



Table D-1: Vangorda Creek Drainage Water Quality  
2010 - Surface Water - General Parameters

Station	Date	ALK	ALKPP	CaCO3	CaCO3-d	Chloride	CN(wad)	CNTHIO	CO3	Colour	COND	CONDf	DOC	HCO3	NH3	NO2	NO2/3	NO3	OH	pH	pHF	SO4-d	TDS	TEMP-F	TOC	TSS	TURB	
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	TCU	µmho/cm	µmho/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	°C	mg/L	mg/L	NTU	
V20	6/1/2010	41.00	<0.5	98	94	<0.5			<0.5		104.0	218.0	4.3	50.00	<0.01				<0.5	7.8	8.2	3.8	120.00	10			2	
V22	3/4/2010	0.80	<0.5	1050	957	<0.5			<0.5		2160.0	2060.0		0.90	0.40				<0.5	5.1	5.7	1400.0	2200.00	1				26
V22	6/16/2010	<0.5	<0.5	848	453	<0.5			<0.5		2160.0	2166.0		<0.5	0.74				<0.5	3.2	3.1	1200.0	2000.00	13				9
V22	9/7/2010	<0.5	<0.5	1030	1040	<0.5			<0.5		2380.0	2424.0		<0.5	0.88				<0.5	3.6	3.5	1600.0	2300.00	11				8
V22	12/16/2010	23.00	<0.5	1030	969	1.30			<0.5		1850.0	20.0		28.00	0.43				<0.5	6.5	7.2	1100.0	1700.00	0				34
V22 Average		6.08	0	990	855	0.51			0.25		2137.5	1667.5		7.35	0.61				0	4.6	4.9	1325.0	2050.00	6				19
V22 Max		23.00	<0.5	1050	1040	1.30			<0.5		2380.0	2424.0		28.00	0.88				<0.5	6.5	7.2	1600.0	2300.00	13				34
V22 Min		<0.5	<0.5	848	453	<0.5			<0.5		1850.0	20.0		<0.5	0.40				<0.5	3.2	3.1	1100.0	1700.00	0				8
V22 N > DL		2	0	4	4	1	0	0	0	0	4	4	0	2	4	0	0	0	0	4	4	4	4	4	4	0	4	0
V22 Median		0.53	<0.5	1030	963	<0.5			<0.5		2160.0	2113.0		0.58	0.59				<0.5	4.3	4.6	1300.0	2100.00	6				18
V23	3/4/2010	200.00	<0.5	602	569	<0.5			<0.5		1030.0	950.0		250.00	0.19				<0.5	8.1	7.6	390.0	740.00	0				<1.0
V23	6/16/2010	160.00	<0.5	511	499	<0.5			<0.5		978.0	990.0		190.00	1.70				<0.5	8.1	8.0	350.0	740.00	13				26
V23	9/7/2010	160.00	3	554	529	<0.5			3.20		992.0	1007.0		190.00	0.29				<0.5	8.4	7.7	420.0	720.00	12				3
V23	12/16/2010	220.00	<0.5	773	705	1.40			<0.5		1300.0	1190.0		270.00	0.03				<0.5	8.1	8.1	530.0	970.00	0				<4.0
V23 Average		185.00	1	610	576	0.54			0.99		1075.0	1034.3		225.00	0.55				0	8.2	7.9	422.5	792.50	6				8
V23 Max		220.00	3	773	705	1.40			3.20		1300.0	1190.0		270.00	1.70				<0.5	8.4	8.1	530.0	970.00	13				26
V23 Min		160.00	<0.5	511	499	<0.5			<0.5		978.0	950.0		190.00	0.03				<0.5	8.1	7.6	350.0	720.00	0				<1.0
V23 N > DL		4	1	4	4	1	0	0	1	0	4	4	0	4	4	0	0	0	0	4	4	4	4	4	4	0	2	0
V23 Median		180.00	<0.5	578	549	<0.5			<0.5		1011.0	998.5		220.00	0.24				<0.5	8.1	7.9	405.0	740.00	6				3
V24	6/22/2010	<0.5	<0.5	920	780	<0.5			<0.5		2140.0	1915.0		<0.5	0.34				<0.5	3.4	3.2	1300.0	2000.00	14				14
V24	6/29/2010	<0.5	<0.5	878	886	<0.5			<0.5		2170.0	2052.0		<0.5	0.31				<0.5	3.3	3.4	1300.0	2100.00	14				10
V24	7/6/2010	<0.5	<0.5	865	827	<0.5			<0.5		2170.0	2046.0		<0.5	0.36				<0.5	3.4	3.2	1300.0	1900.00	14				10
V24	7/13/2010	<0.5	<0.5	962	975	<0.5			<0.5		2270.0	2346.0		<0.5	0.34				<0.5	3.5	3.4	1400.0	2300.00	15				9
V24 Average		0.25	0	906	867	0.25			0.25		2187.5	2089.8		0.25	0.34				0	3.4	3.3	1325.0	2075.00	14				11
V24 Max		<0.5	<0.5	962	975	<0.5			<0.5		2270.0	2346.0		<0.5	0.36				<0.5	3.5	3.4	1400.0	2300.00	15				14
V24 Min		<0.5	<0.5	865	780	<0.5			<0.5		2140.0	1915.0		<0.5	0.31				<0.5	3.3	3.2	1300.0	1900.00	14				9
V24 N > DL		0	0	4	4	0	0	0	0	0	4	4	0	0	4	0	0	0	0	4	4	4	4	4	4	0	4	0
V24 Median		<0.5	<0.5	899	857	<0.5			<0.5		2170.0	2049.0		<0.5	0.34				<0.5	3.4	3.3	1300.0	2050.00	14				10
V25	6/22/2010	16.00	<0.5	1210	1120	<0.5			<0.5		2010.0	1872.0		19.00	0.11				<0.5	8.3	9.2	1300.0	1800.00	13				5
V25	6/29/2010	31.00	<0.5	1450	1570	<0.5			<0.5		2180.0	2065.0		37.00	0.20				<0.5	7.7	8.8	1300.0	2100.00	12				5
V25	7/6/2010	30.00	<0.5	1560	1590	<0.5			<0.5		2280.0	2089.0		37.00	0.24				<0.5	7.7	9.1	1500.0	2100.00	12				2
V25	7/13/2010	33.00	<0.5	1680	1640	<0.5			<0.5		2360.0	2049.0		40.00	0.28				<0.5	8.1	8.9	1400.0	2300.00	13				<1.0
V25	8/12/2010	38.00	<0.5	1660	1710	<0.5			<0.5		2340.0	2003.0		47.00	0.14				<0.5	7.7	8.1	1400.0	2400.00	15				3
V25 Average		29.60	0	1512	1526	0.25			0.25		2234.0	2015.6		36.00	0.19				0	7.9	8.8	1380.0	2140.00	13				3
V25 Max		38.00	<0.5	1680	1710	<0.5			<0.5		2360.0	2089.0		47.00	0.28				<0.5	8.3	9.2	1500.0	2400.00	15				5
V25 Min		16.00	<0.5	1210	1120	<0.5			<0.5		2010.0	1872.0		19.00	0.11				<0.5	7.7	8.1	1300.0	1800.00	12				<1.0
V25 N > DL		5	0	5	5	0	0	0	0	0	5	5	0	5	5	0	0	0	0	5	5	5	5	5	5	0	4	0
V25 Median		31.00	<0.5	1560	1590	<0.5			<0.5		2280.0	2049.0		37.00	0.20				<0.5	7.7	8.9	1400.0	2100.00	13				3

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Station	Date	ALK	ALKPP	CaCO3	CaCO3-d	Chloride	CN(wad)	CNTHIO	CO3	Colour	COND	CONDf	DOC	HCO3	NH3	NO2	NO2/3	NO3	OH	pH	pHF	SO4-d	TDS	TEMP-F	TOC	TSS	TURB
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	TCU	µmho/cm	µmho/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	°C	mg/L	mg/L	NTU
V25BSP	4/27/2010	40.00	<0.5	323	309	<0.5		<0.0005	<0.5	<5.0	625.0	597.0	49.00	0.06					<0.5	7.6	8.3	320.0	440.00	2	<1.0	0.30	
V25BSP	5/11/2010	51.00	<0.5	140	137	<0.5		0	<0.5	15.00	299.0	230.0	62.00	0.09					<0.5	7.8	7.7	100.0	200.00	1	<1.0	5.00	
V25BSP	6/15/2010	70.00	<0.5	198	223	<0.5		0	<0.5	<5.0	452.0	451.0	85.00	0.14					<0.5	7.9	7.9	160.0	340.00	11	<1.0	0.20	
V25BSP	6/22/2010	74.00	<0.5	183	182	<0.5		<0.0005	<0.5	<5.0	425.0	403.0	90.00	<0.05					<0.5	8.0	8.1	150.0	290.00	14	20	6.90	
V25BSP	6/29/2010	35.00	<0.5	1240	1330	<0.5		0	<0.5	<5.0	1910.0	1814.0	42.00	0.22					<0.5	7.5	7.9	1100.0	1800.00	14	<1.0	0.20	
V25BSP	7/6/2010	120.00	<0.5	1230	1260	1.40		<0.0005	<0.5	<5.0	1850.0	1772.0	150.00	0.08					<0.5	7.8	7.3	960.0	1700.00	12	2	0.70	
V25BSP	7/13/2010	40.00	<0.5	1440	1470	<0.5		<0.0005	<0.5	<5.0	2080.0	2160.0	49.00	0.09					<0.5	7.7	7.9	1300.0	2000.00	15	<1.0	0.40	
V25BSP	8/5/2010	56.00	<0.5	773	844	<0.5		<0.0005	<0.5	<5.0	1340.0	1411.0	68.00	<0.05					<0.5	7.7	7.5	700.0	1100.00	14	<1.0	0.30	
V25BSP	8/12/2010	53.00	<0.5	1240	1170	<0.5		<0.0005	<0.5	<5.0	1820.0	1594.0	64.00	0.01					<0.5	7.8	7.8	1000.0	1800.00	15	<1.0	0.30	
V25BSP	9/7/2010	53.00	<0.5			<0.5		<0.0005	<0.5	<5.0	1440.0	1600.0	64.00	0.08	<0.005	0.08	0.08		<0.5	7.7	8.0	880.0	1200.00	7	<1.0	<0.1	
V25BSP	10/5/2010	50.00	<0.5	784	788	<0.5		<0.0005	<0.5	<5.0	1260.0	1310.0	61.00	<0.05	<0.005	0.05	0.05		<0.5	7.5	9.0	710.0	1100.00	2	<1.0	<0.1	
V25BSP	11/1/2010	63.00	<0.5	731	678	<0.5		<0.0005	<0.5	<5.0	1230.0	1140.0	77.00	<0.005	<0.005	0.10	0.10		<0.5	7.7	7.9	620.0	980.00	1	<1.0	0.10	
V25BSP	12/2/2010	52.00	<0.5	661	598	<0.5		<0.0005	<0.5	<5.0	1110.0	1124.0	63.00	<0.05	<0.005	0.10	0.10		<0.5	7.6	7.9	620.0	900.00	1	<1.0	0.20	
V25BSP Average		58.23	0	745	749	0.34		0	0.25	3.46	1218.5	1164.8	71.08	0.07	0.00	0.08	0.08	0	7.7	7.9	663.1	1065.38	8	2	1.05		
V25BSP Max		120.00	<0.5	1440	1470	1.40		0	<0.5	15.00	2080.0	2160.0	150.00	0.22	<0.005	0.10	0.10	<0.5	8.0	9.0	1300.0	2000.00	15	20	6.90		
V25BSP Min		35.00	<0.5	140	137	<0.5		<0.0005	<0.5	<5.0	299.0	230.0	42.00	<0.005	<0.005	0.05	0.05	<0.5	7.5	7.3	100.0	200.00	1	<1.0	<0.1		
V25BSP N > DL		13	0	12	12	1	0	3	0	1	13	16	0	13	8	0	4	4	0	13	16	13	13	16	0	2	10
V25BSP Median		53.00	<0.5	752	733	<0.5		<0.0005	<0.5	<5.0	1260.0	1225.0	64.00	0.06	<0.005	0.09	0.09	<0.5	7.7	7.9	700.0	1100.00	10	<1.0	0.30		
V27	1/18/2010	110.00	<0.5	292	300	<0.5		<0.5			572.0	630.0	1.4	140.00	<0.01				<0.5	8.0	7.8	170.0	420.00	0	1.70	<1.0	
V27	2/24/2010	130.00	<0.5	319	342	<0.5		<0.5			632.0	565.0	0.6	150.00	<0.01				<0.5	8.1	6.9	190.0	470.00	0	0.80	<1.0	
V27	3/29/2010	130.00	<0.5	370	346	<0.5		<0.5			676.0	666.0	1.0	160.00	0.02				<0.5	8.2	8.7	170.0	440.00	1	0.90	<1.0	
V27	4/20/2010	110.00	<0.5	361	399	<0.5		<0.5			694.0	666.0	1.4	130.00	<0.01				<0.5	8.0	8.3	290.0	520.00	4	2.20	3	
V27	5/12/2010	80.00	<0.5	213	197	<0.5		<0.5			416.0	431.0	3.8	97.00	<0.005				<0.5	7.8	8.4	130.0	260.00	4	5.20	<1.0	
V27	6/16/2010	35.00	<0.5	75	72	<0.5		<0.5			168.0	168.0	2.2	43.00	<0.05				<0.5	7.7	8.1	47.0	92.00	6	2.10	<1.0	
V27	7/14/2010	40.00	<0.5	459	472	<0.5		<0.5			852.0	867.0	1.1	49.00	<0.05				<0.5	7.6	7.9	380.0	640.00	10	1.20	<1.0	
V27	8/4/2010	64.00	<0.5	139	148	<0.5		<0.5			311.0	291.0	1.7	79.00	<0.05				<0.5	8.0	8.1	95.0	210.00	10	2.80	<1.0	
V27	9/7/2010	53.00	<0.5	119	118	<0.5		<0.5			272.0	290.0	1.8	65.00	0.14	<0.005	0.24	0.24	<0.5	7.9	5.8	86.0	180.00	5	2.40	<1.0	0.20
V27	10/5/2010	74.00	<0.5	199	198	<0.5		<0.5			389.0	411.0	2.2	91.00	<0.05	<0.005	0.47	0.47	<0.5	7.9	8.7	130.0	280.00	0	1.50	<1.0	0.20
V27	11/1/2010	87.00	<0.5	231	219	<0.5		<0.5			466.0	434.0	1.0	110.00	<0.005	<0.005	0.61	0.61	<0.5	8.1	8.3	140.0	290.00	0	1.10	<1.0	0.25
V27	12/1/2010	98.00	<0.5	273	264	<0.5		<0.5			517.0	330.0	<0.5	120.00	<0.05	<0.005	0.73	0.73	<0.5	8.0	8.0	170.0	340.00	0	<0.5	<1.0	1.30
V27 Average		84.25	0	254	256	0.25		0.25			497.1	479.1	1.5	102.83	0.03	0.00	0.51	0.51	0	7.9	7.9	166.5	345.17	3	1.85	1	0.40
V27 Max		130.00	<0.5	459	472	<0.5		<0.5			852.0	867.0	3.8	160.00	0.14	<0.005	0.73	0.73	<0.5	8.2	8.7	380.0	640.00	10	5.20	3	1.30
V27 Min		35.00	<0.5	75	72	<0.5		<0.5			168.0	168.0	<0.5	43.00	<0.005	<0.005	0.24	0.24	<0.5	7.6	5.8	47.0	92.00	0	<0.5	<1.0	0.20
V27 N > DL		12	0	12	12	0	0	0	0	0	12	12	11	12	2	0	4	4	0	12	12	12	12	12	11	1	3
V27 Median		83.50	<0.5	252	242	<0.5		<0.5			491.5	432.5	1.4	103.50	0.0225	<0.005	0.54	0.54	<0.5	8.0	8.1	155.0	315.00	3	1.60	<1.0	0.1125

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		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	TCU	µmho/cm	µmho/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			mg/L	mg/L	°C	mg/L	mg/L	NTU	
V2A	2/3/2010	440.00	<0.5	1790	1730	2.00			<0.5		2550.0	1070.0	4.2	530.00	0.03					<0.5	8.1	8.0	1000.0	2300.00	0	4.80	6	
V2A	3/2/2010	380.00	<0.5	1490	1660	1.50			<0.5		2290.0	2180.0	3.8	460.00	0.04					<0.5	8.1	7.9	1100.0	2100.00	1	4.30	4	
V2A	4/7/2010	350.00	<0.5	1390	1380	0.90			<0.5		2180.0	2310.0	4.5	430.00	<0.01					<0.5	7.9	7.8	1000.0	2000.00	2	4.40	8	
V2A	5/1/2010	290.00	<0.5	1120	1130	0.90			<0.5		1790.0	1620.0	5.9	360.00	<0.03					<0.5	8.1	8.7	860.0	1500.00	3	4.90	8	
V2A	5/18/2010	350.00	<0.5	1370	1540	1.10			<0.5		2240.0	2184.0	3.4	430.00	0.02					<0.5	8.2	8.3	1200.0	2100.00	5	3.40	2	
V2A	6/2/2010	340.00	12	1590	1590	1.20			14.00		2350.0	2451.0	3.6	390.00	<0.05					<0.5	8.4	8.2	1100.0	2200.00	7	9.40	<1.0	
V2A	6/15/2010	350.00	16	1690	1720	1.00			19.00		2360.0	2118.0	4.1	380.00	<0.05					<0.5	8.5	8.3	1200.0	2200.00	11	2.90	4	
V2A	7/7/2010	390.00	9	1670	1610	0.90			11.00		2370.0	2238.0	4.7	460.00	<0.05					<0.5	8.4	8.2	1200.0	2300.00	10	4.40	2	
V2A	7/22/2010	410.00	<0.5	1570	1790	1.40			<0.5		2490.0	2097.0	3.3	500.00	<0.05					<0.5	8.2	8.2	1200.0	2400.00	10	3.60	<1.0	
V2A	8/5/2010	410.00	<0.5	1850	1870	0.80			<0.5		2800.0	2728.0	4.0	500.00	<0.05					<0.5	8.2	8.3	1400.0	2700.00	11	3.70	<1.0	
V2A	8/18/2010	410.00	11	1840	1800	0.90			14.00		2610.0	2351.0	2.8	480.00	<0.05					<0.5	8.4	8.3	1400.0	2500.00	12	2.80	3	
V2A	9/7/2010	390.00	14	1780	1600	1.50			17.00		2530.0	2360.0	3.5	440.00	0.15	<0.005	7.70	7.70		<0.5	8.5	8.2	1400.0	2500.00	10	3.20	<1.0	0.30
V2A	9/23/2010	390.00	<0.5	1530	1590	0.90			<0.5		2490.0	1510.0	3.6	480.00	0.06	<0.005	6.80	6.80		<0.5	8.3	8.0	1300.0	2400.00	3	11.90	2	0.30
V2A	10/7/2010	390.00	<0.5	1770	1750	1.10			<0.5		2410.0	2389.0	3.4	470.00	<0.05	<0.005	7.50	7.50		<0.5	8.2	8.4	1200.0	2200.00	1	3.10	<1.0	0.40
V2A	10/21/2010	390.00	4	1600	1710	0.80			4.80		1870.0	50.0	3.2	470.00	0.06	<0.005	7.50	7.50		<0.5	8.3	8.5	1300.0	2200.00	0	3.40	3	1.50
V2A	11/4/2010	380.00	<0.5	1640	1650	<0.5			<0.5		2360.0	2240.0	2.6	460.00	<0.005	<0.005	7.10	7.10		<0.5	8.3	8.0	1200.0	2100.00	0	2.80	4	1.30
V2A Average		378.75	4	1606	1633	1.07			5.14		2355.6	1993.5	3.8	452.50	0.03	0.00	7.32	7.32	0	8.3	8.2	1191.3	2231.25	5	4.56	3	0.68	
V2A Max		440.00	16	1850	1870	2.00			19.00		2800.0	2728.0	5.9	530.00	0.15	<0.005	7.70	7.70	<0.5	8.5	8.7	1400.0	2700.00	12	11.90	8	1.50	
V2A Min		290.00	<0.5	1120	1130	<0.5			<0.5		1790.0	50.0	2.6	360.00	<0.005	<0.005	6.80	6.80	<0.5	7.9	7.8	860.0	1500.00	0	2.80	<1.0	0.30	
V2A N > DL		16	6	16	16	15	0	0	6	0	16	16	16	16	6	0	5	5	0	16	16	16	16	16	16	11	5	
V2A Median		390.00	<0.5	1620	1655	0.95			<0.5		2365.0	2211.0	3.6	460.00	<0.05	<0.005	7.50	7.50	<0.5	8.2	8.2	1200.0	2200.00	4	3.65	3	0.40	
V4	1/18/2010	330.00	<0.5	384	401	<0.5			<0.5		709.0	810.0	4.0	400.00	0.05					<0.5	8.1	7.9	77.0	490.00	0	4.80	<1.0	
V4	2/24/2010	340.00	<0.5	406	421	0.60			<0.5		724.0	638.0	2.8	410.00	0.06					<0.5	8.1	7.3	85.0	440.00	0	2.80	<1.0	
V4	3/29/2010	330.00	<0.5	392	392	2.60			<0.5		709.0	724.0	4.3	400.00	0.07					<0.5	8.1	7.9	86.0	430.00	0	4.60	10	
V4	4/20/2010	240.00	<0.5	277	299	1.40			<0.5		506.0	491.0	7.0	290.00	0.04					<0.5	8.2	8.3	52.0	290.00	2	7.10	2	
V4	5/12/2010	170.00	<0.5	194	185	<0.5			<0.5		349.0	312.0	6.5	200.00	0.01					<0.5	8.1	8.0	31.0	210.00	1	7.50	9	
V4	6/16/2010	250.00	<0.5	276	278	<0.5			<0.5		518.0	545.0	6.0	300.00	<0.05					<0.5	8.2	8.4	49.0	320.00	5	5.30	<1.0	
V4	7/14/2010	280.00	<0.5	329	336	<0.5			<0.5		588.0	609.0	4.7	340.00	0.08					<0.5	8.3	8.3	55.0	350.00	8	4.70	<1.0	
V4	8/4/2010	290.00	3	332	360	<0.5			3.00		620.0	572.0	4.3	350.00	<0.05					<0.5	8.3	8.3	67.0	410.00	8	4.60	4	
V4	9/7/2010	290.00	7	344	342	<0.5			7.80		637.0	690.0	4.5	340.00	0.21	<0.005	0.05	0.05		<0.5	8.5	6.7	92.0	400.00	5	4.50	<1.0	2.00
V4	10/5/2010	290.00	<0.5	370	379	<0.5			<0.5		615.0	652.0	4.5	360.00	0.23	<0.005	0.08	0.08		<0.5	8.3	8.4	75.0	420.00	0	4.40	3	2.20
V4	11/1/2010	310.00	2	389	372	<0.5			2.70		676.0	636.0	3.5	370.00	0.03	<0.005	0.13	0.13		<0.5	8.3	8.1	76.0	390.00	0	3.50	<1.0	1.70
V4	12/1/2010	300.00	<0.5	180	378	0.70			<0.5		651.0	430.0	2.9	370.00	<0.05	<0.005	0.11	0.11		<0.5	8.2	7.9	79.0	390.00	0	4.10	2	2.60
V4 Average		285.00	1	323	345	0.61			1.31		608.5	592.4	4.6	344.17	0.07	0.00	0.09	0.09	0	8.2	8.0	68.7	378.33	2	4.83	3	2.04	
V4 Max		340.00	7	406	421	2.60			7.80		724.0	810.0	7.0	410.00	0.23	<0.005	0.13	0.13	<0.5	8.5	8.4	92.0	490.00	8	7.50	10	2.60	
V4 Min		170.00	<0.5	180	185	<0.5			<0.5		349.0	312.0	2.8	200.00	0.01	<0.005	0.05	0.05	<0.5	8.1	6.7	31.0	210.00	0	2.80	<1.0	1.70	
V4 N > DL		12	3	12	12	4	0	0	3	0	12	12	12	12	9	0	4	4	0	12	12	12	12	12	12	6	4	
V4 Median		290.00	<0.5	338	366	<0.5			<0.5		628.5	622.5	4.4	355.00	<0.05	<0.005	0.10	0.10	<0.5	8.2	8.1	75.5	395.00	1	4.60	1	2.10	

Table D-1: Vangorda Creek Drainage Water Quality  
2010 - Surface Water - General Parameters

Station	Date	ALK	ALKPP	CaCO3	CaCO3-d	Chloride	CN(wad)	CNTHIO	CO3	Colour	COND	CONDf	DOC	HCO3	NH3	NO2	NO2/3	NO3	OH	pH	pHF	SO4-d	TDS	TEMP-F	TOC	TSS	TURB
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	TCU	µmho/cm	µmho/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			mg/L	mg/L	°C	mg/L	mg/L	NTU
V5	1/6/2010	310.00	<0.5	465	525	2.70			<0.5		841.0	715.0	3.3	380.00	<0.01				<0.5	8.0	7.5	160.0	450.00	0	3.10	32	
V5	2/18/2010	290.00	<0.5	440	464	2.40			<0.5		790.0	1717.0	2.2	360.00	0.05				<0.5	8.2	8.3	160.0	490.00	<0.0	2.50	8	
V5	3/30/2010	300.00	<0.5	460	465	2.30			<0.5		837.0	777.0	2.2	370.00	0.02				<0.5	8.2	8.9	180.0	540.00	<0.0	3.00	6	
V5	4/20/2010	180.00	<0.5	279	279	2.40			<0.5		491.0	499.0	6.6	220.00	0.11				<0.5	8.2	8.4	94.0	430.00	1	7.00	170	
V5	5/12/2010	170.00	<0.5	264	245	1.60			<0.5		473.0	449.0	7.3	210.00	0.01				<0.5	8.1	8.5	93.0	320.00	2	9.10	82	
V5	6/17/2010	150.00	<0.5	204	191	2.20			<0.5		388.0	394.0	4.8	180.00	0.07				<0.5	8.3	8.3	61.0	240.00	9	4.10	200	
V5	7/14/2010	130.00	<0.5	169	173	1.00			<0.5		335.0	351.0	3.6	160.00	<0.05				<0.5	8.2	8.2	47.0	200.00	9	3.80	37	
V5	8/4/2010	180.00	3	240	264	1.00			3.60		477.0	446.0	3.1	210.00	<0.05				<0.5	8.4	8.5	75.0	330.00	12	3.70	4	
V5	9/7/2010	180.00	3	233	235	1.50			3.10		479.0	520.0	5.6	220.00	0.20	<0.005	0.03	0.03	<0.5	8.4	7.6	82.0	330.00	6	5.70	6	2.50
V5	10/5/2010	190.00	<0.5	287	282	0.90			<0.5		499.0	580.0	4.4	230.00	<0.05	<0.005	0.05	0.05	<0.5	8.2	6.9	82.0	360.00	1	4.00	3	1.10
V5	11/2/2010	220.00	2	321	311	1.00			2.20		587.0	552.0	3.1	260.00	0.01	<0.005	0.09	0.09	<0.5	8.3	8.3	98.0	350.00	1	2.70	12	4.00
V5	12/1/2010	230.00	<0.5	360	355	1.50			<0.5		638.0	350.0	4.4	280.00	<0.05	<0.005	0.11	0.11	<0.5	8.2	7.9	120.0	370.00	0	2.90	14	1.80
V5 Average		210.83	1	310	316	1.71			0.93		569.6	612.5	4.2	256.67	0.05	0.00	0.07	0.07	0	8.2	8.1	104.3	367.50	4	4.30	48	2.48
V5 Max		310.00	3	465	525	2.70			3.60		841.0	1717.0	7.3	380.00	0.20	<0.005	0.11	0.11	<0.5	8.4	8.9	180.0	540.00	12	9.10	200	4.00
V5 Min		130.00	<0.5	169	173	0.90			<0.5		335.0	350.0	2.2	160.00	0.01	<0.005	0.03	0.03	<0.5	8.0	6.9	47.0	200.00	<0.0	2.50	3	1.10
V5 N > DL		12	3	12	12	12	0	0	3	0	12	12	12	12	7	0	4	4	0	12	12	12	12	11	12	12	4
V5 Median		185.00	<0.5	283	281	1.55			<0.5		495.0	509.5	4.0	225.00	<0.05	<0.005	0.07	0.07	<0.5	8.2	8.3	93.5	355.00	1	3.75	13	2.15
V8	1/6/2010	240.00	<0.5	422	464	2.20			<0.5		781.0	675.0	2.0	300.00	<0.01				<0.5	8.1	7.2	170.0	470.00	0	2.00	<4.0	
V8	2/18/2010	240.00	<0.5	419	440	1.70			<0.5		772.0	720.0	2.1	290.00	0.04				<0.5	8.2	8.2	200.0	500.00	0	2.10	2	
V8	3/30/2010	250.00	<0.5	429	431	1.80			<0.5		802.0	552.0	2.0	300.00	<0.01				<0.5	8.3	8.7	200.0	510.00	<0.0	2.50	2	
V8	4/20/2010	180.00	<0.5	340	350	<0.5			<0.5		619.0	720.0	3.9	220.00	0.09				<0.5	8.1	8.4	160.0	440.00	1	4.50	130	
V8	5/12/2010	150.00	<0.5	250	238	0.80			<0.5		463.0	420.0	5.0	180.00	0.09				<0.5	8.0	8.5	110.0	300.00	4	6.90	23	
V8	6/17/2010	100.00	<0.5	156	147	1.00			<0.5		308.0	286.0	3.3	120.00	<0.05				<0.5	8.2	8.3	59.0	190.00	6	2.90	48	
V8	7/14/2010	93.00	<0.5	359	378	0.70			<0.5		684.0	700.0	2.0	110.00	<0.05				<0.5	8.1	7.9	230.0	510.00	11	2.10	26	
V8	8/4/2010	140.00	2	231	243	<0.5			2.10		460.0	443.0	2.4	170.00	<0.05				<0.5	8.3	8.2	100.0	320.00	14	2.30	2	
V8	9/7/2010	140.00	<0.5	210	211	1.00			<0.5		426.0	460.0	3.4	170.00	0.20	<0.005	0.13	0.13	<0.5	8.3	7.3	97.0	290.00	8	3.40	3	0.60
V8	10/5/2010	160.00	<0.5	268	266	<0.5			<0.5		488.0	559.0	3.1	190.00	<0.05	<0.005	0.19	0.19	<0.5	8.1	7.4	100.0	350.00	2	2.80	<1.0	0.40
V8	11/2/2010	170.00	<0.5	301	286	0.80			<0.5		564.0	531.0	1.2	210.00	0.01	<0.005	0.29	0.29	<0.5	8.3	8.8	120.0	360.00	0	1.30	2	1.10
V8	12/1/2010	190.00	<0.5	347	350	1.30			<0.5		627.0	350.0	1.6	240.00	<0.05	<0.005	0.31	0.31	<0.5	8.3	7.8	150.0	410.00	1	2.40	2	0.70
V8 Average		171.08	0	311	317	1.00			0.40		582.8	534.7	2.7	208.33	0.05	0.00	0.23	0.23	0	8.2	8.1	141.3	387.50	4	2.93	20	0.68
V8 Max		250.00	2	429	464	2.20			2.10		802.0	720.0	5.0	300.00	0.20	<0.005	0.31	0.31	<0.5	8.3	8.8	230.0	510.00	14	6.90	130	1.10
V8 Min		93.00	<0.5	156	147	<0.5			<0.5		308.0	286.0	1.2	110.00	<0.01	<0.005	0.13	0.13	<0.5	8.0	7.2	59.0	190.00	<0.0	1.30	<1.0	0.40
V8 N > DL		12	1	12	12	9	0	0	1	0	12	12	12	12	5	0	4	4	0	12	12	12	12	11	12	10	4
V8 Median		165.00	<0.5	321	318	0.90			<0.5		591.5	541.5	2.3	200.00	<0.05	<0.005	0.24	0.24	<0.5	8.2	8.2	135.0	385.00	1	2.45	2.5	0.65



















