4
	9-Nov-12	8.3	8.7	408	9.5
	16-Nov-12	8.5	8.1	569	9.2
	23-Nov-12	8.1	8.0	515	6.0
	30-Nov-12	6.0	8.7	408	4.3
	7-Dec-12	6.5	8.1	542	6.8
	14-Dec-12	6.4	8.1	463	9.8
	21-Dec-12	5.6	7.7	516	10.9
	4-Jan-13	4.8	7.7	509	8.6
	11-Jan-13	4.3	7.7	450	8.7
	17-Jan-13	4.2	7.8	489	10.2
	25-Jan-13	4.3	7.9	492	6.9
	15-Feb-13	3.5	7.7	648	9.8
	22-Feb-13	3.6	7.5	372	7.3
	1-Mar-13	3.3	7.6	486	8.5
	8-Mar-13	5.2	7.5	387	10.1
	15-Mar-13	3.6	-	374	8.6
	22-Mar-13	3.6	7.7	431	10.4
	28-Mar-13	4.4	7.5	370	9.4
	5-Apr-13	3.8	7.7	375	11.3
	12-Apr-13	3.3	7.7	382	12.4
	26-Apr-13	5.2	7.6	343	10.1
	3-May-13	8.9	7.6	350	9.0
	9-May-13	10.6	7.8	449	10.1
	16-May-13	9.1	8.0	410	10.3
	24-May-13	8.2	7.7	439	8.2
	31-May-13	12.7	7.8	466	8.0
	14-Jun-13	14.5	7.9	509	6.5
	21-Jun-13	12.4	8.0	528	11.3
	27-Jun-13	12.6	8.1	532	10.9
	5-Jul-13	14.4	7.7	588	7.9
	12-Jul-13	17.5	7.7	538	5.0
	19-Jul-13	16.9	7.8	525	7.7
	25-Jul-13	14.1	7.5	565	9.0
	2-Aug-13	15.6	8.1	596	9.2
	8-Aug-13	16.0	8.1	548	8.2
	16-Aug-13	14.8	8.2	646	8.9
	23-Aug-13	15.9	8.0	573	6.7
	30-Aug-13	16.0	7.9	570	6.0
	6-Sep-13	15.7	7.8	560	6.6
	13-Sep-13	13.3	7.7	541	8.5
	20-Sep-13	12.9	7.9	529	8.1
	27-Sep-13	12.8	7.8	520	8.1
	4-Oct-13	-	-	-	-
	11-Oct-13	11.3	7.6	502	7.6
	18-Oct-13	10.7	7.5	500	5.7
	25-Oct-13	8.6	7.5	423	3.9
	31-Oct-13	8.3	7.3	406	3.8
	8-Nov-13	3.5	7.2	400	5.0
	14-Nov-13	2.1	7.2	420	4.9
	22-Nov-13	7.5	7.9	449	4.0
	29-Nov-13	6.6	8.4	427	10.7
	6-Dec-13	5.2	8.0	404	8.1
	19-Dec-13	6.0	8.2	414	5.1
	3-Jan-14	2.3	7.8	530	3.3
	10-Jan-14	5.0	8.4	404	4.6
	17-Jan-14	4.7	8.5	394	10.5
	31-Jan-14	4.5	7.3	436	8.5
	7-Feb-14	3.5	7.8	426	3.9
	14-Feb-14	5.0	7.2	447	6.0
	21-Feb-14	4.4	7.3	435	8.3
	28-Feb-14	4.2	7.3	437	8.5
	7-Mar-14	4.4	7.3	439	8.5
	14-Mar-14	4.1	6.4	443	7.0
	21-Mar-14	4.2	7.2	449	4.9
	28-Mar-14	4.0	7.6	389	9.9
	4-Apr-14	3.7	6.9	416	9.0
	11-Apr-14	3.6	7.6	363	10.4
	17-Apr-14	4.6	8.0	631	11.0
	25-Apr-14	4.3	7.9	603	10.3
	1-May-14	4.7	7.8	580	9.2
	9-May-14	12.2	7.6	418	5.6
	16-May-14	10.0	7.1	450	8.2
	23-May-14	11.9	7.5	382	6.2
	30-May-14	12.0	7.2	375	6.1
	6-Jun-14	12.5	7.3	391	7.6
	13-Jun-14	12.7	7.2	398	7.5
	20-Jun-14	13.2	7.9	416	8.1
	27-Jun-14	14.4	7.2	420	8.2
	4-Jul-14	13.3	8.0	492	8.7
	11-Jul-14	14.3	7.9	482	7.2
	18-Jul-14	12.6	8.4	575	-
	25-Jul-14	13.1	8.8	615	-
	1-Aug-14	13.2	8.6	575	6.8
	8-Aug-14	13.8	8.5	523	6.6
	15-Aug-14	12.5	8.3	520	7.3
	22-Aug-14	13.1	8.9	662	-
	29-Aug-14	13.5	9.0	663	-
	5-Sep-14	14.1	9.0	672	-
	12-Sep-14	10.2	8.0	639	5.8
	19-Sep-14	10.2	8.0	423	6.2
	26-Sep-14	10.1	8.0	418	6.2
	3-Oct-14	12.8	7.5	431	6.8
	10-Oct-14	12.6	7.6	419	7.0
	16-Oct-14	11.7	8.2	656	7.4
	24-Oct-14	9.4	8.5	427	6.3
	31-Oct-14	6.4	8.4	420	6.3
	7-Nov-14	0.4	7.3	447	8.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	14-Nov-14	-1.3	7.4	423	6.7
	20-Nov-14	-1.2	7.3	416	6.7
	28-Nov-14	-1.5	7.3	413	5.2
	5-Dec-14	-0.3	7.2	418	6.9
	12-Dec-14	-0.3	7.2	412	6.6
	19-Dec-14	-1.3	7.2	427	6.1
	8-Jan-15	0.4	7.2	420	6.3
	14-Jan-15	0.9	7.4	446	7.3
	23-Jan-15	-0.4	7.2	420	7.9
	6-Feb-15	4.3	7.8	570	8.6
	27-Feb-15	4.6	7.8	577	8.2
	6-Mar-15	4.5	7.6	576	8.7
	13-Mar-15	5.1	7.6	569	8.2
	20-Mar-15	5.5	7.6	349	8.4
	26-Mar-15	4.6	7.7	337	8.9
	2-Apr-15	4.9	7.7	341	9.0
	10-Apr-15	6.4	7.9	288	9.9
	17-Apr-15	5.7	9.2	372	12.6
	23-Apr-15	5.2	7.9	419	10.2
	1-May-15	7.1	7.6	466	10.2
	8-May-15	10.2	9.2	472	-
	15-May-15	8.7	7.8	414	9.3
	21-May-15	8.9	7.8	420	10.6
	28-May-15	11.8	7.8	485	8.8
	4-Jun-15	11.2	7.7	478	8.7
	12-Jun-15	10.8	7.6	535	7.0
	18-Jun-15	12.8	7.8	548	7.1
	26-Jun-15	13.6	7.7	495	-
	10-Jul-15	13.0	7.9	557	-
	17-Jul-15	13.0	7.9	557	-
	22-Jul-15	12.7	8.1	558	-
	30-Jul-15	16.4	8.0	665	-
	5-Aug-15	12.8	7.6	586	6.8
	13-Aug-15	14.9	7.7	703	6.9
	21-Aug-15	15.0	8.2	635	-
	28-Aug-15	-	8.2	605	-
	3-Sep-15	16.9	7.6	700	7.7
	10-Sep-15	17.0	7.8	682	7.9
	18-Sep-15	13.8	7.6	626	7.6
	25-Sep-15	14.3	7.7	632	9.1
	2-Oct-15	9.7	7.3	544	7.2
	9-Oct-15	11.0	7.4	561	7.8
	16-Oct-15	10.3	7.8	549	8.5
	23-Oct-15	9.3	7.5	558	8.2
	30-Oct-15	8.8	7.5	576	8.7
	5-Nov-15	11.0	7.9	596	7.5
	13-Nov-15	8.7	7.5	549	5.2
	19-Nov-15	9.6	7.8	648	11.9
	26-Nov-15	7.0	7.6	558	10.3
	4-Dec-15	6.6	7.4	564	10.4
	10-Dec-15	7.5	7.4	574	8.3
	17-Dec-15	6.9	7.7	492	7.4
	23-Dec-15	7.3	7.6	499	7.3
	30-Dec-15	5.3	7.4	466	8.4
	8-Jan-15	5.5	7.3	470	8.5
	14-Jan-16	4.3	7.1	441	8.4
	22-Jan-16	5.0	7.9	504	7.9
	29-Jan-16	3.6	7.5	472	9.0
	5-Feb-16	4.5	7.5	466	9.0
	11-Feb-16	3.7	7.6	466	9.2
	18-Feb-16	5.4	7.5	484	8.8
	25-Feb-16	3.3	7.1	442	9.2
	4-Mar-16	4.5	7.6	448	9.0
	10-Mar-16	1.6	7.0	276	11.8
	18-Mar-16	4.7	7.7	388	10.8
	28-Mar-16	1.3	7.5	99	12.7
	1-Apr-16	3.7	7.3	237	10.4
	7-Apr-16	3.7	7.1	271	10.7
	15-Apr-16	6.9	7.5	340	10.3
	22-Apr-16	8.8	8.0	449	10.2
	29-Apr-16	6.9	8.3	439	11.1
	6-May-16	10.5	8.1	528	9.3
	13-May-16	12.5	7.8	632	-
	20-May-16	13.0	8.2	650	8.8
	27-May-16	14.7	8.1	581	7.7
	2-Jun-16	13.5	8.0	531	6.5
	10-Jun-16	12.1	8.1	733	8.6
	17-Jun-16	17.0	8.0	695	8.6
	24-Jun-16	13.4	7.9	561	7.9
	28-Jun-16	14.1	8.1	626	11.1
	8-Jul-16	16.7	8.1	587	9.8
	15-Jul-16	16.0	8.2	582	7.7
	22-Jul-16	18.0	7.8	769	8.0
	29-Jul-16	15.5	8.1	691	8.4
	5-Aug-16	16.8	8.3	674	8.0
	12-Aug-16	18.0	8.1	832	8.0
	19-Aug-16	16.4	7.9	661	7.0
	26-Aug-16	14.8	7.9	676	7.6
	2-Sep-16	13.1	7.5	586	7.3
	9-Sep-16	14.7	7.9	587	7.5
	16-Sep-16	12.4	8.1	612	8.3
	21-Sep-16	15.5	8.0	623	10.1
	30-Sep-16	12.0	8.3	604	9.7
	7-Oct-16	12.5	7.4	621	7.0
	13-Oct-16	11.2	8.0	532	9.5
	19-Oct-16	12.4	7.5	645	9.8
	27-Oct-16	6.6	8.0	492	7.2
	3-Nov-16	9.5	7.8	592	7.3
	11-Nov-16	8.1	6.1	496	9.0
	18-Nov-16	9.2	7.7	751	7.2
	24-Nov-16	7.5	7.3	516	8.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	2-Dec-16	6.8	7.8	468	4.9
	7-Dec-16	5.8	7.9	453	5.9
	16-Dec-16	4.9	7.5	768	9.2
	22-Dec-16	5.6	7.7	750	8.8
	6-Jan-17	4.5	7.7	412	9.4
	13-Jan-17	4.0	7.8	439	9.7
	20-Jan-17	4.8	7.8	470	8.7
	26-Jan-17	4.8	7.8	494	8.8
	3-Feb-17	3.5	7.8	440	8.6
	10-Feb-17	4.0	7.8	413	7.8
	17-Feb-17	4.0	7.7	492	8.9
	19-Apr-17	9.3	6.9	449	11.2
	3-May-17	7.8	7.1	374	9.6
	16-May-17	14.5	8.2	548	8.4
	28-Jun-17	14.8	7.9	625	6.8
	18-Jul-17	17.4	8.0	705	7.9
	15-Aug-17	15.1	8.3	557	6.4
	18-Sep-17	14.1	6.4	679	5.7
	18-Oct-17	11.1	7.9	626	7.3
	15-Nov-17	6.9	7.8	550	9.1
	14-Dec-17	4.3	7.9	495	3.3
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	16-Jul-04	25.4	7.7	769	5.7
	22-Jul-04	29.2	8.0		7.2
	29-Jul-04	24.2	7.9	768	
	6-Aug-04	21.6	8.2	774	8.1
	12-Aug-04	15.5	8.1	683	
	20-Aug-04	20.0	8.0	801	
	26-Aug-04	21.5	8.0	785	
	3-Sep-04	23.1	7.9	742	6.0
	9-Sep-04	15.8	8.3	716	7.9
	17-Sep-04	11.9	7.7	691	7.9
	1-Oct-04	17.1	8.0	825	8.8
	7-Oct-04	14.3	7.9	755	7.0
	14-Oct-04	10.2	7.8	709	7.9
	20-Oct-04	7.8	7.8	636	11.9
	28-Oct-04	11.7	8.0	803	9.3
	4-Nov-04	4.1	7.8	493	13.0
	11-Nov-04	3.4	7.8	528	
	19-Nov-04	7.7	7.9	624	
	2-Dec-04	0.1	7.4	436	11.3
	9-Dec-04	0.1	7.6	402	12.1
	17-Dec-04	0.1	7.3	441	10.3
	5-Jan-05	0.1	7.3	388	10.7
	13-Jan-05	0.1	7.2	197	11.4
	30-Mar-05	2.6	7.8	373	12.3
	15-Apr-05	3.1	7.1	307	11.8
	21-Apr-05	9.8	7.6	370	
	29-Apr-05	6.4	7.5	323	
	6-May-05	17.4	7.7	560	
	13-May-05	11.8	8.4	494	
	20-May-05	9.8	7.2	478	9.3
	27-May-05	20.8	7.7	679	8.4
	3-Jun-05	19.8	7.6	670	9.1
	10-Jun-05	23.8	8.0	764	6.0
	17-Jun-05	15.7	7.2	535	6.7
	24-Jun-05	25.4	8.0	770	
	30-Jun-05	23.7	7.9	808	
	7-Jul-05	23.0	6.8	803	5.0
	21-Oct-05	10.0	8.1	630	11.0
	28-Oct-05	6.5	7.9	564	12.3
	4-Nov-05	11.1	7.7	654	9.4
	11-Nov-05	5.0	7.8	515	12.3
	18-Nov-05	0.3	7.1	850	
	2-Dec-05	0.1	8.5	437	11.3
	9-Dec-05	0.1	8.9	476	8.1
	16-Dec-05	0.1	7.8	490	9.1
	22-Dec-05	0.1	7.6	481	6.7
	28-Dec-06	0.3	7.8	842	13.3
	5-Jan-07	4.7	7.9	770	12.1
	12-Jan-07	0.1	7.8	740	12.8
	16-Mar-07	0.1	7.8	526	7.3
	23-Mar-07	0.5	7.6	490	10.6
	30-Mar-07	4.6	7.9	596	12.1
	5-Apr-07	0.1	7.2	372	12.0
	13-Apr-07	1.1	8.0	561	13.7
	20-Apr-07	11.5	8.1	572	
	28-Apr-07	10.3	8.3	550	10.3
	4-May-07	14.2	8.2	576	10.3
	11-May-07	15.6	8.0	644	8.6
	18-May-07	12.9	8.0	612	9.8
	25-May-07	18.9	7.7	644	7.1
	1-Jun-07	20.5	7.7	670	5.6
	8-Jun-07	20.3	7.6	743	5.4
	14-Jun-07	19.6	7.6	761	5.7
	29-Jun-07	20.5	8.0	743	6.4
	6-Jul-07	20.5	8.0	743	6.4
	13-Jul-07	18.0	8.2	785	8.2
	20-Jul-07	17.1	7.4	756	8.1
	24-Aug-07	18.9	7.8	913	6.5
	30-Aug-07	18.0	7.8	872	7.1
	7-Sep-07	19.4	7.4	860	6.5
	14-Sep-07	13.4	7.4	740	7.9
	21-Sep-07	15.4	8.1	793	8.2
	28-Sep-07	13.3	8.4	817	7.9
	5-Oct-07	13.0	7.4	876	8.1
	12-Oct-07	8.6	7.2	713	8.5
	19-Oct-07	14.4	7.7	779	7.5
	26-Oct-07	8.6	7.3	757	10.8
	2-Nov-07	5.7	7.5	819	10.9
	9-Nov-07	2.5	7.4	776	12.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
111-53312.00 A61

LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-Nov-07	1.5	7.3	790	13.0
	11-Jan-08	0.4	7.1	478	10.7
	4-Apr-08	0.3	7.2	485	
	11-Apr-08	2.1	7.0	431	11.8
	18-Apr-08	10.2	6.8	494	8.5
	25-Apr-08	10.5	7.8	552	7.1
	2-May-08	8.1	7.0	617	9.4
	8-May-08	8.5	6.7	584	9.9
	15-May-08	12.2	7.5	683	8.1
	23-May-08	10.9	7.8	557	7.8
	30-May-08	8.1	6.3	566	10.5
	6-Jun-08	24.2	7.0	627	5.4
	13-Jun-08	18.5	7.0	655	5.1
	20-Jun-08	14.3	7.8	723	5.7
	27-Jun-08	20.5	6.7	815	4.6
	4-Jul-08	16.3	6.8	778	6.5
	11-Jul-08	17.3	6.9	773	5.2
	18-Jul-08	21.1	7.4	879	3.9
	25-Jul-08	18.4	7.3	707	4.3
	1-Aug-08	18.3	7.2	701	3.9
	8-Aug-08	17.1	7.4	549	4.2
	15-Aug-08	15.8	6.4	732	4.0
	22-Aug-08	20.2	7.3	740	4.7
	28-Aug-08	16.0	7.3		6.1
	5-Sep-08	17.5	7.6	874	5.6
	12-Sep-08	13.8	7.6	851	5.4
	19-Sep-08	10.9	7.9	568	6.0
	26-Sep-08	12.8	7.4	854	5.7
	3-Oct-08	7.4	7.3	665	7.7
	10-Oct-08	7.4	6.8	791	8.5
	17-Oct-08	7.9	6.5	748	5.9
	24-Oct-08	3.3	7.6	670	6.8
	31-Oct-08	2.5	8.1	720	9.1
	7-Nov-08	8.2	9.9	451	5.7
	14-Nov-08	6.3	8.8	609	8.1
	20-Mar-09	0.2	8.4	526	11.2
	27-Mar-09	2.3	7.1	566	
	3-Apr-09	6.4	7.5	498	10.3
	17-Apr-09	5.8	7.8	529	11.8
	24-Apr-09	7.4	8.0	530	11.7
	1-May-09	14.5	7.8	378	8.5
	8-May-09	13.9	7.5	555	6.8
	15-May-09	12.5	7.9	470	10.2
	22-May-09	14.5	7.7	517	3.3
	29-May-09	13.1	7.7	559	6.7
	5-Jun-09	13.7	7.5	546	3.5
	12-Jun-09	15.8	7.8	623	7.2
	19-Jun-09	16.6	7.2	1214	7.5
	26-Jun-09	25.1	7.7	687	5.6
	2-Jul-09	16.4	7.5	584	6.2
	10-Jul-09	17.8			6.2
	17-Jul-09	14.8	8.8	740	6.1
	24-Jul-09	17.5	7.7	732	6.2
	31-Jul-09	17.2	7.5	742	5.8
	7-Aug-09	14.9	7.6	782	5.0
	14-Aug-09	15.8	8.9	707	8.5
	21-Aug-09	18.8	8.0	788	5.6
	28-Aug-09	14.1	8.3	734	8.1
	4-Sep-09	13.1	8.4	654	9.2
	11-Sep-09	13.6	8.0	752	7.8
	18-Sep-09	12.5	7.7	826	7.5
	25-Sep-09	12.3	7.8	678	8.2
	9-Oct-09	9.4	7.5	764	10.4
	16-Oct-09	2.0	7.9	774	12.2
	23-Oct-09	4.2			7.9
	30-Oct-09	3.1	7.9	735	9.1
	6-Nov-09	2.2	7.3	711	12.4
	13-Nov-09	2.5	7.5	786	7.5
	20-Nov-09	5.7	7.2	350	10.9
	27-Nov-09	3.6		682	11.6
	4-Dec-09	0.8	7.2	605	13.0
	19-Mar-10	7.6	7.5	464	9.4
	26-Mar-10	0.6	7.2	535	11.2
	2-Apr-10	10.7	6.6	451	9.2
	9-Apr-10	4.8	7.3	582	12.4
	16-Apr-10	12.2	7.6	494	8.5
	23-Apr-10	7.9	7.8	443	9.5
	30-Apr-10	10.7	7.7	458	8.4
	7-May-10	10.4	7.8	396	9.1
	14-May-10	11.1	7.8	346	10.8
	21-May-10	17.7	7.8	578	7.1
	28-May-10	23.2	7.7	607	5.5
	4-Jun-10	17.0	7.7	427	5.3
	11-Jun-10	15.8	7.8	471	5.7
	18-Jun-10	18.2	7.2	604	8.8
	25-Jun-10	18.6	7.7	585	7.6
	9-Jul-10	20.0	7.2	532	4.7
	15-Jul-10	23.4	7.8	722	2.4
	23-Jul-10	10.4	7.6	573	7.3
	30-Jul-10	18.8	7.8	552	7.1
	6-Aug-10	18.6	7.7	636	8.6
	13-Aug-10	21.2	7.7	703	4.3
	20-Aug-10	16.1	7.6	651	6.5
	27-Aug-10	14.8	7.5	407	6.2
	30-Aug-10	17.8	7.6	632	4.6
	1-Sep-10	20.2	7.7	706	4.1
	3-Sep-10	19.8	7.7	720	3.9
	7-Sep-10	15.9	7.6	521	5.2
	10-Sep-10	13.1	7.8	510	6.8
	17-Sep-10	11.2	7.6	475	7.4
	24-Sep-10	16.2	7.8		6.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	1-Oct-10	11.3	7.6	523	7.0
	8-Oct-10	9.5	7.6	563	8.2
	15-Oct-10	9.4	7.6	561	8.3
	22-Oct-10	3.1	7.7	441	10.3
	29-Oct-10	6.4	7.6	416	5.1
	5-Nov-10	1.5	7.8	413	11.2
	12-Nov-10	3.1	7.8	469	10.7
	19-Nov-10	1.3	8.1	357	12.3
	26-Nov-10	0.3	7.8	345	11.8
	3-Dec-10	0.2	7.8	334	10.3
	1-Apr-11	2.0	7.3	301	11.2
	8-Apr-11	2.7	7.4	299	9.2
	15-Apr-11	3.4	7.7	252	11.7
	21-Apr-11	2.8	8.0	287	13.1
	29-Apr-11	5.1	-	309	12.2
	6-May-11	8.6	8.1	307	9.3
	13-May-11	10.3	8.2	347	9.3
	20-May-11	14.1	7.9	349	8.6
	27-May-11	10.9	8.1	320	9.0
	3-Jun-11	15.5	7.8	448	9.9
	10-Jun-11	16.5	7.9	482	9.4
	17-Jun-11	16.7	7.8	514	8.1
	24-Jun-11	16.8	7.9	538	6.8
	30-Jun-11	15.7	7.8	505	10.3
	8-Jul-11	20.1	8.0	652	8.2
	14-Jul-11	17.6	7.8	633	6.9
	22-Jul-11	22.2	7.7	707	8.1
	29-Jul-11	20.6	7.7	567	5.6
	12-Aug-11	17.8	8.0	689	6.0
	19-Aug-11	18.0	8.0	478	5.9
	26-Aug-11	19.1	8.0	741	6.1
	2-Sep-11	20.9	7.8	398	8.7
	9-Sep-11	15.9	8.0	640	6.2
	16-Sep-11	9.7	7.7	475	8.3
	23-Sep-11	12.9	7.7	557	5.4
	30-Sep-11	13.7	8.2	552	8.3
	6-Oct-11	8.1	8.2	453	5.9
	14-Oct-11	14.3	7.8	486	6.3
	21-Oct-11	8.7	7.8	401	9.6
	28-Oct-11	5.4	8.6	475	11.2
	4-Nov-11	4.3	8.0	435	11.2
	11-Nov-11	3.3	7.6	498	5.3
	18-Nov-11	0.8	7.6	445	12.6
	25-Nov-11	3.8	7.9	449	8.4
	2-Dec-11	0.6	7.9	346	14.6
	9-Dec-11	0.2	7.3	327	11.4
	16-Dec-11	1.3	7.5	280	14.0
	16-Mar-12	6.0	7.5	250	11.6
	23-Mar-12	10.6	7.5	-	7.6
	30-Mar-12	2.5	7.8	290	8.1
	13-Apr-12	5.4	8.0	340	10.9
	20-Apr-12	8.6	7.9	401	4.4
	27-Apr-12	3.0	8.0	288	12.3
	4-May-12	13.9	7.8	452	3.6
	11-May-12	9.0	7.8	298	10.6
	18-May-12	10.8	8.0	489	8.5
	25-May-12	11.5	7.5	501	9.0
	1-Jun-12	10.6	8.2	467	8.5
	8-Jun-12	16.8	8.1	558	7.9
	15-Jun-12	18.2	8.1	562	7.9
	22-Jun-12	20.0	8.0	726	7.4
	28-Jun-12	18.7	8.2	648	6.3
	6-Jul-12	22.4	8.0	853	5.3
	13-Jul-12	18.8	8.1	683	5.6
	20-Jul-12	19.2	7.9	781	4.9
	27-Jul-12	18.9	7.9	691	5.9
	3-Aug-12	18.6	7.9	720	4.0
	10-Aug-12	16.2	7.8	524	6.0
	17-Aug-12	17.3	7.9	461	5.3
	24-Aug-12	16.7	8.2	667	8.6
	31-Aug-12	18.5	7.7	757	7.2
	7-Sep-12	16.3	8.2	716	4.2
	14-Sep-12	15.2	7.0	593	1.9
	21-Sep-12	10.8	8.0	534	8.7
	28-Sep-12	7.8	6.5	648	9.8
	5-Oct-12	14.3	7.1	736	7.2
	12-Oct-12	4.7	8.0	574	11.3
	19-Oct-12	12.2	8.4	724	4.4
	26-Oct-12	10.4	7.3	615	4.7
	2-Nov-12	1.8	6.3	386	6.9
	9-Nov-12	2.2	7.6	363	11.2
	16-Nov-12	2.8	8.1	438	8.0
	23-Nov-12	6.4	7.7	443	7.4
	30-Nov-12	5.2	7.6	433	7.3
	7-Dec-12	1.1	7.5	386	8.9
	14-Dec-12	0.8	7.7	365	12.3
	21-Dec-12	0.1	7.4	404	12.2
	28-Mar-13	1.5	7.9	303	9.8
	5-Apr-13	0.0	8.0	250	6.9
	12-Apr-13	1.7	8.2	230	7.0
	19-Apr-13	11.2	7.6	277	8.7
	26-Apr-13	4.7	7.8	262	6.1
	3-May-13	15.2	7.8	293	10.5
	9-May-13	13.6	7.8	475	7.5
	16-May-13	11.3	7.8	410	8.2
	24-May-13	5.9	7.7	322	8.4
	31-May-13	19.5	7.7	509	8.5
	7-Jun-13	11.6	-	351	6.2
	14-Jun-13	19.5	7.9	517	5.4
	21-Jun-13	14.9	7.8	539	8.1
	27-Jun-13	15.2	7.9	536	8.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	5-Jul-13	19.2	7.7	621	6.3
	12-Jul-13	14.7	7.6	582	7.0
	19-Jul-13	19.6	7.8	556	5.6
	25-Jul-13	14.6	7.7	523	8.9
	2-Aug-13	18.2	8.1	576	8.6
	8-Aug-13	19.0	8.1	565	8.5
	16-Aug-13	19.2	8.0	560	8.4
	23-Aug-13	19.2	8.1	562	8.5
	30-Aug-13	19.2	8.2	548	8.3
	6-Sep-13	18.7	8.1	530	8.1
	13-Sep-13	12.9	8.2	530	8.6
	20-Sep-13	17.4	8.2	556	8.1
	27-Sep-13	12.6	7.8	550	8.2
	4-Oct-13	10.2	7.6	545	8.2
	11-Oct-13	10.2	7.5	540	8.0
	18-Oct-13	9.8	7.5	539	9.0
	25-Oct-13	7.6	7.6	423	3.9
	31-Oct-13	7.4	7.5	406	3.9
	8-Nov-13	7.4	7.3	398	3.8
	14-Nov-13	3.3	7.4	350	3.0
	22-Nov-13	3.7	7.3	360	3.2
	6-Dec-13	-0.1	7.6	258	7.3
	17-Apr-14	4.2	7.8	491	8.0
	25-Apr-14	4.0	7.8	486	8.2
	1-May-14	4.3	7.6	480	8.2
	9-May-14	11.0	7.6	421	4.3
	16-May-14	10.0	7.1	450	8.2
	23-May-14	9.9	7.1	432	8.7
	30-May-14	10.1	7.1	423	8.8
	6-Jun-14	11.3	7.1	430	8.6
	13-Jun-14	12.5	7.2	432	8.5
	20-Jun-14	13.2	7.2	442	8.5
	27-Jun-14	14.2	7.2	421	7.9
	4-Jul-14	14.6	7.1	406	7.8
	11-Jul-14	14.6	7.1	413	7.8
	18-Jul-14	15.1	8.4	600	-
	25-Jul-14	14.9	8.7	608	-
	1-Aug-14	15.0	8.6	565	4.9
	8-Aug-14	15.3	8.5	562	4.9
	15-Aug-14	13.2	8.5	486	5.2
	22-Aug-14	16.1	8.6	639	7.5
	29-Aug-14	14.9	8.6	659	-
	12-Sep-14	12.0	7.8	623	6.2
	19-Sep-14	10.3	7.9	449	4.9
	26-Sep-14	10.3	7.9	440	5.0
	3-Oct-14	12.9	7.7	425	4.7
	10-Oct-14	11.9	7.6	420	4.5
	16-Oct-14	12.1	7.5	430	4.0
	24-Oct-14	7.6	7.6	489	6.9
	31-Oct-14	7.0	7.6	423	6.0
	7-Nov-14	0.5	7.3	431	7.0
	14-Nov-14	0.2	7.2	428	6.8
	20-Nov-14	-1.2	7.3	432	6.2
	26-Dec-14	1.3	7.2	418	7.0
	2-Apr-15	2.8	7.6	281	9.8
	23-Apr-15	2.5	8.0	343	13.2
	1-May-15	8.1	8.0	447	9.1
	8-May-15	17.3	9.2	523	-
	15-May-15	11.4	7.8	413	9.2
	21-May-15	11.2	8.0	420	11.4
	28-May-15	16.7	7.9	506	8.7
	4-Jun-15	15.5	8.1	507	9.5
	12-Jun-15	14.1	7.7	523	7.3
	18-Jun-15	17.8	7.8	579	6.9
	10-Jul-15	15.9	7.9	545	-
	17-Jul-15	15.5	8.0	541	-
	22-Jul-15	20.5	7.8	683	7.7
	30-Jul-15	24.6	8.1	743	-
	5-Aug-15	14.7	7.6	541	6.1
	13-Aug-15	-	7.9	611	-
	21-Aug-15	13.7	8.0	543	7.2
	28-Aug-15	14.6	8.1	565	7.8
	3-Sep-15	19.6	8.0	710	7.6
	10-Sep-15	18.6	7.7	621	7.1
	18-Sep-15	16.4	7.7	654	8.3
	25-Sep-15	14.0	7.6	583	9.6
	2-Oct-15	6.9	7.6	501	10.6
	9-Oct-15	10.4	7.7	530	8.5
	16-Oct-15	10.5	7.8	483	10.5
	23-Oct-15	5.9	7.6	464	10.8
	30-Oct-15	6.5	7.5	424	10.0
	5-Nov-15	9.9	7.5	445	6.3
	13-Nov-15	5.2	7.3	358	8.1
	19-Nov-15	9.8	7.7	535	12.1
	26-Nov-15	1.0	7.3	362	15.3
	4-Dec-15	2.0	7.5	390	15.5
	10-Dec-15	4.7	7.4	465	11.4
	17-Dec-15	3.6	7.7	370	11.3
	23-Dec-15	5.1	7.4	378	10.9
	30-Dec-15	-0.1	7.4	321	11.4
	8-Jan-16	0.1	7.2	355	12.1
	10-Mar-16	-0.1	6.9	210	10.4
	18-Mar-16	0.9	7.4	289	10.8
	28-Mar-16	1.0	6.6	132	11.5
	1-Apr-16	4.7	7.3	170	9.6
	7-Apr-16	0.2	7.4	219	12.5
	15-Apr-16	2.7	7.0	256	12.9
	22-Apr-16	10.7	7.9	426	8.6
	29-Apr-16	4.7	7.4	352	11.2
	6-May-16	9.2	7.9	424	8.5
	13-May-16	13.8	8.1	566	-

