

Appendix 7

Air and Water Monitoring Results

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Deposited Dust 2008 to 2015

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Month	D1			D2			D3		
	Insoluble Matter	Rolling Annual Average	Ash	Insoluble Matter	Rolling Annual Average	Ash	Insoluble Matter	Rolling Annual Average	Ash
Jan-08	0.4	1.4	0.01	0.1	0.6	<0.1	14	2.6	4.1
Feb-08	4.5	1.6	2.8	0.6	0.6	0.3	9.2	3.2	3.6
Mar-08	0.4	1.6	0.1	0.4	0.6	0.1	0.8	3.1	0.3
Apr-08	1.1	1.6	0.6	2.4	0.7	1.1	0.9	3.1	0.5
May-08	0.2	1.6	<0.1	0.4	0.7	<0.1	0.1	3.1	<0.1
Jun-08	0.4	1.6	0.3	0.7	0.7	0.4	1.3	3.1	0.6
Jul-08	1	1.5	0.6	0.5	0.7	0.3	0.7	3.1	0.4
Aug-08	0.6	1.5	0.3	1	0.8	0.4	1.3	3.1	0.7
Sep-08	1	1.2	0.6	5	1.1	<0.1	1	3.1	0.6
Oct-08	0.8	1.2	0.4	1.4	1.2	0.8	2.7	3.2	1
Nov-08	1.2	1.2	0.8	1.2	1.2	0.8	1.7	3.1	1.1
Dec-08	1.1	1.1	0.8	3	1.4	1.1	1.6	2.9	0.9
Jan-09	0.4	1.1	<0.1	4.4	1.8	0.7	1.5	1.9	0.9
Feb-09	2.8	0.9	2.1	5.8	2.2	2.8	2.7	1.4	2
Mar-09	2	1.1	1.2	0.8	2.2	0.3	0.8	1.4	0.4
Apr-09	0.6	1.0	0.5	1.6	2.2	0.7	0.8	1.4	0.5
May-09	0.4	1.0	<0.1	1.3	2.2	0.4	0.8	1.4	0.4
Jun-09	0.2	1.0	<0.1	1	2.3	0.3	0.6	1.4	0.3
Jul-09	0.8	1.0	0.5	3.6	2.5	0.8	0.8	1.4	0.5
Aug-09	1	1.0	0.7	18	3.9	9.6	1.8	1.4	1.1
Sep-09	4.3	1.3	3.6	9	4.3	4.6	5.2	1.8	4.3
Oct-09	0.8	1.3	0.5	1.7	4.3	0.6	1.4	1.6	0.9
Nov-09	1.4	1.3	1.1	4	4.5	2	1.6	1.6	1.1
Dec-09	0.6	1.3	0.3	0.8	4.3	0.4	5.6	2.0	4.8
Jan-10	1.9	1.4	0.9	**11.3	4.3	1.5	1.9	2.0	1.1
Feb-10	0.6	1.2	0.2	0.6	3.9	<0.1	3.2	2.0	1.5
Mar-10	0.8	1.1	0.2	1.8	3.9	0.4	2.4	2.2	1.8
Apr-10	0.8	1.1	0.3	4.9	4.2	1.8	3	2.4	2.1
May-10	0.3	1.1	<0.1	2.2	4.3	0.8	3	2.5	2.2
Jun-10	0.6	1.2	0.2	1.1	4.3	0.4	0.7	2.6	0.3
Jul-10	0.4	1.1	<0.1	0.5	4.1	0.2	1.9	2.6	1.1
Aug-10	0.6	1.1	0.3	2.6	2.7	0.4	1.6	2.6	1.2
Sep-10	0.9	0.8	0.3	1.6	2.0	0.2	0.9	2.3	0.5
Oct-10	0.9	0.8	0.3	3.5	2.1	1.5	0.9	2.2	0.4
Nov-10	1	0.8	0.2	0.7	1.8	0.2	0.9	2.2	0.3
Dec-10	1	0.8	0.5	0.7	1.8	0.3	1.8	1.9	1.1
Jan-11	0.7	0.7	0.3	4.1	2.0	0.9	0.9	1.8	0.5
Feb-11	0.5	0.7	0.2	2.9	2.2	0.7		1.6	
Mar-11	0.7	0.7	0.2	0.6	2.1	0.3	4.9	1.9	3.8
Apr-11	0.4	0.7	0.1	1.1	1.8	0.5	5.4	2.1	4.8
May-11	0.7	0.7	0.3	1.1	1.7	0.4	1.7	2.0	1.1
Jun-11	0.6	0.7	0.1	0.5	1.7	0.2	1.6	2.0	1
Jul-11	0.4	0.7	0.1	0.1	1.6	<0.1	0.6	1.9	0.3
Aug-11	1.3	0.8	0.8	0.4	1.4	0.2	0.8	1.9	0.5
Sep-11	1	0.8	0.5	1.2	1.4	0.5	0.6	1.8	0.3



Deposited Dust 2008 to 2015

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Month	D1			D2			D3		
	Insoluble Matter	Rolling Annual Average	Ash	Insoluble Matter	Rolling Annual Average	Ash	Insoluble Matter	Rolling Annual Average	Ash
Oct-11	0.5	0.7	0.3	1	1.2	0.8	0.8	1.8	0.4
Nov-11	1.1	0.7	0.4	1.2	1.2	0.4	2	1.9	0.8
Dec-11	0.9	0.7	0.3	0.6	1.2	0.2	0.4	1.8	0.3
Jan-12	0.7	0.7	0.1	0.4	0.9	<0.1	0.4	1.7	0.1
Feb-12	0.8	0.8	<0.1	0.3	0.7	<0.1	0.7	1.7	<0.1
Mar-12	1.3	0.8	0.3	1.1	0.8	0.3	1	1.3	0.4
Apr-12	0.9	0.9	0.2	1.3	0.8	0.4	1.2	1.0	0.4
May-12	0.5	0.8	0.3	0.6	0.7	0.2	2.8	1.1	1
Jun-12	0.6	0.8	0.2	4.1	1.0	1.5	1.1	1.0	0.4
Jul-12	0.4	0.8	0.1	0.9	1.1	0.3	0.4	1.0	0.2
Aug-12	1	0.8	0.5	0.8	1.1	0.4	1.3	1.1	0.6
Sep-12	1.3	0.8	0.5		1.1		0.8	1.1	0.5
Oct-12	0.7	0.9	0.3	0.5	1.1	0.3	1.1	1.1	0.5
Nov-12	1	0.8	0.4	1.3	1.1	0.5	1.5	1.1	0.9
Dec-12	1.6	0.9	0.9	3.9	1.4	2.1	1.3	1.1	0.3
Jan-13	0.8	0.9	0.4	0.6	1.4	0.2	0.9	1.2	0.4
Feb-13	0.6	0.9	0.2	1	1.5	0.4	1	1.2	0.4
Mar-13	0.7	0.8	0.2	1.1	1.5	0.4	4.7	1.5	1
Apr-13	0.5	0.8	0.1	3.5	1.7	0.6	1.9	1.6	0.8
May-13	0.3	0.8	0.1	0.8	1.7	0.3	1	1.4	0.5
Jun-13	0.4	0.8	0.2	0.5	1.4	0.4	0.5	1.4	0.4
Jul-13	0.2	0.8	0.2	0.3	1.3	0.2	0.5	1.4	0.3
Aug-13	0.5	0.7	0.3	0.7	1.3	0.4	1.2	1.4	1
Sep-13	0.8	0.7	0.5	0.8	1.3	0.5	1.5	1.4	0.9
Oct-13	0.8	0.7	0.7	0.9	1.3	0.8	3.6	1.6	1.7
Nov-13	1.0	0.7	0.5	0.8	1.2	0.6	4.0	1.8	2.4
Dec-13	0.7	0.6	0.5	0.8	1.0	0.5	3.3	2.0	2.3
Jan-14	0.6	0.6	0.3	0.6	1.0	0.3	2.2	2.1	1.6
Feb-14	0.9	0.6	0.6	0.2	0.9	0.2	2	2.2	1.5
Mar-14	1.0	0.6	0.5	3.2	1.1	1	3.2	2.1	1.1
Apr-14	0.4	0.6	0.1	0.5	0.8	0.1	2.3	2.1	1.4
May-14	0.5	0.7	0.5	5.6	1.2	1.8	2.5	2.2	1.5
Jun-14	0.5	0.7	0.5	0.4	1.2	0.2	2.4	2.4	2
Jul-14	0.8	0.7	0.3	0.7	1.3	0.3	1.3	2.5	0.7
Aug-14	0.2	0.7	0.2	0.2	1.2	0.2	0.6	2.4	0.5
Sep-14	0.4	0.7	0.1	0.6	1.2	0.1	0.6	2.3	0.1
Oct-14	0.6	0.6	0.3	1.3	1.2	0.8	1.1	2.1	0.6
Nov-14	1.4	0.7	0.9	1.6	1.3	0.9	6.2	2.3	3.1
Dec-14	0.3	0.6	0.3	0.7	1.3	0.5	3.8	2.4	2.9
Jan-15	16.2	1.9	13.1	0.8	1.3	0.4	2.2	2.4	1.2
Feb-15	0.6	1.9	0.4	6.5	1.8	1.9	3.2	2.5	1.5
Mar-15	0.5	1.9	0.5	0.5	1.6	0.3	0.9	2.3	0.6
Apr-15	0.7	1.9	0.3	0.8	1.6	0.3	5	2.5	3.5
May-15	0.2	1.9	0.2	1.5	1.3	0.9	2.9	2.5	2.2
Jun-15	0.2	1.8	0.1	0.2	1.3	0.2	1.8	2.5	1.2