Table D-3: Vangorda Creek Drainage Water Quality  
2010 - Surface Water - Total Metals

Station	Date	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Hg	K	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
V8	1/6/2010	<0.005	31.00	0.400	<50.0	80.500	<0.01	<0.005	97.40	0.07	0.1420	<0.1	0.9400	72.00	1.34	0.01	43.40	12.100	1.32	4.96	2.640		0.2910	65.00	0.18	2.0500	5010.00	<0.01	400.00	1.10	0.01	9.1800	<0.2	16.000	<0.1	
V8	2/18/2010	<0.005	12.40	0.360	<50.0	74.200	<0.01	<0.005	96.90	0.07	0.0880	<0.1	0.5200	43.00	1.30	0.01	43.00	8.490	1.34	4.90	2.170		0.0860	73.00	0.16	1.8700	4940.00	<0.01	385.00	<0.5	0.01	9.3400	<0.2	12.600	<0.1	
V8	3/30/2010	<0.005	7.30	0.420	<50.0	73.700	<0.01	<0.005	97.20	0.06	0.0730	<0.1	0.6400	30.00	1.42	0.01	45.20	6.660	1.47	5.19	2.140		0.2340	76.00	0.17	1.9700	5010.00	<0.01	402.00	<0.5	0.01	10.4000	<0.2	12.700	<0.1	
V8	4/20/2010	0.0120	870.00	2.290	<50.0	104.000	0.13	0.02	79.10	0.21	1.2900	1.20	5.0800	1230.00	1.87	0.01	34.60	73.900	0.72	4.20	5.980		5.8300	59.00	0.16	1.0800	4870.00	<0.01	313.00	10.30	0.02	7.5200	2.20	25.500	1.10	
V8	5/12/2010	<0.005	236.00	0.810	<50.0	56.400	0.02	<0.005	60.80	0.06	0.3310	0.40	2.1200	370.00	1.15	0.00	23.80	26.500	0.91	2.89	2.580		0.9990	38.00	0.15	0.7700	4720.00	<0.01	230.00	7.50	0.02	5.6100	0.40	11.400	0.30	
V8	6/17/2010	<0.005	250.00	0.910	<50.0	50.600	0.05	0.04	37.70	0.07	0.4490	0.50	2.0400	415.00	0.75	0.00	14.90	23.700	0.45	2.27	1.990		1.6300	22.00	0.12	0.3900	4920.00	<0.01	154.00	5.80	0.01	2.6900	0.80	12.900	0.40	
V8	7/14/2010	<0.005	235.00	0.690	<50.0	76.400	0.02	<0.005	103.00	0.12	0.3290	0.50	1.3200	446.00	1.07	0.01	24.80	29.400	0.42	2.49	1.660		1.1700	102.00	0.10	0.3300	4590.00	<0.01	366.00	7.80	0.05	2.1200	0.60	19.000	0.30	
V8	8/4/2010	<0.005	18.00	0.550	<50.0	50.600	<0.01	<0.005	56.40	0.05	0.0560	<0.1	0.8800	51.00	0.89	0.00	21.90	8.770	0.91	3.07	1.020		0.5540	40.00	0.14	0.6100	4850.00	<0.01	229.00	<0.5	0.01	3.8600	<0.2	9.200	<0.1	
V8	9/7/2010	<0.005	19.50	0.480	<50.0	49.700	<0.01	<0.005	51.70	0.04	0.0550	<0.1	0.8800	68.00	0.85	0.00	19.70	8.130	0.82	2.90	1.140		0.1930	30.00	0.78	0.4700	4460.00	<0.01	214.00	<0.5	0.01	3.4600	<0.2	7.200	<0.1	
V8	10/5/2010	<0.005	8.20	0.430	<50.0	52.300	<0.01	<0.005	63.20	0.04	0.0460	<0.1	0.6500	37.00	1.02	0.00	26.90	5.390	0.93	3.64	1.080		0.0770	41.00	0.12	0.7000	5050.00	<0.01	244.00	<0.5	0.01	4.5400	<0.2	7.500	<0.1	
V8	11/2/2010	<0.005	22.40	0.490	<50.0	61.400	<0.01	<0.005	69.50	0.05	0.0880	<0.1	0.9300	60.00	1.01	0.00	30.90	6.760	0.97	4.05	1.380		0.6290	50.00	0.14	0.8600	4860.00	<0.01	275.00	1.00	0.01	5.6000	<0.2	9.900	<0.1	
V8	12/1/2010	<0.005	24.20	0.410	<50.0	66.900	<0.01	0.01	81.40	0.06	0.0960	<0.1	0.6300	65.00	1.18	0.01	35.00	10.500	1.03	4.20	1.510		0.2150	53.00	0.13	1.0100	5170.00	<0.01	328.00	0.70	0.01	6.7100	<0.2	11.000	<0.1	
V8 Average		0.0033	144.50	0.687	25.00	66.392	0.02	0.01	74.53	0.07	0.2536	0.25	1.3858	240.58	1.15	0.01	30.34	18.358	0.94	3.73	2.108		0.9923	54.08	0.20	1.0092	4870.83	0.01	295.00	2.95	0.01	5.9192	0.40	12.908	0.21	
V8 Max		0.0120	870.00	2.290	<50.0	104.000	0.13	0.04	103.00	0.21	1.2900	1.20	5.0800	1230.00	1.87	0.01	45.20	73.900	1.47	5.19	5.980		5.8300	102.00	0.78	2.0500	5170.00	<0.01	402.00	10.30	0.05	10.4000	2.20	25.500	1.10	
V8 Min		<0.005	7.30	0.360	<50.0	49.700	<0.01	<0.005	37.70	0.04	0.0460	<0.1	0.5200	30.00	0.75	0.00	14.90	5.390	0.42	2.27	1.020		0.0770	22.00	0.10	0.3300	4460.00	<0.01	154.00	<0.5	0.01	2.1200	<0.2	7.200	<0.1	
V8 N > DL		1	12	12	0	12	4	3	12	12	12	4	12	12	0	12	12	12	12	12	12		0	12	12	12	12	12	0	12	7	12	12	4	12	4
V8 Median		<0.005	23.30	0.485	<50.0	64.150	<0.01	<0.005	74.30	0.06	0.0920	<0.1	0.9050	66.50	1.11	0.01	28.90	9.635	0.92	3.85	1.825		0.4225	51.50	0.15	0.8150	4895.00	<0.01	294.00	0.85	0.01	5.6050	<0.2	12.000	<0.1	

NB: Metals reported in mg/L are shaded in grey.

Table D-4: Vangorda Creek Drainage Water Quality  
2010 - Seepage Water - General Parameters

Station	Date	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3-d mg/L	Chloride mg/L	CO3 mg/L	COND µmho/cm	CONDF µmho/cm	HCO3 mg/L	OH mg/L	ORP mV	pH	pHF	SO4-d mg/L	TEMP-F °C	TSS mg/L
MOOSE SEEP	1/7/2010	<0.5	14	350.00	<0.5	1620	1.50	<0.5	2380.0	2500.0	430.00	<0.5	132	7.9	7.5	1100.0	1	<1.0
MOOSE SEEP	2/3/2010	<0.5	13	350.00	<0.5	1640	1.60	<0.5	2400.0	2260.0	430.00	<0.5	91	8.0	7.5	1100.0	0	6
MOOSE SEEP	3/2/2010	<0.5	5	350.00	<0.5	1730	0.90	<0.5	2320.0	2170.0	430.00	<0.5	158	8.0	7.8	1100.0	1	<1.0
MOOSE SEEP	4/7/2010	<0.5	17	340.00	<0.5	1570	0.90	<0.5	2280.0	2350.0	410.00	<0.5	326	8.3	7.7	1100.0	1	<1.0
MOOSE SEEP	5/1/2010	<0.5	5	330.00	<0.5	1600	0.90	<0.5	2240.0	1920.0	400.00	<0.5		8.0	8.5	1100.0	3	<1.0
MOOSE SEEP	5/18/2010	<0.5	4	260.00	<0.5	1310	0.90	<0.5	1990.0	2028.0	320.00	<0.5	210	8.0	7.9	1000.0	4	2
MOOSE SEEP	6/2/2010	<0.5	5	290.00	11	1280	0.90	13.00	1990.0	2045.0	330.00	<0.5		8.5	7.9	1000.0	6	6
MOOSE SEEP	6/20/2010	<0.5	8	320.00	3	1330	1.10	3.20	2080.0	2030.0	380.00	<0.5	201	8.3	7.8	1000.0	5	<1.0
MOOSE SEEP	7/7/2010	<0.5	12	320.00	<0.5	1390	1.10	<0.5	2110.0	2290.0	390.00	<0.5	177	8.0	7.7	1000.0	6	2
MOOSE SEEP	7/22/2010	<0.5	11	340.00	<0.5	1520	1.50	<0.5	2220.0	1854.0	420.00	<0.5	160	8.1	7.7	1100.0	6	<1.0
MOOSE SEEP	8/5/2010	<0.5	18	340.00	<0.5	1450	0.60	<0.5	2260.0	2278.0	420.00	<0.5	171	8.1	7.8	1100.0	6	<1.0
MOOSE SEEP	8/18/2010	<0.5	16	330.00	<0.5	1470	0.80	<0.5	2260.0	2164.0	410.00	<0.5	177	8.2	7.7	1200.0	8	2
MOOSE SEEP	9/7/2010	<0.5	15	340.00	<0.5	1410	1.10	<0.5	2360.0	2312.0	420.00	<0.5	177	8.2	7.6	1300.0	5	<1.0
MOOSE SEEP	9/23/2010	<0.5	17	340.00	<0.5	1510	1.00	<0.5	2380.0	2006.0	420.00	<0.5	144	7.9	7.7	1300.0	3	<1.0
MOOSE SEEP	10/7/2010	<0.5	14	350.00	<0.5	1670	<0.5	<0.5	2350.0	2320.0	430.00	<0.5	40	8.1	7.7	1300.0	2	<1.0
MOOSE SEEP	10/21/2010	<0.5	19	350.00	<0.5	1590	1.00	<0.5	2370.0	2243.0	430.00	<0.5	99	8.2	7.9	1200.0	2	<1.0
MOOSE SEEP	11/4/2010	<0.5	8	350.00	<0.5	1680	<0.5	<0.5	2360.0	2313.0	420.00	<0.5	39	8.2	7.8	1300.0	2	<1.0
MOOSE SEEP	12/2/2010	<0.5	8	350.00	<0.5	1530	1.10	<0.5	2310.0	1470.0	420.00	<0.5	249	8.2	7.9	1200.0	0	2
MOOSE SEEP Average		0	12	333.33	1	1517	0.97	1.12	2258.9	2141.8	406.11	0	159	8.1	7.8	1138.9	3	1
MOOSE SEEP Max		<0.5	19	350.00	11	1730	1.60	13.00	2400.0	2500.0	430.00	<0.5	326	8.5	8.5	1300.0	8	6
MOOSE SEEP Min		<0.5	4	260.00	<0.5	1280	<0.5	<0.5	1990.0	1470.0	320.00	<0.5	39	7.9	7.5	1000.0	0	<1.0
MOOSE SEEP N > DL		0	18	18	2	18	16	2	18	18	18	0	16	18	18	18	18	6
MOOSE SEEP Median		<0.5	12	340.00	<0.5	1525	0.95	<0.5	2295.0	2206.5	420.00	<0.5	166	8.1	7.8	1100.0	3	<1.0
V14	6/1/2010	<0.5	6	310.00	4	2750	0.70	4.60	3610.0	3791.0	370.00	<0.5	202	8.3	8.1	2800.0	17	7

Table D-4: Vangorda Creek Drainage Water Quality  
2010 - Seepage Water - General Parameters

Station	Date	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3-d mg/L	Chloride mg/L	CO3 mg/L	COND µmho/cm	CONDf µmho/cm	HCO3 mg/L	OH mg/L	ORP mV	pH	pHF	SO4-d mg/L	TEMP-F °C	TSS mg/L
V15	1/7/2010	<0.5	53	510.00	<0.5	3180	2.00	<0.5	4020.0	3840.0	620.00	<0.5	180	7.5	6.6	2500.0	1	<1.0
V15	1/21/2010	<0.5	58	520.00	<0.5	3160	1.80	<0.5	4030.0	3710.0	630.00	<0.5		7.5	6.8	2700.0	1	<1.0
V15	2/3/2010	<0.5	49	510.00	<0.5	3010	2.10	<0.5	4030.0	2954.0	620.00	<0.5		7.7	7.0	2500.0	0	<1.0
V15	2/18/2010	<0.5	44	520.00	<0.5	2830	1.40	<0.5	4040.0	1780.0	630.00	<0.5	201	7.8	7.1	2800.0	2	3
V15	3/2/2010	<0.5	34	550.00	<0.5	3450	1.50	<0.5	3990.0	3630.0	670.00	<0.5	171	7.6	7.0	2000.0	2	<1.0
V15	3/23/2010	<0.5	<0.5	560.00	<0.5	3270	1.90	<0.5	4070.0	3590.0	680.00	<0.5		8.1	7.0	2500.0	1	<1.0
V15	4/7/2010	<0.5	69	500.00	<0.5	3180	1.60	<0.5	3990.0	2788.0	610.00	<0.5	385	8.0	7.0	1900.0	4	<1.0
V15	4/19/2010	<0.5	39	310.00	<0.5	1950	0.60	<0.5	2550.0	2800.0	370.00	<0.5	70	7.9	7.2	1400.0	3	2
V15	5/1/2010	<0.5	14	390.00	<0.5	2190	1.00	<0.5	2920.0	2560.0	470.00	<0.5		7.8	7.8	1500.0	4	2
V15	5/18/2010	<0.5	17	480.00	<0.5	2830	1.60	<0.5	3690.0	3535.0	590.00	<0.5	248	8.3	7.2	2400.0	7	3
V15	6/2/2010	<0.5	30	530.00	<0.5	2940	1.70	<0.5	3910.0	3948.0	640.00	<0.5		8.2	6.9	2600.0	5	<1.0
V15	6/15/2010	<0.5	46	490.00	<0.5	3250	1.30	<0.5	3820.0	3249.0	600.00	<0.5	248	8.2	6.9	2600.0	7	2
V15	7/7/2010	<0.5	42	520.00	<0.5	2800	1.40	<0.5	3830.0	3541.0	640.00	<0.5	76	7.8	7.4	2000.0	9	<1.0
V15	7/22/2010	<0.5	45	540.00	<0.5	3160	1.70	<0.5	3930.0	3101.0	660.00	<0.5	178	7.7	7.2	2700.0	6	2
V15	8/5/2010	<0.5	57	560.00	<0.5	3010	1.50	<0.5	3990.0	3958.0	680.00	<0.5	199	7.7	7.0	2600.0	8	<1.0
V15	8/18/2010	<0.5	53	550.00	<0.5	2910	1.20	<0.5	3910.0	3527.0	670.00	<0.5	130	7.8	6.9	2500.0	7	<1.0
V15	9/7/2010	<0.5	46	530.00	<0.5	2630	2.00	<0.5	3820.0	3531.0	650.00	<0.5	201	7.9	6.9	2200.0	7	<1.0
V15	9/23/2010	<0.5	65	550.00	<0.5	2790	2.00	<0.5	3800.0	2500.0	670.00	<0.5	194	7.7	6.8	2000.0	5	<1.0
V15	10/7/2010	<0.5	52	560.00	<0.5	2950	1.10	<0.5	3740.0	3435.0	680.00	<0.5	75	7.8	7.5	2500.0	3	<1.0
V15	10/21/2010	<0.5	61	550.00	<0.5	2810	1.90	<0.5	3750.0	3484.0	670.00	<0.5	228	7.9	7.0	1900.0	1	<1.0
V15	11/4/2010	<0.5	50	550.00	<0.5	3000	1.00	<0.5	3810.0	3568.0	670.00	<0.5		7.8	7.2	2500.0	3	<1.0
V15	11/18/2010	<0.5	51	540.00	<0.5	3060	2.20	<0.5	3880.0	2220.0	660.00	<0.5	136	7.8	7.0	2900.0	1	<1.0
V15	12/1/2010	<0.5	52	540.00	<0.5	2930	1.50	<0.5	3860.0	2271.0	660.00	<0.5	236	7.9	7.0	2600.0	0	3
V15	12/16/2010	<0.5	61	560.00	<0.5	3110	3.00	<0.5	4290.0	4150.0	680.00	<0.5	82	7.7	7.2	2700.0	2	<1.0
<b>V15 Average</b>		0	45	517.50	0	2933	1.63	0.25	3819.6	3236.3	630.00	0	180	7.8	7.1	2354.2	4	1
<b>V15 Max</b>		<0.5	69	560.00	<0.5	3450	3.00	<0.5	4290.0	4150.0	680.00	<0.5	385	8.3	7.8	2900.0	9	3
<b>V15 Min</b>		<0.5	<0.5	310.00	<0.5	1950	0.60	<0.5	2550.0	1780.0	370.00	<0.5	70	7.5	6.6	1400.0	0	<1.0
<b>V15 N &gt; DL</b>		0	23	24	0	24	24	0	24	24	24	0	18	24	24	24	24	7
<b>V15 Median</b>		<0.5	50	535.00	<0.5	2975	1.60	<0.5	3895.0	3505.5	655.00	<0.5	187	7.8	7.0	2500.0	3	<1.0
<b>V16</b>	10/6/2010	<0.5	8	320.00	<0.5	1470	0.60	<0.5	2140.0	2521.0	390.00	<0.5	179	8.2	6.6	1200.0	3	3
<b>V30</b>	6/1/2010	<0.5	963	78.00	<0.5	4730	1.40	<0.5	6210.0	>3999.0	95.00	<0.5	75	6.2	6.1	6000.0	13	41
<b>V30</b>	10/6/2010	<0.5	1180	78.00	<0.5	5220	2.40	<0.5	7200.0	>3999.0	96.00	<0.5	31	6.3	5.8	7200.0	2	110
<b>V30 Average</b>		0	1072	78.00	0	4975	1.90	0.25	6705.0	>3999.0	95.50	0	53	6.2	5.9	6600.0	8	76
<b>V30 N &gt; DL</b>		0	2	2	0	2	2	0	2	0	2	0	2	2	2	2	2	2
<b>V33</b>	6/1/2010	<0.5	31300	<0.5	<0.5	36500	<5.0	<0.5	39800.0	>3999.0	<0.5	<0.5	124	3.7	5.1	81000.0	11	480
<b>V33</b>	10/6/2010	33	44200	<0.5	<0.5	41200	<5.0	<0.5	43700.0	>3999.0	<0.5	<0.5	126	3.7	4.8	87000.0	2	410
<b>V33 Average</b>		17	37750	0.25	0	38850	2.50	0.25	41750.0	>3999.0	0.25	0	125	3.7	5.0	84000.0	7	445
<b>V33 N &gt; DL</b>		1	2	0	0	2	0	0	2	0	0	0	2	2	2	2	2	2







Table D-6: Vangorda Creek Drainage Water Quality  
2010 - Groundwater - General Parameters

Station	Date	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3-d mg/L	Chloride mg/L	CO3 mg/L	COND µmho/cm	CONDF µmho/cm	HCO3 mg/L	OH mg/L	pH	pHF	SO4-d mg/L	TEMP-F °C	TSS mg/L
BH05-9B-R	6/12/2010	<0.5	1	150.00	<0.5	196	1.30	<0.5	628.0	562.0	180.00	<0.5	8.2	7.9	180.0	8	680
BH05-9B-R	9/20/2010	<0.5	3	140.00	<0.5	212	1.20	<0.5	624.0	625.0	180.00	<0.5	8.1	7.7	180.0	7	100
BH05-9B-R Average		0	2	145.00	0	204	1.25	0.25	626.0	593.5	180.00	0	8.1	7.8	180.0	8	390
BH05-9B-R N > DL		0	2	2	0	2	2	0	2	2	2	0	2	2	2	2	2
P09-GS1A	9/17/2010	<0.5	20	220.00	<0.5	761	1.70	<0.5	1450.0	1430.0	270.00	<0.5	7.9	6.8	640.0	6	1600
P09-GS1B	6/11/2010																
P09-GS1B	9/16/2010	<0.5	28	240.00	<0.5	705	<0.5	<0.5	1260.0	1300.0	290.00	<0.5	7.7	7.1	490.0	10	5
P09-LCD1	6/12/2010	<0.5	15	260.00	<0.5	408	0.60	<0.5	823.0	776.0	320.00	<0.5	8.0	7.3	190.0	4	840
P09-LCD1	9/20/2010	<0.5	17	270.00	<0.5	441	<0.5	<0.5	843.0	910.0	330.00	<0.5	7.9	7.2	160.0	4	580
P09-LCD1 Average		0	16	265.00	0	425	0.43	0.25	833.0	843.0	325.00	0	8.0	7.3	175.0	4	710
P09-LCD1 N > DL		0	2	2	0	2	1	0	2	2	2	0	2	2	2	2	2
P09-LCD6	6/12/2010	<0.5	17	250.00	<0.5	455	0.80	<0.5	878.0	832.0	300.00	<0.5	8.0	7.4	240.0	7	26000
P09-LCD6	9/20/2010	<0.5	18	270.00	<0.5	508	<0.5	<0.5	876.0	920.0	330.00	<0.5	7.8	7.3	200.0	8	430
P09-LCD6 Average		0	18	260.00	0	482	0.53	0.25	877.0	876.0	315.00	0	7.9	7.4	220.0	8	13215
P09-LCD6 N > DL		0	2	2	0	2	1	0	2	2	2	0	2	2	2	2	2
P09-VC1	6/12/2010	<0.5	2	120.00	<0.5	156	<0.5	<0.5	369.0	360.0	150.00	<0.5	8.1	7.8	61.0	5	93
P09-VC1	9/20/2010	<0.5	3	140.00	<0.5	178	<0.5	<0.5	390.0	390.0	170.00	<0.5	8.0	8.1	62.0	5	42
P09-VC1 Average		0	3	130.00	0	167	0.25	0.25	379.5	375.0	160.00	0	8.1	7.9	61.5	5	68
P09-VC1 N > DL		0	2	2	0	2	0	0	2	2	2	0	2	2	2	2	2
P09-VC2	9/20/2010	<0.5	6	170.00	<0.5	202	<0.5	<0.5	404.0	420.0	210.00	<0.5	7.8	7.7	40.0	4	13
P2001-2A	6/13/2010	<0.5	39	450.00	<0.5	971	1.70	<0.5	1630.0	1638.0	550.00	<0.5	7.5	8.5	550.0	5	3300
P2001-2A	9/18/2010	<0.5	35	490.00	<0.5	1030	0.90	<0.5	1750.0	1684.0	590.00	<0.5	7.7	6.7	580.0	6	1100
P2001-2A Average		0	37	470.00	0	1001	1.30	0.25	1690.0	1661.0	570.00	0	7.6	7.6	565.0	5	2200
P2001-2A N > DL		0	2	2	0	2	2	0	2	2	2	0	2	2	2	2	2
P2001-2B	6/13/2010	<0.5	27	410.00	<0.5	790	1.50	<0.5	1430.0	1264.0	500.00	<0.5	7.8	7.4	450.0	5	2200
P2001-2B	9/18/2010	<0.5	28	480.00	<0.5	1010	0.90	<0.5	1660.0	1741.0	590.00	<0.5	7.8	6.7	510.0	5	220
P2001-2B Average		0	28	445.00	0	900	1.20	0.25	1545.0	1502.5	545.00	0	7.8	7.1	480.0	5	1210
P2001-2B N > DL		0	2	2	0	2	2	0	2	2	2	0	2	2	2	2	2
P2001-3	6/19/2010	<0.5	13	420.00	<0.5	487	1.00	<0.5	917.0	989.0	510.00	<0.5	8.2	7.3	140.0	7	1500
P2001-3	9/15/2010	<0.5	15	440.00	<0.5	536	<0.5	<0.5	976.0	885.0	540.00	<0.5	8.1	7.2	130.0	3	74
P2001-3 Average		0	14	430.00	0	512	0.63	0.25	946.5	937.0	525.00	0	8.1	7.3	135.0	5	787
P2001-3 N > DL		0	2	2	0	2	1	0	2	2	2	0	2	2	2	2	2
P96-6	6/15/2010	<0.5	44	320.00	<0.5	724	0.70	<0.5	1170.0	1140.0	390.00	<0.5	7.6	6.4	350.0	3	300
P96-6	9/21/2010	<0.5	55	290.00	<0.5	837	<0.5	<0.5	1350.0	1010.0	350.00	<0.5	7.3	7.1	480.0	8	180
P96-6 Average		0	49	305.00	0	781	0.48	0.25	1260.0	1096.7	370.00	0	7.4	6.6	415.0	5	240
P96-6 N > DL		0	2	2	0	2	1	0	2	3	2	0	2	3	2	3	2
SRK05-5C	6/12/2010	<0.5	6	160.00	<0.5	387	0.70	<0.5	790.0	734.0	190.00	<0.5	8.2	7.6	250.0	6	22000
SRK05-5C	9/20/2010	<0.5	6	170.00	<0.5	274	<0.5	<0.5	787.0	610.0	200.00	<0.5	7.8	7.9	190.0	6	8400
SRK05-5C Average		0	6	165.00	0	331	0.48	0.25	788.5	672.0	195.00	0	8.0	7.7	220.0	6	15200
SRK05-5C N > DL		0	2	2	0	2	1	0	2	2	2	0	2	2	2	2	2

Table D-6: Vangorda Creek Drainage Water Quality  
2010 - Groundwater - General Parameters

Station	Date	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3-d mg/L	Chloride mg/L	CO3 mg/L	COND µmho/cm	CONDF µmho/cm	HCO3 mg/L	OH mg/L	pH	pHF	SO4-d mg/L	TEMP-F °C	TSS mg/L
SRK05-8	6/12/2010	<0.5	45	520.00	<0.5	1370	1.70	<0.5	2130.0	1918.0	630.00	<0.5	7.4	7.0	890.0	5	790
SRK05-8	9/20/2010	<0.5	46	550.00	<0.5	1560	1.20	<0.5	2290.0	2399.0	670.00	<0.5	7.7	7.2	900.0	11	2500
SRK05-8 Average		0	46	535.00	0	1465	1.45	0.25	2210.0	2158.5	650.00	0	7.5	7.1	895.0	8	1645
SRK05-8 N > DL		0	2	2	0	2	2	0	2	2	2	0	2	2	2	2	2
SRK05-9	1/7/2010	<0.5	24	350.00	<0.5	1610	1.50	<0.5	2350.0	2210.0	420.00	<0.5	7.7	7.0	1100.0	1	680
SRK05-9	1/21/2010	<0.5	17	340.00	<0.5	1720	1.20	<0.5	2280.0	2180.0	420.00	<0.5	7.8	7.3	1100.0	3	130
SRK05-9	2/4/2010	<0.5	16	340.00	<0.5	1460	2.40	<0.5	2290.0	2110.0	420.00	<0.5	7.9	7.3	1100.0	0	710
SRK05-9	2/18/2010	<0.5	15	350.00	<0.5	1450	1.10	<0.5	2210.0	2020.0	420.00	<0.5	8.0	7.5	1100.0	2	160
SRK05-9	3/2/2010	<0.5	8	330.00	<0.5	1510	0.60	<0.5	2100.0	2020.0	400.00	<0.5	7.9	7.5	940.0	3	330
SRK05-9	3/23/2010	<0.5	5	330.00	<0.5	1530	1.10	<0.5	2080.0	1900.0	400.00	<0.5	8.2	7.7	950.0	2	43
SRK05-9	4/7/2010	<0.5	22	310.00	<0.5	1360	0.70	<0.5	2020.0	2030.0	380.00	<0.5	8.2	7.2	950.0	5	170
SRK05-9	4/19/2010	<0.5	27	320.00	<0.5	1420	<0.5	<0.5	2050.0	2130.0	390.00	<0.5	8.1	7.6	1000.0	5	400
SRK05-9	5/1/2010	<0.5	5	300.00	<0.5	1390	0.90	<0.5	1980.0	1750.0	360.00	<0.5	8.0	8.2	990.0	4	620
SRK05-9	5/18/2010	<0.5	7	270.00	<0.5	1210	0.60	<0.5	1880.0	1893.0	320.00	<0.5	8.3	7.6	1000.0	4	1300
SRK05-9	6/2/2010	<0.5	8	300.00	<0.5	1310	1.40	<0.5	2040.0	2190.0	360.00	<0.5	8.3	7.5	1000.0	7	440
SRK05-9	6/20/2010	<0.5	17	330.00	<0.5	1470	1.30	<0.5	2200.0	2230.0	400.00	<0.5	8.1	7.5	1100.0	4	400
SRK05-9	7/7/2010	<0.5	17	360.00	<0.5	1530	0.80	<0.5	2280.0	2520.0	440.00	<0.5	7.9	7.5	1100.0	5	210
SRK05-9	7/22/2010	<0.5	18	370.00	<0.5	1800	1.40	<0.5	2340.0	2021.0	450.00	<0.5	7.9	7.5	1200.0	4	100
SRK05-9	8/5/2010	<0.5	23	380.00	<0.5	1600	1.60	<0.5	2370.0	2410.0	460.00	<0.5	7.8	7.4	1200.0	7	200
SRK05-9	8/18/2010	<0.5	19	360.00	<0.5	1620	0.60	<0.5	2380.0	2235.0	440.00	<0.5	8.0	7.4	1300.0	7	170
SRK05-9	9/7/2010	<0.5	24	400.00	<0.5	1700	1.20	<0.5	2580.0	2503.0	490.00	<0.5	8.0	7.2	1400.0	6	230
SRK05-9	9/23/2010	<0.5	31	370.00	<0.5	1600	0.90	<0.5	2440.0	2129.0	450.00	<0.5	7.9	7.1	1300.0	3	920
SRK05-9	10/7/2010	<0.5	21	370.00	<0.5	1640	0.70	<0.5	2360.0	2330.0	450.00	<0.5	7.9	7.8	1200.0	3	440
SRK05-9	10/21/2010	<0.5	24	350.00	<0.5	1500	0.90	<0.5	2160.0	2200.0	430.00	<0.5	8.1	7.6	1200.0	3	170
SRK05-9	11/4/2010	<0.5	22	340.00	<0.5	1560	<0.5	<0.5	2300.0	2218.0	420.00	<0.5	8.2	7.5	1200.0	5	360
SRK05-9	11/18/2010	<0.5	20	340.00	<0.5	1540	1.10	<0.5	2310.0	2164.0	410.00	<0.5	8.0	7.1	1200.0	2	250
SRK05-9	12/2/2010	<0.5	19	340.00	<0.5	1490	0.80	<0.5	2260.0	2270.0	420.00	<0.5	8.1	7.5	1200.0	2	150
SRK05-9	12/16/2010	<0.5	16	340.00	<0.5	1500	1.40	<0.5	2230.0	2230.0	410.00	<0.5	8.1	7.9	1100.0	0	610
SRK05-9 Average		0	18	341.25	0	1522	1.03	0.25	2228.8	2162.2	415.00	0	8.0	7.5	1122.1	3	383
SRK05-9 Max		<0.5	31	400.00	<0.5	1800	2.40	<0.5	2580.0	2520.0	490.00	<0.5	8.3	8.2	1400.0	7	1300
SRK05-9 Min		<0.5	5	270.00	<0.5	1210	<0.5	<0.5	1880.0	1750.0	320.00	<0.5	7.7	7.0	940.0	0	43
SRK05-9 N > DL		0	24	24	0	24	22	0	24	24	24	0	24	24	24	24	24
SRK05-9 Median		<0.5	18	340.00	<0.5	1520	1.00	<0.5	2270.0	2185.0	420.00	<0.5	8.0	7.5	1100.0	3	290
SRK08-P14	9/16/2010	<0.5	19	280.00	<0.5	1220	1.40	<0.5	1990.0	2080.0	340.00	<0.5	7.9	7.4	930.0	4	2400
SRK08-P15	9/16/2010	<0.5	21	360.00	<0.5	1290	0.60	<0.5	1930.0	2030.0	440.00	<0.5	7.9	7.7	850.0	5	1200
SRK08-P16	9/20/2010																
V34	6/12/2010	<0.5	37	680.00	<0.5	1020	1.60	<0.5	1520.0	1468.0	830.00	<0.5	7.9	7.3	260.0	5	230
V34	9/18/2010	<0.5	33	740.00	<0.5	1080	1.80	<0.5	1670.0	1625.0	900.00	<0.5	7.6	6.9	260.0	6	620
V34 Average		0	35	710.00	0	1050	1.70	0.25	1595.0	1546.5	865.00	0	7.8	7.1	260.0	5	425
V34 N > DL		0	2	2	0	2	2	0	2	2	2	0	2	2	2	2	2