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	20-May-16	13.5	8.0	570	8.7
	27-May-16	16.5	7.8	543	6.4
	2-Jun-16	15.9	7.9	544	6.5
	10-Jun-16	10.5	7.9	629	9.1
	17-Jun-16	14.4	7.9	581	8.0
	24-Jun-16	13.7	7.9	573	8.8
	28-Jun-16	16.0	8.0	609	10.7
	8-Jul-16	18.3	8.0	661	8.0
	15-Jul-16	18.0	7.9	562	6.9
	22-Jul-16	19.0	7.6	636	5.4
	29-Jul-16	16.4	7.8	606	5.9
	7-Oct-16	13.9	7.9	576	9.1
	27-Oct-16	1.7	8.0	396	12.0
	3-Nov-16	8.1	7.6	504	10.8
	11-Nov-16	5.0	7.8	409	12.2
	18-Nov-16	6.7	7.8	695	11.3
	24-Nov-16	1.5	7.4	369	11.8
	2-Dec-16	2.3	7.5	340	7.2
	16-Dec-16	0.0	7.7	334	4.5
	26-Jan-17	0.0	7.5	362	10.1
	19-Apr-17	11.2	7.2	423	11.5
	16-May-17	17.4	8.2	483	7.8
	28-Jun-17	14.5	7.6	535	7.4
	18-Jul-17	19.6	6.1	666	9.2
	15-Aug-17	16.0	8.3	505	7.0
	18-Sep-17	14.2	7.7	649	7.7
	17-Oct-17	6.8	7.8	443	9.7
	14-Nov-17	0.5	7.7	413	12.8
SW3					
	22-May-03	10.0			
	18-Mar-04	0.6		340	4.4
	19-Apr-04	8.7	7.4	239	10.3
	19-May-04	14.6	7.5	378	5.3
	30-Mar-05	1.1	7.0	236	7.5
	11-Apr-05	1.5	6.1	154	7.5
	16-Jan-06	0.8	7.8	602	6.3
	20-Mar-06	0.5	7.8	209	6.0
	18-Apr-06	10.1	7.7	339	
	23-May-06	8.5	7.5	426	
	27-Nov-06	6.1	7.6	737	7.6
	17-Dec-06	1.4	7.5	353	
	21-Jan-07	2.5	7.6	452	6.5
	15-Apr-07	1.7	8.1	351	10.8
	13-May-07	13.2	8.0	849	7.0
	4-Apr-08	0.1	7.7	275	8.2
	23-Apr-08	18.7	7.8	329	5.8
	21-May-08	14.7	6.9	365	4.9
	15-Mar-09	2.0	7.7	295	10.4
	12-Apr-09	12.5	7.3	354	10.6
	17-May-09	20.5	7.7	351	4.5
	14-Mar-10	1.3	7.7	265	9.9
	11-Apr-10	8.2	7.8	373	11.3
	16-May-10	15.3	7.6	219	5.4
	13-Jun-10	18.5	7.5	334	6.2
	18-Jul-10	19.8	7.4	308	5.9
	14-Nov-10	6.0	7.3	365	10.6
	16-Jan-11	0.2	8.8	218	7.6
	13-Mar-11	0.3	8.1	209	7.1
	17-Mar-11	0.5	8.0	141	5.9
	22-Mar-11	0.5	7.9	204	8.2
	1-Apr-11	1.2	7.4	197	7.3
	5-Apr-11	0.4	8.0	166	12.3
	8-Apr-11	1.8	7.9	185	9.3
	12-Apr-11	4.4	6.3	164	10.8
	15-Apr-11	3.0	7.8	140	10.1
	18-Apr-11	2.1	7.8	200	11.7
	20-Apr-11	2.5	8.0	182	8.8
	21-Apr-11	2.3	8.1	185	12.5
	26-Apr-11	7.1	6.6	232	9.6
	29-Apr-11	5.2	7.6	225	11.2
	6-May-11	8.2	8.2	213	7.3
	15-May-11	10.7	8.4	252	9.3
	16-May-11	10.8	7.2	209	9.8
	18-May-11	12.2	8.2	228	7.0
	19-May-11	17.1	8.4	264	10.3
	20-May-11	15.5	7.8	256	6.7
	27-May-11	11.1	-	242	7.6
	3-Jun-11	13.7	7.6	304	5.9
	13-Jun-11	13.4	7.0	316	5.1
	16-Oct-11	9.9	7.4	296	8.0
	18-Dec-11	1.0	8.2	146	9.0
	18-Mar-12	12.8	7.5	215	5.9
	18-Nov-12	4.9	7.4	227	6.3
	16-Dec-12	1.2	7.4	215	10.8
	15-Jan-13	0.1	7.6	218	5.4
	19-Mar-13	0.2	7.7	185	6.7
	15-Apr-13	8.9	7.5	236	6.8
	13-May-13	7.4	7.6	257	7.0
	19-Nov-13	0.9	8.0	218	3.2
	15-Apr-14	0.4	7.6	161	7.0
	12-May-14	17.0	7.1	350	4.6
	22-Oct-14	9.4	7.2	418	4.9
	17-Dec-14	0.2	8.9	262	-
	22-Apr-15	9.2	7.8	229	7.5
	15-Jun-15	18.8	7.6	342	1.7
	19-Jan-16	0.0	7.1	219	11.0
	17-Feb-16	0.1	7.1	243	9.8
	15-Mar-16	2.6	7.4	173	10.6
	20-Apr-16	15.8	7.6	299	7.4
	17-May-16	8.0	7.8	319	8.4
	21-Mar-16	1.3	7.6	280	5.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Apr-17	8.2	7.5	263	8.0
	16-May-17	10.8	7.9	415	3.5
	28-Jun-17	14.5	7.7	344	4.7
	18-Jul-17	16.2	5.6	446	-
	17-Oct-17	9.7	7.7	458	7.3
	14-Nov-17	4.8	7.9	489	14.7
SW3A					
	22-May-03	12.0			
	17-Mar-04	0.1		303	4.2
	19-Apr-04	8.6	7.2	214	6.8
	19-May-04	16.4	7.2	349	5.0
	24-Jun-04	17.0	7.2	470	2.7
	30-Mar-05	0.1	7.0	267	4.0
	11-Apr-05	1.1	6.5	167	7.2
	24-May-05	12.1	7.9	322	4.8
	16-Jan-06	0.1	8.0	178	1.8
	20-Mar-06	0.1	7.8	204	5.5
	18-Apr-06	10.0	7.5	294	
	23-May-06	9.2	7.5	382	
	19-Jun-06	19.7	6.5	688	
	27-Nov-06	5.2	7.2	351	8.1
	17-Dec-06	0.6	7.2	369	7.9
	16-Apr-07	0.9	7.8	344	7.6
	13-May-07	17.0	8.2	389	5.6
	7-Apr-08	1.3	7.6	273	7.5
	23-Apr-08	18.4	7.7	323	2.8
	21-May-08	14.2	6.9	385	4.5
	17-Jun-08	16.3	7.7	465	3.5
	20-Oct-08	7.4	7.7	388	6.7
	15-Mar-09	0.3	7.5	342	7.6
	12-Apr-09	9.9	7.8	360	6.6
	17-May-09	18.4	7.6	358	3.9
	14-Jun-09	14.0	8.1	941	6.5
	11-Oct-09	5.8	6.9	414	8.3
	15-Nov-09	5.6	7.9	417	
	14-Mar-10	0.1	7.7	342	10.9
	11-Apr-10	8.0	7.9	399	9.8
	16-May-10	15.7	7.5	343	4.9
	23-May-10	18.6	7.3	432	4.2
	13-Jun-10	19.2	7.3	401	3.7
	18-Jul-10	19.5	7.5	331	6.5
	17-Oct-10	7.5	7.6	327	6.4
	14-Nov-10	3.6	7.5	246	9.9
	17-Apr-11	2.4	8.3	233	6.5
	15-May-11	10.6	7.9	235	10.6
	13-Jun-11	14.1	7.5	362	6.1
	16-Oct-11	8.3	7.7	300	5.6
	20-Nov-11	1.3	7.8	256	7.5
	19-Dec-11	0.2	8.3	164	6.2
	18-Mar-12	9.8	7.3	231	5.5
	15-Apr-12	3.7	8.3	231	
	13-May-12	14.5	7.7	369	6.5
	13-Aug-12	18.2	8.1	417	3.1
	18-Sep-12	14.1	7.6	444	7.4
	16-Oct-12	6.3	6.1	396	3.3
	20-Nov-12	3.1	7.5	234	5.5
	17-Dec-12	0.2	7.7	195	6.6
	15-Apr-13	4.4	7.3	227	4.6
	13-May-13	6.9	7.5	255	8.5
	19-Nov-13	1.2	8.0	231	3.0
	15-Apr-14	0.2	7.9	182	5.6
	12-May-14	16.9	6.9	365	6.1
	18-Aug-14	14.5	8.5	409	6.5
	8-Sep-14	14.6	8.8	425	7.3
	22-Oct-14	10.0	7.3	463	5.0
	22-Apr-15	8.2	7.5	229	3.0
	19-May-15	14.2	7.5	361	3.8
	15-Jun-15	17.9	7.6	390	3.5
	21-Jul-15	17.7	7.8	437	-
	11-Aug-15	16.2	7.7	394	4.2
	18-Nov-15	5.2	7.2	263	5.9
	8-Dec-15	1.7	7.3	251	9.9
	15-Mar-16	0.4	7.1	164	5.8
	20-Apr-16	14.3	7.2	304	3.6
	17-May-16	7.7	7.5	263	5.2
	22-Jun-16	15.8	7.3	504	3.4
	24-Jan-17	0.0	7.0	215	6.0
	21-Mar-17	0.2	7.9	248	3.7
	19-Apr-17	7.4	7.3	247	4.9
	16-May-17	10.2	7.3	405	3.3
	28-Jun-17	14.2	7.5	360	2.4
	18-Jul-17	17.6	7.5	435	2.9
	15-Aug-17	15.6	7.8	349	2.2
	18-Sep-17	14.0	7.3	398	3.4
	17-Oct-17	7.8	7.5	295	3.2
	14-Nov-17	0.9	7.6	277	6.0
	14-Dec-17	-0.4	7.4	282	7.8
SW4					
	13-Jan-05	0.9	7.2	125	13.6
	31-Mar-06	6.0	7.2	360	
	7-Apr-06	6.6	7.9	463	
	13-Apr-06	15.5	8.6	538	
	17-Nov-06	4.4	7.4	509	9.3
	18-Mar-07	1.5	8.0	338	11.4
	7-Apr-08	2.8	7.5	316	8.8
	15-Mar-09	2.0	7.6	356	6.0
	12-Apr-09	11.0	8.1	558	
	14-Mar-10	2.3	8.0	383	8.4
	19-Jul-10	20.6	7.3	303	5.0
	16-Dec-12	1.4	6.9	308	5.7
	13-Jan-13	0.3	7.4	370	4.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Apr-13	8.6	7.5	349	6.0
	19-Nov-13	2.6	8.0	338	1.4
	15-Apr-14	3.7	7.5	161	2.7
	22-Oct-14	8.6	7.5	421	7.0
	22-Apr-15	5.7	7.5	565	1.7
	15-Mar-16	3.2	7.1	327	4.4
	20-Apr-16	16.8	7.9	467	8.5
	17-May-16	8.5	7.7	472	3.9
	24-Jan-17	-0.1	7.2	327	3.0
	21-Mar-17	1.1	7.5	356	6.9
	19-Apr-17	7.4	7.4	401	8.6
	16-May-17	10.8	7.9	523	13.7
	28-Jun-17	13.9	7.0	425	2.6
	17-Oct-17	7.4	7.2	335	6.7
	14-Nov-17	2.3	7.3	441	12.3
	14-Dec-17	0.9	7.2	510	7.1
SW5					
	22-May-03	11.0			
	16-Mar-04	0.6	7.3	469	5.7
	19-Apr-04	8.0	7.5	316	8.2
	19-May-04	14.9	7.5	464	5.1
	24-Jun-04	14.1	7.5	458	5.1
	29-Jul-04	16.1	7.6	886	9.1
	26-Aug-04	15.6	7.5	430	8.3
	22-Sep-04	11.7	7.2	400	3.2
	21-Oct-04	6.7	7.5	375	8.0
	16-Nov-04	1.3	7.4	400	10.3
	28-Mar-05	0.9	7.0	336	9.7
	11-Apr-05	1.7	6.3	212	8.2
	24-May-05	11.6	6.9	411	8.8
	28-Jun-05	20.2	7.7	522	3.8
	11-Jul-05	17.8	5.5	487	3.2
	22-Aug-05	14.6	6.8	441	2.7
	27-Sep-05	10.3	7.3	386	4.6
	24-Oct-05	5.9	7.9	562	10.9
	13-Nov-05	6.0	8.1	382	11.6
	20-Mar-06	0.8	8.0	317	6.6
	18-Apr-06	9.4	7.7	453	
	23-May-06	6.3	8.3	553	
	21-Jun-06	17.5	7.5	513	
	11-Jul-06	17.7	7.5	486	
	22-Aug-06	19.3	7.1	485	
	20-Sep-06	12.2	7.2	588	
	18-Oct-06	9.7	7.3	471	
	24-Nov-06	1.0	7.6	604	11.2
	17-Dec-06	1.0	7.6	587	11.2
	18-Mar-07	0.5	7.8	560	4.8
	15-Apr-07	3.1	8.1	489	8.8
	13-May-07	19.1	8.2	516	8.9
	17-Jun-07	20.1	7.8	568	4.0
	15-Jul-07	18.7	7.8	518	4.2
	18-Oct-07	13.0	7.7	564	6.4
	21-Nov-07	1.8	7.7	627	8.2
	12-Dec-07	0.2	7.7	587	4.9
	20-Feb-08	0.2	7.8	335	2.9
	18-Mar-08	0.5	7.7	547	5.5
	2-Apr-08	1.3	7.7	382	6.1
	24-Apr-08	12.4	8.1	461	8.6
	21-May-08	10.8	7.7	474	8.5
	17-Jun-08	17.8	7.6	450	5.3
	15-Jul-08	17.9	7.3	555	4.3
	19-Aug-08	17.2	7.9	606	3.5
	16-Sep-08	12.2	7.8	499	4.0
	22-Oct-08	2.8	7.5	538	4.5
	23-Nov-08	0.2		609	3.0
	8-Feb-09	0.3		439	2.8
	15-Mar-09	2.7	8.5	368	7.2
	12-Apr-09	9.6	7.8	477	9.0
	17-May-09	15.5	7.5	415	2.8
	14-Jun-09	14.6	7.3	1007	5.0
	12-Jul-09	19.2	7.6	573	8.2
	9-Aug-09	17.1	9.0	512	3.1
	13-Sep-09	17.6	7.3	617	3.5
	11-Oct-09	2.0	7.4	576	10.0
	15-Nov-09	1.6	7.6	567	10.8
	17-Jan-10	0.6	8.2	222	6.7
	14-Mar-10	4.0	7.5	404	7.9
	11-Apr-10	13.1	8.0	524	10.6
	16-May-10	14.6	7.7	390	6.2
	13-Jun-10	21.0	7.8	471	11.8
	18-Jul-10	19.0	7.5	446	3.5
	15-Aug-10	22.0	7.6	546	4.7
	12-Sep-10	13.4	7.9	461	7.9
	17-Oct-10	6.6	7.7	399	9.1
	14-Nov-10	4.2	7.7	274	7.8
	13-Mar-11	1.5	7.9	286	5.6
	17-Apr-11	3.6	8.1	263	10.2
	15-May-11	11.6	7.7	303	6.1
	12-Jun-11	14.0	7.5	372	9.3
	17-Jul-11	25.9	7.8	582	6.2
	14-Aug-11	22.4	8.0	403	10.4
	18-Sep-11	15.2	8.4	380	4.4
	16-Oct-11	7.3	7.5	394	6.5
	20-Nov-11	0.6	8.9	368	8.6
	18-Dec-11	0.4	8.7	271	9.1
	18-Mar-12	13.5	7.4	340	4.8
	15-Apr-12	4.8	8.5	331	14.5
	13-May-12	19.3	8.2	423	13.2
	17-Jun-12	25.1	8.2	611	13.6
	16-Jul-12	22.2	8.0	627	3.0
	15-Aug-12	15.6	8.7	400	2.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Sep-12	11.2	7.6	497	8.4
	18-Oct-12	10.2	8.3	399	6.2
	20-Nov-12	4.3	7.6	352	7.9
	20-Dec-12	0.3	7.3	656	11.2
	15-Jan-13	0.2	7.6	285	8.3
	16-Apr-13	9.3	7.8	322	7.4
	14-May-13	8.1	7.8	313	8.4
	18-Jun-13	19.5	7.8	454	6.2
	17-Jul-13	22.5	7.1	407	8.4
	20-Aug-13	16.9	8.7	492	3.8
	18-Sep-13	13.0	8.0	438	6.7
	16-Oct-13	12.9	8.4	386	3.2
	20-Nov-13	0.3	8.1	276	2.9
	16-Apr-14	1.0	8.4	231	9.3
	13-May-14	15.6	7.6	389	4.9
	17-Jun-14	17.1	7.7	446	6.5
	15-Jul-14	18.2	8.4	488	8.0
	19-Aug-14	14.2	8.5	484	5.6
	9-Sep-14	15.9	8.5	448	4.9
	22-Oct-14	9.5	8.5	408	5.9
	22-Apr-15	5.8	7.6	346	8.2
	19-May-15	15.7	7.8	399	10.1
	16-Jun-15	20.1	7.5	469	3.3
	22-Jul-15	18.3	7.3	511	3.1
	12-Aug-15	18.0	7.6	516	3.0
	8-Sep-15	21.1	7.4	621	1.1
	15-Oct-15	8.5	7.2	423	3.1
	18-Nov-15	4.9	7.1	380	8.0
	8-Dec-15	2.5	7.7	370	12.1
	15-Mar-16	2.9	7.3	264	10.0
	21-Apr-16	9.6	7.6	375	3.4
	17-May-16	7.6	7.8	368	7.5
	22-Jun-16	16.9	7.5	498	2.1
	20-Jul-16	17.6	8.0	487	4.2
	24-Aug-16	18.4	7.3	577	2.8
	19-Sep-16	15.4	7.4	619	1.0
	17-Oct-16	12.8	7.3	590	1.3
	15-Nov-16	3.7	7.6	410	7.1
	21-Mar-17	0.9	7.4	325	8.1
	19-Apr-17	8.1	7.4	359	6.7
	16-May-17	12.1	7.8	527	8.5
	28-Jun-17	13.8	7.3	422	3.0
	18-Jul-17	18.0	7.0	498	2.1
	15-Aug-17	16.6	8.0	408	1.4
	18-Sep-17	15.3	7.3	512	1.1
	17-Oct-17	6.5	7.2	347	4.0
	14-Nov-17	0.8	7.2	343	9.3
SW6					
	22-May-03	12.0			
	23-Jun-03	18.1			
	19-Apr-04	8.7	7.6	299	7.8
	19-May-04	15.4	7.5	425	4.6
	24-Jun-04	14.7	7.3	435	1.8
	29-Jul-04	16.5	7.1	841	1.8
	26-Aug-04	14.5	7.2	413	6.1
	22-Sep-04	11.9	7.0	393	1.5
	21-Oct-04	6.4	7.2	309	2.1
	16-Nov-04	3.2	6.8	414	5.8
	11-Apr-05	0.5	6.1	173	6.6
	24-May-05	12.2	6.9	400	4.6
	28-Jun-05	21.8	7.7	529	0.4
	11-Jul-05	19.8	6.3	500	0.7
	22-Aug-05	17.0	6.9	457	0.5
	27-Sep-05	13.2	7.1	411	0.5
	28-Oct-05	5.6	7.9	440	2.4
	14-Nov-05	6.1	7.6	369	6.1
	18-Apr-06	10.0	7.7	426	
	23-May-06	6.6	8.0	504	
	21-Jun-06	18.1	7.5	469	
	11-Jul-06	18.3	7.3	463	
	22-Aug-06	18.9	7.2	482	
	20-Sep-06	12.5	6.9	464	
	18-Oct-06	9.2	7.3	453	
	24-Nov-06	0.8	7.8	546	11.4
	17-Dec-06	0.6	7.6	546	12.7
	16-Apr-07	2.9	8.0	474	9.1
	13-May-07	18.3	8.0	496	7.0
	17-Jun-07	20.4	7.7	592	0.8
	15-Jul-07	17.3	7.6	518	2.4
	18-Oct-07	11.3	7.6	646	3.6
	21-Nov-07	1.6	7.9	578	9.4
	7-Apr-08	6.2	7.4	365	8.7
	24-Apr-08	12.7	7.8	452	3.0
	21-May-08	10.5	7.6	436	7.0
	17-Jun-08	16.2	7.5	296	2.4
	16-Jul-08	17.5	7.3	511	1.6
	19-Aug-08	16.6	7.6	565	2.9
	16-Sep-08	11.5	7.7	460	3.9
	22-Oct-08	2.8	7.4	475	5.1
	15-Mar-09	1.0	7.5	344	9.2
	12-Apr-09	10.4	9.6	440	7.6
	17-May-09	15.8	7.6	404	4.1
	14-Jun-09	18.5	7.4	964	4.8
	12-Jul-09	16.8	7.8	556	6.2
	9-Aug-09	17.0	8.0	490	3.0
	13-Sep-09	18.5	6.9	537	5.9
	11-Oct-09	3.3	7.3	554	10.5
	15-Nov-09	1.5	7.3	526	10.5
	14-Mar-10	1.2	7.6	383	9.7
	11-Apr-10	7.3	8.2	499	11.8
	16-May-10	14.1	7.7	368	5.3
	13-Jun-10	20.1	7.6	429	5.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Jul-10	20.7	7.5	397	5.4
	15-Aug-10	21.5	7.7	526	1.9
	12-Sep-10	13.6	7.8	447	4.1
	17-Oct-10	6.5	7.7	384	7.8
	14-Nov-10	4.0	7.6	259	9.0
	17-Apr-11	3.9	8.0	246	9.2
	15-May-11	12.0	7.8	286	6.1
	12-Jun-11	14.4	7.6	352	4.5
	17-Jul-11	23.2	7.6	528	8.5
	14-Aug-11	21.7	8.1	403	4.9
	18-Sep-11	14.4	8.3	424	4.2
	16-Oct-11	7.5	7.7	371	6.7
	20-Nov-11	0.6	8.2	343	10.0
	18-Mar-12	13.8	7.5	299	5.5
	15-Apr-12	4.8	8.6	314	14.6
	13-May-12	18.3	7.8	439	6.1
	17-Jun-12	21.5	8.0	567	3.2
	16-Jul-12	21.2	7.9	611	1.6
	15-Aug-12	16.0	8.0	484	1.4
	19-Sep-12	10.8	7.4	407	1.3
	18-Oct-12	9.3	8.1	349	2.6
	20-Nov-12	3.8	7.5	327	6.6
	16-Apr-13	9.7	7.9	312	7.5
	14-May-13	8.3	7.7	304	8.4
	18-Jun-13	18.3	7.8	422	1.7
	17-Jul-13	22.7	7.1	407	8.4
	20-Aug-13	16.7	8.2	435	2.2
	18-Sep-13	11.7	7.8	391	3.1
	16-Oct-13	12.6	8.3	356	2.3
	20-Nov-13	0.1	8.3	266	2.1
	16-Apr-14	0.9	7.8	423	11.8
	13-May-14	16.2	7.8	380	6.6
	17-Jun-14	17.3	7.6	446	7.6
	15-Jul-14	17.1	7.5	459	7.9
	19-Aug-14	13.6	8.2	463	3.2
	9-Sep-14	16.6	8.3	444	4.2
	22-Oct-14	8.9	7.3	423	3.9
	22-Apr-15	6.3	7.8	333	8.2
	20-May-15	14.2	8.0	371	9.5
	16-Jun-15	19.6	7.6	433	2.9
	22-Jul-15	17.7	7.5	473	3.3
	12-Aug-15	17.4	7.7	473	3.8
	8-Sep-15	18.7	7.4	512	1.5
	15-Oct-15	8.6	7.1	358	3.2
	18-Nov-15	4.8	7.2	347	8.4
	8-Dec-15	1.7	7.7	332	13.8
	15-Mar-16	1.2	7.2	187	10.6
	21-Apr-16	9.4	7.8	347	4.4
	17-May-16	7.0	7.8	337	8.4
	22-Jun-16	15.2	7.6	452	3.3
	20-Jul-16	14.5	7.7	452	4.4
	24-Aug-16	17.0	7.4	475	3.6
	19-Sep-16	13.1	7.5	576	4.1
	17-Oct-16	12.4	7.4	545	5.1
	15-Nov-16	3.5	7.7	383	9.0
	21-Mar-17	0.3	7.5	301	9.8
	19-Apr-17	8.2	7.4	323	7.8
	16-May-17	12.0	7.8	495	8.4
	28-Jun-17	13.7	7.3	382	7.8
	18-Jul-17	17.6	7.2	453	4.3
	15-Aug-17	16.2	8.1	368	4.3
	18-Sep-17	14.2	7.5	471	5.0
	17-Oct-17	7.2	7.4	325	7.4
	14-Nov-17	1.1	7.4	316	12.0
SW6A					
	22-Oct-03	5.1	6.6	461	
	16-Mar-04	0.3	6.1	435	10.2
	19-Apr-04	9.0	7.6	303	11.5
	19-May-04	15.4	7.7	432	7.8
	24-Jun-04	14.8	7.7	433	7.2
	29-Jul-04	17.7	7.7	867	6.4
	26-Aug-04	15.2	7.8	432	
	22-Sep-04	11.7	7.7	417	8.0
	21-Oct-04	6.9	7.7	356	9.3
	16-Nov-04	2.1	7.6	339	12.0
	28-Mar-05	0.6	7.4	303	12.4
	11-Apr-05	1.8	6.4	196	10.9
	24-May-05	12.5	7.3	407	8.4
	28-Jun-05	21.5	7.7	528	6.4
	11-Jul-05	19.6	6.1	503	5.8
	22-Aug-05	15.8	6.9	460	6.8
	27-Sep-05	11.7	7.3	382	7.6
	24-Oct-05	6.3	8.1	448	10.8
	14-Nov-05	5.5	7.8	356	11.0
	16-Jan-06	0.1	7.1	285	9.1
	20-Mar-06	0.4	8.3	276	10.1
	18-Apr-06	10.1	7.9	414	
	23-May-06	7.2	8.5	493	
	21-Jun-06	18.9	7.8	460	
	11-Jul-06	19.0	7.9	463	
	22-Aug-06	19.2	7.6	501	
	20-Sep-06	11.9	7.6	469	
	18-Oct-06	9.4	7.5	443	
	24-Nov-06	1.8	7.9	521	13.4
	17-Dec-06	1.2	7.8	521	14.1
	18-Mar-07	0.4	7.8	511	9.6
	16-Apr-07	3.1	8.1	460	11.5
	13-May-07	17.9	8.2	483	8.3
	17-Jun-07	20.3	8.1	535	5.5
	15-Jul-07	18.5	7.8	508	6.8
	19-Aug-07	17.0	8.0	523	7.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Sep-07	12.2	7.9	476	8.4
	18-Oct-07	12.2	7.8	489	8.0
	21-Nov-07	2.5	7.8	556	10.9
	21-Jan-08	0.1	6.5	460	2.7
	18-Mar-08	0.3	7.6	506	11.9
	2-Apr-08	0.4	7.5	369	9.6
	24-Apr-08	12.5	7.6	452	6.1
	21-May-08	10.3	7.7	439	8.4
	17-Jun-08	16.8	7.7	348	6.3
	15-Jul-08	18.6	7.3	525	5.8
	19-Aug-08	17.8	7.8	556	4.1
	12-Sep-08	13.5	7.8	515	5.2
	22-Oct-08	3.1	7.5	466	8.1
	23-Nov-08	0.5	7.6	540	7.3
	14-Dec-08	0.1	6.8	436	4.9
	18-Jan-09	0.1	7.5	529	6.7
	8-Feb-09	0.5		412	7.0
	15-Mar-09	1.9	8.0	339	13.1
	12-Apr-09	9.8	8.8	447	10.6
	17-May-09	14.5	7.9	402	7.5
	14-Jun-09	14.4	8.5	947	8.6
	12-Jul-09	17.6	8.2	474	9.1
	9-Aug-09	16.3	8.2	484	7.5
	13-Sep-09	16.0	6.9	492	9.1
	11-Oct-09	6.4	8.1	530	12.0
	15-Nov-09	2.1	7.4	495	
	13-Dec-09	0.2	7.5	553	13.5
	17-Jan-10	1.2	8.0	549	12.5
	7-Feb-10	0.2	7.4	548	12.8
	14-Mar-10	2.8	7.5	364	10.9
	11-Apr-10	11.1	8.0	494	12.2
	16-May-10	13.1	8.0	362	8.8
	13-Jun-10	19.6	8.0	426	10.6
	18-Jul-10	18.4	7.8	400	9.3
	15-Aug-10	20.2	8.1	481	7.9
	12-Sep-10	13.0	8.2	433	9.9
	17-Oct-10	8.9	8.1	377	10.4
	14-Nov-10	4.5	8.0	253	10.0
	19-Dec-10	0.5	8.0	260	11.3
	16-Jan-11	0.1	7.9	273	9.6
	20-Feb-11	0.4	7.9	275	6.7
	13-Mar-11	2.1	7.9	269	8.8
	20-Mar-11	0.7	7.8	251	10.2
	17-Apr-11	3.7	8.0	248	10.0
	15-May-11	11.6	7.8	287	8.4
	12-Jun-11	13.6	7.9	345	8.4
	17-Jul-11	22.1	8.4	491	8.1
	14-Aug-11	21.2	8.2	309	7.7
	18-Sep-11	15.2	8.6	380	9.3
	16-Oct-11	7.8	7.8	347	11.3
	20-Nov-11	1.6	8.4	229	13.2
	18-Dec-11	1.0	8.4	248	14.6
	15-Jan-12	0.6	8.0	237	11.9
	19-Feb-12	0.6	8.5	253	13.4
	18-Mar-12	13.1	7.6	297	7.2
	15-Apr-12	6.0	8.6	321	13.8
	13-May-12	19.7	8.1	444	8.3
	17-Jun-12	25.2	8.4	558	12.8
	16-Jul-12	23.4	8.4	522	7.3
	15-Aug-12	16.4	8.3	417	6.0
	19-Sep-12	12.6	7.9	407	9.3
	18-Oct-12	10.4	8.6	347	8.5
	20-Nov-12	4.2	7.6	321	8.8
	20-Dec-12	0.6	7.3	609	12.4
	15-Jan-13	0.2	7.5	264	9.2
	20-Feb-13	0.2	7.9	266	12.7
	20-Mar-13	0.4	7.7	246	13.3
	16-Apr-13	8.3	8.0	268	8.5
	14-May-13	8.1	7.9	300	9.9
	18-Jun-13	19.5	7.9	430	6.2
	17-Jul-13	22.6	7.7	453	7.2
	18-Sep-13	13.6	8.2	385	10.6
	16-Oct-13	12.7	8.5	354	5.0
	20-Nov-13	0.5	7.8	259	7.2
	17-Dec-13	0.3	8.7	269	7.2
	16-Apr-14	0.6	7.9	201	11.5
	13-May-14	15.2	7.8	366	8.0
	17-Jun-14	17.3	8.0	425	8.3
	15-Jul-14	16.6	7.6	440	10.6
	19-Aug-14	14.5	8.5	445	7.1
	9-Sep-14	16.0	8.6	474	4.8
	22-Oct-14	9.9	7.2	463	5.9
	16-Dec-14	0.7	8.2	323	-
	18-Mar-15	1.8	7.8	238	11.1
	22-Apr-15	6.0	7.8	322	10.9
	19-May-15	15.5	8.1	377	10.8
	16-Jun-15	19.6	7.8	434	6.9
	22-Jul-15	18.9	8.0	476	8.3
	12-Aug-15	17.8	8.0	454	-
	25-Aug-15	17.3	8.2	398	6.3
	8-Sep-15	20.5	7.8	473	8.0
	15-Oct-15	9.4	7.7	346	9.6
	18-Nov-15	5.3	7.2	349	11.3
	8-Dec-15	2.7	8.0	339	17.2
	19-Jan-16	-0.1	7.3	-	11.1
	15-Mar-16	2.4	7.5	226	11.7
	21-Apr-16	9.5	7.8	352	8.9
	17-May-16	7.5	8.1	347	10.7
	22-Jun-16	16.4	8.2	445	7.6
	20-Jul-16	17.2	8.3	450	8.1
	24-Aug-16	18.4	8.2	430	7.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Sep-16	15.2	7.7	508	8.2
	17-Oct-16	13.2	8.0	404	8.3
	15-Nov-16	4.8	7.5	360	12.7
	12-Dec-16	0.2	7.4	502	14.4
	24-Jan-17	0.3	7.5	281	11.5
	15-Feb-17	0.0	7.8	312	14.2
	21-Mar-17	0.9	7.8	311	12.4
	19-Apr-17	8.3	7.6	334	11.4
	16-May-17	11.6	8.0	494	9.9
	28-Jun-17	13.7	7.7	389	8.2
	18-Jul-17	17.3	7.5	447	9.2
	15-Aug-17	16.3	8.5	359	8.5
	18-Sep-17	15.1	7.9	447	8.5
	17-Oct-17	7.6	7.7	276	10.1
	14-Nov-17	1.9	7.6	325	14.1
	14-Dec-17	0.0	7.5	305	16.8
SW7					
	22-May-03	11.0			
	25-Oct-05	6.2	7.6	396	9.8
	19-Apr-06	9.0	7.7	435	
	24-May-06	10.5	7.8	471	
	20-Jun-06	21.0	7.4	419	
	12-Jul-06	20.2	7.3	283	
	27-Nov-06	7.1	7.8	479	7.7
	17-Dec-06	1.7	7.8	517	12.5
	17-Apr-07	3.4	7.9	465	12.8
	13-May-07	15.6	8.2	429	8.6
	4-Apr-08	3.2	7.3	357	11.6
	23-Apr-08	17.0	7.6	451	6.8
	21-May-08	10.1	7.6	348	8.7
	15-Mar-09	9.6	8.2	394	
	12-Apr-09	12.6	7.9	277	
	17-May-09	14.5	7.6	415	8.0
	18-Mar-10	1.9	7.0	423	11.1
	12-Apr-10	12.4	7.7	468	11.9
	17-May-10	14.2	7.8	380	8.2
	17-Apr-11	2.9	7.9	351	12.6
	15-May-11	9.9	7.6	299	10.3
	12-Jun-11	15.2	7.9	347	7.5
	20-Mar-12	16.3	7.6	368	8.3
	17-Apr-13	11.0	8.2	332	11.4
	13-May-13	8.6	7.7	262	10.3
	12-May-14	21.1	8.0	380	3.9
	23-Apr-15	2.3	8.3	303	16.2
	15-Mar-16	4.8	7.5	295	12.5
	20-Apr-16	17.2	7.7	367	18.3
	17-May-16	13.5	8.8	314	18.0
	22-Mar-17	-0.2	7.7	332	9.1
	19-Apr-17	13.8	7.5	377	12.2
	16-May-17	18.5	8.3	149	8.8
	28-Jun-17	15.6	7.7	323	5.9
SW8					
	22-May-03	8.0			
	20-Apr-04	11.9	7.8	441	
	19-May-04	17.4	7.7	591	
	24-Jun-04	18.9	7.6	617	
	29-Jul-04	21.9	7.7	491	
	26-Aug-04	20.5	7.9	441	
	23-Sep-04	17.3	8.1	403	
	18-Nov-04	6.0	8.5	273	
	11-Apr-05	8.5	7.0	513	
	26-May-05	19.3	7.8	549	
	29-Jun-05	24.4	7.9	637	
	12-Jul-05	25.0	7.7	589	
	22-Aug-05	20.6	8.7	449	8.2
	25-Oct-05	6.7	7.8	434	3.6
	16-Nov-05	5.8	7.7	305	11.1
	19-Apr-06	11.3	7.8	538	
	24-May-06	11.8	7.8	560	
	20-Jun-06	22.1	7.8	470	
	12-Jul-06	22.5	7.8	355	
	21-Aug-06	21.6	7.3	381	
	17-Oct-06	7.6	8.2	282	
	27-Nov-06	5.6	8.4	301	11.8
	17-Dec-06	3.8	7.7	405	9.5
	16-Apr-07	4.8	7.9	572	
	13-May-07	14.9	8.1	509	
	4-Apr-08	0.4	7.2	496	10.8
	15-Mar-09	7.5	7.7	295	
	12-Apr-09	9.6	8.1	515	
	17-May-09	15.4	7.7	423	
	11-Apr-10	12.3	7.7	507	12.5
	17-Apr-11	5.6	7.9	338	13.7
	15-May-11	11.56	7.58	297	11.98
	20-Mar-12	17.64	7.66	384	8.37
	17-Apr-13	9.4	7.7	386	10.9
	13-May-13	7.2	7.6	246	10.1
	12-May-14	18.6	7.1	391	3.4
	23-Apr-15	7.4	7.8	150	11.9
	15-Mar-16	0.9	6.8	135	7.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
SW9					
	22-May-03	8.0			
	13-Feb-04	1.0		314	9.3
	18-Mar-04	0.5		393	7.1
	20-Apr-04	8.3	7.6	259	10.8
	19-May-04	15.3	7.6	416	7.4
	24-Jun-04	16.4	7.7	483	8.3
	29-Mar-05	1.9	7.5	279	10.5
	11-Apr-05	0.9	6.7	179	11.5
	26-May-05	16.9	7.7	415	7.4
	18-Jan-06	1.5	7.4	231	10.3
	22-Mar-06	0.5	8.0	219	13.4
	19-Apr-06	7.5	7.8	360	
	24-May-06	9.3	7.9	420	
	27-Nov-06	5.5	7.7	424	8.4
	17-Dec-06	0.9	7.6	423	10.9
	16-Apr-07	0.8	8.0	386	11.3
	13-May-07	11.7	8.2	415	9.4
	4-Apr-08	3.7	7.4	353	7.1
	23-Apr-08	13.7	7.8	361	
	21-May-08	9.0	7.7	372	9.4
	15-Mar-09	10.4	7.7	342	5.4
	12-Apr-09	8.4	7.9	393	11.1
	17-May-09	11.2	7.4	340	8.4
	14-Mar-10	0.5	7.3	323	12.9
	11-Apr-10	9.0	8.2	367	13.1
	16-May-10	10.6	7.7	274	8.6
	23-May-10	18.3	7.3	346	7.8
	13-Jun-10	15.0	7.7	333	10.4
	18-Jul-10	19.2	7.9	4.28	11.1
	17-Oct-10	6.4	8.0	286	10.1
	14-Nov-10	5.3	7.8	244	9.6
	20-Mar-11	0.7	7.9	200	10.9
	17-Apr-11	2.1	8.2	217	10.5
	15-May-11	8.7	7.6	220	9.8
	12-Jun-11	16.1	7.7	315	7.9
	18-Mar-12	12.7	7.7	231	8.2
	15-Apr-12	7.5	8.5	278	10.3
	13-May-12	21.6	8.2	320	7.4
	16-Dec-12	1.9	7.1	348	8.1
	13-Jan-13	0.2	7.7	222	9.0
	16-Apr-13	-	8.3	167	9.1
	13-May-13	7.6	7.2	231	11.0
	18-Jun-13	16.0	7.9	343	5.7
	19-Nov-13	2.5	8.3	235	1.9
	15-Apr-14	0.2	7.7	149	11.2
	12-May-14	15.5	7.7	306	4.1
	23-Oct-14	8.3	-	345	11.0
	23-Apr-15	2.4	7.8	206	11.8
	16-Jun-15	14.6	7.8	372	6.7
	15-Mar-16	1.0	6.9	167	11.9
	20-Apr-16	7.9	7.5	246	8.5
	17-May-16	11.0	7.9	318	8.7
	25-Jan-17	1.4	7.9	218	10.7
	22-Mar-17	0.1	7.6	530	7.7
	19-Apr-17	9.1	7.1	254	9.6
	16-May-17	14.3	8.0	310	7.0
	28-Jun-17	13.2	7.8	356	7.4
	15-Nov-17	3.2	7.9	285	7.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
SW10					
	22-May-03	15.0			
	22-Oct-03	6.2	7.5	523	
	11-Feb-04	1.2		306	13.8
	18-Mar-04	2.9		448	7.7
	20-Apr-04	8.5	8.0	261	
	19-May-04	10.8	8.0	386	
	24-Jun-04	13.0	8.0	434	
	29-Jul-04	16.0	8.0	452	8.9
	26-Aug-04	16.5	8.1	477	
	21-Sep-04	15.9	8.2	486	8.2
	21-Oct-04	7.9	7.7	367	6.8
	17-Nov-04	8.5	7.7	384	9.2
	29-Mar-05	4.5	7.8	314	
	11-Apr-05	5.5	7.3	229	
	26-May-05	11.3	6.8	386	10.2
	29-Jun-05	15.9	7.9	503	9.7
	12-Jul-05	17.8	7.8	528	6.8
	22-Aug-05	14.9	8.9	394	8.6
	25-Sep-05	14.2	7.9	443	8.7
	25-Oct-05	7.3	7.9	471	10.4
	16-Nov-05	7.2	8.3	349	10.0
	13-Dec-05	0.1	7.5	248	6.1
	17-Jan-06	1.7	6.8	242	12.9
	22-Mar-06	3.8	8.4	266	
	19-Apr-06	7.7	8.2	361	
	24-May-06	10.5	8.0	457	
	23-Jun-06	14.0	7.9	497	
	12-Jul-06	15.6	8.1	464	
	23-Aug-06	17.5	7.9	512	
	21-Sep-06	11.0	7.9	461	
	19-Oct-06	9.5	7.5	457	
	27-Nov-06	6.0	8.5	488	12.1
	17-Dec-06	3.0	8.2	493	
	16-Apr-07	3.2	8.2	420	13.2
	13-May-07	11.5	8.4	440	10.2
	21-Nov-07	5.6	8.0	431	10.1
	4-Apr-08	4.6	7.4	376	12.8
	23-Apr-08	10.4	8.0	347	8.4
	20-May-08	10.6	7.2	408	9.8
	18-Jun-08	12.9	8.0	451	8.0
	19-Aug-08	12.4	7.8	559	5.8
	21-Oct-08	8.0	7.7	442	7.2
	23-Nov-08	3.8	7.7	471	9.7
	14-Dec-08	3.6	7.1	378	7.5
	18-Jan-09				
	8-Feb-09	2.2		329	9.7
	15-Mar-09	4.4	8.1	333	
	12-Apr-09	5.9	9.0	406	
	17-May-09	15.6	8.2	382	8.1
	14-Jun-09	12.6	8.3	900	9.4
	12-Jul-09	14.1	9.6	506	7.7
	9-Aug-09	16.8	8.2	485	8.5
	11-Oct-09	5.5	7.9	474	11.5
	15-Nov-09	5.9	7.7	409	10.6
	13-Dec-09	0.1	7.8	458	12.7
	14-Mar-10	5.2	7.8	435	14.7
	11-Apr-10	9.1	8.1	443	
	16-May-10	9.2	8.2	312	10.6
	13-Jun-10	12.7	8.1	357	12.5
	18-Jul-10	17.9	8.1	330	11.4
	15-Aug-10	15.4	8.3	318	9.3
	12-Sep-10	13.4	8.2	415	8.6
	17-Oct-10	10.3	7.9	352	8.4
	14-Nov-10	6.0	8.0	251	10.3
	20-Feb-11	1.1	8.3	248	11.6
	13-Mar-11	3.4	8.4	247	13.4
	22-Mar-11	4.0	8.4	306	13.0
	17-Apr-11	6.6	8.3	277	13.2
	15-May-11	10.3	8.6	301	12.0
	12-Jun-11	12.0	8.2	298	9.2
	17-Jul-11	16.1	8.4	498	10.8
	18-Sep-11	13.4	8.6	296	8.4
	16-Oct-11	11.2	7.8	302	9.4
	20-Nov-11	5.7	8.7	290	11.0
	18-Dec-11	3.8	8.4	250	12.3
	19-Feb-12	2.5	7.9	231	12.1
	18-Mar-12	11.4	7.9	253	7.5
	15-Apr-12	9.6	8.5	316	9.7
	13-May-12	14.9	7.9	356	7.1
	17-Jun-12	18.3	8.4	388	6.3
	15-Jul-12	21.3	8.4	479	6.3
	12-Aug-12	15.7	8.4	464	6.6
	16-Sep-12	12.6	7.7	367	9.0
	14-Oct-12	10.3	8.9	269	7.0
	18-Nov-12	6.4	7.8	329	8.4
	16-Dec-12	2.2	8.0	609	-
	13-Jan-13	2.6	8.2	256	11.0
	17-Apr-13	5.5	7.9	239	12.2
	14-May-13	7.9	8.1	283	6.9
	19-Jun-13	11.4	8.4	340	10.9
	16-Jul-13	17.7	8.2	426	7.9
	21-Aug-13	16.5	8.4	426	10.4
	16-Oct-13	12.0	8.5	360	6.0
	20-Nov-13	4.2	8.5	204	3.0
	17-Apr-14	5.4	8.1	412	10.7
	13-May-14	9.6	7.2	322	10.6
	18-Jun-14	12.7	8.3	362	10.5
	15-Jul-14	13.1	7.8	416	8.7
	23-Oct-14	7.7	7.9	390	6.0
	23-Apr-15	5.1	8.3	303	13.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-May-15	10.5	8.4	315	13.6
	15-Jun-15	13.1	8.0	388	9.7
	22-Jul-15	14.1	8.2	428	8.1
	11-Aug-15	16.3	8.3	446	8.6
	25-Aug-15	14.0	-	-	-
	8-Sep-15	20.0	8.0	445	5.6
	16-Oct-15	8.6	8.3	142	7.5
	10-Nov-15	8.4	7.0	309	6.6
	18-Nov-15	8.1	7.9	344	11.3
	9-Dec-15	5.3	7.9	331	12.7
	20-Jan-16	1.4	7.8	286	11.0
	18-Feb-16	0.6	7.6	281	14.4
	15-Mar-16	4.6	7.6	269	13.0
	21-Apr-16	7.8	7.8	299	13.4
	18-May-16	10.3	8.5	222	11.2
	23-Jun-16	13.0	8.4	389	9.5
	5-Jul-16	17.1	8.2	322	11.7
	21-Jul-16	20.4	8.3	275	4.9
	9-Aug-16	22.0	8.3	538	5.1
	24-Aug-16	19.4	8.4	404	5.7
	19-Sep-16	18.3	8.3	506	6.4
	18-Oct-16	16.1	8.2	415	8.9
	15-Nov-16	8.4	7.9	323	7.5
	12-Dec-16	0.2	7.6	395	13.3
	25-Jan-17	2.3	8.1	278	12.1
	17-Feb-17	1.2	8.3	309	15.7
	22-Mar-17	-0.2	8.1	343	14.4
	19-Apr-17	5.8	8.3	216	14.5
	16-May-17	8.6	8.3	312	10.4
	28-Jun-17	11.8	8.3	389	9.4
	7-Jul-17	13.5	8.2	386	8.5
	19-Jul-17	15.8	8.2	313	9.6
	2-Aug-17	16.3	8.4	366	9.1
	16-Aug-17	15.8	8.5	440	7.8
	18-Sep-17	15.0	8.1	2.91	7.8
	18-Oct-17	12.5	8.2	361	5.5
	15-Nov-17	5.0	8.4	337	10.7
	14-Dec-17	1.4	8.4	283	12.6
SW11					
	22-May-03	8.0			
	13-Feb-04	3.8		309	12.3
	18-Mar-04	4.3		410	9.6
	21-Apr-04	5.4	8.0	213	
	19-May-04	7.8	8.0	317	
	24-Jun-04	8.7	8.0	357	
	29-Jul-04	12.7	8.1	404	
	26-Aug-04	14.2	8.2	389	
	22-Sep-04	14.1	8.2	391	10.1
	21-Oct-04	7.0	7.9	323	11.2
	18-Nov-04	8.0	7.9	370	10.8
	29-Mar-05	6.4	7.8	305	
	11-Apr-05	4.6	6.8	207	
	26-May-05	8.3	7.4	311	
	29-Jun-05	10.3	7.9	368	
	12-Jul-05	11.5	7.7	371	10.8
	28-Sep-05	11.4	7.9	443	8.7
	25-Oct-05	6.2	8.0	393	10.9
	16-Nov-05	6.3	7.8	268	11.2
	13-Dec-05	0.3	8.2	299	13.4
	18-Jan-06	5.1	7.2	260	12.7
	24-Mar-06	4.9	8.3	250	
	24-May-06	7.7	8.1	418	
	21-Jun-06	9.9	8.1	426	
	12-Jul-06	11.9	8.1	364	
	24-Aug-06	13.6	7.9	428	
	21-Sep-06	11.8	8.3	404	
	19-Oct-06	9.1	7.9	433	
	23-Nov-06	6.1	7.9	425	
	17-Dec-06	5.1	8.0	436	
	21-Jan-07	2.8	8.3	438	
	17-Apr-07	4.1	8.2	382	
	13-May-07	6.0	8.2	400	
	17-Jun-07	9.5	8.4	428	11.3
	15-Jul-07	12.7	8.1	454	10.1
	19-Aug-07	13.3	8.0	449	9.4
	17-Sep-07	12.7	8.3	426	8.8
	18-Oct-07	12.8	8.0	422	8.5
	19-Nov-07	3.6	7.8	464	11.4
	11-Dec-07	4.3	7.9	440	11.8
	22-Jan-08	3.9	7.8	361	12.7
	20-Feb-08	3.7	8.0	378	
	17-Mar-08	4.5	7.8	400	
	2-Apr-08	4.3	7.8	312	
	23-Apr-08	6.1	7.7	300	10.9
	22-May-08	5.6	7.4	374	11.2
	17-Jun-08	8.7	7.8	434	11.0
	15-Jul-08	12.6	7.3	465	8.6
	19-Aug-08	11.8	7.4	526	6.3
	16-Sep-08	10.1	8.1	477	8.2
	22-Oct-08	6.9	7.9	428	6.8
	23-Nov-08	5.7	8.0	428	8.7
	14-Dec-08	4.8	8.4	336	8.8
	18-Jan-09	3.9	8.1	317	9.0
	8-Feb-09	3.9		344	8.0
	15-Mar-09	4.2	8.3	308	
	12-Apr-09	4.6	8.0	352	
	17-May-09	8.2	8.4	317	
	14-Jun-09	9.4	7.8	809	
	12-Jul-09	9.7	8.6	446	11.5
	9-Aug-09	12.9	8.6	444	10.0
	13-Sep-09	10.0	7.6	413	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	11-Oct-09	6.7	8.2	487	11.5
	15-Nov-09	5.6	8.3	341	12.2
	13-Dec-09	3.3	7.7	454	12.3
	17-Jan-10	4.7	8.0	388	12.6
	7-Feb-10	3.3	7.8	431	12.0
	14-Mar-10	4.9	7.4	349	13.1
	11-Apr-10	6.8	8.0	373	
	16-May-10	6.7	8.0	254	12.3
	13-Jun-10	8.3	8.0	276	
	18-Jul-10	9.3	8.0	324	15.2
	15-Aug-10	13.1	8.2	332	10.6
	12-Sep-10	10.3	8.3	352	10.6
	17-Oct-10	7.3	7.9	317	11.3
	14-Nov-10	6.3	7.9	241	10.6
	19-Dec-10	4.8	8.4	182	11.4
	16-Jan-11	4.8	8.3	251	12.6
	20-Feb-11	4.6	8.1	251	11.8
	13-Mar-11	4.9	8.2	242	13.5
	17-Apr-11	5.4	8.1	227	12.7
	15-May-11	5.6	7.8	209	13.5
	12-Jun-11	8.6	8.2	152	11.1
	17-Jul-11	14.2	8.3	280	9.7
	14-Aug-11	15.0	8.6	260	9.9
	18-Sep-11	12.4	8.9	279	10.2
	16-Oct-11	9.2	7.7	279	11.9
	20-Nov-11	5.3	7.9	288	12.0
	18-Mar-12	6.1	8.0	194	9.3
	15-Apr-12	9.1	8.7	279	12.4
	13-May-12	9.3	8.0	279	11.5
	17-Jun-12	12.1	8.2	333	13.5
	16-Jul-12	16.0	8.2	375	7.1
	14-Aug-12	10.0	7.8	495	7.4
	18-Sep-12	11.0	7.7	335	9.9
	14-Oct-12	10.3	6.7	184	7.8
	18-Nov-12	6.8	7.8	280	9.2
	16-Dec-12	5.0	7.7	568	10.3
	13-Jan-13	4.9	8.1	279	11.2
	19-Mar-13	4.2	8.3	203	9.1
	17-Apr-13	4.8	7.9	198	10.2
	14-May-13	5.7	8.0	237	10.7
	19-Jun-13	8.3	8.1	281	12.7
	16-Jul-13	11.0	8.1	338	11.4
	21-Aug-13	13.4	8.4	313	9.9
	18-Sep-13	10.8	8.0	328	11.3
	16-Oct-13	9.6	8.2	312	5.8
	20-Nov-13	6.2	7.5	273	3.8
	17-Apr-14	4.5	8.1	215	11.0
	13-May-14	8.6	6.6	256	12.4
	18-Jun-14	7.8	8.0	281	10.5
	16-Jul-14	9.8	7.9	244	8.6
	19-Aug-14	12.0	8.8	388	10.5
	9-Sep-14	13.0	9.0	398	4.1
	23-Oct-14	8.0	8.0	391	5.0
	16-Dec-14	5.0	8.5	315	-
	20-Jan-14	2.5	6.9	293	0.1
	18-Mar-15	2.5	8.3	179	13.4
	22-Apr-15	4.8	8.0	259	13.7
	19-May-15	7.1	8.3	253	-
	15-Jun-15	7.2	8.2	305	11.7
	22-Jul-15	9.8	7.9	321	-
	11-Aug-15	11.0	8.3	352	11.4
	25-Aug-15	11.7	8.3	317	9.5
	8-Sep-15	13.6	8.0	362	9.0
	15-Oct-15	9.4	8.3	311	9.9
	18-Nov-15	8.4	8.0	367	11.5
	9-Dec-15	5.2	7.7	315	13.3
	19-Jan-16	3.3	7.9	247	14.5
	17-Feb-16	4.1	7.7	276	14.0
	15-Mar-16	4.5	7.8	201	13.6
	21-Apr-16	4.6	8.0	227	14.8
	18-May-16	7.2	8.2	294	13.2
	23-Jun-16	8.7	8.4	304	11.8
	5-Jul-16	12.7	8.4	298	15.7
	21-Jul-16	13.9	8.2	365	10.3
	9-Aug-16	16.3	8.5	336	11.4
	24-Aug-16	16.6	8.4	215	10.0
	19-Sep-16	14.9	8.4	366	9.8
	18-Oct-16	13.8	8.3	367	11.6
	16-Nov-16	6.7	7.9	253	9.6
	12-Dec-16	1.9	8.7	467	14.8
	25-Jan-17	5.1	8.1	265	12.0
	17-Feb-17	3.5	8.2	290	14.6
	22-Mar-17	3.3	8.3	279	12.9
	19-Apr-17	4.6	7.3	231	15.6
	16-May-17	8.0	7.8	262	13.2
	28-Jun-17	8.0	7.9	300	12.4
	7-Jul-17	9.3	7.4	301	13.7
	19-Jul-17	9.7	8.1	336	11.9
	2-Aug-17	10.6	8.1	323	10.9
	16-Aug-17	10.6	8.2	348	11.2
	18-Sep-17	10.8	8.1	340	10.7
	18-Oct-17	8.9	8.2	361	11.1
	15-Nov-17	6.2	8.3	335	7.1
	14-Dec-17	3.1	8.5	284	11.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
SW11A					
	22-May-03	8.0			
	13-Feb-04	4.8		325	11.9
	18-Mar-04	4.7		436	9.1
	21-Apr-04	4.4	7.8	223	
	19-May-04	6.0	7.8	308	
	24-Jun-04	6.9	7.6	345	
	29-Jul-04	9.1	7.5	383	
	29-Mar-05	5.2	7.8	308	
	11-Apr-05	4.3	7.0	208	
	26-May-05	6.0	7.4	291	
	29-Jun-05	7.6	8.2	347	
	12-Jul-05	8.5	7.8	352	
	23-Aug-05	11.0	7.4	373	11.0
	16-Nov-05	7.8	8.2	306	11.4
	13-Dec-05	5.6	8.3	365	11.3
	18-Jan-06	5.7	7.3	230	12.5
	24-Mar-06	4.5	8.2	249	
	19-Apr-06	5.4	8.0	337	
	24-May-06	6.7	7.9	427	
	21-Jun-06	8.6	7.6	430	
	12-Jul-06	9.7	7.6	396	
	24-Aug-06	12.7	7.2	429	
	21-Sep-06	12.1	7.7	419	
	19-Oct-06	9.1	7.5	470	
	23-Nov-06	6.4	7.9	423	
	17-Dec-06	5.8	7.7	406	
	21-Jan-07	4.8	7.9	442	
	17-Apr-07	4.2	8.2	384	
	13-May-07	5.5	8.0	414	
	11-Dec-07	7.0	7.9	459	11.4
	22-Jan-08	5.2	7.8	290	
	20-Feb-08	4.6	8.1	380	
	17-Mar-08	4.7	7.8	409	
	2-Apr-08	4.2	7.7	310	12.9
	23-Apr-08	4.5	7.8	330	12.7
	22-May-08	5.6	8.1	381	10.5
	17-Jun-08	6.5	8.0	444	12.1
	19-Aug-08	8.0	7.7	542	6.8
	16-Sep-08	8.9	8.0	492	8.7
	23-Nov-08	5.8	8.2	427	8.3
	14-Dec-08	5.7	8.1	337	8.2
	18-Jan-09	4.2	8.3	399	9.4
	8-Feb-09	4.8		348	8.9
	15-Mar-09	4.1	8.1	310	
	12-Apr-09	4.0	8.1	355	
	17-May-09	6.4	8.1	321	
	14-Jun-09	12.1	7.9	796	
	12-Jul-09	8.8	8.4	418	
	9-Aug-09	16.0	7.9	432	
	11-Oct-09	8.6	7.6	512	
	13-Dec-09	5.1	7.7	473	12.3
	17-Jan-10	4.8	8.0	439	11.7
	7-Feb-10	4.6	7.7	433	12.1
	14-Mar-10	4.9	7.6	357	13.3
	11-Apr-10	5.2	7.9	201	12.0
	16-May-10	5.8	7.8	201	12.0
	13-Jun-10	8.0	7.8	319	15.3
	18-Jul-10	8.0	7.8	319	15.3
	15-Aug-10	9.0	7.9	308	10.3
	17-Oct-10	7.8	7.9	343	11.6
	14-Nov-10	6.8	7.8	241	10.1
	16-Jan-11	5.5	8.2	182	11.9
	20-Feb-11	5.2	8.2	201	12.4
	13-Mar-11	5.1	8.4	247	13.6
	17-Apr-11	4.5	8.0	229	13.1
	15-May-11	5.5	8.1	209	13.2
	12-Jun-11	7.3	8.0	248	12.5
	16-Oct-11	9.8	7.6	270	11.7
	20-Nov-11	7.0	7.7	238	11.1
	18-Dec-11	6.3	8.1	226	13.3
	18-Mar-12	5.3	7.9	192	10.1
	15-Apr-12	5.9	8.8	259	15.9
	13-May-12	6.1	8.0	257	17.2
	12-Aug-12	9.1	7.8	415	7.4
	18-Nov-12	6.9	7.5	147	9.2
	16-Dec-12	6.1	7.6	589	10.0
	13-Jan-13	5.6	7.9	292	10.8
	19-Mar-13	4.6	8.2	199	9.5
	17-Apr-13	4.5	8.0	191	10.4
	14-May-13	5.5	8.0	289	10.6
	20-Nov-13	6.7	7.8	281	3.7
	17-Apr-14	4.7	8.1	207	10.9
	13-May-14	5.7	7.1	240	10.1
	18-Jun-14	6.9	8.1	284	10.6
	16-Dec-14	6.0	8.4	331	-
	18-Mar-15	4.8	8.1	242	13.1
	22-Apr-15	4.8	7.8	266	13.9
	19-May-15	5.8	8.1	254	-
	15-Jun-15	6.4	7.9	308	11.5
	22-Jul-15	7.5	7.8	310	-
	11-Aug-15	8.8	8.0	344	11.7
	25-Aug-15	9.9	-	-	-
	8-Sep-15	11.9	7.8	347	9.7
	18-Nov-15	8.5	7.8	348	13.4
	9-Dec-15	7.0	7.5	351	12.3
	19-Jan-16	5.7	7.7	268	13.3
	17-Feb-16	5.4	7.7	292	13.1
	15-Mar-16	4.9	7.5	201	13.3
	21-Apr-16	4.4	8.0	230	14.3
	18-May-16	5.2	8.0	283	13.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	23-Jun-16	7.0	8.0	296	12.3
	5-Jul-16	12.3	8.6	299	13.5
	21-Jul-16	15.0	7.8	375	6.6
	9-Aug-16	22.2	8.1	468	6.3
	24-Aug-16	16.9	7.9	354	3.3
	12-Dec-16	5.4	8.5	447	11.4
	25-Jan-17	5.7	8.0	280	11.6
	17-Feb-17	5.1	8.2	306	13.0
	22-Mar-17	4.0	8.1	290	12.2
	19-Apr-17	5.0	7.2	224	14.5
	16-May-17	6.0	7.9	247	12.8
	28-Jun-17	7.0	7.8	300	12.2
	7-Jul-17	7.6	7.4	292	11.9
	19-Jul-17	7.8	8.0	326	12.1
	2-Aug-17	7.8	7.7	306	11.5
	16-Aug-17	8.8	7.8	336	11.4
	18-Sep-17	10.4	7.8	347	10.5
	18-Oct-17	9.1	7.9	373	11.5
	15-Nov-17	7.2	8.1	351	6.6
	14-Dec-17	6.0	8.3	318	7.6
SW11B					
	22-May-03	8.0			
	13-Feb-04	4.9		325	12.3
	18-Mar-04	4.4		431	8.9
	21-Apr-04	4.2	7.8	221	
	19-May-04	5.8	7.7	305	
	24-Jun-04	6.9	7.5	347	
	29-Jul-04	7.6	7.4	367	
	26-Aug-04	7.8	7.6	332	
	18-Nov-04	6.4	7.6	370	
	29-Mar-05	4.8	7.7	301	
	11-Apr-05	3.9	7.0	208	
	26-May-05	6.1	7.2	302	
	29-Jun-05	7.3	7.9	162	
	12-Jul-05	7.5	7.8	253	
	23-Aug-05	8.5	7.5	331	
	25-Sep-06	9.1	7.6	341	10.8
	25-Oct-05	8.1	8.1	439	
	16-Nov-05	7.1	7.9	328	12.0
	13-Dec-05	5.7	8.3	378	11.5
	18-Jan-06	5.4	7.7	260	12.4
	24-Mar-06	4.4	8.2	247	
	19-Apr-06	5.3	8.0	336	
	24-May-06	6.9	7.8	422	
	21-Jun-06	8.1	7.5	450	
	12-Jul-06	8.9	7.6	400	
	24-Aug-06	10.9	7.3	430	
	21-Sep-06	10.7	7.7	451	
	19-Oct-06	7.8	7.6	488	
	23-Nov-06	6.3	7.8	254	11.8
	17-Dec-06	5.7	7.7	440	
	21-Jan-07	5.1	8.0	438	
	17-Apr-07	4.1	8.1	384	13.1
	13-May-07	5.5	7.9	336	12.6
	11-Dec-07	6.2	8.0	335	11.3
	22-Jan-08	5.1	7.8	365	12.5
	20-Feb-08	4.7	8.2		
	17-Mar-08	4.6	7.8	408	
	2-Apr-08	4.5	7.7	309	
	23-Apr-08	4.9	7.9	331	11.8
	22-May-08	5.8	7.8	382	10.5
	17-Jun-08	7.5	7.8	442	10.9
	15-Jul-08	9.1	7.5	479	9.0
	19-Aug-08	9.2	7.3	544	7.0
	16-Sep-08	7.5	7.8	490	9.2
	22-Oct-08	7.0	7.8	439	7.3
	23-Nov-08	6.3		427	8.2
	14-Dec-08	5.7	8.1	338	8.3
	18-Jan-09	2.6	8.3	410	8.6
	8-Feb-09	4.8		351	8.0
	15-Mar-09	4.1	8.4	304	
	12-Apr-09	3.9	7.6	346	
	17-May-09	6.4	8.2	324	
	14-Jun-09	6.3	8.4	846	
	12-Jul-09	7.9	8.4	402	
	9-Aug-09	9.5	8.9	454	
	11-Oct-09	7.5	8.0	512	
	15-Nov-09	6.3	7.7	431	
	13-Dec-09	5.3	7.8	462	12.1
	17-Jan-10	5.0	8.0	435	12.0
	7-Feb-10	5.0	7.5	428	11.9
	14-Mar-10	4.9	7.5	355	13.3
	11-Apr-10	5.4	7.8	386	
	16-May-10	5.8	7.8	246	12.1
	13-Jun-10	7.7	7.9	231	15.5
	18-Jul-10	8.1	7.7	322	15.4
	15-Aug-10	9.6	331.0	330	11.6
	17-Oct-10	7.5	7.9	337	11.2
	14-Nov-10	7.0	7.8	226	10.5
	20-Feb-11	5.3	8.1	260	11.3
	13-Mar-11	4.9	8.2	199	13.2
	17-Apr-11	4.7	8.0	221	12.9
	15-May-11	5.5	7.9	210	13.1
	12-Jun-11	7.4	7.9	250	11.4
	16-Oct-11	8.3	7.5	315	12.3
	20-Nov-11	6.4	8.0	302	11.1
	18-Dec-11	6.1	8.7	226	13.2
	18-Mar-12	5.5	7.9	198	8.4
	15-Apr-12	6.6	8.6	265	15.2
	13-May-12	6.4	7.7	262	13.1
	17-Jun-12	8.0	8.0	300	12.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	12-Aug-12	8.6	7.6	491	7.3
	18-Nov-12	6.8	7.5	228	9.1
	16-Dec-12	6.1	7.6	533	9.7
	13-Jan-13	5.7	7.9	292	11.3
	19-Mar-13	3.7	8.2	190	9.9
	17-Apr-13	4.5	7.8	196	10.1
	14-May-13	5.6	7.8	238	10.1
	16-Oct-13	8.3	8.1	304	6.1
	20-Nov-13	6.9	7.9	283	3.8
	17-Apr-14	4.8	8.0	216	10.2
	13-May-14	6.0	7.5	244	10.7
	18-Jun-14	6.8	7.9	288	10.2
	23-Oct-14	7.5	7.9	395	4.2
	16-Dec-14	5.8	8.5	327	-
	18-Mar-15	4.9	8.3	243	12.2
	22-Apr-15	5.0	7.8	267	13.8
	19-May-15	6.0	8.1	257	-
	15-Jun-15	6.4	7.8	308	11.2
	22-Jul-15	7.3	7.7	309	-
	11-Aug-15	8.3	7.8	337	11.8
	25-Aug-15	8.7	-	-	-
	8-Sep-15	10.0	7.6	312	9.8
	18-Nov-15	7.4	7.8	362	13.3
	9-Dec-15	6.1	7.6	324	13.1
	19-Jan-16	5.6	7.9	269	13.7
	17-Feb-16	5.4	7.8	292	13.2
	15-Mar-16	4.7	7.6	202	13.6
	21-Apr-16	4.5	7.9	225	14.0
	18-May-16	5.4	8.0	281	13.1
	23-Jun-16	7.0	7.9	298	12.2
	5-Jul-16	10.0	8.3	294	14.5
	21-Jul-16	9.5	7.7	375	11.7
	9-Aug-16	14.4	8.1	371	11.6
	24-Aug-16	11.6	7.9	340	11.2
	18-Oct-16	10.9	8.1	347	13.6
	16-Nov-16	7.8	7.8	331	9.2
	12-Dec-16	4.2	8.4	466	12.4
	17-Feb-17	4.6	8.1	300	13.9
	22-Mar-17	4.6	8.4	289	12.6
	19-Apr-17	5.1	7.1	142	14.3
	16-May-17	6.1	7.9	221	12.8
	28-Jun-17	7.4	7.7	300	12.0
	7-Jul-17	7.7	7.7	281	12.5
	19-Jul-17	7.3	7.9	325	12.2
	2-Aug-17	8.3	7.7	252	11.5
	15-Aug-17	8.5	7.6	266	11.5
	18-Sep-17	8.6	7.7	315	11.4
	18-Oct-17	8.1	7.9	264	11.6
	15-Nov-17	6.7	8.1	346	7.0
	14-Dec-17	5.8	8.4	314	7.6
SW11C					
	22-May-03	8.0			
	18-Mar-04	4.4		431	9.0
	21-Apr-04	4.3	7.8	221	
	19-May-04	5.9	7.6	307	
	24-Jun-04	8.0	7.8	354	
	29-Mar-05	4.7	7.6	301	12.9
	11-Apr-05	4.1	7.1	203	
	26-May-05	6.1	7.2	300	
	18-Jan-06	5.5	7.3	267	12.3
	24-Mar-06	4.4	8.1	245	
	19-Apr-06	5.4	8.0	330	
	24-May-06	6.4	7.9	421	
	12-Jul-06	15.4	7.4	448	
	19-Oct-06	9.7	7.5	428	
	23-Nov-06	6.3	7.7	431	11.8
	17-Dec-06	5.6	7.6	440	
	21-Jan-07	5.1	8.0	443	12.4
	17-Apr-07	4.1	8.0	384	12.8
	13-May-07	5.5	8.0	403	12.7
	19-Nov-07	6.5	7.8	487	10.8
	11-Dec-07	5.7	7.8	461	11.7
	22-Jan-08	4.9	7.7	359	12.4
	20-Feb-08	4.3	8.0	381	
	17-Mar-08	4.4		404	
	2-Apr-08	3.7	7.7	311	13.1
	23-Apr-08	6.5	7.7	325	10.4
	22-May-08	5.7	7.6	381	11.1
	17-Jun-08	10.6	7.8	440	8.9
	15-Jul-08	7.5	7.2	462	10.1
	19-Aug-08	7.5	7.5	535	7.8
	16-Sep-08	8.5	7.8	486	9.2
	22-Oct-08	7.1	7.9	439	7.3
	23-Nov-08	6.1		357	8.2
	14-Dec-08	5.4	8.1	337	8.9
	18-Jan-09	4.3	8.3	240	9.9
	8-Feb-09	4.1		341	8.2
	15-Mar-09	3.7	8.3	205	
	12-Apr-09	4.3	8.0	356	
	17-May-09	5.7	8.1	308	12.5
	14-Jun-09	6.8	8.1	828	
	12-Jul-09	8.7	8.8	448	
	9-Aug-09	12.7	8.6	458	
	13-Sep-09	8.0	7.1	426	
	11-Oct-09	6.5	8.1	363	12.3
	15-Nov-09	6.1	8.1	424	
	13-Dec-09	3.9	7.6	430	11.7
	17-Jan-10	5.2	8.0	447	12.1
	7-Feb-10	4.8	7.8	436	12.1
	14-Mar-10	4.2	7.5	355	13.6
	11-Apr-10	5.6	7.8	377	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-May-10	5.6	7.9	247	12.2
	13-Jun-10	7.2	7.8	274	15.4
	18-Jul-10	8.6	7.7	321	15.2
	15-Aug-10	10.4	7.8	300	11.0
	12-Sep-10	8.8	8.1	314	11.4
	17-Oct-10	7.5	7.8	335	11.5
	14-Nov-10	6.7	7.7	256	10.5
	20-Feb-11	4.7	8.1	195	12.7
	13-Mar-11	4.6	8.1	243	13.4
	17-Apr-11	4.4	7.9	220	13.1
	15-May-11	5.5	7.9	212	13.3
	12-Jun-11	8.2	7.8	227	11.3
	16-Oct-11	8.9	7.5	320	11.6
	20-Nov-11	6.3	8.1	288	11.3
	18-Dec-11	5.9	8.7	222	13.4
	18-Mar-12	4.9	7.9	194	7.1
	15-Apr-12	5.4	8.6	251	15.8
	13-May-12	6.3	7.7	213	13.1
	17-Jun-12	7.9	7.8	220	12.7
	16-Jul-12	8.8	7.9	318	7.5
	14-Aug-12	9.1	7.6	420	7.3
	16-Sep-12	8.9	7.5	321	10.5
	18-Nov-12	6.7	7.5	280	9.1
	16-Dec-12	5.9	7.5	586	9.9
	13-Jan-13	5.2	7.9	285	11.2
	19-Mar-13	4.3	8.1	206	10.0
	17-Apr-13	4.1	7.8	196	10.1
	14-May-13	5.5	8.0	236	10.0
	16-Oct-13	8.6	7.8	307	5.8
	20-Nov-13	6.4	7.4	280	3.7
	17-Apr-14	4.4	7.8	423	10.3
	13-May-14	6.3	7.5	235	10.8
	18-Jun-14	7.9	8.1	277	10.0
	23-Oct-14	7.7	7.9	357	4.3
	16-Dec-14	5.5	8.4	324	-
	18-Mar-15	3.9	8.2	231	12.1
	22-Apr-15	4.3	7.8	260	13.7
	19-May-15	6.1	7.9	256	-
	15-Jun-15	7.0	7.7	312	11.1
	22-Jul-15	7.9	7.5	245	-
	11-Aug-15	8.6	7.7	341	11.5
	25-Aug-15	8.6	8.2	304	10.0
	8-Sep-15	8.1	7.6	329	11.0
	15-Oct-15	8.3	7.8	295	11.1
	18-Nov-15	6.8	7.7	363	12.5
	9-Dec-15	5.9	7.5	339	13.1
	19-Jan-16	5.1	7.9	264	13.6
	17-Feb-16	4.4	7.8	282	12.8
	15-Mar-16	4.3	7.6	204	13.4
	21-Apr-16	4.2	8.0	227	14.5
	18-May-16	5.3	8.0	283	10.0
	23-Jun-16	7.1	7.8	294	12.3
	5-Jul-16	7.7	7.8	307	18.0
	21-Jul-16	8.7	7.6	321	11.4
	9-Aug-16	8.7	7.8	471	14.3
	24-Aug-16	9.3	7.7	308	11.8
	19-Sep-16	9.1	7.6	329	11.5
	18-Oct-16	8.8	7.7	297	14.7
	16-Nov-16	7.3	7.7	319	11.0
	12-Dec-16	5.6	8.2	471	13.3
	25-Jan-17	5.2	7.9	218	11.7
	17-Feb-17	4.7	8.1	304	13.5
	22-Mar-17	4.3	8.0	287	12.7
	19-Apr-17	4.9	7.0	237	14.3
	16-May-17	5.8	7.9	248	12.7
	28-Jun-17	7.4	7.8	298	11.9
	7-Jul-17	8.8	7.5	294	13.1
	19-Jul-17	8.3	7.9	231	11.3
	2-Aug-17	8.5	7.7	314	11.3
	16-Aug-17	8.8	7.5	341	10.5
	18-Sep-17	8.5	7.6	344	11.5
	18-Oct-17	8.5	7.7	367	11.0
	15-Nov-17	6.7	8.1	341	7.0
	14-Dec-17	5.3	8.2	310	8.1
SW11D					
	22-May-03	8.0			
	13-Feb-04	3.9		311	11.9
	18-Mar-04	3.7		421	9.5
	21-Apr-04	4.1	7.9	212	
	19-May-04	3.1	8.2	240	
	24-Jun-04	6.3	7.8	326	
	29-Jul-04	9.7	8.0	327	
	22-Sep-04	12.0	7.9	354	9.4
	20-Oct-04	7.2	7.9	302	10.8
	18-Nov-04	6.2	7.9	302	11.2
	29-Mar-05	4.2	7.7	294	
	11-Apr-05	3.1	7.2	211	
	26-May-05	4.5	7.2	271	
	29-Jun-05	8.6	7.9	309	
	12-Jul-05	9.9	7.5	319	9.4
	23-Aug-05	11.6	7.7	341	9.1
	25-Sep-05	11.4	7.6	342	7.6
	25-Oct-05	7.3	8.0	393	10.9
	16-Nov-05	7.0	7.8	297	11.0
	13-Dec-05	1.1	7.5	264	11.6
	18-Jan-06	5.5	7.0	266	12.6
	24-Mar-06	4.3	8.1	245	
	19-Apr-06	5.0	8.1	329	
	24-May-06	6.0	7.9	415	
	21-Jun-06	8.3	8.0	379	
	12-Jul-06	10.8	8.2	362	
	24-Aug-06	12.8	7.8	412	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	21-Sep-06	11.6	7.9	396	
	19-Oct-06	8.8	8.1	393	
	23-Nov-06	6.2	7.8	425	11.8
	17-Dec-06	5.6	7.8	440	
	21-Jan-07	4.6	8.1	434	12.9
	17-Apr-07	4.0	8.1	385	
	13-May-07	3.6	8.1	379	
	17-Jun-07	7.4	8.5	325	11.9
	19-Aug-07	12.1	8.0	423	9.1
	19-Nov-07	4.2	7.9	457	10.8
	11-Dec-07	3.1	7.9	378	11.9
	22-Jan-08	4.5	7.7	367	12.5
	20-Feb-08	3.7	8.0	383	
	17-Mar-08	4.2	7.7	402	
	2-Apr-08	4.1	7.7	315	
	23-Apr-08	4.7	7.8	326	10.9
	22-May-08	5.7	7.5	381	10.2
	23-Nov-08	3.5	8.1	411	7.7
	14-Dec-08	5.4	8.1	337	8.9
	8-Feb-09	3.6		324	8.2
	15-Mar-09	3.8	8.0	310	
	12-Apr-09	3.4	7.7	350	
	17-May-09	7.2	8.2	320	
	14-Mar-10	2.3	7.5	346	13.4
	11-Apr-10	5.1	7.8	385	
	16-May-10	5.9	7.8	252	11.7
	13-Jun-10	6.9	7.9	270	13.2
	18-Jul-10	8.4	7.7	321	15.2
	17-Oct-10	7.3	8.7	352	8.0
	14-Nov-10	6.7	7.8	258	9.8
	13-Mar-11	4.3	8.0	240	12.9
	17-Apr-11	4.3	7.9	221	12.7
	15-May-11	5.5	7.8	126	13.5
	12-Jun-11	7.0	8.0	239	11.9
	16-Oct-11	10.0	7.4	341	10.8
	20-Nov-11	6.0	8.0	293	11.9
	18-Dec-11	6.1	8.6	229	13.0
	18-Mar-12	5.2	7.8	192	9.8
	15-Apr-12	5.6	8.6	222	15.9
	13-May-12	6.2	7.8	256	11.8
	14-Aug-12	9.0	7.5	498	7.7
	18-Nov-12	6.7	7.5	283	9.1
	16-Dec-12	6.0	7.5	589	9.8
	13-Jan-13	5.2	7.8	283	10.9
	19-Mar-13	4.6	8.1	208	9.8
	17-Apr-13	4.2	7.8	194	9.9
	16-Oct-13	7.8	7.8	300	6.0
	20-Nov-13	6.7	7.4	280	3.7
	17-Apr-14	4.4	7.7	423	10.2
	13-May-14	5.7	7.5	245	10.0
	18-Jun-14	7.8	7.9	273	10.7
	23-Oct-14	7.6	7.9	393	4.3
	16-Dec-14	5.6	8.4	326	-
	22-Apr-15	4.6	7.7	243	13.3
	19-May-15	5.8	8.1	249	-
	15-Jun-15	6.6	7.5	310	11.1
	22-Jul-15	7.7	7.9	271	-
	11-Aug-15	9.4	8.0	309	11.1
	25-Aug-15	11.7	-	-	-
	8-Sep-15	12.0	7.8	306	9.3
	15-Oct-15	8.5	8.1	283	10.7
	18-Nov-15	7.3	7.8	327	12.5
	9-Dec-15	4.8	7.7	297	13.1
	19-Jan-16	4.5	7.9	248	13.8
	17-Feb-16	4.3	7.8	277	13.4
	15-Mar-16	4.4	7.7	203	13.4
	21-Apr-16	4.1	8.0	224	14.1
	18-May-16	4.6	8.1	272	13.1
	23-Jun-16	6.9	8.3	266	11.6
	5-Jul-16	8.8	8.1	281	16.9
	21-Jul-16	10.5	7.7	321	10.2
	9-Aug-16	12.1	8.4	351	12.9
	24-Aug-16	12.6	8.1	194	9.2
	19-Sep-16	12.2	8.1	331	11.5
	18-Oct-16	11.5	8.0	302	12.6
	15-Nov-16	6.8	8.0	292	10.6
	12-Dec-16	0.8	8.3	448	13.4
	25-Jan-17	5.3	7.9	276	11.6
	17-Feb-17	4.1	8.1	296	13.5
	22-Mar-17	4.2	8.0	265	12.7
	19-Apr-17	4.4	7.1	232	14.6
	16-May-17	6.0	8.0	243	12.8
	28-Jun-17	6.9	7.9	289	12.3
	7-Jul-17	7.8	7.4	294	12.1
	19-Jul-17	8.3	8.2	314	11.7
	2-Aug-17	9.8	8.0	292	10.6
	16-Aug-17	10.3	7.8	328	10.2
	18-Sep-17	11.0	7.8	325	9.1
	18-Oct-17	9.1	8.0	334	10.8
	15-Nov-17	6.4	8.1	332	7.2
	14-Dec-17	4.6	8.3	289	8.5
SW11E					
	22-May-03	8.0			
	13-Feb-04	2.6		294	12.9
	18-Mar-04	4.2		421	9.3
	21-Apr-04	6.7	8.2	210	
	19-May-04	9.4	8.3	325	
	24-Jun-04	10.6	8.3	368	
	29-Jul-04	13.3	8.2	399	
	26-Aug-04	13.1	8.2	354	
	20-Oct-04	7.0	8.1	318	12.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Nov-04	7.5	8.1	358	11.7
	16-Dec-04	2.0	8.2	294	
	29-Mar-05	7.8	8.1	308	
	11-Apr-05	5.3	7.2	212	
	24-May-05	10.3	7.7	329	
	27-Jun-05	12.6	8.0	385	
	12-Jul-05	13.8	7.7	387	9.6
	23-Aug-05	13.3	7.9	371	10.0
	25-Sep-06	12.5	7.9	270	9.7
	25-Oct-05	6.7	8.1	403	
	16-Nov-05	6.5	8.1	275	11.6
	13-Dec-05	1.2	8.1	324	12.4
	18-Jan-06	4.6	7.0	251	
	24-Mar-06	5.4	8.3	246	
	19-Apr-06	8.8	8.5	319	
	24-May-06	9.2	8.3	399	
	21-Jun-06	11.3	8.3	419	
	12-Jul-06	13.4	8.2	356	
	24-Aug-06	14.8	8.1	412	
	21-Sep-06	11.6	8.2	397	
	19-Oct-06	9.4	8.2	425	
	23-Nov-06	5.9	8.2	421	
	17-Dec-06	4.7	8.2	433	
	21-Jan-07	2.0	8.5	433	
	18-Feb-07	3.3	8.5	448	
	18-Mar-07	3.8	8.4	381	
	17-Apr-07	4.3	8.4	377	
	13-May-07	6.7	8.3	395	
	17-Jun-07	11.4	8.4	449	10.6
	15-Jul-07	13.8	8.1	436	9.5
	19-Aug-07	13.7	8.0	418	9.2
	17-Sep-07	11.0	8.0	405	
	18-Oct-07	11.8	8.0	408	9.2
	19-Nov-07	2.2	7.9	455	12.4
	11-Dec-07	2.9	8.0	433	12.5
	22-Jan-08	3.6	7.9	358	13.3
	20-Feb-08	3.3	8.1	377	
	17-Mar-08	4.2	8.1	398	
	2-Apr-08	4.3	7.8	313	
	23-Apr-08	7.4	7.9	304	10.6
	22-May-08	5.8	7.3	359	10.8
	17-Jun-08	9.3	7.9	425	9.3
	15-Jul-08	13.2	7.3	454	7.3
	19-Aug-08	12.0	7.7	512	
	16-Sep-08	10.8	8.2	468	9.0
	22-Oct-08	6.5	8.0	419	7.9
	23-Nov-08	5.3	8.1	421	9.0
	14-Dec-08	4.3	8.5	330	9.4
	18-Jan-09	3.1	8.1	412	4.6
	8-Feb-09	3.9		339	7.9
	15-Mar-09	4.5	8.6	298	
	12-Apr-09	5.2	8.2	331	
	17-May-09	10.4	8.3	328	10.5
	14-Jun-09	10.9	8.2	764	
	12-Jul-09	10.9	8.7	431	11.0
	9-Aug-09	14.0	8.7	433	9.3
	13-Sep-09	11.8	7.6	403	10.4
	11-Oct-09	6.3	8.3	474	12.0
	15-Nov-09	4.5	8.3	412	
	13-Dec-09	1.9	8.1	450	12.4
	17-Jan-10	3.5	8.2	427	12.9
	7-Feb-10	2.1	7.7	428	12.3
	14-Mar-10	5.2	7.9	344	13.0
	11-Apr-10	8.6	8.1	365	
	16-May-10	7.7	8.3	258	11.7
	13-Jun-10	9.7	8.4	284	14.6
	18-Jul-10	10.6	8.3	330	14.5
	15-Aug-10	13.7	8.4	248	10.0
	12-Sep-10	10.6	8.4	340	10.7
	17-Oct-10	7.3	8.2	312	11.8
	14-Nov-10	6.3	8.4	235	10.8
	19-Dec-10	4.1	8.5	237	10.5
	16-Jan-11	4.4	8.2	243	12.6
	20-Feb-11	3.7	8.3	240	12.5
	13-Mar-11	5.4	8.3	242	13.3
	17-Apr-11	5.8	8.1	230	12.6
	15-May-11	6.1	8.0	211	13.1
	12-Jun-11	10.5	8.3	263	10.0
	17-Jul-11	16.2	8.4	230	10.5
	14-Aug-11	15.3	8.4	256	8.1
	18-Sep-11	12.3	8.5	268	8.5
	16-Oct-11	9.5	7.9	280	11.9
	20-Nov-11	4.0	8.0	222	12.7
	18-Dec-11	5.6	8.6	214	13.5
	15-Jan-12	3.6	8.4	185	11.5
	19-Feb-12	4.3	8.2	179	12.7
	18-Mar-12	7.5	8.4	202	10.0
	15-Apr-12	9.1	8.9	277	12.6
	13-May-12	11.3	8.3	288	10.2
	17-Jun-12	14.4	8.2	348	13.8
	16-Jul-12	17.1	8.5	381	6.6
	14-Aug-12	10.9	8.4	302	7.3
	18-Sep-12	12.0	7.8	334	9.5
	14-Oct-12	9.2	8.3	298	8.5
	18-Nov-12	6.8	8.1	279	9.1
	16-Dec-12	4.4	7.9	552	10.5
	13-Jan-13	4.6	8.2	279	11.5
	19-Mar-13	3.9	8.3	200	10.2
	17-Apr-13	5.6	8.1	201	10.1
	14-May-13	6.1	8.2	236	8.7
	19-Jun-13	9.7	8.3	277	12.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-Jul-13	13.8	8.3	346	9.8
	21-Aug-13	14.1	8.3	344	9.4
	18-Sep-13	10.6	8.2	312	10.3
	16-Oct-13	10.4	8.6	314	5.7
	20-Nov-13	5.5	7.9	260	3.6
	18-Dec-13	4.0	8.1	217	7.5
	21-Jan-14	0.9	7.7	296	3.9
	19-Feb-14	1.7	7.0	268	3.6
	19-Mar-14	1.6	7.6	268	5.3
	17-Apr-14	4.8	8.0	219	10.7
	13-May-14	11.0	6.8	268	10.5
	18-Jun-14	9.5	8.6	291	10.7
	16-Jul-14	10.4	8.9	348	8.3
	19-Aug-14	12.6	8.8	380	8.1
	9-Sep-14	13.6	8.8	386	4.2
	23-Oct-14	8.2	8.1	387	5.0
	19-Nov-14	3.8	7.5	307	6.9
	16-Dec-14	4.5	8.6	304	-
	20-Jan-15	1.7	7.9	275	1.9
	18-Mar-15	3.6	8.5	227	13.6
	22-Apr-15	4.7	8.2	257	14.3
	19-May-15	9.4	8.6	261	-
	16-Jun-15	9.2	8.4	315	10.8
	21-Jul-15	12.3	8.3	333	-
	11-Aug-15	12.9	8.3	357	11.0
	25-Aug-15	12.7	8.7	307	9.3
	8-Sep-15	16.1	7.9	363	8.1
	15-Oct-15	9.1	8.2	296	10.4
	18-Nov-15	7.4	8.2	345	13.2
	9-Dec-15	4.7	8.0	315	13.9
	20-Jan-16	2.4	7.9	214	14.3
	17-Feb-16	1.7	8.0	255	14.5
	15-Mar-16	4.2	7.7	190	13.8
	21-Apr-16	5.9	8.0	232	14.6
	18-May-16	9.3	8.6	305	12.0
	23-Jun-16	10.7	8.5	314	11.4
	5-Jul-16	14.4	8.5	328	14.6
	21-Jul-16	16.0	8.4	368	9.3
	9-Aug-16	16.4	8.5	416	11.4
	24-Aug-16	16.3	8.5	361	10.0
	19-Sep-16	15.3	8.1	44	8.4
	18-Oct-16	14.1	8.2	357	12.6
	16-Nov-16	6.5	8.2	301	11.4
	12-Dec-16	1.3	8.1	454	15.7
	25-Jan-17	4.9	8.3	272	12.1
	17-Feb-17	2.9	8.5	282	15.7
	22-Mar-17	2.8	8.5	260	12.9
	19-Apr-17	4.8	7.7	221	14.4
	16-May-17	6.0	8.1	247	12.5
	28-Jun-17	8.2	8.2	299	12.1
	7-Jul-17	10.6	8.0	306	10.5
	19-Jul-17	11.7	8.3	350	11.2
	2-Aug-17	11.9	8.4	327	10.5
	16-Aug-17	11.9	8.4	261	10.7
	17-Sep-17	12.2	8.2	341	9.7
	18-Oct-17	9.7	8.5	359	8.1
	15-Nov-17	5.7	8.6	325	11.2
	14-Dec-17	2.3	8.5	276	11.8
SW12					
	22-May-03	8.0			
	13-Feb-04	1.4		358	12.9
	18-Mar-04	2.5		640	9.9
	21-Apr-04	10.7	8.2	388	
	19-May-04	13.4	8.2	484	
	24-Jun-04	13.1	8.2	470	
	29-Jul-04	14.4	8.1	507	
	26-Aug-04	13.3	8.2	466	
	22-Sep-04	13.7	7.9	457	9.1
	20-Oct-04	7.6	8.1	412	11.1
	18-Nov-04	7.8	7.9	444	11.0
	29-Mar-05	5.1	8.0	390	
	11-Apr-05	7.1	7.2	332	
	26-May-05	13.7	7.7	464	9.7
	29-Jun-05	15.6	8.0	543	
	12-Jul-05	15.5	7.7	554	9.0
	23-Aug-05	13.9	7.8	491	10.1
	28-Sep-06	12.3	7.9	444	9.8
	25-Oct-05	7.1	8.1	534	11.4
	16-Nov-05	7.0	7.8	373	11.2
	13-Dec-05	1.9	8.0	436	12.4
	18-Jan-06	2.6	6.9	383	
	24-Mar-06	3.9	8.4	394	
	19-Apr-06	11.1	8.3	478	
	24-May-06	11.2	8.2	552	
	21-Jun-06	13.7	8.2	571	
	12-Jul-06	15.3	8.1	459	
	24-Aug-06	14.6	8.0	519	
	21-Sep-06	11.9	8.2	515	
	19-Oct-06	9.6	8.0	580	
	23-Nov-06	4.8	8.0	521	
	17-Dec-06	3.5	8.1	651	
	21-Jan-07	1.0	8.3	585	
	18-Mar-07	0.9	8.2	630	
	17-Apr-07	4.2	8.4	531	
	13-May-07	8.8	8.3	505	11.6
	17-Jun-07	14.2	8.2	605	9.1
	15-Jul-07	14.9	8.0	596	8.9
	19-Aug-07	14.1	7.9	540	8.3
	17-Sep-07	11.5	8.0	500	8.4
	18-Oct-07	12.7	7.9	522	8.8
	19-Nov-07	3.9	7.8	629	11.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	11-Dec-07	3.0	7.8	552	11.9
	22-Jan-08	2.0	7.8	607	13.8
	20-Feb-08	1.8	8.0	566	
	17-Mar-08	0.1	8.0	578	
	2-Apr-08	4.4	7.9	454	12.6
	23-Apr-08	11.5	7.9	460	9.0
	22-May-08	7.2	7.3	489	10.3
	17-Jun-08	11.5	7.7	542	8.9
	15-Jul-08	14.1	7.1	604	7.7
	19-Aug-08	12.9	7.6	661	5.7
	16-Sep-08	11.9	8.2	598	7.4
	22-Oct-08	6.1	7.8	568	8.1
	23-Nov-08	3.5	8.2	608	9.2
	14-Dec-08	2.3	8.3	498	8.9
	8-Feb-09	2.0		405	8.6
	15-Mar-09	5.4	8.7	402	
	12-Apr-09	6.7	8.1	487	
	17-May-09	14.6	8.4	435	10.2
	14-Jun-09	13.1	7.9	981	10.3
	12-Jul-09	12.8	8.5	549	10.2
	9-Aug-09	15.4	8.6	468	8.5
	13-Sep-09	11.1	7.8	520	11.0
	11-Oct-09	6.3	8.1	620	12.1
	15-Nov-09	4.7	8.1	572	
	13-Dec-09	1.6	7.7	589	12.0
	17-Jan-10	2.2	8.0	566	11.3
	14-Mar-10	5.1	7.7	468	12.8
	11-Apr-10	9.2	7.9	543	
	16-May-10	11.4	8.3	354	10.3
	13-Jun-10	13.1	8.2	421	13.0
	18-Jul-10	15.5	8.2	481	12.6
	15-Aug-10	15.2	8.3	474	11.5
	17-Oct-10	7.7	7.8	373	11.0
	14-Nov-10	5.3	8.1	278	10.6
	13-Mar-11	3.8	8.3	298	13.7
	20-Mar-11	4.1	8.1	380	12.6
	17-Apr-11	7.3	8.3	355	12.3
	15-May-11	8.8	8.0	326	11.8
	12-Jun-11	13.5	8.3	358	8.6
	17-Jul-11	17.6	8.3	444	9.8
	14-Aug-11	15.6	8.4	320	8.7
	18-Sep-11	12.5	8.7	354	9.9
	16-Oct-11	10.0	7.6	349	11.3
	20-Nov-11	4.1	8.1	259	12.6
	18-Dec-11	3.6	8.6	386	13.0
	15-Jan-12	1.4	8.5	223	12.3
	19-Feb-12	2.5	8.3	258	13.0
	18-Mar-12	11.2	8.2	355	8.3
	15-Apr-12	8.5	8.7	357	13.8
	13-May-12	13.4	8.2	395	4.2
	17-Jun-12	15.9	8.3	453	13.0
	16-Jul-12	18.2	8.3	508	6.9
	14-Aug-12	14.7	8.2	459	7.0
	18-Sep-12	12.5	7.7	486	9.4
	18-Oct-12	9.3	8.0	374	8.4
	20-Nov-12	6.7	8.0	387	9.1
	20-Dec-12	3.3	7.7	803	10.5
	16-Jan-13	2.9	7.9	393	11.6
	19-Mar-13	0.6	7.8	426	9.6
	17-Apr-13	7.2	8.2	328	10.3
	14-May-13	7.0	8.0	337	8.2
	19-Jun-13	11.7	8.2	389	10.8
	16-Jul-13	15.8	8.2	466	8.6
	21-Aug-13	14.9	8.3	459	10.2
	18-Sep-13	10.9	8.0	422	11.2
	16-Oct-13	11.9	8.3	444	5.2
	20-Nov-13	3.5	0.5	382	3.9
	18-Dec-13	2.3	7.9	311	6.3
	17-Apr-14	4.8	8.2	311	10.9
	13-May-14	15.0	7.0	407	10.4
	18-Jun-14	13.8	8.4	375	10.0
	16-Jul-14	12.4	7.8	465	8.2
	19-Aug-14	13.4	8.7	505	8.8
	9-Sep-14	13.0	8.8	-	7.3
	23-Oct-14	8.5	7.9	537	7.0
	16-Dec-14	2.7	8.6	351	-
	20-Jan-15	0.5	7.9	344	2.2
	22-Apr-15	5.7	8.1	394	13.5
	19-May-15	12.3	8.5	257	13.5
	16-Jun-15	13.8	8.2	436	8.3
	22-Jul-15	14.7	8.4	443	-
	11-Aug-15	14.3	8.2	470	8.8
	8-Sep-15	16.9	7.9	471	7.7
	15-Oct-15	9.7	8.1	370	10.5
	18-Nov-15	8.0	8.0	435	12.1
	9-Dec-15	5.2	7.9	426	13.0
	20-Jan-16	1.3	7.9	361	14.0
	17-Feb-16	1.0	7.9	347	14.7
	15-Mar-16	4.1	7.6	289	12.9
	21-Apr-16	8.0	7.9	359	13.9
	18-May-16	10.4	8.6	442	11.9
	23-Jun-16	12.5	8.4	428	10.5
	24-Aug-16	15.5	8.4	433	8.1
	19-Sep-16	14.1	8.3	540	9.4
	18-Oct-16	13.7	8.0	454	12.2
	16-Nov-16	7.6	7.9	402	10.7
	12-Dec-16	2.2	8.0	623	14.4
	25-Jan-17	3.5	8.1	389	12.5
	17-Feb-17	1.6	8.3	372	15.4
	22-Mar-17	0.8	8.3	365	12.4
	19-Apr-17	6.3	7.6	375	12.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-May-17	8.9	8.2	416	10.9
	28-Jun-17	11.2	8.4	478	10.2
	19-Jul-17	14.1	8.4	473	9.5
	16-Aug-17	13.4	8.2	468	9.7
	18-Sep-17	13.7	7.9	4.02	9.4
	18-Oct-17	10.2	8.3	454	8.6
	15-Nov-17	5.5	8.4	427	11.8
	14-Dec-17	0.7	8.2	342	12.9
SW12A					
	22-May-03	8.0			
	21-Apr-04	12.3	8.0	657	
	11-Apr-05	7.4	7.4	476	
	24-Mar-06	1.8	7.9	674	
	19-Apr-06	12.1	7.8	867	
	24-May-06	9.5	7.7	939	
	23-Nov-06	4.4	8.4	968	9.3
	17-Dec-06	3.0	7.7	992	11.2
	18-Mar-07	1.0	8.0	1066	
	17-Apr-07	3.2	8.0	915	12.2
	2-Apr-08	5.0	7.7	621	11.7
	23-Apr-08	14.2	7.8	590	9.0
	22-May-08	7.2	8.4	524	8.7
	23-Nov-08	1.6	7.8	834	8.1
	14-Dec-08	2.2	7.0	694	10.7
	8-Feb-09	1.2		522	9.1
	15-Mar-09	6.1	8.1	570	
	12-Apr-09	8.0	7.9	687	
	17-May-09	14.7	7.9	528	
	14-Mar-10	5.3	7.6	663	11.6
	11-Apr-10	8.8	8.0	848	
	16-May-10	13.7	8.0	670	10.3
	13-Jun-10	15.6	7.8	689	10.7
	18-Jul-10	17.8	7.8	778	10.0
	12-Sep-10	11.2	8.3	466	9.9
	14-Nov-10	5.5	7.9	360	8.5
	20-Mar-11	3.8	7.8	541	12.5
	17-Apr-11	9.0	7.7	628	12.5
	15-May-11	9.6	8.0	466	10.7
	16-Oct-11	10.3	7.7	329	10.9
	18-Dec-11	4.1	8.8	273	14.4
	18-Mar-12	14.5	7.8	589	7.0
	14-Aug-12	15.8	8.0	439	5.0
	20-Nov-12	6.5	7.5	633	6.3
	20-Dec-12	2.0	7.3	1130	9.3
	16-Jan-13	1.9	7.6	553	9.7
	19-Mar-13	2.1	8.1	278	10.8
	17-Apr-13	8.3	7.9	497	10.4
	14-May-13	6.4	8.0	581	9.0
	16-Oct-13	13.3	8.0	613	1.5
	20-Nov-13	3.6	7.5	503	3.1
	17-Apr-14	4.1	7.9	441	10.4
	13-May-14	15.7	6.7	664	10.0
	23-Oct-14	7.8	7.2	428	8.3
	22-Apr-15	6.0	7.8	585	13.5
	15-Mar-16	4.2	7.3	413	11.3
	21-Apr-16	8.2	7.6	543	13.1
	18-May-16	10.3	8.0	709	10.8
	21-Jul-16	16.2	8.3	468	8.3
	25-Jan-17	2.7	7.9	494	10.2
	19-Apr-17	5.8	7.1	588	10.0
	16-May-17	9.0	7.7	686	6.4