Deposited Dust 2008 to 2015

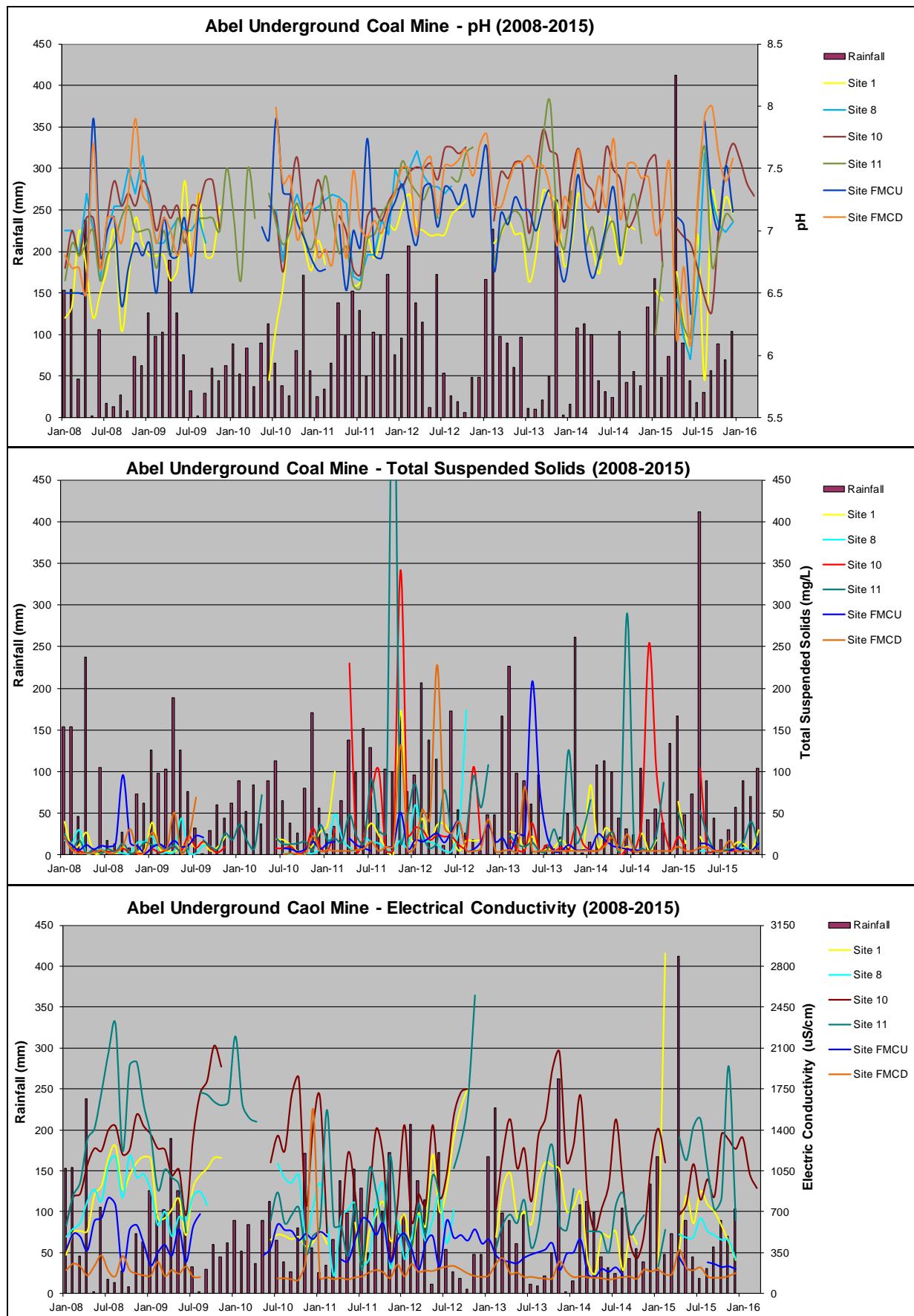
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Month	D1			D2			D3		
	Insoluble Matter	Rolling Annual Average	Ash	Insoluble Matter	Rolling Annual Average	Ash	Insoluble Matter	Rolling Annual Average	Ash
Jul-15	0.2	1.8	0.2	0.3	1.3	0.2	1.8	2.5	1.4
Aug-15	0.8	1.8	0.5	0.5	1.3	0.4	3	2.7	2.8
Sep-15	0.5	1.9	0.2	0.8	1.3	0.5	1.6	2.8	1.2
Oct-15	1	1.9	0.6	0.7	1.2	0.4	1.5	2.8	1.1
Nov-15	0.8	1.8	0.4	0.8	1.2	0.3	1.0	2.4	0.7
Dec-15	2.0	2.0	0.9	1.1	1.2	0.6	3.0	2.3	2.5
<i>Annual Average</i>	1.98		1.45	1.21		0.53	2.33		1.66
<i>Standard Dev</i>	4.51		3.68	1.70		0.47	1.16		0.89
<i>Min</i>	0.20		0.10	0.20		0.20	0.90		0.60
<i>Max</i>	16.20		13.10	6.50		1.90	5.00		3.50

** Contaminated sample (e.g. bird droppings)



Surface Water 2008 to 2015



Surface Water Quality Monitoring Results – 2008/2009

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Sample Site	Date	pH	EC ($\mu\text{S}/\text{cm}$)	TSS (mg/L)	Flow	Sample Site	Date	pH	EC ($\mu\text{S}/\text{cm}$)	TSS (mg/L)	Flow
1	Jun-08	6.6	940	2	N	1	Dec-08	7.0	1210	6	N
8	Jun-08	7.1	810	7	N	8	Dec-08	7.3	980	16	N
9	Jun-08	7.7	740	4	L	9	Dec-08	6.8	1040	2	L
10	Jun-08	7.6	1230	5	L	10	Dec-08	7.2	1390	2	N
11	Jun-08	7.1	1840	2	N	11	Dec-08	6.8	1610	15	N
FMCU	Jun-08	6.9	620	11	VL	FMCU	Dec-08	7.0	450	2	N
FMCD	Jun-08	7.2	300	6	N	FMCD	Dec-08	6.8	160	4	L
1	Jul-08	6.8	1160	6	L	1	Jan-09	6.8	1130	39	N
8	Jul-08	7.2	1100	4	L	8	Jan-09	6.8	870	22	N
9	Jul-08	7.6	1060	3	L	9	Jan-09	7.0	1180	7	L
10	Jul-08	7.3	1400	4	M	10	Jan-09	7.3	1350	7	L
11	Jul-08	6.8	2060	7	L	11	Jan-09	6.8	1330	12	N
FMCU	Jul-08	7.4	820	10	N	FMCU	Jan-09	7.0	230	9	N
FMCD	Jul-08	7.4	190	2	VL	FMCD	Jan-09	7.3	150	27	M
1	Aug-08	6.9	1220	2	N	1	Feb-09	6.8	680	7	N
8	Aug-08	7.4	1140	4	L	8	Feb-09	7.0	590	3	L
9	Aug-08	7.7	1090	7	M	9	Feb-09	7.3	540	7	L
10	Aug-08	7.5	1410	5	N	10	Feb-09	7.1	1270	3	L
11	Aug-08	7.0	2220	4	N	11	Feb-09	6.8	910	11	N
FMCU	Aug-08	8.3	730	14	N	FMCU	Feb-09	6.8	350	13	N
FMCD	Aug-08	7.8	170	3	L	FMCD	Feb-09	7.4	260	11	M
1	Sep-08	7.1	890	9	N	1	Mar-09	6.8	650	4	N
8	Sep-08	7.5	820	2	L	8	Mar-09	7.2	700	3	N
9	Sep-08	7.8	650	5	M	9	Mar-09	7.5	820	2	M
10	Sep-08	7.9	1250	8	M	10	Mar-09	7.4	1230	6	M
11	Sep-08	7.3	1330	14	N	11	Mar-09	7.3	1060	7	N
FMCU	Sep-08	7.3	460	96	L	FMCU	Mar-09	7.3	420	9	N
FMCD	Sep-08	7.3	320	11	N	FMCD	Mar-09	7.6	150	7	M
1	Oct-08	6.7	970	3	N	1	Apr-09	7.0	740	4	N
8	Oct-08	7.7	1150	2	L	8	Apr-09	7.4	500	4	N
9	Oct-08	7.5	910	2	M	9	Apr-09	7.5	1030	9	M
10	Oct-08	7.1	1200	2	N	10	Apr-09	7.3	1050	10	M
11	Oct-08	6.8	1930	2	N	11	Apr-09	7.7	1020	11	N
FMCU	Oct-08	6.8	540	15	N	FMCU	Apr-09	6.7	340	17	M
FMCD	Oct-08	7.1	200	31	M	FMCD	Apr-09	7.3	200	51	H
1	Nov-08	7.1	1130	4	N	1	May-09	7.4	810	10	N
8	Nov-08	7.7	940	15	N	8	May-09	7.5	660	44	M
9	Nov-08	7.4	1050	3	H	9	May-09	7.9	610	41	M
10	Nov-08	7.4	510	2	L	10	May-09	7.7	1070	5	M
11	Nov-08	7.2	2020	6	N	11	May-09	7.3	940	3	N
FMCU	Nov-08	7.0	570	11	N	FMCU	May-09	6.9	540	10	N
FMCD	Nov-08	7.9	160	2	M	FMCD	May-09	8.0	180	2	M