Table D-6: Vangorda Creek Drainage Water Quality  
2010 - Groundwater - General Parameters

Station	Date	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3-d mg/L	Chloride mg/L	CO3 mg/L	COND µmho/cm	CONDF µmho/cm	HCO3 mg/L	OH mg/L	pH	pHF	SO4-d mg/L	TEMP-F °C	TSS mg/L
V35	6/12/2010	<0.5	64	630.00	<0.5	2560	1.70	<0.5	3390.0	3002.0	770.00	<0.5	7.5	7.0	1700.0	6	54
V35	9/18/2010	<0.5	41	550.00	<0.5	1860	<0.5	<0.5	2760.0	2781.0	670.00	<0.5	7.8	6.9	1300.0	5	58
V35 Average		0	52	590.00	0	2210	0.98	0.25	3075.0	2891.5	720.00	0	7.6	6.9	1500.0	6	56
V35 N > DL		0	2	2	0	2	1	0	2	2	2	0	2	2	2	2	2
V36	6/12/2010	<0.5	39	460.00	<0.5	1640	1.30	<0.5	2500.0	2166.0	560.00	<0.5	7.5	7.0	1300.0	9	120
V36	9/18/2010	<0.5	40	500.00	<0.5	1760	0.60	<0.5	2720.0	2700.0	600.00	<0.5	7.6	6.6	1300.0	6	42
V36 Average		0	40	480.00	0	1700	0.95	0.25	2610.0	2433.0	580.00	0	7.5	6.8	1300.0	8	81
V36 N > DL		0	2	2	0	2	2	0	2	2	2	0	2	2	2	2	2
V37	6/13/2010	<0.5	3	440.00	14	490	1.20	16.00	956.0	997.0	500.00	<0.5	8.5	9.2	160.0	5	70
V37	9/18/2010	<0.5	11	440.00	<0.5	542	<0.5	<0.5	1100.0	1085.0	540.00	<0.5	8.0	7.3	170.0	7	47
V37 Average		0	7	440.00	7	516	0.73	8.13	1028.0	775.5	520.00	0	8.3	8.5	165.0	6	59
V37 N > DL		0	2	2	1	2	1	1	2	4	2	0	2	4	2	4	2









## Table D-8: Bioassay Results Summary Vangorda Clarification Pond and Discharge to Vangorda Creek - 2010



Station	Date	Percent Mortality				Temp. (°C)		D.O. (mg/L)		pH		Conductivity (µS/cm)	LC <sub>50</sub> Final Result (%v/v)
		24 hr	48 hr	72 hr	96 hr	Initial	Final	Initial	Final	Initial	Final		
Clarification P.	6/13/2010	0	0	0	0	14.9	15.1	9.7	9.4	9.1	7.0	2144	Pass: 100%
V2	3/2/2010	0	0	0	0	14.9	14.7	10.2	9.6	7.9	8.3	2240	Pass: 100%
V2	6/20/2010	0	0	0	0	15.5	15.3	9.8	9.9	8.0	8.3	2059	Pass: 100%
V2	9/7/2010	0	0	0	0	15.0	15.1	9.8	9.9	8.0	8.2	2159	Pass: 100%
V2	12/2/2010	0	0	0	0	14.5	15.2	10.7	9.8	7.9	8.1	2443	Pass: 100%
V25BSP	4/27/2010	0	0	0	0	14.5	14.1	10.0	9.9	7.3	7.7	659	Pass: 100%
V25BSP	6/15/2010	0	0	0	0	15.9	14.8	9.8	9.7	7.7	7.8	474	Pass: 100%
V25BSP	9/7/2010	0	0	0	0	14.7	15.1	9.9	9.7	7.5	7.6	1505	Pass: 100%
V25BSP	12/2/2010	0	0	0	0	14.2	15.1	10.7	9.7	7.1	7.6	1192	Pass: 100%



## Table D-9: Vangorda Creek Drainage 2010 FMC Lab Analysis - Zinc (Total and Dissolved) at V25



Date	Time	Temp. (°C)	pH	EC (µS/cm)	Zn-T		Zn-T Average	Zn-D		Zn-D Average	Method of Analysis	Comments
22-Jun-10	9:00 AM	12.9	9.19	1872	0.545	-	<b>0.545</b>	0.027	-	<b>0.027</b>	ICP	Discharge commenced on Jun 21 at 8:30 pm
23-Jun-10	8:15 AM	13.4	9.33	1892	0.542	-	<b>0.542</b>	0.015	-	<b>0.015</b>	ICP	
24-Jun-10	7:11 AM	12.9	9.23	2140	0.180	-	<b>0.180</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
25-Jun-10	9:05 AM	13.4	9.32	1904	0.101	-	<b>0.101</b>	0.023	-	<b>0.023</b>	ICP	
26-Jun-10	6:00 AM	14.2	9.26		0.255	-	<b>0.255</b>	0.079	-	<b>0.079</b>	ICP	
27-Jun-10	6:00 AM	14.2	9.25		0.223	-	<b>0.223</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
28-Jun-10	6:00 AM	14.1	9.15		0.128	-	<b>0.128</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
29-Jun-10	8:45 AM	12.2	8.83	2065	0.102	-	<b>0.102</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
30-Jun-10	6:00 AM	13.1	9.16	1558	0.027	-	<b>0.027</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
1-Jul-10	11:25 AM	11.1	9.18	2006	0.087	-	<b>0.087</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
2-Jul-10	6:00 AM	11.5	9.14	1980	0.096	-	<b>0.096</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
3-Jul-10	6:00 AM				0.047	-	<b>0.047</b>	<0.01	-	<b>&lt;0.01</b>	ICP	No field parameters measured
4-Jul-10	6:00 AM	10.6	9.06		0.046	-	<b>0.046</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
5-Jul-10	6:00 AM	10.4	9.09		0.061	-	<b>0.061</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
6-Jul-10	6:00 AM	11.1	9.05		0.086	-	<b>0.086</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
6-Jul-10	11:22 AM	11.8	9.11	2089	0.049	-	<b>0.049</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
7-Jul-10	6:00 AM	11.2	9.18	2380	0.043	-	<b>0.043</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
8-Jul-10	6:00 AM	11.3	9.00	2132	0.048	-	<b>0.048</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
9-Jul-10	1:33 PM	13.3	9.00	2160	0.062	-	<b>0.062</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
10-Jul-10	6:00 AM	11.5	9.22	2013	0.073	-	<b>0.073</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
11-Jul-10	6:00 AM	12.5	9.06		0.044	-	<b>0.044</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
12-Jul-10	6:00 AM	10.4	9.00		0.055	-	<b>0.055</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
13-Jul-10	6:00 AM	11.1	9.06		0.042	-	<b>0.042</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
13-Jul-10	10:12 AM	12.9	8.86	2049	0.049	0.055	<b>0.052</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
14-Jul-10	6:00 AM	11.5	9.00		0.046	-	<b>0.046</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
15-Jul-10	8:20 AM	10.6	8.92	2110	0.043	-	<b>0.043</b>	<0.01	-	<b>&lt;0.01</b>	ICP	Vangorda treatment plant shut down @ 11:15am.
13-Aug-10	9:17 AM	14.2	8.08	2390	0.035	-	<b>0.035</b>				ICP	
14-Aug-10	11:00 AM		7.77	2357	0.060	0.056	<b>0.058</b>	0.027	-	<b>0.027</b>	ICP	Field parameters not measured until 2.5 hours after sample collected (therefore temp. not available).
15-Aug-10	8:15 AM	14.4	8.58	2010	0.088	-	<b>0.088</b>	0.050	-	<b>0.050</b>	ICP	



Date	Time	Temp. (°C)	pH	EC (µS/cm)	Zn-T		Zn-T Average	Zn-D		Zn-D Average	Method of Analysis	Comments
22-Jun-10	8:24 AM	13.9	8.14	403	0.113	0.072	<b>0.093</b>	0.030	-	<b>0.030</b>	ICP	Discharge commenced on Jun 21 at 8:30 pm.
22-Jun-10	12:00 PM	16.6	8.25		0.106	-	<b>0.106</b>	0.024	-	<b>0.024</b>	ICP	
22-Jun-10	6:00 PM	18.9	8.26		0.057	-	<b>0.057</b>	0.028	-	<b>0.028</b>	ICP	
23-Jun-10	12:00 AM	15.1	8.04		0.055	-	<b>0.055</b>	0.031	-	<b>0.031</b>	ICP	
23-Jun-10	6:00 AM	13.4	8.10		0.058	-	<b>0.058</b>	0.022	-	<b>0.022</b>	ICP	
24-Jun-10	7:20 AM	12.7	8.23	910	0.047	-	<b>0.047</b>	0.035	-	<b>0.035</b>	ICP	
25-Jun-10	9:12 AM	12.9	8.16	1128	<0.01	0.037	<b>0.021</b>	0.052	-	<b>0.052</b>	ICP	
26-Jun-10	6:00 AM	14.1	8.86		0.037	-	<b>0.037</b>	<0.01	-	<b>&lt;0.01</b>	ICP	
27-Jun-10	6:00 AM	14.6	9.03		0.104	-	<b>0.104</b>	0.087	-	<b>0.087</b>	ICP	
28-Jun-10	6:00 AM	15.8	8.99		0.084	-	<b>0.084</b>	0.089	-	<b>0.089</b>	ICP	
29-Jun-10	9:10 AM	13.7	7.91	1814	0.084	0.083	<b>0.084</b>	0.086	-	<b>0.086</b>	ICP	
30-Jun-10	6:00 AM	13.8	8.57	1352	0.077	0.079	<b>0.078</b>	0.079	-	<b>0.079</b>	ICP	
1-Jul-10	11:43 AM	12.6	7.86	1796	0.083	-	<b>0.083</b>	0.085	-	<b>0.085</b>	ICP	
2-Jul-10	6:00 AM	12.5	8.19	1822	0.122	-	<b>0.122</b>	0.066	-	<b>0.066</b>	ICP	
3-Jul-10	6:00 AM	13.3	8.23		0.071	-	<b>0.071</b>	0.061	-	<b>0.061</b>	ICP	
4-Jul-10	6:00 AM	12.2	8.25		0.063	-	<b>0.063</b>	0.054	-	<b>0.054</b>	ICP	
5-Jul-10	6:00 AM	12.1	8.18		0.063	-	<b>0.063</b>	0.047	-	<b>0.047</b>	ICP	
6-Jul-10	6:00 AM	12.0	8.05		0.059	-	<b>0.059</b>	0.050	-	<b>0.050</b>	ICP	
6-Jul-10	12:14 PM	12.2	7.28	1772	0.063	-	<b>0.063</b>	0.054	-	<b>0.054</b>	ICP	
7-Jul-10	6:00 AM	11.2	9.18	2380	0.050	-	<b>0.050</b>	0.045	-	<b>0.045</b>	ICP	
8-Jul-10	6:00 AM	13.1	8.24	1845	0.051	-	<b>0.051</b>	0.043	-	<b>0.043</b>	ICP	
9-Jul-10	2:03 PM	16.4	7.81	1883	0.043	-	<b>0.043</b>	0.045	-	<b>0.045</b>	ICP	
10-Jul-10	6:00 AM	13.8	8.04	1732	0.044	-	<b>0.044</b>	0.039	-	<b>0.039</b>	ICP	
11-Jul-10	6:00 AM	13.4	8.36		0.065	-	<b>0.065</b>	0.036	-	<b>0.036</b>	ICP	
12-Jul-10	6:00 AM	11.7	8.68		0.048	-	<b>0.048</b>	0.050	-	<b>0.050</b>	ICP	
13-Jul-10	6:00 AM	12.3	8.60		0.049	-	<b>0.049</b>	0.040	-	<b>0.040</b>	ICP	
13-Jul-10	10:54 AM	15.1	7.93	2160	0.045	0.045	<b>0.045</b>	0.037	-	<b>0.037</b>	ICP	
14-Jul-10	6:00 AM	12.5	8.54		0.046	-	<b>0.046</b>	0.042	-	<b>0.042</b>	ICP	
15-Jul-10	8:30 AM	12.0	8.04	1935	0.041	-	<b>0.041</b>	0.040	-	<b>0.040</b>	ICP	Vangorda treatment plant shut down @ 11:15am.
12-Aug-10	3:02 PM	15.2	7.79	1594	0.063	-	<b>0.063</b>				ICP	
15-Aug-10	8:25 AM	14.3	8.35	1573	0.053	-	<b>0.053</b>	0.052	-	<b>0.052</b>	ICP	

















Station	Date	Sample Type	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3 mg/L	CaCO3-d mg/L	Cl-d mg/L	CO3 mg/L	Colour TCU	COND µmho/cm
V2	1/7/2010	FIELD BLANK			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		2.0
		Maxxam Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	1	1	1	1	1	1	0	2
		Comments										
		Action										
		Result										
MOOSE SEEP	2/3/2010	FIELD BLANK	<0.5	<0.5	0.70	<0.5		<0.5	<0.5	<0.5		2.0
		Maxxam Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	1	1	1.4	1	0	1	1	1	0	2
		Comments										
		Action										
		Result										
V22	3/4/2010	LAB BLANK			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<1.0
		Denison Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	1	1	1	1	1	1	0	1
		Comments										
		Action										
		Result										
V22	3/4/2010	LAB BLANK			1.10	<0.5	<0.5	<0.5	<0.5	<0.5		<1.0
		Maxxam Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	2.2	1	1	1	1	1	0	1
		Comments										
		Action										
		Result										
V22	3/4/2010	FIELD BLANK			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<1.0
		Denison Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	1	1	1	1	1	1	0	1
		Comments										
		Action										
		Result										
V22	3/4/2010	FIELD BLANK			0.60	<0.5	<0.5	<0.5	<0.5	<0.5		<1.0
		Maxxam Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	1.2	1	1	1	1	1	0	1
		Comments										
		Action										
		Result										
V2A	4/7/2010	FIELD BLANK			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<1.0
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	1	1	1	1	1	1	0	1
		Comments										
		Action										
		Result										
V1	5/12/2010	FIELD BLANK			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		6.0
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	1	1	1	1	1	1	0	6
		Comments										Conductivity value > PQL and correctly entered into emLine.
		Action										Let Value Stand
		Result										High blank value remains.

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit, or >1 pH unit difference from DI Water)




Table D-14: Vangorda Creek Drainage Water Quality  
2010 QA/QC Field and Lab Blanks - General Parameters

Station	Date	Sample Type	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3 mg/L	CaCO3-d mg/L	Cl-d mg/L	CO3 mg/L	Colour TCU	COND µmho/cm
V15	5/18/2010	FIELD BLANK	<0.5	1	1.20	<0.5		<0.5	<0.5	<0.5		<1.0
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	1	1.4	2.4	1	0	1	1	1	0	1
		Comments										
		Action										
		Result										
V15	15/06/2010	FIELD BLANK	<0.5	21	5.90	<0.5		120		<0.5		320.0
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	1	42.8	11.8	1	0	240	0	1	0	320
		Comments	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.
		Action	Change Value	Change Value	Change Value	Change Value	Change Value	Change Value	Change Value	Change Value	Change Value	Change Value
		Result	Value changed, see results below.	Value changed, see results below.	Value changed, see results below.	Value changed, see results below.	Value changed, see results below.	Value changed, see results below.	Value changed, see results below.	Value changed, see results below.	Value changed, see results below.	Value changed, see results below.
V15 Corrected	15/06/2010	FIELD BLANK	<0.5	<0.5	0.60	<0.5		<0.5		<0.5		<1
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	1	1	1.2	1	0	1	0	1	0	1
		Comments										
		Action										
		Result										
V8	17/06/2010	FIELD BLANK			0.80	<0.5	<0.5	<0.5		<0.5		2.0
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	1.6	1	1	1	0	1	0	2
		Comments										
		Action										
		Result										
V24	29/06/2010	FIELD BLANK			1.30	<0.5	<0.5	<0.5		<0.5		<1
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	2.6	1	1	1	0	1	0	1
		Comments										
		Action										
		Result										
V2A	7/22/2010	FIELD BLANK			1.40	<0.5	<0.5	<0.5	<0.5	<0.5		<1
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	2.8	1	1	1	1	1	0	1
		Comments										
		Action										
		Result										

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit, or >1 pH unit difference from DI Water)

Table D-14: Vangorda Creek Drainage Water Quality  
2010 QA/QC Field and Lab Blanks - General Parameters

Station	Date	Sample Type	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3 mg/L	CaCO3-d mg/L	Cl-d mg/L	CO3 mg/L	Colour TCU	COND µmho/cm
LCD	8/4/2010	FIELD BLANK			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	1	1	1	1	1	1	0	1
		Comments										
		Action										
		Result										
LCD	9/7/2010	FIELD BLANK			0.60	<0.5			<0.5	<0.5		<1
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	1.2	1	0	0	1	1	0	1
		Comments										
		Action										
		Result										
LCD Retest	9/7/2010	FIELD BLANK										
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	0	0	0	0	0	0	0	0
		Comments										
		Action										
		Result										
V23	9/7/2010	FIELD BLANK			<0.5	<0.5	<0.5	1	<0.5	<0.5		2.0
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	1	1	1	2.2	1	1	0	2
		Comments										
		Action										
		Result										
V15	9/7/2010	FIELD BLANK	<0.5	1	<0.5	<0.5		2	<0.5	<0.5		4.0
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	1	1.2	1	1	0	4.8	1	1	0	4
		Comments										
		Action										
		Result										
MOOSE SEEP	9/23/2010	FIELD BLANK	<0.5	<0.5	0.80	<0.5		1	<0.5	<0.5		2.0
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	1	1	1.6	1	0	2.8	1	1	0	2
		Comments										
		Action										
		Result										

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit, or >1 pH unit difference from DI Water)

Station	Date	Sample Type	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3 mg/L	CaCO3-d mg/L	Cl-d mg/L	CO3 mg/L	Colour TCU	COND µmho/cm
V4	10/5/2010	FIELD BLANK			1.50	<0.5	<0.5	<0.5	<0.5	<0.5		2.0
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	3	1	1	1	1	1	0	2
		Comments										
		Action										
		Result										
V16	10/6/2010	FIELD BLANK	<0.5	28	1.40	<0.5		<0.5	<0.5	<0.5		6.0
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	1	56	2.8	1	0	1	1	1	0	6
		Comments		Blank concentration > PQL and correctly entered into emLine.								Blank concentration > PQL and correctly entered into emLine.
		Action		Let Value Stand								Let Value Stand
		Result		Retest request would be filed past hold time. Discrepancy between values remains.								High blank value remains.
MOOSE SEEP	10/21/2010	FIELD BLANK	<0.5	<0.5	<0.5	<0.5		2	<0.5	<0.5		<1
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	1	1	1	1	0	4.2	1	1	0	1
		Comments										
		Action										
		Result										
V27	11/1/2010	FIELD BLANK			1.30	<0.5	<0.5	<0.5	<0.5	<0.5		<1
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	2.6	1	1	1	1	1	0	1
		Comments										
		Action										
		Result										
V2	11/4/2010	FIELD BLANK			1.30	<0.5	<0.5	<0.5	<0.5	<0.5	<5	3.0
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	2.6	1	1	1	1	1	10	3
		Comments									Blank concentration not > PQL (detection limit for field blank higher than that used for DI water). Therefore, comparison not valid in this case.	
		Action									Let Value Stand	
		Result										

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit, or >1 pH unit difference from DI Water)



Station	Date	Sample Type	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3 mg/L	CaCO3-d mg/L	Cl-d mg/L	CO3 mg/L	Colour TCU	COND µmho/cm
V27	12/1/2010	FIELD BLANK			1.00	<0.5	<0.5	<0.5	<0.5	<0.5		2.0
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	2	1	1	1	1	1	0	2
		Comments										
		Action										
		Result										
V15	12/1/2010	FIELD BLANK	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5		2.0
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	1	1	1	1	0	1	1	1	0	2
		Comments										
		Action										
		Result										
V22	12/16/2010	FIELD BLANK			0.70	<0.5	<0.5	<0.5	<0.5	<0.5		<1
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
		Times greater than DI water	0	0	1.4	1	1	1	1	1	0	1
		Comments										
		Action										
		Result										

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit, or >1 pH unit difference from DI Water)

Station	Date	Sample Type	DOC mg/L	HCO3 mg/L	NH3 mg/L	OH mg/L	pH	SO4-d mg/L	TDS mg/L	TOC mg/L	TSS mg/L	TURB NTU
V2	1/7/2010	FIELD BLANK	<0.5	<0.5	<0.01	<0.5	5.70	<0.5	<10.0	<0.5	<1.0	
		Maxxam Deionized Water	<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
		Times greater than DI water	1	1	2	1	0.25	1	1	1	0.25	0
		Comments										
		Action										
		Result										
MOOSE SEEP	2/3/2010	FIELD BLANK		0.90		<0.5	6.00	<0.5			<1.0	
		Maxxam Deionized Water	<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
		Times greater than DI water	0	1.8	0	1	0.05	1	0	0	0.25	0
		Comments										
		Action										
		Result										
V22	3/4/2010	LAB BLANK		<0.5	<0.01	<0.5	5.60	<0.5	<10.0			
		Denison Deionized Water	<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
		Times greater than DI water	0	1	2	1	0.35	1	1	0	0	0
		Comments										
		Action										
		Result										
V22	3/4/2010	LAB BLANK		1.30	<0.01	<0.5	6.20	<0.5	12.00			
		Maxxam Deionized Water	<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
		Times greater than DI water	0	2.6	2	1	0.25	1	1.2	0	0	0
		Comments										
		Action										
		Result										
V22	3/4/2010	FIELD BLANK		<0.5	<0.01	<0.5	5.40	<0.5	<10.0			
		Denison Deionized Water	<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
		Times greater than DI water	0	1	2	1	0.55	1	1	0	0	0
		Comments										
		Action										
		Result										
V22	3/4/2010	FIELD BLANK		0.70	<0.01	<0.5	5.50	<0.5	<10.0			
		Maxxam Deionized Water	<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
		Times greater than DI water	0	1.4	2	1	0.45	1	1	0	0	0
		Comments										
		Action										
		Result										
V2A	4/7/2010	FIELD BLANK	1.2	<0.5	<0.01	<0.5	5.20	<0.5	20.00	<0.5	<1.0	
		Deionized Water	<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
		Times greater than DI water	2.4	1	2	1	0.75	1	2	1	0.25	0
		Comments										
		Action										
		Result										
V1	5/12/2010	FIELD BLANK	0.8	<0.5	0.02	<0.5	4.70	<0.5	<10.0	0.90	<1.0	
		Deionized Water	<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
		Times greater than DI water	1.6	1	4	1	1.25	1	1	1.8	0.25	0
		Comments					pH value correctly entered into emLine. However, difference between values > 1.					
		Action					Let Value Stand					
		Result					Retest not requested because result would be obtained on water past hold time.					

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit, or >1 pH unit difference from DI Water)

Station	Date	Sample Type	DOC mg/L	HCO3 mg/L	NH3 mg/L	OH mg/L	pH	SO4-d mg/L	TDS mg/L	TOC mg/L	TSS mg/L	TURB NTU
V15	5/18/2010	FIELD BLANK		1.50		<0.5	5.90	1.0			<1.0	
	Deionized Water		<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
	Times greater than DI water		0	3	0	1	0.05	2	0	0	0.25	0
	Comments											
	Action											
	Result											
V15	15/06/2010	FIELD BLANK		7.20		<0.5	6.70	150.0			2	
	Deionized Water		<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
	Times greater than DI water		0	14.4	0	1	0.75	300	0	0	0.5	0
	Comments		Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.	Data incorrectly entered into emLine. A30 duplicate data entered into emLine as V15 blank data.
	Action		Change Value	Change Value	Change Value	Change Value	Change Value	Change Value	Change Value	Change Value	Change Value	Change Value
	Result		Value changed, see results below.	Value changed, see results below.	Value changed, see results below.	Value changed, see results below.	Value changed, see results below.	Value changed, see results below.	Value changed, see results below.	Value changed, see results below.	Value changed, see results below.	Value changed, see results below.
V15 Corrected	15/06/2010	FIELD BLANK		0.80		<0.5	5.30	<0.5			<1	
	Deionized Water		<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
	Times greater than DI water		0	1.6	0	1	0.65	1	0	0	0.25	0
	Comments											
	Action											
	Result											
V8	17/06/2010	FIELD BLANK	<0.5	1.00	<0.05	<0.5	5.92	1.0	<10	<0.5	<1	
	Deionized Water		<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
	Times greater than DI water		1	2	10	1	0.03	2	1	1	0.25	0
	Comments				Blank concentration not > PQL (detection limit for field blank higher than that used for DI water, lab noted "RDL raised due to sample matrix interference).							
	Action				Let Value Stand							
	Result											
V24	29/06/2010	FIELD BLANK		1.50	<0.05	<0.5	5.87	<0.5	<10		<1	
	Deionized Water		<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
	Times greater than DI water		0	3	10	1	0.08	1	1	0	0.25	0
	Comments				Blank concentration not > PQL (detection limit for field blank higher than that used for DI water, lab noted "RDL raised due to sample matrix interference).							
	Action				Let Value Stand							
	Result											
V2A	7/22/2010	FIELD BLANK	<0.5	1.70	<0.05	<0.5	5.79	<0.5	<10	<0.5	<1	
	Deionized Water		<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
	Times greater than DI water		1	3.4	10	1	0.16	1	1	1	0.25	0
	Comments				Blank concentration not > PQL (detection limit for field blank higher than that used for DI water, lab noted "RDL raised due to sample matrix interference).							
	Action				Let Value Stand							
	Result											

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit, or >1 pH unit difference from DI Water)

Table D-14: Vangorda Creek Drainage Water Quality  
2010 QA/QC Field and Lab Blanks - General Parameters

Station	Date	Sample Type	DOC mg/L	HCO3 mg/L	NH3 mg/L	OH mg/L	pH	SO4-d mg/L	TDS mg/L	TOC mg/L	TSS mg/L	TURB NTU
LCD	8/4/2010	FIELD BLANK		<0.5	<0.05	<0.5	5.06	0.6	<10		<1	
	Deionized Water		<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
	Times greater than DI water		0	1	10	1	0.89	1.2	1	0	0.25	0
	Comments				Blank concentration not > PQL (detection limit for field blank higher than that used for DI water, lab noted "RDL raised due to sample matrix interference).							
	Action				Let Value Stand							
	Result											
LCD	9/7/2010	FIELD BLANK		0.70	0.30	<0.5	5.47	1.3	<10		<1	
	Deionized Water		<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
	Times greater than DI water		0	1.4	60	1	0.48	2.6	1	0	0.25	0
	Comments				Blank concentration > PQL and correctly entered into emLine. Lab noted that "RDL raised due to sample matrix interference."							
	Action				Request Retest							
	Result				Retest performed, see results below.							
LCD Retest	9/7/2010	FIELD BLANK			<0.005		-					
	Deionized Water		<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
	Times greater than DI water		0	0	1	0	#VALUE!	0	0	0	0	0
	Comments				Retest for September 7 LCD blank.							
	Action				Let Value Stand							
	Result				New blank value entered into emLine.							
V23	9/7/2010	FIELD BLANK		<0.5	0.23	<0.5	5.56	<0.5	<10		<1	
	Deionized Water		<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
	Times greater than DI water		0	1	46	1	0.39	1	1	0	0.25	0
	Comments				Blank concentration not > PQL (detection limit for field blank higher than that used for DI water, lab noted "RDL raised due to sample matrix interference). Therefore, comparison not valid in this case.							
	Action				Let Value Stand							
	Result				High blank value remains.							
V15	9/7/2010	FIELD BLANK		<0.5		<0.5	5.30	1.0			<1	
	Deionized Water		<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
	Times greater than DI water		0	1	0	1	0.65	2	0	0	0.25	0
	Comments											
	Action											
	Result											
MOOSE SEEP	9/23/2010	FIELD BLANK		0.90		<0.5	5.50	0.6			<1	
	Deionized Water		<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
	Times greater than DI water		0	1.8	0	1	0.45	1.2	0	0	0.25	0
	Comments											
	Action											
	Result											

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit, or >1 pH unit difference from DI Water)

Station	Date	Sample Type	DOC mg/L	HCO3 mg/L	NH3 mg/L	OH mg/L	pH	SO4-d mg/L	TDS mg/L	TOC mg/L	TSS mg/L	TURB NTU
V4	10/5/2010	FIELD BLANK	0.8	1.90	<0.05	<0.5	5.90	0.9	<10	<0.5	<1	0.20
Deionized Water			<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
Times greater than DI water			1.6	3.8	10	1	0.05	1.8	1	1	0.25	2
Comments			Blank concentration not > PQL (detection limit for field blank higher than that used for DI water, lab noted "RDL raised due to sample matrix interference). Therefore, comparison not valid in this case.									
Action			Let Value Stand									
Result												
V16	10/6/2010	FIELD BLANK		1.70		<0.5	5.23	0.7			<1	
Deionized Water			<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
Times greater than DI water			0	3.4	0	1	0.72	1.4	0	0	0.25	0
Comments												
Action												
Result												
MOOSE SEEP	10/21/2010	FIELD BLANK		<0.5		<0.5	5.99	0.9			<1	
Deionized Water			<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
Times greater than DI water			0	1	0	1	0.04	1.8	0	0	0.25	0
Comments												
Action												
Result												
V27	11/1/2010	FIELD BLANK	<0.5	1.60	0.01	<0.5	5.78	3.0	<10	<0.5	<1	<0.1
Deionized Water			<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
Times greater than DI water			1	3.2	2.4	1	0.17	6	1	1	0.25	1
Comments			Blank concentration > PQL and correctly entered into emLine.									
Action			Let Value Stand									
Result			High blank value remains.									
V2	11/4/2010	FIELD BLANK	<0.5	1.50	0.04	<0.5	5.93	5.0	<10	<0.5	<1	<0.2
Deionized Water			<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
Times greater than DI water			1	3	7	1	0.02	10	1	1	0.25	2
Comments			Blank concentration > PQL and correctly entered into emLine.									
Action			Let Value Stand									
Result			High blank value remains.									