	28-Jun-17	12.2	8.0	761	6.2
SW13					
	22-May-03	13.0			
	13-Feb-04	0.8		287	12.8
	21-Apr-04	8.2	8.3	259	
	19-May-04	15.2	8.3	390	
	24-Jun-04	18.1	8.4	413	
	29-Jul-04	21.8	8.2	434	
	26-Aug-04	20.7	8.2	394	8.1
	22-Sep-04	22.6	8.2	392	8.0
	20-Oct-04	8.6	8.0	288	11.5
	18-Nov-04	6.1	8.0	282	
	11-Apr-05	5.1	7.3	243	
	26-May-05	15.4	8.1	373	
	29-Jun-05	22.2	8.1	491	
	12-Jul-05	23.3	7.8	474	7.9
	23-Aug-05	19.9	7.6	430	6.8
	28-Sep-05	15.8	7.9	362	7.4
	25-Oct-05	8.4	8.9	382	11.6
	16-Nov-05	5.8	8.2	267	
	13-Dec-05	0.8	8.0	455	
	18-Jan-06	2.4	7.7	270	
	24-Mar-06	3.3	8.4	255	
	19-Apr-06	8.7	8.4	342	
	24-May-06	10.2	8.3	420	
	21-Jun-06	19.0	8.3	424	
	12-Jul-06	20.8	8.4	350	
	24-Aug-06	20.2	7.9	382	
	21-Sep-06	16.2	8.1	358	
	19-Oct-06	9.7	8.2	370	
	23-Nov-06	4.6	8.1	445	
	17-Dec-06	3.3	8.2	489	
	21-Jan-07	1.7	8.4	475	
	17-Apr-07	3.8	8.5	427	
	13-May-07	10.5	8.4	404	11.1
	17-Jun-07	20.5	8.4	442	9.0
	15-Jul-07	23.3	8.1	434	7.3
	19-Aug-07	19.0	7.9	428	6.4
	17-Sep-07	15.9	7.9	379	7.2
	18-Oct-07	13.3	7.9	373	8.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Nov-07	3.9	8.1	400	12.6
	20-Feb-08	2.2	8.1	420	
	17-Mar-08	2.1	8.0	423	
	2-Apr-08	3.2	7.9	372	
	23-Apr-08	9.4	7.9	320	10.5
	22-May-08	8.8	7.8	377	11.1
	17-Jun-08	16.6	7.9	403	8.4
	15-Jul-08	22.0	7.5	425	5.8
	19-Aug-08	21.9	8.0	501	4.4
	16-Sep-08	17.6	8.4	418	6.4
	22-Oct-08	7.4	8.0	437	7.1
	23-Nov-08	3.9	8.5	462	9.0
	14-Dec-08	3.1	8.4	369	9.5
	8-Feb-09	2.5		385	8.2
	15-Mar-09	4.5	8.6	362	
	12-Apr-09	5.6	8.0	403	
	17-May-09	15.0	8.5	338	10.1
	14-Jun-09	19.6	7.9	803	
	12-Jul-09	18.2	8.2	420	9.5
	9-Aug-09	22.3	8.0	341	8.2
	13-Sep-09	16.8	7.7	374	8.6
	11-Oct-09	8.5	8.4	441	11.1
	15-Nov-09	5.6	8.5	429	
	13-Dec-09	1.4	7.7	477	12.7
	17-Jan-10	1.0	8.1	463	12.2
	14-Mar-10	4.1	7.9	410	13.5
	11-Apr-10	8.2	8.0	395	
	16-May-10	12.4	8.4	317	10.4
	13-Jun-10	16.7	8.4	356	12.9
	18-Jul-10	19.1	8.2	395	11.7
	15-Aug-10	21.5	8.4	403	7.9
	12-Sep-10	15.4	8.3	391	8.0
	17-Oct-10	8.9	8.1	338	10.5
	13-Mar-11	3.4	8.4	260	13.9
	20-Mar-11	3.6	8.3	277	13.4
	17-Apr-11	5.6	8.4	240	12.5
	15-May-11	7.6	8.4	248	12.9
	12-Jun-11	17.5	8.6	305	8.7
	17-Jul-11	26.0	8.5	423	8.9
	14-Aug-11	22.6	8.5	286	6.4
	18-Sep-11	17.6	8.7	200	7.1
	16-Oct-11	10.1	7.8	274	11.3
	20-Nov-11	4.1	8.1	285	11.9
	18-Dec-11	4.0	8.9	244	14.5
	15-Jan-12	2.2	8.5	207	12.0
	19-Feb-12	2.2	8.2	222	13.2
	18-Mar-12	9.1	8.3	233	9.2
	15-Apr-12	10.6	8.8	285	12.5
	13-May-12	16.0	8.4	331	10.9
	17-Jun-12	24.3	8.6	424	11.9
	16-Jul-12	26.9	8.6	406	6.3
	14-Aug-12	16.7	8.5	337	7.0
	18-Sep-12	16.1	7.9	364	8.6
	18-Oct-12	9.8	8.4	287	8.9
	20-Nov-12	5.3	8.0	297	9.7
	20-Dec-12	3.1	7.8	591	10.6
	16-Jan-13	3.4	8.1	259	11.6
	19-Mar-13	2.3	8.3	215	10.6
	17-Apr-13	5.2	8.0	189	10.2
	14-May-13	7.4	8.2	254	7.9
	19-Jun-13	16.9	8.4	355	9.5
	16-Jul-13	25.3	8.3	369	6.4
	21-Aug-13	21.3	8.4	401	7.2
	18-Sep-13	16.7	8.2	335	9.5
	16-Oct-13	12.1	8.6	347	5.5
	20-Nov-13	4.2	8.6	276	3.9
	18-Dec-13	1.9	7.9	255	8.0
	21-Jan-14	0.8	7.5	220	4.7
	19-Feb-14	0.6	7.8	242	3.7
	19-Mar-14	0.6	7.3	232	8.4
	17-Apr-14	3.5	8.2	236	8.7
	13-May-14	12.4	7.5	277	11.6
	18-Jun-14	12.9	7.5	219	11.0
	16-Jul-14	18.2	7.8	400	8.8
	19-Aug-14	20.1	8.8	424	6.9
	9-Sep-14	19.1	8.8	418	11.9
	23-Oct-14	9.6	8.1	415	9.0
	19-Nov-14	2.3	7.4	314	6.3
	16-Dec-14	3.0	8.6	314	-
	20-Jan-15	1.1	7.8	194	2.1
	22-Apr-15	6.0	8.3	292	13.1
	19-May-15	14.8	8.1	317	12.2
	16-Jun-15	16.0	8.2	359	8.3
	22-Jul-15	20.8	8.6	403	-
	11-Aug-15	19.5	8.1	396	7.1
	8-Sep-15	22.4	7.9	396	6.1
	15-Oct-15	12.1	8.1	297	8.5
	18-Nov-15	6.0	8.1	309	13.3
	9-Dec-15	3.6	8.8	305	12.3
	15-Mar-16	4.2	7.7	238	13.6
	21-Apr-16	7.5	8.0	266	13.8
	18-May-16	9.2	8.6	318	11.9
	23-Jun-16	19.1	8.3	396	6.6
	21-Jul-16	22.6	7.6	453	2.2
	24-Aug-16	23.6	8.3	372	8.2
	19-Sep-16	20.8	8.2	384	6.9
	18-Oct-16	15.1	8.3	318	10.4
	16-Nov-16	6.4	8.3	270	11.4
	12-Dec-16	1.3	8.1	433	11.6
	25-Jan-17	3.4	8.2	299	12.4
	17-Feb-17	1.1	8.4	284	14.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	22-Mar-17	2.8	8.4	295	11.6
	19-Apr-17	6.9	7.8	279	13.6
	16-May-17	10.3	8.5	252	10.7
	28-Jun-17	12.2	8.5	362	11.1
	19-Jul-17	20.4	8.6	436	9.1
	16-Aug-17	19.6	8.3	388	8.6
	18-Sep-17	17.6	8.2	333	9.1
	18-Oct-17	11.3	8.2	345	9.0
	15-Nov-17	3.8	8.5	324	14.0
	14-Dec-17	1.6	8.4	286	13.9
SW14					
	22-May-03	15.0			
	10-Feb-04	0.8		292	11.0
	16-Mar-04	1.5	8.0	435	11.9
	19-Apr-04	9.5	8.4	253	
	19-May-04	14.6	8.3	385	
	24-Jun-04	15.8	8.3	385	9.3
	29-Jul-04	18.0	8.0	389	7.7
	26-Aug-04	16.0	7.9	370	
	22-Sep-04	14.7	7.7	355	8.1
	20-Oct-04	7.0	7.5	313	10.3
	16-Nov-04	3.4	7.5	294	12.0
	16-Dec-04	0.4	7.8	235	
	29-Mar-05	3.5	8.0	301	
	11-Apr-05	5.6	7.1	249	
	24-May-05	12.2	7.7	352	10.5
	28-Jun-05	21.8	8.4	488	
	11-Jul-05	21.6	7.2	471	7.2
	22-Aug-05	16.0	7.8	383	8.2
	27-Sep-05	13.2	7.6	355	9.0
	24-Oct-05	7.9	7.6	580	9.6
	16-Nov-05	6.0	7.6	301	11.7
	12-Dec-05	0.2	8.3	255	3.0
	17-Jan-06	0.6	7.8	243	
	20-Mar-06	3.3	8.3	278	
	18-Apr-06	10.5	6.4	345	
	24-May-06	11.7	8.4	423	
	23-Jun-06	17.6	7.8	362	
	11-Jul-06	18.1	8.5	356	
	23-Aug-06	17.0	7.6	414	
	20-Sep-06	12.5	7.4	539	
	19-Oct-06	9.8	7.7	421	
	27-Nov-06	6.4	8.2	451	12.4
	17-Dec-06	2.9	8.1	505	
	18-Mar-07	2.5	8.3	429	
	17-Apr-07	5.4	8.5	425	
	13-May-07	10.2	8.0	409	11.1
	17-Jun-07	19.1	8.3	451	8.1
	15-Jul-07	19.3	8.3	447	7.2
	19-Aug-07	19.2	8.1	416	6.5
	17-Sep-07	13.4	7.8	402	8.1
	18-Oct-07	12.7	7.7	488	6.4
	21-Nov-07	3.8	7.8	475	10.8
	21-Jan-08	1.2	7.3	385	
	2-Apr-08	2.1	7.8	336	
	21-Apr-08	11.2	7.5	325	9.8
	20-May-08	13.6	7.4	379	9.5
	18-Jun-08	15.0	8.1	379	7.4
	15-Jul-08	18.5	7.6	442	5.5
	19-Aug-08	16.4	7.7	513	4.6
	17-Sep-08	13.9	8.6	444	6.1
	22-Oct-08	5.5	8.0	444	8.7
	23-Nov-08	3.9		472	8.8
	14-Dec-08	2.8	7.3	374	8.1
	15-Mar-09	4.1	8.6	386	
	12-Apr-09	6.8	8.4	346	
	17-May-09	15.5	8.3	342	10.0
	14-Jun-09	15.8	8.6	822	8.9
	12-Jul-09	17.5	9.2	366	8.8
	9-Aug-09	20.5	8.7	384	9.0
	13-Sep-09	16.1	6.5	387	9.2
	11-Oct-09	5.1	7.7	471	11.5
	15-Nov-09	3.6	7.3	446	
	13-Dec-09	1.6	7.5	489	11.9
	14-Mar-10	3.5	8.0	339	13.5
	11-Apr-10	9.4	8.3	400	11.5
	16-May-10	12.9	8.4	323	10.4
	13-Jun-10	14.0	8.3	317	13.0
	18-Jul-10	18.6	8.2	364	11.9
	15-Aug-10	17.2	8.3	387	8.9
	12-Sep-10	14.1	8.2	368	9.2
	17-Oct-10	8.2	8.0	348	11.0
	14-Nov-10	6.4	8.3	288	12.4
	13-Mar-11	3.3	8.1	241	11.5
	20-Mar-11	3.3	8.3	275	13.0
	17-Apr-11	5.9	8.4	247	12.2
	15-May-11	8.0	8.2	248	12.8
	12-Jun-11	16.7	8.4	314	9.8
	17-Jul-11	21.8	8.3	393	8.6
	14-Aug-11	18.7	8.6	264	8.4
	18-Sep-11	14.3	8.8	265	9.5
	16-Oct-11	10.0	7.7	251	12.7
	20-Nov-11	2.8	8.0	284	12.9
	18-Dec-11	3.4	9.2	241	13.6
	18-Mar-12	10.4	8.3	247	8.5
	15-Apr-12	8.0	8.9	275	12.9
	13-May-12	16.8	8.4	327	9.2
	17-Jun-12	21.0	8.4	400	13.0
	16-Jul-12	24.0	8.5	378	6.8
	14-Aug-12	16.7	8.6	447	7.0
	18-Sep-12	14.8	7.8	354	8.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	17-Oct-12	11.1	7.2	320	7.7
	20-Nov-12	5.8	8.1	304	10.7
	18-Dec-12	4.2	7.7	623	9.7
	20-Dec-12	2.6	7.9	585	11.4
	16-Jan-13	3.1	8.3	295	11.5
	19-Mar-13	2.3	8.3	218	10.5
	17-Apr-13	6.2	8.3	241	10.4
	14-May-13	7.3	8.2	247	8.9
	19-Jun-13	15.2	8.4	315	10.1
	16-Jul-13	22.1	8.3	424	7.6
	21-Aug-13	22.2	8.3	419	7.4
	18-Sep-13	12.9	8.3	323	10.2
	16-Oct-13	12.7	8.9	360	5.4
	20-Nov-13	4.0	8.2	277	3.9
	17-Apr-14	4.0	8.2	447	10.3
	13-May-14	15.5	7.0	318	10.3
	18-Jun-14	14.2	7.5	232	8.9
	15-Jul-14	15.7	8.9	391	6.9
	9-Sep-14	16.7	8.7	427	4.3
	23-Oct-14	10.2	8.7	421	4.2
	22-Apr-15	6.2	8.3	297	13.2
	19-May-15	14.0	8.5	286	-
	15-Jun-15	16.0	8.2	351	8.7
	22-Jul-15	18.8	8.5	391	-
	11-Aug-15	17.7	8.2	398	8.6
	25-Aug-15	16.6	8.2	338	7.0
	8-Sep-15	20.3	7.9	403	6.1
	15-Oct-15	10.1	7.9	310	9.7
	18-Nov-15	7.8	7.9	346	12.7
	9-Dec-15	3.8	7.8	269	13.6
	20-Jan-16	-0.1	7.7	268	15.0
	15-Mar-16	4.7	8.3	236	14.1
	21-Apr-16	8.2	7.7	275	13.4
	18-May-16	11.0	8.6	340	11.3
	23-Jun-16	15.0	8.4	367	9.7
	21-Jul-16	19.4	7.8	397	8.6
	24-Aug-16	19.7	5.1	376	7.5
	19-Sep-16	17.4	8.0	447	8.2
	18-Oct-16	15.4	7.8	405	11.1
	16-Nov-16	7.1	7.8	315	10.4
	12-Dec-16	0.6	8.2	465	16.1
	25-Jan-17	3.2	8.2	300	13.0
	22-Mar-17	1.2	8.5	292	14.0
	19-Apr-17	6.6	7.8	272	14.4
	16-May-17	10.5	8.0	303	11.4
	28-Jun-17	12.7	8.3	375	10.5
	19-Jul-17	18.8	8.2	430	8.9
	16-Aug-17	17.1	8.2	368	8.4
	18-Sep-17	16.3	7.9	366	8.1
	18-Oct-17	11.1	8.2	354	8.9
	15-Nov-17	4.2	8.3	341	12.6
	14-Dec-17	0.0	8.4	281	-
SW15					
	19-May-04	18.2	8.2	421	9.1
	24-Jun-04	18.9	8.1	412	8.3
	29-Jul-04	20.5	8.0	398	7.5
	26-Aug-04	18.0	8.1	402	9.0
	20-Oct-04	7.9	8.0	316	11.7
	17-Nov-04	6.5	7.9	330	12.0
	16-Dec-04	0.1	7.9	134	5.6
	11-Apr-05	11.2	7.5	340	11.0
	24-May-05	15.2	7.7	389	9.5
	28-Jun-05	23.0	8.3	484	
	11-Jul-05	23.8	7.2	471	7.0
	22-Aug-05	18.4	8.7	383	8.4
	27-Sep-05	14.4	7.6	348	7.9
	24-Oct-05	8.6	7.9	400	
	15-Nov-05	4.5	7.9	285	2.9
	12-Dec-05	0.1	8.3	243	0.6
	18-Apr-06	17.9	8.4	388	
	23-May-06	16.3	8.1	420	
	20-Jun-06	20.1	8.0	399	
	11-Jul-06	21.5	8.0	376	
	23-Aug-06	18.7	7.8	378	
	20-Sep-06	13.6	7.9	345	
	19-Oct-06	10.1	7.8	390	
	27-Nov-06	6.8	8.0	490	11.9
	17-Dec-06	1.6	8.0	556	
	17-Apr-07	8.5	8.5	441	
	13-May-07	12.0	8.1	388	10.5
	17-Jun-07	21.9	8.2	422	7.0
	15-Jul-07	21.8	8.1	419	7.2
	19-Aug-07	21.5	8.0	390	6.6
	17-Sep-07	16.2	8.0	330	8.3
	19-Oct-07	15.2	8.2	371	7.7
	21-Nov-07	4.2	7.9	446	11.5
	10-Dec-07	0.9	7.7	428	11.3
	1-Apr-08	1.0	7.4	218	14.0
	21-Apr-08	21.1	7.7	406	6.8
	20-May-08	18.8	7.6	394	6.6
	18-Jun-08	16.5	8.2	830	6.9
	19-Aug-08	15.2	7.9	404	4.8
	17-Sep-08	13.9	8.4	471	6.2
	22-Oct-08	5.9	7.7	429	8.0
	23-Nov-08	1.9	7.6	518	8.7
	15-Mar-09	6.3	8.2	384	
	12-Apr-09	11.8	8.4	373	
	17-May-09	19.4	8.0	373	8.2
	14-Jun-09	15.7	8.4	826	9.6
	12-Jul-09	15.9	8.8	486	9.3
	9-Aug-09	19.8	8.0	400	8.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	13-Sep-09	16.7	6.5	319	
	11-Oct-09	6.2	7.5	419	11.6
	15-Nov-09	5.2	7.4	407	
	13-Dec-09	0.5	7.5	508	12.2
	14-Mar-10	3.3	7.7	274	13.0
	16-May-10	19.3	8.2	408	8.5
	13-Jun-10	17.4	8.0	340	10.6
	18-Jul-10	21.4	8.0	443	10.8
	17-Oct-10	8.2	7.9	360	10.5
	14-Nov-10	6.9	8.1	303	11.7
	20-Mar-11	2.3	8.0	245	11.9
	17-Apr-11	8.5	8.1	321	10.9
	15-May-11	12.8	8.0	321	12.8
	12-Jun-11	19.6	8.2	345	8.1
	16-Oct-11	10.8	7.8	368	9.0
	20-Nov-11	3.4	8.0	297	12.0
	18-Dec-11	2.0	8.5	209	11.4
	18-Mar-12	16.9	8.0	369	7.8
	15-Apr-12	7.4	8.4	338	11.5
	13-May-12	13.7	8.0	383	9.4
	14-Aug-12	18.5	8.1	489	5.7
	18-Sep-12	14.8	7.7	426	7.4
	17-Oct-12	10.6	7.3	315	6.9
	20-Nov-12	6.1	7.7	350	8.6
	18-Dec-12	3.8	7.3	720	8.9
	15-Jan-13	1.8	7.7	642	10.9
	16-Apr-13	8.9	8.0	292	9.5
	13-May-13	11.7	8.0	367	5.7
	19-Jun-13	15.8	8.1	400	8.6
	16-Oct-13	13.8	8.6	377	4.8
	19-Nov-13	4.1	8.3	334	2.0
	16-Apr-14	5.7	8.0	307	10.8
	13-May-14	13.8	7.7	398	10.0
	15-Jul-14	15.2	8.8	472	-
	19-Aug-14	17.6	8.7	289	5.1
	9-Sep-14	16.0	8.6	560	4.5
	22-Oct-14	10.1	7.3	416	6.9
	16-Dec-14	0.4	8.3	253	-
	22-Apr-15	8.1	7.9	409	12.0
	19-May-15	12.6	8.2	404	-
	15-Jun-15	16.7	7.8	515	7.8
	21-Jul-15	18.3	8.2	475	-
	18-Nov-15	7.6	8.0	372	10.8
	9-Dec-15	4.5	7.6	341	12.3
	20-Jan-16	0.4	7.6	317	14.0
	15-Mar-16	6.4	7.9	321	12.4
	21-Apr-16	7.3	7.9	345	10.6
	18-May-16	9.6	8.1	421	9.2
	24-Aug-16	17.8	8.4	469	9.3
	19-Sep-16	16.9	7.9	395	7.2
	18-Oct-16	14.8	8.1	356	11.5
	15-Nov-16	7.7	7.1	309	10.6
	12-Dec-16	1.6	7.5	481	15.8
	24-Jan-17	2.4	8.0	307	12.2
	21-Mar-17	0.6	7.7	333	13.0
	19-Apr-17	7.4	6.2	348	12.3
	16-May-17	18.0	8.6	429	7.2
	28-Jun-17	17.1	8.2	429	7.8
	19-Jul-17	18.3	8.2	456	7.2
	16-Aug-17	16.7	8.0	386	7.4
	18-Sep-17	16.5	8.0	384	6.7
	18-Oct-17	11.5	8.1	357	9.3
	15-Nov-17	4.3	8.1	348	8.2
SW16					
	22-May-03	15.0			
	23-Jun-03	19.4			
	19-Apr-04	12.6	8.0	251	
	19-May-04	12.4	7.6	372	7.7
	24-Jun-04	14.9	7.3	423	3.5
	29-Jul-04	16.4	7.3	481	5.1
	20-Oct-04	7.9	7.4	386	8.2
	17-Nov-04	5.9	7.2	337	8.6
	29-Mar-05	2.9	7.6	344	11.9
	11-Apr-05	8.5	7.5	232	
	24-May-05	12.3	7.5	359	8.9
	27-Jun-05	19.1	7.6	488	7.8
	11-Jul-05	20.0	6.8	524	5.7
	22-Aug-05	15.2	8.3	492	7.2
	27-Sep-05	13.2	7.5	563	7.0
	24-Oct-05	8.6	8.9	1065	8.4
	14-Nov-05	5.7	8.2	527	10.7
	12-Dec-05	2.0	8.0	303	9.1
	17-Jan-06	0.4	6.4	180	13.4
	22-Mar-06	1.4	8.4	227	
	18-Apr-06	11.5	8.0	334	
	23-May-06	11.5	7.8	417	
	20-Jun-06	16.1	7.4	529	
	11-Jul-06	18.3	7.5	577	
	19-Oct-06	10.4	7.6	277	
	27-Nov-06	6.4	7.6	440	8.2
	17-Dec-06	2.5	7.7	451	12.4
	18-Mar-07	0.2	8.1	409	13.6
	16-Apr-07	2.8	8.3	397	12.4
	13-May-07	10.1	8.0	432	7.0
	19-Nov-07	4.6	7.8	576	8.4
	21-Jan-08	0.1	7.4	355	6.0
	19-Feb-08	0.2	7.7	115	10.7
	17-Mar-08	0.5	6.6	433	14.3
	1-Apr-08	0.7	7.3	207	
	23-Apr-08	13.0	8.0	324	
	21-May-08	8.9	7.7	394	6.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Jun-08	13.7	7.6	466	4.4
	15-Jul-08	15.2	7.1	537	4.0
	18-Aug-08	10.1	7.5	590	3.0
	17-Sep-08	12.2	8.3	497	5.6
	20-Oct-08	8.8	7.2	445	6.5
	14-Dec-08	1.1	7.8	349	8.7
	8-Feb-09	0.8	8.4	385	10.6
	15-Mar-09	3.5	8.5	343	
	12-Apr-09	12.2	8.8	346	
	17-May-09	20.4	8.1	352	7.1
	14-Jun-09	16.5	7.7	865	6.6
	12-Jul-09	12.1	8.2	484	7.8
	11-Oct-09	6.9	7.2	478	11.0
	15-Nov-09	3.7	7.4	424	
	14-Mar-10	1.5	8.0	357	13.7
	11-Apr-10	11.7	7.7	406	11.1
	16-May-10	15.1	8.2	339	9.0
	13-Jun-10	16.6	8.0	371	9.7
	18-Jul-10	17.0	8.0	366	10.4
	15-Aug-10	16.2	7.6	421	4.9
	17-Oct-10	7.4	7.7	328	7.9
	14-Nov-10	5.8	7.8	269	10.1
	19-Dec-10	0.8	8.1	151	11.9
	16-Jan-11	0.3	8.2	225	11.7
	13-Mar-11	1.1	8.1	185	11.8
	17-Apr-11	3.4	8.1	240	14.2
	15-May-11	8.8	8.0	240	12.5
	12-Jun-11	13.8	8.0	298	8.3
	17-Jul-11	20.0	8.2	423	8.3
	14-Aug-11	16.1	8.2	296	5.6
	18-Sep-11	12.8	8.3	302	6.2
	16-Oct-11	9.5	7.7	193	7.3
	20-Nov-11	2.3	8.0	273	11.8
	19-Dec-11	0.3	7.5	134	11.5
	19-Feb-12	1.0	7.9	204	13.2
	18-Mar-12	15.8	8.1	168	8.2
	15-Apr-12	6.6	8.3	285	10.4
	13-May-12	14.2	8.2	333	7.7
	17-Jun-12	9.4	8.2	443	8.9
	16-Jul-12	20.7	8.4	401	1.8
	14-Aug-12	15.4	8.2	320	6.1
	18-Sep-12	13.9	7.4	380	6.7
	17-Oct-12	10.6	6.7	321	6.7
	20-Nov-12	6.0	7.7	293	7.6
	18-Dec-12	4.0	7.2	-	8.0
	16-Jan-13	0.2	7.8	207	10.7
	16-Apr-13	6.6	8.1	227	10.0
	13-May-13	11.3	8.2	266	5.6
	19-Jun-13	13.3	7.9	301	7.3
	16-Jul-13	18.0	8.1	440	4.9
	21-Aug-13	17.0	8.5	400	1.1
	18-Sep-13	11.3	8.9	344	8.4
	16-Oct-13	13.1	8.8	368	5.0
	19-Nov-13	2.7	8.0	263	2.5
	18-Dec-13	0.8	8.1	241	5.6
	16-Apr-14	-0.1	7.9	131	12.6
	13-May-14	13.2	8.0	302	10.1
	17-Jun-14	15.5	7.5	400	8.0
	15-Jul-14	14.0	8.8	259	4.4
	19-Aug-14	13.2	8.3	428	7.5
	9-Sep-14	14.8	8.4	474	4.5
	23-Oct-14	6.8	8.0	369	6.9
	16-Dec-14	1.1	8.6	250	-
	22-Apr-15	6.5	8.2	281	12.2
	19-May-15	13.7	7.8	322	13.2
	15-Jun-15	14.9	7.7	381	6.4
	21-Jul-15	16.3	7.9	419	-
	11-Aug-15	15.3	7.6	428	5.8
	25-Aug-15	15.5	8.2	368	5.2
	8-Sep-15	18.3	7.5	469	3.9
	15-Oct-15	9.7	7.4	344	6.4
	18-Nov-15	7.4	7.5	352	9.9
	8-Dec-15	3.7	7.7	312	16.5
	19-Jan-16	-0.1	7.6	234	13.2
	17-Feb-16	0.0	7.6	162	13.4
	15-Mar-16	4.6	7.9	220	13.1
	21-Apr-16	6.7	8.0	263	11.8
	18-May-16	9.0	8.2	345	8.4
	22-Jun-16	14.9	7.7	413	4.8
	20-Jul-16	15.8	7.9	481	4.3
	24-Aug-16	17.2	7.8	483	2.8
	19-Sep-16	15.1	7.4	452	2.9
	18-Oct-16	14.0	7.5	434	5.6
	15-Nov-16	6.8	7.6	337	6.6
	12-Dec-16	0.5	7.3	412	10.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	24-Jan-17	2.2	8.2	260	12.2
	16-Feb-17	0.1	8.0	272	14.2
	21-Mar-17	3.7	8.3	285	11.5
	19-Apr-17	11.1	7.8	305	11.1
	16-May-17	11.5	8.0	392	6.6
	28-Jun-17	13.9	8.0	398	8.8
	19-Jul-17	15.7	7.9	454	4.6
	15-Aug-17	15.8	8.5	356	5.2
	18-Sep-17	15.6	7.9	425	4.9
	17-Oct-17	10.1	8.0	365	8.1
	14-Nov-17	4.2	8.2	299	8.3
SW17					
	22-May-03	15.0			
	10-Feb-04	1.0		315	11.6
	17-Mar-04	2.5		432	10.3
	19-Apr-04	9.9	8.2	276	
	19-May-04	15.6	8.2	386	
	24-Jun-04	17.8	8.1	430	8.2
	29-Jul-04	19.3	7.9	436	7.4
	26-Aug-04	17.2	7.9	435	
	22-Sep-04	16.5	7.9	417	8.7
	20-Oct-04	8.3	7.9	336	11.3
	17-Nov-04	5.3	7.8	320	
	16-Dec-05	1.5	8.0	264	
	29-Mar-05	2.7	7.8	297	
	11-Apr-05	7.2	7.5	284	
	24-May-05	13.4	7.7	350	9.6
	27-Jun-05	21.4	7.5	452	8.5
	11-Jul-05	22.3	6.8	477	6.6
	22-Aug-05	18.5	8.4	431	7.8
	27-Sep-05	15.4	7.4	409	8.5
	24-Oct-05	8.4	7.9	475	11.6
	14-Nov-05	6.3	7.8	353	11.2
	12-Dec-05	1.4	8.5	324	12.3
	17-Jan-06	2.4	7.0	275	13.6
	21-Mar-06	3.5	8.5	348	
	18-Apr-06	10.2	8.4	341	
	23-May-06	10.1	8.1	419	
	20-Jun-06	18.9	7.8	387	
	11-Jul-06	20.4	7.8	369	
	23-Aug-06	17.2	7.3	409	
	20-Sep-06	14.3	7.4	414	
	19-Oct-06	10.8	7.3	413	
	27-Nov-06	6.0	8.1	470	
	17-Dec-06	4.7	7.9	512	
	21-Jan-07	1.8	7.7	504	13.6
	18-Mar-07	2.3	8.3	431	
	16-Apr-07	4.4	8.4	411	
	13-May-07	13.3	8.3	405	10.1
	17-Jun-07	21.1	8.1	472	7.0
	15-Jul-07	19.7	7.8	499	6.9
	19-Aug-07	18.1	7.8	520	6.4
	17-Sep-07	14.0	7.7	397	8.1
	18-Oct-07	12.8	7.8	400	8.3
	19-Nov-07	3.8	7.9	515	11.7
	21-Jan-08	2.8	7.5	423	12.7
	19-Feb-08	2.2	7.9	431	
	17-Mar-08	1.8	6.9	462	
	1-Apr-08	2.6	7.7	301	
	23-Apr-08	12.0	7.8	362	8.5
	6-May-08	9.6	6.7	411	10.6
	21-May-08	10.6	7.3	374	9.3
	17-Jun-08	16.4	7.6	406	6.9
	15-Jul-08	14.9	6.9	563	7.0
	18-Aug-08	21.2	7.3	456	4.1
	16-Sep-08	15.1	8.0	419	7.1
	21-Oct-08	7.7	7.9	424	8.6
	23-Nov-08	3.5	7.8	486	9.8
	14-Dec-08	2.6	7.6	365	7.6
	18-Jan-09		8.5		
	8-Feb-09	1.6	8.5	430	9.9
	15-Mar-09	4.5	8.8	379	
	12-Apr-09	8.7	8.4	407	
	17-May-09	16.0	8.2	349	9.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	14-Jun-09	17.0	7.7	802	8.5
	12-Jul-09	16.9	8.0	437	8.1
	9-Aug-09	19.7	5.7	424	6.9
	13-Sep-09	17.3	8.4	411	8.3
	11-Oct-09	7.9	7.2	457	
	15-Nov-09	4.6	7.4	439	
	13-Dec-09	1.4	7.7	443	12.9
	7-Feb-10	0.0	7.8	425	11.5
	14-Mar-10	3.6	7.9	424	13.7
	11-Apr-10	7.9	8.0	415	
	16-May-10	12.3	8.2	313	10.1
	13-Jun-10	17.1	8.1	359	11.2
	18-Jul-10	19.5	8.1	404	11.0
	15-Aug-10	19.8	8.1	421	7.7
	12-Sep-10	14.9	7.9	381	8.4
	17-Oct-10	8.7	7.9	320	10.3
	14-Nov-10	5.1	8.2	274	12.9
	19-Dec-10	1.7	8.4	244	11.8
	16-Jan-11	1.6	8.0	255	12.7
	13-Mar-11	2.4	8.3	253	12.8
	20-Mar-11	3.6	8.3	291	12.4
	17-Apr-11	4.7	8.3	264	13.7
	15-May-11	9.0	7.6	241	12.0
	12-Jun-11	14.9	8.1	303	4.4
	17-Jul-11	22.9	7.8	415	8.1
	14-Aug-11	18.5	8.2	285	7.3
	18-Sep-11	13.4	8.1	261	8.3
	16-Oct-11	10.2	8.0	300	9.8
	20-Nov-11	3.1	7.6	271	13.2
	18-Dec-11	2.9	8.2	218	12.6
	15-Jan-12	1.6	8.3	201	13.4
	19-Feb-12	1.6	8.1	226	13.7
	18-Mar-12	11.0	8.2	276	10.5
	15-Apr-12	9.2	8.5	301	10.3
	13-May-12	14.0	8.0	322	9.2
	17-Jun-12	20.8	8.1	419	12.6
	16-Jul-12	23.0	8.1	450	5.5
	14-Aug-12	18.6	8.0	279	7.0
	18-Sep-12	15.9	7.3	336	7.2
	17-Oct-12	8.7	6.7	264	7.6
	20-Nov-12	4.6	7.9	299	9.3
	18-Dec-12	4.0	7.4	634	11.1
	16-Jan-13	3.6	7.8	326	10.2
	20-Feb-13	1.8	7.9	258	14.6
	20-Mar-13	2.3	8.0	251	6.0
	16-Apr-13	5.8	7.9	259	9.7
	13-May-13	10.6	8.2	232	8.9
	19-Jun-13	16.4	8.2	344	8.1
	16-Jul-13	22.3	8.0	416	5.9
	21-Aug-13	19.5	8.2	378	6.0
	18-Sep-13	13.6	8.0	322	8.9
	16-Oct-13	11.3	8.3	365	5.7
	19-Nov-13	4.2	8.2	293	2.6
	16-Apr-14	3.2	8.1	274	10.4
	12-May-14	11.0	8.0	346	10.0
	17-Jun-14	17.9	8.1	366	10.6
	15-Jul-14	18.3	8.7	398	4.3
	19-Aug-14	16.0	8.4	412	5.7
	9-Sep-14	17.8	8.5	430	2.1
	23-Oct-14	8.2	8.6	381	8.3
	16-Dec-14	2.5	8.2	317	-
	22-Apr-15	7.6	8.1	328	12.2
	19-May-15	15.1	8.3	404	-
	15-Jun-15	17.7	8.0	387	7.5
	21-Jul-15	19.5	8.4	403	-
	11-Aug-15	19.0	8.1	416	7.9
	25-Aug-15	18.8	8.1	373	7.0
	8-Sep-15	21.6	7.8	436	5.6
	15-Oct-15	11.2	7.9	321	9.4
	18-Nov-15	5.6	8.0	330	11.5
	8-Dec-15	3.0	8.2	313	21.2
	19-Jan-16	1.1	8.1	270	15.8
	17-Feb-16	1.6	8.0	301	14.9
	15-Mar-16	5.1	8.0	273	13.6
	21-Apr-16	9.2	7.9	298	11.9
	18-May-16	10.9	8.4	339	11.3
	22-Jun-16	19.4	8.2	393	8.1
	20-Jul-16	20.6	8.4	420	7.7
	24-Aug-16	20.6	8.2	389	7.8
	19-Sep-16	18.3	7.9	382	7.7
	18-Oct-16	14.5	7.6	337	12.5
	15-Nov-16	6.6	7.9	464	11.5
	12-Dec-16	1.6	8.0	398	13.8
	24-Jan-17	2.5	8.0	295	13.7
	16-Feb-17	1.5	8.1	311	15.3
	21-Mar-17	4.2	8.4	333	12.1
	19-Apr-17	9.1	7.9	306	13.3
	16-May-17	16.4	8.8	367	9.6
	28-Jun-17	15.6	8.2	377	9.2
	19-Jul-17	18.9	7.9	428	7.8
	15-Aug-17	19.0	8.6	340	7.3
	18-Sep-17	17.6	8.1	378	7.8
	17-Oct-17	11.6	8.1	355	9.9
	14-Nov-17	3.4	8.3	325	9.4
	14-Dec-17	2.2	8.0	327	14.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
SW17A					
	22-May-03	11.0			
	23-Jun-03	12.7			
	10-Feb-04	2.3		295	11.3
	17-Mar-04	4.3		434	9.6
	19-Apr-04	10.8	8.2	266	
	19-May-04	11.0	8.2	341	
	24-Jun-04	11.2	8.2	338	
	29-Jul-04	11.9	8.1	332	10.7
	26-Aug-04	12.1	8.2	341	
	22-Sep-04	12.6	8.1	353	
	20-Oct-04	6.9	8.1	318	
	16-Nov-04	4.4	8.0	310	
	16-Dec-04	1.5	8.1	272	
	29-Mar-05	6.8	8.0	315	
	11-Apr-05	8.9	7.6	275	
	24-May-05	9.2	7.7	324	
	27-Jun-05	13.5	7.7	382	
	11-Jul-05	14.2	6.8	381	10.1
	22-Aug-05	12.7	8.6	360	
	27-Sep-05	11.8	7.7	350	10.7
	24-Oct-05	7.4	7.8	427	
	14-Nov-05	6.3	8.6	323	12.4
	12-Dec-05	0.2	8.6	295	13.6
	17-Jan-06	2.4	7.7	267	13.2
	22-Mar-06	5.5	8.7	264	
	18-Apr-06	10.9	8.4	365	
	23-May-06	10.0	8.3	424	
	20-Jun-06	12.2	8.3	422	
	11-Jul-06	13.9	8.3	409	
	23-Aug-06	12.8	8.1	419	
	20-Sep-06	11.2	8.1	391	
	19-Oct-06	9.9	8.1	432	
	27-Nov-06	7.4	8.2	450	11.9
	17-Dec-06	4.5	8.1	496	
	21-Jan-07	1.0	7.9	473	
	18-Mar-07	3.6	8.3	430	
	16-Apr-07	4.6	8.4	404	
	13-May-07	9.0	8.3	408	
	17-Jun-07	13.3	8.3	452	10.4
	15-Jul-07	13.5	8.1	451	9.8
	19-Aug-07	14.9	8.3	422	9.1
	17-Sep-07	10.9	8.0	418	10.0
	18-Oct-07	11.2	8.0	432	9.6
	19-Nov-07	3.6	8.1	473	
	10-Dec-07	2.9	8.1	429	12.9
	21-Jan-08	3.3	7.6	395	
	19-Feb-08	2.6	7.9	434	
	17-Mar-08	1.5	6.6	450	
	1-Apr-08	4.4	7.6	355	
	23-Apr-08	10.4	7.9	324	8.3
	6-May-08	7.2	6.8	407	
	21-May-08	7.1	7.3	386	10.6
	17-Jun-08	9.0	7.7	425	9.4
	15-Jul-08	11.2	7.0	454	8.4
	18-Aug-08	14.5	7.4	488	5.2
	16-Sep-08	10.2	8.2	331	8.4
	21-Oct-08	5.8	7.7	423	8.2
	23-Nov-08	4.7	7.8	458	9.6
	14-Dec-08	3.4	7.7	398	8.5
	18-Jan-09	1.9	8.6	445	11.3
	8-Feb-09	3.7	8.8	417	9.8
	15-Mar-09	5.9	8.8	366	
	12-Apr-09	10.9	8.4	396	
	17-May-09	16.3	8.3	338	
	14-Jun-09	12.4	7.7	808	
	12-Jul-09	10.5	8.4	441	
	9-Aug-09	12.9	6.1	443	10.3
	13-Sep-09	12.1	8.6	401	
	11-Oct-09	6.9	7.5	460	
	15-Nov-09	4.1	7.3	414	
	13-Dec-09	1.9	7.8	443	
	17-Jan-10	2.4	8.2	449	14.0
	7-Feb-10	1.3	8.3	459	11.3
	14-Mar-10	4.9	8.0	434	13.2
	11-Apr-10	6.3	8.0	405	
	16-May-10	11.0	8.3	320	10.9
	13-Jun-10	12.5	8.3	333	13.8
	18-Jul-10	12.8	8.2	351	12.0
	15-Aug-10	12.8	8.3	348	10.6
	12-Sep-10	11.0	8.2	333	10.5
	17-Oct-10	7.5	8.1	314	11.8
	14-Nov-10	5.6	8.3	276	9.1
	19-Dec-10	2.2	8.2	248	12.8
	16-Jan-11	3.3	8.4	263	12.7
	20-Feb-11	1.5	8.1	254	12.2
	13-Mar-11	4.0	8.2	262	11.9
	20-Mar-11	6.2	8.2	302	12.1
	17-Apr-11	6.6	8.4	255	12.4
	15-May-11	7.2	7.5	233	13.0
	12-Jun-11	10.2	8.3	271	8.2
	17-Jul-11	13.9	8.0	250	8.4
	14-Aug-11	13.1	8.5	245	10.3
	18-Sep-11	11.4	8.1	276	10.3
	16-Oct-11	8.7	8.2	320	10.7
	20-Nov-11	3.1	7.5	278	14.1
	18-Dec-11	3.3	8.4	226	11.5
	15-Jan-12	2.0	8.5	216	13.7
	19-Feb-12	3.5	8.1	240	13.8
	20-Mar-12	12.1	8.3	258	10.0
	15-Apr-12	5.9	8.6	280	12.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	13-May-12	10.6	8.3	311	11.5
	17-Jun-12	14.0	8.3	358	10.8
	16-Jul-12	16.0	8.7	381	7.3
	14-Aug-12	12.8	8.0	304	7.8
	18-Sep-12	11.8	7.2	340	9.8
	17-Oct-12	8.9	6.7	303	8.1
	20-Nov-12	6.7	7.9	317	9.4
	16-Dec-12	5.5	7.6	664	10.7
	16-Jan-13	3.0	8.1	318	11.9
	20-Feb-13	1.4	8.1	245	15.7
	20-Mar-13	3.3	8.2	246	6.6
	16-Apr-13	5.8	7.9	259	9.7
	13-May-13	9.0	8.4	277	6.4
	19-Jun-13	10.2	8.2	276	11.6
	16-Jul-13	13.8	8.0	360	9.5
	21-Aug-13	13.8	8.2	345	9.7
	18-Sep-13	9.7	7.9	314	11.9
	16-Oct-13	10.7	8.5	330	6.7
	19-Nov-13	3.9	7.9	298	2.4
	18-Dec-13	1.8	8.4	257	4.3
	16-Apr-14	4.0	8.0	237	10.5
	13-May-14	9.8	8.2	285	10.3
	17-Jun-14	11.5	8.3	312	13.3
	15-Jul-14	12.0	8.8	324	7.0
	19-Aug-14	11.0	8.5	358	8.5
	9-Sep-14	12.5	8.5	375	4.4
	23-Oct-14	6.9	8.0	375	8.1
	16-Dec-14	3.9	8.6	334	-
	20-Jan-15	0.8	7.7	171	0.1
	18-Mar-15	2.1	8.3	229	13.5
	22-Apr-15	6.7	8.2	302	12.7
	19-May-15	11.5	8.4	304	-
	15-Jun-15	12.0	8.1	365	9.8
	21-Jul-15	13.7	8.1	356	-
	11-Aug-15	13.0	8.2	372	10.2
	25-Aug-15	12.8	8.2	323	10.5
	8-Sep-15	14.6	8.0	370	8.7
	15-Oct-15	9.8	8.1	320	10.7
	18-Nov-15	7.8	8.1	365	12.8
	8-Dec-15	5.0	8.2	339	20.5
	19-Jan-16	2.0	8.1	272	15.4
	17-Feb-16	3.0	8.0	292	14.1
	15-Mar-16	6.6	8.1	282	12.8
	21-Apr-16	6.1	8.1	264	13.3
	18-May-16	7.9	8.4	334	12.7
	22-Jun-16	14.0	8.4	367	10.8
	20-Jul-16	15.1	8.5	368	10.6
	24-Aug-16	16.0	8.5	376	10.6
	19-Sep-16	15.1	8.2	384	9.8
	18-Oct-16	13.2	7.8	335	13.5
	15-Nov-16	7.2	8.2	326	12.5
	12-Dec-16	2.6	7.9	422	13.9
	24-Jan-17	4.1	8.3	320	13.0
	16-Feb-17	1.6	8.3	310	15.5
	21-Mar-17	7.1	8.4	353	11.7
	19-Apr-17	9.4	8.0	311	13.2
	16-May-17	12.6	8.8	332	10.8
	28-Jun-17	10.6	8.3	350	11.6
	19-Jul-17	11.2	8.1	363	11.4
	15-Aug-17	11.8	8.8	287	11.8
	18-Sep-17	13.1	8.2	368	10.9
	17-Oct-17	9.4	8.3	357	11.3
	14-Nov-17	5.8	8.3	349	8.7
	14-Dec-17	2.2	8.1	315	14.8
SW17B					
	20-Oct-04	8.1	7.6	313	
	11-Apr-05	5.9	7.4	264	
	24-May-05	10.0	7.3	331	10.7
	27-Jun-05	16.1	7.5	462	
	11-Jul-05	17.2	6.7	502	7.9
	22-Aug-05	15.8	8.4	509	8.0
	27-Sep-05	13.6	7.4	471	8.1
	24-Oct-05	8.9	7.6	480	11.1
	14-Nov-05	6.7	8.3	388	10.6
	17-Jan-06	2.1	7.4	258	13.1
	22-Mar-06	3.4	8.3	261	
	18-Apr-06	9.3	8.2	348	
	23-May-06	9.9	8.0	429	
	20-Jun-06	15.3	7.8	481	
	11-Jul-06	17.6	7.8	532	
	23-Aug-06	15.3	7.4	620	
	19-Oct-06	10.2	7.6	469	
	27-Nov-06	6.8	8.0	476	11.6
	17-Dec-06	4.1	7.9	497	
	16-Apr-07	3.3	8.3	392	13.1
	13-May-07	10.3	8.2	415	10.3
	17-Jun-07	17.7	8.1	524	7.9
	15-Jul-07	17.5	7.7	588	6.9
	19-Aug-07	17.2	7.9	635	6.8
	17-Sep-07	12.1	7.7	547	8.0
	18-Oct-07	12.2	7.7	534	8.1
	19-Nov-07	3.8	7.8	470	11.4
	1-Apr-08	2.0	7.5	326	13.8
	23-Apr-08	10.5	7.9	341	9.2
	6-May-08	7.5	6.6	404	11.2
	21-May-08	8.4	7.2	384	9.4
	17-Jun-08	11.9	8.0	460	8.5
	15-Jul-08	18.9	7.1	425	6.0
	18-Aug-08	17.4	7.3	615	4.5
	16-Sep-08	12.5	7.9	548	7.5
	21-Oct-08	6.4	7.9	449	8.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	23-Nov-08	4.7	7.7	492	11.2
	14-Dec-08	3.3	7.6	391	7.9
	15-Mar-09	3.7	8.8	356	
	12-Apr-09	8.2	8.8	374	
	17-May-09	15.8	8.1	179	9.1
	14-Jun-09	14.7	7.7	870	9.4
	12-Jul-09	13.6	8.1	513	9.1
	9-Aug-09	16.3	6.1	534	7.7
	13-Sep-09	14.6	8.2	532	9.4
	11-Oct-09	7.8	7.3	504	11.6
	15-Nov-09	3.6	7.4	430	
	14-Mar-10	2.9	7.9	426	13.8
	11-Apr-10	5.5	7.9	418	
	16-May-10	11.3	8.1	323	10.1
	13-Jun-10	13.9	8.0	364	12.3
	18-Jul-10	16.1	7.9	425	11.7
	15-Aug-10	16 .47	7.9	458	7.6
	12-Sep-10	13.3	7.7	442	7.8
	17-Oct-10	7.8	7.8	339	10.1
	14-Nov-10	5.5	8.1	290	13.0
	20-Mar-11	6.1	8.4	298	12.1
	17-Apr-11	4.1	8.2	245	13.3
	15-May-11	7.2	7.7	243	12.6
	12-Jun-11	11.4	8.0	293	5.8
	17-Jul-11	18.0	7.8	450	7.6
	14-Aug-11	16.4	8.2	338	9.5
	18-Sep-11	12.9	8.0	358	8.3
	16-Oct-11	9.9	8.0	364	9.1
	20-Nov-11	3.6	7.4	294	12.4
	18-Dec-11	3.3	8.4	221	11.9
	18-Mar-12	9.9	8.1	260	10.2
	15-Apr-12	6.4	8.6	277	11.6
	13-May-12	10.6	8.0	318	10.4
	17-Jun-12	16.3	8.1	430	10.6
	16-Jul-12	18.6	8.2	520	5.8
	14-Aug-12	15.6	8.1	667	7.0
	18-Sep-12	13.9	7.1	410	7.7
	17-Oct-12	9.2	6.5	324	7.5
	20-Nov-12	6.1	7.8	318	8.8
	18-Dec-12	5.0	7.4	655	10.2
	16-Jan-13	2.2	8.0	310	10.7
	16-Apr-13	5.5	8.0	242	9.9
	13-May-13	8.0	8.2	264	6.4
	19-Jun-13	11.1	8.1	334	10.4
	16-Jul-13	16.6	7.9	438	7.6
	21-Aug-13	16.2	8.0	440	7.6
	18-Sep-13	11.6	8.1	380	9.4
	16-Oct-13	12.2	8.6	328	5.8
	19-Nov-13	4.6	8.3	308	2.4
	16-Apr-14	0.9	8.2	233	10.2
	13-May-14	11.0	8.0	292	10.2
	17-Jun-14	14.7	8.0	365	11.2
	15-Jul-14	14.4	8.6	392	4.8
	23-Oct-14	7.5	7.6	408	8.1
	16-Dec-14	3.0	8.5	315	-
	22-Apr-15	5.9	8.1	310	13.2
	19-May-15	13.2	8.2	330	-
	15-Jun-15	14.3	7.9	411	8.5
	21-Jul-15	16.8	8.0	440	-
	11-Aug-15	16.1	7.9	473	8.3
	8-Sep-15	18.8	7.6	524	6.1
	15-Oct-15	10.7	7.6	372	8.7
	18-Nov-15	7.5	7.7	368	11.4
	8-Dec-15	4.0	7.9	332	19.7
	19-Jan-16	1.3	7.9	268	15.0
	17-Feb-16	1.8	7.8	296	14.0
	21-Apr-16	5.8	7.9	260	13.2
	18-May-16	8.3	8.3	335	11.6
	22-Jun-16	16.8	8.0	437	8.5
	20-Jul-16	17.1	8.1	447	10.0
	24-Aug-16	17.9	8.1	495	7.9
	19-Sep-16	15.7	7.7	481	8.2
	18-Oct-16	13.3	7.4	349	12.9
	15-Nov-16	7.4	7.8	356	10.8
	12-Dec-16	3.4	7.7	445	12.7
	24-Jan-17	3.4	8.0	308	12.5
	16-Feb-17	1.9	8.1	309	14.4
	21-Mar-17	4.4	8.2	318	12.3
	19-Apr-17	8.7	7.7	301	12.7
	16-May-17	13.6	8.6	340	9.7
	28-Jun-17	11.9	8.0	383	10.3
	18-Jul-17	14.5	7.8	432	8.9
	15-Aug-17	15.4	8.4	374	8.2
	18-Sep-17	14.3	7.8	447	8.0
	17-Oct-17	10.0	7.9	392	9.9
	14-Nov-17	5.6	8.1	357	8.2
SW18					
	22-May-03	15.0			
	23-Jun-03	15.7			
	20-Aug-03	16.4			
	22-Oct-03	5.7	7.2	485	
	10-Feb-04	0.9		289	
	16-Mar-04	1.0	8.0	399	12.9
	19-Apr-04	11.1	8.3	272	
	19-May-04	13.4	8.2	365	
	24-Jun-04	13.6	8.2	335	
	29-Jul-04	15.9	8.2	355	
	26-Aug-04	15.2	8.2	341	
	22-Sep-04	14.7	8.2	350	10.1
	20-Oct-04	6.7	8.1	321	
	16-Nov-04	3.7	8.0	312	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	11-Apr-05	8.4	7.6	272	
	24-May-05	10.8	7.5	339	
	27-Jun-05	17.5	8.0	413	
	11-Jul-05	18.8	7.1	401	8.8
	22-Aug-05	15.0	8.7	344	9.6
	27-Sep-06	13.0	7.7	374	10.1
	24-Oct-05	7.6	8.0	482	
	15-Nov-05	3.7	8.0	290	12.9
	17-Jan-06	0.2	7.7	234	
	20-Mar-06	3.4	8.1	275	
	18-Apr-06	12.1	8.5	346	
	23-May-06	10.7	8.3	427	
	20-Jun-06	14.7	7.9	417	
	11-Jul-06	17.3	8.3	391	
	23-Aug-06	15.9	8.1	376	
	20-Sep-06	11.9	8.1	370	
	19-Oct-06	10.3	8.3	463	
	27-Nov-06	7.0	8.2	461	11.9
	17-Dec-06	2.8	8.2	487	
	18-Mar-07	2.6	8.3	421	
	17-Apr-07	6.6	8.5	403	
	13-May-07	8.4	8.2	413	
	17-Jun-07	16.3	8.3	439	9.4
	15-Jul-07	17.7	8.2	426	8.8
	19-Aug-07	19.3	8.2	394	8.0
	17-Sep-07	13.4	8.0	404	9.3
	19-Oct-07	14.9	8.3	437	7.1
	21-Nov-07	4.3	8.6	478	12.3
	12-Dec-07	0.9	8.0	435	14.1
	21-Jan-08	1.1	7.4	406	
	19-Feb-08	0.6	7.8	411	
	17-Mar-08	2.5	8.0	430	
	2-Apr-08	1.4	7.7	356	
	23-Apr-08	14.3	7.8	334	8.8
	6-May-08	8.6	7.4	415	11.2
	21-May-08	12.8	7.6	387	9.2
	18-Jun-08	12.9	8.0	325	8.4
	15-Jul-08	15.6	7.5	447	6.7
	18-Aug-08	18.8	7.8	492	4.5
	17-Sep-08	12.3	8.5	484	6.7
	20-Oct-08	9.0	7.8	440	7.7
	23-Nov-08	3.5	8.6	483	9.8
	14-Dec-08	2.1	7.0	379	8.2
	8-Feb-09	2.3		339	9.4
	15-Mar-09	6.4	8.7	353	
	12-Apr-09	11.1	8.5	356	
	17-May-09	15.0	8.5	345	10.3
	14-Jun-09	12.6	7.9	814	
	12-Jul-09	12.2	8.5	437	
	9-Aug-09	16.3	9.3	420	9.4
	13-Sep-09	14.7	8.0	385	10.3
	11-Oct-09	7.2	7.3	492	
	15-Nov-09	4.0	7.4	433	
	13-Dec-09	2.2	7.9	490	12.4
	14-Mar-10	5.4	8.2	322	12.6
	11-Apr-10	10.9	7.8	419	12.7
	16-May-10	9.8	8.4	311	11.2
	13-Jun-10	14.0	8.3	347	12.9
	18-Jul-10	17.9	8.2	406	12.1
	15-Aug-10	15.5	8.3	370	10.2
	12-Sep-10	12.5	8.3	362	10.2
	17-Oct-10	7.6	8.2	340	12.1
	14-Nov-10	5.7	8.3	279	13.1
	19-Dec-10	1.9	8.3	249	14.1
	13-Mar-11	3.2	8.2	227	12.5
	20-Mar-11	3.5	8.2	279	13.0
	17-Apr-11	5.0	8.2	253	11.7
	20-Apr-11	3.6	8.2	197	10.7
	15-May-11	9.6	8.2	257	13.2
	12-Jun-11	12.1	8.4	284	11.7
	17-Jul-11	18.4	8.4	337	8.2
	14-Aug-11	16.1	8.4	251	9.5
	18-Sep-11	12.8	8.5	290	10.1
	16-Oct-11	9.4	8.2	330	9.8
	20-Nov-11	1.7	7.7	266	15.0
	18-Dec-11	3.0	8.4	210	13.3
	19-Feb-12	1.7	7.7	221	13.4
	18-Mar-12	14.1	8.3	284	9.9
	15-Apr-12	6.8	8.5	234	12.0
	13-May-12	12.8	8.3	325	10.7
	17-Jun-12	17.9	8.3	376	8.2
	16-Jul-12	20.7	8.4	400	6.9
	14-Aug-12	16.1	8.3	442	7.6
	18-Sep-12	14.0	7.7	356	9.2
	17-Oct-12	10.1	6.9	328	8.2
	20-Nov-12	6.6	7.8	315	9.6
	18-Dec-12	4.5	7.6	635	10.9
	16-Jan-13	1.8	8.2	301	10.9
	16-Apr-13	8.7	8.3	263	10.0
	13-May-13	10.7	8.4	290	9.2
	19-Jun-13	12.6	8.3	324	10.9
	16-Jul-13	17.6	8.2	383	8.5
	21-Aug-13	17.0	8.2	365	8.7
	18-Sep-13	11.0	8.4	321	11.2
	16-Oct-13	12.5	8.5	336	5.8
	19-Nov-13	3.8	8.6	293	2.8
	16-Apr-14	3.0	8.3	249	10.5
	13-May-14	12.2	8.0	309	11.0
	18-Jun-14	15.7	8.2	338	10.2
	15-Jul-14	-	7.8	325	7.9
	19-Aug-14	13.5	8.7	387	7.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	9-Sep-14	15.3	8.8	412	4.2
	23-Oct-14	8.0	8.3	416	6.9
	17-Dec-14	2.4	8.9	295	-
	22-Apr-15	7.1	8.2	320	13.0
	19-May-15	12.8	8.5	314	-
	15-Jun-15	14.8	8.2	405	9.4
	21-Jul-15	16.5	8.4	379	-
	11-Aug-15	15.9	8.2	393	8.7
	25-Aug-15	15.5	8.7	330	7.6
	8-Sep-15	18.9	8.0	383	7.2
	15-Oct-15	9.7	8.2	315	10.3
	18-Nov-15	8.0	8.2	373	13.0
	8-Dec-15	4.1	8.3	331	22.5
	19-Jan-16	-0.1	8.1	266	9.0
	17-Feb-16	1.3	8.2	289	15.0
	15-Mar-16	5.1	8.2	264	13.7
	21-Apr-16	7.0	8.2	276	13.2
	18-May-16	8.9	8.6	344	12.0
	22-Jun-16	14.7	8.5	364	10.3
	20-Jul-16	16.4	8.6	373	9.7
	24-Aug-16	18.0	8.6	373	8.9
	19-Sep-16	16.1	8.3	391	7.9
	18-Oct-16	15.1	8.4	411	12.7
	15-Nov-16	7.1	8.2	339	11.7
	12-Dec-16	1.2	8.2	439	14.9
	25-Jan-17	2.6	8.3	288	14.0
	16-Feb-17	-0.2	8.3	154	16.1
	21-Mar-17	5.5	8.4	330	12.3
	19-Apr-17	10.0	8.1	316	13.1
	16-May-17	10.6	8.4	441	9.9
	28-Jun-17	13.2	8.2	385	10.7
	19-Jul-17	14.8	8.3	404	10.3
	15-Aug-17	15.4	8.9	321	10.6
	18-Sep-17	15.9	8.3	394	9.7
	17-Oct-17	10.9	8.3	404	10.6
	14-Nov-17	5.1	8.4	351	8.8
	14-Dec-17	0.3	8.1	282	8.9
SW19					
	22-May-03	15.0			
	23-Jun-03	18.5			
	20-Aug-03	21.5			
	23-Oct-03	5.6	7.4	531	
	12-Feb-04	0.8		318	13.0
	16-Mar-04	0.0	8.1	434	13.4
	19-May-04	15.1	8.3	431	
	24-Jun-04	12.8	7.8	405	
	29-Jul-04	15.4	8.1	410	
	26-Aug-04	16.7	8.2	408	
	22-Sep-04	13.1	8.1	393	
	20-Oct-04	7.6	8.1	370	
	18-Nov-04	8.3	8.1	394	
	16-Dec-04	0.1	8.0	127	
	29-Mar-05	2.5	8.0	322	
	11-Apr-05	8.0	7.4	290	
	24-May-05	11.3	8.0	388	
	28-Jun-05	22.2	8.4	504	
	11-Jul-05	22.7	7.6	493	
	22-Aug-05	16.8	8.6	417	
	27-Sep-05	14.2	7.9	413	
	25-Oct-05	6.6	8.2	481	
	14-Nov-05	5.5	8.1	364	
	12-Dec-05	0.1	8.6	245	1.5
	16-Jan-06	0.1	8.2		1.6
	20-Mar-06	1.5	8.5	289	
	18-Apr-06	11.0	8.5	380	
	23-May-06	12.1	8.4	463	
	20-Jun-06	17.6	8.2	455	
	10-Jul-06	17.9	8.2	428	
	22-Aug-06	20.3	7.9	438	
	21-Sep-06	10.0	8.0	461	
	18-Oct-06	11.3	8.2	497	
	27-Nov-06	6.9	8.3	502	
	17-Dec-06	2.9	8.3	523	
	21-Jan-07	0.1	8.3	413	8.5
	18-Mar-07	0.1	8.3	461	
	16-Apr-07	3.3	8.4	452	
	13-May-07	16.0	8.6	444	9.9
	17-Jun-07	18.9	8.3	498	9.0
	15-Jul-07	16.5	8.0	488	9.6
	19-Aug-07	16.3	8.1	481	9.1
	17-Sep-07	12.1	8.1	503	9.5
	19-Oct-07	13.6	8.0	465	9.4
	21-Nov-07	4.0	8.0	552	12.1
	12-Dec-07	0.5	7.8	495	
	22-Jan-08	0.1	7.8	411	
	20-Feb-08	0.1	7.5	232	6.4
	19-Mar-08	1.0	7.8	484	
	2-Apr-08	2.7	7.7	365	
	24-Apr-08	9.1	7.2	383	9.1
	21-May-08	9.1	7.8	430	10.0
	18-Jun-08	13.5	8.3	478	8.8
	15-Jul-08	18.4	7.6	505	6.8
	19-Aug-08	16.5	8.0	542	5.6
	16-Sep-08	12.9	8.5	490	7.4
	22-Oct-08	5.0	8.0	493	7.8
	14-Dec-08	1.3	6.9	402	8.3
	15-Mar-09	6.0	8.8	361	
	12-Apr-09	6.9	7.7	433	
	17-May-09	12.5	8.6	407	
	14-Jun-09	14.0	8.4	701	
	12-Jul-09	13.7	8.5	492	10.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	9-Aug-09	16.4	8.3	478	9.3
	13-Sep-09	11.4	7.0	454	
	11-Oct-09	4.4	7.7	541	12.8
	15-Nov-09	3.2	7.7	483	
	13-Dec-09	0.1	7.7	560	13.1
	17-Jan-10	0.2	8.3	524	12.1
	14-Mar-10	6.0	7.9	412	12.8
	11-Apr-10	10.5	8.2	460	13.7
	16-May-10	13.6	8.5	370	10.3
	13-Jun-10	15.8	8.4	394	12.6
	18-Jul-10	20.2	8.4	455	11.5
	15-Aug-10	15.9	8.3	412	10.2
	12-Sep-10	11.9	8.3	369	10.6
	17-Oct-10	7.4	8.3	373	12.2
	14-Nov-10	5.4	8.3	308	13.4
	19-Dec-10	0.8	8.6	269	14.1
	20-Feb-11	-0.02	8.2	271	10.8
	13-Mar-11	2.63	8.4	271	14.9
	20-Mar-11	3.71	8.4	304	13.5
	17-Apr-11	3.78	8.2	251	10.5
	15-May-11	10.3	8.6	301	12.0
	12-Jun-11	13.8	8.6	338	9.8
	17-Jul-11	21.2	8.4	422	10.4
	14-Aug-11	17.7	8.7	297	9.6
	18-Sep-11	13.3	8.8	324	11.3
	16-Oct-11	9.8	8.2	385	11.0
	20-Nov-11	3.1	8.2	313	13.7
	18-Dec-11	1.3	8.9	223	13.5
	19-Feb-12	1.2	8.2	240	12.4
	18-Mar-12	13.9	8.4	307	7.8
	15-Apr-12	5.2	9.0	303	15.5
	13-May-12	11.6	8.3	345	12.4
	17-Jun-12	21.2	8.4	445	6.8
	16-Jul-12	20.7	8.4	440	8.2
	15-Aug-12	15.8	8.6	440	7.0
	19-Sep-12	10.7	7.9	370	10.9
	18-Oct-12	10.6	8.3	359	8.9
	21-Nov-12	5.5	8.5	286	4.5
	18-Dec-12	4.1	7.8	678	9.8
	15-Jan-13	1.4	8.1	314	12.4
	19-Mar-13	0.0	8.2	219	12.8
	16-Apr-13	5.8	8.1	262	10.2
	14-May-13	6.9	8.3	294	9.5
	19-Jun-13	11.3	8.5	323	12.3
	17-Jul-13	20.5	8.2	420	8.8
	20-Aug-13	18.2	8.4	421	10.5
	18-Sep-13	12.5	8.4	421	10.5
	17-Oct-13	11.4	8.5	378	6.0
	20-Nov-13	2.6	8.0	305	4.1
	16-Apr-14	4.4	8.4	282	10.3
	13-May-14	14.2	8.6	354	10.3
	18-Jun-14	15.5	8.3	354	10.7
	15-Jul-14	17.0	7.8	410	8.5
	19-Aug-14	13.8	8.6	445	5.4
	9-Sep-14	15.4	8.5	459	5.0
	21-Oct-14	10.3	8.3	451	6.0
	23-Apr-15	3.2	8.4	306	15.4
	20-May-15	12.2	8.4	334	14.0
	15-Jun-15	16.5	8.4	423	8,95
	21-Jul-15	19.0	8.4	470	-
	12-Aug-15	15.4	8.3	412	10.1
	9-Sep-15	18.7	8.0	409	5.2
	16-Oct-15	8.4	8.1	343	11.9
	19-Nov-15	9.1	8.1	433	13.7
	8-Dec-15	3.8	8.3	356	23.1
	19-Jan-16	-0.1	8.1	266	9.0
	21-Apr-16	9.0	8.4	12.98	312.0
	17-May-16	10.3	8.6	379	11.6
	22-Jun-16	17.3	8.5	413	9.8
	20-Jul-16	18.0	8.5	422	9.4
	25-Aug-16	18.9	8.3	434	11.1
	19-Sep-16	14.7	8.1	414	9.1
	17-Oct-16	12.2	7.7	457	10.6
	15-Nov-16	4.9	7.6	355	13.8
	12-Dec-16	0.1	7.7	311	16.9
	24-Jan-17	1.9	8.2	312	14.4
	17-Feb-17	-0.1	8.3	314	16.1
	22-Mar-17	-0.1	8.6	311	12.1
	19-Apr-17	10.4	7.8	344	12.7
	16-May-17	10.6	8.6	483	8.5
	28-Jun-17	13.1	8.4	415	10.7
	19-Jul-17	18.1	8.5	465	9.6
	16-Aug-17	17.3	8.5	445	9.5
	17-Sep-17	16.9	8.4	432	9.3
	18-Oct-17	10.4	8.5	408	8.0
	14-Nov-17	4.8	8.5	383	9.0
	14-Dec-17	-0.4	8.1	213	15.8
SW20					
	22-May-03	7.0			
	23-Jun-03	6.9			
	16-Mar-04	6.7	7.6	485	7.5
	21-Apr-04	6.4	7.4	261	
	19-May-04	6.8	7.4	334	
	24-Jun-04	7.0	7.4	331	11.4
	29-Jul-04	7.7	7.1	328	11.8
	26-Aug-04	7.8	7.3	337	
	22-Sep-04	8.9	7.5	358	9.7
	29-Mar-05	6.9	7.7	345	11.9
	11-Apr-05	7.1	7.1	254	
	24-May-05	8.2	7.3	346	
	28-Jun-05	13.4	8.3	421	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	11-Jul-05	12.8	6.8	406	
	22-Aug-05	12.2	7.6	240	10.2
	27-Sep-05	11.7	7.5	367	9.7
	12-Dec-05	2.5	8.2	328	10.6
	17-Jan-06	5.1	6.4	303	11.8
	20-Mar-06	6.9	8.2	323	
	18-Apr-06	9.5	7.9	371	
	23-May-06	10.2	7.8	460	
	20-Jun-06	11.2	7.7	455	
	11-Jul-06	12.1	7.7	438	
	23-Aug-06	11.0	7.5	444	
	20-Sep-06	11.0	7.6	414	
	18-Oct-06	10.1	7.6	441	
	27-Nov-06	7.6	7.7	489	10.9
	17-Dec-06	6.3	7.7	521	12.4
	21-Jan-07	5.7	7.9	498	12.2
	18-Feb-07	5.2	8.1	490	12.2
	18-Mar-07	5.7	8.0	423	12.3
	16-Apr-07	5.8	8.0	435	12.5
	13-May-07	9.8	8.0	446	
	17-Jun-07	12.0	8.1	494	9.7
	15-Jul-07	11.3	7.9	463	9.7
	19-Aug-07	13.4	8.7	469	
	21-Jan-08	5.7	7.5	380	
	19-Feb-08	5.0	7.7	451	12.0
	17-Mar-08	7.2	7.5	476	
	1-Apr-08	4.8	7.6	345	
	23-Apr-08	8.5	7.8	370	10.6
	20-May-08	10.2	6.9	255	
	17-Jun-08	7.9	8.2	462	9.8
	15-Jul-08	9.4	6.9	491	7.7
	18-Aug-08	11.2	5.7	293	5.8
	16-Sep-08	8.5	7.7	508	8.4
	20-Oct-08	8.0	7.5	414	8.5
	23-Nov-08	6.6		513	8.1
	14-Dec-08	5.5	7.2	403	8.3
	18-Jan-09	5.3	7.9	457	9.5
	8-Feb-09	6.9		443	7.9
	15-Mar-09	7.8	8.1	379	
	12-Apr-09	8.4	8.0	430	
	17-May-09	11.3	7.7	375	
	14-Jun-09	10.1	7.3	885	
	12-Jul-09	8.9	8.2	478	10.4
	9-Aug-09	9.6	8.4	481	10.9
	13-Sep-09	10.4	9.1	426	
	11-Oct-09	7.9	6.3	492	
	15-Nov-09	3.9	7.2	426	
	13-Dec-09	2.4	7.4	456	12.1
	17-Jan-10	3.8	7.7		12.1
	7-Feb-10	1.5	7.8	479	12.6
	14-Mar-10	7.8	7.8	423	11.9
	11-Apr-10	8.4	7.7	447	12.8
	16-May-10	9.3	8.0	335	11.4
	13-Jun-10	9.9	7.8	347	14.1
	18-Jul-10	9.8	7.7	351	11.7
	15-Aug-10	11.7	8.1	349	9.6
	12-Sep-10	8.7	7.7	300	11.0
	17-Oct-10	7.4	7.6	295	10.4
	14-Nov-10	6.8	7.6	287	
	19-Dec-10	5.4	8.1	261	11.3
	16-Jan-11	5.2	8.0	295	12.4
	20-Feb-11	5.5	7.9	284	12.0
	13-Mar-11	7.2	8.0	309	11.0
	17-Apr-11	6.8	8.0	282	12.0
	15-May-11	6.8	7.9	256	13.4
	12-Jun-11	8.4	7.7	240	7.8
	17-Jul-11	10.2	7.9	331	11.2
	14-Aug-11	12.3	8.0	256	11.6
	18-Sep-11	10.0	7.5	213	10.3
	16-Oct-11	7.7	8.0	324	11.4
	20-Nov-11	3.5	7.8	288	12.7
	18-Dec-11	0.3	6.8	261	10.9
	15-Jan-11	6.0	7.8	262	11.4
	19-Feb-12	5.1	7.1	272	12.7
	18-Mar-12	7.9	7.7	251	10.8
	15-Apr-12	6.0	8.7	306	10.8
	13-May-12	12.1	7.8	360	9.2
	17-Jun-12	12.3	7.7	383	8.4
	16-Jul-12	17.2	7.9	425	5.8
	14-Aug-12	12.8	7.6	451	6.6
	18-Sep-12	10.9	6.8	355	10.6
	17-Oct-12	8.0	6.8	456	7.4
	20-Nov-12	7.4	7.8	339	8.7
	18-Dec-12	6.6	7.5	728	10.1
	15-Jan-13	5.7	7.7	352	11.4
	20-Feb-13	4.1	8.1	282	13.4
	19-Mar-13	5.0	7.9	241	9.7
	16-Apr-13	6.5	7.1	265	9.7
	13-May-13	7.6	7.5	271	10.9
	18-Jun-13	9.7	7.8	334	8.4
	16-Jul-13	9.7	7.9	357	10.0
	21-Aug-13	11.0	8.0	356	10.1
	18-Sep-13	8.3	8.5	317	12.4
	16-Oct-13	9.2	8.7	337	7.0
	19-Nov-13	5.9	7.4	329	6.0
	17-Dec-13	5.0	7.8	316	4.0
	21-Jan-14	3.5	7.9	201	3.4
	20-Feb-14	5.0	7.7	314	7.8
	18-Mar-14	2.8	7.3	324	4.1
	15-Apr-14	5.9	7.7	267	11.9
	12-May-14	9.2	7.5	320	10.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	17-Jun-14	9.4	8.1	336	11.5
	14-Jul-14	10.8	8.9	403	2.0
	18-Aug-14	10.9	8.4	192	6.6
	8-Sep-14	10.4	8.8	398	8.9
	23-Oct-14	7.9	7.9	410	4.6
	16-Dec-14	5.9	8.2	383	-
	20-Jan-15	4.4	6.9	255	1.2
	18-Mar-15	5.3	8.3	195	12.1
	21-Apr-15	6.8	7.7	260	11.8
	19-May-15	9.6	8.0	321	15.6
	15-Jun-15	10.6	7.8	387	10.0
	21-Jul-15	11.1	8.0	376	-
	11-Aug-15	12.4	8.0	404	10.3
	8-Sep-15	11.6	7.8	372	11.4
	15-Oct-15	8.4	7.4	323	7.1
	18-Nov-15	8.0	7.9	383	11.8
	8-Dec-15	5.8	8.0	370	16.3
	19-Jan-16	1.8	7.9	287	15.1
	17-Feb-16	4.5	7.7	344	13.6
	15-Mar-16	7.1	7.5	284	12.9
	20-Apr-16	7.0	7.4	300	12.9
	17-May-16	9.7	7.9	393	11.9
	22-Jun-16	9.3	7.9	357	11.1
	20-Jul-16	10.3	8.0	372	11.0
	24-Aug-16	12.8	8.3	379	11.1
	19-Sep-16	13.0	8.2	388	9.8
	17-Oct-16	13.7	7.5	353	5.9
	15-Nov-16	6.9	7.9	500	11.4
	12-Dec-16	0.0	7.8	442	15.5
	24-Jan-17	6.2	7.8	328	12.1
	16-Feb-17	3.7	8.1	357	13.5
	21-Mar-17	7.0	7.9	388	12.1
	19-Apr-17	8.4	7.6	344	14.2
	16-May-17	9.9	8.4	349	12.5
	28-Jun-17	8.4	7.7	309	11.5
	18-Jul-17	9.4	8.1	339	11.6
	15-Aug-17	9.6	8.3	309	11.8
	17-Sep-17	9.9	7.8	379	10.3
	17-Oct-17	8.8	8.0	377	10.3
	14-Nov-17	6.8	8.0	391	8.0
	14-Dec-17	4.7	7.9	367	12.5
SW21					
	11-Feb-04	0.3	8.5	283	10.3
	17-Mar-04	0.2	7.5	286	8.1
	21-Apr-04	10.8	8.0	310	
	19-May-04	17.5	8.1	395	
	24-Jun-04	18.9	8.1	419	
	29-Jul-04	23.1	8.0	418	8.2
	26-Aug-04	18.4	7.9	411	
	22-Sep-04	20.5	7.6	417	8.7
	20-Oct-04	9.2	7.9	321	10.8
	18-Nov-04	6.1	8.0	317	
	29-Mar-05	6.9	7.7	345	11.9
	11-Apr-05	7.1	7.1	264	
	26-May-05	19.6	8.2	418	
	28-Jun-05	25.9	8.4	432	8.0
	12-Jul-05	24.7	7.9	471	6.9
	23-Aug-05	19.9	7.3	342	8.5
	28-Sep-05	16.6	7.7	344	8.9
	25-Oct-05	8.6	8.0	319	11.6
	15-Nov-05	6.3	8.0	298	11.9
	13-Dec-05	0.5	7.6	185	12.7
	17-Jan-06	1.6	6.8	245	12.7
	22-Mar-06	1.4	8.0	247	
	19-Apr-06	13.5	8.2	388	
	23-May-06	12.4	8.1	405	
	20-Jun-06	21.8	8.1	399	
	11-Jul-06	23.3	8.1	373	
	23-Aug-06	21.3	7.9	375	
	20-Sep-06	16.3	8.0	350	
	19-Oct-06	10.0	8.0	368	
	23-Nov-06	2.4	8.3	457	13.6
	17-Dec-06	3.0	7.7	515	
	16-Apr-07	4.4	8.3	435	
	13-May-07	15.0	8.5	383	
	17-Jun-07	24.4	8.3	415	
	15-Jul-07	22.0	8.0	418	8.0
	19-Aug-07	20.1	8.0	385	8.6
	18-Oct-07	10.3	7.9	365	8.7
	21-Nov-07	4.5	8.2	418	11.7
	9-Dec-07	1.5	7.2	393	12.5
	21-Jan-08	1.3	7.5	390	
	19-Feb-08	1.6	7.7	425	12.7
	17-Mar-08	1.1	7.4	444	
	1-Apr-08	2.0	7.4	326	
	23-Apr-08	16.6	7.9	394	8.2
	21-May-08	14.0	7.9	357	9.3
	17-Jun-08	19.6	7.9	336	6.7
	15-Jul-08	22.7	7.4	309	5.7
	19-Aug-08	22.1	8.1	325	4.2
	16-Sep-08	10.5	8.7	272	6.5
	21-Oct-08	10.6	8.0	332	7.6
	23-Nov-08	2.2		462	9.6
	14-Dec-08	1.8	7.3	394	9.7
	18-Jan-09	0.2	7.9	460	12.6
	8-Feb-09	1.0	8.9	429	9.0
	15-Mar-09	3.9	8.1	375	
	12-Apr-09	9.8	8.5	433	
	17-May-09	17.0	8.2	311	
	14-Jun-09	19.3	7.9	621	
	12-Jul-09	21.2	7.8	362	7.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	9-Aug-09	20.1	6.8	361	8.8
	13-Sep-09	20.5	8.0	389	9.0
	11-Oct-09	8.5	8.5	342	11.2
	15-Nov-09	6.6	7.4	369	
	13-Dec-09	0.4	7.5	463	12.3
	7-Feb-10	0.7	7.4	502	10.9
	14-Mar-10	4.3	7.4	305	11.5
	11-Apr-10	10.6	7.9	459	14.1
	16-May-10	14.5	8.0	345	8.9
	13-Jun-10	20.7	8.0	394	10.1
	18-Jul-10	24.2	8.1	401	10.1
	12-Sep-10	18.0	8.2	362	7.5
	17-Oct-10	11.4	8.0	302	10.3
	14-Nov-10	6.8	8.1	281	12.6
	20-Feb-11	0.8	8.0	262	11.8
	13-Mar-11	1.1	8.1	233	10.9
	17-Apr-11	6.5	8.2	303	12.2
	15-May-11	12.2	8.0	283	12.1
	12-Jun-11	20.8	8.3	332	9.8
	16-Oct-11	12.1	8.2	230	9.3
	18-Dec-11	3.7	8.7	230	10.7
	18-Mar-12	15.6	8.0	304	9.2
	15-Apr-12	12.0	8.6	319	10.9
	13-May-12	17.6	8.2	347	8.8
	14-Aug-12	21.5	8.4	459	6.2
	18-Sep-12	17.8	7.9	322	7.4
	17-Oct-12	10.8	7.0	254	8.2
	20-Nov-12	5.7	8.0	316	9.4
	18-Dec-12	4.3	7.2	680	9.0
	15-Jan-13	3.5	7.4	345	9.5
	16-Apr-13	7.2	7.8	299	9.9
	13-May-13	14.5	8.0	339	5.2
	19-Jun-13	22.5	8.2	409	7.2
	16-Jul-13	28.2	8.1	444	4.3
	16-Oct-13	14.9	8.7	331	4.8
	19-Nov-13	5.3	8.7	301	2.0
	16-Apr-14	5.9	7.7	194	10.6
	13-May-14	16.0	7.9	312	9.1
	16-Dec-14	2.0	9.4	313	-
	22-Apr-15	10.2	8.0	406	11.6
	19-May-15	17.1	8.2	346	13.7
	15-Jun-15	20.5	8.0	393	7.4
	21-Jul-15	23.2	8.4	422	7.6
	11-Aug-15	21.1	7.6	396	6.9
	18-Nov-15	6.7	7.9	248	13.2
	8-Dec-15	3.5	7.4	289	13.9
	19-Jan-16	1.4	7.5	270	11.9
	17-Feb-16	1.2	7.2	3.15	11.3
	15-Mar-16	6.2	7.5	334	11.4
	21-Apr-16	11.3	7.9	345	11.5
	18-May-16	13.7	8.3	382	10.8
	21-Jul-16	23.9	8.3	288	8.5
	24-Aug-16	24.7	8.1	326	8.9
	19-Sep-16	22.0	8.2	330	8.0
	18-Oct-16	15.3	8.2	289	12.7
	16-Nov-16	6.9	7.9	264	11.3
	12-Dec-16	1.2	8.1	430	15.8
	25-Jan-17	2.1	7.5	315	10.7
	17-Feb-17	0.6	7.9	303	12.5
	22-Mar-17	4.3	8.1	350	12.1
	19-Apr-17	9.7	7.1	335	14.6
	16-May-17	20.7	8.7	427	8.7
	28-Jun-17	21.2	8.2	429	9.4
	19-Jul-17	24.0	8.1	428	7.4
	16-Aug-17	20.6	8.1	351	8.8
	19-Sep-17	19.4	8.1	343	8.0
	18-Oct-17	12.5	8.0	341	9.0
	15-Nov-17	3.8	8.1	327	8.1
	14-Dec-17	1.1	8.2	294	10.4
SW21A					
	19-May-04	15.7	8.0	378	
	24-Jun-04	17.2	8.1	384	
	29-Jul-04	22.7	8.0	416	8.2
	26-Aug-04	15.7	8.0	377	
	20-Oct-04	6.6	8.0	301	12.0
	18-Nov-04	7.9	7.9	332	11.2
	16-Dec-04	0.2	7.9	243	
	29-Mar-05	2.1	7.7	224	
	11-Apr-05	9.9	7.4	328	11.1
	26-May-05	22.0	8.2	429	8.8
	28-Jun-05	26.2	8.2	496	
	12-Jul-05	18.2	7.7	423	8.3
	23-Aug-05	13.6	7.4	363	10.1
	28-Sep-05	11.9	7.7	346	10.2
	25-Oct-05	6.2	7.9	392	
	15-Nov-05	3.9	8.0	280	12.5
	13-Dec-05	0.3	7.9	278	13.0
	17-Jan-06	0.3	6.4	219	13.8
	22-Mar-06	0.4	8.2	255	
	19-Apr-06	17.9	8.3	358	
	23-May-06	15.6	8.3	403	
	20-Jun-06	17.1	8.4	405	
	11-Jul-06	19.4	8.1	390	
	23-Aug-06	16.9	7.9	390	
	20-Sep-06	11.3	8.1	362	
	19-Oct-06	9.7	8.0	396	
	23-Nov-06	1.9	8.2	430	13.6
	17-Dec-06	1.6	8.0	497	
	16-Apr-07	2.4	8.3	420	13.6
	13-May-07	15.2	8.5	387	
	17-Jun-07	20.8	8.3	426	8.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Jul-07	19.1	8.0	419	8.7
	19-Aug-07	16.7	7.8	345	9.3
	18-Oct-07	12.8	7.9	396	9.0
	21-Nov-07	3.6	8.0	423	11.2
	9-Dec-07	0.9	7.9	395	13.0
	21-Oct-08	5.0	8.3	380	
	23-Nov-08	1.3		481	9.0
	14-Dec-08	0.3	7.6	379	9.2
	15-Mar-09	6.4	8.1	369	
	12-Apr-09	11.5	8.4	401	
	17-May-09	21.5	8.3	308	
	13-Sep-09	16.6	7.9	358	
	11-Oct-09	5.2	8.4	413	12.4
	15-Nov-09	5.6	7.6	334	
	14-Mar-10	7.0	7.4	284	11.1
	11-Apr-10	12.6	8.0	434	12.5
	16-May-10	14.3	8.1	356	9.8
	12-Sep-10	14.0	8.1	322	8.7
	14-Nov-10	6.1	8.1	268	12.0
	17-Apr-11	8.4	8.1	343	10.7
	15-May-11	9.3	8.0	267	12.3
	12-Jun-11	18.0	8.3	319	8.3
	16-Oct-11	9.4	8.0	304	9.0
	18-Dec-11	1.7	8.6	222	11.9
	18-Mar-12	18.1	7.9	351	7.9
	15-Apr-12	9.4	8.7	272	10.7
	13-May-12	19.5	8.0	368	7.3
	17-Oct-12	9.4	7.0	296	8.0
	20-Nov-12	5.6	7.9	323	8.9
	18-Dec-12	3.3	7.2	617	8.8
	15-Jan-13	0.7	7.8	306	11.0
	16-Apr-13	8.6	7.9	227	8.7
	16-Apr-14	3.2	7.2	187	10.5
	13-May-14	15.6	7.9	366	8.1
	16-Dec-14	0.0	9.7	283	-
	22-Apr-15	8.2	7.8	381	10.1
	15-Mar-16	6.8	7.7	296	10.7
	21-Apr-16	9.0	7.9	370	8.5
	21-Jul-16	17.9	7.8	401	7.0
	24-Aug-16	19.5	7.9	362	6.7
	19-Sep-16	17.8	8.0	381	7.0
	18-Oct-16	14.8	8.0	380	10.6
	16-Nov-16	6.7	7.9	301	10.3
	12-Dec-16	0.7	8.3	465	14.5
	25-Jan-17	1.8	7.8	298	11.5
	17-Feb-17	0.2	7.8	271	13.7
	22-Mar-17	0.0	8.0	383	11.3
	19-Apr-17	6.8	6.7	326	11.8
	16-May-17	20.7	8.7	404	6.9
	28-Jun-17	16.7	7.8	401	7.3
	19-Jul-17	18.4	7.7	408	6.9
	16-Aug-17	15.4	7.9	290	7.6
	19-Sep-17	15.3	7.9	374	7.7
	18-Oct-17	9.4	8.1	333	10.4
	15-Nov-17	3.7	8.2	307	8.4
	14-Dec-17	-0.3	8.3	265	11.1
SW21B					
	19-May-04	9.6	8.2	318	
	24-Jun-04	10.5	8.2	330	
	29-Jul-04	11.4	8.1	284	
	26-Aug-04	10.3	8.1	322	
	23-Sep-04	11.0	8.1	335	
	20-Oct-04	7.5	8.1	307	11.9
	18-Nov-04	6.6	8.0	309	11.8
	29-Mar-05	2.1	7.7	224	
	11-Apr-05	2.3	7.0	231	13.6
	26-May-05	10.0	7.6	322	
	12-Jul-05	12.1	7.6	343	10.4
	23-Aug-05	11.2	7.6	341	
	28-Sep-06	10.5	7.8	330	10.9
	25-Oct-05	7.2	8.2	399	
	15-Nov-05	3.9	8.0	280	12.5
	13-Dec-05	2.6	8.3	296	12.6
	17-Jan-06	3.2	7.0	244	12.9
	19-Apr-06	9.2	8.3	340	
	23-May-06	9.4	8.3	395	
	20-Jun-06	12.1	8.2	401	
	11-Jul-06	12.9	8.2	385	
	23-Aug-06	12.6	8.0	400	
	20-Sep-06	10.7	8.0	393	
	19-Oct-06	8.8	8.0	399	
	23-Dec-06	4.9	8.4	417	
	17-Dec-06	3.7	8.2	432	
	21-Jan-07	2.7	8.1	419	
	16-Apr-07	3.7	8.4	396	13.0
	13-May-07	9.1	8.4	384	
	17-Jun-07	12.0	8.3	430	10.6
	15-Jul-07	11.6	8.2	430	10.5
	19-Aug-07	11.3	7.9	422	10.0
	17-Sep-07	10.1	8.0	401	10.4
	18-Oct-07	10.0	7.9	404	9.2
	21-Nov-07	5.2	8.0	425	10.9
	9-Dec-07	3.9	8.1	392	11.8
	21-Jan-08	2.6	7.8	378	12.4
	19-Feb-08	2.9	8.1	399	
	23-Apr-08	8.5	7.9	343	10.0
	21-May-08	8.0	7.9	365	9.8
	17-Jun-08	11.7	7.9	401	8.6
	15-Jul-08	12.8	7.5	432	7.6
	19-Aug-08	14.5	8.1	466	5.3
	16-Sep-08	14.3	8.4	419	6.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	21-Oct-08	9.1	7.9	309	8.8
	23-Nov-08	4.7		427	8.4
	14-Dec-08	3.4	7.4	350	8.2
	12-Apr-09	2.9	8.7	375	
	17-May-09	12.0	8.3	331	10.1
	14-Jun-09	12.0	7.4	773	10.5
	12-Jul-09	13.2	8.5	417	9.6
	9-Aug-09	12.4	8.3	435	
	13-Sep-09	11.3	7.7	387	
	11-Oct-09	7.1	8.6	429	
	15-Nov-09	5.9	7.6	362	
	11-Apr-10	6.2	8.2	402	
	16-May-10	9.3	8.2	284	10.6
	12-Sep-10	11.5	8.2	340	10.3
	17-Oct-10	8.8	8.0	294	10.9
	14-Nov-10	6.1	8.3	254	12.1
	17-Apr-11	2.9	8.3	186	15.8
	15-May-11	7.7	8.1	240	12.8
	12-Jun-11	10.3	8.4	257	12.3
	17-Jul-11	14.2	8.3	328	10.9
	14-Aug-11	14.2	8.5	245	10.1
	18-Sep-11	11.1	8.6	272	10.0
	16-Oct-11	10.3	8.0	314	10.5
	20-Nov-11	5.2	8.1	270	13.5
	18-Mar-12	7.8	8.1	251	11.7
	15-Apr-12	7.6	8.7	281	10.1
	13-May-12	10.7	8.2	294	10.1
	17-Jun-12	15.1	8.4	290	7.4
	16-Jul-12	16.0	8.3	363	7.1
	14-Aug-12	16.2	8.4	478	6.9
	18-Sep-12	12.9	7.9	342	9.4
	17-Oct-12	8.7	7.0	280	9.0
	20-Nov-12	5.5	7.8	284	9.2
	18-Dec-12	3.8	7.6	560	9.4
	13-May-13	7.2	8.2	259	6.0
	19-Jun-13	11.1	8.7	299	11.6
	16-Jul-13	15.8	8.2	360	9.0
	20-Aug-13	14.3	8.3	332	9.5
	18-Sep-13	11.6	8.0	310	11.1
	16-Oct-13	11.0	8.6	304	5.5
	13-May-14	13.7	8.2	144	10.6
	17-Jun-14	14.2	8.2	322	10.0
	15-Jul-14	12.3	11.9	260	10.9
	19-Aug-14	12.7	8.8	372	5.8
	22-Oct-14	9.5	8.3	376	6.9
	22-Apr-15	4.0	7.9	263	11.0
	11-Aug-15	14.8	8.0	361	8.6
	8-Sep-15	17.4	7.8	380	7.0
	15-Oct-15	11.8	8.0	320	9.4
	18-Nov-15	8.3	7.7	334	11.2
	8-Dec-15	5.3	7.5	310	12.0
	18-May-16	8.0	8.3	324	11.4
	23-Jun-16	14.0	8.2	347	9.6
	21-Jul-16	12.3	8.5	345	11.2
	24-Aug-16	13.0	8.3	342	10.9
	19-Sep-16	12.3	8.3	341	10.9
	18-Oct-16	11.4	8.2	341	13.6
	16-Nov-16	7.1	8.1	307	11.3
	12-Dec-16	3.7	8.7	446	15.2
	25-Jan-17	4.0	8.3	298	12.3
	22-Mar-17	1.9	8.3	296	12.5
	19-Apr-17	6.6	7.4	280	13.9
	16-May-17	10.4	8.4	304	10.7
	28-Jun-17	10.3	8.3	322	11.4
	19-Jul-17	11.9	8.2	345	11.1
	16-Aug-17	11.6	8.2	310	10.9
	19-Sep-17	11.6	8.1	341	10.6
	18-Oct-17	9.1	8.3	323	11.2
	15-Nov-17	5.3	8.4	309	7.6
	14-Dec-17	3.0	8.5	283	9.4
SW21C					
	11-Feb-04	3.7	8.2	291	8.5
	17-Mar-04	4.0		409	9.4
	21-Apr-04	7.7	8.2	246	
	19-May-04	9.5	8.2	316	
	24-Jun-04	9.9	8.2	320	
	29-Jul-04	10.5	8.1	312	
	26-Aug-04	9.8	8.2	318	
	22-Sep-04	10.3	8.0	329	10.8
	20-Oct-04	7.3	8.1	305	11.9
	18-Nov-04	7.4	8.0	317	11.6
	29-Mar-05	5.4	8.1	281	
	11-Apr-05	5.8	7.4	251	
	26-May-05	10.0	8.0	240	
	28-Jun-05	12.0	8.3	327	
	12-Jul-05	11.2	7.6	345	10.8
	23-Aug-05	10.7	7.8	335	
	28-Sep-05	9.9	8.0	326	11.0
	25-Oct-05	7.1	8.2	397	
	15-Nov-05	5.7	8.3	272	12.3
	13-Dec-05	2.5	8.7	295	12.2
	17-Jan-06	3.6	7.4	246	13.0
	22-Mar-06	5.0	8.6	262	
	19-Apr-06	9.2	8.4	339	
	23-May-06	9.4	8.3	397	
	20-Jun-06	11.2	8.3	399	
	11-Jul-06	12.4	8.3	389	
	23-Aug-06	12.0	8.1	400	
	20-Sep-06	10.0	8.2	394	
	19-Oct-06	8.4	8.1	396	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	23-Nov-06	5.3	8.5	313	12.7
	17-Dec-06	4.6	8.2	427	
	21-Jan-07	3.0	8.5	420	
	18-Mar-07	4.7	8.3	377	
	16-Apr-07	5.2	8.4	396	
	13-May-07	8.9	8.4	383	
	17-Jun-07	11.6	8.4	428	
	15-Jul-07	11.0	8.1	431	
	19-Aug-07	10.6	7.9	425	10.4
	17-Sep-07	9.8	8.2	401	10.9
	18-Oct-07	9.9	8.0	404	9.6
	21-Nov-07	5.5	8.1	430	11.0
	9-Dec-07	4.6	8.1	394	11.8
	21-Jan-08	3.9	7.8	381	12.4
	19-Feb-08	4.2	8.0	400	
	17-Mar-08	4.1	7.7	409	
	1-Apr-08	3.9	7.7	314	
	23-Apr-08	8.8	8.0	343	10.4
	21-May-08	7.8	7.8	356	10.3
	17-Jun-08	9.0	7.8	400	
	15-Jul-08	10.2	7.3	430	9.6
	19-Aug-08	9.9	7.9	463	6.4
	16-Sep-08	9.8	8.5	428	8.0
	21-Oct-08	6.4	8.2	369	7.7
	23-Nov-08	4.2	8.5	427	8.2
	14-Dec-08	4.8	7.2	350	7.0
	18-Jan-09	3.7	8.6	402	10.3
	8-Feb-09	4.7		333	8.6
	15-Mar-09	5.8	8.6	265	
	12-Apr-09	6.9	8.6	383	
	17-May-09	13.5	8.2	325	
	14-Jun-09	9.4	7.4	764	
	12-Jul-09	9.6	8.2	409	
	9-Aug-09	11.4	8.1	410	10.4
	13-Sep-09	10.7	7.6	379	10.6
	11-Oct-09	6.2	8.2	431	
	15-Nov-09	5.7	7.7	375	
	13-Dec-09	2.9	7.9	420	12.3
	17-Jan-10	3.9	8.5	397	12.1
	7-Feb-10	3.0	8.0	408	12.3
	14-Mar-10	5.1	7.8	393	12.1
	11-Apr-10	6.4	7.9	403	
	16-May-10	8.8	8.3	274	11.3
	13-Jun-10	9.6	8.3	280	11.9
	18-Jul-10	11.4	8.2	299	14.1
	15-Aug-10	10.9	8.4	282	11.0
	12-Sep-10	9.3	8.3	229	10.9
	17-Oct-10	7.7	8.1	286	10.7
	14-Nov-10	6.4	8.1	256	11.8
	19-Dec-10	3.7	8.3	223	12.8
	16-Jan-11	4.6	8.6	165	11.9
	20-Feb-11	3.7	8.1	240	12.1
	13-Mar-11	4.9	8.3	239	11.3
	17-Apr-11	5.7	8.3	266	12.3
	15-May-11	7.3	7.9	238	12.3
	12-Jun-11	9.7	8.3	255	12.4
	17-Jul-11	11.3	8.2	295	9.0
	14-Aug-11	11.3	8.6	218	10.4
	18-Sep-11	9.7	8.5	261	10.4
	16-Oct-11	8.3	8.1	288	10.2
	20-Nov-11	5.0	7.7	183	12.4
	20-Dec-11	4.5	8.3	199	11.6
	15-Jan-12	3.7	8.4	212	11.8
	19-Feb-12	4.4	8.0	213	12.8
	18-Mar-12	8.1	8.0	213	12.8
	15-Apr-12	6.4	8.8	268	12.0
	13-May-12	9.0	8.2	265	7.5
	17-Jun-12	11.6	8.3	322	11.8
	16-Jul-12	13.0	8.3	333	7.3
	14-Aug-12	11.0	8.1	456	7.6
	18-Sep-12	10.2	7.5	311	10.2
	17-Oct-12	8.6	6.7	217	8.2
	20-Nov-12	6.8	7.8	293	9.2
	18-Dec-12	5.7	7.7	609	9.5
	16-Jan-13	4.3	7.9	300	10.8
	20-Mar-13	4.1	8.4	238	7.7
	16-Apr-13	6.4	8.1	238	9.9
	13-May-13	7.6	8.1	260	6.7
	19-Jun-13	9.3	8.1	273	11.6
	16-Jul-13	11.8	8.1	324	10.1
	21-Aug-13	11.3	8.2	305	10.4
	18-Sep-13	9.0	7.9	291	12.0
	16-Oct-13	9.6	8.4	294	6.6
	19-Nov-13	5.4	8.5	270	2.5
	16-Apr-14	5.1	8.2	263	10.6
	13-May-14	8.8	8.1	265	10.5
	17-Jun-14	10.1	8.3	298	12.0
	15-Jul-14	10.9	7.7	330	8.7
	19-Aug-14	10.4	8.6	353	8.3
	9-Sep-14	10.8	8.8	356	4.3
	22-Oct-14	7.6	8.2	353	6.8
	16-Dec-14	4.9	9.3	313	-
	20-Jan-15	1.6	7.7	143	1.2
	18-Mar-15	2.8	8.4	214	13.8
	22-Apr-15	6.0	8.0	304	14.5
	19-May-15	8.8	8.3	267	-
	15-Jun-15	10.0	8.1	325	10.4
	21-Jul-15	10.9	8.1	323	-
	11-Aug-15	10.7	8.3	339	10.6
	25-Aug-15	10.7	8.3	297	10.9
	8-Sep-15	12.1	7.4	337	10.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Oct-15	8.7	8.1	297	10.0
	18-Nov-15	7.5	8.1	332	11.1
	8-Dec-15	5.7	7.9	316	12.9
	19-Jan-16	2.1	8.2	249	13.8
	17-Feb-16	3.6	8.0	288	13.7