N - Nil Flow, L - Low Flow, M - Medium Flow, H - High Flow



Surface Water Quality Monitoring Results – 2009/2010

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Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)	Flow	Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)	Flow
1	Jun-09	6.8	510	15	N	1	Dec-09	NS	NS	NS	N
8	Jun-09	7.4	630	<2	M	8	Dec-09	NS	NS	NS	N
9	Jun-09	7.7	390	22	H	9	Dec-09	NS	NS	NS	N
10	Jun-09	7.4	680	23	M	10	Dec-09	NS	NS	NS	N
11	Jun-09	7.1	560	8	N	11	Dec-09	7.4	1590	18	N
FMCU	Jun-09	7.6	280	12	H	FMCU	Dec-09	NS	NS	NS	N
FMCD	Jun-09	7.2	240	20	H	FMCD	Dec-09	NS	NS	NS	N
1	Jul-09	7.8	880	9	N	1	Jan-10	NS	NS	NS	N
8	Jul-09	7.6	820	<2	L	8	Jan-10	NS	NS	NS	N
9	Jul-09	7.9	870	19	L	9	Jan-10	NS	NS	NS	N
10	Jul-09	7.6	1290	9	L	10	Jan-10	NS	NS	NS	N
11	Jul-09	NS	NS	NS	-	11	Jan-10	7.1	2220	37	L
FMCU	Jul-09	6.6	510	23	L	FMCU	Jan-10	NS	NS	NS	N
FMCD	Jul-09	7.5	150	69	L	FMCD	Jan-10	NS	NS	NS	N
1	Aug-09	7.2	990	15	L	1	Feb-10	NS	NS	NS	N
8	Aug-09	7.3	840	11	L	8	Feb-10	NS	NS	NS	N
9	Aug-09	7.6	1180	25	L	9	Feb-10	NS	NS	NS	N
10	Aug-09	7.3	1640	16	L	10	Feb-10	NS	NS	NS	N
11	Aug-09	7.3	1720	18	L	11	Feb-10	7.1	1820	17	N
FMCU	Aug-09	7.4	700	21	N	FMCU	Feb-10	NS	NS	NS	N
FMCD	Aug-09	7.8	140	2	L	FMCD	Feb-10	NS	NS	NS	N
1	Sep-09	7.8	1050	5	N	1	Mar-10	NS	NS	NS	N
8	Sep-09	6.4	730	10	N	8	Mar-10	NS	NS	NS	N
9	Sep-09	7.6	1770	14	N	9	Mar-10	NS	NS	NS	N
10	Sep-09	7.5	1820	8	L	10	Mar-10	NS	NS	NS	N
11	Sep-09	6.2	1680	10	N	11	Mar-10	7.5	1500	8	L
FMCU	Sep-09	NS	NS	NS	N	FMCU	Mar-10	NS	NS	NS	N
FMCD	Sep-09	NS	NS	NS	N	FMCD	Mar-10	NS	NS	NS	N
1	Oct-09	8.6	1050	10	N	1	Apr-10	NS	NS	NS	N
8	Oct-09	NS	NS	NS	N	8	Apr-10	NS	NS	NS	N
9	Oct-09	8.4	1500	186	L	9	Apr-10	NS	NS	NS	N
10	Oct-09	8.5	1770	3	L	10	Apr-10	NS	NS	NS	N
11	Oct-09	8.3	1480	7	N	11	Apr-10	7.2	1620	72	-
FMCU	Oct-09	NS	NS	NS	N	FMCU	Apr-10	NS	NS	NS	N
FMCD	Oct-09	NS	NS	NS	N	FMCD	Apr-10	NS	NS	NS	N
1	Nov-09	8.8	1580	22	L	1	May-10	NS	NS	NS	N
8	Nov-09	NS	NS	NS	N	8	May-10	NS	NS	NS	N
9	Nov-09	NS	NS	NS	N	9	May-10	NS	NS	NS	N
10	Nov-09	8.5	2610	10	L	10	May-10	NS	NS	NS	N
11	Nov-09	8.8	2230	26	L	11	May-10	NS	NS	NS	N
FMCU	Nov-09	NS	NS	NS	N	FMCU	May-10	7.5	322.0	14.0	-
FMCD	Nov-09	NS	NS	NS	N	FMCD	May-10	7.9	165	360	-

D - Dry, N - Nil Flow, L - Low Flow, M - Medium Flow, H - High Flow NS - Sample Unobtainable



Surface Water Quality Monitoring Results – 2010/2011

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Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)	Flow	Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)	Flow	
1	Jun-10	7.9	460	19	NS	1	Dec-10	6.7	436.0	28.0	Still	
8	Jun-10	NS	NS	NS	Dry	8	Dec-10	7.16	732	6	Still	
9	Jun-10	NS	NS	NS	Dry	9	Dec-10	7.32	1070	32	Still	
10	Jun-10	7.3	880	8	NS	10	Dec-10	7.17	1410	10	Trickle	
11	Jun-10	7.5	690	20	NS	11	Dec-10	6.85	493	36	Still	
FMCU	Jun-10	6.9	388	NS	NS	FMCU	Dec-10	6.8	465.0	7.0	Trickle	
FMCD	Jun-10	0	0	0	0	FMCD	Dec-10	7.21	1580	<5	Slow	
1	Jul-10	6.22	504	18	Pond	1	Jan-11	6.9	536.0	36.0	Still	
8	Jul-10	7.16	1110	2	Pond	8	Jan-11	7.19	943	<5	Trickle	
9	Jul-10	7.2	1300	27	Trickle	9	Jan-11	NS	NS	NS	-	
10	Jul-10	7.12	1350	8	Trickle	10	Jan-11	7.41	1680	5	Still	
11	Jul-10	7.06	865	13	Pond	11	Jan-11	7.05	568	18	Slow	
FMCU	Jul-10	7.9	590	8	Trickle	FMCU	Jan-11	6.7	528.0	14.0	Still	
FMCD	Jul-10	7.99	128	1	Steady	FMCD	Jan-11	6.79	138	6	Slow	
1	Aug-10	6.55	492	12	Slow	1	Feb-11	6.7	424.0	100	Still	
8	Aug-10	6.75	988	1	Trickle	8	Feb-11	7.25	624	49	Still	
9	Aug-10	6.92	516	44	Trickle	9	Feb-11	NS	NS	NS	-	
10	Aug-10	6.67	1220	10	Trickle	10	Feb-11	7.16	519	31	Still	
11	Aug-10	6.89	602	13	Slow	11	Feb-11	7.44	1570	20	Still	
FMCU	Aug-10	7.31	543	7	Still	FMCU	Feb-11	6.7	488.0	16.0	Still	
FMCD	Aug-10	7.38	130	2	Steady	FMCD	Feb-11	6.85	139	<5	Slow	
1	Sep-09	7.05	464	4	Still	1	Mar-11	NS	NS	NS	Dry	
8	Sep-10	7.14	947	3	Trickle	8	Mar-11	7.29	151	20	Still	
9	Sep-10	7.23	1410	6	Trickle	9	Mar-11	NS	NS	NS	-	
10	Sep-10	7.25	1700	2	Trickle	10	Mar-11	NS	NS	NS	Dry	
11	Sep-10	7	671	14	Still	11	Mar-11	7.13	578	16	Still	
FMCU	Sep-10	7.29	534	4	Pond	FMCU	Mar-11	NS	NS	NS	Dry	
FMCD	Sep-10	7.44	121	1	Steady	FMCD	Mar-11	6.73	122	<5	Steady	
1	Oct-10	7.19	484	5	Still	1	Apr-11	NS	NS	NS	Dry	
8	Oct-10	7.29	1010	2	Still	8	Apr-11	7.27	650	9	Still	
9	Oct-10	7.74	1570	7	Trickle	9	Apr-11	NS	NS	NS	-	
10	Oct-10	7.59	1840	6	Trickle	10	Apr-11	7.12	487	230	Trickle	
11	Oct-10	7.22	734	16	Still	11	Apr-11	6.82	577	48	Still	
FMCU	Oct-10	7.07	456	7	Still	FMCU	Apr-11	7.1	292.0	20.0	Still	
FMCD	Oct-10	6.93	121	1	Steady	FMCD	Apr-11	7.26	133	<5	Steady	
	Nov-10						May-11	NS	NS	NS	Dry	
1		6.89	402	12	Still	8	May-11	7.22	717	5	Still	
8	Nov-10		7.13	461	2	Still	9	May-11	NS	NS	NS	-
9	Nov-10		7.1	307	45	Trickle	10	May-11	6.99	1203	5	Still
10	Nov-10		7.09	751	32	Trickle	11	May-11	6.87	320	22	Still
11	Nov-10		6.95	340	6	Still	FMCU	May-11	6.5	278.0	12.0	Still
FMCU	Nov-10		6.94	509	16	Trickle	FMCD	May-11	6.78	120	6	Steady
FMCD	Nov-10		7.14	294	23	Steady						