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit, or >1 pH unit difference from DI Water)

Station	Date	Sample Type	DOC mg/L	HCO3 mg/L	NH3 mg/L	OH mg/L	pH	SO4-d mg/L	TDS mg/L	TOC mg/L	TSS mg/L	TURB NTU
V27	12/1/2010	FIELD BLANK	<0.5	1.20	<0.05	<0.5	5.93	0.8	<10	<0.5	<1	
Deionized Water			<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
Times greater than DI water			1	2.4	10	1	0.02	1.6	1	1	0.25	0
Comments			Blank concentration not > PQL (detection limit for field blank higher than that used for DI water, lab noted "RDL raised due to sample matrix interference). Therefore, comparison not valid in this case.									
Action			Let Value Stand									
Result												
V15	12/1/2010	FIELD BLANK		<0.5		<0.5	5.55	1.3			<1	
Deionized Water			<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
Times greater than DI water			0	1	0	1	0.40	2.6	0	0	0.25	0
Comments												
Action												
Result												
V22	12/16/2010	FIELD BLANK		0.80	<0.05	<0.5	5.58	<0.5	<10		<4	
Deionized Water			<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
Times greater than DI water			0	1.6	10	1	0.37	1	1	0	1	0
Comments			Blank concentration not > PQL (detection limit for field blank higher than that used for DI water, lab noted "RDL raised due to sample matrix interference). Therefore, comparison not valid in this case.									
Action			Let Value Stand									
Result												

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit, or >1 pH unit difference from DI Water)

Table D-15: Vangorda Creek Drainage Water Quality  
2010 QA/QC Splits - Dissolved Metals



Station	Date	Sample Type	Ag-d µg/L	Al-d µg/L	As-d µg/L	Ba-d µg/L	B-d µg/L	Be-d µg/L	Bi-d µg/L	Ca-d mg/L	Cd-d µg/L	Co-d µg/L	Cr-d µg/L	Cu-d µg/L	Fe-d µg/L	K-d mg/L	Li-d mg/L	Mg-d mg/L
V2	1/7/2010	FIELD BLANK	<0.005	0.70	<0.02	0.110	<50.0	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1.0	<0.05	<0.0005	<0.05
		Maxxam Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	1	3.5	1	5.5	1	1	1	1	1	1	1	1	1	1	0.001	1
		Comments				Blank concentration > PQL and correctly entered into emLine. Lab noted that "Dissolved greater than total. Retest yields similar results."												
		Action				Let Value Stand												
		Result				High blank value remains.												
MOOSE SEEP	2/3/2010	FIELD BLANK	<0.005	0.60	<0.02	0.040	<50.0	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1.0	<0.05	<0.0005	<0.05
		Maxxam Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	1	3	1	2	1	1	1	1	1	1	1	1	1	1	0.001	1
		Comments																
		Action																
		Result																
V22	3/4/2010	LAB BLANK	<0.005	0.60	<0.02	0.210	<50.0	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1.0	<0.05	<0.0005	<0.05
		Denison Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	1	3	1	10.5	1	1	1	1	1	1	1	1	1	1	0.001	1
		Comments				Blank concentration > PQL and correctly entered into emLine. Lab noted that "Dissolved greater than total. Retest yields similar results."												
		Action				Let Value Stand												
		Result				High blank value remains.												
V22	3/4/2010	LAB BLANK	<0.005	0.30	<0.02	<0.02	<50.0	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1.0	<0.05	<0.0005	<0.05
		Maxxam Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	1	1.5	1	1	1	1	1	1	1	1	1	1	1	1	0.001	1
		Comments																
		Action																
		Result																
V22	3/4/2010	FIELD BLANK	<0.005	0.30	<0.02	<0.02	<50.0	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1.0	<0.05	<0.0005	<0.05
		Denison Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	1	1.5	1	1	1	1	1	1	1	1	1	1	1	1	0.001	1
		Comments																
		Action																
		Result																
V22	3/4/2010	FIELD BLANK	<0.005	0.40	<0.02	<0.02	<50.0	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	0.0600	<1.0	<0.05	<0.0005	<0.05
		Maxxam Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	1	2	1	1	1	1	1	1	1	1	1	1.2	1	1	0.001	1
		Comments																
		Action																
		Result																
V2A	4/7/2010	FIELD BLANK	<0.005	0.80	<0.02	0.100	<50.0	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1.0	<0.05	<0.0005	<0.05
		Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	1	4	1	5	1	1	1	1	1	1	1	1	1	1	0.001	1
		Comments				Blank concentration > PQL and correctly entered into emLine.												
		Action				Let Value Stand												
		Result				High blank value remains.												
V1	5/12/2010	FIELD BLANK	<0.005	1.00	<0.02	0.150	<50.0	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1.0	<0.05	<0.0005	<0.05
		Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	1	5	1	7.5	1	1	1	1	1	1	1	1	1	1	0.001	1
		Comments				Blank concentration > PQL and correctly entered into emLine. Lab noted that "Dissolved metals greater than total metals for some parameters; analysis from separate field prepared sample bottles."												
		Action				Let Value Stand												
		Result				High blank value remains.												
V1 Retest	5/12/2010	FIELD BLANK	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Comments																
		Action																
		Result																
V15	5/18/2010	FIELD BLANK	<0.005	1.90	<0.02	0.140	<50.0	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	0.0600	4.00	<0.05	<0.0005	<0.05
		Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	1	9.5	1	7	1	1	1	1	1	1	1	1.2	4	1	0.001	1
		Comments				Blank concentration > PQL and correctly entered into emLine.												
		Action				Let Value Stand												
		Result				High blank value remains.												

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit)





Table D-15: Vangorda Creek Drainage Water Quality  
2010 QA/QC Splits - Dissolved Metals

Station	Date	Sample Type	Ag-d µg/L	Al-d µg/L	As-d µg/L	Ba-d µg/L	B-d µg/L	Be-d µg/L	Bi-d µg/L	Ca-d mg/L	Cd-d µg/L	Co-d µg/L	Cr-d µg/L	Cu-d µg/L	Fe-d µg/L	K-d mg/L	Li-d mg/L	Mg-d mg/L
Action			Let Value Stand															
Result			Let Value Stand															
			Blank value < PQL															
			Blank value is a detection limit higher than that of DI water															
			Blank value > PQL and < retest limit															
			Blank value > retest limit (20X DI Water Detection Limit)															
LCD	9/7/2010	FIELD BLANK	<0.02	<0.1	<0.1	<1	<50	<0.1	<1	<0.05	<0.01	<0.5	<1	<0.2	<5	<0.05	<0.005	<0.05
Deionized Water			<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
Times greater than DI water			4	15	5	50	1	10	200	1	2	100	10	4	5	1	0.01	1
Comments			Blank concentration not > PQL (detection limit for field blank higher than that used for DI water). Therefore, comparison not valid in this case.															
Action			Let Value Stand															
Result			Let Value Stand															
V23	9/7/2010	FIELD BLANK	<0.005	3.40	0.09	0.410	<50	<0.01	<0.005	0.24	0.01	0.0490	<0.1	<0.05	3.00	<0.05	<0.0005	0.13
Deionized Water			<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.05	<0.1	<0.05	<1	<0.05	<0.5	<0.05
Times greater than DI water			1	17	4.5	20.5	1	1	1	4.8	1.6	9.8	1	1	3	1	0.001	2.6
Comments			Blank concentration > PQL and correctly entered into emLine. Lab noted that "Dissolved metals greater than total metals for some parameters; analysis from separate field prepared sample bottles."															
Action			Let Value Stand															
Result			High blank value remains.															
V15	9/7/2010	FIELD BLANK	<0.005	2.20	<0.02	0.460	<50	<0.01	<0.005	0.40	<0.005	0.0080	<0.1	0.2200	3.00	0.07	<0.0005	0.34
Deionized Water			<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.05	<0.1	<0.05	<1	<0.05	<0.5	<0.05
Times greater than DI water			1	11	1	23	1	1	1	8	1	1.6	1	4.4	3	1.4	0.001	6.8
Comments			Blank concentration > PQL and correctly entered into emLine.															
Action			Request Retest															
Result			Retest performed, see results below.															
V15 Retest	9/7/2010	FIELD BLANK	<0.005	5.80	<0.09	1.320	<50	<0.01	<0.005	0.40	<0.005	0.0090	<0.1	0.2700	7.00	0.07	<0.0005	0.37
Deionized Water			<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.05	<0.1	<0.05	<1	<0.05	<0.5	<0.05
Times greater than DI water			1	29	4.5	66	1	1	1	8	1	1.8	1	5.4	7	1.4	0.001	7.4
Comments			Retest for September 7 V15 blank. Blank concentration > PQL and correctly entered into emLine.															
Action			Let Value Stand															
Result			New blank value entered into emLine.															
MOOSE SEEP	9/23/2010	FIELD BLANK	0.0260	1.40	<0.02	0.220	<50	<0.01	<0.005	0.29	0.01	0.0230	<0.1	0.3300	16.00	0.37	0.003	0.16
Deionized Water			<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.05	<0.1	<0.05	<1	<0.05	<0.5	<0.05
Times greater than DI water			5.2	7	1	11	1	1	1	5.8	2	4.6	1	6.6	16	7.4	0.005	3.2
Comments			Blank concentration > PQL and correctly entered into emLine.															
Action			Let Value Stand															
Result			High blank value remains.															
V4	10/5/2010	FIELD BLANK	<0.005	1.40	<0.02	0.320	<50	<0.01	<0.005	0.13	0.01	0.0130	<0.1	0.1400	2.00	0.06	<0.0005	<0.05
Deionized Water			<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.05	<0.1	<0.05	<1	<0.05	<0.5	<0.05
Times greater than DI water			1	7	1	16	1	1	1	2.6	1.8	2.6	1	2.8	2	1.2	0.001	1
Comments			Blank concentration > PQL and correctly entered into emLine.															
Action			Let Value Stand															
Result			High blank value remains.															
V16	10/6/2010	FIELD BLANK	<0.005	2.10	<0.02	0.040	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	0.0600	3.00	<0.05	<0.0005	<0.05
Deionized Water			<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
Times greater than DI water			1	10.5	1	2	1	1	1	1	1	1	1	1.2	3	1	0.001	1
Comments			Blank concentration > PQL and correctly entered into emLine.															
Action			Let Value Stand															
Result			High blank value remains.															
V16 Retest	10/6/2010	FIELD BLANK	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
Deionized Water			<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
Times greater than DI water			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Comments																		
Action																		
Result																		
MOOSE SEEP	10/21/2010	FIELD BLANK	<0.005	3.90	<0.02	0.910	<50	<0.01	<0.005	0.42	0.02	0.0410	<0.1	0.6500	10.00	0.63	0.003	0.25
Deionized Water			<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.05	<0.1	<0.05	<1	<0.05	<0.5	<0.05
Times greater than DI water			1	19.5	1	45.5	1	1	1	8.4	3.8	8.2	1	13	10	12.6	0.0056	5

Table D-15: Vangorda Creek Drainage Water Quality  
2010 QA/QC Splits - Dissolved Metals

Station	Date	Sample Type	Ag-d µg/L	Al-d µg/L	As-d µg/L	Ba-d µg/L	B-d µg/L	Be-d µg/L	Bi-d µg/L	Ca-d mg/L	Cd-d µg/L	Co-d µg/L	Cr-d µg/L	Cu-d µg/L	Fe-d µg/L	K-d mg/L	Li-d mg/L	Mg-d mg/L		
<b>Comments</b>			Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.		
<b>Action</b>			Request Retest			Request Retest			Request Retest			Request Retest			Request Retest			Request Retest		
<b>Result</b>			Retest performed, see results below.			Retest performed, see results below.			Retest performed, see results below.			Retest performed, see results below.			Retest performed, see results below.			Retest performed, see results below.		
<b>Comments</b>			Blank value < PQL			Blank value is a detection limit higher than that of DI water			Blank value > PQL and < retest limit			Blank value > retest limit (20X DI Water Detection Limit)								
MOOSE SEEP R	10/21/2010	FIELD BLANK	<0.005	6.20	<0.03	0.950	<50	<0.01	<0.005	0.42	0.02	0.0510	<0.1	0.6200	13.00	0.63	0.003	0.25		
<b>Deionized Water</b>			<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
<b>Times greater than DI water</b>			1	3.1	1.5	47.5	1	1	1	8.4	3.4	10.2	1	12.4	13	12.6	0.062	5		
<b>Comments</b>			Retest for October 21 MOOSE SEEP blank. Blank concentration > PQL and correctly entered into emLine.			Retest for October 21 MOOSE SEEP blank. Blank concentration > PQL and correctly entered into emLine.			Retest for October 21 MOOSE SEEP blank. Blank concentration > PQL and correctly entered into emLine.			Retest for October 21 MOOSE SEEP blank. Blank concentration > PQL and correctly entered into emLine.			Retest for October 21 MOOSE SEEP blank. Blank concentration > PQL and correctly entered into emLine.			Retest for October 21 MOOSE SEEP blank. Blank concentration > PQL and correctly entered into emLine.		
<b>Action</b>			Let Value Stand			Let Value Stand			Let Value Stand			Let Value Stand			Let Value Stand			Let Value Stand		
<b>Result</b>			New blank value entered into emLine.			New blank value entered into emLine.			New blank value entered into emLine.			New blank value entered into emLine.			New blank value entered into emLine.			New blank value entered into emLine.		
V27	11/1/2010	FIELD BLANK	<0.005	0.70	<0.02	0.080	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	0.0600	<1	<0.05	<0.0005	<0.05		
<b>Deionized Water</b>			<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
<b>Times greater than DI water</b>			1	3.5	1	4	1	1	1	1	1	1	1	1.2	1	1	0.001	1		
<b>Comments</b>																				
<b>Action</b>																				
<b>Result</b>																				
V2	11/4/2010	FIELD BLANK	<0.005	2.30	<0.02	0.200	<50	<0.01	<0.005	<0.05	0.01	0.0170	<0.1	0.2400	5.00	<0.05	<0.0005	<0.05		
<b>Deionized Water</b>			<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
<b>Times greater than DI water</b>			1	11.5	1	10	1	1	1	1	1.4	3.4	1	4.8	5	1	0.001	1		
<b>Comments</b>			Blank concentration > PQL and correctly entered into emLine. Lab noted that "Dissolved greater than total. Reanalysis yields similar results."			Blank concentration > PQL and correctly entered into emLine. Lab noted that "Dissolved greater than total. Reanalysis yields similar results."									Blank concentration equal to PQL and correctly entered into emLine.					
<b>Action</b>			Let Value Stand			Let Value Stand									Let Value Stand					
<b>Result</b>			High blank value remains.			High blank value remains.									High blank value remains.					
V27	12/1/2010	FIELD BLANK	0.0090	1.00	<0.02	0.090	<50	<0.01	0.01	0.06	0.01	0.0080	<0.1	0.4000	<1	0.20	<0.0005	<0.05		
<b>Deionized Water</b>			<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
<b>Times greater than DI water</b>			1.8	5	1	4.5	1	1	1.4	1.2	1.2	1.6	1	8	1	4	0.001	1		
<b>Comments</b>			Blank concentration equal to PQL and correctly entered into emLine.												Blank concentration > PQL and correctly entered into emLine. Lab noted that "Dissolved greater than total. Reanalysis yields similar results."					
<b>Action</b>			Let Value Stand												Let Value Stand					
<b>Result</b>			High blank value remains.												High blank value remains.					
V15	12/1/2010	FIELD BLANK	<0.005	0.50	<0.02	0.030	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.0005	<0.05		
<b>Deionized Water</b>			<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
<b>Times greater than DI water</b>			1	2.5	1	1.5	1	1	1	1	1	1	1	1	1	1	0.001	1		
<b>Comments</b>																				
<b>Action</b>																				
<b>Result</b>																				
V15 Retest	12/1/2010	FIELD BLANK	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
<b>Deionized Water</b>			<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
<b>Times greater than DI water</b>			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<b>Comments</b>																				
<b>Action</b>																				
<b>Result</b>																				
V22	12/16/2010	FIELD BLANK	<0.005	0.70	<0.02	0.050	<50	<0.01	<0.005	<0.05	<0.005	0.0150	<0.1	<0.05	<1	<0.05	<0.0005	<0.05		
<b>Deionized Water</b>			<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
<b>Times greater than DI water</b>			1	3.5	1	2.5	1	1	1	1	1	3	1	1	1	1	0.001	1		
<b>Comments</b>																				
<b>Action</b>																				
<b>Result</b>																				

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit)





Table D-15: Vangorda Creek Drainage Water Quality 2010 QA/QC Splits - Dissolved Metals



Table with columns: Station, Date, Sample Type, Mn-d (µg/L), Mo-d (µg/L), Na-d (mg/L), Ni-d (µg/L), Pb-d (µg/L), Sb-d (µg/L), Se-d (µg/L), Si-d (µg/L), Sn-d (µg/L), Sr-d (µg/L), Ti-d (µg/L), U-d (µg/L), V-d (µg/L), Zn-d (µg/L), Zr-d (µg/L). Rows include data for stations LCD, V23, V15, V15 Retest, MOOSE SEEP, V4, V16, and MOOSE SEEP, detailing deionized water results and times greater than DI water.

Table D-15: Vangorda Creek Drainage Water Quality  
2010 QA/QC Splits - Dissolved Metals

Station	Date	Sample Type	Mn-d µg/L	Mo-d µg/L	Na-d mg/L	Ni-d µg/L	Pb-d µg/L	Sb-d µg/L	Se-d µg/L	Si-d µg/L	Sn-d µg/L	Sr-d µg/L	Ti-d µg/L	Ti-d µg/L	U-d µg/L	V-d µg/L	Zn-d µg/L	Zr-d µg/L	
		Comments	Blank concentration > PQL and correctly entered into emLine.																
		Action	Request Retest																
		Result	Retest performed, see results below.																
			Blank value < PQL																
			Blank value is a detection limit higher than that of DI water																
			Blank value > PQL and < retest limit																
			Blank value > retest limit (20X DI Water Detection Limit)																
MOOSE SEEP R	10/21/2010	FIELD BLANK	6.400	<0.05	0.28	0.210	2.1100	<0.03	<0.04	<100	0.02	1.60	<0.5	<0.002	0.0180	<0.2	12.600	<0.1	
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	
		Times greater than DI water	128	1	5.6	10.5	422	1.5	1	1	2	32	1	1	9	1	128	1	
		Comments	Retest for October 21 MOOSE SEEP blank. Blank concentration > PQL and correctly entered into emLine.																
		Action	Let Value Stand																
		Result	New blank value entered into emLine.																
V27	11/1/2010	FIELD BLANK	<0.05	<0.05	<0.05	0.090	0.0520	<0.02	<0.04	<100	0.02	0.21	<0.5	<0.002	0.0280	<0.2	0.400	<0.1	
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	
		Times greater than DI water	1	1	1	4.5	10.4	1	1	1	2	4.2	1	1	14	1	4	1	
		Comments	Blank concentration > PQL and correctly entered into emLine.																
		Action	Let Value Stand																
		Result	High blank value remains.																
V2	11/4/2010	FIELD BLANK	1.260	<0.05	<0.05	0.140	0.4120	<0.02	<0.04	<100	<0.01	0.13	<0.5	<0.002	0.0060	<0.2	7.100	<0.1	
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	
		Times greater than DI water	25.2	1	1	7	82.4	1	1	1	1	2.6	1	1	3	1	71	1	
		Comments	Blank concentration > PQL and correctly entered into emLine. Lab noted that "Dissolved greater than total. Reanalysis yields similar results."																
		Action	Let Value Stand																
		Result	High blank value remains. Retest not requested because lab already reanalyzed.																
V27	12/1/2010	FIELD BLANK	0.970	<0.05	0.15	0.170	0.2450	<0.02	<0.04	<100	<0.01	0.21	<0.5	<0.002	0.0490	<0.2	2.700	<0.1	
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	
		Times greater than DI water	19.4	1	3	8.5	49	1	1	1	1	4.2	1	1	24.5	1	27	1	
		Comments	Blank concentration > PQL and correctly entered into emLine. Lab noted that "Dissolved greater than total. Reanalysis yields similar results."																
		Action	Let Value Stand																
		Result	High blank value remains. Retest not requested because lab already reanalyzed.																
V15	12/1/2010	FIELD BLANK	0.090	<0.05	<0.05	<0.02	0.0290	<0.02	<0.04	<100	<0.01	0.12	<0.5	<0.002	0.0430	<0.2	0.500	<0.1	
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	
		Times greater than DI water	1.8	1	1	1	5.8	1	1	1	1	2.4	1	1	21.5	1	5	1	
		Comments	Blank concentration > PQL and correctly entered into emLine.																
		Action	Let Value Stand																
		Result	High blank value remains. Retest performed, see results below.																
V15 Retest	12/1/2010	FIELD BLANK	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	0.0360	<0.2	<0.1	<0.1	
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	
		Times greater than DI water	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	
		Comments	Retest for December 1 V15 blank. Blank concentration > PQL and correctly entered into emLine.																
		Action	Let Value Stand																
		Result	New blank value entered into emLine.																
V22	12/16/2010	FIELD BLANK	0.980	<0.05	<0.05	0.070	0.0580	<0.02	<0.04	<100	<0.01	0.18	<0.5	<0.002	0.0530	<0.2	4.200	<0.1	
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	
		Times greater than DI water	19.6	1	1	3.5	11.6	1	1	1	1	3.6	1	1	26.5	1	42	1	
		Comments	Blank concentration > PQL and correctly entered into emLine. Lab noted that "Dissolved greater than total. Reanalysis yields similar results."																
		Action	Let Value Stand																
		Result	High blank value remains. Retest not requested because lab already reanalyzed.																

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit)



Station	Date	Sample Type	Ag µg/L	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Bi µg/L	Ca mg/L	Cd µg/L	Co µg/L	Cr µg/L	Cu µg/L	Fe µg/L	K mg/L	Li mg/L	Mg mg/L		
LCD	8/4/2010	FIELD BLANK	<0.02	6.00	<0.1	<50	<1	<0.1	<1	0.07	0.09	<0.5	<1	<0.2	20.00	<0.05	<0.005	0.06		
		Deionized Water	<0.005	<0.2	<0.02	<50	<0.02	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
		Times greater than DI water	4	30	5	1	50	10	200	1.4	18	100	10	4	20	1	0.01	1.2		
		Comments	Blank value correctly entered into emLine. However concentration not > PQL (detection limit for field blank higher than that used for DI water). Therefore, comparison not valid in this case.			Blank concentration not > PQL (detection limit for field blank higher than that used for DI water). Therefore, comparison not valid in this case.			Blank concentration not > PQL (detection limit for field blank higher than that used for DI water). Therefore, comparison not valid in this case.			Blank concentration not > PQL (detection limit for field blank higher than that used for DI water). Therefore, comparison not valid in this case.			Blank concentration not > PQL (detection limit for field blank higher than that used for DI water). Therefore, comparison not valid in this case.			Blank value correctly entered into emLine. However concentration not > PQL (detection limit for field blank higher than that used for DI water). Therefore, comparison not valid in this case.		
		Action	Let Value Stand			Let Value Stand			Let Value Stand			Let Value Stand			Let Value Stand					
		Result	High blank value remains.									High blank value remains.			High blank value remains.					
LCD Retest	8/4/2010	FIELD BLANK	<0.005	<0.2	<0.02	<50	<0.02	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
		Deionized Water	<0.005	<0.2	<0.02	<50	<0.02	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
		Times greater than DI water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		Comments																		
		Action																		
		Result																		
LCD	9/7/2010	FIELD BLANK	<0.02	4.00	<0.1	<50	<1	<0.1	<1	0.07	0.03	<0.5	<1	<0.2	22.00	<0.05	<0.005	<0.05		
		Deionized Water	<0.005	<0.2	<0.02	<50	<0.02	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
		Times greater than DI water	4	20	5	1	50	10	200	1.4	6	100	10	4	22	1	0.01	1		
		Comments	Blank value correctly entered into emLine. However concentration not > PQL (detection limit for field blank higher than that used for DI water). Therefore, comparison not valid in this case.			Blank concentration not > PQL (detection limit for field blank higher than that used for DI water). Therefore, comparison not valid in this case.			Blank concentration not > PQL (detection limit for field blank higher than that used for DI water). Therefore, comparison not valid in this case.			Blank concentration not > PQL (detection limit for field blank higher than that used for DI water). Therefore, comparison not valid in this case.			Blank concentration not > PQL (detection limit for field blank higher than that used for DI water). Therefore, comparison not valid in this case.			Blank value correctly entered into emLine. However concentration not > PQL (detection limit for field blank higher than that used for DI water). Therefore, comparison not valid in this case.		
		Action	Let Value Stand			Let Value Stand			Let Value Stand			Let Value Stand			Let Value Stand					
		Result	High blank value remains.									High blank value remains.			High blank value remains.					
LCD Retest	9/7/2010	FIELD BLANK	<0.005	<0.2	<0.02	<50	<0.02	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
		Deionized Water	<0.005	<0.2	<0.02	<50	<0.02	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
		Times greater than DI water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		Comments																		
		Action																		
		Result																		
V23	9/7/2010	FIELD BLANK	<0.005	1.40	<0.02	<50	0.080	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.0005	<0.05		
		Deionized Water	<0.005	<0.2	<0.02	<50	<0.02	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
		Times greater than DI water	1	7	1	1	4	1	1	1	1	1	1	1	1	1	0.001	1		
		Comments	Blank concentration > PQL and correctly entered into emLine.																	
		Action	Let Value Stand																	
		Result	High blank value remains.																	
V4	10/5/2010	FIELD BLANK	<0.005	3.10	<0.02	<50	0.980	<0.01	<0.005	0.06	0.01	0.0060	<0.1	0.1400	5.00	<0.05	<0.0005	<0.05		
		Deionized Water	<0.005	<0.2	<0.02	<50	<0.02	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
		Times greater than DI water	1	15.5	1	1	49	1	1	1.2	1.2	1.2	1	2.8	5	1	0.001	1		
		Comments	Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.									Blank concentration equal to PQL and correctly entered into emLine.					
		Action	Let Value Stand			Let Value Stand									Let Value Stand					
		Result	High blank value remains.			High blank value remains. Retest not requested because lab already reanalyzed full suite because dissolved > total for some metals.									High blank value remains.					
V27	11/1/2010	FIELD BLANK	<0.005	0.80	<0.02	<50	0.090	<0.01	<0.005	0.06	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.0005	<0.05		
		Deionized Water	<0.005	<0.2	<0.02	<50	<0.02	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
		Times greater than DI water	1	4	1	1	4.5	1	1	1.2	1	1	1	1	1	1	0.001	1		
		Comments																		
		Action																		
		Result																		
V2	11/4/2010	FIELD BLANK	<0.005	0.70	<0.02	<50	0.070	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.0005	<0.05		
		Deionized Water	<0.005	<0.2	<0.02	<50	<0.02	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05		
		Times greater than DI water	1	3.5	1	1	3.5	1	1	1	1	1	1	1	1	1	0.001	1		
		Comments																		
		Action																		
		Result																		

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit)



Table D-16: Vangorda Creek Drainage Water Quality  
2010 QA/QC Field and Lab Blanks - Total Metals



Station	Date	Sample Type	Ag µg/L	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Bi µg/L	Ca mg/L	Cd µg/L	Co µg/L	Cr µg/L	Cu µg/L	Fe µg/L	K mg/L	Li mg/L	Mg mg/L	
V27	12/1/2010	FIELD BLANK	<0.005	1.00	<0.02	<50	0.040	<0.01	0.02	<0.05	<0.005	<0.005	<0.1	0.0700	<1	<0.05	<0.0005	<0.05	
		Deionized Water	<0.005	<0.2	<0.02	<50	<0.02	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05	
		Times greater than DI water	1	5	1	1	2	1	4.2	1	1	1	1	1.4	1	1	0.001	1	
		Comments	Blank concentration equal to PQL and correctly entered into emLine.																
		Action	Let Value Stand																
		Result	High blank value remains.																
V22	12/16/2010	FIELD BLANK	<0.005	1.70	<0.02	<50	0.060	<0.01	<0.005	<0.05	<0.005	0.0060	<0.1	<0.05	2.00	<0.05	<0.0005	<0.05	
		Deionized Water	<0.005	<0.2	<0.02	<50	<0.02	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05	
		Times greater than DI water	1	8.5	1	1	3	1	1	1	1	1.2	1	1	2	1	0.001	1	
		Comments	Blank concentration equal to PQL and correctly entered into emLine.																
		Action	Let Value Stand																
		Result	High blank value remains.																