	15-Mar-16	6.2	7.9	275	12.4
	21-Apr-16	7.3	8.1	283	13.4
	18-May-16	7.9	8.5	328	12.3
	23-Jun-16	9.5	8.5	316	11.6
	5-Jul-16	10.9	8.4	324	16.6
	21-Jul-16	11.9	8.5	342	10.5
	9-Aug-16	11.6	8.4	426	13.1
	24-Aug-16	12.2	8.4	336	11.1
	19-Sep-16	11.4	8.4	334	10.9
	18-Oct-16	11.7	8.3	340	13.6
	16-Nov-16	7.3	8.2	308	10.7
	12-Dec-12	3.3	8.4	442	14.7
	25-Jan-17	4.8	8.3	296	11.7
	17-Feb-17	3.3	8.3	307	14.5
	22-Mar-17	2.6	8.5	304	12.2
	19-Apr-17	6.3	7.4	270	13.2
	16-May-17	10.8	8.5	197	10.8
	28-Jun-17	9.8	8.3	318	11.5
	7-Jul-17	10.9	8.2	288	11.6
	19-Jul-17	10.9	8.2	336	11.1
	2-Aug-17	10.5	8.0	311	12.0
	16-Aug-17	10.3	8.3	330	11.1
	19-Sep-17	10.4	8.2	326	11.0
	18-Oct-17	8.6	8.3	320	11.4
	15-Nov-17	5.5	8.4	311	12.9
	14-Dec-17	3.0	8.4	281	12.2
SW21D					
	21-Apr-04	9.7	7.5	162	
	19-Apr-06	15.7	7.8	241	
	23-May-06	16.1	7.8	272	
	16-Apr-07	4.2	8.3	244	
	23-Apr-08	12.4	8.0	209	8.1
	12-Apr-09	15.4	8.0	260	9.5
	17-May-09	19.0	7.9	250	4.6
	11-Apr-10	9.2	7.8	261	13.0
	16-May-10	14.4	7.5	232	6.0
	13-Jun-10	18.2	7.5	251	7.8
	18-Jul-10	19.9	7.5	237	8.2
	14-Nov-10	5.9	8.0	199	7.9
	17-Apr-11	5.8	8.2	186	12.9
	15-May-11	8.6	8.0	159	10.2
	18-Mar-12	11.0	7.6	159	9.8
	14-Aug-12	17.2	8.2	394	3.9
	20-Nov-12	4.3	7.4	209	6.6
	18-Dec-12	1.2	7.2	376	7.2
	15-Jan-13	0.5	7.6	188	6.6
	16-Apr-13	1.1	8.2	114	9.4
	13-May-13	12.9	7.8	212	4.2
	16-Oct-13	12.4	8.5	240	3.5
	19-Nov-13	3.0	8.8	184	1.7
	13-May-14	14.6	7.4	211	5.2
	22-Oct-14	7.1	8.0	172	7.0
	16-Dec-14	-0.1	9.5	233	-
	22-Apr-15	7.2	7.6	178	11.9
	19-May-15	15.4	7.6	223	7.4
	15-Jun-15	17.3	7.4	258	2.2
	15-Mar-16	1.6	7.3	156	10.5
	21-Apr-16	8.3	7.7	195	9.7
	18-May-16	11.7	7.9	245	8.0
	25-Jan-17	-0.1	7.8	119	4.1
	19-Apr-17	7.8	7.1	194	8.1
	16-May-17	20.9	8.2	299	6.2
	28-Jun-17	18.0	7.8	279	6.9
	15-Nov-17	5.5	8.4	311	12.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
SW22					
	26-Jun-03	9.7			
	11-Feb-04	6.0	7.9	382	9.8
	17-Mar-04	6.7		566	9.2
	21-Apr-04	6.5	7.4	301	
	19-May-04	7.1	7.3	374	
	24-Jun-04	7.1	7.3	386	
	29-Jul-04	7.2	7.2	354	
	26-Aug-04	7.5	7.3	362	
	22-Sep-04	8.6	7.7	376	
	20-Oct-04	7.9	7.2	373	10.8
	17-Nov-04	7.9	7.7	383	11.2
	16-Dec-04	7.1	7.4	369	12.1
	29-Mar-05	6.7	7.5	369	
	11-Apr-05	6.9	6.8	329	
	26-May-05	7.6	6.8	383	
	28-Jun-05	8.1	8.2	396	
	11-Jul-05	8.4	7.3	390	11.8
	22-Aug-05	8.6	9.0	380	
	27-Sep-05	8.8	7.7	373	11.6
	25-Oct-05	7.7	8.0	479	
	15-Nov-05	7.5	7.9	367	11.7
	14-Dec-05	4.9	8.1	372	12.0
	18-Jan-06	6.4	8.0	338	12.1
	21-Mar-06	6.8	8.0	380	11.9
	19-Apr-06	7.6	7.8	416	
	23-May-06	8.4	7.9	478	
	20-Jun-06	8.8	7.7	467	
	11-Jul-06	9.5	8.1	457	
	23-Aug-06	10.2	7.9	467	
	20-Sep-06	9.2	8.0	455	
	19-Oct-06	8.6	8.0	462	
	23-Nov-06	7.4	7.9	483	11.8
	17-Dec-06	7.3	7.6	515	
	21-Jan-07	5.7	7.9	495	12.2
	18-Feb-07	5.0	8.1	490	
	18-Mar-07	5.8	7.7	480	
	17-Apr-07	6.8	8.0	471	12.0
	13-May-07	8.4	8.1	426	
	17-Jun-07	8.1	8.0	505	
	15-Jul-07	8.4	7.9	506	11.3
	19-Aug-07	8.5	7.9	500	11.2
	17-Sep-07	8.5	7.9	465	10.1
	18-Oct-07	9.1	8.0	465	10.0
	21-Nov-07	7.0	7.9	503	
	11-Dec-07	6.1	8.0	435	11.3
	22-Jan-08	7.1	7.7	463	
	20-Feb-08	6.5	7.9	484	
	18-Mar-08	6.4	7.9	488	
	2-Apr-08	6.8	7.8	450	11.3
	23-Apr-08	7.1	8.0	393	10.9
	21-May-08	6.9	7.4	430	9.2
	17-Jun-08	7.3	8.1	466	10.6
	16-Jul-08	8.3	7.7	490	9.4
	19-Aug-08	8.1	7.7	533	7.0
	16-Sep-08	8.0	7.8	476	10.1
	22-Oct-08	7.4	7.9	438	6.7
	14-Dec-08	6.9	7.4	402	7.1
	18-Jan-09	6.6	8.0	468	7.2
	8-Feb-09	6.4		427	7.9
	15-Mar-09	7.1	8.1	410	
	12-Apr-09	7.1	8.2	429	
	17-May-09	8.0	7.9	376	11.8
	14-Jun-09	7.9	8.2	890	
	12-Jul-09	8.7	7.6	474	
	9-Aug-09	8.4	8.8	491	
	13-Sep-09	9.0	7.7	451	
	11-Oct-09	7.5	8.6	501	
	15-Nov-09	7.2	7.9	428	
	13-Dec-09	6.3	7.9	475	11.8
	17-Jan-10	6.1	8.3	462	12.3
	7-Feb-10	6.0	7.7	468	12.3
	14-Mar-10	7.1	7.6	465	12.1
	11-Apr-10	7.3	8.2	455	
	16-May-10	7.6	7.9	283	11.8
	13-Jun-10	7.4	7.8	300	15.2
	18-Jul-10	8.0	8.0	317	15.2
	15-Aug-10	8.4	8.2	325	12.6
	12-Sep-10	8.2	8.2	350	11.4
	17-Oct-10	7.9	7.8	346	11.3
	14-Nov-10	7.7	7.9	263	10.1
	19-Dec-10	7.1	8.1	290	10.7
	16-Jan-11	6.9	8.0	304	11.6
	20-Feb-11	3.8	7.8	298	8.6
	13-Mar-11	7.3	8.2	205	12.2
	20-Mar-11	7.0	7.9	166	11.5
	17-Apr-11	6.7	8.1	310	8.5
	15-May-11	7.1	7.1	283	12.4
	12-Jun-11	8.4	8.0	267	12.7
	17-Jul-11	8.6	8.0	242	14.0
	14-Aug-11	8.8	8.7	225	11.2
	18-Sep-11	8.9	8.8	292	11.8
	16-Oct-11	8.3	8.0	341	11.4
	20-Nov-11	7.1	8.4	329	10.1
	18-Dec-11	7.2	8.5	262	10.3
	15-Jan-12	6.7	8.3	262	9.8
	19-Feb-12	6.9	8.2	280	11.4
	18-Mar-12	7.5	7.7	251	9.2
	15-Apr-12	7.4	8.7	314	13.1
	13-May-12	7.4	8.2	401	13.5
	17-Jun-12	8.6	7.8	344	7.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-Jul-12	8.6	8.3	346	7.9
	15-Aug-12	8.7	8.2	420	6.9
	18-Sep-12	8.6	7.7	340	10.8
	18-Oct-12	8.9	8.2	313	8.7
	21-Nov-12	7.9	7.7	291	4.0
	20-Dec-12	7.2	7.5	716	10.4
	16-Jan-13	7.2	7.9	365	10.6
	20-Feb-13	6.8	8.0	301	12.1
	20-Mar-13	6.2	7.8	300	13.0
	17-Apr-13	7.1	7.6	310	9.9
	14-May-13	7.0	7.7	295	10.0
	19-Jun-13	7.6	8.1	310	12.4
	17-Jul-13	8.4	7.9	309	8.9
	21-Aug-13	8.4	8.0	338	11.8
	19-Sep-13	8.7	8.0	331	6.8
	17-Oct-13	8.2	8.3	313	6.3
	20-Nov-13	7.3	8.4	331	2.8
	22-Jan-14	1.7	7.6	220	3.9
	19-Mar-14	3.4	7.7	256	6.5
	17-Apr-14	6.8	7.9	345	10.3
	13-May-14	8.6	7.2	322	10.5
	17-Jun-14	8.7	7.7	300	12.3
	15-Jul-14	9.0	8.8	387	4.0
	19-Aug-14	9.4	8.6	380	10.4
	9-Sep-14	9.2	9.0	386	4.2
	20-Oct-14	9.0	8.8	380	4.9
	17-Dec-14	7.1	8.4	377	-
	21-Jan-15	6.3	7.8	367	1.4
	19-Mar-15	5.4	7.9	268	11.0
	23-Apr-15	6.7	7.7	358	13.5
	20-May-15	7.6	7.9	293	15.0
	15-Jun-15	7.8	7.9	348	10.9
	22-Jul-15	8.2	7.8	296	11.4
	12-Aug-15	8.4	8.1	357	11.6
	9-Sep-15	9.1	7.8	352	8.9
	16-Oct-15	7.9	7.8	330	11.2
	19-Nov-15	8.3	7.6	387	13.2
	8-Dec-15	7.0	7.9	371	12.4
	20-Jan-16	6.1	7.8	350	11.7
	18-Feb-16	4.3	7.7	332	12.6
	15-Mar-16	6.9	7.5	339	12.1
	21-Apr-16	7.1	7.6	324	13.4
	18-May-16	7.7	8.0	373	11.8
	22-Jun-16	8.0	7.9	343	12.3
	21-Jul-16	8.7	8.0	365	12.7
	25-Aug-16	9.6	8.1	358	12.4
	19-Sep-16	9.4	8.1	515	8.9
	17-Oct-16	9.5	8.0	420	10.3
	15-Nov-16	8.1	8.1	361	11.4
	12-Dec-16	5.5	8.4	503	14.1
	25-Jan-17	7.3	7.6	381	10.0
	16-Feb-17	4.9	8.1	361	13.2
	21-Mar-17	7.2	8.1	384	11.1
	19-Apr-17	7.2	7.1	333	12.9
	16-May-17	6.4	8.3	444	12.6
	28-Jun-17	7.1	7.8	340	12.4
	20-Jul-17	7.3	8.1	344	11.8
	16-Aug-17	7.3	7.7	350	11.0
	19-Sep-17	8.1	7.8	356	11.6
	17-Oct-17	8.1	8.1	358	11.1
	15-Nov-17	7.5	8.0	372	11.7
	14-Dec-17	7.4	7.4	371	12.3
SW22A					
	11-Feb-04	2.4	8.7	453	10.8
	17-Mar-04	2.0	8.7	618	10.1
	21-Apr-04	5.6	7.9	393	
	19-May-04	5.6	7.8	496	
	24-Jun-04	7.6	8.2	548	
	29-Jul-04	10.3	8.1	607	
	26-Aug-04	7.4	8.1	586	
	22-Sep-04	13.5	8.1	690	10.4
	20-Oct-04	6.5	7.9	582	11.8
	17-Nov-04	7.7	7.9	642	10.9
	29-Mar-05	4.9	8.1	676	
	11-Apr-05	5.1	7.4	389	
	26-May-05	7.5	7.1	390	
	28-Jun-05	10.0	8.4	629	
	11-Jul-05	11.5	7.3	655	10.7
	22-Aug-05	11.3	9.0	640	
	27-Sep-05	8.5	7.8	597	
	25-Oct-05	6.1	8.7	750	
	15-Nov-05	5.9	7.8	506	11.7
	14-Dec-05	4.2	8.3	646	12.6
	18-Jan-06	3.2	7.4	469	
	21-Mar-06	5.5	8.3	545	
	19-Apr-06	6.5	8.1	581	
	23-May-06	11.9	8.3	724	
	20-Jun-06	11.6	8.2	695	
	11-Jul-06	13.8	8.4	700	
	23-Aug-06	13.3	8.2	733	
	20-Sep-06	10.8	8.3	732	
	19-Oct-06	8.9	8.2	751	
	23-Nov-06	6.1	8.4	680	12.4
	17-Dec-06	6.0	8.2	713	
	21-Jan-07	2.3	8.4	689	
	18-Mar-07	1.9	8.4	703	
	17-Apr-07	4.8	8.4	649	
	13-May-07	9.3	8.4	614	
	17-Jun-07	8.8	8.2	615	
	15-Jul-07	10.0	8.0	402	10.8
	17-Sep-07	9.1	8.2	697	10.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Oct-07	10.4	8.6		
	21-Nov-07	4.6	7.9	779	11.1
	11-Dec-07	2.3	8.1	372	13.1
	20-Feb-08	3.5	8.1	654	
	18-Mar-08	3.5	7.9	688	
	2-Apr-08	5.1	7.7	526	12.5
	23-Apr-08	8.6	7.7	523	10.2
	21-May-08	6.6	7.7	576	10.8
	17-Jun-08	9.5	8.1	656	9.8
	16-Jul-08	10.0	7.7	709	
	19-Aug-08	9.9	7.8	816	6.7
	16-Sep-08	8.5	7.7	724	10.8
	22-Oct-08	5.8	7.9	606	7.4
	23-Nov-08	5.3	8.1	625	8.3
	14-Dec-08	2.5	7.3	503	8.5
	18-Jan-09	0.2	8.5	631	12.8
	8-Feb-09	4.5		525	9.0
	15-Mar-09	5.5	8.6	520	
	12-Apr-09	7.1	8.2	429	
	17-May-09	11.5	8.5	494	
	14-Jun-09	10.0	8.3	1259	
	12-Jul-09	10.3	8.3	593	
	9-Aug-09	7.5	7.5	725	
	13-Sep-09	12.0	8.1	605	
	11-Oct-09	6.4	8.3	719	12.1
	15-Nov-09	6.4	7.7	569	12.4
	13-Dec-09	0.9	7.9	507	11.8
	17-Jan-10	0.7	8.4	518	11.4
	7-Feb-10	0.0	7.6	586	11.6
	14-Mar-10	6.1	7.4	575	12.6
	11-Apr-10	7.8	8.1	607	
	16-May-10	9.3	8.3	396	11.8
	13-Jun-10	9.8	8.3	439	14.6
	18-Jul-10	8.8	8.3	438	15.2
	15-Aug-10	10.0	8.3	368	10.5
	12-Sep-10	9.3	8.4	467	11.1
	17-Oct-10	7.0	8.1	424	11.4
	14-Nov-10	6.5	8.2	262	10.1
	19-Dec-10	3.6	8.3	363	11.5
	16-Jan-11	2.7	8.3	354	12.7
	20-Feb-11	3.6	8.0	383	10.6
	13-Mar-11	5.8	8.4	314	13.1
	20-Mar-11	5.1	7.6	407	12.0
	17-Apr-11	4.6	8.3	347	9.1
	15-May-11	6.9	7.6	273	12.7
	12-Jun-11	8.2	8.4	375	12.5
	17-Jul-11	11.8	8.4	484	13.3
	14-Aug-11	11.9	8.7	338	10.0
	18-Sep-11	11.0	8.6	392	10.6
	16-Oct-11	8.5	8.1	483	10.9
	20-Nov-11	4.4	8.3	396	11.6
	18-Dec-11	5.2	8.6	302	11.0
	15-Jan-12	2.5	8.6	325	11.2
	19-Feb-12	4.0	8.3	329	12.1
	18-Mar-12	9.2	8.2	358	8.2
	15-Apr-12	7.0	8.7	407	12.9
	13-May-12	7.4	7.8	308	13.3
	17-Jun-12	11.8	8.4	506	7.1
	16-Jul-12	11.9	8.5	508	7.5
	15-Aug-12	9.6	8.4	486	6.8
	18-Sep-12	9.7	7.8	491	10.2
	18-Oct-12	8.8	8.4	379	8.2
	21-Nov-12	8.3	7.9	350	4.1
	20-Dec-12	4.6	7.8	889	11.1
	16-Jan-13	6.4	8.1	383	10.8
	20-Feb-13	2.9	8.3	203	14.0
	20-Mar-13	4.4	8.2	375	7.3
	17-Apr-13	6.6	7.9	335	10.5
	14-May-13	6.2	8.0	375	9.2
	19-Jun-13	9.4	8.2	443	11.0
	17-Jul-13	11.0	8.2	469	8.6
	21-Aug-13	10.7	8.2	467	11.6
	19-Sep-13	12.0	8.2	506	6.5
	17-Oct-13	9.2	8.6	422	6.2
	20-Nov-13	5.6	8.3	429	2.0
	17-Apr-14	5.2	8.0	489	11.3
	13-May-14	8.4	7.3	322	10.4
	17-Jun-14	9.4	8.4	410	10.4
	15-Jul-14	9.8	8.7	540	6.9
	19-Aug-14	10.0	8.7	542	11.0
	21-Jan-15	2.2	8.0	446	1.3
	19-Mar-15	1.3	7.7	369	14.8
	23-Apr-15	4.1	8.1	443	13.7
	20-May-15	9.5	8.5	411	14.6
	15-Jun-15	8.4	8.3	484	11.3
	22-Jul-15	8.3	8.3	484	11.8
	12-Aug-15	9.4	8.3	509	11.0
	16-Oct-15	6.9	8.0	418	11.6
	19-Nov-15	8.3	7.8	553	13.2
	8-Dec-15	4.5	8.1	476	12.7
	20-Jan-16	2.7	8.1	391	13.5
	18-Feb-16	3.2	7.9	441	14.1
	15-Mar-16	5.3	7.8	348	12.8
	21-Apr-16	7.3	7.9	407	13.7
	18-May-16	10.1	8.6	517	12.0
	22-Jun-16	11.0	8.5	496	11.3
	21-Jul-16	11.6	8.4	513	11.4
	25-Aug-16	13.1	8.5	525	11.0
	19-Sep-16	11.7	8.3	690	8.2
	17-Oct-16	8.3	8.2	508	11.0
	15-Nov-16	8.3	8.1	496	10.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	12-Dec-16	1.1	8.0	730	14.6
	12-Jan-17	5.3	8.1	495	11.7
	16-Feb-17	3.2	8.4	436	14.6
	21-Mar-17	4.9	8.2	488	12.1
	19-Apr-17	8.9	7.8	492	13.1
	16-May-17	7.0	8.1	3.16	11.7
	28-Jun-17	8.6	8.2	471	12.1
	20-Jul-17	8.3	8.4	517	12.0
	16-Aug-17	10.3	8.3	506	11.3
	19-Sep-17	10.1	8.2	557	10.8
	17-Oct-17	9.8	8.3	529	10.5
	15-Nov-17	5.4	8.3	465	13.6
	14-Dec-17	5.7	7.8	465	13.5
SW22B					
	18-Oct-07	11.4	8.2	629	9.3
	22-Jan-08	2.0	7.7	574	
SW22C					
	17-Apr-07	3.2	8.4	547	13.3
	15-May-07	11.6	8.3	548	10.3
	18-Jun-07	13.3	8.5	697	
	18-Jul-07	14.0	8.0	681	9.9
	22-Aug-07	14.5	8.0	704	9.5
	17-Sep-07	11.0	8.0	651	9.9
	18-Oct-07	11.4	8.2	629	9.3
	21-Nov-07	4.6	7.8	625	10.9
	22-Jan-08	2.0	7.7	574	
	20-Feb-08	1.5	8.1	531	
	18-Mar-08	1.7	7.8	598	
	2-Apr-08	2.5	7.5	440	13.0
	23-Apr-08	10.5	7.8	461	8.7
	21-May-08	7.4	7.5	518	10.6
	17-Jun-08	12.1	8.0	583	8.6
	16-Jul-08	14.9	7.7	529	6.8
	19-Aug-08	13.7	7.6	746	5.5
	16-Sep-08	11.0	7.7	654	9.2
	22-Oct-08	5.9	7.8	497	7.2
	23-Nov-08	3.6	7.8	571	9.0
	14-Dec-08	2.5	6.9	448	8.1
	18-Jan-09	1.3	8.1	554	12.5
	8-Feb-09	1.8		419	9.3
	15-Mar-09	3.3	8.1	419	
	12-Apr-09	6.8	8.5	471	
	17-May-09	14.5	8.4	462	
	14-Jun-09	12.5	8.4	1141	
	12-Jul-09	14.0	8.0	652	10.4
	9-Aug-09	11.6	8.4	634	9.7
	13-Sep-09	14.6	8.2	617	
	11-Oct-09	6.6	8.3	610	12.0
	15-Nov-09	4.7	7.7	533	
	13-Dec-09	0.1	8.1	354	12.5
	17-Jan-10	0.1	8.2	315	15.9
	7-Feb-10	0.7	8.3	426	11.5
	14-Mar-10	4.0	7.5	468	13.5
	11-Apr-10	6.9	8.1	545	
	16-May-10	10.9	8.2	406	10.4
	13-Jun-10	12.9	8.2	450	12.6
	18-Jul-10	13.6	8.1	470	13.0
	15-Aug-10	13.5	8.3	486	9.7
	12-Sep-10	11.1	8.4	478	10.2
	17-Oct-10	7.3	7.8	7.89	10.6
	14-Nov-10	6.0	8.2	271	9.4
	19-Dec-10	2.4	8.4	300	11.9
	16-Jan-11	1.4	8.2	270	12.3
	20-Feb-11	1.7	8.0	315	10.1
	13-Mar-11	2.8	8.3	279	13.8
	20-Mar-11	2.8	7.2	340	12.8
	17-Apr-11	3.0	8.5	266	12.1
	15-May-11	8.5	7.3	280	11.8
	12-Jun-11	12.9	8.3	375	10.5
	17-Jul-11	16.1	8.4	498	10.8
	14-Aug-11	15.1	8.8	333	9.5
	18-Sep-11	12.8	8.8	403	6.8
	16-Oct-11	9.2	7.9	413	9.6
	20-Nov-11	3.6	8.2	332	11.7
	18-Dec-11	1.0	8.4	241	12.6
	15-Jan-12	0.8	8.6	262	11.9
	19-Feb-12	2.1	8.0	182	12.9
	18-Mar-12	11.4	7.8	318	7.4
	15-Apr-12	6.3	8.6	347	13.4
	13-May-12	10.2	8.1	394	11.9
	17-Jun-12	16.1	8.3	526	7.1
	16-Jul-12	16.1	8.8	530	7.6
	15-Aug-12	13.9	8.6	492	6.3
	18-Sep-12	12.5	7.8	468	8.3
	18-Oct-12	9.3	8.7	392	9.0
	21-Nov-12	6.4	8.1	325	4.2
	20-Dec-12	2.9	7.6	735	11.4
	16-Jan-13	2.8	8.0	344	11.1
	20-Feb-13	1.3	8.2	249	14.1
	20-Mar-13	2.2	8.1	308	8.9
	17-Apr-13	4.8	7.9	284	9.6
	14-May-13	6.7	8.0	319	8.7
	19-Jun-13	11.3	8.4	436	10.9
	17-Jul-13	15.8	8.2	483	8.8
	19-Sep-13	13.4	8.3	484	3.8
	17-Oct-13	10.6	9.2	419	6.0
	20-Nov-13	3.6	8.6	351	2.2
	22-Jan-14	-0.1	7.1	236	3.5
	17-Apr-14	2.9	7.4	324	11.7
	13-May-14	10.6	7.2	316	10.4
	17-Jun-14	14.5	8.0	440	9.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Jul-14	15.0	8.6	509	6.9
	19-Aug-14	13.4	8.7	363	9.7
	9-Sep-14	14.3	8.6	584	5.0
	20-Oct-14	11.3	8.3	542	4.9
	17-Dec-14	2.5	8.4	350	-
	21-Jan-15	0.5	7.3	346	0.3
	23-Apr-15	3.5	8.2	363	14.3
	20-May-15	10.5	8.3	386	13.9
	15-Jun-15	12.6	8.0	487	9.7
	22-Jul-15	12.9	8.1	524	10.3
	12-Aug-15	14.2	8.1	528	9.3
	9-Sep-15	17.2	7.8	506	4.8
	16-Oct-15	8.6	8.0	417	10.2
	19-Nov-15	8.3	7.7	451	12.6
	8-Dec-15	3.8	7.9	413	12.5
	20-Jan-16	1.3	8.0	352	13.8
	18-Feb-16	1.2	7.8	364	14.4
	15-Mar-16	3.7	7.7	278	13.1
	21-Apr-16	7.6	7.8	368	12.8
	18-May-16	9.5	8.4	456	11.0
	22-Jun-16	13.3	8.4	494	10.7
	21-Jul-16	14.9	8.1	534	10.5
	25-Aug-16	16.8	8.5	552	10.8
	19-Sep-16	14.6	8.2	644	8.0
	18-Oct-16	12.5	7.9	619	9.0
	15-Nov-16	7.5	8.0	427	11.2
	12-Dec-16	1.7	8.1	584	15.0
	25-Jan-17	2.8	8.2	397	12.5
	16-Feb-17	1.1	8.1	206	14.7
	21-Mar-17	3.7	8.4	391	12.2
	19-Apr-17	8.0	7.6	402	13.0
	16-May-17	13.4	8.1	456	9.0
	28-Jun-17	11.1	8.2	476	10.2
	20-Jul-17	12.4	8.3	527	10.3
	16-Aug-17	13.5	8.3	432	9.9
	19-Sep-17	13.4	8.2	519	8.7
	17-Oct-17	10.3	8.3	497	9.8
	15-Nov-17	4.5	8.2	414	12.9
	14-Dec-17	1.4	7.8	361	15.6
SW23					
	17-Mar-04	0.1		385	10.2
	19-May-04	16.9	8.1	521	9.7
	24-Jun-04	14.8	8.2	521	9.0
	29-Jul-04	14.8	8.1	508	8.6
	26-Aug-04	15.7	8.2	500	8.2
	22-Sep-04	15.6	8.0	519	7.9
	20-Oct-04	7.4	7.9	422	11.3
	17-Nov-04	6.0	7.8	407	11.6
	29-Mar-05	1.2	7.5	293	
	11-Apr-05	9.2	7.5	274	11.4
	24-May-05	13.5	7.8	468	8.7
	27-Jun-05	18.8	7.9	610	9.2
	11-Jul-05	18.2	6.9	565	6.8
	22-Aug-05	15.3	8.4	492	7.1
	27-Sep-05	13.3	7.6	517	5.8
	24-Oct-05	8.0	7.9	609	10.6
	14-Nov-05	5.8	8.4	425	10.5
	12-Dec-05	0.2	8.3	277	11.0
	18-Jan-06	0.2	7.2	192	
	22-Mar-06	0.2	8.5	245	
	18-Apr-06	13.3	8.0	422	
	23-May-06	12.0	8.0	508	
	20-Jun-06	15.4	8.0	590	
	11-Jul-06	17.7	8.2	584	
	23-Aug-06	15.6	7.8	538	
	19-Sep-06	14.2	8.0	612	
	19-Oct-06	10.0	7.6	487	
	27-Nov-06	6.5	7.9	478	11.6
	17-Dec-06	2.3	7.9	492	
	18-Mar-07	0.2	8.2	456	14.4
	16-Apr-07	2.8	8.3	454	13.3
	13-May-07	12.0	8.3	520	9.8
	17-Jun-07	16.2	8.1	651	5.8
	19-Nov-07	3.1	7.7	594	11.9
	10-Dec-07	2.5	8.4	407	12.8
	19-Feb-08	0.1	7.9	278	
	2-Apr-08	0.2	7.0	156	
	23-Apr-08	14.4	8.0	441	7.1
	21-May-08	9.5	7.5	473	9.2
	17-Jun-08	13.0	7.6	590	
	15-Jul-08	14.9	7.1	665	6.5
	18-Aug-08	18.3	7.5	645	4.5
	17-Sep-08	12.8	8.3	582	6.5
	20-Oct-08	9.4	7.6	539	7.1
	15-Mar-09	0.7	8.3	384	
	12-Apr-09	9.4	8.3	415	
	17-May-09	20.4	8.3	478	9.2
	14-Jun-09	15.9	7.6	1154	9.9
	12-Jul-09	12.8	8.4	635	
	9-Aug-09	16.9	8.3	633	8.5
	13-Sep-09	14.4	7.7	552	9.7
	11-Oct-09	7.3	7.2	553	
	15-Nov-09	3.5	7.4	481	
	13-Dec-09	0.7	7.9	504	12.8
	14-Mar-10	0.4	8.2	349	15.5
	11-Apr-10	11.1	7.8	495	12.1
	16-May-10	17.0	8.3	440	8.6
	13-Jun-10	19.2	8.2	492	11.3
	18-Jul-10	15.6	8.1	333	11.8
	15-Aug-10	16.6	8.1	533	9.1
	17-Oct-10	7.9	7.9	393	10.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	14-Nov-10	5.1	8.0	291	12.8
	13-Mar-11	0.1	8.4	189	13.1
	17-Apr-11	2.5	8.1	282	14.7
	15-May-11	9.9	7.9	315	12.8
	12-Jun-11	14.4	8.2	373	9.8
	17-Jul-11	18.5	8.1	501	5.7
	14-Aug-11	16.5	8.4	248	6.1
	18-Sep-11	12.7	8.2	370	9.1
	16-Oct-11	9.7	7.9	361	7.7
	20-Nov-11	1.8	7.8	297	13.1
	18-Dec-11	0.7	8.1	164	11.9
	18-Mar-12	17.6	8.3	342	9.0
	15-Apr-12	6.8	8.3	332	11.7
	13-May-12	14.9	8.2	402	11.7
	17-Jun-12	19.0	8.3	533	14.1
	16-Jul-12	18.6	8.2	513	3.5
	14-Aug-12	16.8	8.2	438	6.6
	18-Sep-12	14.3	7.2	429	8.5
	17-Oct-12	10.4	6.9	350	7.7
	20-Nov-12	5.6	7.7	326	8.0
	18-Dec-12	3.9	7.4	620	10.7
	16-Jan-13	0.0	8.2	246	11.4
	16-Apr-13	8.3	8.1	232	10.1
	14-May-13	13.0	8.2	348	5.8
	19-Jun-13	14.2	7.9	305	8.1
	16-Jul-13	19.3	8.0	563	7.4
	16-Oct-13	12.3	8.4	406	5.8
	19-Nov-13	2.9	7.8	268	2.7
	13-May-14	14.1	8.0	396	11.0
	17-Jun-14	17.2	8.0	510	9.9
	15-Jul-14	5.6	8.9	245	4.3
	19-Aug-14	13.2	8.5	533	10.5
	9-Sep-14	15.2	8.7	477	4.0
	23-Oct-14	9.9	7.3	420	6.9
	16-Dec-14	0.8	8.7	251	-
	22-Apr-15	7.1	8.1	358	12.3
	19-May-15	14.8	8.4	416	-
	15-Jun-15	17.5	8.1	499	7.9
	21-Jul-15	17.3	8.2	512	-
	11-Aug-15	16.3	8.1	542	8.2
	8-Sep-15	18.7	7.8	544	6.5
	15-Oct-15	9.4	8.0	426	9.2
	18-Nov-15	8.0	7.9	402	11.0
	8-Dec-15	3.9	8.0	347	21.2
	15-Mar-16	5.5	7.9	258	13.0
	21-Apr-16	7.0	8.0	336	12.5
	18-May-16	10.0	8.3	427	11.5
	22-Jun-16	15.6	8.3	490	8.1
	20-Jul-16	17.4	831.0	503	7.5
	24-Aug-16	18.4	8.4	527	7.6
	19-Sep-16	16.3	8.2	579	8.2
	18-Oct-16	14.1	7.9	537	10.9
	15-Nov-16	7.3	8.1	408	11.6
	12-Dec-16	1.1	7.7	453	14.2
	24-Jan-17	1.8	8.1	246	14.1
	16-Feb-17	0.5	8.1	293	15.9
	21-Mar-17	3.0	8.1	306	12.8
	19-Apr-17	11.0	8.0	385	13.2
	16-May-17	18.0	8.1	457	9.4
	28-Jun-17	18.7	8.4	531	8.1
	19-Jul-17	18.4	8.4	576	7.5
	15-Aug-17	17.7	8.7	463	8.6
	17-Sep-17	15.8	8.0	550	8.3
	17-Oct-17	9.9	8.0	384	10.3
	14-Nov-17	4.2	8.1	333	9.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
SW24					
	21-Apr-04	8.1	8.0	243	
	19-May-04	12.9	8.0	357	10.5
	24-Jun-04	12.3	8.0	370	
	29-Mar-05	5.7	7.8	274	12.2
	11-Apr-05	5.9	7.5	249	
	26-May-05	12.0	7.7	329	10.6
	28-Jun-05	16.0	8.1	383	
	11-Jul-05	18.7	6.8	374	7.7
	17-Jan-06	2.0	6.4	216	
	22-Mar-06	3.4	8.3	238	
	18-Apr-06	9.5	8.0	335	
	23-May-06	8.6	8.0	412	
	20-Jun-06	14.7	7.7	473	
	19-Oct-06	10.3	7.5	394	
	27-Nov-06	7.2	7.8	420	10.2
	17-Dec-06	3.6	7.8	428	12.6
	21-Jan-07	1.0	8.0	412	
	18-Mar-07	3.5	8.1	369	
	17-Apr-07	3.4	8.2	380	12.7
	19-Feb-08	1.5	7.9	379	
	17-Mar-08	0.4	7.5	399	
	2-Apr-08	2.8	7.6	267	
	23-Apr-08	9.6	7.8	339	8.7
	6-May-08	7.6	7.1	403	10.1
	21-May-08	7.5	7.6	366	9.5
	17-Jun-08	10.4	7.6	444	9.0
	15-Jul-08	13.4	7.1	491	7.3
	18-Aug-08	17.8	7.4	541	4.3
	16-Sep-08	11.3	7.9	493	7.4
	21-Oct-08	6.4	7.7	396	7.7
	23-Nov-08	4.1	7.8	420	8.0
	14-Dec-08	2.3	7.6	337	
	18-Jan-09	0.8	8.4	394	11.9
	8-Feb-09	2.6	8.8	299	9.5
	15-Mar-09	4.0	8.6	340	
	12-Apr-09	8.4	8.4	372	
	17-May-09	14.8	8.1	350	
	14-Jun-09	7.2	7.3	682	10.2
	12-Jul-09	11.6	8.2	442	10.4
	9-Aug-09	15.2	8.7	451	8.9
	13-Sep-09	14.2	7.8	307	7.1
	11-Oct-09	5.2	8.4	489	12.6
	15-Nov-09	4.6	7.3	378	
	13-Dec-09	0.9	7.9	425	14.0
	17-Jan-10	1.5	8.5	391	11.4
	14-Mar-10	3.7	7.8	383	13.5
	11-Apr-10	5.7	7.9	400	
	16-May-10	11.2	8.1	292	9.5
	13-Jun-10	12.1	8.0	289	12.2
	18-Jul-10	14.5	7.8	372	12.0
	15-Aug-10	15.3	8.2	358	8.9
	12-Sep-10	11.2	8.2	334	10.3
	17-Oct-10	8.9	7.8	310	9.5
	14-Nov-10	5.7	8.1	242	11.9
	19-Dec-10	2.1	8.2	210	12.7
	16-Jan-11	1.6	8.5	219	11.3
	20-Feb-11	0.4	8.1	216	11.9
	13-Mar-11	0.3	8.3	221	12.0
	17-Apr-11	5.0	8.3	254	12.7
	15-May-11	7.5	7.8	238	12.5
	12-Jun-11	11.6	8.1	272	10.8
	17-Jul-11	16.4	8.2	344	7.9
	14-Aug-11	15.6	8.3	264	8.7
	18-Sep-11	11.9	8.3	283	9.6
	16-Oct-11	8.7	8.0	323	8.7
	20-Nov-11	1.9	7.9	252	13.6
	18-Dec-11	2.0	8.3	196	12.7
	15-Jan-12	0.9	8.3	183	13.3
	19-Feb-12	1.9	8.0	192	12.3
	18-Mar-12	11.5	8.1	274	10.1
	15-Apr-12	5.6	8.7	256	11.1
	13-May-12	11.5	7.1	304	5.1
	17-Jun-12	16.6	8.2	370	12.2
	16-Jul-12	19.2	8.4	400	6.5
	14-Aug-12	14.3	8.0	422	6.7
	18-Sep-12	13.3	7.4	349	8.7
	17-Oct-12	10.1	7.0	297	7.2
	20-Nov-12	5.9	7.8	287	9.0
	18-Dec-12	4.3	7.5	581	9.6
	16-Jan-13	1.0	8.1	264	11.9
	20-Feb-13	0.0	8.1	216	15.3
	20-Mar-13	0.8	8.1	209	8.8
	16-Apr-13	6.1	7.9	221	9.7
	13-May-13	10.9	8.2	274	10.0
	19-Jun-13	11.6	8.1	279	10.2
	16-Jul-13	17.1	8.0	354	8.0
	21-Aug-13	15.8	8.1	360	7.7
	18-Sep-13	10.3	7.8	306	11.0
	16-Oct-13	12.0	8.3	321	5.5
	19-Nov-13	3.4	8.5	261	2.6
	16-Apr-14	2.7	8.3	187	10.4
	13-May-14	11.4	8.2	282	11.1
	17-Jun-14	13.2	8.3	222	10.0
	15-Jul-14	13.0	8.3	284	5.3
	19-Aug-14	9.1	8.4	410	10.0
	9-Sep-14	13.7	8.7	384	2.8
	23-Oct-14	7.8	8.3	367	6.4
	16-Dec-14	2.4	9.0	280	-
	20-Jan-15	-0.1	7.7	251	1.4
	18-Mar-15	0.4	8.2	197	13.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	22-Apr-15	6.5	8.1	295	12.3
	19-May-15	11.0	8.3	286	-
	15-Jun-15	12.8	8.1	313	8.9
	21-Jul-15	14.6	8.2	349	-
	11-Aug-15	14.1	8.3	363	10.0
	8-Sep-15	16.9	7.8	370	8.6
	15-Oct-15	8.8	8.0	293	10.5
	18-Nov-15	8.0	7.9	337	10.7
	8-Dec-15	4.3	8.1	302	19.7
	19-Jan-16	0.0	7.9	230	15.6
	17-Feb-16	0.5	7.9	248	14.5
	15-Mar-16	6.2	8.0	270	12.7
	21-Apr-16	6.4	8.1	273	13.0
	18-May-16	9.0	8.4	333	11.5
	22-Jun-16	13.9	8.4	349	9.7
	20-Jul-16	15.7	8.2	371	7.6
	24-Aug-16	17.7	8.6	382	9.9
	19-Sep-16	15.9	8.3	381	8..88
	18-Oct-16	14.7	7.7	374	10.9
	15-Nov-16	8.1	8.1	323	10.4
	12-Dec-16	0.5	7.4	412	10.8
	24-Jan-17	2.7	8.1	230	12.9
	16-Feb-17	-0.1	8.2	265	16.0
	21-Mar-17	3.9	8.2	23	12.3
	19-Apr-17	10.4	8.2	302	13.2
	16-May-17	14.8	8.6	343	7.5
	28-Jun-17	13.4	8.4	357	9.9
	19-Jul-17	15.7	8.5	248	9.6
	15-Aug-17	16.3	8.8	310	9.7
	17-Sep-17	16.1	8.2	385	9.5
	17-Oct-17	10.5	8.1	365	9.4
	14-Nov-17	6.0	8.2	316	8.2
	14-Dec-17	-0.1	8.2	251	-
SW24A					
	21-Apr-04	6.6	7.5	274	
	19-May-04	7.4	8.0	357	
	24-Jun-04	7.4	7.5	396	
	29-Jul-04	7.8	7.6	416	
	26-Aug-04	8.2	7.5	432	
	22-Sep-04	7.8	7.6	455	
	20-Oct-04	7.2	7.7	432	11.7
	17-Nov-04	7.4	7.7	440	11.1
	16-Dec-04	6.7	7.7	382	
	29-Mar-05	5.6	7.8	369	12.6
	11-Apr-05	6.0	7.4	298	
	26-May-05	7.4	7.7	345	12.1
	28-Jun-05	8.3	8.2	404	
	11-Jul-05	9.1	6.9	427	
	22-Aug-05	10.2	8.3	397	
	28-Sep-05	10.4	7.7	480	10.9
	15-Nov-05	6.6	7.9	419	
	12-Dec-05	5.4	8.3	405	11.2
	17-Jan-06	3.0	7.9	305	13.4
	22-Mar-06	4.3	8.5	284	
	18-Apr-06	9.0	8.3	351	
	24-May-06	8.9	8.3	447	
	20-Jun-06	11.3	8.2	492	
	11-Jul-06	12.4	8.3	468	
	23-Aug-06	11.8	8.0	492	
	20-Sep-06	10.5	7.9	475	
	19-Oct-06	9.3	8.0	508	
	27-Nov-06	7.0	8.1	518	12.2
	17-Dec-06	4.0	8.1	515	
	21-Jan-07	2.9	8.2	520	
	18-Mar-07	3.9	8.3	459	
	17-Apr-07	4.2	8.4	417	
	13-May-07	9.3	8.3	441	11.2
	17-Jun-07	8.5	8.1	522	11.5
	15-Jul-07	11.0	8.0	507	9.9
	19-Aug-07	13.0	8.1	519	
	17-Sep-07	9.8	7.9	506	9.7
	18-Oct-07	10.7	7.8	525	9.0
	19-Nov-07	4.8	7.9	572	11.6
	10-Dec-07	4.2	8.0	505	12.6
	21-Jan-08	2.9	7.6	390	
	19-Feb-08	3.0	7.9	453	
	17-Mar-08	2.0	7.1	466	
	2-Apr-08	2.0	7.1	466	
	23-Apr-08	9.6	8.0	351	
	6-May-08	6.8	7.1	421	11.3
	21-May-08	7.2	7.6	403	10.5
	17-Jun-08	8.1	7.9	479	9.8
	15-Jul-08	10.3	7.0	511	8.5
	18-Aug-08	12.8	7.4	574	5.5
	16-Sep-08	9.8	8.1	542	8.2
	21-Oct-08	5.9	7.9	480	7.9
	23-Nov-08	3.5	7.5	461	8.3
	14-Dec-08	2.8	7.2	426	8.0
	18-Jan-09	4.1	8.3	252	9.5
	8-Feb-09	3.5	8.9	452	10.2
	15-Mar-09	4.8	8.4	395	
	12-Apr-09	7.1	8.4	413	
	17-May-09	14.0	7.8	378	
	14-Jun-09	9.1	7.6	911	
	12-Jul-09	9.6	8.5	502	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	9-Aug-09	11.2	6.8	362	10.3
	13-Sep-09	10.4	7.8	472	
	11-Oct-09	7.0	8.4	554	
	15-Nov-09	4.8	7.3	488	
	13-Dec-09	3.4	7.7	545	
	17-Jan-10	3.5	8.7	508	11.0
	7-Feb-10	2.4	7.7	368	12.6
	14-Mar-10	4.9	8.0	460	12.9
	11-Apr-10	5.4	7.8	430	
	16-May-10	9.8	8.2	318	10.6
	13-Jun-10	9.8	8.2	334	12.6
	18-Jul-10	12.5	8.2	399	12.7
	15-Aug-10	12.3	8.3	336	9.8
	12-Sep-10	10.1	8.2	403	10.5
	17-Oct-10	7.7	8.0	290	11.0
	14-Nov-10	5.9	8.3	303	12.4
	19-Dec-10	4.0	8.2	201	11.8
	16-Jan-11	3.7	8.3	292	12.9
	20-Feb-11	4.3	8.0	277	12.4
	13-Mar-11	4.3	8.1	272	11.5
	17-Apr-11	5.4	8.2	280	12.9
	15-May-11	6.9	7.7	180	12.3
	12-Jun-11	8.6	8.1	290	6.7
	17-Jul-11	9.6	7.8	356	9.4
	14-Aug-11	10.6	8.5	278	10.7
	18-Sep-11	10.5	8.1	333	9.3
	16-Oct-11	8.0	7.9	356	11.0
	20-Nov-11	5.0	7.5	348	12.3
	18-Dec-11	3.7	8.3	139	12.0
	15-Jan-12	3.1	8.4	238	12.5
	19-Feb-12	3.2	8.0	261	14.1
	18-Mar-12	9.1	8.1	264	10.9
	15-Apr-12	5.7	8.5	303	10.0
	13-May-12	10.2	8.1	309	10.5
	17-Jun-12	13.5	8.3	410	12.9
	16-Jul-12	15.0	8.4	427	6.8
	14-Aug-12	12.5	8.1	454	7.4
	18-Sep-12	11.4	7.3	398	9.6
	17-Oct-12	9.4	7.4	354	7.9
	20-Nov-12	6.7	7.8	348	9.1
	18-Dec-12	6.6	7.5	743	9.5
	16-Jan-13	2.9	8.0	317	11.5
	20-Feb-13	1.9	8.0	247	14.6
	20-Mar-13	2.6	8.1	254	7.0
	16-Apr-13	6.2	8.1	248	10.0
	13-May-13	7.2	8.1	239	10.1
	19-Jun-13	9.8	8.3	339	11.4
	16-Jul-13	12.4	8.1	406	9.8
	21-Aug-13	12.5	8.2	406	9.7
	18-Sep-13	8.3	7.8	370	12.0
	16-Oct-13	10.4	8.4	379	6.5
	19-Nov-13	4.3	8.1	324	2.5
	18-Dec-13	3.7	8.6	321	4.2
	21-Jan-14	1.1	7.6	1.56	3.3
	16-Apr-14	3.4	8.2	279	10.4
	13-May-14	9.4	8.3	246	10.4
	17-Jun-14	10.8	8.4	359	10.0
	15-Jul-14	12.0	7.8	366	4.7
	23-Oct-14	7.3	8.2	428	4.3
	16-Dec-14	4.0	8.7	370	-
	20-Jan-15	1.8	7.9	344	1.4
	18-Mar-15	1.5	8.4	252	13.2
	22-Apr-15	5.5	8.1	308	12.8
	19-May-15	9.5	8.4	314	-
	15-Jun-15	10.4	8.1	373	9.3
	21-Jul-15	10.9	7.5	382	-
	11-Aug-15	11.4	8.2	414	10.0
	25-Aug-15	11.9	8.2	366	10.2
	8-Sep-15	13.1	7.8	416	9.5
	15-Oct-15	8.4	8.0	277	11.0
	18-Nov-15	7.9	8.0	421	10.3
	8-Dec-15	5.2	8.1	389	19.4
	19-Jan-16	3.4	8.1	322	14.6
	17-Feb-16	3.3	8.0	339	14.3
	15-Mar-16	5.9	7.9	276	12.6
	21-Apr-16	5.7	8.1	268	13.6
	18-May-16	7.9	8.4	304	12.4
	22-Jun-16	12.2	8.3	394	10.6
	5-Jul-16	13.5	8.4	401	14.7
	20-Jul-16	13.1	7.8	385	9.7
	9-Aug-16	14.0	8.3	246	10.9
	24-Aug-16	17.7	8.6	382	9.9
	19-Sep-16	12.7	8.1	545	
	18-Oct-16	12.9	7.8	445	12.3
	15-Nov-16	7.2	8.1	382	11.5
	12-Dec-16	0.9	7.9	481	13.9
	24-Jan-17	3.9	8.2	319	13.2
	16-Feb-17	1.4	8.3	323	15.2
	21-Mar-17	4.8	8.4	343	12.4
	19-Apr-17	8.8	8.2	286	15.7
	16-May-17	12.2	8.8	344	10.5
	28-Jun-17	8.9	8.3	351	11.7
	7-Jul-17	12.1	8.1	382	11.1
	19-Jul-17	11.6	8.4	422	10.4
	2-Aug-17	12.7	8.4	401	10.0
	15-Aug-17	12.1	8.7	347	10.5
	17-Sep-17	12.2	8.2	428	10.2
	17-Oct-17	8.9	8.2	399	10.5
	14-Nov-17	6.1	8.3	394	8.0
	14-Dec-17	3.1	8.3	360	13.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
SW24B					
	10-Feb-04	2.1	8.6	338	11.4
	17-Mar-04	3.7		471	9.6
	19-Apr-04	7.1	8.1	255	
	19-May-04	11.6	8.2	380	
	24-Jun-04	12.0	8.2	437	
	29-Jul-04	12.4	8.2	453	
	26-Aug-04	10.0	8.1	386	
	22-Sep-04	10.1	8.0	412	
	20-Oct-04	7.4	8.0	387	
	17-Nov-04	6.6	8.0	416	12.0
	16-Dec-04	2.9	8.2	358	
	29-Mar-05	5.2	8.0	338	
	11-Apr-05	4.6	7.3	254	
	26-May-05	11.2	8.2	368	
	28-Jun-05	13.6	8.4	450	
	11-Jul-05	12.8	7.1	440	10.3
	22-Aug-05	10.8	8.5	410	
	28-Sep-05	9.9	7.9	415	
	24-Oct-05	7.7	8.0	536	
	15-Nov-06	7.1	8.5	235	
	12-Dec-05	2.8	8.5	393	11.8
	17-Jan-06	5.8	7.7	328	12.1
	22-Mar-06	3.9	8.4	330	
	18-Apr-06	7.4	8.3	389	
	23-May-06	7.0	8.1	458	
	20-Jun-06	9.6	7.9	495	
	11-Jul-06	10.8	7.8	519	
	23-Aug-06	11.0	7.6	577	
	20-Sep-06	10.3	7.6	564	
	19-Oct-06	8.3	7.7	533	
	27-Nov-06	7.0	7.8	534	
	17-Dec-06	5.9	7.8	533	
	21-Jan-07	4.8	8.2	542	
	18-Mar-07	5.5	8.2	480	
	17-Apr-07	5.7	8.3	462	
	13-May-07	7.4	8.2	442	11.7
	17-Jun-07	12.2	8.3	526	10.0
	15-Jul-07	9.2	7.8	569	11.3
	17-Sep-07	10.0	7.7	420	
	18-Oct-07	11.4	8.2	629	9.3
	19-Nov-07	5.9	7.8	581	11.3
	10-Dec-07	5.8	7.9	488	11.2
	21-Jan-08	5.6	7.6	471	
	19-Feb-08	5.4	7.9	486	
	17-Mar-08	4.7	7.2	500	
	2-Apr-08	5.8	7.7	307	
	23-Apr-08	7.5	7.8	386	10.9
	6-May-08	6.5	6.8	452	11.7
	21-May-08	6.5	7.6	427	10.6
	17-Jun-08	8.9	7.8	479	9.6
	15-Jul-08	8.7	7.0	562	8.7
	18-Aug-08	9.1	7.2	619	6.6
	16-Sep-08	8.5	8.1	568	9.1
	21-Oct-08	7.0	7.9	521	8.0
	23-Nov-08	6.5	7.6	538	8.5
	14-Dec-08	5.9	7.1	433	7.0
	18-Jan-09	4.7	8.3	487	10.7
	8-Feb-09	5.4	8.7	481	9.6
	15-Mar-09	6.0	8.4	413	
	12-Apr-09	6.7	8.4	426	
	17-May-09	8.1	8.1	380	11.7
	14-Jun-09	7.9	7.4	880	
	12-Jul-09	8.0	8.4	519	12.0
	9-Aug-09	9.7	8.8	545	11.0
	13-Sep-09	9.3	8.2	532	
	11-Oct-09	6.5	8.5	548	
	15-Nov-09	6.3	7.3	512	
	13-Dec-09	5.7	7.6	572	
	17-Jan-10	5.2	8.1	555	12.1
	7-Feb-10	4.8	7.6	552	12.2
	14-Mar-10	5.9	7.8	471	12.3
	11-Apr-10	6.1	7.8	473	
	16-May-10	7.5	8.1	309	11.5
	13-Jun-10	7.5	8.0	313	14.9
	18-Jul-10	9.3	8.0	365	12.9
	15-Aug-10	9.0	8.1	377	11.6
	12-Sep-10	8.9	8.1	377	11.6
	17-Oct-10	7.4	8.0	371	11.0
	14-Nov-10	6.6	8.2	320	12.2
	19-Dec-10	4.0	8.1	283	11.7
	16-Jan-11	5.6	8.3	323	11.9
	20-Feb-11	4.4	8.0	218	11.5
	13-Mar-11	5.2	8.1	299	11.0
	17-Apr-11	5.9	8.2	302	12.7
	15-May-11	6.8	7.6	254	12.4
	12-Jun-11	8.4	7.9	230	7.8
	17-Jul-11	11.0	7.8	293	9.1
	14-Aug-11	10.5	8.3	292	11.0
	18-Sep-11	9.7	8.2	352	11.1
	16-Oct-11	8.4	7.1	358	10.6
	20-Nov-11	5.8	7.5	356	12.3
	18-Dec-11	5.9	8.1	236	11.1
	15-Jan-12	5.3	8.3	262	11.5
	19-Feb-12	5.1	7.8	286	12.7
	18-Mar-12	7.5	8.0	274	11.4
	15-Apr-12	6.2	8.5	315	10.8
	13-May-12	7.5	8.0	306	11.5
	17-Jun-12	9.1	8.1	359	14.2
	16-Jul-12	11.0	8.2	415	7.8
	14-Aug-12	9.4	7.9	486	7.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Sep-12	9.1	7.1	385	10.4
	17-Oct-12	8.4	7.4	344	8.2
	20-Nov-12	6.9	7.6	363	9.1
	18-Dec-12	5.6	7.7	720	9.6
	16-Jan-13	5.7	7.9	336	11.1
	20-Feb-13	4.8	8.0	303	12.9
	20-Mar-13	4.5	8.0	253	5.5
	16-Apr-13	6.1	8.0	256	10.0
	13-May-13	7.2	8.2	241	10.2
	19-Jun-13	9.2	8.2	314	11.9
	16-Jul-13	9.0	7.9	284	10.9
	21-Aug-13	9.2	8.0	324	11.1
	18-Sep-13	8.8	7.8	383	12.3
	16-Oct-13	8.7	8.3	362	7.1
	19-Nov-13	6.5	8.3	354	2.3
	18-Dec-13	4.5	8.6	334	7.5
	21-Jan-14	4.5	8.1	320	6.5
	16-Apr-14	5.8	8.2	352	10.2
	13-May-14	7.9	8.0	306	10.2
	17-Jun-14	8.2	8.0	247	10.2
	15-Jul-14	9.1	7.7	351	4.7
	23-Oct-14	7.5	8.1	437	9.0
	16-Dec-14	5.9	8.6	412	-
	20-Jan-15	4.2	7.8	378	1.3
	18-Mar-15	3.8	8.2	281	13.2
	22-Apr-15	6.3	8.0	350	12.9
	19-May-15	7.6	8.3	290	-
	15-Jun-15	10.4	8.1	373	9.3
	21-Jul-15	8.6	7.9	357	-
	11-Aug-15	8.9	8.1	388	11.4
	8-Sep-15	10.9	7.8	417	10.5
	15-Oct-15	8.2	8.0	384	11.2
	18-Nov-15	7.1	7.9	417	12.0
	8-Dec-15	6.1	8.0	403	19.4
	19-Jan-16	4.8	7.9	338	12.8
	17-Feb-16	5.0	7.9	374	13.1
	15-Mar-16	6.4	7.8	311	12.6
	21-Apr-16	6.3	8.0	295	13.1
	18-May-16	6.6	8.3	337	12.4
	22-Jun-16	8.4	8.1	347	11.9
	20-Jul-16	9.5	8.1	393	11.2
	24-Aug-16	13.5	8.3	405	10.3
	19-Sep-16	11.1	7.9	422	10.5
	18-Oct-16	10.2	7.7	439	14.2
	15-Nov-16	6.5	8.1	381	12.6
	12-Dec-16	4.6	7.9	482	12.4
	24-Jan-17	6.1	8.1	358	11.9
	16-Feb-17	4.7	8.2	380	13.8
	21-Mar-17	5.6	8.2	365	12.1
	19-Apr-17	7.3	7.8	323	14.2
	16-May-17	8.0	8.5	336	11.9
	28-Jun-17	7.2	7.9	356	12.1
	7-Jul-17	8.3	7.9	350	12.3
	19-Jul-17	8.2	7.9	384	11.7
	15-Aug-17	8.8	8.6	329	12.5
	17-Sep-17	9.3	8.0	403	11.0
	17-Oct-17	8.0	8.0	419	11.6
	14-Nov-17	6.5	8.2	415	8.0
	14-Dec-17	5.6	8.2	398	12.5
SW24C					
	19-Feb-08	4.5	8.0	475	
	17-Mar-08	3.6	7.4	491	
	2-Apr-08	3.6	7.4	491	
	23-Apr-08	8.1	7.8	377	10.2
	6-May-08	6.6	7.0	443	12.1
	21-May-08	6.8	7.6	423	11.1
	17-Jun-08	8.3	7.6	453	10.3
	15-Jul-08	9.4	7.0	552	9.5
	18-Aug-08	10.4	7.3	604	6.5
	16-Sep-08	9.0	8.2	559	9.6
	21-Oct-08	6.5	7.9	588	8.4
	23-Nov-08	5.5	7.9	285	9.6
	14-Dec-08	5.1	7.5	429	7.1
	18-Jan-09	3.9	8.5	491	11.7
	8-Feb-09	4.8		472	9.4
	15-Mar-09	5.6	8.6	412	
	12-Apr-09	6.8	8.4	426	
	17-May-09	9.7	8.2	337	11.2
	14-Jun-09	8.6	7.6	907	
	12-Jul-09	8.5	8.3	514	
	9-Aug-09	10.5	8.4	530	10.6
	13-Sep-09	9.9	8.1	506	
	11-Oct-09	6.3	8.4	549	
	15-Nov-09	5.6	7.3	499	
	13-Dec-09	4.2	7.7	540	
	17-Jan-10	3.7	8.2	533	12.9
	7-Feb-10	2.9	7.7	506	12.1
	14-Mar-10	5.5	7.8	470	12.8
	11-Apr-10	5.9	7.3	462	
	16-May-10	8.2	8.2	313	11.4
	13-Jun-10	8.4	8.1	327	14.1
	18-Jul-10	10.5	8.1	381	12.7
	15-Aug-10	10.2	8.2	378	11.0
	17-Oct-10	7.2	8.0	374	11.5
	14-Nov-10	6.5	8.2	317	12.3
	19-Dec-10	4.8	8.1	306	12.3
	16-Jan-11	4.9	8.4	311	12.3
	20-Feb-11	4.4	8.1	219	11.6
	13-Mar-11	4.9	8.2	242	11.5
	17-Apr-11	5.7	8.2	278	12.9
	15-May-11	6.8	7.7	252	13.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	12-Jun-11	8.3	8.0	288	6.5
	17-Jul-11	11.1	7.9	364	12.6
	14-Aug-11	10.5	8.3	284	10.8
	18-Sep-11	9.5	8.3	344	10.6
	16-Oct-11	8.2	7.9	349	11.2
	20-Nov-11	5.1	7.6	219	12.7
	15-Jan-12	4.3	8.3	257	12.2
	19-Feb-12	4.4	8.1	276	12.3
	18-Mar-12	7.8	8.1	273	11.4
	15-Apr-12	5.9	8.4	309	11.1
	13-May-12	8.3	8.0	310	11.4
	17-Jun-12	10.3	8.1	369	14.6
	16-Jul-12	12.4	8.2	419	7.3
	14-Aug-12	10.1	7.8	472	7.5
	18-Sep-12	10.0	7.4	392	9.9
	17-Oct-12	8.3	7.2	349	8.2
	20-Nov-12	6.9	7.8	357	9.3
	18-Dec-12	6.2	7.5	741	9.6
	16-Jan-13	4.8	8.1	349	11.6
	20-Feb-13	3.1	8.1	284	14.2
	20-Mar-13	4.1	8.0	277	6.4
	16-Apr-13	6.1	8.0	253	10.1
	14-May-13	7.2	8.2	238	10.1
	19-Jun-13	8.2	8.1	329	12.0
	16-Jul-13	10.4	7.9	371	10.1
	21-Aug-13	10.4	7.9	393	10.4
	18-Sep-13	8.5	7.8	375	11.9
	16-Oct-13	8.9	8.1	289	7.0
	19-Nov-13	5.6	8.3	324	2.4
	18-Dec-13	3.5	8.6	297	7.0
	22-Jan-14	2.6	7.3	304	3.1
	18-Mar-14	3.8	7.1	330	5.4
	16-Apr-14	5.2	8.2	338	11.3
	13-May-14	8.7	8.0	207	10.4
	17-Jun-14	9.7	8.2	324	12.0
	15-Jul-14	10.5	8.7	366	5.2
	19-Aug-14	9.1	8.4	410	10.0
	9-Sep-14	10.4	8.4	437	4.0
	23-Oct-14	7.5	8.1	435	8.7
	16-Dec-14	5.0	8.8	392	-
	20-Jan-15	3.3	7.8	367	1.4
	18-Mar-15	2.5	8.3	266	13.2
	22-Apr-15	6.1	8.0	317	13.1
	19-May-15	8.1	8.3	296	-
	15-Jun-15	10.4	8.1	373	9.3
	21-Jul-15	9.6	7.9	368	-
	11-Aug-15	9.6	8.2	396	11.3
	8-Sep-15	12.1	7.8	422	9.6
	15-Oct-15	8.2	8.0	374	10.5
	18-Nov-15	7.4	7.9	350	12.5
	8-Dec-15	5.7	8.1	397	19.5
	19-Jan-16	4.1	8.0	329	14.6
	17-Feb-16	4.2	7.7	358	13.2
	15-Mar-16	6.4	7.9	307	12.9
	21-Apr-16	6.4	8.0	299	12.9
	18-May-16	6.8	8.4	338	11.7
	22-Jun-16	10.2	8.3	367	11.3
	20-Jul-16	11.1	8.1	357	10.4
	24-Aug-16	10.8	8.1	388	11.2
	19-Sep-16	12.2	8.1	567	10.2
	18-Oct-16	11.6	7.8	438	12.0
	15-Nov-16	6.7	8.1	386	11.8
	12-Dec-16	3.8	7.8	482	12.6
	24-Jan-17	5.7	8.1	350	12.1
	16-Feb-17	3.6	8.2	336	13.7
	21-Mar-17	5.2	8.2	356	12.1
	19-Apr-17	7.6	7.9	321	13.7
	16-May-17	9.2	8.6	340	11.4
	28-Jun-17	8.0	8.1	354	12.0
	19-Jul-17	9.3	8.1	385	11.4
	15-Aug-17	9.8	8.6	334	11.0
	17-Sep-17	10.5	8.0	418	10.7
	17-Oct-17	8.3	8.1	413	11.4
	14-Nov-17	6.4	8.2	410	8.3
	14-Dec-17	4.2	8.0	376	13.5
SW25					
	11-Feb-04	1.2	8.5	220	10.1
	17-Mar-04	1.6	8.6	353	6.2
	19-Apr-04	9.0	8.3	254	
	19-May-04	17.3	8.4	344	
	24-Jun-04	18.9	8.5	308	9.0
	29-Jul-04	22.4	8.7	564	7.6
	20-Oct-04	9.5	8.1	244	10.3
	17-Nov-04	4.0	8.2	204	
	16-Dec-04	1.0	7.8	182	
	29-Mar-05	1.1	7.3	258	6.4
	11-Apr-05	2.6	6.4	222	7.2
	24-May-05	14.0	8.0	327	10.2
	28-Jun-05	24.7	8.2	389	
	11-Jul-05	19.4	6.7	304	7.4
	22-Aug-05	17.2	7.1	290	8.1
	14-Nov-05	7.1	8.5	235	
	12-Dec-05	0.6	8.7	218	13.3
	20-Mar-06	1.9	8.0	260	3.7
	18-Apr-06	9.9	8.2	365	
	23-May-06	10.3	8.7	408	
	20-Jun-06	19.5	8.4	354	
	11-Jul-06	19.3	8.4	302	
	18-Oct-06	9.4	7.9	363	
	27-Nov-06	4.0	8.5	329	
	17-Dec-06	1.0	8.2	374	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	21-Jan-07	2.3	8.4	472	
	15-Apr-07	2.4	8.3	410	13.7
	13-May-07	15.9	8.6	371	9.8
	17-Jun-07	23.5	8.6	342	8.2
	12-Dec-07	1.1	8.3	347	12.9
	21-Jan-08	1.9	7.2	369	9.2
	20-Feb-08	1.4	7.9	424	12.5
	18-Mar-08	1.3	7.8	432	5.4
	2-Apr-08	0.9	7.6	428	5.3
	21-Apr-08	13.1	7.6	385	7.9
	21-May-08	11.8	7.9	364	8.7
	17-Jun-08	19.6	7.8	340	6.4
	15-Jul-08	19.3	7.4	394	6.5
	17-Sep-08	16.2	8.8	343	5.8
	20-Oct-08	10.3	8.1	304	8.5
	23-Nov-08	2.2	8.5	344	8.6
	14-Dec-08	1.8	7.5	305	7.2
	18-Jan-09	1.2	8.4	348	9.2
	8-Feb-09	1.3		410	7.2
	15-Mar-09	3.1	7.7	352	9.7
	12-Apr-09	7.8	8.2	437	
	17-May-09	16.0	8.5	337	9.5
	14-Jun-09	19.1	8.2	697	8.9
	12-Jul-09	19.0	7.7	355	7.9
	9-Aug-09	21.6	9.0	327	8.7
	13-Sep-09	17.0	8.3	299	8.9
	11-Oct-09	7.1	8.1	329	12.2
	15-Nov-09	6.3	8.3	309	
	13-Dec-09	0.5	7.6	352	
	17-Jan-10	0.8	7.5		12.9
	7-Feb-10	0.8	7.5	368	11.9
	14-Mar-10	1.5	8.1	395	8.6
	11-Apr-10	10.7	8.0	392	12.2
	16-May-10	14.7	8.5	298	10.4
	13-Jun-10	21.6	8.5	353	12.0
	18-Jul-10	23.7	7.7	358	9.5
	15-Aug-10	24.2	8.7	298	6.6
	12-Sep-10	16.0	8.7	276	8.3
	17-Oct-10	9.7	8.5	222	10.7
	14-Nov-10	5.2	8.2	189	8.8
	19-Dec-10	0.8	8.5	182	12.6
	16-Jan-11	1.3	8.3	205	9.6
	20-Feb-11	1.1	8.2	227	6.8
	13-Mar-11	1.3	7.8	158	6.5
	17-Apr-11	4.0	8.0	263	11.8
	15-May-11	12.4	8.2	278	11.5
	12-Jun-11	18.5	8.6	267	10.3
	17-Jul-11	23.7	8.6	293	6.6
	14-Aug-11	20.3	8.8	209	8.0
	18-Sep-11	14.4	9.0	215	9.1
	16-Oct-11	10.2	8.4	240	9.7
	20-Nov-11	2.5	8.3	181	12.0
	18-Dec-11	1.1	8.2	161	13.7
	15-Jan-12	1.3	8.2	164	11.3
	19-Feb-12	1.5	8.1	198	11.4
	18-Mar-12	7.5	7.6	244	8.6
	15-Apr-12	9.5	8.6	286	10.5
	13-May-12	16.9	8.3	323	8.6
	17-Jun-12	21.1	8.5	322	5.7
	16-Jul-12	21.8	8.7	291	6.0
	14-Aug-12	21.3	9.0	420	7.1
	18-Sep-12	16.8	8.3	257	8.4
	17-Oct-12	9.5	7.0	220	8.2
	20-Nov-12	4.4	7.9	191	4.4
	17-Dec-12	1.7	7.7	213	-
	15-Jan-13	1.7	7.7	258	10.1
	20-Feb-13	1.9	7.7	218	9.0
	19-Mar-13	2.2	7.7	213	6.3
	15-Apr-13	4.8	7.5	284	6.3
	13-May-13	12.2	8.4	302	6.5
	18-Jun-13	21.4	8.5	337	7.6
	16-Jul-13	26.9	8.3	345	5.7
	20-Aug-13	21.3	8.5	258	6.6
	18-Sep-13	15.4	8.4	268	8.8
	16-Oct-13	14.1	9.4	258	6.8
	19-Nov-13	2.9	8.6	210	2.1
	18-Dec-13	0.9	8.2	214	8.4
	15-Apr-14	1.6	7.6	182	10.3
	12-May-14	15.0	8.2	352	8.7
	17-Jun-14	20.9	8.5	346	8.7
	14-Jul-14	22.1	9.4	363	0.2
	18-Aug-14	20.5	8.8	327	6.4
	8-Sep-14	21.0	9.4	331	9.0
	22-Oct-14	8.6	7.5	416	6.9
	19-Nov-14	0.2	7.9	166	6.2
	16-Dec-14	0.6	8.4	176	-
	22-Apr-15	8.1	8.1	340	12.0
	19-May-15	18.2	8.6	311	-
	15-Jun-15	21.8	8.5	342	9.3
	21-Jul-15	23.3	9.0	310	-
	12-Aug-15	20.4	8.6	320	8.3
	8-Sep-15	21.0	8.1	315	8.9
	15-Oct-15	11.8	8.0	259	10.1
	18-Nov-15	5.7	8.1	254	12.2
	8-Dec-15	2.4	8.4	236	19.4
	19-Jan-16	0.4	8.1	205	17.1
	17-Feb-16	1.2	7.8	243	15.2
	15-Mar-16	2.4	7.9	230	11.7
	20-Apr-16	11.7	7.9	315	12.4
	17-May-16	11.7	8.5	355	10.6
	22-Jun-16	17.7	8.5	340	8.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	24-Aug-16	11.5	8.1	402	10.3
	15-Nov-16	7.6	8.3	396	11.4
	12-Dec-16	0.6	7.9	340	15.3
	24-Jan-17	1.2	8.3	258	13.0
	15-Feb-17	1.1	8.2	266	11.7
	21-Mar-17	3.4	8.0	301	10.3
	19-Apr-17	9.4	8.0	313	14.0
	16-May-17	12.8	8.6	436	12.4
	28-Jun-17	19.1	8.5	341	9.7
	18-Jul-17	23.1	7.3	365	7.8
	15-Aug-17	21.0	8.5	278	10.0
	17-Sep-17	19.6	8.6	328	10.1
	17-Oct-17	11.8	8.4	279	10.5
	14-Nov-17	2.4	8.1	235	14.3
	14-Dec-17	-0.2	8.0	229	19.5
SW26					
	11-Feb-04	0.2	8.2	157	11.9
	18-Mar-04	0.2	7.3		8.9
	19-Apr-04	5.7	7.5	96	
	19-May-04	13.1	7.6	200	9.7
	24-Jun-04	13.4	8.0	263	9.9
	29-Jul-04	15.1	7.9	521	8.6
	17-Nov-04	5.5	7.6	192	10.0
	29-Mar-05	2.3	7.4	159	
	11-Apr-05	0.6	7.0	115	11.0
	26-May-05	10.1	7.3	182	10.3
	28-Jun-05	19.1	8.0	314	9.2
	14-Dec-05	0.1	7.7	122	2.7
	21-Mar-06	0.3	8.0	195	12.1
	19-Apr-06	6.7	7.7	147	
	23-May-06	10.0	7.7	201	
	21-Jun-06	13.2	7.4	336	
	19-Oct-06	9.3	7.6	292	
	23-Nov-06	3.0	7.5	232	12.5
	17-Dec-06	1.4	7.4	221	12.7
	16-Apr-07	0.5	8.0	206	12.6
	13-May-07	9.6	8.2	225	10.3
	17-Jun-07	15.5	8.1	334	8.2
	10-Dec-07	1.4	9.0	257	13.2
	19-Feb-08	0.3	7.9	198	10.3
	17-Mar-08	0.6	7.2	233	
	1-Apr-08	0.2	7.7	198	13.6
	21-Apr-08	7.0	7.2	134	9.0
	21-May-08	6.2	7.8	201	8.5
	17-Jun-08	11.9	7.8	250	7.6
	15-Jul-08	13.8	6.9	372	6.4
	19-Aug-08	13.2	7.9	347	5.6
	16-Sep-08	11.4	7.5	235	6.6
	21-Oct-08	4.6	7.9	158	8.1
	8-Feb-09	1.0	9.2	232	8.9
	15-Mar-09	0.8	7.7	155	
	12-Apr-09	2.5	8.0	215	13.3
	17-May-09	14.1	7.8	207	9.5
	14-Jun-09	13.0	7.3	528	8.0
	12-Jul-09	11.5	8.4	347	8.1
	11-Oct-09	4.3	7.5	450	11.4
	15-Nov-09	4.3	7.7	237	9.7
	14-Mar-10	2.3	8.2	218	11.1
	11-Apr-10	7.5	8.2	199	12.6
	16-May-10	8.6	7.2	147	7.9
	13-Jun-10	14.1	7.6	202	9.4
	18-Jul-10	17.9	7.4	246	7.1
	15-Aug-10	17.4	7.7	364	6.0
	12-Sep-10	12.6	7.9	251	8.1
	17-Oct-10	8.5	7.5	225	6.9
	14-Nov-10	4.2	7.7	127	9.2
	13-Mar-11	0.7	8.3	132	9.2
	17-Apr-11	2.6	8.2	117	12.0
	15-May-11	8.0	7.6	121	9.8
	12-Jun-11	13.7	7.5	166	7.6
	16-Oct-11	9.4	7.4	196	6.9
	20-Nov-11	2.1	8.2	162	10.7
	18-Mar-12	5.6	7.5	107	7.1
	15-Apr-12	7.1	8.7	158	10.8
	13-May-12	13.7	7.6	191	7.7
	17-Jun-12	18.7	8.0	280	7.9
	19-Sep-12	9.6	7.8	174	8.8
	17-Oct-12	9.6	7.0	170	5.8
	21-Nov-12	3.2	8.0	100	4.4
	18-Dec-12	1.3	7.0	243	8.0
	15-Jan-13	0.1	7.2	122	7.9
	16-Apr-13	0.3	7.5	116	6.4
	13-May-13	8.6	7.5	263	9.0
	19-Jun-13	11.9	8.0	195	8.2
	17-Jul-13	18.4	7.7	267	4.3
	20-Aug-13	16.7	8.1	317	8.0
	19-Sep-13	13.0	8.2	269	4.9
	17-Oct-13	10.9	8.3	209	3.7
	19-Nov-13	1.8	8.7	126	1.8
	16-Apr-14	-0.1	8.2	214	8.2
	12-May-14	12.5	7.5	149	4.5
	18-Jun-14	13.6	7.7	220	8.0
	15-Jul-14	15.0	7.8	240	7.1
	19-Aug-14	12.9	8.5	220	4.0
	8-Sep-14	15.0	8.6	283	7.0
	20-Oct-14	10.2	8.4	378	6.7
	21-Apr-15	3.5	7.4	-	9.6
	19-May-15	11.7	8.0	181	11.9
	15-Jun-15	13.7	7.6	189	6.6
	22-Jul-15	13.8	7.8	283	8.3
	12-Aug-15	14.2	7.8	245	7.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	9-Sep-15	17.2	7.8	284	5.3
	19-Nov-15	8.0	7.2	187	10.2
	8-Dec-15	2.5	7.1	152	12.2
	15-Mar-16	0.2	6.5	101	10.7
	21-Apr-16	5.2	7.8	109	10.8
	18-May-16	9.3	7.8	155	9.2
	23-Jun-16	12.6	7.9	289	6.0
	15-Nov-16	4.0	7.5	245	6.8
	12-Dec-16	0.0	7.2	287	11.3
	25-Jan-17	1.0	7.6	140	11.1
	21-Mar-17	0.8	7.8	162	10.0
	19-Apr-17	6.4	7.8	125	9.7
	16-May-17	12.9	7.6	156	7.1
	28-Jun-17	13.8	7.5	214	6.6
	20-Jul-17	15.1	7.7	282	6.7
	16-Aug-17	15.4	7.7	338	6.4
	17-Sep-17	15.7	7.6	271	7.2
	17-Oct-17	10.0	7.6	210	6.1
	14-Nov-17	3.0	7.9	178	7.1
SW26A					
	11-Feb-04	0.3	8.4	159	10.5
	18-Mar-04	0.3		191	6.9
	19-Apr-04	5.6	7.3	93	11.7
	19-May-04	12.8	7.3	195	7.3
	24-Jun-04	11.6	7.6	255	8.3
	29-Jul-04	15.2	7.6	523	7.7
	17-Nov-04	6.0	7.3	180	10.1
	29-Mar-05	2.3	7.4	156	12.0
	11-Apr-05	0.3	6.9	113	9.4
	26-May-05	9.7	6.8	177	8.2
	28-Jun-05	18.8	8.1	301	8.9
	14-Dec-05	0.2	7.7	140	5.9
	17-Jan-06	0.4	7.4	106	11.0
	21-Mar-06	0.3	7.9	120	10.7
	19-Apr-06	6.1	7.7	147	
	23-May-06	9.9	7.9	201	
	21-Jun-06	12.8	7.3	319	
	19-Oct-06	8.9	7.5	268	
	23-Nov-06	2.8	7.6	224	10.6
	17-Dec-06	1.3	7.3	210	11.3
	16-Apr-07	0.4	8.2	203	10.9
	13-May-07	9.0	8.4	217	8.1
	17-Jun-07	15.4	8.0	332	7.5
	19-Feb-08	0.3	7.7	220	11.4
	17-Mar-08	0.6	7.6	228	
	1-Apr-08	0.2	7.3	195	10.5
	21-Apr-08	6.8	6.9	145	8.1
	21-May-08	6.6	7.9	99	6.6
	17-Jun-08	12.1	7.9	268	6.9
	15-Jul-08	13.6	7.3	358	6.3
	19-Aug-08	13.4	8.1	201	5.4
	16-Sep-08	11.3	7.6	233	5.6
	21-Oct-08	5.2	8.3	204	8.5
	15-Mar-09	0.6	7.9	201	12.0
	12-Apr-09	1.6	7.5	226	12.6
	17-May-09	13.5	7.3	267	7.3
	14-Jun-09	13.8	7.3	411	9.7
	12-Jul-09	11.6	8.4	354	8.4
	9-Aug-09	15.4	8.4	256	6.0
	11-Oct-09	4.5	7.6	440	12.0
	15-Nov-09	4.1	7.6	230	9.9
	14-Mar-10	1.0	8.4	226	13.3
	11-Apr-10	7.0	8.6	216	12.9
	16-May-10	8.6	7.4	142	7.1
	13-Jun-10	14.4	7.6	178	4.5
	18-Jul-10	17.4	7.5	2.46	8.2
	15-Aug-10	16.9	7.5	355	7.4
	12-Sep-10	12.7	7.8	284	7.1
	17-Oct-10	8.4	7.6	218	6.9
	13-Mar-11	0.4	8.2	120	8.4
	17-Apr-11	2.5	7.8	128	9.9
	15-May-11	8.0	7.6	127	8.2
	12-Jun-11	13.6	7.7	188	7.4
	16-Oct-11	9.5	7.6	196	6.0
	20-Nov-11	3.7	8.4	183	7.0
	18-Mar-12	5.6	8.1	99	7.5
	15-Apr-12	6.7	9.0	152	9.4
	13-May-12	12.6	7.8	187	7.5
	17-Jun-12	17.4	8.3	278	7.7
	19-Sep-12	9.9	8.0	209	8.1
	17-Oct-12	9.8	7.7	171	5.5
	21-Nov-12	3.6	8.2	116	4.7
	18-Dec-12	1.1	7.1	210	7.8
	15-Jan-13	0.0	7.4	119	7.3
	16-Apr-13	0.1	7.6	115	5.9
	13-May-13	8.5	7.5	255	9.2
	19-Jun-13	12.1	8.4	224	8.1
	17-Jul-13	18.5	7.4	264	4.1
	20-Aug-13	16.4	8.1	318	7.0
	19-Sep-13	12.7	8.5	276	4.2
	17-Oct-13	10.9	8.7	305	3.5
	19-Nov-13	1.7	8.7	123	1.8
	12-May-14	12.3	7.2	138	4.5
	18-Jun-14	13.9	7.5	220	7.3
	15-Jul-14	15.0	7.8	231	8.2
	19-Aug-14	18.2	8.6	241	5.3
	8-Sep-14	15.1	8.6	334	7.1
	20-Oct-14	10.3	8.3	385	6.9
	21-Apr-15	3.3	7.6	-	8.9
	19-May-15	11.6	7.9	176	12.0
	15-Jun-15	13.7	7.5	187	5.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	22-Jul-15	14.1	7.8	280	8.6
	12-Aug-15	14.2	7.9	270	8.2
	9-Sep-15	17.1	7.6	288	4.9
	19-Nov-15	8.0	7.3	177	10.3
	8-Dec-15	2.5	7.1	148	12.5
	20-Jan-16	0.0	7.2	129	9.5
	17-Feb-16	0.0	8.0	133	8.2
	15-Mar-16	0.1	6.6	114	10.3
	21-Apr-16	5.2	7.6	109	10.6
	18-May-16	9.0	7.9	149	8.7
	23-Jun-16	12.9	8.2	263	8.6
	15-Nov-16	4.3	8.0	215	9.4
	12-Dec-16	0.0	7.6	259	12.4
	24-Jan-17	0.9	7.9	138	11.2
	17-Feb-17	0.4	8.3	159	12.6
	21-Mar-17	0.4	8.1	157	10.1
	19-Apr-17	6.3	7.3	124	9.4
	16-May-17	12.7	7.7	170	6.9
	28-Jun-17	13.8	7.6	208	6.0
	20-Jul-17	15.1	7.6	270	6.1
	16-Aug-17	15.4	7.9	213	5.9
	17-Sep-17	15.7	7.9	310	7.0
	17-Oct-17	9.8	8.1	197	6.3
	14-Nov-17	2.8	8.1	173	7.4
	14-Dec-17	-0.4	8.2	81	8.6
SW27					
	20-Oct-04	3.7	8.0	300	12.9
	15-Dec-04	0.1	7.9	232	9.3
	29-Mar-05	5.8	8.1	312	
	11-Apr-05	7.3	7.5	250	
	24-May-05	8.4	7.8	313	
	28-Jun-05	14.5	8.3	392	
	11-Jul-05	13.1	6.5	372	10.3
	22-Aug-05	11.7	8.3	336	
	27-Sep-05	10.5	7.6	323	10.7
	24-Oct-05	6.1	8.0	399	
	14-Nov-05	5.0	8.4	305	12.0
	12-Dec-05	0.1	8.6	263	7.9
	17-Jan-06	1.0	7.9	268	
	20-Mar-06	5.9	8.7	276	12.3
	18-Apr-06	10.0	8.4	296	
	23-May-06	8.7	8.3	415	
	20-Jun-06	11.2	8.3	424	
	11-Jul-06	12.7	8.3	405	
	23-Aug-06	12.2	7.9	412	
	20-Sep-06	9.9	8.1	351	
	18-Oct-06	11.1	7.8	428	
	27-Nov-06	7.6	8.2	468	11.7
	17-Dec-06	4.6	8.2	497	
	16-Apr-07	5.1	8.4	383	
	13-May-07	9.8	8.3	406	
	17-Jun-07	11.6	8.3	441	10.7
	15-Jul-07	11.4	8.0	463	10.6
	19-Aug-07	12.6	8.3	444	9.9
	17-Sep-07	9.5	7.9	417	10.4
	18-Oct-07	10.8	8.0	429	9.2
	19-Nov-07	3.7	8.5	455	
	22-Jan-08	4.6	7.3	389	
	20-Feb-08	4.0	8.0	436	
	17-Mar-08	5.6	7.8	454	
	1-Apr-08	5.7	7.8	399	
	23-Apr-08	7.9	7.9	295	10.6
	21-May-08	9.3	6.7	384	10.5
	17-Jun-08	7.5	7.8	443	9.9
	15-Jul-08	9.2	6.9	415	9.0
	18-Aug-08	11.0	6.6	524	5.8
	16-Sep-08	8.7	8.0	484	8.9
	20-Oct-08	7.9	7.5	436	8.0
	23-Nov-08	6.2		508	8.3
	14-Dec-08	5.7	7.4	413	7.7
	18-Jan-09	4.3	8.4	392	8.8
	8-Feb-09	6.6		351	8.1
	15-Mar-09	7.4	8.2	367	
	12-Apr-09	7.5	8.3	329	
	17-May-09	10.1	8.3	352	
	14-Jun-09	9.1	7.2	825	
	12-Jul-09	8.7	8.1	466	
	9-Aug-09	7.6	8.3	485	
	13-Sep-09	9.4	8.9	419	
	11-Oct-09	6.0	7.4	466	
	15-Nov-09	5.8	7.8	419	
	13-Dec-09	3.8	7.9	484	12.5
	17-Jan-10	4.7	7.7		12.2
	7-Feb-10	3.0	7.8	470	13.0
	14-Mar-10	7.2	7.9	447	12.1
	11-Apr-10	7.4	7.6	413	12.9
	16-May-10	8.1	8.1	301	11.5
	13-Jun-10	8.7	8.1	217	14.9
	18-Jul-10	9.2	8.0	332	12.1
	15-Aug-10	10.2	8.1	344	10.3
	12-Sep-10	8.8	8.0	163	11.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	17-Oct-10	7.6	7.9	323	11.4
	14-Nov-10	6.8	8.0	273	17.6
	19-Dec-10	5.0	8.2	245	11.9
	16-Jan-11	4.6	8.1	244	11.3
	20-Feb-11	4.7	8.1	288	11.6
	13-Mar-11	7.0	8.2	311	10.7
	17-Apr-11	6.5	8.2	213	11.8
	15-May-11	6.6	7.3	216	13.4
	12-Jun-11	8.2	7.8	262	7.3
	17-Jul-11	9.9	7.7	316	9.3
	14-Aug-11	10.9	8.1	240	11.3
	18-Sep-11	9.3	7.9	278	10.9
	16-Oct-11	8.2	8.0	300	10.7
	20-Nov-11	4.6	7.4	296	12.8
	18-Dec-11	5.5	8.3	245	11.2
	15-Jan-12	5.6	8.1	251	12.0
	19-Feb-12	5.4	7.4	264	12.1
	18-Mar-12	8.1	7.9	210	11.1
	15-Apr-12	6.3	8.7	289	11.6
	13-May-12	10.3	8.0	320	9.6
	17-Jun-12	10.5	8.1	348	8.7
	16-Jul-12	12.2	8.1	336	6.3
	14-Aug-12	10.2	7.8	464	9.2
	18-Sep-12	9.9	7.0	339	10.3
	17-Oct-12	8.3	6.8	300	7.9
	20-Nov-12	7.6	7.8	337	9.1
	18-Dec-12	6.7	7.7	651	10.4
	15-Jan-13	6.0	7.9	357	11.4
	20-Feb-13	5.0	8.3	282	13.0
	19-Mar-13	5.5	8.1	243	11.5
	16-Apr-13	6.8	7.5	262	9.8
	13-May-13	7.5	7.9	268	10.5
	18-Jun-13	8.6	7.9	292	8.7
	16-Jul-13	10.0	7.9	347	10.5
	21-Aug-13	10.3	8.0	339	10.8
	19-Sep-13	8.5	7.9	317	12.1
	16-Oct-13	9.0	8.5	333	7.1
	19-Nov-13	5.9	7.7	322	4.0
	17-Dec-13	5.4	8.1	298	4.2
	21-Jan-14	3.6	7.5	286	3.1
	20-Feb-14	3.3	7.5	277	8.5
	18-Mar-14	2.3	7.6	285	4.0
	15-Apr-14	5.1	8.0	192	12.2
	12-May-14	9.1	7.1	265	10.2
	17-Jun-14	8.9	8.2	315	10.0
	14 ju;y 14	9.2	8.9	370	2.6
	18-Aug-14	9.5	8.8	371	7.2
	8-Sep-14	10.3	8.9	379	11.0
	23-Oct-14	7.9	8.0	403	4.3
	16-Dec-14	5.7	8.7	371	-
	20-Jan-15	3.9	7.2	342	2.0
	18-Mar-15	4.9	8.4	250	12.2
	21-Apr-15	6.6	8.0	219	11.3
	19-May-15	8.2	8.3	290	14.6
	15-Jun-15	11.8	8.2	356	9.8
	21-Jul-15	12.6	8.2	340	-
	11-Aug-15	13.0	8.2	356	10.0
	8-Sep-15	13.1	7.9	356	9.2
	15-Oct-15	8.1	8.0	299	10.5
	18-Nov-15	7.6	8.0	357	12.2
	8-Dec-15	5.3	8.2	341	15.9
	19-Jan-16	1.8	8.0	276	15.3
	17-Feb-16	4.0	8.0	326	13.8
	15-Mar-16	7.0	7.9	276	12.7
	20-Apr-16	6.3	7.9	149	13.4
	17-May-16	10.2	8.5	348	11.7
	22-Jun-16	10.5	8.5	342	10.9
	20-Jul-16	12.3	8.5	361	10.4
	24-Aug-16	14.4	8.1	368	5.2
	19-Sep-16	13.3	8.0	360	6.6
	17-Oct-16	11.5	8.1	373	8.5
	15-Nov-16	7.2	8.2	471	11.9
	12-Dec-16	2.0	7.7	421	12.5
	24-Jan-17	4.9	8.3	247	13.0
	16-Feb-17	2.1	8.2	318	15.1
	21-Mar-17	7.2	8.3	357	12.0
	19-Apr-17	8.7	8.2	292	13.9
	16-May-17	9.9	8.8	293	12.0
	28-Jun-17	8.5	8.1	336	11.8
	18-Jul-17	9.9	8.3	355	11.7
	15-Aug-17	10.1	8.7	287	11.8
	17-Sep-17	11.5	8.1	361	10.2
	17-Oct-17	8.4	8.2	348	11.0
	14-Nov-17	6.3	8.3	360	8.6
	14-Dec-17	3.6	8.2	335	14.1
SW77					
	13-Dec-09				
	17-Jan-10	5.6	8.2	164	11.3
	7-Feb-10	5.7	8.4	449	12.6
	14-Mar-10	6.0	-	383	12.5
	11-Apr-10	5.9	7.5	407	12.9
	16-May-10	7.0	7.6	264	10.5
	13-Jun-10	7.9	7.5	286	12.7
	18-Jul-10	9.2	7.3	298	12.7
	15-Aug-10	10.0	7.6	326	8.6
	12-Sep-10	10.6	7.7	261	11.1
	17-Oct-10	10.2	7.0	327	8.6
	21-Oct-10	10.0	6.9	354	8.7
	14-Nov-10	9.4	7.5	294	13.7
	17-Apr-11	5.4	8.1	253	12.0
	15-May-11	6.0	7.7	219	12.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	12-Jun-11	7.7	7.5	253	5.8
	17-Jul-11	9.4	7.3	306	10.1
	14-Aug-11	10.6	8.7	240	10.9
	16-Oct-11	10.5	8.0	353	9.1
	20-Nov-11	8.7	8.3	321	10.1
	18-Dec-11	8.2	8.6	225	9.2
	15-Jan-12	7.0	8.2	242	10.3
	19-Feb-12	6.5	7.1	244	12.5
	18-Mar-12	5.9	7.5	214	13.3
	15-Apr-12	6.3	8.8	287	12.5
	13-May-12	7.0	7.5	281	9.5
	17-Jun-12	8.3	7.6	274	6.6
	16-Jul-12	10.8	7.8	346	6.1
	14-Aug-12	10.1	7.7	225	9.0
	18-Sep-12	11.0	6.6	348	8.2
	17-Oct-12	10.6	7.9	318	7.5
	20-Nov-12	9.3	8.0	343	8.5
	18-Dec-12	8.4	7.7	713	9.2
	15-Jan-13	7.4	7.9	306	10.3
	20-Feb-13	6.4	7.8	234	10.1
	19-Mar-13	5.9	8.1	214	12.2
	16-Apr-13	0.2	6.9	194	10.0
	13-May-13	6.1	7.4	265	11.0
	18-Jun-13	8.2	7.9	296	8.7
	16-Jul-13	9.9	8.2	333	9.9
	16-Oct-13	10.1	9.9	336	6.3
	19-Nov-13	8.9	7.3	338	6.3
	17-Dec-13	8.0	8.1	269	6.9
	18-Mar-14	4.3	6.8	280	6.0
	15-Apr-14	4.6	7.8	191	10.2
	12-May-14	6.8	7.8	252	3.3
	17-Jun-14	7.8	7.8	306	11.2
	14-Jul-14	8.7	8.9	341	1.9
	18-Aug-14	9.6	8.5	341	4.3
	8-Sep-14	10.4	8.5	378	9.9
	23-Oct-14	9.3	8.1	435	8.5
	18-Mar-15	5.7	7.6	253	10.6
	21-Apr-15	5.4	7.5	202	11.9
	19-May-15	6.4	7.9	268	14.5
	15-Jun-15	7.3	7.6	329	9.6
	21-Jul-15	13.0	8.0	358	-
	11-Aug-15	13.0	7.9	342	9.4
	25-Aug-15	10.3	7.7	325	11.4
	8-Sep-15	14.2	7.8	372	9.6
	15-Oct-15	8.8	7.8	304	9.9
	18-Nov-15	8.3	7.8	360	10.0
	8-Dec-15	6.3	7.9	344	14.6
	19-Jan-16	4.1	7.9	259	13.4
	17-Feb-16	5.1	7.9	321	12.3
	15-Mar-16	6.3	7.7	237	13.0
	20-Apr-16	6.5	7.3	291	12.6
	17-May-16	10.0	8.0	353	11.9
	22-Jun-16	9.1	7.9	336	10.9
	5-Jul-16	10.7	8.0	267	16.3
	20-Jul-16	11.4	8.3	355	10.3
	9-Aug-16	14.9	8.1	345	11.8
	24-Aug-16	12.9	8.2	356	11.0
	19-Sep-16	13.1	8.2	374	9.4
	17-Oct-16	12.1	7.9	340	8.9
	15-Nov-16	8.7	7.4	480	9.7
	12-Dec-16	5.0	8.0	431	12.1
	24-Jan-17	6.5	7.6	267	12.0
	16-Feb-17	4.4	8.1	331	13.6
	21-Mar-17	6.5	8.0	349	12.1
	19-Apr-17	8.4	7.7	309	14.4
	16-May-17	9.2	8.1	323	11.3
	28-Jun-17	10.9	7.7	362	11.1
	7-Jul-17	11.9	8.0	334	11.5
	18-Jul-17	11.5	8.0	363	10.5
	2-Aug-17	10.9	8.2	255	10.1
	15-Aug-17	11.0	8.5	294	10.8
	17-Sep-17	11.4	7.8	356	10.3
	17-Oct-17	9.7	8.0	269	10.6
	14-Nov-17	8.1	8.0	377	7.8
	14-Dec-17	4.6	8.1	334	13.2
RR3 OUT					
	18-Nov-15	8.2	6.9	494	4.9
	8-Dec-15	7.0	7.1	439	6.2
	19-Jan-16	4.6	6.7	335	7.3
	17-Feb-16	4.1	6.9	329	6.7
	15-Mar-16	5.3	7.1	349	8.2
	20-Apr-16	8.3	7.3	309	7.9
	17-May-16	7.6	7.4	358	4.9
	23-Jun-16	12.5	7.6	387	5.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA
DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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LOCATION	DATE	TEMPERATURE (°C)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	24-Jan-17	6.2	7.5	436	6.9
	15-Feb-17	4.9	7.7	343	7.2
	21-Mar-17	4.5	7.4	320	5.7
	19-Apr-17	7.1	7.4	273	7.8
	16-May-17	9.1	7.8	457	6.2
	28-Jun-17	11.3	7.2	379	4.4
	18-Jul-17	11.6	7.7	395	5.1
	15-Aug-17	11.0	8.0	329	1.2
	17-Sep-17	12.5	7.3	454	1.1
	17-Oct-17	11.0	7.3	474	2.5
	14-Nov-17	9.0	7.3	436	4.1
	14-Dec-17	6.9	7.2	377	5.8
RR3 KARST					
	18-Nov-15	8.2	7.0	493	5.2
	8-Dec-15	6.8	7.2	438	8.1
	19-Jan-16	4.2	6.9	325	9.1
	17-Feb-16	4.3	7.1	333	7.6
	15-Mar-16	4.5	7.3	289	9.6
	20-Apr-16	8.7	7.5	310	9.0
	17-May-16	8.1	7.5	364	6.2
	23-Jun-16	12.7	7.5	391	4.0
	24-Jan-17	6.0	7.4	437	7.6
	15-Feb-17	4.5	7.6	204	8.7
	21-Mar-17	4.5	7.5	323	6.6
	19-Apr-17	7.3	7.2	300	8.3
	16-May-17	8.9	7.8	457	6.4
	28-Jun-17	11.4	7.4	378	6.3
	18-Jul-17	11.9	7.7	396	5.7
	15-Aug-17	11.4	7.9	331	2.4
	17-Sep-17	13.0	7.2	462	1.6
	17-Oct-17	11.0	7.3	470	4.1
	14-Nov-17	8.8	7.3	383	5.5
	14-Dec-17	6.1	7.2	365	8.2
PR CONTROL					
	25-Aug-15	14.6	8.4	307	8.0
	9-Sep-15	18.4	8.3	365	9.4
	15-Oct-15	8.6	8.0	291	11.3
	18-Nov-15	6.9	8.0	335	11.3
	8-Dec-15	3.5	8.3	305	15.7
	19-Jan-16	-0.1	7.7	239	16.1
	17-Feb-16	0.6	8.2	276	15.8
	15-Mar-16	4.2	8.3	256	13.8
	20-Apr-16	9.7	7.7	310	12.2
	17-May-16	7.5	8.6	328	12.5
	22-Jun-16	12.5	8.5	330	11.1
	20-Jul-16	14.2	8.5	344	10.2
	24-Aug-16	16.6	8.4	252	11.5
	19-Sep-16	15.2	8.4	440	9.7
	17-Oct-16	12.6	8.1	340	9.6
	15-Nov-16	6.1	8.2	468	12.9
	12-Dec-16	0.0	7.6	405	13.4
	24-Jan-17	1.9	8.2	268	14.3
	16-Feb-17	0.4	8.4	284	16.4
	21-Mar-17	2.2	8.4	303	13.8
	19-Apr-17	7.8	7.7	305	14.1
	16-May-17	9.2	8.4	456	8.5
	28-Jun-17	11.7	8.3	358	11.1
	18-Jul-17	13.7	6.4	368	11.3
	15-Aug-17	14.4	8.8	297	11.0
	17-Sep-17	14.9	8.2	366	10.3
	17-Oct-17	8.8	8.3	338	11.5
	14-Nov-17	4.4	8.2	320	11.3
	14-Dec-17	-0.1	7.9	277	19.5
BC CONTROL					
	25-Aug-15	14.6	8.3	436	7.9
	9-Sep-15	17.9	8.0	400	5.9
	16-Oct-15	8.1	7.8	436	9.1
	19-Nov-15	9.4	8.0	405	11.7
	8-Dec-15	3.2	7.9	348	18.0
	15-Mar-16	6.2	8.1	259	13.4
	21-Apr-16	9.7	8.5	316	12.2
	17-May-16	5.8	8.5	334	12.6
	22-Jun-16	15.7	8.4	465	8.5
	20-Jul-16	13.6	7.9	457	9.1
	25-Aug-16	17.7	8.3	577	7.3
	19-Sep-16	14.6	8.1	275	8.3
	17-Oct-16	12.3	7.9	648	8.4
	15-Nov-16	5.2	8.0	439	11.1
	12-Dec-16	0.0	7.6	318	14.5
	24-Jan-17	2.1	8.2	287	13.6
	22-Mar-17	0.0	8.9	475	6.0
	19-Apr-17	10.8	7.5	345	12.4
	16-May-17	18.0	8.6	320	7.9
	28-Jun-17	12.4	8.4	415	10.8
	19-Jul-17	17.2	8.5	485	8.6
	16-Aug-17	15.9	8.4	457	8.0
	17-Sep-17	14.6	7.1	477	8.6
	18-Oct-17	9.4	8.3	404	10.4
	14-Nov-17	5.3	8.3	375	10.3
	14-Dec-17	-0.1	8.0	203	18.8