NS - Sample Unobtainable



Surface Water Quality Monitoring Results – 2011/2012

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Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)	Flow
1	Jun-11	6.55	607	25	Slow
8	Jun-11	6.63	771	20	Steady
9	Jun-11	NS	NS	NS	NS
10	Jun-11	6.69	854	25	Steady
11	Jun-11	6.56	757	14	Still
FMCU	Jun-11	7	460	8	Slow
FMCD	Jun-11	7.48	138	8	Steady
1	Jul-11	6.59	227	38	Steady
8	Jul-11	6.6	255	16	Fast
9	Jul-11	NS	NS	NS	NS
10	Jul-11	6.65	248	74	Fast
11	Jul-11	6.54	200	91	Steady
FMCU	Jul-11	6.87	639	5	Trickle
FMCD	Jul-11	7.03	146	16	Steady
1	Aug-11	6.93	527	24	Slow
8	Aug-11	6.81	301	14	Slow
9	Aug-11	NS	NS	NS	NS
10	Aug-11	7.11	821	102	Slow
11	Aug-11	6.93	1060	29	Slow
FMCU	Aug-11	7.74	611	NS	Trickle
FMCD	Aug-11	6.95	180	5	Steady
1	Sep-11	6.78	674	8	Trickle
8	Sep-11	6.81	770	7	Slow
9	Sep-11	NS	NS	NS	NS
10	Sep-11	7.18	1410	5	0
11	Sep-11	6.97	866	26	Trickle
FMCU	Sep-11	6.81	502	10	Still
FMCD	Sep-11	7.08	200	10	Steady
1	Oct-11	6.96	781	5	Trickle
8	Oct-11	7.09	932	5	Trickle
9	Oct-11	NS	NS	NS	NS
10	Oct-11	7.08	1150	6	Slow
11	Oct-11	7.13	606	624	Trickle
FMCU	Oct-11	6.78	597	12	Slow
FMCD	Oct-11	6.98	180	11	Steady
1	Nov-11	7.05	455	173	Slow
8	Nov-11	6.97	217	18	Fast
9	Nov-11	NS	NS	NS	NS
10	Nov-11	7.23	285	342	Fast
11	Nov-11	7.22	1180	16	Steady
FMCU	Nov-11	7.1	270	51	Still
FMCD	Nov-11	7.17	133	132	Steady

D - Dry, N - Nil Flow, L - Low Flow, M - Medium Flow, H - High Flow NS - Sample Unobtainable

Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)	Flow
1	Dec-11	7.0	545.0	30.0	Slow
8	Dec-11	7.49	615	10	Steady
9	Dec-11	NS	NS	NS	NS
10	Dec-11	7.32	752	24	Slow
11	Dec-11	7.31	526	49	Slow
FMCU	Dec-11	7.2	452.0	8.0	Trickle
FMCD	Dec-11	7.33	248	5	Steady
1	Jan-12	7.2	673.0	14.0	Still
8	Jan-12	7.33	296	60	Steady
9	Jan-12	NS	NS	NS	NS
10	Jan-12	7.36	1440	33	Steady
11	Jan-12	7.56	494	85	Still
FMCU	Jan-12	7.4	511.0	18.0	Still
FMCD	Jan-12	7.51	147	10	Still
1	Feb-12	7.3	388.0	44.0	Slow
8	Feb-12	7.5	480	20	Slow
9	Feb-12	NS	NS	NS	NS
10	Feb-12	7.47	618	30	Slow
11	Feb-12	7.4	393	25	Slow
FMCU	Feb-12	7.1	384.0	16.0	Slow
FMCD	Feb-12	7.49	253	55	Steady
1	Mar-12	7.0	687.0	16.0	Trickle
8	Mar-12	7.64	668	16	Slow
9	Mar-12	NS	NS	NS	NS
10	Mar-12	7.51	850	18	Slow
11	Mar-12	7.31	767	8	Slow
FMCU	Mar-12	6.9	199.0	21.0	Fast
FMCD	Mar-12	6.96	186	42	Fast
1	Apr-12	7.0	579.0	36.0	Slow
8	Apr-12	7.44	448	12	Steady
9	Apr-12	NS	NS	NS	NS
10	Apr-12	7.5	753	24	Steady
11	Apr-12	7.25	510	16	Slow
FMCU	Apr-12	7.3	432.0	26.0	Steady
FMCD	Apr-12	7.52	196	228	Fast
1	May-12	7.0	1190.0	37.0	Still
8	May-12	7.36	634	5	Slow
9	May-12	NS	NS	NS	NS
10	May-12	7.54	1440	22	Slow
11	May-12	7.35	1010	78	Still
FMCU	May-12	7.4	491.0	15.0	Slow
FMCD	May-12	7.59	192	33	Fast



Surface Water Quality Monitoring Results – 2012/2013

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Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)	Flow	Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)	Flow
1	Jun-12	6.97	699	22	-	1	Dec-12	0.0	0.0	0.0	Dry
8	Jun-12	7.35	841	<5	-	8	Dec-12	0	0	0	NS
9	Jun-12	NS	NS	NS	NS	9	Dec-12	NS	NS	NS	NS
10	Jun-12	7.41	825	22	-	10	Dec-12	0	0	0	NS
11	Jun-12	7.1	822	19	-	11	Dec-12	0	0	0	NS
FMCU	Jun-12	7.03	228	29	-	FMCU	Dec-12	7.4	427.0	16.0	-
FMCD	Jun-12	7.13	215	26	-	FMCD	Dec-12	7.69	142	5	-
1	Jul-12	6.97	906	<5	-	1	Jan-13	0.0	0.0	0.0	Dry
8	Jul-12	7.3	431	32	-	8	Jan-13	0	0	0	NS
9	Jul-12	NS	NS	NS	NS	9	Jan-13	NS	NS	NS	NS
10	Jul-12	7.66	1020	12	-	10	Jan-13	0	0	0	NS
11	Jul-12	0	0	0	NS	11	Jan-13	0	0	0	NS
FMCU	Jul-12	7.35	624	22	-	FMCU	Jan-13	7.7	461.0	20.0	-
FMCD	Jul-12	7.52	230	40	-	FMCD	Jan-13	7.77	157	<5	-
1	Aug-12	7.13	1330	17	-	1	Feb-13	6.9	483.0	28.0	-
8	Aug-12	7.36	717	174	-	8	Feb-13	0	0	0	NS
9	Aug-12	NS	NS	NS	NS	9	Feb-13	NS	NS	NS	NS
10	Aug-12	7.67	1520	9	-	10	Feb-13	7.08	724	18	-
11	Aug-12	7.43	1070	25	-	11	Feb-13	6.72	391	23	-
FMCU	Aug-12	7.32	477	6	-	FMCU	Feb-13	6.7	325.0	5.0	-
FMCD	Aug-12	7.52	235	6	-	FMCD	Feb-13	7.21	257	6	-
1	Sep-12	7.18	1590	17	-	1	Mar-13	7.0	922.0	24.0	-
8	Sep-12	0	0	0	NS	8	Mar-13	0	0	0	NS
9	Sep-12	NS	NS	NS	NS	9	Mar-13	NS	NS	NS	NS
10	Sep-12	7.62	1720	106	-	10	Mar-13	7.47	1210	6	-
11	Sep-12	7.4	1290	95	-	11	Mar-13	6.98	595	13	-
FMCU	Sep-12	7.21	500	7	-	FMCU	Mar-13	7.1	284.0	26.0	-
FMCD	Sep-12	7.57	206	<5	-	FMCD	Mar-13	7.19	300	<5	-
1	Oct-12	7.24	1760	18	-	1	Apr-13	7.1	1030.0	8.0	-
8	Oct-12	0	0	0	NS	8	Apr-13	0	0	0	NS
9	Oct-12	NS	NS	NS	NS	9	Apr-13	NS	NS	NS	NS
10	Oct-12	7.67	1750	12	-	10	Apr-13	7.42	1490	6	-
11	Oct-12	7.62	1650	57	-	11	Apr-13	7.1	675	10	-
FMCU	Oct-12	7.37	453	16	-	FMCU	Apr-13	7.1	269.0	25.0	-
FMCD	Oct-12	7.65	171	8	-	FMCD	Apr-13	7.37	172	82	-
1	Nov-12	0	0	0	Dry	1	May-13	7.0	648.0	22.0	-
8	Nov-12	0	0	0	NS	8	May-13	0	0	0	NS
9	Nov-12	NS	NS	NS	NS	9	May-13	NS	NS	NS	NS
10	Nov-12	0	0	0	NS	10	May-13	7.55	1070	38	-
11	Nov-12	7.67	2550	108	-	11	May-13	7.16	603	15	-
FMCU	Nov-12	7.11	549	36	-	FMCU	May-13	0.0	0.0	0.0	NS
FMCD	Nov-12	7.44	149	43	-	FMCD	May-13	0	0	0	NS