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit)



Table D-16: Vangorda Creek Drainage Water Quality  
2010 QA/QC Field and Lab Blanks - Total Metals

Station	Date	Sample Type	Mn µg/L	Mo µg/L	Na mg/L	Ni µg/L	Pb µg/L	Sb µg/L	Se µg/L	Si µg/L	Sn µg/L	Sr µg/L	Ti µg/L	Tl µg/L	U µg/L	V µg/L	Zn µg/L	Zr µg/L
LCD	8/4/2010	FIELD BLANK	34.000	<1	<0.05	<1	0.4000	<0.5	<0.1	<100	<5	<1	<5	<0.05	<0.1	<5	75.000	<0.5
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1
		Times greater than DI water	680	20	1	50	60	25	2.5	1	500	20	10	25	50	25	750	5
		Comments	Blank concentration > PQL and correctly entered into emLine.															
		Action	Request Retest	Let Value Stand		Let Value Stand	Let Value Stand	Let Value Stand			Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Request Retest	Let Value Stand
		Result	Retest performed, see results below.															
LCD Retest	8/4/2010	FIELD BLANK	2.000														7.000	
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1
		Times greater than DI water	40	0	0	0	0	0	0	0	0	0	0	0	0	0	70	0
		Comments	Retest for August 4 LCD blank. Blank value correctly entered into emLine; however, value not > PQL (detection limit for field blank higher than that used for DI water). Therefore, comparison not valid in this case.															
		Action	Let Value Stand															
		Result	New blank value entered into emLine.															
LCD	9/7/2010	FIELD BLANK	17.000	<1	<0.05	<1	<0.2	0.60	<0.1	<100	<5	<1	<5	<0.05	<0.1	<5	46.000	<0.5
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1
		Times greater than DI water	340	20	1	50	40	30	2.5	1	500	20	10	25	50	25	460	5
		Comments	Blank concentration > PQL and correctly entered into emLine.															
		Action	Request Retest	Let Value Stand		Let Value Stand	Let Value Stand	Let Value Stand			Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Request Retest	Let Value Stand
		Result	Retest performed, see results below.															
LCD Retest	9/7/2010	FIELD BLANK	<10														<50	
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1
		Times greater than DI water	200	0	0	0	0	0	0	0	0	0	0	0	0	0	500	0
		Comments	Retest for September 7 LCD blank. Blank concentration not > PQL (detection limit for field blank higher than that used for DI water). Therefore, comparison not valid in this case.															
		Action	Let Value Stand															
		Result	New blank value entered into emLine.															
V23	9/7/2010	FIELD BLANK	0.060	<0.05	<0.05	0.030	0.1810	0.68	<0.04	<100	<0.01	0.12	<0.5	<0.002	0.0240	<0.2	0.700	<0.1
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1
		Times greater than DI water	1.2	1	1	1.5	36.2	34	1	1	1	2.4	1	1	12	1	7	1
		Comments	Blank concentration > PQL and correctly entered into emLine.															
		Action	Let Value Stand															
		Result	High blank value remains. Retest not requested because lab already reanalyzed full suite because dissolved > total for some metals.															
V4	10/5/2010	FIELD BLANK	0.550	<0.05	<0.05	0.040	0.4840	<0.02	<0.04	<100	<0.01	0.20	<0.5	<0.002	0.0120	<0.2	2.800	<0.1
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1
		Times greater than DI water	11	1	1	2	96.8	1	1	1	1	4	1	1	6	1	28	1
		Comments	Blank concentration > PQL and correctly entered into emLine.															
		Action	Let Value Stand															
		Result	High blank value remains.															
V27	11/1/2010	FIELD BLANK	0.080	<0.05	<0.05	<0.02	0.0700	<0.02	<0.04	<100	<0.01	0.14	<0.5	<0.002	0.0250	<0.2	0.300	<0.1
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1
		Times greater than DI water	1.6	1	1	1	14	1	1	1	1	2.8	1	1	12.5	1	3	1
		Comments	Blank concentration > PQL and correctly entered into emLine.															
		Action	Let Value Stand															
		Result	High blank value remains.															
V2	11/4/2010	FIELD BLANK	0.160	0.11	<0.05	<0.02	0.0780	<0.02	<0.04	<100	<0.01	0.09	<0.5	<0.002	0.0040	<0.2	0.800	<0.1
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1
		Times greater than DI water	3.2	2.2	1	1	15.6	1	1	1	1	1.8	1	1	2	1	8	1
		Comments	Blank concentration > PQL and correctly entered into emLine.															
		Action	Let Value Stand															
		Result	High blank value remains.															

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit)

Station	Date	Sample Type	Mn µg/L	Mo µg/L	Na mg/L	Ni µg/L	Pb µg/L	Sb µg/L	Se µg/L	Si µg/L	Sn µg/L	Sr µg/L	Tl µg/L	Tl µg/L	U µg/L	V µg/L	Zn µg/L	Zr µg/L
V27	12/1/2010	FIELD BLANK	0.160	<0.05	<0.05	0.040	0.0850	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	0.0360	<0.2	0.900	<0.1
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1
		Times greater than DI water	3.2	1	1	2	17	1	1	1	1	1	1	1	18	1	9	1
		Comments					Blank concentration > PQL and correctly entered into emLine.								Blank concentration > PQL and correctly entered into emLine.		Blank concentration > PQL and correctly entered into emLine.	
		Action					Let Value Stand								Let Value Stand		Let Value Stand	
		Result					High blank value remains.								High blank value remains.		High blank value remains.	
V22	12/16/2010	FIELD BLANK	0.350	0.21	<0.05	0.060	0.0750	<0.02	<0.04	<100	<0.01	0.24	<0.5	<0.002	0.0060	<0.2	1.900	<0.1
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1
		Times greater than DI water	7	4.2	1	3	15	1	1	1	1	4.8	1	1	3	1	19	1
		Comments	Blank concentration equal to PQL and correctly entered into emLine.				Blank concentration equal to PQL and correctly entered into emLine.										Blank concentration equal to PQL and correctly entered into emLine.	
		Action	Let Value Stand				Let Value Stand										Let Value Stand	
		Result	High blank value remains.				High blank value remains.										High blank value remains.	

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit)





Table D-17: Vangorda Creek Drainage Water Quality  
2010 QA/QC Duplicates - Seepage - General Metals

Station	Date	Sample Type	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3 mg/L	CaCO3-d mg/L	Chloride mg/L	CN(wad) mg/L	CNTHIO mg/L	CO3 mg/L	Colour TCU	COND µmho/cm	DOC mg/L	HCO3 mg/L	NH3 mg/L	NO2 mg/L	NO2/3 mg/L	NO3 mg/L	OH mg/L	pH (blank)	SO4-d mg/L	TDS mg/L	TOC mg/L	TSS mg/L	TURB NTU
MOOSE SEEP	5/1/2010	M	<0.5	4.50	330.00	<0.5	1600.00		0.90			<0.5		2240.00		400.00					<0.5	8.00	1100.00			<1	
MOOSE SEEP	5/1/2010	DUPLICATE	<0.5	4.00	330.00	<0.5	1490.00		0.90			<0.5		2230.00		400.00					<0.5	8.10	1100.00			2.00	
RPD (%)			N/A	11.76	0.00	N/A	N/A	7.12	0.00	N/A	N/A	N/A	N/A	0.45	N/A	0.00	N/A	N/A	N/A	N/A	0.10	0.00	N/A	N/A	N/A	N/A	
Comments																											
Action																											
Result																											
LCD	5/12/2010	M			<0.5	<0.5	1020.00	980.00	<0.5			<0.5		2400.00		<0.5	0.60				<0.5	3.90	1600.00	2400.00		21.00	
LCD	5/12/2010	DUPLICATE			<0.5	<0.5	1040.00	1020.00	<0.5			<0.5		2400.00		<0.5	0.71				<0.5	3.60	1600.00	2500.00		14.00	
RPD (%)			N/A	N/A	N/A	N/A	1.94	4.00	N/A	N/A	N/A	N/A	N/A	0.00	N/A	N/A	16.79	N/A	N/A	N/A	N/A	0.30	0.00	4.08	N/A	40.00	
Comments																											
Action																											
Result																											
V2A	5/18/2010	M			350.00	<0.5	1370.00	1540.00				<0.5		2240.00	3.40	430.00	0.02				<0.5	8.20	1200.00	2100.00	3.40	2.00	
V2A	5/18/2010	DUPLICATE			350.00	<0.5	1430.00	1550.00				<0.5		2250.00	3.40	430.00	0.02				<0.5	8.10	1100.00	2100.00	3.60	2.00	
RPD (%)			N/A	N/A	0.00	N/A	4.29	0.65	N/A	N/A	N/A	N/A	N/A	0.45	0.00	0.00	6.45	N/A	N/A	N/A	N/A	0.10	8.70	0.00	5.71	0.00	
Comments																											
Action																											
Result																											
LCD	6/16/2010	M			<0.5	<0.5	2930	2950	<0.5			<0.5		5950		<0.5	1.5				<0.5	3.49	5400	7700		11	
LCD	6/16/2010	DUPLICATE			<0.5	<0.5	3030	2990	<0.5			<0.5		5960		<0.5	1.5				<0.5	3.42	5400	7900		9	
RPD (%)			N/A	N/A	N/A	N/A	3.36	1.35	N/A	N/A	N/A	N/A	N/A	0.17	N/A	N/A	0.00	N/A	N/A	N/A	N/A	0.07	0.00	2.56	N/A	20.00	
Comments																											
Action																											
Result																											
V25	7/6/2010	M			30.00	<0.5	1560.00	1590.00	<0.5			<0.5		2280.0000		37.00	0.24				<0.5	7.71	1500.000	2100.0000		2	
V25	7/6/2010	DUPLICATE			30.00	<0.5	1580.00	1600.00	<0.5			<0.5		2230.0000		37.00	0.25				<0.5	7.51	1600.000	2100.0000		2	
RPD (%)			N/A	N/A	0.00	N/A	1.27	0.63	N/A	N/A	N/A	N/A	N/A	2.22	N/A	0.00	4.08	N/A	N/A	N/A	N/A	0.20	6.45	0.00	N/A	0.00	
Comments																											
Action																											
Result																											
V2A	7/7/2010	M			390.00	9.20	1670.00	1610.00	0.90			11.00		2370.00	4.70	460.00	<0.05				<0.5	8.35	1200.00	2300.00	4.40	2.00	
V2A	7/7/2010	DUPLICATE			400.00	7.50	1630.00	1610.00	0.80			8.90		2460.00	3.70	470.00	<0.05				<0.5	8.34	1200.00	2300.00	3.90	2.00	
RPD (%)			N/A	N/A	2.53	20.36	2.42	0.00	11.76	N/A	N/A	21.11	N/A	3.73	23.81	2.15	N/A	N/A	N/A	N/A	N/A	0.01	0.00	0.00	12.05	0.00	
Comments																											
Action																											
Result																											
V25 BSP	7/13/2010	M			40.00	<0.5	1440.00	1470.00	<0.5			<0.0005	<0.5	<5	2080.00	49.00	0.09				<0.5	7.65	1300.00	2000.00		<1	
V25 BSP	7/13/2010	DUPLICATE			39.00	<0.5	1430.00	1440.00	<0.5			<0.0005	<0.5	<5	2080.00	47.00	0.10				<0.5	7.59	1300.00	2000.00		<1	
RPD (%)			N/A	N/A	2.53	N/A	0.70	2.06	N/A	N/A	N/A	N/A	N/A	0.00	N/A	4.17	10.53	N/A	N/A	N/A	N/A	0.06	0.00	0.00	N/A	N/A	
Comments																											
Action																											
Result																											
V15	7/22/2010	M	<0.5	44.50	540.00	<0.5	3160.00		1.70			<0.5		3930.00		660.00					<0.5	7.70	2700.00			2.00	
V15	7/22/2010	DUPLICATE	<0.5	46.60	540.00	<0.5	3070.00		11.00			<0.5		3910.00		660.00					<0.5	7.88	2000.00			3.00	
RPD (%)			N/A	4.61	0.00	N/A	N/A	2.89	146.46	N/A	N/A	N/A	N/A	0.51	N/A	0.00	N/A	N/A	N/A	N/A	N/A	0.18	29.79	N/A	N/A	40.00	
Comments			Both values correctly entered into emLine; however, main sample value not > PQL. Therefore, RPD analysis not valid in this case.																								
Action			Let Value Stand																								
Result			Discrepancy between values remains.																								
V8	7/14/2010	M			93.00	<0.5	359.00	378.00	0.70			<0.5		684.00	2.00	110.00	<0.05				<0.5	8.07	230.00	510.00	2.10	26.00	
V8	7/14/2010	DUPLICATE			92.00	<0.5	361.00	371.00	1.20			<0.5		686.00	1.90	110.00	<0.05				<0.5	8.05	230.00	490.00	2.00	26.00	
RPD (%)			N/A	N/A	1.08	N/A	0.56	1.87	52.63	N/A	N/A	N/A	N/A	0.29	5.13	0.00	N/A	N/A	N/A	N/A	N/A	0.02	0.00	4.00	4.88	0.00	
Comments			Both values correctly entered into emLine; however, neither value > PQL. Therefore, RPD analysis not valid in this case.																								
Action			Let Value Stand																								
Result			Discrepancy between values remains.																								

RPD > 50%

Table D-17: Vangorda Creek Drainage Water Quality  
2010 QA/QC Duplicates - Seepage - General Metals

Station	Date	Sample Type	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3 mg/L	CaCO3-d mg/L	Chloride mg/L	CN(wad) mg/L	CNTHIO mg/L	CO3 mg/L	Colour TCU	COND µmho/cm	DOC mg/L	HCO3 mg/L	NH3 mg/L	NO2 mg/L	NO2/3 mg/L	NO3 mg/L	OH mg/L	pH (blank)	SO4-d mg/L	TDS mg/L	TOC mg/L	TSS mg/L	TURB NTU
V2A	8/18/2010	M			410.00	11.00	1840.00	1800.00	0.90			14.00		2610.00	2.80	480.00	<0.05				<0.5	8.40	1400.00	2500.00	2.80	3.00	
V2A	8/18/2010	DUPLICATE			410.00	13.00	1890.00	1790.00	0.90			16.00		2590.00	3.20	470.00	<0.05				<0.5	8.42	1400.00	2400.00	3.20	9.00	
RPD (%)			N/A	N/A	0.00	16.67	2.68	0.56	0.00	N/A	N/A	13.33	N/A	0.77	13.33	2.11	N/A	N/A	N/A	N/A	0.02	0.00	4.08	13.33	100.00	N/A	
Comments			Both values correctly entered into emLine; however, main sample value not > PQL. Therefore, RPD analysis not valid in this case.																								
Action			Let Value Stand																								
Result			Discrepancy between values remains.																								
V2A	9/7/2010	M			390.00	14.00	1780.00	1600.00	1.50			17.00		2530.00	3.50	440.00	0.15				<0.5	8.45	1400.00	2500.00	3.20	<1	0.30
V2A	9/7/2010	DUPLICATE			400.00	9.20	1690.00	1650.00	1.50			11.00		2540.00	2.90	460.00	0.18				<0.5	8.40	1500.00	2500.00	2.80	<1	0.20
RPD (%)			N/A	N/A	2.53	41.38	5.19	3.08	0.00	N/A	N/A	42.86	N/A	0.39	18.75	4.44	18.18	N/A	N/A	N/A	N/A	0.05	6.90	0.00	13.33	N/A	40.00
Comments																											
Action																											
Result																											
V22	9/7/2010	M			<0.5	<0.5	1030.00	1040.00	<0.5			<0.5		2380.00		<0.5	0.88				<0.5	3.58	1600.00	2300.00		8.00	
V22	9/7/2010	DUPLICATE			<0.5	<0.5	1020.00	1030.00	<0.5			<0.5		2380.00		<0.5	0.89				<0.5	3.55	1500.00	2300.00		5.00	
RPD (%)			N/A	N/A	N/A	N/A	0.98	0.97	N/A	N/A	N/A	N/A	N/A	0.00	N/A	N/A	1.13	N/A	N/A	N/A	N/A	0.03	6.45	0.00	N/A	46.15	N/A
Comments																											
Action																											
Result																											
V15	9/23/2010	M	<0.5	64.80	550.00	<0.5		2790.00	2.00			<0.5		3800.00		670.00					<0.5	7.69	2000.00			<1	
V15	9/23/2010	DUPLICATE	<0.5	59.70	550.00	<0.5		2730.00	1.60			<0.5		3830.00		670.00					<0.5	7.31	1900.00			2.00	
RPD (%)			N/A	8.19	0.00	N/A	N/A	2.17	22.22	N/A	N/A	N/A	N/A	0.79	N/A	0.00	N/A	N/A	N/A	N/A	N/A	0.38	5.13	N/A	N/A	N/A	N/A
Comments																											
Action																											
Result																											
V2A	10/21/2010	M			390.00	4.00	1600.00	1710.00	0.80			4.80		2450.00	3.20	470.00	0.06				<0.5	8.32	1300.00	2200.00	3.40	3.00	
V2A	10/21/2010	DUPLICATE			390.00	4.10	1600.00	1670.00	1.20			4.90		2440.00	3.80	470.00	0.05				<0.5	8.33	1200.00	2300.00	3.50	3.00	
RPD (%)			N/A	N/A	0.00	2.47	0.00	2.37	40.00	N/A	N/A	2.06	N/A	0.41	17.14	0.00	13.79	N/A	N/A	N/A	N/A	0.01	8.00	4.44	2.90	0.00	6.90
Comments																											
Action																											
Result																											
V25 BSP	11/1/2010	M			63.00	<0.5	731.00	678.00	<0.5			<0.0005	<0.5	<5	1230.0000		77.00	<0.005	<0.005	0.10	0.100	<0.5	7.66	620.000	980.0000	<1	0.1000
V25 BSP	11/1/2010	DUPLICATE			64.00	<0.5	730.00	672.00	<0.5			<0.0005	<0.5	<5	1230.0000		78.00	0.01	<0.005	0.10	0.100	<0.5	7.72	620.000	990.0000	<1	0.1500
RPD (%)			N/A	N/A	1.57	N/A	0.14	0.89	N/A	N/A	N/A	N/A	N/A	0.00	N/A	1.29	N/A	N/A	0.00	0.00	N/A	0.06	0.00	1.02	N/A	N/A	40.00
Comments																											
Action																											
Result																											
V8	12/1/2010	M			190.00	<0.5	347.00	350.00	1.30			<0.5		627.00	1.60	240.00	<0.05				<0.5	8.25	150.00	410.00	2.40	2.00	0.70
V8	12/1/2010	DUPLICATE			190.00	<0.5	355.00	347.00	1.80			<0.5		612.00	1.60	240.00	<0.05				<0.5	8.20	150.00	390.00	1.90	3.00	
RPD (%)			N/A	N/A	0.00	N/A	2.28	0.86	32.26	N/A	N/A	N/A	N/A	2.42	0.00	0.00	N/A	N/A	N/A	N/A	N/A	0.05	0.00	5.00	23.26	40.00	200.00
Comments			Turbidity not run on duplicate sample. Accidentally not requested for duplicate sample.																								
Action			Let Value Stand																								
Result			No turbidity value for duplicate.																								

RPD > 50%





Table D-18: Vangorda Creek Drainage Water Quality  
2010 QA/QC Duplicates - Seepage - Dissolved Metals

Station	Date	Sample Type	Ag-d µg/L	Al-d µg/L	As-d µg/L	Ba-d µg/L	B-d µg/L	Be-d µg/L	Bi-d µg/L	Ca-d mg/L	Cd-d µg/L	Co-d µg/L	Cr-d µg/L	Cu-d µg/L	Fe-d µg/L	Hg-d µg/L	K-d mg/L	Li-d mg/L	Mg-d mg/L
V5	1/6/2010	M	<0.005	1.90	0.45	88.700	<50.0	<0.01	<0.005	121.00	0.06	0.0440	<0.1	0.6600	11.00		1.69	0.007	53.90
V5	1/6/2010	DUPLICATE	<0.005	2.10	0.40	89.300	<50.0	<0.01	<0.005	118.00	0.06	0.0430	<0.1	0.6600	10.00		1.61	0.006	52.60
RPD (%)			N/A	10.00	11.76	0.67	N/A	N/A	N/A	2.51	3.45	2.30	N/A	0.00	9.52	N/A	4.85	1.55	2.44
Comments																			
Action																			
Result																			
V15	1/7/2010	M	<0.03	5.00	0.50	51.70	<300.0	<0.05	<0.03	494.00	1.90	0.05	<0.5	1.90	17.00		6.55	0.02	472.00
V15	1/7/2010	DUPLICATE	<0.03	6.00	0.50	51.50	<300.0	<0.05	<0.03	492.00	1.81	0.08	<0.5	2.00	20.00		6.55	0.02	470.00
RPD (%)			N/A	18.18	0.00	0.39	N/A	N/A	N/A	0.41	4.85	46.15	N/A	5.13	16.22	N/A	0.00	4.26	0.42
Comments																			
Action																			
Result																			
V2A	2/3/2010	M	<0.03	2.00	1.00	92.80	<300.0	<0.05	<0.03	344.00	0.43	0.10	<0.5	1.60	<5.0		3.94	0.01	211.00
V2A	2/3/2010	DUPLICATE	<0.03	3.00	1.00	93.20	<300.0	<0.05	<0.03	343.00	0.46	0.13	<0.5	1.60	<5.0		3.93	0.01	211.00
RPD (%)			N/A	40.00	0.00	0.43	N/A	N/A	N/A	0.29	6.74	26.09	N/A	0.00	N/A	N/A	0.25	0.00	0.00
Comments																			
Action																			
Result																			
V1	2/18/2010	M	<0.005	4.10	0.29	39.30	<50.0	<0.01	<0.005	17.90	<0.005	0.01	<0.1	0.27	2.00		0.59	0.00	3.08
V1	2/18/2010	DUPLICATE	<0.005	4.00	0.29	39.40	<50.0	<0.01	<0.005	17.30	<0.005	0.01	<0.1	0.20	2.00		0.56	0.00	3.01
RPD (%)			N/A	2.47	0.00	0.25	N/A	N/A	N/A	3.41	N/A	0.00	N/A	29.79	0.00	N/A	5.22	6.45	2.30
Comments																			
Action																			
Result																			
V2	3/2/2010	M	<0.03	2.00	0.90	66.30	<300.0	<0.05	<0.03	351.00	0.17	<0.03	<0.5	0.90	9.00	<0.05	2.84	0.01	195.00
V2	3/2/2010	DUPLICATE	0.06	2.00	0.80	66.60	<300.0	<0.05	<0.03	344.00	0.18	<0.03	<0.5	0.90	10.00		2.76	0.01	184.00
RPD (%)			N/A	0.00	11.76	0.45	N/A	N/A	N/A	2.01	6.06	N/A	N/A	0.00	10.53	N/A	2.86	0.00	5.80
Comments																			
Action																			
Result																			
V5	3/30/2010	M	<0.005	2.00	0.43	81.40	<50.0	<0.01	<0.005	104.00	0.05	0.06	<0.1	0.61	11.00		1.46	0.01	50.10
V5	3/30/2010	DUPLICATE	<0.005	2.10	0.41	78.90	<50.0	<0.01	<0.005	102.00	0.04	0.06	<0.1	0.59	10.00		1.44	0.01	50.40
RPD (%)			N/A	4.88	4.76	3.12	N/A	N/A	N/A	1.94	18.18	1.68	N/A	3.33	9.52	N/A	1.38	1.50	0.60
Comments																			
Action																			
Result																			
V8	3/30/2010	M	<0.005	2.50	0.39	73.60	<50.0	<0.01	<0.005	94.10	0.06	0.06	<0.1	0.81	15.00		1.33	0.01	47.60
V8	3/30/2010	DUPLICATE	<0.005	2.00	0.43	78.50	<50.0	<0.01	<0.005	98.30	0.06	0.08	<0.1	0.57	30.00		1.41	0.01	45.90
RPD (%)			N/A	22.22	9.76	6.44	N/A	N/A	N/A	4.37	3.33	28.57	N/A	34.78	66.67	N/A	5.84	1.44	3.64
Comments			Both values > PQL and entered correctly into emLine.																
Action			Let Value Stand																
Result			Discrepancy between values remains.																
V15	4/7/2010	M	<0.03	5.00	0.40	46.60	<300	<0.05	<0.03	471.00	1.94	0.06	<0.5	2.20	13.00		6.40	0.03	488.00
V15	4/7/2010	DUPLICATE	0.06	6.00	0.40	46.20	<300	<0.05	<0.03	450.00	1.85	0.06	<0.5	2.00	14.00		6.20	0.02	456.00
RPD (%)			N/A	18.18	0.00	0.86	N/A	N/A	N/A	4.56	4.75	0.00	N/A	9.52	7.41	N/A	3.17	4.08	6.78
Comments																			
Action																			
Result																			
V1	4/20/2010	M	<0.005	9.50	0.30	38.70	<50	<0.01	0.01	17.30	0.01	0.02	<0.1	0.25	12.00		0.66	0.00	2.87
V1	4/20/2010	DUPLICATE	0.01	5.40	0.32	37.80	<50	<0.01	<0.005	17.60	0.01	0.02	<0.1	0.26	72.00		0.66	0.00	2.91
RPD (%)			N/A	55.03	6.45	2.35	N/A	N/A	N/A	1.72	44.44	23.53	N/A	3.92	142.86	N/A	0.00	0.00	1.38
Comments			Both values > PQL and entered correctly into emLine. Lab noted on both samples that "Dissolved greater than total. Reanalysis yields similar results."																
Action			Request Retest																
Result			Retest performed, see results below.																
V1 Retest	4/20/2010	M	<0.005	10.90	0.30	37.30	<50	<0.01	0.01	14.90	0.01	0.02	<0.1	0.24	15.00		0.57	0.00	2.62
V1 Retest	4/20/2010	DUPLICATE	0.01	5.40	0.32	37.80	<50	<0.01	<0.005	17.60	0.01	0.02	<0.1	0.26	72.00		0.66	0.00	2.91
RPD (%)			N/A	67.48	6.45	1.33	N/A	N/A	N/A	16.62	58.82	18.18	N/A	8.00	131.03	N/A	14.63	7.41	10.49
Comments			Retest of April 20 V1 sample and duplicate. Both values > PQL and entered correctly into emLine. Lab noted on both samples that "Dissolved greater than total. Reanalysis yields similar results."																
Action			Let Value Stand																
Result			New values entered into emLine.																
			RPD > 50%																
			RPD > 100%																



Station	Date	Sample Type	Ag-d µg/L	Al-d µg/L	As-d µg/L	Ba-d µg/L	B-d µg/L	Be-d µg/L	Bi-d µg/L	Ca-d mg/L	Cd-d µg/L	Co-d µg/L	Cr-d µg/L	Cu-d µg/L	Fe-d µg/L	Hg-d µg/L	K-d mg/L	Li-d mg/L	Mg-d mg/L
MOOSE SEEP	5/1/2010	M	0.05	4.00	1.60	39.40	<300	<0.05	<0.03	304.00	0.15	0.04	<0.5	1.00	6.00		3.40	0.01	204.00
MOOSE SEEP	5/1/2010	DUPLICATE	<0.03	6.00	1.70	38.80	<300	<0.05	<0.03	282.00	0.16	0.05	<0.5	1.00	6.00		3.30	0.01	191.00
RPD (%)			N/A	40.00	6.06	1.53	N/A	N/A	N/A	7.51	6.45	22.22	N/A	0.00	0.00	N/A	2.99	18.18	6.58
Comments																			
Action																			
Result																			
MOOSE SEEP Retest	5/1/2010	M																	
MOOSE SEEP Retest	5/1/2010	DUPLICATE																	
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Comments																			
Action																			
Result																			
LCD	5/12/2010	M	0.14	2910.00	1.10	26.00	<200	<0.4	<4	115.00	159.00	623.00	<4	55.50	24500.00		1.70	0.02	169.00
LCD	5/12/2010	DUPLICATE	0.16	2980.00	0.90	28.00	<200	0.50	<4	121.00	168.00	643.00	<4	58.10	25100.00		1.80	0.03	174.00
RPD (%)			13.33	2.38	20.00	7.41	N/A	N/A	N/A	5.08	5.50	3.16	N/A	4.58	2.42	N/A	5.71	8.33	2.92
Comments																			
Action																			
Result																			
V2A	5/18/2010	M	<0.03	9.00	1.30	58.800	<300	<0.05	<0.03	282.00	0.45	0.2700	<0.5	1.3000	26.00		3.90	0.012	203.00
V2A	5/18/2010	DUPLICATE	<0.03	9.00	1.30	59.400	<300	<0.05	<0.03	285.00	0.41	0.2800	<0.5	1.2000	30.00		3.90	0.011	203.00
RPD (%)			N/A	0.00	0.00	1.02	N/A	N/A	N/A	1.06	9.30	3.64	N/A	8.00	14.29	N/A	0.00	8.70	0.00
Comments																			
Action																			
Result																			
LCD	6/16/2010	M	1.1	11600	4	22	<1000	3	<20	207	541	2520	<20	258	71600		3	<0.1	590
LCD	6/16/2010	DUPLICATE	0.9	11500	<2	21	<1000	3	<20	217	530	2560	<20	250	69000		3	<0.1	595
RPD (%)			20.00	0.87	N/A	4.65	N/A	0.00	N/A	4.72	2.05	1.57	N/A	3.15	3.70	N/A	0.00	N/A	0.84
Comments																			
Action																			
Result																			
V25	7/6/2010	M	0.07	12.00	0.20	19.10	<300	<0.05	<0.03	474.00	0.67	0.39	<0.5	<0.3	24.00	<0.05	2.90	0.05	99.70
V25	7/6/2010	DUPLICATE	<0.03	10.00	0.20	19.70	<300	<0.05	<0.03	477.00	0.70	0.38	<0.5	<0.3	15.00	<0.05	2.90	0.05	100.00
RPD (%)			N/A	18.18	0.00	3.09	N/A	N/A	N/A	0.63	4.38	2.60	N/A	N/A	46.15	N/A	0.00	2.11	0.30
Comments																			
Action																			
Result																			
V2A	7/7/2010	M	<0.03	13.00	1.20	55.90	<300	<0.05	<0.03	267.00	0.44	0.08	<0.5	1.40	31.00		4.40	0.01	229.00
V2A	7/7/2010	DUPLICATE	<0.03	5.00	1.20	56.20	<300	<0.05	<0.03	271.00	0.45	0.08	<0.5	1.20	14.00		4.30	0.01	226.00
RPD (%)			N/A	88.89	0.00	0.54	N/A	N/A	N/A	1.49	2.25	0.00	N/A	15.38	75.56	N/A	2.30	0.00	1.32
Comments			Both values > PQL and correctly entered into emLine. Lab noted on main sample that "Dissolved greater than total. Reanalysis yields similar results."																
Action			Let Value Stand																
Result			Discrepancy between values remains.																
V25 BSP	7/13/2010	M	<0.03	17.00	0.20	31.70	<300	<0.05	<0.03	439.00	0.90	1.06	<0.5	1.70	20.00	<0.05	3.40	0.04	90.80
V25 BSP	7/13/2010	DUPLICATE	<0.03	14.00	0.20	30.60	<300	<0.05	<0.03	431.00	0.91	0.97	<0.5	1.60	15.00	<0.05	3.20	0.04	87.70
RPD (%)			N/A	19.35	0.00	3.53	N/A	N/A	N/A	1.84	1.10	8.87	N/A	6.06	28.57	N/A	6.06	0.00	3.47
Comments																			
Action																			
Result																			
V15	7/22/2010	M	<0.03	8.00	0.60	47.10	<300	<0.05	<0.03	470.00	1.61	0.06	<0.5	1.90	12.00		6.60	0.02	482.00
V15	7/22/2010	DUPLICATE	<0.03	7.00	0.60	47.70	<300	<0.05	<0.03	461.00	1.56	0.04	<0.5	1.80	11.00		6.30	0.02	466.00
RPD (%)			N/A	13.33	0.00	1.27	N/A	N/A	N/A	1.93	3.15	40.00	N/A	5.41	8.70	N/A	4.65	0.00	3.38
Comments																			
Action																			
Result																			
V8	7/14/2010	M	<0.005	12.10	0.41	68.20	<50.0	<0.01	<0.005	104.00	0.10	0.14	<0.1	1.66	24.00		1.13	0.01	28.60
V8	7/14/2010	DUPLICATE	<0.005	8.00	0.42	67.50	<50.0	<0.01	<0.005	102.00	0.17	0.81	<0.1	1.50	17.00		1.29	0.01	28.20
RPD (%)			N/A	40.80	2.41	1.03	N/A	N/A	N/A	1.94	47.76	140.87	N/A	10.13	34.15	N/A	13.22	0.00	1.41
Comments			Both values > PQL and correctly entered into emLine. Lab noted on duplicate sample that "Dissolved greater than total. Reanalysis yields similar results."																
Action			Request Retest																
Result			Retest performed, see results below.																