NOTE:
- Blank indicates parameter value not available.
- Monitoring dates where surface water station was observed as frozen, dry or where insufficient

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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			SUMP 1					
			Q1 2016		Q2 2016		Q3 2016	Q4 2016
			23-Mar-16		25-May-16		10-Aug-16	18-Oct-16
PARAMETERS	UNITS	PWQO	SUMP 1	DUP	SUMP 1	DUP	SUMP 1	SUMP 1
Total Coliform	cfu/100mL		330	48	26	20	16	NDOGT
E.Coli	cfu/100mL		131	0	13	14	5	NDOGT
Heterotrophic Plate Count	cfu/mL		-	610	>2000	>2000	>2000	>2000
Temperature (field)	°C		13.9	-	12.8	-	19	13.2
pH @25°C (lab)	pH units	6.5 - 8.5	-	7.79	8.25	8.26	7.92	7.95
pH (field)	pH units	6.5 - 8.5	8.6	-	7.8	-	8.8	8.0
Conductivity @25°C (lab)	µS/cm		-	593	700	702	925	825
Conductivity (field)	µS/cm		614	-	487	-	750	651
Dissolved Oxygen (field)	mg/L		-	-	7.6	-	-	-
Alkalinity (CaCO3)	mg/L		-	236	235	235	236	120
Hardness (CaCO3)	mg/L		-	284	324	328	364	359
Chloride	mg/L		-	36.3	76.1	76.4	139	117
Fluoride	mg/L		0.2	0.3	0.2	0.2	0.2	0.3
Nitrate (N)	mg/L		1	1.9	2	2	0.8	1
Nitrite (N)	mg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulphate	mg/L		-	8	7	7	6	6
Colour	TCU		-	13	5	5	5	25
Total Suspended Solids	mg/L		-	3	21	18	8	12
Ammonia (N) - Total	mg/L		-	0.05	0.09	0.09	0.09	0.62
Unionized Ammonia as NH_3	mg/L	0.02	-	0.0003	0.0013	0.0016	0.017	0.0144
Total Kjeldahl Nitrogen	mg/L		0.16	0.1	0.3	0.2	0.3	0.8
Phosphorus - Total	mg/L	0.03	0.01	0.02	0.01	<0.01	0.01	0.02
Turbidity	NTU		-	-	-	-	-	11.8
Silica	mg/L		-	-	-	-	-	4.59
Silicon	mg/L		-	-	-	-	-	2.15
Phenolics	mg/L	0.005	-	-	-	-	-	<0.001
Oil and Grease - Anim/Veg.	mg/L		-	-	-	-	-	<1.0
Oil and Grease - Mineral	mg/L		-	-	-	-	-	<1.0
Oil & Grease - Total	mg/L		-	-	-	-	-	<1.0
Calcium	mg/L		-	62	64	64.9	64.6	71
Magnesium	mg/L		-	31.4	40	40.4	49.4	44.2
Potassium	mg/L		-	1.2	2.5	2.4	3.8	2.8
Sodium	mg/L		-	13.9	23.2	23.1	33.2	29.4
Aluminum	mg/L		-	0.02	0.14	0.13	0.06	0.04
Antimony	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	0.0003	0.0001
Arsenic	mg/L		0.0013	0.001	0.0014	0.0013	0.0017	0.0026
Barium	mg/L		0.013	0.009	0.011	0.012	0.013	0.015
Beryllium	mg/L		-	<0.002	<0.002	<0.002	<0.002	<0.002
Boron	mg/L	0.2	0.084	0.016	0.029	0.029	0.049	0.037
Cadmium	mg/L	0.0002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Chromium	mg/L	0.0089	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cobalt	mg/L		-	<0.0001	0.0002	0.0002	0.0003	0.0003
Copper	mg/L	0.005	-	<0.002	<0.002	<0.002	<0.002	<0.002
Iron	mg/L	0.3	-	0.011	0.139	0.116	0.026	0.046
Lead	mg/L	0.025	0.00033	0.00007	0.00021	0.0002	0.0001	0.00004
Manganese	mg/L		-	0.002	0.015	0.015	0.035	0.141
Molybdenum	mg/L		-	0.0004	0.0004	0.0004	0.0008	0.0006
Nickel	mg/L		-	<0.01	<0.01	<0.01	<0.01	<0.01