D - Dry, N - Nil Flow, L - Low Flow, M - Medium Flow, H - High Flow NS - Sample Unobtainable



Surface Water Quality Monitoring Results – 2013/2014

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Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)	Flow	Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)	Flow
1	Jun-13	6.97	702	<5	-	1	Dec-13	6.7	706.0	9.0	-
8	Jun-13	NF	NF	NF	NF	8	Dec-13	NF	NF	NF	NF
9	Jun-13	NS	NS	NS	NS	9	Dec-13	NS	NS	NS	NS
10	Jun-13	7.54	1240	<5	-	10	Dec-13	7.02	1130	13	-
11	Jun-13	7.09	799	5	-	11	Dec-13	6.85	542	30	-
FMCU	Jun-13	7.17	306	83	Low	FMCU	Dec-13	6.6	337.0	6.0	Pond
FMCD	Jun-13	7.55	140	<5	Low	FMCD	Dec-13	7.27	187	<5	Mod
1	Jul-13	6.59	593	7	-	1	Jan-14	6.9	740.0	84.0	-
8	Jul-13	NF	NF	NF	NF	8	Jan-14	NF	NF	NF	NF
9	Jul-13	NS	NS	NS	NS	9	Jan-14	NS	NS	NS	NS
10	Jul-13	6.98	787	12	-	10	Jan-14	7.42	1270	6	-
11	Jul-13	6.84	392	5	-	11	Jan-14	7.32	896	66	-
FMCU	Jul-13	7.16	334	24	Low	FMCU	Jan-14	6.9	353.0	7.0	Pond
FMCD	Jul-13	7.6	142	<5	Low	FMCD	Jan-14	7.19	140	<5	Mod
1	Aug-13	6.81	955	9	-	1	Feb-14	7.3	865.0	10.0	-
8	Aug-13	NF	NF	NF	NF	8	Feb-14	NF	NF	NF	NF
9	Aug-13	NS	NS	NS	NS	9	Feb-14	NS	NS	NS	NS
10	Aug-13	7.44	1350	<5	-	10	Feb-14	7.66	1690	<5	-
11	Aug-13	7.16	569	31	-	11	Feb-14	0	0	0	Dry
FMCU	Aug-13	7	354	<5	Pond	FMCU	Feb-14	7.5	460.0	25.0	Pond
FMCD	Aug-13	7.5	132	<5	Mod	FMCD	Feb-14	7.65	146	<5	Low
1	Sep-13	7.32	1120	18	-	1	Mar-14	7.0	276.0	32.0	-
8	Sep-13	NF	NF	NF	NF	8	Mar-14	NF	NF	NF	NF
9	Sep-13	NS	NS	NS	NS	9	Mar-14	NS	NS	NS	NS
10	Sep-13	7.81	1500	9	-	10	Mar-14	7.4	815	14	-
11	Sep-13	7.74	1040	14	-	11	Mar-14	6.85	532	20	-
FMCU	Sep-13	7.21	377	<5	Pond	FMCU	Mar-14	6.9	169.0	18.0	Pond
FMCD	Sep-13	7.52	128	<5	Low	FMCD	Mar-14	7.23	139	11	Low
1	Oct-13	7.28	1090	9	-	1	Apr-14	6.9	166.0	24.0	-
8	Oct-13	NF	NF	NF	NF	8	Apr-14	NF	NF	NF	NF
9	Oct-13	NS	NS	NS	NS	9	Apr-14	NS	NS	NS	NS
10	Oct-13	7.64	1920	<5	-	10	Apr-14	7.32	533	28	-
11	Oct-13	8.03	1260	126	-	11	Apr-14	7.03	531	27	-
FMCU	Oct-13	7.31	428	12	Pond	FMCU	Apr-14	6.6	140.0	11.0	Pond
FMCD	Oct-13	7.33	132	<5	Low	FMCD	Apr-14	7.18	134	21	Mod
1	Nov-13	7.21	1060	5	-	1	May-14	6.7	502.0	6.0	-
8	Nov-13	NF	NF	NF	NF	8	May-14	NF	NF	NF	NF
9	Nov-13	NS	NS	NS	NS	9	May-14	NS	NS	NS	NS
10	Nov-13	7.6	2060	34	-	10	May-14	7.16	730	<5	-
11	Nov-13	7.05	585	16	-	11	May-14	6.77	513	<5	-
FMCU	Nov-13	6.85	202	6	Pond	FMCU	May-14	6.8	209.0	9.0	Pond
FMCD	Nov-13	6.88	274	5	Mod	FMCD	May-14	7.44	131	<5	Mod

D - Dry, N - Nil Flow, L - Low Flow, M - Medium Flow, H - High Flow NS - Sample Unobtainable

Surface Water Quality Monitoring Results – 2014

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Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)	Flow	Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)	Flow
1	Jun-14	7.11	481	10	Low	1	Dec-14	0.0	0.0	0.0	No
8	Jun-14	0	0	0	Dry	8	Dec-14	0	0	0	0
9	Jun-14	0	0	0	Not	9	Dec-14	0	0	0	0
10	Jun-14	0	936	8	Low	10	Dec-14	0	0	0	No
11	Jun-14	6.99	352	290	Low	11	Dec-14	0	0	0	No
FMCU	Jun-14	7.05	185	7	Low	FMCU	Dec-14	0.0	0.0	0.0	No
FMCD	Jun-14	7.19	119	25	Mod	FMCD	Dec-14	7.43	189	<5	Low
1	Jul-14	7.01	530	<5	0						
8	Jul-14	0	0	0	Dry						
9	Jul-14	0	0	0	Not						
10	Jul-14	0	1490	<5	Low						
11	Jul-14	7.07	756	<5	0						
FMCU	Jul-14	7.35	223	6	Poole						
FMCD	Jul-14	7.74	129	<5	Low						
1	Aug-14	6.73	200	26	No						
8	Aug-14	0	0	0	Dry						
9	Aug-14	0	0	0	No						
10	Aug-14	0	931	40	Low						
11	Aug-14	6.8	860	8	Low						
FMCU	Aug-14	6.8	151	<5	Low						
FMCD	Aug-14	7.09	140	<5	Low						
1	Sep-14	7.03	497	<5	Low						
8	Sep-14	0	0	0	Dry						
9	Sep-14	0	0	0	0						
10	Sep-14	0	1120	<5	Low						
11	Sep-14	7.1	512	<5	Low						
FMCU	Sep-14	0	0	0	No						
FMCD	Sep-14	7.53	144	<5	Low						
1	Oct-14	7.01	420	18	Low						
8	Oct-14	0	0	0	No						
9	Oct-14	0	0	0	0						
10	Oct-14	0	1410	22	Low						
11	Oct-14	7.29	585	24	Low						
FMCU	Oct-14	0	0	0	No						
FMCD	Oct-14	7.54	127	<5	Low						
1	Nov-14	0	0	0	No						
8	Nov-14	0	0	0	No						
9	Nov-14	0	0	0	0						
10	Nov-14	0	1120	7	Low						
11	Nov-14	6.9	670	87	Low						
FMCU	Nov-14	0	0	0	No						
FMCD	Nov-14	7.42	203	<5	Low						

D - Dry, N - Nil Flow, L - Low Flow, M - Medium Flow, H - High Flow NS - Sample Unobtainable



Surface Water Quality Monitoring Results – 2015

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Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)	Flow
1	Jan-15	6.52	218	64	Low
8	Jan-15	5.55	116.3	17	Low
9	Jan-15	NS	NS	NS	NS
10	Jan-15	7.02	673	104	Mod
11	Jan-15	6.17	229	51	Mod
FMCU	Jan-15	6.49	204	13	0
FMCD	Jan-15	6.97	201	10	0
1	Feb-15	6.44	2910	14	Low
8	Feb-15	NS	NS	NS	No
9	Feb-15	NS	NS	NS	NS
10	Feb-15	6.95	766	<5	Low
11	Feb-15	6.75	545	19	Low
FMCU	Feb-15	NS	NS	NS	No
FMCD	Feb-15	7.12	164.5	<5	Low
1	Mar-15	NS	NS	NS	No
8	Mar-15	NS	NS	NS	No
9	Mar-15	NS	NS	NS	NS
10	Mar-15	6.89	1107	<5	Low
11	Mar-15	NS	NS	NS	No
FMCU	Mar-15	NS	NS	NS	No
FMCD	Mar-15	7.53	170	<5	Low
1	Apr-15	6.67	382	22	Low
8	Apr-15	6.45	506	<5	Low
9	Apr-15	NS	NS	NS	NS
10	Apr-15	6.69	803	<5	Low
11	Apr-15	6.62	1334	53	Low
FMCU	Apr-15	7.11	307	14	Low
FMCD	Apr-15	6.13	372	9	Low
1	May-15	6.28	838	6	Low
8	May-15	6.15	478	<5	Low
9	May-15	NS	NS	NS	NS
10	May-15	6.46	977	<5	Low
11	May-15	6.23	1140	23	Low
FMCU	May-15	7.04	214	13	Mod
FMCD	May-15	6.71	217	9	Mod
1	Jun-15	6.02	599	<5	Low
8	Jun-15	5.97	482	<5	Low
9	Jun-15	NS	NS	NS	NS
10	Jun-15	6.35	834	<5	Low
11	Jun-15	6.15	1426	<5	Low
FMCU	Jun-15	6.33	202	6	Low
FMCD	Jun-15	6.08	200	<5	Mod

Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)	Flow
1	Jul-15	7.0	872.0	<5	Low
8	Jul-15	6.56	642	<5	Low
9	Jul-15	NS	NS	NS	NS
10	Jul-15	7.03	1364	<5	Low
11	Jul-15	7.22	1492	<5	Low
FMCU	Jul-15	NS	NS	NS	No
FMCD	Jul-15	7.27	223	<5	Low
1	Aug-15	5.8	762.0	<5	Low
8	Aug-15	7.62	533	7	No
9	Aug-15	NS	NS	NS	NS
10	Aug-15	7.52	1315	<5	Low
11	Aug-15	7.67	1072	7	No
FMCU	Aug-15	7.9	267.0	<5	No
FMCD	Aug-15	7.92	145.7	17	Low
1	Sep-15	7.3	698.0	15.0	No
8	Sep-15	7.25	499	<5	No
9	Sep-15	NS	NS	NS	NS
10	Sep-15	7.7	1237	<5	Low
11	Sep-15	6.72	714	8	No
FMCU	Sep-15	7.2	252.0	8.0	No
FMCD	Sep-15	8	135.4	<5	Low
1	Oct-15	7.0	578.0	13.0	No
8	Oct-15	7.04	459	9	No
9	Oct-15	NS	NS	NS	NS
10	Oct-15	7.57	1332	8	Low
11	Oct-15	6.92	822	18	No
FMCU	Oct-15	7.0	226.9	<5	No
FMCD	Oct-15	7.6	134.9	<5	Low
1	Nov-15	7.3	442.0	<5	Low
8	Nov-15	6.99	452	<5	No
9	Nov-15	NS	NS	NS	NS
10	Nov-15	7.38	1022	<5	Low
11	Nov-15	7.13	1945	40	Low
FMCU	Nov-15	7.5	232.5	<5	No
FMCD	Nov-15	7.4	148.9	<5	Low
1	Dec-15	7.1	286.0	30.0	No
8	Dec-15	7.07	294	<5	Low
9	Dec-15	NS	NS	NS	NS
10	Dec-15	7.28	901	6	Low
11	Dec-15	7.08	626	10	No
FMCU	Dec-15	7.2	208.3	14.0	No
FMCD	Dec-15	7.58	175.1	<5	Low

D - Dry, N - Nil Flow, L - Low Flow, M - Medium Flow, H - High Flow NS - Sample Unobtainable



Groundwater 2008 to 2015

Groundwater Quality Monitoring Results – 2008/2009

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Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)
6	Jun-08	6.1	3740	362
7	Jun-08	6.8	2200	1130
12	Jun-08	6.1	4640	148
13	Jun-08	6.8	12830	32
JRD1	Jun-08	7	2660	132
JRD2	Jun-08	6.7	600	130
6	Jul-08	6.1	3970	174
7	Jul-08	7.1	2590	616
12	Jul-08	6.7	6720	121
13	Jul-08	6.7	14710	6
JRD1	Jul-08	6.8	3210	28
JRD2	Jul-08	7	3040	15
6	Aug-08	6.1	3930	804
7	Aug-08	6.7	2350	98
12	Aug-08	6.8	10130	216
13	Aug-08	7	13610	15
JRD1	Aug-08	7.0	3220	35
JRD2	Aug-08	7.2	2980	57
6	Sep-08	6.2	2860	261
7	Sep-08	6.9	2300	130
12	Sep-08	6.6	1630	152
13	Sep-08	6.8	13580	30
JRD1	Sep-08	7.3	3230	71
JRD2	Sep-08	6.5	220	78
6	Oct-08	6.4	3950	14
7	Oct-08	6.6	2260	878
12	Oct-08	6.8	11530	407
13	Oct-08	6.8	13910	9
JRD1	Oct-08	6.8	3650	28
JRD2	Oct-08	6	220	125
6	Nov-08	6	3750	550
7	Nov-08	6.9	2250	670
12	Nov-08	6.7	8880	182
13	Nov-08	7	13180	3
JRD1	Nov-08	6.7	3830	12
JRD2	Nov-08	6.9	240	178

Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)
6	Dec-08	6.1	3750	356
7	Dec-08	6.8	2490	416
12	Dec-08	6.9	11300	173
13	Dec-08	7	13280	11
JRD1	Dec-08	6.9	3800	28
JRD2	Dec-08	6.4	410	180
6	Jan-09	6.6	4260	1160
7	Jan-09	6.5	2250	160
12	Jan-09	6.8	12440	1550
13	Jan-09	6.8	14450	7
JRD1	Jan-09	6.8	3830	13
JRD2	Jan-09	7.1	3080	16
6	Feb-09	6.3	3090	165
7	Feb-09	6.6	2070	177
12	Feb-09			
13	Feb-09	6.9	13090	18
JRD1	Feb-09	6.9	3790	59
JRD2	Feb-09	6.7	500	63
6	Mar-09	6.3	3820	204
7	Mar-09	6.5	2090	534
12	Mar-09	6.3	2390	106
13	Mar-09	7	13250	9
JRD1	Mar-09	6.8	3870	14
JRD2	Mar-09	6.7	490	27
6	Apr-09	6.7	3340	192
7	Apr-09	6.3	2060	196
12	Apr-09	6.8	7970	727
13	Apr-09	6.8	14680	2
JRD1	Apr-09	6.6	3770	11
JRD2	Apr-09	7	2620	15
6	May-09	6.8	4250	136
7	May-09	7	2530	264
12	May-09	6.7	11550	454
13	May-09	6.9	13410	18
JRD1	May-09	6.7	3260	23
JRD2	May-09	6.9	560	25



Groundwater Quality Monitoring Results – 2009/2010

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Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)
6	Jun-09	6.5	4460	459
7	Jun-09	6.5	2140	551
12	Jun-09	NS	NS	NS
13	Jun-09	7.1	11920	15
JRD1	Jun-09	6.8	2250	29
JRD2	Jun-09	7.4	730	91
6	Jul-09	6.6	4290	945
7	Jul-09	6.8	2260	103
12	Jul-09	6.7	5330	1380
13	Jul-09	6.8	14850	25
JRD1	Jul-09	6.6	3720	21
JRD2	Jul-09	7	2660	15
6	Aug-09	6.7	4580	807
7	Aug-09	6.8	2380	16
12	Aug-09	6.9	8730	15
13	Aug-09	7.1	12600	20
JRD1	Aug-09	6.8	3090.0	52.0
JRD2	Aug-09	7	1160	97
6	Sep-09	6.6	4380	119
7	Sep-09	6.6	2460	12
12	Sep-09	NS	NS	NS
13	Sep-09	6.6	13490	14
JRD1	Sep-09	6.8	3130	66
JRD2	Sep-09	7.9	1230	61
6	Oct-09	6.9	3940	51
7	Oct-09	6.8	2000	147
12	Oct-09	NS	NS	NS
13	Oct-09	7.2	11610	12
JRD1	Oct-09	7.1	3250	106
JRD2	Oct-09	7.6	1770	61
6	Nov-09	7.2	8400	266
7	Nov-09	6.8	3590	246
12	Nov-09	NS	NS	NS
13	Nov-09	7.3	260	14
JRD1	Nov-09	6.9	10230	47
JRD2	Nov-09	7.1	350.0	47.0

Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)
6	Dec-09	6.9	4270.0	193.0
7	Dec-09	6.9	2390	14
12	Dec-09	NS	NS	NS
13	Dec-09	7	12390	26
JRD1	Dec-09	6.7	3650	63
JRD2	Dec-09	7.3	1920.0	87.0
6	Jan-10	6.7	5310	173
7	Jan-10	NS	NS	NS
12	Jan-10	6.7	13200.0	37.0
13	Jan-10	6.5	12990	31
JRD1	Jan-10	6.8	3580	22
JRD2	Jan-10	7.3	2050.0	44.0
6	Feb-10	6.9	4570	193
7	Feb-10	NS	NS	NS
12	Feb-10	6.9	12280	46
13	Feb-10	7.1	11560	28
JRD1	Feb-10	6.9	3750	40
JRD2	Feb-10	7.3	960	139
6	Mar-10	6.7	4180	394
7	Mar-10	NS	NS	NS
12	Mar-10	6.5	6880	30
13	Mar-10	7	11430	32
JRD1	Mar-10	6.8	4040	38
JRD2	Mar-10	7.4	1220	100
6	Apr-10	6.4	3900.0	397.0
7	Apr-10	NS	NS	NS
12	Apr-10	8.2	8440	67
13	Apr-10	7	11430	32
JRD1	Apr-10	6.7	3930	52
JRD2	Apr-10	6.3	1990	101
6	May-10	6.89	1590	268
7	May-10	NS	NS	NS
12	May-10	6.75	8310	34
13	May-10	NS	NS	NS
JRD1	May-10	6.73	3780	23
JRD2	May-10	7.41	1590	136