RPD > 50%  
RPD > 100%

Table D-18: Vangorda Creek Drainage Water Quality  
2010 QA/QC Duplicates - Seepage - Dissolved Metals



Station	Date	Sample Type	Ag-d µg/L	Al-d µg/L	As-d µg/L	Ba-d µg/L	B-d µg/L	Be-d µg/L	Bi-d µg/L	Ca-d mg/L	Cd-d µg/L	Co-d µg/L	Cr-d µg/L	Cu-d µg/L	Fe-d µg/L	Hg-d µg/L	K-d mg/L	Li-d mg/L	Mg-d mg/L
V8 Retest	7/14/2010	M										0.14							
V8 Retest	7/14/2010	DUPLICATE										0.76							
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	136.14	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Comments			Retest for July 14 V8 sample and duplicate. Both values > PQL and correctly entered into emLine.																
Action			Let Value Stand																
Result			New values entered into emLine.																
V2A	8/18/2010	M	<0.03	4.00	1.20	57.60	<300	<0.05	<0.03	303.00	0.43	0.05	<0.5	1.20	6.00		4.40	0.02	252.00
V2A	8/18/2010	DUPLICATE	<0.03	6.00	1.10	57.80	<300	<0.05	<0.03	297.00	0.44	0.06	<0.5	2.00	9.00		4.50	0.02	254.00
RPD (%)			N/A	40.00	8.70	0.35	N/A	N/A	N/A	2.00	2.30	18.18	N/A	50.00	40.00	N/A	2.25	6.45	0.79
Comments			Both values correctly entered into emLine; however, main sample value not > PQL. Therefore, RPD analysis not valid in this case. In addition, lab noted on duplicate sample that "Dissolved greater than total. Reanalysis yields similar results."																
Action			Let Value Stand																
Result			Discrepancy between values remains.																
V2A	9/7/2010	M	<0.03	6.00	0.90	58.10	<300	<0.05	<0.03	278.00	0.49	<0.03	<0.5	1.40	10.00		4.20	0.01	220.00
V2A	9/7/2010	DUPLICATE	<0.03	6.00	1.00	58.10	<300	<0.05	<0.03	293.00	0.53	0.04	<0.5	1.50	9.00		4.30	0.01	222.00
RPD (%)			N/A	0.00	10.53	0.00	N/A	N/A	N/A	5.25	7.84	N/A	N/A	6.90	10.53	N/A	2.35	0.00	0.90
Comments																			
Action																			
Result																			
V22	9/7/2010	M	0.1900	1580.00	2.30	20.000	<50	0.40	<1	223.00	139.00	711.0000	<1	490.0000	50600.00		2.68	0.050	117.00
V22	9/7/2010	DUPLICATE	0.2100	1540.00	2.30	21.000	<50	0.40	<1	220.00	138.00	726.0000	<1	496.0000	50300.00		2.65	0.051	116.00
RPD (%)			10.00	2.56	0.00	4.88	N/A	0.00	N/A	1.35	0.72	2.09	N/A	1.22	0.59	N/A	1.13	1.98	0.86
Comments																			
Action																			
Result																			
V15	9/23/2010	M	<0.03	7.00	0.60	46.30	<300	<0.05	<0.03	410.00	1.74	0.55	<0.5	2.40	36.00		6.50	0.02	428.00
V15	9/23/2010	DUPLICATE	<0.03	7.00	0.70	46.50	<300	<0.05	<0.03	394.00	1.61	0.34	<0.5	2.10	15.00		6.40	0.02	424.00
RPD (%)			N/A	0.00	15.38	0.43	N/A	N/A	N/A	3.98	7.76	47.19	N/A	13.33	82.35	N/A	1.55	4.26	0.94
Comments			Both values correctly entered into emLine; however, duplicate value not > PQL. Therefore, RPD analysis not valid in this case.																
Action			Let Value Stand																
Result			Discrepancy between values remains.																
V2A	10/21/2010	M	<0.03	4.00	0.90	59.00	<300	<0.05	<0.03	299.00	0.59	0.04	<0.5	1.30	10.00		4.10	0.01	234.00
V2A	10/21/2010	DUPLICATE	<0.03	6.00	0.90	58.60	<300	<0.05	<0.03	284.00	0.55	0.08	<0.5	1.50	11.00		4.00	0.01	233.00
RPD (%)			N/A	40.00	0.00	0.68	N/A	N/A	N/A	5.15	7.02	66.67	N/A	14.29	9.52	N/A	2.47	0.00	0.43
Comments			Both values correctly entered into emLine; however, neither value > PQL. Therefore, RPD analysis not valid in this case.																
Action			Let Value Stand																
Result			Discrepancy between values remains.																
V25 BSP	11/1/2010	M	<0.005	3.60	0.12	28.80	<50	<0.01	<0.005	203.00	0.18	0.03	<0.1	1.21	10.00	<0.01	1.76	0.01	41.70
V25 BSP	11/1/2010	DUPLICATE	<0.005	3.40	0.12	30.10	<50	<0.01	<0.005	200.00	0.16	0.02	<0.1	1.18	8.00	<0.01	1.76	0.01	42.10
RPD (%)			N/A	5.71	0.00	4.41	N/A	N/A	N/A	1.49	11.56	17.39	N/A	2.51	22.22	N/A	0.00	2.47	0.95
Comments																			
Action																			
Result																			
V8	12/1/2010	M	<0.005	2.40	0.37	63.50	<50	<0.01	0.43	81.60	0.05	0.05	<0.1	0.60	15.00		1.17	0.01	35.50
V8	12/1/2010	DUPLICATE	<0.005	1.60	0.38	64.00	<50	<0.01	0.05	80.40	0.05	0.05	<0.1	0.58	13.00		1.20	0.01	35.60
RPD (%)			N/A	40.00	2.67	0.78	N/A	N/A	158.91	1.48	2.11	2.20	N/A	3.39	14.29	N/A	2.53	0.00	0.28
Comments			Both values > PQL and correctly entered into emLine. Lab noted on both samples that "Dissolved greater than total. Reanalysis yields similar results."																
Action			Let Value Stand																
Result			Discrepancy between values remains. Retest not requested because lab already reanalyzed.																

RPD > 50%  
RPD > 100%

Station	Date	Sample Type	Ag-d µg/L	Al-d µg/L	As-d µg/L	Ba-d µg/L	B-d µg/L	Be-d µg/L	Bi-d µg/L	Ca-d mg/L	Cd-d µg/L	Co-d µg/L	Cr-d µg/L	Cu-d µg/L	Fe-d µg/L	Hg-d µg/L	K-d mg/L	Li-d mg/L	Mg-d mg/L
V8 Retest	12/1/2010	M																	
V8 Retest	12/1/2010	DUPLICATE																	
		RPD (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Comments																			
Action																			
Result																			

RPD > 50%  
RPD > 100%

Table D-18: Vangorda Creek Drainage Water Quality  
2010 QA/QC Duplicates - Seepage - Dissolved Metals

Station	Date	Sample Type	Mn-d µg/L	Mo-d µg/L	Na-d mg/L	Ni-d µg/L	Pb-d µg/L	Sb-d µg/L	S-d mg/L	Se-d µg/L	Si-d µg/L	Sn-d µg/L	Sr-d µg/L	Ti-d µg/L	Ti-d µg/L	U-d µg/L	V-d µg/L	Zn-d µg/L	Zr-d µg/L
V5	1/6/2010	M	12.200	2.47	5.64	1.820	0.1920	0.17	70	4.8000	5980.00	<0.01	424.00	<0.5	<0.002	7.1500	<0.2	3.200	<0.1
V5	1/6/2010	DUPLICATE	11.800	2.48	5.52	1.760	0.3850	0.17	67	4.6500	5620.00	<0.01	428.00	<0.5	<0.002	7.1100	<0.2	3.500	<0.1
RPD (%)			3.33	0.40	2.15	3.35	66.90	0.00	4.38	3.17	6.21	N/A	0.94	N/A	N/A	0.56	N/A	8.96	N/A
Comments			Both values > PQL and correctly entered into emLine.																
Action			Let Value Stand																
Result			Discrepancy between values remains.																
V15	1/7/2010	M	1.10	0.70	15.90	122.00	0.35	<0.1	940.00	0.80	6750.00	<0.05	1620.0	<3.0	<0.01	57.30	<1.0	2910.00	<0.5
V15	1/7/2010	DUPLICATE	1.20	0.70	15.80	123.00	0.69	<0.1	941.00	0.80	6660.00	0.06	1620.0	<3.0	<0.01	56.80	<1.0	2930.00	<0.5
RPD (%)			8.70	0.00	0.63	0.82	65.38	N/A	0.11	0.00	1.34	N/A	0.00	N/A	N/A	0.88	N/A	0.68	N/A
Comments			Both values > PQL and correctly entered into emLine.																
Action			Let Value Stand																
Result			Discrepancy between values remains.																
V2A	2/3/2010	M	7.50	2.30	13.90	34.20	0.82	0.40	421.00	0.70	5860.00	<0.05	1080.0	<3.0	0.020	41.00	<1.0	680.00	<0.5
V2A	2/3/2010	DUPLICATE	7.30	2.40	13.60	33.50	0.91	0.40	419.00	0.70	5770.00	<0.05	1130.0	<3.0	<0.01	40.80	<1.0	687.00	<0.5
RPD (%)			2.70	4.26	2.18	2.07	10.40	0.00	0.48	0.00	1.55	N/A	4.52	N/A	N/A	0.49	N/A	1.02	N/A
Comments																			
Action																			
Result																			
V1	2/18/2010	M	0.09	0.72	2.32	0.22	0.05	0.05	4.00	0.19	5310.00	<0.01	83.6	<0.5	<0.002	1.39	<0.2	0.70	<0.1
V1	2/18/2010	DUPLICATE	<0.05	0.71	2.29	0.21	0.03	0.05	5.00	0.20	5220.00	<0.01	84.9	<0.5	<0.002	1.41	<0.2	1.00	<0.1
RPD (%)			N/A	1.40	1.30	4.65	68.35	0.00	22.22	5.13	1.71	N/A	1.54	N/A	N/A	1.43	N/A	35.29	N/A
Comments			Both values > PQL and correctly entered into emLine.																
Action			Let Value Stand																
Result			Discrepancy between values remains.																
V2	3/2/2010	M	0.70	1.80	12.40	2.20	0.21	0.20	442.00	0.60	5760.00	<0.05	959.0	<3.0	<0.01	29.90	<1.0	23.20	<0.5
V2	3/2/2010	DUPLICATE	0.50	1.70	11.50	2.40	0.27	0.20	432.00	0.60	5810.00	<0.05	949.0	<3.0	<0.01	30.00	<1.0	22.30	<0.5
RPD (%)			33.33	5.71	7.53	8.70	25.00	0.00	2.29	0.00	0.86	N/A	1.05	N/A	N/A	0.33	N/A	3.96	N/A
Comments																			
Action																			
Result																			
V5	3/30/2010	M	8.70	2.69	5.64	1.72	0.10	0.16	59.00	3.74	5290.00	<0.01	404.0	<0.5	0.003	7.59	<0.2	2.90	<0.1
V5	3/30/2010	DUPLICATE	8.65	2.62	5.74	1.74	0.17	0.16	57.00	3.58	5170.00	<0.01	397.0	<0.5	0.003	7.47	<0.2	3.10	<0.1
RPD (%)			0.58	2.64	1.76	1.16	50.37	0.00	3.45	4.37	2.29	N/A	1.75	N/A	0.00	1.59	N/A	6.67	N/A
Comments			Both values > PQL and correctly entered into emLine.																
Action			Let Value Stand																
Result			Discrepancy between values remains.																
V8	3/30/2010	M	5.69	1.47	5.55	2.27	0.20	0.16	67.00	1.94	5070.00	<0.01	406.0	<0.5	0.008	10.60	<0.2	13.20	<0.1
V8	3/30/2010	DUPLICATE	6.06	1.55	5.28	2.36	0.14	0.17	71.00	1.93	4340.00	<0.01	408.0	<0.5	0.007	10.50	<0.2	13.30	<0.1
RPD (%)			6.30	5.30	4.99	3.89	36.90	6.06	5.80	0.52	15.52	N/A	0.49	N/A	13.33	0.95	N/A	0.75	N/A
Comments																			
Action																			
Result																			
V15	4/7/2010	M	0.40	0.70	15.90	130.00	0.24	<0.1	819.00	0.80	5870.00	<0.05	1640.0	4.00	<0.01	57.70	<1	3500.00	<0.5
V15	4/7/2010	DUPLICATE	0.50	0.90	15.40	118.00	0.25	0.20	788.00	0.80	5830.00	<0.05	1550.0	<3	<0.01	55.30	<1	3170.00	<0.5
RPD (%)			22.22	25.00	3.19	9.68	4.08	N/A	3.86	0.00	0.68	N/A	5.64	N/A	N/A	4.25	N/A	9.90	N/A
Comments																			
Action																			
Result																			
V1	4/20/2010	M	1.35	0.71	2.21	0.26	1.02	0.05	<10	0.19	5330.00	<0.01	78.4	<0.5	<0.002	1.45	<0.2	2.20	<0.1
V1	4/20/2010	DUPLICATE	1.03	0.69	2.23	0.27	0.48	0.05	<10	0.20	5110.00	<0.01	79.7	<0.5	<0.002	1.47	<0.2	44.90	<0.1
RPD (%)			26.89	2.86	0.90	3.77	72.18	0.00	N/A	5.13	4.21	N/A	1.64	N/A	N/A	1.37	N/A	181.32	N/A
Comments			Both values > PQL and correctly entered into emLine. Lab noted on both samples that "Dissolved greater than total. Reanalysis yields similar results."																
Action			Request Retest																
Result			Retest performed, see results below.																
V1 Retest	4/20/2010	M	1.30	0.66	1.91	0.19	1.63	0.05	<10	0.19	4080.00	<0.01	80.8	<0.5	<0.002	1.50	<0.2	2.60	<0.1
V1 Retest	4/20/2010	DUPLICATE	1.03	0.69	2.23	0.27	0.48	0.05	<10	0.20	5110.00	<0.01	79.7	<0.5	<0.002	1.47	<0.2	44.90	<0.1
RPD (%)			23.18	4.44	15.46	34.78	109.15	0.00	N/A	5.13	22.42	N/A	1.37	N/A	N/A	2.02	N/A	178.11	N/A
Comments			Retest of April 20 V1 sample and duplicate. Both values > PQL and correctly entered into emLine. Lab noted on both samples that "Dissolved greater than total. Reanalysis yields similar results."																
Action			Let Value Stand																
Result			New values entered into emLine.																

RPD > 50%  
RPD > 100%

Station	Date	Sample Type	Mn-d µg/L	Mo-d µg/L	Na-d mg/L	Ni-d µg/L	Pb-d µg/L	Sb-d µg/L	S-d mg/L	Se-d µg/L	Si-d µg/L	Sn-d µg/L	Sr-d µg/L	Ti-d µg/L	Ti-d µg/L	U-d µg/L	V-d µg/L	Zn-d µg/L	Zr-d µg/L
MOOSE SEEP	5/1/2010	M	0.50	2.90	10.10	1.70	0.37	0.30	434.00	0.80	4400.00	<0.05	810.0	<3	<0.01	35.50	<1	7.70	<0.5
MOOSE SEEP	5/1/2010	DUPLICATE	2.50	2.70	9.60	1.20	0.54	0.30	401.00	0.80	4380.00	<0.05	767.0	<3	<0.01	33.50	<1	8.30	<0.5
RPD (%)			133.33	7.14	5.08	34.48	37.36	0.00	7.90	0.00	0.46	N/A	5.45	N/A	N/A	5.80	N/A	7.50	N/A
Comments			Both values correctly entered into emLine; however, main sample value not > PQL. Therefore, RPD analysis not valid in this case.																
Action			Request Retest																
Result			Retest performed, see results below.																
MOOSE SEEP Retest	5/1/2010	M	0.60																
MOOSE SEEP Retest	5/1/2010	DUPLICATE	2.50																
RPD (%)			122.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Comments			Retest of May 1 Moose Seep sample and duplicate. Both values correctly entered into emLine; however, main sample value not > PQL. Therefore, RPD analysis not valid in this case.																
Action			Let Value Stand																
Result			Discrepancy between values remains.																
LCD	5/12/2010	M	78000.00	<4	1.50	517.00	37.30	<2	535.00	<0.4	2650.00	<20	410.0	<20	<0.2	8.70	<20	224000.00	<2
LCD	5/12/2010	DUPLICATE	81500.00	<4	1.50	534.00	38.50	<2	548.00	<0.4	2660.00	<20	423.0	<20	<0.2	9.00	<20	237000.00	<2
RPD (%)			4.39	N/A	0.00	3.24	3.17	N/A	2.40	N/A	0.38	N/A	3.12	N/A	N/A	3.39	N/A	5.64	N/A
Comments																			
Action																			
Result																			
V2A	5/18/2010	M	7.300	2.10	10.30	46.000	0.7700	0.50	367	0.5000	5030.00	0.08	945.00	<3	0.03	35.7000	<1	811.000	<0.5
V2A	5/18/2010	DUPLICATE	8.000	2.00	10.20	45.900	0.9000	0.50	359	0.5000	5010.00	0.10	960.00	<3	0.04	35.7000	<1	799.000	<0.5
RPD (%)			9.15	4.88	0.98	0.22	15.57	0.00	2.20	0.00	0.40	22.22	1.57	N/A	28.57	0.00	N/A	1.49	N/A
Comments																			
Action																			
Result																			
LCD	6/16/2010	M	317000	<20	4	1820	335	<10	1720	<2	7870	<100	890	<100	<1	35	<100	820000	<10
LCD	6/16/2010	DUPLICATE	324000	<20	4	1770	329	<10	1690	<2	8560	<100	877	<100	<1	33	<100	832000	<10
RPD (%)			2.18	N/A	0.00	2.79	1.81	N/A	1.76	N/A	8.40	N/A	1.47	N/A	N/A	5.88	N/A	1.45	N/A
Comments																			
Action																			
Result																			
V25	7/6/2010	M	999.00	0.50	5.00	0.40	0.30	0.20	538.00	<0.2	<500	<0.05	1400.0	<3	1.530	0.15	<1	4.90	<0.5
V25	7/6/2010	DUPLICATE	990.00	0.40	5.00	0.30	0.32	<0.1	514.00	0.40	<500	<0.05	1440.0	<3	1.620	0.13	<1	4.40	<0.5
RPD (%)			0.90	22.22	0.00	28.57	6.45	N/A	4.56	N/A	N/A	N/A	2.82	N/A	5.71	14.29	N/A	10.75	N/A
Comments																			
Action																			
Result																			
V2A	7/7/2010	M	2.70	2.40	10.70	51.10	4.79	0.60	452.00	0.50	4430.00	<0.05	999.0	<3	0.030	34.40	<1	794.00	<0.5
V2A	7/7/2010	DUPLICATE	2.70	2.00	10.50	50.30	2.51	0.50	444.00	0.50	4470.00	0.13	999.0	<3	0.020	34.90	<1	779.00	<0.5
RPD (%)			0.00	18.18	1.89	1.58	62.47	18.18	1.79	0.00	0.90	N/A	0.00	N/A	40.00	1.44	N/A	1.91	N/A
Comments			Both values > PQL and correctly entered into emLine. Lab noted on both samples that "Dissolved greater than total. Reanalysis yields similar results."																
Action			Let Value Stand																
Result			Discrepancy between values remains.																
V25 BSP	7/13/2010	M	825.00	0.50	5.20	2.50	0.72	<0.1	500.00	<0.2	1240.00	<0.05	1380.0	<3	1.030	0.27	<1	51.10	<0.5
V25 BSP	7/13/2010	DUPLICATE	799.00	0.50	5.10	2.30	0.45	<0.1	476.00	<0.2	1210.00	<0.05	1330.0	<3	1.010	0.24	<1	48.30	<0.5
RPD (%)			3.20	0.00	1.94	8.33	46.15	N/A	4.92	N/A	2.45	N/A	3.69	N/A	1.96	11.76	N/A	5.63	N/A
Comments																			
Action																			
Result																			
V15	7/22/2010	M	0.90	0.90	16.00	106.00	0.30	0.20	888.00	0.70	6800.00	<0.05	1550.0	<3	<0.01	55.80	<1	2700.00	<0.5
V15	7/22/2010	DUPLICATE	0.80	0.90	15.50	105.00	0.24	0.20	861.00	0.70	6630.00	<0.05	1530.0	<3	<0.01	56.20	<1	2640.00	<0.5
RPD (%)			11.76	0.00	3.17	0.95	22.22	0.00	3.09	0.00	2.53	N/A	1.30	N/A	N/A	0.71	N/A	2.25	N/A
Comments																			
Action																			
Result																			
V8	7/14/2010	M	22.50	0.54	2.97	1.42	1.20	0.12	102.00	0.36	4300.00	0.02	378.0	<0.5	0.051	2.59	<0.2	37.10	<0.1
V8	7/14/2010	DUPLICATE	103.00	0.53	3.00	1.71	0.48	0.12	100.00	0.39	4320.00	0.02	373.0	<0.5	0.054	2.58	<0.2	149.00	<0.1
RPD (%)			128.29	1.87	1.01	18.53	66.57	0.00	1.98	8.00	0.46	0.00	1.33	N/A	5.71	0.39	N/A	120.26	N/A
Comments			Both values > PQL and correctly entered into emLine. Lab noted on duplicate sample that "Dissolved greater than total. Reanalysis yields similar results."																
Action			Request Retest																
Result			Retest performed, see results below.																

RPD > 50%

RPD > 100%

Station	Date	Sample Type	Mn-d µg/L	Mo-d µg/L	Na-d mg/L	Ni-d µg/L	Pb-d µg/L	Sb-d µg/L	S-d mg/L	Se-d µg/L	Si-d µg/L	Sn-d µg/L	Sr-d µg/L	Ti-d µg/L	Ti-d µg/L	U-d µg/L	V-d µg/L	Zn-d µg/L	Zr-d µg/L			
V8 Retest	7/14/2010	M	19.90																32.60			
V8 Retest	7/14/2010	DUPLICATE	96.80																142.00			
RPD (%)			131.79	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	125.32	N/A		
Comments			Retest for July 14 V8 sample and duplicate. Both values > PQL and correctly entered into emLine.																			
Action			Let Value Stand																			
Result			New values entered into emLine.																			
V2A	8/18/2010	M	1.80	2.00	11.70	62.70	0.43	0.70	468.00	0.50	5050.00	<0.05	1040.0	<3	0.030	46.20	<1	875.00	<0.5			
V2A	8/18/2010	DUPLICATE	4.40	2.00	11.70	60.70	1.13	0.80	465.00	0.50	4930.00	0.37	1030.0	<3	0.040	45.40	<1	838.00	<0.5			
RPD (%)			83.87	0.00	0.00	3.24	89.74	13.33	0.64	0.00	2.40	N/A	0.97	N/A	28.57	1.75	N/A	4.32	N/A			
Comments			Both values > PQL and correctly entered into emLine. Lab noted on duplicate sample that "Dissolved greater than total. Reanalysis yields similar results."				Both values > PQL and correctly entered into emLine.															
Action			Let Value Stand				Let Value Stand															
Result			Discrepancy between values remains.				Discrepancy between values remains.															
V2A	9/7/2010	M	3.30	1.80	10.30	57.00	1.08	0.50	430.00	0.40	4910.00	<0.05	988.0	<3	0.020	39.30	<1	854.00	<0.5			
V2A	9/7/2010	DUPLICATE	2.10	1.80	10.60	58.40	1.15	0.50	431.00	0.40	5310.00	<0.05	997.0	<3	0.020	39.70	<1	884.00	<0.5			
RPD (%)			44.44	0.00	2.87	2.43	6.28	0.00	0.23	0.00	7.83	N/A	0.91	N/A	0.00	1.01	N/A	3.45	N/A			
Comments																						
Action																						
Result																						
V22	9/7/2010	M	49700.000	<1	4.65	569.000	327.0000	<0.5	539	0.2000	4520.00	<5	1150.00	<5	2.22	4.5000	<5	175000.000	<0.5			
V22	9/7/2010	DUPLICATE	49900.000	<1	4.64	573.000	335.0000	<0.5	527	0.2000	4270.00	<5	1170.00	<5	2.30	4.5000	<5	179000.000	<0.5			
RPD (%)			0.40	N/A	0.22	0.70	2.42	N/A	2.25	0.00	5.69	N/A	1.72	N/A	3.54	0.00	N/A	2.26	N/A			
Comments																						
Action																						
Result																						
V15	9/23/2010	M	46.30	0.80	13.70	115.00	0.35	<0.1	857.00	0.60	6300.00	<0.05	1480.0	<3	<0.01	58.80	<1	3050.00	<0.5			
V15	9/23/2010	DUPLICATE	28.90	0.80	13.50	112.00	0.97	0.20	825.00	0.70	6070.00	<0.05	1470.0	<3	<0.01	57.70	<1	3070.00	<0.5			
RPD (%)			46.28	0.00	1.47	2.64	93.94	N/A	3.80	15.38	3.72	N/A	0.68	N/A	N/A	1.89	N/A	0.65	N/A			
Comments			Both values > PQL and correctly entered into emLine.																			
Action			Let Value Stand																			
Result			Discrepancy between values remains.																			
V2A	10/21/2010	M	3.20	1.60	12.20	56.80	0.52	0.40	481.00	0.60	5670.00	<0.05	989.0	<3	<0.01	37.70	<1	1030.00	<0.5			
V2A	10/21/2010	DUPLICATE	4.20	1.70	12.00	56.10	0.88	0.40	483.00	0.50	5180.00	<0.05	977.0	<3	<0.01	38.10	<1	1100.00	<0.5			
RPD (%)			27.03	6.06	1.65	1.24	51.43	0.00	0.41	18.18	9.03	N/A	1.22	N/A	N/A	1.06	N/A	6.57	N/A			
Comments			Both values > PQL and correctly entered into emLine.																			
Action			Let Value Stand																			
Result			Discrepancy between values remains.																			
V25 BSP	11/1/2010	M	3.45	0.35	6.45	0.74	0.71	0.13	222.00	0.50	5020.00	0.05	706.0	<0.5	0.027	1.98	<0.2	74.70	<0.1			
V25 BSP	11/1/2010	DUPLICATE	2.48	0.30	6.54	0.74	1.32	0.13	223.00	0.48	4960.00	<0.01	701.0	<0.5	0.028	1.99	<0.2	75.20	<0.1			
RPD (%)			32.72	15.38	1.39	0.00	60.61	0.00	0.45	4.08	1.20	N/A	0.71	N/A	3.64	0.50	N/A	0.67	N/A			
Comments			Both values > PQL and correctly entered into emLine. Lab noted on both samples that "Dissolved greater than total. Reanalysis yields similar results."																			
Action			Let Value Stand																			
Result			Discrepancy between values remains.																			
V8	12/1/2010	M	6.06	1.07	4.36	1.84	0.12	0.14	55.00	1.05	4990.00	<0.01	319.0	<0.5	0.006	6.96	<0.2	12.10	<0.1			
V8	12/1/2010	DUPLICATE	5.46	1.01	4.28	1.42	0.03	0.13	56.00	1.04	4940.00	<0.01	317.0	<0.5	0.005	6.76	<0.2	9.70	<0.1			
RPD (%)			10.42	5.77	1.85	25.77	122.76	7.41	1.80	0.96	1.01	N/A	0.63	N/A	18.18	2.92	N/A	22.02	N/A			
Comments			Both values > PQL and correctly entered into emLine.																			
Action			Request Retest																			
Result			Retest performed, see results below.																			

RPD > 50%  
RPD > 100%



Station	Date	Sample Type	Mn-d µg/L	Mo-d µg/L	Na-d mg/L	Ni-d µg/L	Pb-d µg/L	Sb-d µg/L	S-d mg/L	Se-d µg/L	Si-d µg/L	Sn-d µg/L	Sr-d µg/L	Ti-d µg/L	Ti-d µg/L	U-d µg/L	V-d µg/L	Zn-d µg/L	Zr-d µg/L		
V8 Retest	12/1/2010	M					0.11														
V8 Retest	12/1/2010	DUPLICATE					0.02														
		RPD (%)	N/A	N/A	N/A	N/A	129.93	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Comments							Retest for December 1 V8 sample and duplicate. Both values correctly entered into emLine; however, duplicate value not > PQL. Therefore, RPD analysis not valid in this case.														
Action							Let Value Stand														
Result							New values entered into emLine.														