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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			SUMP 1					
			Q1 2016		Q2 2016		Q3 2016	Q4 2016
			23-Mar-16		25-May-16		10-Aug-16	18-Oct-16
PARAMETERS	UNITS	PWQO	SUMP 1	DUP	SUMP 1	DUP	SUMP 1	SUMP 1
Selenium	mg/L		0.002	0.002	0.004	0.004	0.005	0.006
Silver	mg/L		-	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Strontium	mg/L		-	0.185	0.356	0.348	0.555	0.395
Thallium	mg/L		-	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Titanium	mg/L		-	<0.005	<0.005	<0.005	<0.005	<0.005
Tungsten	mg/L		-	0.03	0.02	0.02	0.05	<0.01
Uranium	mg/L		0.00017	0.00014	0.00016	0.00014	0.00018	0.00017
Vanadium	mg/L		-	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	0.02	-	<0.005	<0.005	<0.005	<0.005	<0.005
Zirconium	mg/L		-	<0.003	<0.003	<0.003	<0.003	<0.003
Anion Sum	meq/L		-	6.06	7.15	7.16	8.84	5.93
Cation Sum	meq/L		-	6.31	7.57	7.64	8.83	8.58
Ion Ratio	AS/CS		-	0.960	0.944	0.937	1.00	0.70
TDS (Calc)	mg/L		-	303	363	365	442	349
Benzene	µg/L		-	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		-	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		-	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		-	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene, o-	µg/L		-	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, total	µg/L		-	<1.1	<1.1	<1.1	<1.1	<1.1
PHC F1 (C6-C10)	µg/L		-	<50	<50	<50	<50	<50
PHC F2 (>C10-C16)	µg/L		-	<50	<50	<50	<50	<50
PHC F3 (>C16-C34)	µg/L		-	<400	<400	<400	<400	<400
PHC F4 (<C34-C50)	µg/L		-	<400	<400	<400	<400	<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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PARAMETERS	UNITS	PWQO	SUMP 1			
			Q1 2017	Q2 2017	Q3 2017	Q4 2017
			1-Feb-17 SUMP 1	5-Apr-17 SUMP 1	17-Jul-17 SUMP 1	4-Oct-17 SUMP 1
Total Coliform	cfu/100mL		NDOGT	<10	>200	NDOGT
E.Coli	cfu/100mL		NDOGT	0	61	NDOGT
Heterotrophic Plate Count	cfu/mL		>2000	16	>2000	>2000
Temperature (field)	°C		2.7	6.9	16.2	15.3
pH @25°C (lab)	pH units	6.5 - 8.5	7.7	8.17	7.99	8.16
pH (field)	pH units	6.5 - 8.5	8.6	8.2	7.9	7.7
Conductivity @25°C (lab)	µS/cm		734	603	801	809
Conductivity (field)	µS/cm		-	583	828	824
Dissolved Oxygen (field)	mg/L		-	-	-	-
Alkalinity (CaCO3)	mg/L		227	208	211	202
Hardness (CaCO3)	mg/L		285	271	302	327
Chloride	mg/L		75.4	59.3	92.0	115.0
Fluoride	mg/L		0.2	0.2	0.2	0.3
Nitrate (N)	mg/L		1.5	1.8	1.7	1
Nitrite (N)	mg/L		<0.1	<0.1	<0.1	<0.1
Sulphate	mg/L		8	7	6	6
Colour	TCU		<2	10	6	<2
Total Suspended Solids	mg/L		24	<3	<3	<3
Ammonia (N) - Total	mg/L		0.1	0.02	0.03	0.06
Unionized Ammonia as NH_3	mg/L	0.02	0.0038	0.0004	0.0008	0.0008
Total Kjeldahl Nitrogen	mg/L		0.2	0.2	0.3	0.2
Phosphorus - Total	mg/L	0.03	<0.01	0.02	0.01	<0.01
Turbidity (field)	NTU		6	6	5	5
Silica	mg/L		-	-	-	-
Silicon	mg/L		-	-	-	-
Phenolics	mg/L	0.005	-	-	-	-
Oil and Grease - Anim/Veg.	mg/L		-	-	-	-
Oil and Grease - Mineral	mg/L		-	-	-	-
Oil & Grease - Total	mg/L		-	-	-	-
Calcium	mg/L		55.6	56.8	57.0	53.4
Magnesium	mg/L		35.5	31.5	38.8	47.1
Potassium	mg/L		1.7	1.6	2.8	3.6
Sodium	mg/L		18.4	19.9	26.6	30.9
Aluminum	mg/L		0.03	0.07	0.06	0.03
Antimony	mg/L		<0.0001	<0.0001	0.0001	<0.0001
Arsenic	mg/L		0.0006	0.0006	0.0009	0.0011
Barium	mg/L		0.001	0.013	0.034	0.014
Beryllium	mg/L		<0.002	<0.002	<0.002	<0.002
Boron	mg/L	0.2	0.017	0.018	0.052	0.052
Cadmium	mg/L	0.0002	<0.00002	<0.00002	<0.000014	<0.000014
Chromium	mg/L	0.0089	<0.002	<0.002	<0.002	<0.002
Cobalt	mg/L		0.0001	<0.0001	0.0002	<0.0001
Copper	mg/L	0.005	<0.002	0.005	0.004	0.003
Iron	mg/L	0.3	0.027	0.052	0.105	0.044
Lead	mg/L	0.025	0.00008	<0.00002	0.00005	0.00004
Manganese	mg/L		0.011	0.005	0.018	0.051
Molybdenum	mg/L		0.0004	0.0004	0.0005	<0.01
Nickel	mg/L		<0.01	<0.01	<0.01	<0.01