Groundwater Quality Monitoring Results – 2010/2011

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Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)
6	Jun-10	6.9	3320	206
7	Jun-10	NS	NS	NS
12	Jun-10	7.3	3200	63
13	Jun-10	7.6	10300	12
JRD1	Jun-10	7.5	3780	43
JRD2	Jun-10	7.2	315	14
6	Jul-10	7.23	3920	194
7	Jul-10	6.81	2630	22
12	Jul-10	6.41	7790	50
13	Jul-10	6.64	13100	6
JRD1	Jul-10	6.65	3520	22
JRD2	Jul-10	7.1	338	52
6	Aug-10	6.37	4020	234
7	Aug-10	6.8	2680	62
12	Aug-10	6.85	7840	12
13	Aug-10	6.65	13400	16
JRD1	Aug-10	7.2	3960.0	22.0
JRD2	Aug-10	7.2	2380	48
6	Sep-10	7.05	3700	412
7	Sep-10	4.76	2580	36
12	Sep-10	6.78	7800	22
13	Sep-10	6.78	11800	5
JRD1	Sep-10	8.03	3840	16
JRD2	Sep-10	7.05	2460	34
6	Oct-10	6.58	2320	152
7	Oct-10	7.03	2660	86
12	Oct-10	6.6	10800	17
13	Oct-10	6.99	12000	9
JRD1	Oct-10	8.05	4380	76
JRD2	Oct-10	7.27	2500	17
6	Nov-10	6.64	1090	141
7	Nov-10	7.21	2870	65
12	Nov-10	6.44	3260	30
13	Nov-10	6.97	13100	10
JRD1	Nov-10	8.34	4720	57
JRD2	Nov-10	7.2	2520.0	58.0

Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)
6	Dec-10	6.5	1410.0	244.0
7	Dec-10	7.01	2670	232
12	Dec-10	6.31	2390	71
13	Dec-10	6.84	11000	5
JRD1	Dec-10	8.31	4460	229
JRD2	Dec-10	7.0	1120.0	99.0
6	Jan-11	6.51	3020	708
7	Jan-11	6.92	2800	68
12	Jan-11	6.4	7560.0	40.0
13	Jan-11	6.86	12400	30
JRD1	Jan-11	7.87	4990	51
JRD2	Jan-11	7.2	2110.0	222.0
6	Feb-11	6.47	2850	173
7	Feb-11	6.8	2760.0	147.0
12	Feb-11	6.35	7480	94
13	Feb-11	6.6	12400	25
JRD1	Feb-11	7.93	4660	69
JRD2	Feb-11	7.03	2500	62
6	Mar-11	6.68	2590	380
7	Mar-11	7.04	2560	39
12	Mar-11	6.58	13800	12
13	Mar-11	6.86	12200	24
JRD1	Mar-11	8.23	4710	32
JRD2	Mar-11	7.68	2080	69
6	Apr-11	7.4	3950.0	287.0
7	Apr-11	7.69	2780	150
12	Apr-11	7.46	14200	82
13	Apr-11	6.86	12200	24
JRD1	Apr-11	8.38	4840	24
JRD2	Apr-11	7.77	2520	50
6	May-11	6.7	4140	84
7	May-11	7.01	2860	18
12	May-11	6.5	9230	24
13	May-11	6.88	12600	42
JRD1	May-11	8.2	4970	76
JRD2	May-11	7.15	2080	70



Groundwater Quality Monitoring Results – 2011/2012

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Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)
6	Jun-11	6.72	4020	143
7	Jun-11	6.84	2720	18
12	Jun-11	6.46	6820	18
13	Jun-11	6.99	8970	16
JRD1	Jun-11	8.18	4750	26
JRD2	Jun-11	7.08	2280	94
6	Jul-11	7.17	4120	123
7	Jul-11	7.2	2380	40
12	Jul-11	6.7	1840	210
13	Jul-11	7.37	11000	14
JRD1	Jul-11	8.18	4720	18
JRD2	Jul-11	6.32	441	32
6	Aug-11	6.78	3530	-
7	Aug-11	6.47	2160	258
12	Aug-11	7.33	1540	-
13	Aug-11	6.98	3770	-
JRD1	Aug-11	8.3	4640.0	-
JRD2	Aug-11	7.04	337	-
6	Sep-11	6.77	3890	144
7	Sep-11	6.56	2190	154
12	Sep-11	6.29	4560	40
13	Sep-11	6.89	11000	17
JRD1	Sep-11	NS	NS	NS
JRD2	Sep-11	6.25	351	48
6	Oct-11	6.69	2370	94
7	Oct-11	6.31	1540	113
12	Oct-11	6.01	1080	108
13	Oct-11	6.88	10200	36
JRD1	Oct-11	NS	NS	NS
JRD2	Oct-11	6.21	408	45
6	Nov-11	7.28	3730	194
7	Nov-11	7.06	2010	15
12	Nov-11	6.83	4290	101
13	Nov-11	7.34	11400	15
JRD1	Nov-11	8.25	4620	52
JRD2	Nov-11	7.1	386.0	54.0

Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)
6	Dec-11	7.0	2680.0	262.0
7	Dec-11	6.78	2050	142
12	Dec-11	6.18	2720	80
13	Dec-11	7.28	9180	66
JRD1	Dec-11	NS	NS	NS
JRD2	Dec-11	6.8	313.0	76.0
6	Jan-12	7.08	2740	542
7	Jan-12	7.18	2190	240
12	Jan-12	6.4	9120.0	22.0
13	Jan-12	7.24	11000	21
JRD1	Jan-12	8.17	4120	36
JRD2	Jan-12	7.1	389.0	28.0
6	Feb-12	7.1	3260	66
7	Feb-12	7.2	2180.0	40.0
12	Feb-12	6.12	1460	27
13	Feb-12	7.21	8210	22
JRD1	Feb-12	8.26	4260	14
JRD2	Feb-12	8.06	471	18
6	Mar-12	7.11	3140	35
7	Mar-12	7.04	2190	124
12	Mar-12	6.17	517	46
13	Mar-12	7.03	3710	14
JRD1	Mar-12	8.05	4170	40
JRD2	Mar-12	7.26	390	48
6	Apr-12	7.3	3120.0	222.0
7	Apr-12	7.55	2740	105
12	Apr-12	6.5	2170	161
13	Apr-12	7.03	3710	14
JRD1	Apr-12	8.18	4500	57
JRD2	Apr-12	8	506	50
6	May-12	7.16	3170	174
7	May-12	7.49	2720	106
12	May-12	6.37	1250	130
13	May-12	7.34	11200	80
JRD1	May-12	8.17	4380	26
JRD2	May-12	6.57	315	69



Groundwater Quality Monitoring Results – 2012/2013

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Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)
6	Jun-12	7.04	662	6400
7	Jun-12	7.14	2340	78
12	Jun-12	6.28	452	40
13	Jun-12	7.3	7560	87
JRD1	Jun-12	8.36	4280	40
JRD2	Jun-12	6.78	256	88
6	Jul-12	7.15	3320	384
7	Jul-12	7.47	2750	94
12	Jul-12	6.44	1980	84
13	Jul-12	7.25	11200	57
JRD1	Jul-12	8.63	4590	54
JRD2	Jul-12	6.9	317	72
6	Aug-12	0	NS	NS
7	Aug-12	7.41	2760	78
12	Aug-12	6.39	1030	63
13	Aug-12	7.48	9580	63
JRD1	Aug-12	8.4	4530.0	17.0
JRD2	Aug-12	6.93	336	118
6	Sep-12	NS	NS	NS
7	Sep-12	7.53	2820	166
12	Sep-12	6.57	1400	99
13	Sep-12	7.37	11500	19
JRD1	Sep-12	8.42	4550	22
JRD2	Sep-12	7.22	421	53
6	Oct-12	NS	NS	NS
7	Oct-12	7.08	2410	61
12	Oct-12	6.59	1910	118
13	Oct-12	7.29	12400	11
JRD1	Oct-12	8.44	4660	12
JRD2	Oct-12	7.24	404	37
6	Nov-12	NS	NS	NS
7	Nov-12	7.07	2490	232
12	Nov-12	6.78	3060	96
13	Nov-12	7.09	12400	44
JRD1	Nov-12	8.31	4730	8
JRD2	Nov-12	7.0	434.0	25.0

Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)
6	Dec-12	NS	NS	NS
7	Dec-12	7.1	1190	90
12	Dec-12	7.42	4340	93
13	Dec-12	7.56	11600	66
JRD1	Dec-12	8.41	4480	22
JRD2	Dec-12	8.0	474.0	50.0
6	Jan-13	NS	NS	NS
7	Jan-13	6.78	2170	34
12	Jan-13	7.0	5770.0	130.0
13	Jan-13	7.45	12100	158
JRD1	Jan-13	8.3	4590	22
JRD2	Jan-13	7.6	483.0	25.0
6	Feb-13	NS	NS	NS
7	Feb-13	7.4	2760.0	16.0
12	Feb-13	6.45	1010	27
13	Feb-13	7.4	8840	69
JRD1	Feb-13	8.26	4810	31
JRD2	Feb-13	6.66	351	28
6	Mar-13	NS	NS	NS
7	Mar-13	7.19	2550	18
12	Mar-13	6.31	636	73
13	Mar-13	7.26	6050	328
JRD1	Mar-13	8.33	4460	38
JRD2	Mar-13	6.66	242	120
6	Apr-13	NS	NS	NS
7	Apr-13	6.79	1280	72
12	Apr-13	6.73	1800	61
13	Apr-13	7.26	6050	328
JRD1	Apr-13	8.31	4540	32
JRD2	Apr-13	6.77	255	67
6	May-13	NS	NS	NS
7	May-13	7.12	2160	136
12	May-13	6.78	2520	81
13	May-13	7.46	6660	130
JRD1	May-13	8.37	4610	37
JRD2	May-13	7.31	407	656



Groundwater Quality Monitoring Results – 2013/2014

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Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)
6	Jun-13	NS	NS	NS
7	Jun-13	6.98	2910	<5
12	Jun-13	6.92	3750	664
13	Jun-13	7.62	6280	136
JRD1	Jun-13	8.28	4560	94
JRD2	Jun-13	7.16	372	201
6	Jul-13	6.45	807	11600
7	Jul-13	7.26	2530	1620
12	Jul-13	6.85	4200	3530
13	Jul-13	7.2	6910	1520
JRD1	Jul-13	8.46	4350	68
JRD2	Jul-13	7.22	1870	795
6	Aug-13	6.86	2590	6840
7	Aug-13	NS	NS	NS
12	Aug-13	7.02	5310	3070
13	Aug-13	7.82	10200	820
JRD1	Aug-13	8.3	4320	150.0
JRD2	Aug-13	7.43	2500	402
6	Sep-13	7.04	2410	4800
7	Sep-13	NS	NS	NS
12	Sep-13	6.9	6590	892
13	Sep-13	7.42	5950	180
JRD1	Sep-13	8.04	4390	30
JRD2	Sep-13	7.55	2350	178
6	Oct-13	6.69	2350	2560
7	Oct-13	NS	NS	NS
12	Oct-13	7.12	9590	157
13	Oct-13	7.49	5320	43
JRD1	Oct-13	8.31	4350	9
JRD2	Oct-13	7.54	2400	271
6	Nov-13	7.06	2300	207
7	Nov-13	NS	NS	NS
12	Nov-13	6.94	11100	332
13	Nov-13	7.64	5950	22
JRD1	Nov-13	8.39	4560	18
JRD2	Nov-13	7.5	2530	100.0

Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)
6	Dec-13	6.8	967	44.0
7	Dec-13	NS	NS	NS
12	Dec-13	6.07	1940	14
13	Dec-13	7.42	5670	118
JRD1	Dec-13	NS	NS	NS
JRD2	Dec-13	6.2	282	<5
6	Jan-14	6.86	2260	655
7	Jan-14	NS	NS	NS
12	Jan-14	6.7	8240	120.0
13	Jan-14	7.28	6170	135
JRD1	Jan-14	8.39	4440	45
JRD2	Jan-14	7.4	2140	371.0
6	Feb-14	7.12	2350	1950
7	Feb-14	NS	NS	NS
12	Feb-14	NS	NS	NS
13	Feb-14	7.51	6430	78
JRD1	Feb-14	8.35	4520	28
JRD2	Feb-14	7.48	2390	497
6	Mar-14	6.98	2240	512
7	Mar-14	NS	NS	NS
12	Mar-14	NS	NS	NS
13	Mar-14	7.47	5480	133
JRD1	Mar-14	8.35	4220	70
JRD2	Mar-14	7.4	1800	932
6	Apr-14	7.2	2400	790.0
7	Apr-14	NS	NS	NS
12	Apr-14	NS	NS	NS
13	Apr-14	7.47	5480	133
JRD1	Apr-14	8.36	4330	121
JRD2	Apr-14	7.4	2150	364
6	May-14	7.04	2350	3590
7	May-14	NS	NS	NS
12	May-14	NS	NS	NS
13	May-14	7.3	5260	36
JRD1	May-14	8.35	4200	57
JRD2	May-14	7.55	1440	230

2015 ANNUAL ENVIRONMENTAL

MANAGEMENT REPORT

Report No. 737/15

DONALDSON COAL PTY LTD

Abel Underground Coal Mine

Appendix 7

Groundwater Quality Monitoring Results – 2014

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Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)
6	Jun-14	0	0	0
7	Jun-14	0	0	0
12	Jun-14	0	0	0
13	Jun-14	0	0	0
JRD1	Jun-14	0	0	0
JRD2	Jun-14	0	0	0
6	Jul-14	7.04	2110	872
7	Jul-14	0	0	0
12	Jul-14	0	0	0
13	Jul-14	7.43	5380	415
JRD1	Jul-14	8.35	4100	18
JRD2	Jul-14	7.36	2380	242
6	Aug-14	6.64	174	2220
7	Aug-14	0	0	0
12	Aug-14	0	0	0
13	Aug-14	6.48	4350	0
JRD1	Aug-14	8.5	3990	6.3
JRD2	Aug-14	7.8	2280	693
6	Sep-14	7.29	2370	1300
7	Sep-14	0	0	0
12	Sep-14	0	0	0
13	Sep-14	0	0	0
JRD1	Sep-14	0	0	0
JRD2	Sep-14	7.67	2290	71
6	Oct-14	7.58	2400	342
7	Oct-14	0	0	0
12	Oct-14	0	0	0
13	Oct-14	7.33	5280	22
JRD1	Oct-14	0	0	0
JRD2	Oct-14	7.36	690	92
6	Nov-14	7.29	2500	63
7	Nov-14	0	0	0
12	Nov-14	0	0	0
13	Nov-14	7.35	6130	88
JRD1	Nov-14	0	0	0
JRD2	Nov-14	7.4	2160	93.0



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Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)
6	Jan-15	6.64	2190	550
7	Jan-15	0	0	0
12	Jan-15	0	0	0
13	Jan-15	7.06	5490	75
JRD1	Jan-15	NS	NS	NS
JRD2	Jan-15	6.6	1784	171
6	Feb-15	6.74	2310	38
7	Feb-15	0	0	0
12	Feb-15	0	0	0
13	Feb-15	6.97	5480	40
JRD1	Feb-15	NS	NS	NS
JRD2	Feb-15	6.58	446	24
6	Mar-15	6.78	2350	424
7	Mar-15	0	0	0
12	Mar-15	0	0	0
13	Mar-15	6.91	5890	76
JRD1	Mar-15	NS	NS	NS
JRD2	Mar-15	6.68	788	110
6	Apr-15	6.45	2440	626
7	Apr-15	0	0	0
12	Apr-15	0	0	0
13	Apr-15	6.68	3220	86
JRD1	Apr-15	NS	NS	NS
JRD2	Apr-15	6.74	2080	130
6	May-15	6.53	2270	44
7	May-15	0	0	0
12	May-15	0	0	0
13	May-15	6.95	4030	27
JRD1	May-15	NS	NS	NS
JRD2	May-15	6.83	1910	41
6	Jun-15	6.47	2290	38
7	Jun-15	0	0	0
12	Jun-15	0	0	0
13	Jun-15	6.92	4250	71
JRD1	Jun-15	NS	NS	NS
JRD2	Jun-15	6.7	2030	37.0

Sample Site	Date	pH	EC (uS/cm)	TSS (mg/L)
6	Jul-15	6.9	2099	90.0
7	Jul-15	0	0	0
12	Jul-15	0	0	0
13	Jul-15	7.28	2540	94
JRD1	Jul-15	NS	NS	NS
JRD2	Jul-15	7.3	914	9.0
6	Aug-15	7.4	2260	62
7	Aug-15	0	0	0
12	Aug-15	0.0	0	0.0
13	Aug-15	7.45	4780	122
JRD1	Aug-15	NS	NS	NS
JRD2	Aug-15	7.7	2168	24.0
6	Sep-15	6.65	2399	31
7	Sep-15	0.0	0	0.0
12	Sep-15	0	0	0
13	Sep-15	7.1	4810	62
JRD1	Sep-15	NS	NS	NS
JRD2	Sep-15	6.94	2580	38
6	Oct-15	6.74	2267	68
7	Oct-15	0	0	0
12	Oct-15	0	0	0
13	Oct-15	7.01	4040	23
JRD1	Oct-15	NS	NS	NS
JRD2	Oct-15	7.13	1961	100
6	Nov-15	6.8	2450	103.0
7	Nov-15	0	0	0
12	Nov-15	0	0	0
13	Nov-15	7.01	4040	23
JRD1	Nov-15	NS	NS	NS
JRD2	Nov-15	7.12	2335	196
6	Dec-15	6.81	2417	342
7	Dec-15	0	0	0
12	Dec-15	0	0	0
13	Dec-15	7.15	5290	30
JRD1	Dec-15	NS	NS	NS
JRD2	Dec-15	7.13	2160	108