RPD > 50%  
RPD > 100%



Table D-19: Vangorda Creek Drainage Water Quality  
2010 QA/QC Duplicates - Seepage - Total Metals



Station	Date	Sample Type	Ag µg/L	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Bi µg/L	Ca mg/L	Cd µg/L	Co ug/L	Cr µg/L	Cu µg/L	Fe µg/L	Hg µg/L	K mg/L	Li mg/L	Mg mg/L	Mn µg/L	
LCD	5/12/2010	M	0.27	3100.00	1.30	<50	31.00	0.50	<1	126.00	156.00	610.00	<1	51.40	26100.00	<0.02	1.98	0.02	171.00	84900.00	
LCD	5/12/2010	DUPLICATE	0.30	3080.00	1.30	<50	31.00	0.50	<1	128.00	156.00	630.00	<1	53.60	26600.00	<0.02	2.02	0.02	174.00	87300.00	
RPD (%)			10.53	0.65	0.00	N/A	0.00	0.00	N/A	1.57	0.00	3.23	N/A	4.19	1.90	N/A	2.00	4.26	1.74	2.79	
Comments																					
Action																					
Result																					
V2A	5/18/2010	M	<0.03	8.00	1.20	<300	54.00	<0.05	<0.03	250.00	0.33	0.26	<0.5	1.20	17.00		3.30	0.01	181.00	7.30	
V2A	5/18/2010	DUPLICATE	<0.03	16.00	1.30	<300	55.70	<0.05	<0.03	262.00	0.31	0.26	<0.5	1.10	34.00		3.40	0.01	187.00	7.90	
RPD (%)			N/A	66.67	8.00	N/A	3.10	N/A	N/A	4.69	6.25	0.00	N/A	8.70	66.67	N/A	2.99	0.00	3.26	7.89	
Comments																		Both values correctly entered into emLine; however, main sample value not > PQL. Therefore, RPD analysis not valid in this case.			
Action			Let Value Stand																		
Result			Discrepancy between values remains.																		
LCD	6/16/2010	M	<0.4	11800	4	<1000	22	<2	<20	212	544	2380.00	<20	244	62400		3	<0.1	583	318000	
LCD	6/16/2010	DUPLICATE	<0.4	12000	4	<1000	23	<2	<20	214	564	2500.00	<20	267	65400		3	<0.1	606	331000	
RPD (%)			N/A	1.68	0.00	N/A	4.44	N/A	N/A	0.94	3.61	4.92	N/A	9.00	4.69	N/A	0.00	N/A	3.87	4.01	
Comments																					
Action																					
Result																					
V25	7/6/2010	M	<0.03	9.00	<0.1	<300	20.00	<0.05	<0.03	462.00	1.07	0.47	<0.5	0.40	15.00		2.90	0.05	98.30	1130.00	
V25	7/6/2010	DUPLICATE	<0.03	8.00	<0.1	<300	20.40	<0.05	<0.03	465.00	1.16	0.55	<0.5	0.40	14.00		2.90	0.05	100.00	1130.00	
RPD (%)			N/A	11.76	N/A	N/A	1.98	N/A	N/A	0.65	8.07	15.69	N/A	0.00	6.90	N/A	0.00	0.00	1.71	0.00	
Comments																					
Action																					
Result																					
V2A	7/7/2010	M	<0.03	9.00	1.00	<300	55.20	<0.05	<0.03	292.00	0.50	0.0700	<0.5	1.3000	23.00		4.10	0.014	227.00	2.500	
V2A	7/7/2010	DUPLICATE	<0.03	9.00	1.10	<300	55.90	<0.05	<0.03	285.00	0.50	0.0700	<0.5	1.2000	20.00		4.20	0.014	225.00	2.700	
RPD (%)			N/A	0.00	9.52	N/A	1.26	N/A	N/A	2.43	0.00	0.00	N/A	8.00	13.95	N/A	2.41	0.00	0.88	7.69	
Comments																					
Action																					
Result																					
V25 BSP	7/13/2010	M	<0.03	26.00	0.20	<300	32.10	<0.05	<0.03	428.00	0.92	1.18	<0.5	2.10	40.00	<0.05	2.60	0.04	89.60	844.00	
V25 BSP	7/13/2010	DUPLICATE	<0.03	29.00	0.20	<300	32.50	<0.05	<0.03	427.00	0.90	1.15	<0.5	1.90	36.00	<0.05	2.60	0.04	89.40	844.00	
RPD (%)			N/A	10.91	0.00	N/A	1.24	N/A	N/A	0.23	2.20	2.58	N/A	10.00	10.53	N/A	0.00	2.41	0.22	0.00	
Comments																					
Action																					
Result																					
V8	7/14/2010	M	<0.005	235.00	0.69	<50.0	76.40	0.02	<0.005	103.00	0.12	0.33	0.50	1.32	446.00		1.07	0.01	24.80	29.40	
V8	7/14/2010	DUPLICATE	<0.005	222.00	0.68	<50.0	77.90	0.02	<0.005	104.00	0.13	0.35	0.50	1.37	434.00		1.07	0.01	24.80	30.00	
RPD (%)			N/A	5.69	1.46	N/A	1.94	0.00	N/A	0.97	7.35	6.75	0.00	3.72	2.73	N/A	0.00	0.00	0.00	2.02	
Comments																					
Action																					
Result																					
V2A	8/18/2010	M	<0.03	27.00	1.10	<300	60.60	<0.05	<0.03	310.00	0.51	0.07	<0.5	1.40	63.00		4.80	0.02	258.00	3.00	
V2A	8/18/2010	DUPLICATE	<0.03	27.00	1.00	<300	59.70	<0.05	<0.03	316.00	0.50	0.07	<0.5	1.50	55.00		5.00	0.02	266.00	2.80	
RPD (%)			N/A	0.00	9.52	N/A	1.50	N/A	N/A	1.92	1.98	0.00	N/A	6.90	13.56	N/A	4.08	0.00	3.05	6.90	
Comments																					
Action																					
Result																					
V2A	9/7/2010	M	<0.03	9.00	1.00	<300	57.30	<0.05	<0.03	304.00	0.56	0.06	0.80	1.30	19.00		4.70	0.02	247.00	2.30	
V2A	9/7/2010	DUPLICATE	<0.03	23.00	1.20	<300	58.10	<0.05	<0.03	280.00	0.47	0.11	<0.5	1.50	43.00		4.60	0.02	240.00	2.60	
RPD (%)			N/A	87.50	18.18	N/A	1.39	N/A	N/A	8.22	17.48	58.82	N/A	14.29	77.42	N/A	2.15	0.00	2.87	12.24	
Comments																		Both values correctly entered into emLine; however, neither value > PQL. Therefore, RPD analysis not valid in this case.			
Action			Let Value Stand																		
Result			Discrepancy between values remains.																		
V22	9/7/2010	M	0.22	1600.00	3.60	<50	44.00	0.30	<1	222.00	127.00	710.00	<1	495.00	51300.00		2.71	0.05	115.00	50000.00	
V22	9/7/2010	DUPLICATE	0.22	1600.00	3.10	<50	32.00	0.30	<1	224.00	127.00	690.00	<1	480.00	51300.00		2.66	0.05	113.00	48800.00	
RPD (%)			0.00	0.00	14.93	N/A	31.58	0.00	N/A	0.90	0.00	2.86	N/A	3.08	0.00	N/A	1.86	0.00	1.75	2.43	
Comments																					
Action																					
Result																					
V2A	10/21/2010	M	<0.03	25.00	1.00	<300	59.40	<0.05	<0.03	288.00	0.58	0.11	<0.5	1.30	47.00		3.80	0.01	214.00	2.70	
V2A	10/21/2010	DUPLICATE	<0.03	28.00	1.00	<300	59.90	<0.05	<0.03	271.00	0.58	0.11	<0.5	1.40	46.00		3.90	0.01	224.00	2.50	
RPD (%)			N/A	11.32	0.00	N/A	0.84	N/A	N/A	6.08	0.00	0.00	N/A	7.41	2.15	N/A	2.60	8.00	4.57	7.69	
Comments																					
Action																					
Result																					

RPD > 50%  
RPD > 100%

Table D-19: Vangorda Creek Drainage Water Quality  
2010 QA/QC Duplicates - Seepage - Total Metals



Station	Date	Sample Type	Ag µg/L	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Bi µg/L	Ca mg/L	Cd µg/L	Co ug/L	Cr µg/L	Cu µg/L	Fe µg/L	Hg µg/L	K mg/L	Li mg/L	Mg mg/L	Mn µg/L	
V25 BSP	11/1/2010	M	<0.005	2.30	0.14	<50	29.40	<0.01	<0.005	220.00	0.16	0.02	<0.1	1.25	7.00	0.02	1.85	0.01	44.10	3.35	
V25 BSP	11/1/2010	DUPLICATE	<0.005	2.10	0.12	<50	30.30	<0.01	<0.005	220.00	0.18	0.02	<0.1	1.21	6.00	0.02	1.84	0.01	44.10	3.18	
RPD (%)			N/A	9.09	15.38	N/A	3.02	N/A	N/A	0.00	10.40	9.52	N/A	3.25	15.38	12.50	0.54	0.79	0.00	5.21	
Comments																					
Action																					
Result																					
V8	12/1/2010	M	<0.005	24.20	0.41	<50	66.90	<0.01	0.01	81.40	0.06	0.10	<0.1	0.63	65.00		1.18	0.01	35.00	10.50	
V8	12/1/2010	DUPLICATE	<0.005	10.60	0.37	<50	64.50	<0.01	<0.005	83.70	0.05	0.05	<0.1	0.57	31.00		1.24	0.01	35.40	6.37	
RPD (%)			N/A	78.16	10.26	N/A	3.65	N/A	N/A	2.79	10.53	68.53	N/A	10.00	70.83	N/A	4.96	3.85	1.14	48.96	
Comments				Both values > PQL and correctly entered into emLine.							Both values > PQL and correctly entered into emLine.			Both values > PQL and correctly entered into emLine.							
Action				Let Value Stand							Let Value Stand			Let Value Stand							
Result				Discrepancy between values remains.							Discrepancy between values remains.			Discrepancy between values remains.							

RPD > 50%  
RPD > 100%

Table D-19: Vangorda Creek Drainage Water Quality  
2010 QA/QC Duplicates - Seepage - Total Metals



Station	Date	Sample Type	Mo µg/L	Na mg/L	Ni µg/L	P mg/L	Pb µg/L	S mg/L	Sb µg/L	Se µg/L	Si µg/L	Sn µg/L	Sr µg/L	Ti µg/L	Tl µg/L	U µg/L	V µg/L	Zn µg/L	Zr µg/L
V5	1/6/2010	M	2.26	4.93	2.260		0.72	57	0.1700	4.37	5790.00	<0.01	417.00	4.20	0.0050	7.13	0.400	4.90	0.2000
V5	1/6/2010	DUPLICATE	2.31	5.03	2.420		0.70	57	0.1900	4.86	6390.00	<0.01	413.00	2.70	0.0040	7.00	0.400	4.80	<0.1
RPD (%)			2.19	2.01	6.84	N/A	2.97	0.00	11.11	10.62	9.85	N/A	0.96	43.48	22.22	1.84	0.00	2.06	N/A
Comments																			
Action																			
Result																			
V2A	2/3/2010	M	2.40	14.20	32.70		3.33	385.00	0.40	0.60	5780.00	<0.05	1130.00	<3	0.02	41.70	<1	667.00	<0.5
V2A	2/3/2010	DUPLICATE	2.40	14.30	34.30		2.58	389.00	0.50	0.70	5720.00	0.1	1150.00	<3	<0.01	41.70	<1	706.00	<0.5
RPD (%)			0.00	0.70	4.78	N/A	25.38	1.03	22.22	15.38	1.04	N/A	1.75	N/A	N/A	0.00	N/A	5.68	N/A
Comments																			
Action																			
Result																			
V1	2/18/2010	M	0.62	2.03	0.22		0.08	4.00	0.03	0.19	5050.00	<0.01	76.90	<0.5	<0.002	1.28	<0.2	0.60	<0.1
V1	2/18/2010	DUPLICATE	0.69	2.15	0.57		0.76	4.00	0.03	0.19	4880.00	<0.01	77.40	<0.5	<0.002	1.32	<0.2	12.50	<0.1
RPD (%)			10.69	5.74	88.61	N/A	160.10	0.00	0.00	0.00	3.42	N/A	0.65	N/A	N/A	3.08	N/A	181.68	N/A
Comments			Both values > PQL and correctly entered into emLine.																
Action			Request Retest																
Result			Retest performed, see results below.																
V1 Retest	2/18/2010	M	0.64	2.00	0.21		0.09	4.00	0.03	0.17	4560.00	<0.01	74.30	<0.5	<0.002	1.25	<0.2	0.80	<0.1
V1 Retest	2/18/2010	DUPLICATE	0.69	2.03	0.52		0.74	4.00	0.03	0.18	4650.00	<0.01	76.40	<0.5	<0.002	1.30	<0.2	11.60	<0.1
RPD (%)			7.52	1.49	84.93	N/A	158.07	0.00	0.00	5.71	1.95	N/A	2.79	N/A	N/A	3.92	N/A	174.19	N/A
Comments			Retest for February 18 V1 sample and duplicate. Both values > PQL and correctly entered into emLine. Duplicate will be performed at V1 at next sampling event.																
Action			Let Value Stand																
Result			New values entered into emLine.																
V2	3/2/2010	M	1.80	11.50	2.30		0.55	388.00	0.20	0.70	6350.00	<0.05	906.00	<3.0	<0.01	29.60	<1.0	21.60	<0.5
V2	3/2/2010	DUPLICATE	1.70	11.70	2.10		0.54	406.00	0.20	0.70	5870.00	<0.05	879.00	<3.0	<0.01	29.30	<1.0	22.50	<0.5
RPD (%)			5.71	1.72	9.09	N/A	1.83	4.53	0.00	0.00	7.86	N/A	3.03	N/A	N/A	1.02	N/A	4.08	N/A
Comments																			
Action																			
Result																			
V5	3/30/2010	M	2.65	5.49	1.84		0.24	61.00	0.16	3.73	5570.00	<0.01	401.00	<0.5	0.00	7.39	0.30	2.90	<0.1
V5	3/30/2010	DUPLICATE	2.83	5.69	1.97		0.25	66.00	0.16	3.96	5280.00	<0.01	433.00	2.000	0.01	7.75	0.40	3.30	<0.1
RPD (%)			6.57	3.58	6.82	N/A	6.09	7.87	0.00	5.98	5.35	N/A	7.67	N/A	50.00	4.76	28.57	12.90	N/A
Comments			Both values correctly entered into emLine; however, neither value > PQL. Therefore, RPD analysis not valid in this																
Action			Let Value Stand																
Result			Discrepancy between values remains.																
V8	3/30/2010	M	1.47	5.19	2.14		0.23	76.00	0.17	1.97	5010.00	<0.01	402.00	<0.5	0.01	10.40	<0.2	12.70	<0.1
V8	3/30/2010	DUPLICATE	1.53	5.43	2.30		0.15	81.00	0.17	2.10	4880.00	<0.01	400.00	<0.5	0.01	10.20	<0.2	12.60	<0.1
RPD (%)			4.00	4.52	7.21	N/A	45.67	6.37	0.00	6.39	2.63	N/A	0.50	N/A	13.33	1.94	N/A	0.79	N/A
Comments																			
Action																			
Result																			
V1	4/20/2010	M	0.67	2.09	0.22		0.12	0.04	0.20	0.20	4810.00	<0.01	77.50	<0.5	<0.002	1.40	<0.2	0.90	<0.1
V1	4/20/2010	DUPLICATE	0.71	2.08	0.25		1.01	0.04	0.20	0.20	4370.00	<0.01	78.60	<0.5	0.00	1.47	<0.2	1.60	<0.1
RPD (%)			5.80	0.48	12.77	N/A	196.26	N/A	0.00	0.00	9.59	N/A	1.41	N/A	N/A	4.88	N/A	56.00	N/A
Comments			Both values > PQL and correctly entered into emLine.																
Action			Request Retest																
Result			Retest performed, see results below.																
V1 Retest	4/20/2010	M	0.60	1.76	0.18		0.37	<10	0.03	0.18	4040.00	<0.01	79.30	<0.5	<0.002	1.41	<0.2	0.80	<0.1
V1 Retest	4/20/2010	DUPLICATE	0.65	1.78	0.23		2.09	<10	0.04	0.19	4030.00	<0.01	80.40	<0.5	0.00	1.45	<0.2	2.80	<0.1
RPD (%)			8.00	1.13	24.39	N/A	139.42	N/A	28.57	5.41	0.25	N/A	1.38	N/A	N/A	2.80	N/A	111.11	N/A
Comments			Retest for April 20 V1 sample and duplicate. Both values > PQL and correctly entered into emLine.																
Action			Let Value Stand																
Result			New values entered into emLine.																

RPD > 50%  
RPD > 100%

Table D-19: Vangorda Creek Drainage Water Quality  
2010 QA/QC Duplicates - Seepage - Total Metals



Station	Date	Sample Type	Mo µg/L	Na mg/L	Ni µg/L	P mg/L	Pb µg/L	S mg/L	Sb µg/L	Se µg/L	Si µg/L	Sn µg/L	Sr µg/L	Ti µg/L	Ti µg/L	U µg/L	V µg/L	Zn µg/L	Zr µg/L
LCD	5/12/2010	M	<1	1.53	480.00		37.30	567.00	<0.5	0.40	3050.00	<5	406.00	<5	0.25	8.10	<5	203000.00	<0.5
LCD	5/12/2010	DUPLICATE	<1	1.65	500.00		37.80	577.00	<0.5	0.30	3040.00	<5	417.00	<5	0.27	8.40	<5	209000.00	<0.5
RPD (%)			N/A	7.55	4.08	N/A	1.33	1.75	N/A	28.57	0.33	N/A	2.67	N/A	7.69	3.64	N/A	2.91	N/A
Comments																			
Action																			
Result																			
V2A	5/18/2010	M	1.90	9.50	42.00		0.54	391.00	0.50	0.60	4460.00	<0.05	869.00	<3	0.04	33.70	<1	747.00	<0.5
V2A	5/18/2010	DUPLICATE	2.20	9.70	44.70		0.73	383.00	0.40	0.50	4210.00	<0.05	888.00	<3	0.04	33.50	<1	750.00	<0.5
RPD (%)			14.63	2.08	6.23	N/A	29.92	2.07	22.22	18.18	5.77	N/A	2.16	N/A	0.00	0.60	N/A	0.40	N/A
Comments																			
Action																			
Result																			
LCD	6/16/2010	M	<20	4	1680		320	1720	<10	<2	8330	<100	863	<100	<1	32	<100	887000	<10
LCD	6/16/2010	DUPLICATE	<20	4	1750		332	1800	<10	<2	8450	<100	892	<100	<1	33	<100	926000	<10
RPD (%)			N/A	0.00	4.08	N/A	3.68	4.55	N/A	N/A	1.43	N/A	3.30	N/A	N/A	3.08	N/A	4.30	N/A
Comments																			
Action																			
Result																			
V25	7/6/2010	M	<0.3	4.90	0.60		0.30	564.00	<0.1	<0.2	<500	<0.05	1450.00	<3	1.34	0.13	<1	58.90	<0.5
V25	7/6/2010	DUPLICATE	<0.3	4.90	0.40		0.27	564.00	<0.1	<0.2	<500	<0.05	1430.00	<3	1.43	0.11	<1	60.60	<0.5
RPD (%)			N/A	0.00	40.00	N/A	10.53	0.00	N/A	N/A	N/A	N/A	1.39	N/A	6.50	16.67	N/A	2.85	N/A
Comments																			
Action																			
Result																			
V2A	7/7/2010	M	2.50	10.60	51.900		1.32	427	0.6000	0.50	4990.00	0.17	981.00	<3	0.0300	35.80	<1	811.00	<0.5
V2A	7/7/2010	DUPLICATE	2.30	10.50	51.800		1.03	423	0.5000	0.50	4750.00	<0.05	976.00	<3	0.0300	35.10	<1	801.00	<0.5
RPD (%)			8.33	0.95	0.19	N/A	24.68	0.94	18.18	0.00	4.93	N/A	0.51	N/A	0.00	1.97	N/A	1.24	N/A
Comments																			
Action																			
Result																			
V25 BSP	7/13/2010	M	0.40	5.10	2.10		1.04	484.00	<0.1	<0.2	1180.00	<0.05	1370.00	<3	1.05	0.25	<1	56.70	<0.5
V25 BSP	7/13/2010	DUPLICATE	<0.3	4.90	2.20		0.76	488.00	<0.1	<0.2	1180.00	<0.05	1390.00	<3	1.05	0.28	<1	54.30	<0.5
RPD (%)			N/A	4.00	4.65	N/A	31.11	0.82	N/A	N/A	0.00	N/A	1.45	N/A	0.00	11.32	N/A	4.32	N/A
Comments																			
Action																			
Result																			
V8	7/14/2010	M	0.42	2.49	1.66		1.17	102.00	0.10	0.33	4590.00	<0.01	366.00	7.800	0.05	2.12	0.60	19.00	0.30
V8	7/14/2010	DUPLICATE	0.40	2.48	1.72		1.27	105.00	0.10	0.34	4460.00	<0.01	364.00	7.900	0.06	2.11	0.60	22.00	0.30
RPD (%)			4.88	0.40	3.55	N/A	8.20	2.90	0.00	2.99	2.87	N/A	0.55	1.27	9.17	0.47	0.00	14.63	0.00
Comments																			
Action																			
Result																			
V2A	8/18/2010	M	1.90	11.60	58.60		1.73	495.00	0.50	0.40	5640.00	<0.05	1080.00	<3	0.03	42.60	<1	882.00	<0.5
V2A	8/18/2010	DUPLICATE	2.00	12.20	60.40		1.40	494.00	0.70	0.40	5660.00	<0.05	1080.00	<3	0.04	42.40	<1	914.00	<0.5
RPD (%)			5.13	5.04	3.03	N/A	21.09	0.20	33.33	0.00	0.35	N/A	0.00	N/A	28.57	0.47	N/A	3.56	N/A
Comments																			
Action																			
Result																			
V2A	9/7/2010	M	1.90	12.20	59.30		0.57	478.00	1.10	0.50	4810.00	<0.05	1050.00	<3	0.02	40.10	<1	951.00	<0.5
V2A	9/7/2010	DUPLICATE	1.90	11.90	58.40		1.14	467.00	1.20	0.50	4130.00	<0.05	1050.00	<3	0.03	40.50	<1	902.00	<0.5
RPD (%)			0.00	2.49	1.53	N/A	66.67	2.33	8.70	0.00	15.21	N/A	0.00	N/A	40.00	0.99	N/A	5.29	N/A
Comments																			
Action																			
Result																			
V22	9/7/2010	M	2.00	4.48	560.00		345.00	538.00	0.90	<0.1	4440.00	<5	1070.00	<5	1.97	4.40	<5	162000.00	<0.5
V22	9/7/2010	DUPLICATE	2.00	4.32	547.00		334.00	520.00	0.80	<0.1	4530.00	<5	1070.00	<5	1.92	4.30	<5	158000.00	<0.5
RPD (%)			0.00	3.64	2.35	N/A	3.24	3.40	11.76	N/A	2.01	N/A	0.00	N/A	2.57	2.30	N/A	2.50	N/A
Comments																			
Action																			
Result																			
V2A	10/21/2010	M	1.60	10.90	52.60		1.22	450.00	0.40	0.50	5310.00	<0.05	978.00	<3	0.02	39.10	<1	1060.00	<0.5
V2A	10/21/2010	DUPLICATE	1.60	11.60	53.50		1.37	439.00	0.40	0.50	4850.00	<0.05	1010.00	<3	<0.01	38.80	<1	1070.00	<0.5
RPD (%)			0.00	6.22	1.70	N/A	11.58	2.47	0.00	0.00	9.06	N/A	3.22	N/A	N/A	0.77	N/A	0.94	N/A
Comments																			
Action																			
Result																			

RPD > 50%  
RPD > 100%

Table D-19: Vangorda Creek Drainage Water Quality  
2010 QA/QC Duplicates - Seepage - Total Metals



Station	Date	Sample Type	Mo µg/L	Na mg/L	Ni µg/L	P mg/L	Pb µg/L	S mg/L	Sb µg/L	Se µg/L	Si µg/L	Sn µg/L	Sr µg/L	Ti µg/L	Tl µg/L	U µg/L	V µg/L	Zn µg/L	Zr µg/L
V25 BSP	11/1/2010	M	0.33	6.77	0.80	<0.002	0.12	240.00	0.12	0.53	5640.00	<0.01	702.00	<0.5	0.03	2.01	<0.2	78.90	<0.1
V25 BSP	11/1/2010	DUPLICATE	0.31	6.72	0.73	0.00	0.27	237.00	0.13	0.51	5740.00	<0.01	711.00	<0.5	0.03	2.03	<0.2	78.00	<0.1
RPD (%)			6.25	0.74	9.15	N/A	75.65	1.26	8.00	3.85	1.76	N/A	1.27	N/A	3.64	0.99	N/A	1.15	N/A
Comments			Both values > PQL and correctly entered into emLine.																
Action			Let Value Stand																
Result			Discrepancy between values remains.																
V8	12/1/2010	M	1.03	4.20	1.51		0.22	53.00	0.13	1.01	5170.00	<0.01	328.00	0.700	0.01	6.71	<0.2	11.00	<0.1
V8	12/1/2010	DUPLICATE	0.93	4.20	1.49		0.10	57.00	0.13	1.08	5340.00	<0.01	316.00	<0.5	0.01	6.21	<0.2	10.20	<0.1
RPD (%)			10.20	0.00	1.33	N/A	73.89	7.27	0.00	6.70	3.24	N/A	3.73	N/A	18.18	7.74	N/A	7.55	N/A
Comments			Both values > PQL and correctly entered into emLine.																
Action			Let Value Stand																
Result			Discrepancy between values remains.																

RPD > 50%  
RPD > 100%

Table D-20: Vangorda Creek Drainage Water Quality  
2010 QA/QC Splits - General Parameters

Station	Date	Sample Type	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3 mg/L	CaCO3-d mg/L	Chloride mg/L	CN(wad) mg/L	CNTHIO mg/L	CO3 mg/L	Colour TCU	COND µmho/cm	DOC mg/L	HCO3 mg/L	NH3 mg/L	OH mg/L	pH	SO4-d mg/L	TDS mg/L	TOC mg/L	TSS mg/L	TURB NTU
V25 BSP	6/22/2010	M			74	<0.5	183	182	<0.5		<0.0005	<0.5	<5	425		90	<0.05	<0.5	8	150	290		20	6.9
V25 BSP	6/22/2010	SPLIT			74	<0.5	193	183.00	<0.5			<0.5	<5	426		91	<0.05	<0.5	8	130	280		52	10.7
RPD (%)			N/A	N/A	0.00	N/A	5.32	0.55	N/A	N/A	N/A	N/A	N/A	0.24	N/A	1.10	N/A	N/A	0.00	14.29	3.51	N/A	88.89	43.18
Comments																						Both values > PQL and correctly entered into emLine.		
Action																						Let Value Stand		
Result																						Discrepancy between values remains. Retest not carried out because insufficient sample remaining to reanalyze.		
V1	7/14/2010	M			26.00	<0.5	23.80	27.20	<0.5			<0.5		65.00		1.10	31.00	<0.05	<0.5	7.56	6.80	38.00	1.80	<1.0
V1	7/14/2010	SPLIT			25.00	<0.5	24.10	25.40	<0.5			<0.5		65.00		1.80	30.00	<0.05	<0.5	7.52	8.30	44.00	1.80	2.00
RPD (%)			N/A	N/A	3.92	N/A	1.25	6.84	N/A	N/A	N/A	N/A	N/A	0.00	48.28	3.28	N/A	N/A	0.04	19.87	14.63	0.00	N/A	N/A
Comments																								
Action																								
Result																								
V5	8/4/2010	M			180.00	3.00	240.00	264.00	1.00			3.60		477.00		3.10	210.00	<0.05	<0.5	8.37	75.00	330.00	3.70	4.00
V5	8/4/2010	SPLIT			180.00	3.40	245.00	260.00	0.90			4.10		478.00		3.40	210.00	<0.05	<0.5	8.38	74.00	310.00	3.10	5.00
RPD (%)			N/A	N/A	0.00	12.50	2.06	1.53	10.53	N/A	N/A	12.99	N/A	0.21	9.23	0.00	N/A	N/A	0.01	1.34	6.25	17.65	22.22	N/A
Comments																								
Action																								
Result																								
V25 BSP	8/5/2010	M			56.00	<0.5	773.00	844.00	<0.5		<0.0005	<0.5	<5	1340.00		68.00	<0.05	<0.5	7.68	700.00	1100.00		<1	0.30
V25 BSP	8/5/2010	SPLIT			57.00	<0.5	767.00	834.00	<0.5		<0.0005	<0.5	<5	1370.00		70.00	<0.05	<0.5	7.61	690.00	1200.00		<1	0.20
RPD (%)			N/A	N/A	1.77	N/A	0.78	1.19	N/A	N/A	N/A	N/A	N/A	2.21	N/A	2.90	N/A	N/A	0.07	1.44	8.70	N/A	N/A	40.00
Comments																								
Action																								
Result																								
V5	9/7/2010	M			180.00	2.60	233.00	235.00	1.50			3.10		479.00		5.60	220.00	0.20	<0.5	8.39	82.00	330.00	5.70	6.00 2.50
V5	9/7/2010	SPLIT			180.00	2.20	239.00	238.00	1.60			2.60		477.00		6.60	220.00	0.31	<0.5	8.35	83.00	330.00	6.30	6.00 1.80
RPD (%)			N/A	N/A	0.00	16.67	2.54	1.27	6.45	N/A	N/A	17.54	N/A	0.42	16.39	0.00	43.14	N/A	0.04	1.21	0.00	10.00	0.00	32.56
Comments																								
Action																								
Result																								
V1	10/5/2010	M			34.00	<0.5	38.50	39.90	<0.5			<0.5		88.00		1.10	41.00	0.36	<0.5	7.58	9.60	82.00	1.70	<1 0.20
V1	10/5/2010	SPLIT			32.00	<0.5	38.80	39.50	<0.5			<0.5		87.00		1.90	39.00	<0.05	<0.5	7.48	11.00	86.00	2.10	<1 0.20
RPD (%)			N/A	N/A	6.06	N/A	0.78	1.01	N/A	N/A	N/A	N/A	N/A	1.14	53.33	5.00	N/A	N/A	0.10	13.59	4.76	21.05	N/A	0.00
Comments														Both values correctly entered into emLine; however, neither value > PQL. Therefore, RPD analysis not valid in this case.										
Action														Let Value Stand										
Result														Discrepancy between values remains.										
V15	10/7/2010	M	<0.5	52.20	560.00	<0.5		2950.00	1.10			<0.5		3740.00		680.00		<0.5	7.77	2500.00			<1	
V15	10/7/2010	SPLIT	<0.5	58.00	560.00	<0.5		2890.00	2.00			<0.5		3760.00		680.00		<0.5	7.77	1900.00			<1	
RPD (%)			N/A	10.53	0.00	N/A	N/A	2.05	58.06	N/A	N/A	N/A	N/A	0.53	N/A	0.00	N/A	N/A	0.00	27.27	N/A	N/A	N/A	N/A
Comments														Both values correctly entered into emLine; however, neither value > PQL. Therefore, RPD analysis not valid in this case.										
Action														Let Value Stand										
Result														Discrepancy between values remains.										