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

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PARAMETERS	UNITS	PWQO	SUMP 1			
			Q1 2017	Q2 2017	Q3 2017	Q4 2017
			1-Feb-17 SUMP 1	5-Apr-17 SUMP 1	17-Jul-17 SUMP 1	4-Oct-17 SUMP 1
Selenium	mg/L		0.001	<0.001	<0.001	<0.001
Silver	mg/L		<0.00002	<0.00002	<0.00002	<0.00002
Strontium	mg/L		0.249	0.222	0.396	0.407
Thallium	mg/L		<0.00005	<0.00005	<0.00005	<0.00005
Titanium	mg/L		<0.005	<0.005	<0.005	<0.005
Tungsten	mg/L		<0.01	<0.01	<0.01	<0.01
Uranium	mg/L		0.00014	0.00016	0.00013	0.00011
Vanadium	mg/L		<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	0.02	<0.005	<0.005	0.16	0.007
Zirconium	mg/L		<0.003	<0.003	<0.003	<0.003
Anion Sum	meq/L		6.94	6.12	7.06	7.48
Cation Sum	meq/L		6.54	6.34	7.28	7.98
Ion Ratio	AS/CS		1.06	0.97	0.97	0.94
TDS (Calc)	mg/L		338	309	357	382
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<1.0
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.5
Xylene, total	µg/L		<1.1	<1.1	<1.1	<1.1
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<50
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<50
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<400
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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			SUMP 2					
			Q1 2016	Q2 2016	Q3 2016		Q4 2016	
			23-Mar-16	25-May-16	10-Aug-16		18-Oct-16	
PARAMETERS	UNITS	PWQO	SUMP 2	SUMP 2	SUMP 2	DUP	SUMP 2	DUP
Total Coliform	cfu/100mL		16	50	102	92	NDOGT	NDOGT
E.Coli	cfu/100mL		0	21	15	15	NDOGT	NDOGT
Heterotrophic Plate Count	cfu/mL		1360	>2000	>2000	>2000	>2000	>2000
Temperature (field)	°C		4.1	15.2	20.4	-	14.4	-
pH @25°C (lab)	pH units	6.5 - 8.5	7.94	8.36	8.09	8.08	7.82	7.82
pH (field)	pH units	6.5 - 8.5	7.8	8.3	8.6	-	8.1	-
Conductivity @25°C (lab)	µS/cm		594	711	947	944	833	847
Conductivity (field)	µS/cm		307	575	684	-	415	-
Dissolved Oxygen (field)	mg/L		8.1	7.9	-	-	-	-
Alkalinity (CaCO3)	mg/L		208	235	231	227	120	120
Hardness (CaCO3)	mg/L		252	339	384	388	377	359
Chloride	mg/L		52.2	80.7	159	158	120	121
Fluoride	mg/L		0.3	0.2	0.2	0.2	0.3	0.2
Nitrate (N)	mg/L		1.5	2	0.8	0.8	0.2	0.2
Nitrite (N)	mg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulphate	mg/L		6	7	7	6	5	5
Colour	TCU		8	5	4	5	42	27
Total Suspended Solids	mg/L		2	21	31	22	20	9
Ammonia (N) - Total	mg/L		0.03	0.08	0.09	0.09	0.14	0.05
Unionized Ammonia as NH_3	mg/L	0.02	0.0002	0.0042	0.0126	0.0126	0.0045	0.0016
Total Kjeldahl Nitrogen	mg/L		0.1	0.2	0.4	0.3	0.3	0.2
Phosphorus - Total	mg/L	0.03	0.01	0.01	0.03	0.01	0.02	0.01
Turbidity	NTU		-	-	-	-	-	-
Silica	mg/L		-	-	-	-	-	-
Silicon	mg/L		-	-	-	-	-	-
Phenolics	mg/L	0.005	-	-	-	-	-	-
Oil and Grease - Anim/Veg.	mg/L		-	-	-	-	-	-
Oil and Grease - Mineral	mg/L		-	-	-	-	-	-
Oil & Grease - Total	mg/L		-	-	-	-	-	-
Calcium	mg/L		53	64.8	64	64.5	73.2	69.3
Magnesium	mg/L		29.1	43	54.5	55.2	47.3	45.3
Potassium	mg/L		1.4	2.8	4.5	4.6	3.1	3.1
Sodium	mg/L		18	24.1	37.1	37.2	31.6	31.0
Aluminum	mg/L		0.02	0.14	0.06	0.06	0.11	0.07
Antimony	mg/L		<0.0001	<0.0001	0.0003	0.0002	<0.0001	<0.0001
Arsenic	mg/L		0.0013	0.0015	0.002	0.002	0.0032	0.0032
Barium	mg/L		0.009	0.011	0.016	0.015	0.018	0.018
Beryllium	mg/L		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Boron	mg/L	0.20	0.015	0.033	0.058	0.059	0.039	0.038
Cadmium	mg/L	0.0002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Chromium	mg/L	0.0089	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cobalt	mg/L		<0.0001	0.0002	0.0003	0.0003	0.0002	0.0002
Copper	mg/L	0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Iron	mg/L	0.3	0.013	0.122	0.035	0.035	0.264	0.214
Lead	mg/L	0.025	0.00004	0.0002	0.00012	0.00013	0.00009	<0.00002
Manganese	mg/L		0.003	0.017	0.01	0.01	0.091	0.086
Molybdenum	mg/L		0.0004	0.0004	0.0008	0.0008	0.0007	0.0006
Nickel	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

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			SUMP 2					
			Q1 2016	Q2 2016	Q3 2016		Q4 2016	
			23-Mar-16	25-May-16	10-Aug-16		18-Oct-16	
PARAMETERS	UNITS	PWQO	SUMP 2	SUMP 2	SUMP 2	DUP	SUMP 2	DUP
Selenium	mg/L		0.002	0.004	0.006	0.006	0.007	0.007
Silver	mg/L		<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Strontium	mg/L		0.197	0.404	0.688	0.708	0.446	0.432
Thallium	mg/L		<0.00005	<0.00005	<0.000005	<0.00005	<0.00005	<0.00005
Titanium	mg/L		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tungsten	mg/L		0.04	0.02	0.04	0.04	<0.01	<0.01
Uranium	mg/L		0.00017	0.00014	0.00017	0.00016	0.00018	0.00017
Vanadium	mg/L		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zirconium	mg/L		<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Anion Sum	meq/L		5.87	7.27	9.33	9.19	5.91	5.93
Cation Sum	meq/L		5.86	7.9	9.41	9.5	9.03	8.63
Ion Ratio	AS/CS		1.00	0.92	0.992	0.968	0.655	0.687
TDS (Calc)	mg/L		292	373	469	466	354	347
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, total	µg/L		<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<50	<50	<50
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<50	<50	<50
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<400	<400	<400
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<400	<400	<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

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			SUMP 2					
			Q1 2017	Q2 2017		Q3 2017	Q4 2017	
			1-Feb-17	5-Apr-17		17-Jul-17	4-Oct-17	
PARAMETERS	UNITS	PWQO	SUMP 2	SUMP 2	DUP	SUMP 2	SUMP 2	DUP 1
Total Coliform	cfu/100mL		4	<10	<10	>200	NDOGT	NDOGT
E.Coli	cfu/100mL		0	0	0	50	NDOGT	NDOGT
Heterotrophic Plate Count	cfu/mL		50	60	8	>200	>2000	>2000
Temperature (field)	°C		1.5	6.9	-	18.8	15.9	-
pH @25°C (lab)	pH units	6.5 - 8.5	7.79	8.25	8.23	7.98	8.25	8.27
pH (field)	pH units	6.5 - 8.5	8.7	8.2	-	8.0	8.0	-
Conductivity @25°C (lab)	µS/cm		734	540	533	794	815	823
Conductivity (field)	µS/cm		-	583	-	816	824	-
Dissolved Oxygen (field)	mg/L		-	-	-	-	-	-
Alkalinity (CaCO3)	mg/L		217	194	194	203	207	189
Hardness (CaCO3)	mg/L		285	222	218	297	327	322
Chloride	mg/L		82.1	45.6	45.7	94.1	124	124
Fluoride	mg/L		0.2	0.3	0.2	0.2	0.2	0.2
Nitrate (N)	mg/L		1.0	1.5	1.5	1.8	0.9	0.9
Nitrite (N)	mg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulphate	mg/L		7	6	7	6	5	5
Colour	TCU		5	8	8	3	6	8
Total Suspended Solids	mg/L		<2	5	5	<3	<3	<3
Ammonia (N) - Total	mg/L		0.02	0.03	0.02	0.05	0.03	0.03
Unionized Ammonia as NH_3	mg/L	0.02	0.0008	0.0007	0.0005	0.0019	0.0008	0.0008
Total Kjeldahl Nitrogen	mg/L		0.2	0.2	0.1	0.2	0.2	0.2
Phosphorus - Total	mg/L	0.03	<0.01	0.02	0.02	0.01	<0.01	<0.01
Turbidity (field)	NTU		-	-	-	3.0	5.0	-
Silica	mg/L		-	-	-	-	-	-
Silicon	mg/L		-	-	-	-	-	-
Phenolics	mg/L	0.005	-	-	-	-	-	-
Oil and Grease - Anim/Veg.	mg/L		-	-	-	-	-	-
Oil and Grease - Mineral	mg/L		-	-	-	-	-	-
Oil & Grease - Total	mg/L		-	-	-	-	-	-
Calcium	mg/L		55.1	49.5	48.7	52.3	48.8	47.9
Magnesium	mg/L		35.9	24.0	23.5	40.4	49.8	49.3
Potassium	mg/L		1.7	1.1	1.1	3.0	4.1	4.1
Sodium	mg/L		23.4	18.7	18.3	31.6	32.5	32.3
Aluminum	mg/L		0.03	0.07	0.09	0.04	0.05	0.05
Antimony	mg/L		0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001
Arsenic	mg/L		0.0006	0.0005	0.0006	0.0008	0.0013	0.0013
Barium	mg/L		0.011	0.011	0.011	0.014	0.012	0.012
Beryllium	mg/L		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Boron	mg/L	0.20	0.014	0.033	0.020	0.052	0.059	0.059
Cadmium	mg/L	0.0002	<0.00002	<0.00002	<0.00002	<0.000014	<0.000014	<0.000014
Chromium	mg/L	0.0089	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cobalt	mg/L		0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0001
Copper	mg/L	0.005	<0.002	<0.002	0.002	<0.002	<0.002	<0.002
Iron	mg/L	0.3	0.014	0.063	0.074	0.014	0.048	0.046
Lead	mg/L	0.025	0.00009	<0.00002	<0.00002	0.00003	0.00007	0.00006
Manganese	mg/L		0.005	0.004	0.004	0.001	0.013	0.013
Molybdenum	mg/L		0.0005	0.0003	0.0003	0.0005	<0.01	<0.01
Nickel	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

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			SUMP 2					
			Q1 2017	Q2 2017		Q3 2017	Q4 2017	
			1-Feb-17	5-Apr-17		17-Jul-17	4-Oct-17	
PARAMETERS	UNITS	PWQO	SUMP 2	SUMP 2	DUP	SUMP 2	SUMP 2	DUP 1
Selenium	mg/L		0.001	0.001	0.001	<0.001	0.001	<0.001
Silver	mg/L		<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Strontium	mg/L		0.234	0.147	0.145	0.414	0.465	0.464
Thallium	mg/L		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Titanium	mg/L		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tungsten	mg/L		<0.01	0.21	0.13	<0.01	<0.01	<0.01
Uranium	mg/L		0.00016	0.00014	0.00014	0.00012	0.00009	0.00009
Vanadium	mg/L		<0.005	0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zirconium	mg/L		<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Anion Sum	meq/L		6.88	5.42	5.42	6.98	7.83	7.48
Cation Sum	meq/L		6.76	5.29	5.19	7.39	8.06	7.96
Ion Ratio	AS/CS		1.02	1.03	1.04	0.94	0.97	0.94
TDS (Calc)	mg/L		340	269	268	357	393	381
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, total	µg/L		<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<50	<50	<50
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<50	<50	<50
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<400	<400	<400
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<400	<400	<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

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			SW1		SW2		SW0-2	
			SW1	SW1	SW2	SW2	SW0-2	SW0-2
PARAMETERS	UNITS	PWQO	24-Oct-16	9-May-17	24-Oct-16	9-May-17	24-Oct-16	10-May-17
Total Coliform	cfu/100mL		-	-	-	-	-	-
E.Coli	cfu/100mL		-	-	-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-	-	-
Temperature (field)	°C		6.2	9.5	11.0	8.1	7.0	11.4
pH @25°C (lab)	pH units	6.5 - 8.5	8.08	8.18	8.08	8.12	8.2	8.2
pH (field)	pH units	6.5 - 8.5	7.3	8.3	7.4	8.1	7.5	8.3
Conductivity @25°C (lab)	µS/cm		809	528	643	529	762	527
Conductivity (field)	µS/cm		544	352	496	328	529	353
Dissolved Oxygen (field)	mg/L		10.0	14.1	8.6	14.9	11.0	12.8
Alkalinity (CaCO3)	mg/L		236	171	259	219	239	188
Hardness (CaCO3)	mg/L		322	237	269	231	302	256
Chloride	mg/L		116	50.3	42.8	29.8	95.8	45.7
Fluoride	mg/L		0.3	<0.1	0.1	<0.1	0.2	<0.1
Nitrate (N)	mg/L		0.2	1.3	1.1	0.4	<0.1	0.3
Nitrite (N)	mg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulphate	mg/L		6	4	7	4	10	4
Colour	TCU		31	13	<2	3	49	38
Total Suspended Solids	mg/L		8	<3	7	<3	<3	<3
Ammonia (N) - Total	mg/L		0.02	0.01	0.03	<0.01	0.03	<0.01
Unionized Ammonia as NH_3	mg/L	0.02	0.0001	0.0003	0.0002	<0.0002	0.0001	<0.0004
Total Kjeldahl Nitrogen	mg/L		0.3	1.1	0.2	0.2	1.5	1.6
Phosphorus - Total	mg/L	0.03	0.02	0.02	0.01	0.01	0.02	0.03
Calcium	mg/L		60.7	49.3	64.1	59	62.2	57
Magnesium	mg/L		41.4	27.7	26.4	20.3	35.6	27.5
Potassium	mg/L		2.5	1.6	0.8	0.6	2.4	2.5
Sodium	mg/L		26.8	18.2	22.9	19.8	22.7	20
Aluminum	mg/L		0.03	0.03	0.03	0.03	0.03	0.04
Antimony	mg/L		<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Arsenic	mg/L		0.0004	0.0003	0.0003	0.0001	0.0014	0.0005
Barium	mg/L		0.011	0.009	0.007	0.007	0.011	0.008
Beryllium	mg/L		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Boron	mg/L	0.20	0.016	0.014	0.009	<0.005	0.017	0.01
Cadmium	mg/L	0.0002	<0.00002	<0.000014	<0.00002	<0.000014	<0.00002	<0.000014
Chromium	mg/L	0.0089	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cobalt	mg/L		0.0002	0.0002	0.0001	<0.0001	0.0002	<0.0001
Copper	mg/L	0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Iron	mg/L	0.3	0.101	0.024	0.102	0.012	0.097	0.061
Lead	mg/L	0.025	0.00006	<0.00002	0.00011	<0.00002	0.00004	0.00002
Manganese	mg/L		0.019	0.001	0.018	0.004	0.019	0.005
Molybdenum	mg/L		0.0005	0.0004	0.0001	<0.0001	0.0003	0.0003
Nickel	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	mg/L		0.006	<0.001	<0.001	<0.001	0.004	<0.001
Silver	mg/L		<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Strontium	mg/L		0.32	0.229	0.076	0.052	0.228	0.178
Thallium	mg/L		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Titanium	mg/L		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tungsten	mg/L		0.02	<0.01	<0.01	<0.01	0.01	<0.01
Uranium	mg/L		0.00009	0.00011	0.00009	0.00009	0.00011	0.0001

TABLE B-6
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			SW1		SW2		SW0-2	
			SW1	SW1	SW2	SW2	SW0-2	SW0-2
PARAMETERS	UNITS	PWQO	24-Oct-16	9-May-17	24-Oct-16	9-May-17	24-Oct-16	10-May-17
Vanadium	mg/L		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	0.02	0.012	0.005	<0.005	<0.005	<0.005	0.005
Zirconium	mg/L		<0.003	0.004	<0.003	0.006	<0.003	0.006
Anion Sum	meq/L		8.12	5.02	6.62	5.31	7.7	5.16
Cation Sum	meq/L		7.67	5.57	6.4	5.49	7.09	6.04
Ion Ratio	AS/CS		1.06	0.902	1.03	0.967	1.09	0.854
TDS (Calc)	mg/L		396	260	325	266	373	271
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, total	µg/L		<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<50	<50	<50
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<50	<50	<50
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<400	<400	<400
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<400	<400	<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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			SW3			SW3B	
			SW3	SW3	DUP 2	SW3B	SW3B
PARAMETERS	UNITS	PWQO	24-Oct-16	9-May-17	9-May-17	24-Oct-16	9-May-17
Total Coliform	cfu/100mL		-	-	-	-	-
E.Coli	cfu/100mL		-	-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-	-
Temperature (field)	°C		**DRY**	7.0	-	**DRY**	7.2
pH @25°C (lab)	pH units	6.5 - 8.5		7.86	7.94		7.8
pH (field)	pH units	6.5 - 8.5		7.9	-		7.8
Conductivity @25°C (lab)	µS/cm			315	312		456
Conductivity (field)	µS/cm			188	-		260
Dissolved Oxygen (field)	mg/L			10.8	-		10.0
Alkalinity (CaCO3)	mg/L			166	164		205
Hardness (CaCO3)	mg/L			176	176		229
Chloride	mg/L			0.9	0.9		17.6
Fluoride	mg/L			<0.1	<0.1		<0.1
Nitrate (N)	mg/L			<0.1	<0.1		0.3
Nitrite (N)	mg/L			<0.1	<0.1		<0.1
Sulphate	mg/L			2	1		3
Colour	TCU			27	27		9
Total Suspended Solids	mg/L			<3	<3		<3
Ammonia (N) - Total	mg/L			<0.01	<0.01		<0.01
Unionized Ammonia as NH_3	mg/L	0.02		<0.0001	<0.0001		<0.0001
Total Kjeldahl Nitrogen	mg/L			0.3	0.3		0.2
Phosphorus - Total	mg/L	0.03		0.01	0.02		0.01
Calcium	mg/L			47.6	47.4		60.6
Magnesium	mg/L			13.8	14.1		18.9
Potassium	mg/L			0.2	0.2		0.3
Sodium	mg/L			0.9	0.9		13.2
Aluminum	mg/L			0.05	0.03		0.05
Antimony	mg/L			<0.0001	<0.0001		<0.0001
Arsenic	mg/L			<0.0001	<0.0001		<0.0001
Barium	mg/L			0.009	0.009		0.012
Beryllium	mg/L			<0.002	<0.002		<0.002
Boron	mg/L	0.20		<0.005	<0.005		<0.005
Cadmium	mg/L	0.0002		<0.000014	<0.000014		<0.000014
Chromium	mg/L	0.0089		<0.002	<0.002		<0.002
Cobalt	mg/L			<0.0001	<0.0001		<0.0001
Copper	mg/L	0.005		<0.002	<0.002		<0.002
Iron	mg/L	0.3		0.086	0.054		0.014
Lead	mg/L	0.025		<0.00002	<0.00002		<0.00002
Manganese	mg/L			0.011	0.01		0.005
Molybdenum	mg/L			<0.0001	<0.0001		<0.0001
Nickel	mg/L			<0.01	<0.01		<0.01
Selenium	mg/L			<0.001	<0.001		<0.001
Silver	mg/L			<0.00002	<0.00002		<0.00002
Strontium	mg/L			0.043	0.044		0.055
Thallium	mg/L			<0.00005	<0.00005		<0.00005
Titanium	mg/L			<0.005	<0.005		<0.005
Tungsten	mg/L			<0.01	<0.01		<0.01
Uranium	mg/L			0.00014	0.00014		0.00019

TABLE B-6
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			SW3			SW3B	
			SW3	SW3	DUP 2	SW3B	SW3B
PARAMETERS	UNITS	PWQO	24-Oct-16	9-May-17	9-May-17	24-Oct-16	9-May-17
Vanadium	mg/L			<0.005	<0.005		<0.005
Zinc	mg/L	0.02		<0.005	<0.005		<0.005
Zirconium	mg/L		**DRY**	0.005	0.004	**DRY**	0.006
Anion Sum	meq/L			3.37	3.32		4.69
Cation Sum	meq/L			3.56	3.57		5.16
Ion Ratio	AS/CS			0.948	0.929		0.908
TDS (Calc)	mg/L			165	163		238
Benzene	µg/L			<0.5	<0.5		<0.5
Toluene	µg/L			<0.5	<0.5		<0.5
Ethylbenzene	µg/L			<0.5	<0.5		<0.5
Xylene, m, p-	µg/L			<1.0	<1.0		<1.0
Xylene, o-	µg/L			<0.5	<0.5		<0.5
Xylene, total	µg/L			<1.1	<1.1		<1.1
PHC F1 (C6-C10)	µg/L			<50	<50		<50
PHC F2 (>C10-C16)	µg/L			<50	<50		<50
PHC F3 (>C16-C34)	µg/L			<400	<400		<400
PHC F4 (<C34-C50)	µg/L			<400	<400		<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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			SW6A			SW9	
			SW6A	DUP2	SW6A	SW9	SW9
PARAMETERS	UNITS	PWQO	25-Oct-16	25-Oct-16	8-May-17	25-Oct-16	8-May-17
Total Coliform	cfu/100mL		-	-	-	-	-
E.Coli	cfu/100mL		-	-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-	-
Temperature (field)	°C		4.8	-	9.0	**DRY**	8.3
pH @25°C (lab)	pH units	6.5 - 8.5	8.3	8.3	8.3		8.21
pH (field)	pH units	6.5 - 8.5	7.9	-	8.0		8.2
Conductivity @25°C (lab)	µS/cm		558	556	387		308
Conductivity (field)	µS/cm		363	-	243		189
Dissolved Oxygen (field)	mg/L		12.9	-	12.5		12.2
Alkalinity (CaCO3)	mg/L		240	241	181		159
Hardness (CaCO3)	mg/L		295	306	205		169
Chloride	mg/L		29.6	29.6	10.5		< 0.5
Fluoride	mg/L		0.2	0.2	< 0.1		< 0.1
Nitrate (N)	mg/L		0.3	0.3	0.2		0.2
Nitrite (N)	mg/L		<0.1	<0.1	< 0.1		< 0.1
Sulphate	mg/L		8	8	3		2
Colour	TCU		26	29	31		26
Total Suspended Solids	mg/L		10	14	<3		3
Ammonia (N) - Total	mg/L		0.02	0.02	0.03		<0.01
Unionized Ammonia as NH_3	mg/L	0.02	0.0002	0.0002	0.0005		<0.0003
Total Kjeldahl Nitrogen	mg/L		0.5	0.6	0.3		2.3
Phosphorus - Total	mg/L	0.03	0.02	0.03	<0.01		<0.01
Calcium	mg/L		68.1	70.8	49.5		44.4
Magnesium	mg/L		30.4	31.4	19.8		14.1
Potassium	mg/L		1.4	1.4	0.9		0.7
Sodium	mg/L		10	10.3	5.8		0.8
Aluminum	mg/L		0.04	0.05	0.03		0.03
Antimony	mg/L		0.0002	<0.0001	< 0.0001		< 0.0001
Arsenic	mg/L		0.0005	0.0006	0.0002		0.0001
Barium	mg/L		0.014	0.015	0.01		0.01
Beryllium	mg/L		<0.002	<0.002	< 0.002		< 0.002
Boron	mg/L	0.20	0.007	0.007	0.012		0.01
Cadmium	mg/L	0.0002	<0.00002	<0.00002	< 0.000014		< 0.000014
Chromium	mg/L	0.0089	<0.002	<0.002	< 0.002		< 0.002
Cobalt	mg/L		0.0002	0.0002	< 0.0001		< 0.0001
Copper	mg/L	0.005	<0.002	<0.002	< 0.002		< 0.002
Iron	mg/L	0.3	0.104	0.136	0.085		0.058
Lead	mg/L	0.025	0.00017	0.00022	< 0.00002		0.00003
Manganese	mg/L		0.081	0.101	0.007		0.001
Molybdenum	mg/L		<0.0001	<0.0001	0.0001		< 0.0001
Nickel	mg/L		<0.01	<0.01	< 0.01		< 0.01
Selenium	mg/L		0.002	0.002	< 0.001		< 0.001
Silver	mg/L		<0.00002	<0.00002	< 0.00002		< 0.00002
Strontium	mg/L		0.1	0.102	-		-
Thallium	mg/L		<0.00005	<0.00005	< 0.00005		< 0.00005
Titanium	mg/L		<0.005	<0.005	< 0.005		< 0.005
Tungsten	mg/L		<0.01	<0.01	< 0.01		< 0.01
Uranium	mg/L		0.00012	0.00012	0.0001		0.00015

TABLE B-6
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			SW6A			SW9	
			SW6A	DUP2	SW6A	SW9	SW9
PARAMETERS	UNITS	PWQO	25-Oct-16	25-Oct-16	8-May-17	25-Oct-16	8-May-17
Vanadium	mg/L		<0.005	<0.005	< 0.005		< 0.005
Zinc	mg/L	0.02	<0.005	<0.005	0.006		< 0.005
Zirconium	mg/L		<0.003	<0.003	< 0.003	**DRY**	< 0.003
Anion Sum	meq/L		5.85	5.87	3.97		3.25
Cation Sum	meq/L		6.38	6.62	4.38		3.43
Ion Ratio	AS/CS		0.916	0.887	0.907		0.945
TDS (Calc)	mg/L		294	299	198		159
Benzene	µg/L		<0.5	<0.5	<0.5		<0.5
Toluene	µg/L		<0.5	<0.5	<0.5		<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5		<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0		<1.0
Xylene, o-	µg/L		<0.5	<0.5	<0.5		<0.5
Xylene, total	µg/L		<1.1	<1.1	<1.1		<1.1
PHC F1 (C6-C10)	µg/L		<50	<50	<50		<50
PHC F2 (>C10-C16)	µg/L		<50	<50	<50		<50
PHC F3 (>C16-C34)	µg/L		<400	<400	<400		<400
PHC F4 (<C34-C50)	µg/L		<400	<400	<400		<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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			SW10		SW11		SW11A	
			SW10	SW10	SW11	SW11	SW11A	SW11A
PARAMETERS	UNITS	PWQO	24-Oct-16	8-May-17	16-Nov-16	8-May-17	25-Oct-16	8-May-17
Total Coliform	cfu/100mL		>2000	60	-	-	-	52
E.Coli	cfu/100mL		108	1	-	-	-	4
Heterotrophic Plate Count	cfu/mL		>2000	270	-	-	-	200
Temperature (field)	°C		7.9	6.8	6.7	5.5	**DRY**	5.2
pH @25°C (lab)	pH units	6.5 - 8.5	8.09	8.32	7.95	8.3		8.26
pH (field)	pH units	6.5 - 8.5	8.0	8.0	7.9	8.0		7.8
Conductivity @25°C (lab)	µS/cm		495	365	484	315		310
Conductivity (field)	µS/cm		331	206	253	179		166
Dissolved Oxygen (field)	mg/L		9.8	12.7	9.6	14.7		15.0
Alkalinity (CaCO3)	mg/L		242	183	236	164		161
Hardness (CaCO3)	mg/L		566	195	255	175		169
Chloride	mg/L		5.1	0.9	2.4	< 0.5		0.6
Fluoride	mg/L		<0.1	< 0.1	<0.1	< 0.1		< 0.1
Nitrate (N)	mg/L		1.4	1.2	0.3	0.3		0.3
Nitrite (N)	mg/L		0.3	< 0.1	<0.1	< 0.1		< 0.1
Sulphate	mg/L		7	2	7	3		2
Colour	TCU		38	6	13	9		8
Total Suspended Solids	mg/L		1110	32	195	<3		<3
Ammonia (N) - Total	mg/L		0.22	<0.01	<0.01	<0.01		<0.01
Unionized Ammonia as NH_3	mg/L	0.02	0.0034	<0.0001	<0.0001	<0.0001		<0.0001
Total Kjeldahl Nitrogen	mg/L		24.8	0.3	0.3	1.6		1.4
Phosphorus - Total	mg/L	0.03	3.16	0.03	0.02	0.01		0.01
Calcium	mg/L		174	55	69.8	47.2		45.4
Magnesium	mg/L		31.6	13.9	19.7	13.8		13.5
Potassium	mg/L		1	0.4	0.7	0.7		0.7
Sodium	mg/L		3.4	1.2	1.9	0.9		0.9
Aluminum	mg/L		3.02	0.11	0.16	0.03		0.02
Antimony	mg/L		<0.0001	< 0.0001	<0.0001	< 0.0001		< 0.0001
Arsenic	mg/L		0.0015	0.0002	0.0001	0.0001		0.0001
Barium	mg/L		0.065	0.007	0.012	0.007		0.008
Beryllium	mg/L		<0.002	< 0.002	<0.002	< 0.002		< 0.002
Boron	mg/L	0.20	0.022	0.008	<0.005	0.008		0.008
Cadmium	mg/L	0.0002	0.00068	< 0.000014	0.00009	< 0.000014		< 0.000014
Chromium	mg/L	0.0089	0.003	0.002	0.099	< 0.002		< 0.002
Cobalt	mg/L		0.0034	< 0.0001	0.0009	< 0.0001		< 0.0001
Copper	mg/L	0.005	0.016	< 0.002	0.002	< 0.002		< 0.002
Iron	mg/L	0.3	3.53	0.181	0.86	0.051		0.031
Lead	mg/L	0.025	0.0175	0.00032	0.00022	< 0.00002		< 0.00002
Manganese	mg/L		0.697	0.008	0.036	0.001		< 0.001
Molybdenum	mg/L		<0.0001	< 0.0001	0.0083	< 0.0001		< 0.0001
Nickel	mg/L		<0.01	< 0.01	0.1	< 0.01		< 0.01
Selenium	mg/L		<0.001	< 0.001	<0.001	< 0.001	**DRY**	< 0.001
Silver	mg/L		<0.00002	< 0.00002	<0.00002	< 0.00002		< 0.00002
Strontium	mg/L		0.165	-	0.092	-		-
Thallium	mg/L		0.00006	< 0.00005	<0.00005	< 0.00005		< 0.00005
Titanium	mg/L		0.012	< 0.005	<0.005	< 0.005		< 0.005
Tungsten	mg/L		0.02	< 0.01	<0.01	< 0.01		< 0.01
Uranium	mg/L		0.00017	0.00007	0.00012	0.00011		0.0001

TABLE B-6
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PARAMETERS	UNITS	PWQO	SW10	SW10	SW11	SW11	SW11A	SW11A
			SW10	SW10	SW11	SW11	SW11A	SW11A
			24-Oct-16	8-May-17	16-Nov-16	8-May-17	25-Oct-16	8-May-17
Vanadium	mg/L		0.005	< 0.005	<0.005	< 0.005		< 0.005
Zinc	mg/L	0.02	0.049	< 0.005	<0.005	< 0.005		< 0.005
Zirconium	mg/L		<0.003	< 0.003	<0.003	< 0.003		< 0.003
Anion Sum	meq/L		5.25	3.81	4.95	3.36		3.29
Cation Sum	meq/L		11.7	3.96	5.25	3.55		3.44
Ion Ratio	AS/CS		0.449	0.961	0.944	0.945		0.957
TDS (Calc)	mg/L		380	189	245	165		161
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5		<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5		<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5		<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<1.0		<1.0
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.5		<0.5
Xylene, total	µg/L		<1.1	<1.1	<1.1	<1.1		<1.1
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<50		<50
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<50		<50
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<400		<400
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<400		<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

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			SW11B		SW11C		SW11D	
			SW11B	SW11B	SW11C	SW11C	SW11D	SW11D
PARAMETERS	UNITS	PWQO	24-Oct-16	8-May-17	24-Oct-16	8-May-17	24-Oct-16	8-May-17
Total Coliform	cfu/100mL		230	68	230	74	390	28
E.Coli	cfu/100mL		9	0	4	1	81	0
Heterotrophic Plate Count	cfu/mL		>2000	40	500	40	>2000	10
Temperature (field)	°C		9.3	5.1	8.5	4.9	8.0	4.6
pH @25°C (lab)	pH units	6.5 - 8.5	8.41	8.27	8.24	8.31	8.35	8.28
pH (field)	pH units	6.5 - 8.5	7.6	7.7	7.8	7.8	8.0	7.9
Conductivity @25°C (lab)	µS/cm		439	318	466	317	435	317
Conductivity (field)	µS/cm		328	164	336	175	222	153
Dissolved Oxygen (field)	mg/L		11.0	15.0	11.0	14.8	11.3	14.9
Alkalinity (CaCO3)	mg/L		230	160	239	317	226	162
Hardness (CaCO3)	mg/L		248	165	246	164	242	161
Chloride	mg/L		2.2	< 0.5	2.4	170	1.2	0.8
Fluoride	mg/L		<0.1	< 0.1	<0.1	< 0.5	<0.1	< 0.1
Nitrate (N)	mg/L		0.2	0.3	0.4	< 0.1	0.4	0.4
Nitrite (N)	mg/L		0.2	< 0.1	0.2	0.3	0.2	< 0.1
Sulphate	mg/L		7	2	7	< 0.1	7	2
Colour	TCU		7	8	<2	2	4	9
Total Suspended Solids	mg/L		100	<3	16	<3	38	3
Ammonia (N) - Total	mg/L		0.02	<0.01	0.02	<0.01	0.01	<0.01
Unionized Ammonia as NH_3	mg/L	0.02	0.0001	<0.0001	0.0002	<0.0001	0.0002	<0.0001
Total Kjeldahl Nitrogen	mg/L		0.4	2.2	0.2	1.1	1	0.7
Phosphorus - Total	mg/L	0.03	0.08	<0.01	0.03	<0.01	0.12	0.03
Calcium	mg/L		67.8	44.1	65.9	45.6	66.3	43.3
Magnesium	mg/L		19.2	13.3	19.8	13.5	18.6	12.9
Potassium	mg/L		0.8	0.7	0.5	0.7	0.5	0.7
Sodium	mg/L		1.6	0.9	1.9	0.9	1	0.9
Aluminum	mg/L		0.2	0.03	0.06	0.02	0.22	0.03
Antimony	mg/L		<0.0001	< 0.0001	<0.0001	< 0.0001	<0.0001	< 0.0001
Arsenic	mg/L		0.0003	0.0001	0.0002	0.0001	0.0005	0.0001
Barium	mg/L		0.013	0.007	0.01	0.007	0.01	0.007
Beryllium	mg/L		<0.002	< 0.002	<0.002	< 0.002	<0.002	< 0.002
Boron	mg/L	0.20	0.007	0.008	0.005	0.007	0.009	0.007
Cadmium	mg/L	0.0002	0.0001	< 0.000014	<0.00002	< 0.000014	0.00004	< 0.000014
Chromium	mg/L	0.0089	<0.002	< 0.002	<0.002	< 0.002	<0.002	0.003
Cobalt	mg/L		0.0032	< 0.0001	0.0002	< 0.0001	0.0004	< 0.0001
Copper	mg/L	0.005	0.009	< 0.002	<0.002	< 0.002	0.002	0.002
Iron	mg/L	0.3	0.759	0.05	0.037	0.033	0.232	0.054
Lead	mg/L	0.025	0.00335	< 0.00002	0.00011	< 0.00002	0.0015	< 0.00002
Manganese	mg/L		0.489	0.002	0.009	< 0.001	0.051	0.002
Molybdenum	mg/L		<0.0001	< 0.0001	0.0001	< 0.0001	<0.0001	< 0.0001
Nickel	mg/L		<0.01	< 0.01	<0.01	< 0.01	<0.01	< 0.01
Selenium	mg/L		<0.001	< 0.001	<0.001	< 0.001	<0.001	< 0.001
Silver	mg/L		<0.00002	< 0.00002	<0.00002	< 0.00002	<0.00002	< 0.00002
Strontium	mg/L		0.102	-	0.087	-	0.086	-
Thallium	mg/L		<0.00005	< 0.00005	<0.00005	< 0.00005	<0.00005	< 0.00005
Titanium	mg/L		0.007	< 0.005	<0.005	< 0.005	<0.005	< 0.005
Tungsten	mg/L		<0.01	< 0.01	<0.01	< 0.01	0.01	< 0.01
Uranium	mg/L		0.00025	0.0001	0.00016	0.00011	0.00012	0.00011

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

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			SW11B		SW11C		SW11D	
			SW11B	SW11B	SW11C	SW11C	SW11D	SW11D
PARAMETERS	UNITS	PWQO	24-Oct-16	8-May-17	24-Oct-16	8-May-17	24-Oct-16	8-May-17
Vanadium	mg/L		<0.005	< 0.005	<0.005	< 0.005	<0.005	< 0.005
Zinc	mg/L	0.02	0.008	< 0.005	<0.005	< 0.005	<0.005	< 0.005
Zirconium	mg/L		<0.003	< 0.003	<0.003	< 0.003	<0.003	< 0.003
Anion Sum	meq/L		4.98	3.27	5.02	3.37	4.74	3.35
Cation Sum	meq/L		6.46	3.35	5.02	3.45	4.91	3.28
Ion Ratio	AS/CS		0.771	0.976	1	0.976	0.966	1.02
TDS (Calc)	mg/L		268	159	243	164	233	160
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, total	µg/L		<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<50	<50	<50
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<50	<50	<50
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<400	<400	<400
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<400	<400	<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

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			SW11E		SW14		SW15	
			SW11E	SW11E	SW14	SW14	SW15	SW15
PARAMETERS	UNITS	PWQO	24-Oct-16	9-May-17	24-Oct-16	9-May-17	24-Oct-16	9-May-17
Total Coliform	cfu/100mL		230	60	-	-	-	-
E.Coli	cfu/100mL		9	0	-	-	-	-
Heterotrophic Plate Count	cfu/mL		>2000	160	-	-	-	-
Temperature (field)	°C		7.8	6.4	7.7	7.0	9.5	12.2
pH @25°C (lab)	pH units	6.5 - 8.5	8.41	8.26	8.22	8.21	8.27	8.27
pH (field)	pH units	6.5 - 8.5	7.9	8.5	7.5	8.3	7.7	8.4
Conductivity @25°C (lab)	µS/cm		439	323	460	458	437	365
Conductivity (field)	µS/cm		311	190	464	223	323	320
Dissolved Oxygen (field)	mg/L		12.5	15.5	10.1	15.1	9.8	11.5
Alkalinity (CaCO3)	mg/L		230	171	220	246	226	183
Hardness (CaCO3)	mg/L		248	190	219	253	220	220
Chloride	mg/L		2.2	< 0.5	10.2	1.2	3	5.8
Fluoride	mg/L		<0.1	< 0.1	<0.1	< 0.1	0.1	< 0.1
Nitrate (N)	mg/L		0.2	0.4	<0.1	0.4	0.3	0.8
Nitrite (N)	mg/L		0.2	< 0.1	<0.1	< 0.1	0.2	< 0.1
Sulphate	mg/L		7	3	8	3	5	3
Colour	TCU		7	8	12	7	7	7
Total Suspended Solids	mg/L		100	5	14	11	<3	14.7
Ammonia (N) - Total	mg/L		0.02	<0.01	0.03	<0.01	0.04	<0.01
Unionized Ammonia as NH_3	mg/L	0.02	0.0002	<0.0004	0.0001	<0.0003	0.0004	<0.0005
Total Kjeldahl Nitrogen	mg/L		0.4	0.2	0.3	0.3	0.2	0.2
Phosphorus - Total	mg/L	0.03	0.08	0.02	0.01	0.03	0.01	0.03
Calcium	mg/L		67.8	52.4	55.6	74.5	58.2	60.4
Magnesium	mg/L		19.2	14.3	19.4	16.3	18.3	16.8
Potassium	mg/L		0.8	0.8	1	0.9	0.8	0.9
Sodium	mg/L		1.6	0.8	4.4	1.4	1.7	5.2
Aluminum	mg/L		0.2	0.07	0.04	0.22	0.03	0.09
Antimony	mg/L		<0.0001	< 0.0001	<0.0001	< 0.0001	<0.0001	< 0.0001
Arsenic	mg/L		0.0003	< 0.0001	0.0005	< 0.0001	0.0003	< 0.0001
Barium	mg/L		0.013	0.008	0.012	0.016	0.016	0.009
Beryllium	mg/L		<0.002	< 0.002	<0.002	< 0.002	<0.002	< 0.002
Boron	mg/L	0.20	0.007	< 0.005	0.042	0.011	0.016	0.008
Cadmium	mg/L	0.0002	0.00004	< 0.000014	<0.00002	< 0.000014	<0.00002	< 0.000014
Chromium	mg/L	0.0089	<0.002	< 0.002	<0.002	< 0.002	<0.002	< 0.002
Cobalt	mg/L		0.0004	< 0.0001	0.0001	< 0.0001	0.0001	< 0.0001
Copper	mg/L	0.005	0.003	0.002	<0.002	< 0.002	<0.002	< 0.002
Iron	mg/L	0.3	0.239	0.066	0.212	0.251	0.028	0.104
Lead	mg/L	0.025	0.00086	< 0.00002	0.00004	0.00015	<0.00002	0.00005
Manganese	mg/L		0.092	0.004	0.112	0.032	0.066	0.013
Molybdenum	mg/L		<0.0001	< 0.0001	<0.0001	0.0003	0.0001	0.0001
Nickel	mg/L		<0.01	< 0.01	<0.01	< 0.01	<0.01	< 0.01
Selenium	mg/L		<0.001	< 0.001	<0.001	< 0.001	<0.001	< 0.001
Silver	mg/L		<0.00002	< 0.00002	<0.00002	< 0.00002	<0.00002	< 0.00002
Strontium	mg/L		0.089	0.057	0.178	0.146	0.145	0.084
Thallium	mg/L		<0.00005	< 0.00005	<0.00005	< 0.00005	<0.00005	< 0.00005
Titanium	mg/L		<0.005	< 0.005	<0.005	0.005	<0.005	< 0.005
Tungsten	mg/L		0.01	< 0.01	0.01	< 0.01	0.01	< 0.01
Uranium	mg/L		0.00017	0.00013	0.0003	0.00045	0.00032	0.00025

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

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PARAMETERS	UNITS	PWQO	SW11E	SW11E	SW14	SW14	SW15	SW15
			SW11E	SW11E	SW14	SW14	SW15	SW15
			24-Oct-16	9-May-17	24-Oct-16	9-May-17	24-Oct-16	9-May-17
Vanadium	mg/L		<0.005	< 0.005	<0.005	< 0.005	<0.005	< 0.005
Zinc	mg/L	0.02	<0.005	< 0.005	<0.005	< 0.005	<0.005	< 0.005
Zirconium	mg/L		<0.003	0.005	<0.003	0.007	<0.003	0.005
Anion Sum	meq/L		4.84	3.52	4.85	5.04	4.74	3.95
Cation Sum	meq/L		5.07	3.85	4.61	5.16	4.51	4.65
Ion Ratio	AS/CS		0.955	0.914	1.05	0.977	1.05	0.849
TDS (Calc)	mg/L		239	176	231	247	224	206
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, total	µg/L		<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<50	<50	<50
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<50	<50	<50
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<400	<400	<400
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<400	<400	<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

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			SW16		SW17		SW17A	
			SW16	SW16	SW17	SW17	SW17A	SW17A
PARAMETERS	UNITS	PWQO	25-Oct-16	9-May-17	25-Oct-16	9-May-17	25-Oct-16	9-May-17
Total Coliform	cfu/100mL		-	-	-	-	-	-
E.Coli	cfu/100mL		-	-	-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-	-	-
Temperature (field)	°C		4.2	9.2	8.4	7.1	5.3	8.7
pH @25°C (lab)	pH units	6.5 - 8.5	8.15	8.21	8.29	8.26	8.41	8.38
pH (field)	pH units	6.5 - 8.5	7.5	8.3	7.9	8.3	8.0	8.4
Conductivity @25°C (lab)	µS/cm		461	378	428	399	443	377
Conductivity (field)	µS/cm		283	283	309	234	294	238
Dissolved Oxygen (field)	mg/L		9.9	11.8	11.5	14.1	13.3	13.5
Alkalinity (CaCO3)	mg/L		235	193	196	199	229	195
Hardness (CaCO3)	mg/L		277	207	234	215	263	210
Chloride	mg/L		4.3	1.6	11.4	3.4	2.9	1.7
Fluoride	mg/L		0.2	< 0.1	0.2	< 0.1	<0.1	< 0.1
Nitrate (N)	mg/L		0.1	0.5	0.2	0.7	0.6	1
Nitrite (N)	mg/L		<0.1	< 0.1	<0.1	< 0.1	<0.1	< 0.1
Sulphate	mg/L		6	4	10	6	7	3
Colour	TCU		11	10	6	5	5	4
Total Suspended Solids	mg/L		20	5	8	5	8	7
Ammonia (N) - Total	mg/L		0.01	<0.01	<0.01	<0.01	0.01	<0.01
Unionized Ammonia as NH_3	mg/L	0.02	0.00004	<0.0003	<0.0001	<0.0003	0.0001	<0.0004
Total Kjeldahl Nitrogen	mg/L		0.4	0.2	0.4	0.2	0.2	0.2
Phosphorus - Total	mg/L	0.03	0.12	0.02	0.02	0.01	0.01	0.01
Calcium	mg/L		73.4	57.6	56.5	60	71.1	60.7
Magnesium	mg/L		22.7	15.4	22.5	15.7	20.8	14.2
Potassium	mg/L		2	0.4	1.2	0.5	1.1	0.7
Sodium	mg/L		1.6	1.3	7.7	2.6	1.6	1
Aluminum	mg/L		0.06	0.08	0.05	0.04	0.05	0.06
Antimony	mg/L		<0.0001	< 0.0001	<0.0001	< 0.0001	<0.0001	< 0.0001
Arsenic	mg/L		0.0033	< 0.0001	0.0005	< 0.0001	0.0002	< 0.0001
Barium	mg/L		0.026	0.007	0.01	0.008	0.01	0.009
Beryllium	mg/L		<0.002	< 0.002	<0.002	< 0.002	<0.002	< 0.002
Boron	mg/L	0.20	0.043	0.012	0.057	0.01	0.01	< 0.005
Cadmium	mg/L	0.0002	<0.00002	< 0.000014	<0.00002	< 0.000014	<0.00002	< 0.000014
Chromium	mg/L	0.0089	<0.002	< 0.002	0.01	0.005	<0.002	< 0.002
Cobalt	mg/L		0.0005	< 0.0001	0.0002	< 0.0001	0.0002	< 0.0001
Copper	mg/L	0.005	<0.002	< 0.002	<0.002	< 0.002	<0.002	< 0.002
Iron	mg/L	0.3	7.37	0.142	0.29	0.046	0.152	0.085
Lead	mg/L	0.025	0.00015	0.00004	0.00015	< 0.00002	0.00011	0.00023
Manganese	mg/L		1.45	0.021	0.077	0.006	0.055	0.01
Molybdenum	mg/L		<0.0001	0.0001	0.0013	0.0001	0.0001	0.0005
Nickel	mg/L		<0.01	< 0.01	<0.01	< 0.01	<0.01	< 0.01
Selenium	mg/L		<0.001	< 0.001	<0.001	< 0.001	<0.001	< 0.001
Silver	mg/L		<0.00002	< 0.00002	<0.00002	< 0.00002	<0.00002	< 0.00002
Strontium	mg/L		0.221	0.103	0.508	0.276	0.118	0.071
Thallium	mg/L		<0.00005	< 0.00005	<0.00005	< 0.00005	<0.0005	< 0.00005
Titanium	mg/L		<0.005	< 0.005	<0.005	< 0.005	<0.005	< 0.005
Tungsten	mg/L		<0.01	< 0.01	0.01	< 0.01	<0.01	0.02
Uranium	mg/L		0.00026	0.00035	0.00018	0.00023	0.00015	0.00014

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

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PARAMETERS	UNITS	PWQO	SW16	SW16	SW17	SW17	SW17A	SW17A
			SW16	SW16	SW17	SW17	SW17A	SW17A
			25-Oct-16	9-May-17	25-Oct-16	9-May-17	25-Oct-16	9-May-17
Vanadium	mg/L		<0.005	< 0.005	<0.005	< 0.005	<0.005	< 0.005
Zinc	mg/L	0.02	0.011	< 0.005	<0.005	0.007	<0.005	< 0.005
Zirconium	mg/L		<0.003	0.006	<0.003	0.007	<0.003	0.007
Anion Sum	meq/L		4.96	4.03	4.47	4.24	4.84	4.09
Cation Sum	meq/L		6.11	4.22	5.06	4.41	5.37	4.27
Ion Ratio	AS/CS		0.813	0.956	0.884	0.961	0.901	0.958
TDS (Calc)	mg/L		260	199	228	211	244	203
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, total	µg/L		<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<50	<50	<50
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<50	<50	<50
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<400	<400	<400
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<400	<400	<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

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			SW18			SW21C	
			SW18	SW18 DUP	SW18	SW21C	SW21C
PARAMETERS	UNITS	PWQO	24-Oct-16	24-Oct-16	9-May-17	24-Oct-16	8-May-17
Total Coliform	cfu/100mL		-	-	-	160	46
E.Coli	cfu/100mL		-	-	-	1	11
Heterotrophic Plate Count	cfu/mL		-	-	-	460	110
Temperature (field)	°C		7.3	-	8.8	7.3	6.9
pH @25°C (lab)	pH units	6.5 - 8.5	8.42	8.41	8.39	8.42	8.37
pH (field)	pH units	6.5 - 8.5	7.9	-	8.5	7.6	8.2
Conductivity @25°C (lab)	µS/cm		494	497	395	445	379
Conductivity (field)	µS/cm		341	-	248	311	224
Dissolved Oxygen (field)	mg/L		11.5	-	13.3	13.1	14.2
Alkalinity (CaCO3)	mg/L		253	251	206	225	189
Hardness (CaCO3)	mg/L		257	250	240	236	202
Chloride	mg/L		4.4	4.4	1.4	2.2	1.5
Fluoride	mg/L		0.1	<0.1	< 0.1	<0.1	< 0.1
Nitrate (N)	mg/L		0.2	0.2	0.6	1.8	1.6
Nitrite (N)	mg/L		0.2	0.2	< 0.1	0.2	< 0.1
Sulphate	mg/L		10	10	4	6	4
Colour	TCU		10	7	5	3	5
Total Suspended Solids	mg/L		4	<3	5	12	12
Ammonia (N) - Total	mg/L		0.04	0.02	<0.01	0.01	<0.01
Unionized Ammonia as NH_3	mg/L	0.02	0.0005	0.0002	<0.0005	0.0001	<0.0002
Total Kjeldahl Nitrogen	mg/L		0.2	0.2	0.2	0.2	2
Phosphorus - Total	mg/L	0.03	<0.01	<0.01	0.01	<0.01	0.02
Calcium	mg/L		68.6	66.5	69.5	57.9	55.9
Magnesium	mg/L		20.8	20.2	16	22.3	15.2
Potassium	mg/L		0.8	0.8	0.7	0.3	0.3
Sodium	mg/L		2.8	2.7	1.4	0.9	0.9
Aluminum	mg/L		0.03	0.03	0.07	0.03	0.07
Antimony	mg/L		<0.0001	<0.0001	< 0.0001	<0.0001	< 0.0001
Arsenic	mg/L		0.0002	0.0003	< 0.0001	0.0001	0.0002
Barium	mg/L		0.012	0.011	0.011	0.005	0.005
Beryllium	mg/L		<0.002	<0.002	< 0.002	<0.002	< 0.002
Boron	mg/L	0.20	0.026	0.025	0.005	<0.005	0.005
Cadmium	mg/L	0.0002	<0.00002	<0.00002	< 0.000014	<0.00002	< 0.000014
Chromium	mg/L	0.0089	<0.002	<0.002	< 0.002	<0.002	< 0.002
Cobalt	mg/L		0.0001	0.0001	< 0.0001	<0.0001	< 0.0001
Copper	mg/L	0.005	<0.002	<0.002	< 0.002	<0.002	< 0.002
Iron	mg/L	0.3	0.014	0.013	0.086	0.021	0.096
Lead	mg/L	0.025	<0.00002	<0.00002	0.00006	0.00006	0.00015
Manganese	mg/L		0.004	0.004	0.018	0.002	0.004
Molybdenum	mg/L		<0.0001	<0.0001	< 0.0001	<0.0001	< 0.0001
Nickel	mg/L		<0.01	<0.01	< 0.01	<0.01	< 0.01
Selenium	mg/L		<0.001	<0.001	< 0.001	<0.001	< 0.001
Silver	mg/L		<0.00002	<0.00002	< 0.00002	<0.00002	< 0.00002
Strontium	mg/L		0.244	0.212	0.134	0.063	-
Thallium	mg/L		<0.00005	<0.00005	< 0.00005	<0.00005	< 0.00005
Titanium	mg/L		<0.005	<0.005	< 0.005	<0.005	< 0.005
Tungsten	mg/L		0.02	<0.01	< 0.01	<0.01	< 0.01
Uranium	mg/L		0.00026	0.00026	0.00023	0.00007	0.00006

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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			SW18			SW21C	
			SW18	SW18 DUP	SW18	SW21C	SW21C
PARAMETERS	UNITS	PWQO	24-Oct-16	24-Oct-16	9-May-17	24-Oct-16	8-May-17
Vanadium	mg/L		<0.005	<0.005	< 0.005	<0.005	< 0.005
Zinc	mg/L	0.02	<0.005	<0.005	0.007	<0.005	< 0.005
Zirconium	mg/L		<0.003	<0.003	0.006	<0.003	< 0.003
Anion Sum	meq/L		5.43	5.39	4.27	4.83	4.02
Cation Sum	meq/L		5.28	5.13	4.87	4.77	4.09
Ion Ratio	AS/CS		1.03	1.05	0.878	1.01	0.983
TDS (Calc)	mg/L		261	257	219	233	198
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, total	µg/L		<1.1	<1.1	<1.1	<1.1	<1.1
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<50	<50
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<50	<50
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<400	<400
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<400	<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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			SW24A		SW77	
			SW24A	SW24A	SW77	SW77
PARAMETERS	UNITS	PWQO	25-Oct-16	9-May-17	25-Oct-16	9-May-17
Total Coliform	cfu/100mL		-	-	-	-
E.Coli	cfu/100mL		-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-
Temperature (field)	°C		4.3	8.1	6.4	6.3
pH @25°C (lab)	pH units	6.5 - 8.5	8.35	8.3	8.32	8.16
pH (field)	pH units	6.5 - 8.5	7.9	8.5	7.8	7.8
Conductivity @25°C (lab)	µS/cm		533	388	460	398
Conductivity (field)	µS/cm		336	239	295	223
Dissolved Oxygen (field)	mg/L		13.8	13.4	12.7	14.1
Alkalinity (CaCO3)	mg/L		234	194	233	195
Hardness (CaCO3)	mg/L		290	223	345	209
Chloride	mg/L		17.5	1.5	2.2	2.8
Fluoride	mg/L		0.2	< 0.1	<0.1	< 0.1
Nitrate (N)	mg/L		0.3	1.4	1.5	1.9
Nitrite (N)	mg/L		<0.1	< 0.1	<0.1	< 0.1
Sulphate	mg/L		19	4	7	3
Colour	TCU		13	5	<2	3
Total Suspended Solids	mg/L		46	5	184	38
Ammonia (N) - Total	mg/L		<0.01	<0.01	0.01	<0.01
Unionized Ammonia as NH_3	mg/L	0.02	<0.0001	<0.0005	0.0001	<0.0001
Total Kjeldahl Nitrogen	mg/L		0.3	0.2	5.4	0.2
Phosphorus - Total	mg/L	0.03	0.03	0.01	0.81	0.02
Calcium	mg/L		79.8	61.9	108	62.2
Magnesium	mg/L		22	16.7	18.1	12.9
Potassium	mg/L		1.5	0.3	0.6	< 0.1
Sodium	mg/L		11.6	0.8	1.3	1
Aluminum	mg/L		0.07	0.08	0.92	0.07
Antimony	mg/L		<0.0001	< 0.0001	<0.0001	< 0.0001
Arsenic	mg/L		0.0002	< 0.0001	0.0005	< 0.0001
Barium	mg/L		0.015	0.006	0.026	0.006
Beryllium	mg/L		<0.002	< 0.002	<0.002	< 0.002
Boron	mg/L	0.20	0.079	< 0.005	0.006	< 0.005
Cadmium	mg/L	0.0002	<0.00002	< 0.000014	0.00008	< 0.000014
Chromium	mg/L	0.0089	<0.002	< 0.002	<0.002	< 0.002
Cobalt	mg/L		0.0003	< 0.0001	0.001	< 0.0001
Copper	mg/L	0.005	<0.002	<0.002	0.005	< 0.002
Iron	mg/L	0.3	0.123	0.089	1.33	0.051
Lead	mg/L	0.025	0.00022	0.00012	0.00289	0.00006
Manganese	mg/L		0.052	0.012	0.381	0.005
Molybdenum	mg/L		0.0001	< 0.0001	<0.0001	< 0.0001
Nickel	mg/L		<0.01	< 0.01	<0.01	< 0.01
Selenium	mg/L		<0.001	< 0.001	<0.001	< 0.001
Silver	mg/L		<0.00002	< 0.00002	<0.00002	< 0.00002
Strontium	mg/L		0.872	0.064	0.147	0.077
Thallium	mg/L		<0.00005	< 0.00005	<0.00005	< 0.00005
Titanium	mg/L		<0.005	< 0.005	0.009	< 0.005
Tungsten	mg/L		0.01	< 0.01	<0.01	< 0.01
Uranium	mg/L		0.00026	0.0001	0.00015	0.00008

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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PARAMETERS	UNITS	PWQO	SW24A		SW77	
			SW24A	SW24A	SW77	SW77
			25-Oct-16	9-May-17	25-Oct-16	9-May-17
Vanadium	mg/L		<0.005	< 0.005	<0.005	< 0.005
Zinc	mg/L	0.02	<0.005	< 0.005	0.01	< 0.005
Zirconium	mg/L		0.003	0.008	<0.003	0.006
Anion Sum	meq/L		5.61	4.09	4.97	4.17
Cation Sum	meq/L		6.35	4.51	7.05	4.21
Ion Ratio	AS/CS		0.883	0.908	0.705	0.989
TDS (Calc)	mg/L		294	208	285	207
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<1.0
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.5
Xylene, total	µg/L		<1.1	<1.1	<1.1	<1.1
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<50
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<50
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<400
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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PARAMETERS	UNITS	PWQO	BC CONTROL		PR CONTROL		
			BC CONT	BC CONT	PR CONT	PR CONT	DUP 1
			25-Oct-16	9-May-17	25-Oct-16	8-May-17	8-May-17
Total Coliform	cfu/100mL		-	-	-	-	-
E.Coli	cfu/100mL		-	-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-	-
Temperature (field)	°C		6.1	5.2	5.4	7.8	-
pH @25°C (lab)	pH units	6.5 - 8.5	8.26	8.32	8.4	8.46	8.47
pH (field)	pH units	6.5 - 8.5	7.7	8.4	7.9	8.4	-
Conductivity @25°C (lab)	µS/cm		714	429	456	408	405
Conductivity (field)	µS/cm		480	243	287	246	-
Dissolved Oxygen (field)	mg/L		13.5	15.6	15.1	14.0	-
Alkalinity (CaCO3)	mg/L		228	199	225	208	212
Hardness (CaCO3)	mg/L		362	237	261	226	227
Chloride	mg/L		57.1	8.3	4.1	1.7	1.8
Fluoride	mg/L		0.2	< 0.1	<0.1	< 0.1	< 0.1
Nitrate (N)	mg/L		0.5	1.6	0.3	0.5	0.5
Nitrite (N)	mg/L		<0.1	< 0.1	<0.1	< 0.1	< 0.1
Sulphate	mg/L		61	6	11	5	5
Colour	TCU		20	13	10	8	7
Total Suspended Solids	mg/L		<3	9	<3	10	8
Ammonia (N) - Total	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Unionized Ammonia as NH_3	mg/L	0.02	0.0001	<0.0003	<0.0001	<0.0004	<0.0004
Total Kjeldahl Nitrogen	mg/L		0.2	9	1	2	3.5
Phosphorus - Total	mg/L	0.03	0.02	0.02	0.01	0.02	0.05
Calcium	mg/L		105	70.1	65.5	61.5	61.6
Magnesium	mg/L		24.2	15	23.6	17.5	17.6
Potassium	mg/L		3.5	0.8	1.3	0.7	0.7
Sodium	mg/L		15.4	4	3	1.7	1.6
Aluminum	mg/L		0.04	0.09	0.02	0.08	0.08
Antimony	mg/L		<0.0001	< 0.0001	0.0002	< 0.0001	< 0.0001
Arsenic	mg/L		0.0014	< 0.0001	0.0001	0.0001	0.0001
Barium	mg/L		0.051	0.02	0.022	0.019	0.018
Beryllium	mg/L		<0.002	< 0.002	<0.002	< 0.002	< 0.002
Boron	mg/L	0.20	0.231	0.01	0.025	0.02	0.022
Cadmium	mg/L	0.0002	<0.00002	< 0.000014	<0.00002	< 0.000014	< 0.000014
Chromium	mg/L	0.0089	<0.002	< 0.002	<0.002	0.004	< 0.002
Cobalt	mg/L		0.0003	< 0.0001	0.0002	< 0.0001	< 0.0001
Copper	mg/L	0.005	<0.002	< 0.002	<0.002	< 0.002	< 0.002
Iron	mg/L	0.3	0.023	0.091	<0.005	0.161	0.118
Lead	mg/L	0.025	<0.00002	0.00003	<0.00002	0.00006	0.00006
Manganese	mg/L		0.044	0.009	0.008	0.012	0.01
Molybdenum	mg/L		0.0001	0.0001	<0.0001	0.0001	0.0001
Nickel	mg/L		<0.01	< 0.01	<0.01	< 0.01	< 0.01
Selenium	mg/L		0.006	< 0.001	<0.001	< 0.001	< 0.001
Silver	mg/L		<0.00002	< 0.00002	<0.00002	< 0.00002	< 0.00002
Strontium	mg/L		0.913	0.156	0.19	-	-
Thallium	mg/L		<0.00005	< 0.00005	<0.00005	< 0.00005	< 0.00005
Titanium	mg/L		<0.005	< 0.005	<0.005	< 0.005	0.006
Tungsten	mg/L		<0.01	< 0.01	<0.01	< 0.01	< 0.01
Uranium	mg/L		0.00038	0.00024	0.00024	0.00027	0.00025

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS (2017)

DUNTROON QUARRY - AMP MONITORING REPORT (2017)
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PARAMETERS	UNITS	PWQO	BC CONTROL		PR CONTROL		
			BC CONT	BC CONT	PR CONT	PR CONT	DUP 1
			25-Oct-16	9-May-17	25-Oct-16	8-May-17	8-May-17
Vanadium	mg/L		<0.005	< 0.005	<0.005	< 0.005	< 0.005
Zinc	mg/L	0.02	<0.005	0.005	<0.005	< 0.005	< 0.005
Zirconium	mg/L		<0.003	0.009	<0.003	< 0.003	< 0.003
Anion Sum	meq/L		7.49	4.44	4.86	4.36	4.42
Cation Sum	meq/L		8	4.93	5.37	4.61	4.62
Ion Ratio	AS/CS		0.935	0.901	0.905	0.945	0.958
TDS (Calc)	mg/L		406	231	245	216	218
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, total	µg/L		<1.1	<1.1	<1.1	<1.1	<1.1
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<50	<50
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<50	<50
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<400	<400
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<400	<400

APPENDIX B – PERFORMANCE INDICATOR MONITORING PROGRAM RESULTS MONTHLY MONITORING DATA AND TRIGGER VALUES

TABLE B7 – ESCARPMENT SPRINGS JANUARY 2017

Surface Water Station	January 2017 Monitoring Data		January PITM Trigger Values	
	Temperature (˚C)	Flow (L/s)	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW10	2.3	1.5	NO TRIGGER	NO TRIGGER
SW11	5.1	20.8	11.0	1.2
SW11A	5.7	4.7	NO TRIGGER	NO TRIGGER
SW11B	N/A	3.9	NO TRIGGER	NO TRIGGER
SW11C	5.2	1.2	NO TRIGGER	NO TRIGGER
SW11D	5.3	10.3	NO TRIGGER	NO TRIGGER
SW11E	4.9	19.5	NO TRIGGER	NO TRIGGER
SW21C	4.8	4.6	2.8	0.5
SW24A	3.9	3.7	1.7	1.5
SW77	6.5	0.4	0.23	0.2

TABLE B8 – SURFACE WATER STATIONS JANUARY 2017

Surface Water Station	January 2017	Monitoring Data	January PITM Trigger Values	
	Temperature (˚C)	Flow (L/s)	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW1	-0.1	55.9	13.8	0.9
SW2	6.3	8.5	3.7 (unfrozen)	1.5 (unfrozen)
SW0-2	0.0	94.6	78.8 (unfrozen)	48.2 (unfrozen)
SW3	BURIED	BURIED	1.7 (unfrozen)	NO TRIGGER
SW6A	0.3	340.4	174.6	113.0
SW9	4.0	1.4	NO TRIGGER	NO TRIGGER
SW14	3.2	37.9	35.7	12.6
SW15	2.4	3.8	NO TRIGGER	NO TRIGGER
SW16	2.2	10.7	7.0 (unfrozen)	6.1 (unfrozen)
SW17	2.5	4.4	2.4	1.4
SW17A	4.1	21.6	15.5	0.6
SW18	2.6	76.8	36.3 (unfrozen)	31.6 (unfrozen)
RR3 Karst	6.0	0.7	NO TRIGGER	NO TRIGGER
PR Control	1.9	44.6	NO TRIGGER	NO TRIGGER
BC Control	2.1	37.3	NO TRIGGER	NO TRIGGER

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TABLE B9 – ESCARPMENT SPRINGS FEBRUARY 2017

Surface Water Station	February 2017 Monitoring Data		February PITM Trigger Values	
	Temperature (˚C)	Flow (L/s)	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW10	1.2	0.7	0.5 (unfrozen)	0.3 (unfrozen)
SW11	3.5	8.5	4.6	1.4
SW11A	5.1	0.1	NO TRIGGER	NO TRIGGER
SW11B	4.6	1.7	NO TRIGGER	NO TRIGGER
SW11C	4.7	0.7	NO TRIGGER	NO TRIGGER
SW11D	4.1	3.3	NO TRIGGER	NO TRIGGER
SW11E	2.9	6.5	NO TRIGGER	NO TRIGGER
SW21C	3.3	2.2	2.0	0.7
SW24A	1.4	0.6	1.4	0.7
SW77	4.4	0.9	0.23	0.2

TABLE B10 – SURFACE WATER STATIONS FEBRUARY 2017

Surface Water Station	February 2017 Monitoring Data		February PITM Trigger Values	
	Temperature (˚C)	Flow (L/s)	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW1	FROZEN	FROZEN	12.6	4.8
SW2	3.3	1.4	3.8 (unfrozen)	3.0 (unfrozen)
SW0-2	FROZEN	FROZEN	NO TRIGGER	NO TRIGGER
SW3	BURIED	BURIED	NO TRIGGER	NO TRIGGER
SW6A	0.0	163.3	190.7	134.9
SW9	BURIED	BURIED	NO TRIGGER	NO TRIGGER
SW14	BURIED	BURIED	NO TRIGGER	NO TRIGGER
SW15	BURIED	BURIED	NO TRIGGER	NO TRIGGER
SW16	0.1	4.4	7.5 (unfrozen)	6.5 (unfrozen)
SW17	1.5	3.3	1.9	0.9
SW17A	1.6	13.8	9.2	2.4
SW18	-0.2	FROZEN	15.5 (unfrozen)	2.0
RR3 Karst	4.5	0.9	NO TRIGGER	NO TRIGGER
PR Control	0.4	18.3	NO TRIGGER	NO TRIGGER
BC Control	FROZEN	FROZEN	NO TRIGGER	NO TRIGGER

TABLE B11 – ESCARPMENT SPRINGS MARCH 2017

Surface Water Station	March 2017 Monitoring Data		March PITM Trigger Values	
	Temperature (˚C)	Flow (L/s)	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW10	-0.2	1.6	0.4	0.2
SW11	3.3	23.4	11.5	2.1
SW11A	4.0	0.6	NO TRIGGER	NO TRIGGER
SW11B	4.6	2.6	NO TRIGGER	NO TRIGGER
SW11C	4.3	0.5	NO TRIGGER	NO TRIGGER
SW11D	4.2	7.5	NO TRIGGER	NO TRIGGER
SW11E	2.8	10.9	NO TRIGGER	NO TRIGGER
SW21C	5.1	2.6	1.7	0.7
SW24A	4.8	0.3	1.5	0.2
SW77	6.5	0.9	0.35	0.3

TABLE B12 – SURFACE WATER STATIONS MARCH 2017

Surface Water Station	March 2017 Monitoring Data		March PITM Trigger Values	
	Temperature (˚C)	Flow (L/s)	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW1	N/A	N/A	6.8	0.6
SW2	N/A	N/A	2.8 (unfrozen)	2.2 (unfrozen)
SW0-2	N/A	N/A	104.3 (unfrozen)	69.3 (unfrozen)
SW3	1.3	3.2	5.5	0.8
SW6A	0.9	298.7	363.6	178.8
SW9	0.1	7.7	5.2	0.4
SW14	1.2	19.6	25.1	5.5
SW15	0.6	1.2	1.7 (unfrozen)	1.5 (unfrozen)
SW16	3.7	6.3	12.1	2.0
SW17	4.2	2.6	4.3	1.8
SW17A	7.1	20.6	14.7	11.7
SW18	5.5	70.7	66.0	48.7
RR3 Karst	4.5	2.6	NO TRIGGER	NO TRIGGER
PR Control	2.2	40.3	NO TRIGGER	NO TRIGGER
BC Control	14.6	14.6	NO TRIGGER	NO TRIGGER

TABLE B13 – ESCARPMENT SPRINGS APRIL 2017

Surface Water Station	April 2017 Monitoring Data		April PITM Trigger Values	
	Temperature (˚C)	Flow (L/s)	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW10	5.8	0.5	0.5	0.2
SW11	4.6	18.8	9.0	5.8
SW11A	5.0	0.6	NO TRIGGER	NO TRIGGER
SW11B	5.1	1.6	NO TRIGGER	NO TRIGGER
SW11C	4.9	0.9	NO TRIGGER	NO TRIGGER
SW11D	4.4	20.7	NO TRIGGER	NO TRIGGER
SW11E	4.8	32.0	NO TRIGGER	NO TRIGGER
SW21C	6.3	5.3	3.3	1.9
SW24A	8.8	3.6	1.9	0.8
SW77	8.4	1.4	0.35	0.3

TABLE B14 – SURFACE WATER STATIONS APRIL 2017

Surface Water Station	April 2017 Monitoring Data		April PITM Trigger Values	
	Temperature (˚C)	Flow (L/s)	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW1	11.5	53.7	11.7	1.5
SW2	8.6	8.0	8.0	6.5
SW0-2	11.2	58.5	50.0	31.7
SW3	8.2	7.7	4.3	3.4
SW6A	8.3	380.1	382.7	200.0
SW9	9.1	20.1	5.6	0.1
SW14	6.6	46.1	15.7	6.5
SW15	7.4	1.3	0.6	0.1
SW16	11.1	12.2	4.6	2.9
SW17	9.1	8.8	3.1	1.6
SW17A	9.4	37.1	16.9	14.7
SW18	10.0	77.7	80.7	29.5
RR3 Karst	7.3	2.7	NO TRIGGER	NO TRIGGER
PR Control	7.8	93.8	NO TRIGGER	NO TRIGGER
BC Control	10.8	35.1	NO TRIGGER	NO TRIGGER

TABLE B15 – ESCARPMENT SPRINGS MAY 2017

Surface Water Station	May 2017 Monitoring Data		May PITM Trigger Values	
	Temperature (˚C)	Flow (L/s)	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW10	8.6	1.7	0.2	0.1
SW11	8.0	33.4	10.4	2.5
SW11A	6.0	0.8	NO TRIGGER	NO TRIGGER
SW11B	6.1	0.3	NO TRIGGER	NO TRIGGER
SW11C	5.8	2	NO TRIGGER	NO TRIGGER
SW11D	6.0	14.5	NO TRIGGER	NO TRIGGER
SW11E	6.0	19.5	NO TRIGGER	NO TRIGGER
SW21C	10.8	3.5	3.7	2.6
SW24A	12.2	1.5	1.4	0.8
SW77	9.2	0.9	0.3	0.2

TABLE B16 – SURFACE WATER STATIONS MAY 2017

Surface Water Station	May 2017 Monitoring Data		May PITM Trigger Values	
	Temperature (˚C)	Flow (L/s)	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW1	11.4	95.5	5.0	2.5
SW2	8.3	4.4	3.9	3.3
SW0-2	17.4	99.4	33.5	16.1
SW3	10.8	5.5	NO TRIGGER	NO TRIGGER
SW6A	11.6	487.2	189.1	164.4
SW9	14.3	5.0	NO TRIGGER	NO TRIGGER
SW14	10.5	23.1	8.8	4.1
SW15	18.0	1.9	0.6	0.1
SW16	11.5	2.5	2.4	1.0
SW17	16.4	19.6	2.0	1.3
SW17A	12.6	45.0	12.0	9.6
SW18	10.6	79.0	29.1	25.3
RR3 Karst	8.9	0.9	NO TRIGGER	NO TRIGGER
PR Control	9.2	77.2	NO TRIGGER	NO TRIGGER
BC Control	18.0	17.1	NO TRIGGER	NO TRIGGER

TABLE B17 – ESCARPMENT SPRINGS JUNE 2017

Surface Water Station	June 2017 Monitoring Data		June PITM Trigger Values			
	Temperature (˚C)	Flow (L/s)	Temperature (˚C) 'YELLOW'	Temperature (˚C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW10	11.8	1.7	16.4	18.3	0.09	0.09
SW11	8.0	21.5	10.9	12.1	2.8	1.9
SW11A	7.0	0.2	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW11B	7.4	1.4	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW11C	7.4	1.1	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW11D	6.9	5.5	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW11E	8.2	17.9	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW21C	9.8	1.4	10.8	12.0	2.1	0.6
SW24A	8.9	1.2	12.2	13.5	0.4	0.2
SW77	10.9	0.8	7.5	8.3	0.12	0.1

TABLE B18 – SURFACE WATER STATIONS JUNE 2017

Surface Water Station	June 2017 Monitoring Data		June PITM Trigger Values			
	Temperature (˚C)	Flow (L/s)	Temperature (˚C) 'YELLOW'	Temperature (˚C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW1	17.3	34.0	21.0	23.4	3.0	1.1
SW2	9.4	3.6	12.2	13.5	1.9	1.6
SW0-2	14.5	53.6	22.9	25.4	4.9	3.6
SW3	14.5	2.5	16.7	18.5	NO TRIGGER	NO TRIGGER
SW6A	13.7	457.4	22.7	25.2	83.4	58.3
SW9	13.2	2.1	14.8	16.4	NO TRIGGER	NO TRIGGER
SW14	12.7	43.9	19.6	21.8	1.8	1.6
SW15	17.1	2.2	20.7	23.0	0.2	NO TRIGGER
SW16	13.9	5.2	17.5	19.4	0.6	0.1
SW17	15.6	14.5	19.2	21.4	0.5	0.3
SW17A	10.6	55.3	12.6	14	6.9	3.9
SW18	13.2	49.4	16.1	17.9	13.3	11.5
RR3 Karst	11.4	1.0	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
PR Control	11.7	60.3	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
BC Control	12.4	25.1	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER

TABLE B19 – ESCARPMENT SPRINGS JULY 2017

Surface Water Station	July 7 2017 Monitoring Data		July 18-20 2017 Monitoring Data		July PITM Trigger Values			
	Temperature (˚C)	Flow (L/s)	Temperature (˚C)	Flow (L/s)	Temperature (˚C) 'YELLOW'	Temperature (˚C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW10	13.5	0.4	15.8	0.4	19.2	21.3	0.09	0.09
SW11	9.3	2.4	9.7	4.2	14.4	16.0	0.9	0.8
SW11A	7.6	0.2	7.8	0.4	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW11B	7.7	3.0	7.3	1.6	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW11C	8.8	0.1	8.3	0.4	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW11D	7.8	0.8	8.3	1.1	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW11E	10.6	8.9	11.7	4.9	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW21C	10.9	5.5	10.9	3.8	11.7	13.0	1.2	0.7
SW24A	12.1	0.1	11.6	1.1	13.5	15.0	0.4	0.3
SW77	11.9	0.9	11.5	0.4	9.7	10.8	0.12	0.1

TABLE B20 – SURFACE WATER STATIONS JULY 2017

Surface Water Station	July 2017 Monitoring Data		July PITM Trigger Values			
	Temperature (˚C)	Flow (L/s)	Temperature (˚C) 'YELLOW'	Temperature (˚C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW1	20.2	8.9	21.7	24.1	0.3	0.2
SW2	11.8	2.6	15.7	17.4	1.3	0.5
SW0-2	19.6	40.7	26.3	29.2	3.6	1.7
SW3	16.2	1.1	17.8	19.8	NO TRIGGER	NO TRIGGER
SW6A	17.3	236.7	21.1	23.4	55.6	47.5
SW9	DRY	DRY	17.3	19.2	NO TRIGGER	NO TRIGGER
SW14	18.8	6.1	21.6	24.0	1.1	0.5
SW15	18.3	0.4	21.4	23.8	0.1	NO TRIGGER
SW16	15.7	2.2	18.6	20.7	0.3	NO TRIGGER
SW17	18.9	2.1	20.7	23.0	0.3	0.2
SW17A	11.2	19.1	14.4	16.0	2.9	1.7
SW18	14.8	28.5	18.6	20.7	7.1	3.8
RR3 Karst	11.9	0.7	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
PR Control	13.7	25.9	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
BC Control	17.2	5.3	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER

TABLE B21 – ESCARPMENT SPRINGS AUGUST 2017

Surface Water Station	August 2 2017 Monitoring Data		August 14-18 2017 Monitoring Data		August PITM Trigger Values			
	Temperature (˚C)	Flow (L/s)	Temperature (˚C)	Flow (L/s)	Temperature (˚C) 'YELLOW'	Temperature (˚C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW10	16.3	0.4	15.8	0.5	15.8	17.5	0.09	NO TRIGGER
SW11	10.6	0.9	10.6	2.5	13.5	15.0	0.9	0.8
SW11A	7.8	0.2	8.8	0.2	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW11B	8.3	0.4	8.5	0.5	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW11C	8.5	0.2	8.8	0.7	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW11D	9.8	0.4	10.3	1.0	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW11E	11.9	4.3	11.9	1.8	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW21C	10.5	2.4	10.3	7.2	10.8	12.0	0.6	0.1
SW24A	12.7	0.6	12.1	0.1	11.7	13.0	0.3	0.1
SW77	10.9	0.3	11.0	0.3	9.5	10.6	0.12	0.1

TABLE B22 – SURFACE WATER STATIONS AUGUST 2017

Surface Water Station	August 2017 Monitoring Data		August PITM Trigger Values			
	Temperature (˚C)	Flow (L/s)	Temperature (˚C) 'YELLOW'	Temperature (˚C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW1	16.1	14.4	17.7	19.7	0.5	0.1
SW2	10.6	1.4	15.6	17.3	0.3	0.1
SW0-2	16.0	36.2	22.4	24.9	1.9	0.4
SW3	PONDED	PONDED	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW6A	16.3	148.7	19.1	21.2	32.1	24.9
SW9	DRY	DRY	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW14	17.1	5.8	20.0	22.2	1.1	0.5
SW15	16.7	0.3	19.4	21.5	0.1	NO TRIGGER
SW16	15.8	0.8	15.3	17.0	0.1	NO TRIGGER
SW17	19.0	0.6	19.1	21.2	0.3	0.1
SW17A	11.8	8.4	13.4	14.9	2.5	0.5
SW18	15.4	13.8	17.4	19.3	3.5	3.0
RR3 Karst	11.4	0.5	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
PR Control	14.3	24.8	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
BC Control	15.9	2.3	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER

TABLE B23 – ESCARPMENT SPRINGS SEPTEMBER 2017

Surface Water Station	September 2017 Monitoring Data		September PITM Trigger Values			
	Temperature (˚C)	Flow (L/s)	Temperature (˚C) 'YELLOW'	Temperature (˚C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW10	15.0	0.2	12.8	14.2	0.09	0.09
SW11	10.9	1.3	11.4	12.7	0.2	0.1
SW11A	10.4	0.1	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW11B	8.6	0.4	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW11C	8.5	0.4	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW11D	11.0	0.2	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW11E	12.2	1.8	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW21C	10.4	5.7	9.6	10.7	0.8	0.7
SW24A	12.2	0.2	10.2	11.4	0.3	0.1
SW77	11.4	0.2	9.9	11.0	0.1	0.09

TABLE B24 – SURFACE WATER STATIONS SEPTEMBER 2017

Surface Water Station	September 2017 Monitoring Data		September PITM Trigger Values			
	Temperature (˚C)	Flow (L/s)	Temperature (˚C) Table 3.6 'YELLOW'	Temperature (˚C) Table 3.6 'RED'	Flow (L/s) Table 3.5 'YELLOW'	Flow (L/s) Table 3.5 'RED'
SW1	16.3	21.8	17.1	19.0	0.6	0.2
SW2	10.8	0.6	12.8	14.2	0.1	NO TRIGGER
SW0-2	14.2	26.8	20.8	23.1	1.9	0.4
SW3	DRY	DRY	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW6A	15.1	100.2	14.4	16.0	14.7	9.0
SW9	DRY	DRY	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW14	16.3	10.7	14.5	16.1	0.8	0.1
SW15	16.5	0.5	15.0	16.7	0.1	NO TRIGGER
SW16	15.6	1.5	12.5	13.9	0.1	NO TRIGGER
SW17	17.6	0.6	15.6	17.3	0.3	0.1
SW17A	13.1	7.0	10.9	12.1	1.2	1.1
SW18	15.9	10.5	13.2	14.7	3.1	1.6
RR3 Karst	13.0	<0.1	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
PR Control	14.9	9.9	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
BC Control	14.6	1.1	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER

TABLE B25 – ESCARPMENT SPRINGS OCTOBER 2017

Surface Water Station	October 2017 Monitoring Data		October PITM Trigger Values	
	Temperature (˚C)	Flow (L/s)	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW10	12.5	0.5	0.1	0.09
SW11	8.9	7.4	0.8	0.4
SW11A	9.1	0.2	NO TRIGGER	NO TRIGGER
SW11B	8.1	0.7	NO TRIGGER	NO TRIGGER
SW11C	8.5	0.7	NO TRIGGER	NO TRIGGER
SW11D	9.1	0.3	NO TRIGGER	NO TRIGGER
SW11E	9.7	3.1	NO TRIGGER	NO TRIGGER
SW21C	8.6	1.1	1.2	0.7
SW24A	8.9	0.8	0.3	0.1
SW77	9.7	0.2	0.1	0.09

TABLE B26 – SURFACE WATER STATIONS OCTOBER 2017

Surface Water Station	October 2017 Monitoring Data		October PITM Trigger Values	
	Temperature (˚C)	Flow (L/s)	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW1	8.3	37.3	1.3	0.9
SW2	9.8	2.6	0.12	0.10
SW0-2	6.8	58.5	6.6	1.2
SW3	9.7	2.3	-	-
SW6A	7.6	204.0	47.8	41.5
SW9	DRY	DRY	-	-
SW14	11.1	18.4	1.7	0.3
SW15	11.5	1.9	0.3	0.1
SW16	10.1	4.4	0.2	NO TRIGGER
SW17	12.0	3.8	0.4	0.2
SW17A	9.4	7.9	2.6	1.5
SW18	10.9	22.6	5.9	3.3
RR3 Karst	11.0	0.8	NO TRIGGER	NO TRIGGER
PR Control	8.8	27.3	NO TRIGGER	NO TRIGGER
BC Control	9.4	8.8	NO TRIGGER	NO TRIGGER

TABLE B27 – ESCARPMENT SPRINGS NOVEMBER 2017

Surface Water Station	November 2017 Monitoring Data		November PITM Trigger Values	
	Temperature (˚C)	Flow (L/s)	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW10	5.0	0.5	0.1	0.09
SW11	6.2	5.5	2.4	1.4
SW11A	7.2	0.1	NO TRIGGER	NO TRIGGER
SW11B	6.7	0.9	NO TRIGGER	NO TRIGGER
SW11C	6.7	0.3	NO TRIGGER	NO TRIGGER
SW11D	6.4	0.8	NO TRIGGER	NO TRIGGER
SW11E	5.7	6.0	NO TRIGGER	NO TRIGGER
SW21C	5.5	2.4	1.4	0.5
SW24A	6.1	0.2	0.3	0.1
SW77	8.1	0.3	0.2	0.1

TABLE B28 – SURFACE WATER STATIONS NOVEMBER 2017

Surface Water Station	November 2017 Monitoring Data		November PITM Trigger Values	
	Temperature (˚C)	Flow (L/s)	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW1	0.7	33.2	2.2	0.3
SW2	7.7	1.1	0.2 (unfrozen)	0.1 (unfrozen)
SW0-2	0.5	44.5	10.2	4.1
SW3	4.8	0.9	NO TRIGGER	NO TRIGGER
SW6A	1.9	190.9	96.9	32.8
SW9	3.2	0.2	NO TRIGGER	NO TRIGGER
SW14	4.2	13.8	3.1	0.9
SW15	4.3	1.3	0.6	0.2
SW16	4.2	6.3	0.1	NO TRIGGER
SW17	3.4	4.0	0.6	0.3
SW17A	5.8	8.7	4.1	2.2
SW18	5.1	29.3	8.6	4.6
RR3 Karst	8.8	0.2	NO TRIGGER	NO TRIGGER
PR Control	4.4	40.1	NO TRIGGER	NO TRIGGER
BC Control	5.3	21.4	NO TRIGGER	NO TRIGGER

TABLE B29 – ESCARPMENT SPRINGS DECEMBER 2017

Surface Water Station	December 2017 Monitoring Data		December PITM Trigger Values	
	Temperature (˚C)	Flow (L/s)	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW10	1.4	0.2	0.1	0.09
SW11	3.1	5.7	3.5	0.9
SW11A	6.0	0.5	NO TRIGGER	NO TRIGGER
SW11B	5.8	1.7	NO TRIGGER	NO TRIGGER
SW11C	5.3	0.8	NO TRIGGER	NO TRIGGER
SW11D	4.6	2.0	NO TRIGGER	NO TRIGGER
SW11E	2.3	7.8	NO TRIGGER	NO TRIGGER
SW21C	3.0	5.6	1.7	0.4
SW24A	3.1	0.5	0.5	0.1
SW77	4.6	0.6	0.23	0.2

TABLE B30 – SURFACE WATER STATIONS DECEMBER 2017

Surface Water Station	December 2017		December PITM Trigger Values	
	Temperature (˚C)	Flow (L/s)	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW1	FROZEN	FROZEN	5.1	0.6
SW2	FROZEN	FROZEN	1.3 (unfrozen)	0.3 (unfrozen)
SW0-2	FROZEN	FROZEN	23.8 (unfrozen)	19.2 (unfrozen)
SW3	FROZEN	FROZEN	NO TRIGGER	NO TRIGGER
SW6A	0.0	219.0	241.2	151.0
SW9	FROZEN	FROZEN	NO TRIGGER	NO TRIGGER
SW14	0.0	14.5	6.2	2.5
SW15	FROZEN	FROZEN	0.8	0.6
SW16	FROZEN	FROZEN	2.4	NO TRIGGER
SW17	2.2	6.0	1.4	1.1
SW17A	2.2	16.3	4.5	1.8
SW18	0.3	27.8	18.1	9.3
RR3 Karst	6.1	1.6	NO TRIGGER	NO TRIGGER
PR Control	-0.1	37.5	NO TRIGGER	NO TRIGGER
BC Control	-0.1	11.2	NO TRIGGER	NO TRIGGER

APPENDIX B – PERFORMANCE INDICATOR MONITORING PROGRAM RESULTS WETLAND WATER LEVEL DATA

TABLE B31 – RR PSW #2, #6 & #3 WETLAND WATER LEVELS MAY – JULY 2017

Location	2017 Measured Water Level (m ASL)					
	10 May	25 May	1 June	26 June	7 July	17 July
RR PSW #2						
DP5 (in)	510.1	510.1	510.0	510.0	510.0	510.0
DP5 (out)	510.1	501.1	510.0	510.0	510.0	510.0
DP7 (in)	509.4	N/A	509.3	509.3	509.3	509.3
DP7 (out)	509.4	N/A	509.3	509.3	509.3	509.3
RR PSW #6						
DP2 (in)	512.3	512.3	512.2	512.3	512.2	512.3
DP2 (out)	512.3	512.3	512.2	512.3	512.2	512.3
DP4 (in)	511.7	511.7	511.6	511.6	N/A	N/A
DP4 (out)	511.7	511.7	511.6	511.6	N/A	N/A
DP8 (in)	511.3	511.3	511.3	511.3	511.3	511.3
DP8 (out)	511.4	511.3	511.3	511.3	511.3	511.3
RR PSW #3						
DP10 (in)	507.4	507.4	507.4	507.4	507.4	507.4
DP10 (out)	507.4	507.4	507.4	507.4	507.4	507.4

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TABLE B32 – ANSI A & ANSI B WETLAND WATER LEVELS MAY – JULY 2017

Location	2017 Measured Water Level (m ASL)					
	10 May	25 May	1 June	26 June	7 July	17 July
ANSI A						
DP6 (in)	511.8	511.8	511.8	512.0	511.8	511.9
DP6 (out)	511.8	511.8	511.8	512.0	511.8	511.9
ANSI B						
Bridson DP (in)	510.4	510.5	510.5	510.4	510.4	DRY
Bridson DP (out)	510.4	501.5	501.4	DRY	DRY	DRY
DP9 (in)	507.8	507.8	507.8	507.8	507.8	507.7
DP9 (out)	507.8	507.8	507.8	507.8	507.8	507.7