RPD > 50%



Table D-20: Vangorda Creek Drainage Water Quality  
2010 QA/QC Splits - General Parameters

Station	Date	Sample Type	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3 mg/L	CaCO3-d mg/L	Chloride mg/L	CN(wad) mg/L	CNTHIO mg/L	CO3 mg/L	Colour TCU	COND µmho/cm	DOC mg/L	HCO3 mg/L	NH3 mg/L	OH mg/L	pH	SO4-d mg/L	TDS mg/L	TOC mg/L	TSS mg/L	TURB NTU
V15	11/18/2010	M	<0.5	51.10	540.00	<0.5		3060.00	2.20			<0.5		3880.00		660.00		<0.5	7.75	2900.00				<1
V15	11/18/2010	SPLIT	<0.5	51.50	540.00	<0.5		2960.00	<0.5			<0.5		3880.00		660.00		<0.5	7.79	2500.00				<1
RPD (%)			N/A	0.78	0.00	N/A	N/A	3.32	N/A	N/A	N/A	N/A	N/A	0.00	N/A	0.00	N/A	N/A	0.04	14.81	N/A	N/A	N/A	N/A
Comments																								
Action																								
Result																								
V15	12/16/2010	M	<0.5	61.40	560.00	<0.5		3110.00	3.00			<0.5		4290.00		680.00		<0.5	7.72	2700.00				<1
V15	12/16/2010	SPLIT	<0.5	53.20	560.00	<0.5		3210.00	1.50			<0.5		4200.00		690.00		<0.5	7.94	2700.00				<1
RPD (%)			N/A	14.31	0.00	N/A	N/A	3.16	66.67	N/A	N/A	N/A	N/A	2.12	N/A	1.46	N/A	N/A	0.22	0.00	N/A	N/A	N/A	N/A
Comments									Both values correctly entered into emLine; however, split value not > PQL. Therefore, RPD analysis not valid in this case.															
Action									Let Value Stand															
Result									Discrepancy between values remains.															
V23	12/16/2010	M			220.00	<0.5	773.00	705.00	1.40			<0.5		1300.00		270.00		0.03	<0.5	8.06	530.00	970.00		<4
V23	12/16/2010	SPLIT			190.00	<0.5	678.00	647.00	0.80			<0.5		1140.00		230.00		0.01	<0.5	8.01	420.00	850.00		<4
RPD (%)			N/A	N/A	14.63	N/A	13.09	8.58	54.55	N/A	N/A	N/A	N/A	13.11	N/A	16.00	60.00	N/A	0.05	23.16	13.19	N/A	N/A	N/A
Comments									Both values correctly entered into emLine; however, neither value > PQL. Therefore, RPD analysis not valid in this case.								Both values correctly entered into emLine; however, split value not > PQL. Therefore, RPD analysis not valid in this case.							
Action									Let Value Stand								Let Value Stand							
Result									Discrepancy between values remains.								Discrepancy between values remains.							

RPD > 50%









Table D-23: Vangorda Creek Drainage Water Quality  
2010 QA/QC Lab vs. Field Comparison

Station	Date	COND µmho/cm	CONDF µmho/cm	RPD %	Comments	Action	Result	pH	pHF	Difference	Comments	Action	Result
LCD	5/12/2010	2400	2259	6.05				3.9	4.43	0.53			
LCD	6/16/2010	5950	>3999	#VALUE!	Field and lab values not comparable because conductivity greater than maximum measurable level for field meter used.			3.49	3.13	0.36			
LCD	7/14/2010	7090	>3999	#VALUE!	Field and lab values not comparable because conductivity greater than maximum measurable level for field meter used.			3.28	3.21	0.07			
LCD	8/4/2010	7660	>3999	#VALUE!	Field and lab values not comparable because conductivity greater than maximum measurable level for field meter used.			3.19	2.67	0.52			
LCD	9/7/2010	8210	9240	11.81				3.19	3.04	0.15			
LCD	10/5/2010	7770	>3999	#VALUE!	Field and lab values not comparable because conductivity greater than maximum measurable level for field meter used.			3.3	2.15	1.15	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.
MOOSE SEEP	1/7/2010	2380	2500	4.92				7.9	7.45	0.45			
MOOSE SEEP	2/3/2010	2400	2260	6.01				8	7.45	0.55			
MOOSE SEEP	3/2/2010	2320	2170	6.68				8	7.81	0.19			
MOOSE SEEP	4/7/2010	2280	2350	3.02				8.3	7.72	0.58			
MOOSE SEEP	5/1/2010	2240	1920	15.38				8	8.51	0.51			
MOOSE SEEP	5/18/2010	1990	2028	1.89				8	7.89	0.11			
MOOSE SEEP	6/2/2010	1990	2045	2.73				8.5	7.87	0.63			
MOOSE SEEP	6/20/2010	2080	2030	2.43				8.3	7.76	0.54			
MOOSE SEEP	7/7/2010	2110	2290	8.18				7.95	7.72	0.23			
MOOSE SEEP	7/22/2010	2220	1854	17.97				8.08	7.71	0.37			
MOOSE SEEP	8/5/2010	2260	2278	0.79				8.05	7.76	0.29			
MOOSE SEEP	8/18/2010	2260	2164	4.34				8.19	7.72	0.47			
MOOSE SEEP	9/7/2010	2360	2312	2.05				8.22	7.55	0.67			
MOOSE SEEP	9/23/2010	2380	2006	17.05				7.85	7.68	0.17			
MOOSE SEEP	10/7/2010	2350	2320	1.28				8.11	7.74	0.37			
MOOSE SEEP	10/21/2010	2370	2243	5.51				8.22	7.91	0.31			
MOOSE SEEP	11/4/2010	2360	2313	2.01				8.18	7.84	0.34			
MOOSE SEEP	12/2/2010	2310	1470	44.44				8.24	7.91	0.33			

RPD > 50% or pH difference > 1.5 pH unit  
 RPD > 20% or pH difference > 1 pH unit

Table D-23: Vangorda Creek Drainage Water Quality  
2010 QA/QC Lab vs. Field Comparison

Station	Date	COND µmho/cm	CONDF µmho/cm	RPD %	Comments	Action	Result	pH	pHF	Difference	Comments	Action	Result
SRK GD01	12/1/2010	3480	2320	40.00	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains. Multiple flagged conductivity values on December 1, 2010 suggests calibration on field meter may have been off.	8.13	7.56	0.57			
V1	1/7/2010	112	140	22.22	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.	7.7	7.76	0.06			
V1	2/18/2010	118	80	38.38	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains. Multiple flagged conductivity values on February 18, 2010 suggests calibration on field meter may have been off.	7.8	8.34	0.54			
V1	3/29/2010	121	122	0.82				7.9	7.91	0.01			
V1	4/20/2010	113	101	11.21				7.8	7.9	0.1			
V1	5/12/2010	86	99	14.05				7.4	7.94	0.54			
V1	6/16/2010	46	54	16.00				7.42	7.16	0.26			
V1	7/14/2010	65	60	8.00				7.56	8.2	0.64			
V1	7/14/2010	65	60	8.00				7.52	8.2	0.68			
V1	8/4/2010	84	81	3.64				7.8	8.29	0.49			
V1	9/7/2010	78	30	88.89	Field and lab values correctly entered into emLine.	Let Value Stand	Retest request would be filed past sample hold time. Discrepancy between values remains.	7.61	8.38	0.77			
V1	10/5/2010	88	103	15.71				7.58	5.23	2.35	Field and lab values correctly entered into emLine.	Let Value Stand	Retest request would be filed past sample hold time. Discrepancy between values remains.
V1	11/1/2010	99	89	10.64				7.72	8.67	0.95			
V1	12/1/2010	101	140	32.37	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains. Multiple flagged conductivity values on December 1, 2010 suggests calibration on field meter may have been off.	7.22	8.19	0.97			
V14	6/1/2010	3610	3791	4.89				8.3	8.12	0.18			
V14	10/6/2010			#DIV/0!						0			

RPD > 50% or pH difference > 1.5 pH unit  
 RPD > 20% or pH difference > 1 pH unit

Table D-23: Vangorda Creek Drainage Water Quality  
2010 QA/QC Lab vs. Field Comparison

Station	Date	COND µmho/cm	CONDF µmho/cm	RPD %	Comments	Action	Result	pH	pHF	Difference	Comments	Action	Result
V15	1/7/2010	4020	3840	4.58				7.5	6.62	0.88			
V15	1/21/2010	4030	3710	8.27				7.5	6.76	0.74			
V15	2/3/2010	4030	2954	30.81	Field and lab values correctly entered into emLine.	Let Value Stand		7.7	6.99	0.71	Discrepancy between lab and field values remains. Multiple flagged conductivity values on February 3, 2010 suggests calibration on field meter may have been off.		
V15	2/18/2010	4040	1780	77.66	Field and lab values correctly entered into emLine.	Request Retest		7.8	7.06	0.74	Retest not possible because was requested too late. Remainder of sample had been discarded. Therefore, discrepancy between lab and field values remains. Multiple flagged conductivity values on February 18, 2010 suggests calibration on field meter may have been off.		
V15	3/2/2010	3990	3630	9.45				7.6	7.03	0.57			
V15	3/23/2010	4070	3590	12.53				8.1	7	1.1	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.
V15	4/7/2010	3990	2788	35.47	Field and lab values correctly entered into emLine.	Let Value Stand		8.0	6.97	1.03	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.
V15	4/19/2010	2550	2800	9.35				7.9	7.19	0.71			
V15	5/1/2010	2920	2560	13.14				7.8	7.79	0.01			
V15	5/18/2010	3690	3535	4.29				8.3	7.15	1.15	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.
V15	6/2/2010	3910	3948	0.97				8.2	6.88	1.32	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.
V15	6/15/2010	3820	3249	16.16				8.2	6.91	1.29	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.
V15	7/7/2010	3830	3541	7.84				7.8	7.44	0.36			
V15	7/22/2010	3930	3101	23.58	Field and lab values correctly entered into emLine.	Let Value Stand		7.7	7.21	0.49	Discrepancy between lab and field values remains.		
V15	8/5/2010	3990	3958	0.81				7.66	6.99	0.67			
V15	8/18/2010	3910	3527	10.30				7.84	6.93	0.91			
V15	9/7/2010	3820	3531	7.86				7.94	6.87	1.07	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.
V15	9/23/2010	3800		200.00	Lab value correctly entered into emLine. However, field value not entered.	Change Value		7.69		7.69	Lab value correctly entered into emLine. However, field value not entered.	Change Value	Field value entered into emLine. (see below)
V15	9/23/2010	3800	2500	41.27	Field and lab values ocrrectly entered into emLine.	Let Value Stand		7.69	6.8	0.89	Discrepancy between lab and field values remains.		

RPD > 50% or pH difference > 1.5 pH unit  
 RPD > 20% or pH difference > 1 pH unit



Table D-23: Vangorda Creek Drainage Water Quality  
2010 QA/QC Lab vs. Field Comparison

Station	Date	COND µmho/cm	CONDF µmho/cm	RPD %	Comments	Action	Result	pH	pHF	Difference	Comments	Action	Result
V15	10/7/2010	3740	3435	8.50				7.77	7.45	0.32			
V15	10/21/2010	3750	3484	7.35				7.88	7.04	0.84			
V15	11/4/2010	3810	3568	6.56				7.82	7.19	0.63			
V15	11/18/2010	3880	2220	54.43	Field and lab values correctly entered into emLine.	Let Value Stand	Retest request would be filed past sample hold time. Discrepancy between values remains.	7.75	6.96	0.79			
V15	12/1/2010	3860	2271	51.83	Field and lab values correctly entered into emLine.	Let Value Stand	Retest request would be filed past sample hold time. Discrepancy between values remains.	7.93	6.99	0.94			
V15	12/16/2010	4290	4150	3.32				7.72	7.22	0.5			
V16	10/6/2010	2140	2521	16.35				8.17	6.56	1.61	Field and lab values correctly entered into emLine.	Let Value Stand	Retest request would be filed past sample hold time. Discrepancy between values remains.
V17A	6/16/2010	104	104	0.00				7.5	8.05	0.55			

RPD > 50% or pH difference > 1.5 pH unit  
 RPD > 20% or pH difference > 1 pH unit

Table D-23: Vangorda Creek Drainage Water Quality  
2010 QA/QC Lab vs. Field Comparison

Station	Date	COND µmho/cm	CONDF µmho/cm	RPD %	Comments	Action	Result	pH	pHF	Difference	Comments	Action	Result
V2	1/7/2010	2270	2190	3.59				7.9	7.56	0.34			
V2	2/3/2010	2540	825	101.93	Field and lab values correctly entered into emLine.	Request Retest	Retest not possible because was requested too late. Remainder of sample had been discarded. Therefore, discrepancy between lab and field values remains. Multiple flagged conductivity values on February 3, 2010 suggests calibration on field meter may have been off.	8.1	7.87	0.23			
V2	3/2/2010	2230	2089	6.53				8.1	7.17	0.93			
V2	4/7/2010	2200	2250	2.25				7.9	7.9	0			
V2	5/1/2010	1910	1680	12.81				8.1	8.46	0.36			
V2	5/18/2010	1990	1905	4.36				7.9	8.1	0.2			
V2	6/2/2010	2000	2155	7.46				8.4	8.03	0.37			
V2	6/20/2010	1930	1980	2.56				8.2	7.98	0.22			
V2	7/7/2010	1890	2080	9.57				8.23	7.97	0.26			
V2	7/22/2010	1930	1730	10.93				8.2	8	0.2			
V2	8/5/2010	2080	2109	1.38				8.11	8.1	0.01			
V2	8/18/2010	2050	1972	3.88				8.26	8.02	0.24			
V2	9/7/2010	2050	2042	0.39				8.26	7.97	0.29			
V2	9/23/2010	2040	1146	56.12	Field and lab values correctly entered into emLine.	Let Value Stand	Retest request would be filed past sample hold time. Discrepancy between values remains.	8.18	7.99	0.19			
V2	10/7/2010	1950	1960	0.51				8.12	7.94	0.18			
V2	10/21/2010	1940	1850	4.75				8.28	8.19	0.09			
V2	11/4/2010	1940	1938	0.10				8.23	8.23	0			
V2	12/2/2010	2330	2180	6.65				8.07	8.38	0.31			
V20	6/1/2010	104	218	70.81	Field and lab values correctly entered into emLine.	Request Retest	Retest not possible because was requested too late. Remainder of sample had been discarded. Discrepancy between values remains.	7.8	8.19	0.39			

RPD > 50% or pH difference > 1.5 pH unit  
 RPD > 20% or pH difference > 1 pH unit

Table D-23: Vangorda Creek Drainage Water Quality  
2010 QA/QC Lab vs. Field Comparison

Station	Date	COND µmho/cm	CONDF µmho/cm	RPD %	Comments	Action	Result	pH	pHF	Difference	Comments	Action	Result
V22	3/4/2010	2160	2060	4.74				5.1	5.72	0.62			
V22	6/16/2010	2160	2166	0.28				3.2	3.13	0.07			
V22	9/7/2010	2380	2424	1.83				3.58	3.46	0.12			
V22	12/16/2010	1850	20	195.72	Field and lab values correctly entered into emLine.	Let Value Stand	Retest request would be filed past sample hold time. Measurement re-checked with same meter, gave same result. V23, sampled right after V22 with same meter, showed no issues with CONDF.	6.51	8.06	1.55	Lab value correctly entered into emLine. However, field value incorrectly entered.	Change Value	Field value entered into emLine. (see below)
V22	12/16/2010	1850	20	195.72	Field and lab values correctly entered into emLine.	Let Value Stand	Retest request would be filed past sample hold time. Measurement re-checked with same meter, gave same result. V23, sampled right after V22 with same meter, showed no issues with CONDF.	6.51	7.17	0.66			
V23	3/4/2010	1030	950	8.08				8.1	7.63	0.47			
V23	6/16/2010	978	990	1.22				8.1	7.99	0.11			
V23	9/7/2010	992	1007	1.50				8.38	7.73	0.65			
V23	12/16/2010	1300	1190	8.84				8.06	7.17	0.89	Lab value correctly entered into emLine. However, field value incorrectly entered.	Change Value	Field value entered into emLine. (see below)
V23	12/16/2010	1300	1190	8.84				8.06	8.06	0			
V24	6/22/2010	2140	1915	11.10				3.4	3.2	0.2			
V24	6/29/2010	2170	2052	5.59				3.28	3.43	0.15			
V24	7/6/2010	2170	2046	5.88				3.38	3.2	0.18			
V24	7/13/2010	2270	2346	3.29				3.51	3.44	0.07			
V25	6/22/2010	2010	1872	7.11				8.3	9.19	0.89			
V25	6/29/2010	2180	2065	5.42				7.74	8.83	1.09	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.
V25	7/6/2010	2280	2089	8.74				7.71	9.11	1.4	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.
V25	7/13/2010	2360	2049	14.11				8.06	8.86	0.8			
V25	8/12/2010	2340	2003	15.52				7.72	8.11	0.39			

RPD > 50% or pH difference > 1.5 pH unit

RPD > 20% or pH difference > 1 pH unit

Table D-23: Vangorda Creek Drainage Water Quality  
2010 QA/QC Lab vs. Field Comparison

Station	Date	COND µmho/cm	CONDF µmho/cm	RPD %	Comments	Action	Result	pH	pHF	Difference	Comments	Action	Result
V25BSP	4/27/2010	625	597	4.58				7.6	8.34	0.74			
V25BSP	5/11/2010	299	230	26.09	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.	7.8	7.67	0.13			
V25BSP	6/15/2010	452	451	0.22				7.9	7.93	0.03			
V25BSP	6/22/2010	425	403	5.31				8	8.14	0.14			
V25BSP	6/29/2010	1910	1814	5.16				7.53	7.91	0.38			
V25BSP	7/6/2010	1850	1772	4.31				7.8	7.28	0.52			
V25BSP	7/13/2010	2080	2160	3.77				7.65	7.93	0.28			
V25BSP	7/13/2010	2080	2160	3.77				7.59	7.93	0.34			
V25BSP	8/5/2010	1340	1411	5.16				7.68	7.51	0.17			
V25BSP	8/12/2010	1820	1594	13.24				7.76	7.79	0.03			
V25BSP	9/7/2010	1440	1600	10.53				7.72	8.04	0.32			
V25BSP	10/5/2010	1260	1310	3.89				7.53	8.95	1.42	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.
V25BSP	11/1/2010	1230	1140	7.59				7.66	7.92	0.26			
V25BSP	12/2/2010	1110	1124	1.25				7.58	7.89	0.31			
V27	1/18/2010	572	630	9.65				8	7.82	0.18			
V27	2/24/2010	632	565	11.19				8.1	6.94	1.16	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.
V27	3/29/2010	676	666	1.49				8.2	8.68	0.48			
V27	4/20/2010	694	666	4.12				8	8.3	0.3			
V27	5/12/2010	416	431	3.54				7.8	8.35	0.55			
V27	6/16/2010	168	168	0.00				7.72	8.07	0.35			
V27	7/14/2010	852	867	1.75				7.59	7.94	0.35			
V27	8/4/2010	311	291	6.64				8.02	8.14	0.12			
V27	9/7/2010	272	290	6.41				7.89	5.75	2.14	Field and lab values correctly entered into emLine.	Let Value Stand	Retest request would be filed past sample hold time. Discrepancy between values remains.
V27	10/5/2010	389	411	5.50				7.9	8.67	0.77			
V27	11/1/2010	466	434	7.11				8.06	8.3	0.24			
V27	12/1/2010	517	330	44.16	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains. Multiple flagged conductivity values on December 1, 2010 suggests calibration on field meter may have been off.	8.01	8.03	0.02			

RPD > 50% or pH difference > 1.5 pH unit  
 RPD > 20% or pH difference > 1 pH unit

Table D-23: Vangorda Creek Drainage Water Quality  
2010 QA/QC Lab vs. Field Comparison

Station	Date	COND µmho/cm	CONDF µmho/cm	RPD %	Comments	Action	Result	pH	pHF	Difference	Comments	Action	Result
V2A	2/3/2010	2550	1070	81.77	Field and lab values correctly entered into emLine.	Request Retest	Retest not possible because was requested too late. Remainder of sample had been discarded.	8.1	8.02	0.08			
V2A	3/2/2010	2290	2180	4.92				8.1	7.88	0.22			
V2A	4/7/2010	2180	2310	5.79				7.9	7.77	0.13			
V2A	5/1/2010	1790	1620	9.97				8.1	8.67	0.57			
V2A	5/18/2010	2240	2184	2.53				8.2	8.31	0.11			
V2A	6/2/2010	2350	2451	4.21				8.4	8.23	0.17			
V2A	6/15/2010	2360	2118	10.81				8.5	8.26	0.24			
V2A	7/7/2010	2370	2238	5.73				8.35	8.2	0.15			
V2A	7/22/2010	2490	2097	17.14				8.24	8.16	0.08			
V2A	8/5/2010	2800	2728	2.60				8.24	8.25	0.01			
V2A	8/18/2010	2610	2351	10.44				8.4	8.27	0.13			
V2A	9/7/2010	2530	2360	6.95				8.45	8.17	0.28			
V2A	9/23/2010	2490	1510	49.00	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.	8.29	8	0.29			
V2A	10/7/2010	2410	2389	0.88				8.19	8.35	0.16			
V2A	10/21/2010	2450	50	192.00	Field and lab values correctly entered into emLine.	Request Retest	Retest performed, see results below.	8.32	8.52	0.2			
V2A	11/4/2010	2360	2240	5.22				8.25	8.03	0.22			
V2A Retest	10/21/2010	1870	50	189.58	Retest for October 21 V2A EC. Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.	8.32	8.52	0.2			
V30	6/1/2010	6210	>3999	#VALUE!	Field and lab values not comparable because conductivity greater than maximum measurable level for field meter used.			6.2	6.07	0.13			
V30	10/6/2010	7200	>3999	#VALUE!	Field and lab values not comparable because conductivity greater than maximum measurable level for field meter used.			6.27	5.8	0.47			
V31	10/6/2010			#DIV/0!						0			
V32	10/6/2010			#DIV/0!						0			
V33	6/1/2010	39800	>3999	#VALUE!	Field and lab values not comparable because conductivity greater than maximum measurable level for field meter used.			3.7	5.11	1.41	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.
V33	10/6/2010	43700	>3999	#VALUE!	Field and lab values not comparable because conductivity greater than maximum measurable level for field meter used.			3.71	4.83	1.12	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.

RPD > 50% or pH difference > 1.5 pH unit  
 RPD > 20% or pH difference > 1 pH unit

Table D-23: Vangorda Creek Drainage Water Quality  
2010 QA/QC Lab vs. Field Comparison

Station	Date	COND µmho/cm	CONDF µmho/cm	RPD %	Comments	Action	Result	pH	pHF	Difference	Comments	Action	Result
V4	1/18/2010	709	810	13.30				8.1	7.89	0.21			
V4	2/24/2010	724	638	12.63				8.1	7.32	0.78			
V4	3/29/2010	709	724	2.09				8.1	7.9	0.2			
V4	4/20/2010	506	491	3.01				8.2	8.3	0.1			
V4	5/12/2010	349	312	11.20				8.1	8.03	0.07			
V4	6/16/2010	518	545	5.08				8.24	8.37	0.13			
V4	7/14/2010	588	609	3.51				8.26	8.31	0.05			
V4	8/4/2010	620	572	8.05				8.31	8.33	0.02			
V4	9/7/2010	637	690	7.99				8.45	6.68	1.77	Field and lab values correctly entered into emLine.	Let Value Stand	Retest request would be filed past sample hold time. Discrepancy between values remains.
V4	10/5/2010	615	652	5.84				8.28	8.43	0.15			
V4	11/1/2010	676	636	6.10				8.31	8.11	0.2			
V4	12/1/2010	651	430	40.89	Field and lab values correctly entered into emLine.	Let Value Stand		8.22	7.88	0.34	Discrepancy between lab and field values remains. Multiple flagged conductivity values on December 1, 2010 suggests calibration on field meter may have been off.		
V5	1/6/2010	841	715	16.20				8	7.45	0.55			
V5	2/18/2010	790	1717	73.95	Field and lab values correctly entered into emLine.	Request Retest		8.2	8.3	0.1	Retest not possible because was requested too late. Remainder of sample had been discarded. Therefore discrepancy between lab and field values remains.		
V5	3/30/2010	837	777	7.43				8.2	8.86	0.66			
V5	4/20/2010	491	499	1.62				8.2	8.44	0.24			
V5	5/12/2010	473	449	5.21				8.1	8.52	0.42			
V5	6/17/2010	388	394	1.53				8.25	8.28	0.03			
V5	7/14/2010	335	351	4.66				8.21	8.21	0			
V5	8/4/2010	477	446	6.72				8.37	8.46	0.09			
V5	9/7/2010	479	520	8.21				8.39	7.58	0.81			
V5	10/5/2010	499	580	15.01				8.21	6.89	1.32	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.
V5	11/2/2010	587	552	6.15				8.31	8.25	0.06			
V5	12/1/2010	638	350	58.30	Field and lab values correctly entered into emLine.	Let Value Stand		8.24	7.86	0.38	Retest request would be filed past sample hold time. Multiple flagged conductivity values on December 1, 2010 suggests calibration on field meter may have been off.		

RPD > 50% or pH difference > 1.5 pH unit  
 RPD > 20% or pH difference > 1 pH unit

Table D-23: Vangorda Creek Drainage Water Quality  
2010 QA/QC Lab vs. Field Comparison

Station	Date	COND µmho/cm	CONDF µmho/cm	RPD %	Comments	Action	Result	pH	pHF	Difference	Comments	Action	Result
V8	1/6/2010	781	675	14.56				8.1	7.2	0.9			
V8	2/18/2010	772	720	6.97				8.2	8.17	0.03			
V8	3/30/2010	802	552	36.93	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.	8.3	8.72	0.42			
V8	4/20/2010	619	720	15.09				8.1	8.37	0.27			
V8	5/12/2010	463	420	9.74				8	8.52	0.52			
V8	6/17/2010	308	286	7.41				8.18	8.31	0.13			
V8	7/14/2010	684	700	2.31				8.07	7.93	0.14			
V8	7/14/2010	686	700	2.02				8.05	7.93	0.12			
V8	8/4/2010	460	443	3.77				8.32	8.24	0.08			
V8	9/7/2010	426	460	7.67				8.29	7.32	0.97			
V8	10/5/2010	488	559	13.56				8.06	7.35	0.71			
V8	11/2/2010	564	531	6.03				8.26	8.75	0.49			
V8	12/1/2010	627	350	56.70	Field and lab values correctly entered into emLine.	Let Value Stand	Retest request would be filed past sample hold time. Multiple flagged conductivity values on December 1, 2010 suggests calibration on field meter may have been off.	8.25	7.81	0.44			

RPD > 50% or pH difference > 1.5 pH unit


RPD > 20% or pH difference > 1 pH unit

Table D-24: Vangorda Creek Drainage Groundwater Quality  
2010 QA/QC Field Blanks - General Parameters

Station	Date	Sample Type	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3 mg/L	CaCO3-d mg/L	Cl-d mg/L	CO3 mg/L	Colour TCU	COND µmho/cm	DOC mg/L	HCO3 mg/L	NH3 mg/L	OH mg/L	pH	SO4-d mg/L	TDS mg/L	TOC mg/L	TSS mg/L	TURB NTU
P2001-2A	6/13/2010	FIELD BLANK	<0.5	<0.5	<0.5	<0.5		<0.5		<0.5		<1		<0.5		<0.5	5.30	<0.5			<1	
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
		Times greater than DI water	1	1	1	1	0	1	0	1	0	1	0	1	0	1	0.65	1	0	0	0.25	0
		Comments																				
		Action																				
		Result																				
V37	6/13/2010	FIELD BLANK	<0.5	<0.5	1.90	<0.5		<0.5		<0.5		2.0		2.30		<0.5	5.80	<0.5			<1	
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
		Times greater than DI water	1	1	3.8	1	0	1	0	1	0	2	0	4.6	0	1	0.15	1	0	0	0.25	0
		Comments																				
		Action																				
		Result																				
SRK05-9	8/5/2010	FIELD BLANK	<0.5	<0.5	1.30	<0.5		<0.5	<0.5	<0.5		2.0		1.60		<0.5	5.91	<0.5			<1	
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
		Times greater than DI water	1	1	2.6	1	0	1	1	1	0	2	0	3.2	0	1	0.04	1	0	0	0.25	0
		Comments																				
		Action																				
		Result																				
SRK05-9	10/7/2010	FIELD BLANK	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5		2.0		<0.5		<0.5	5.07	1.1			<1	
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
		Times greater than DI water	1	1	1	1	0	1	1	1	0	2	0	1	0	1	0.88	2.2	0	0	0.25	0
		Comments																				
		Action																				
		Result																				
SRK05-9	11/18/2010	FIELD BLANK	<0.5	<0.5	1.10	<0.5		<0.5	1	<0.5		<1		1.30		<0.5	5.65	<0.5			<1	
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
		Times greater than DI water	1	1	2.2	1	0	1	1.4	1	0	1	0	2.6	0	1	0.30	1	0	0	0.25	0
		Comments																				
		Action																				
		Result																				
SRK05-9	12/16/2010	FIELD BLANK	<0.5	<0.5	1.30	<0.5		1	<0.5	<0.5		2.0		1.60		<0.5	5.89	<0.5			<1	
		Deionized Water	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.005	<0.5	5.95	<0.5	<10.0	<0.5	<4.0	<0.1
		Times greater than DI water	1	1	2.6	1	0	1.2	1	1	0	2	0	3.2	0	1	0.06	1	0	0	0.25	0
		Comments																				
		Action																				
		Result																				

Blank value < PQL

 Blank value is a detection limit higher than that of DI water

 Blank value > PQL and < retest limit

 Blank value > retest limit (20X DI Water Detection Limit, or >1 pH unit difference from DI Water)





Table D-25: Vangorda Creek Drainage Groundwater Quality  
2010 QA/QC Field Blanks - Dissolved Metals

Station	Date	Sample Type	Ag-d µg/L	Al-d µg/L	As-d µg/L	Ba-d µg/L	B-d µg/L	Be-d µg/L	Bi-d µg/L	Ca-d mg/L	Cd-d µg/L	Co-d µg/L	Cr-d µg/L	Cu-d µg/L	Fe-d µg/L	K-d mg/L	Li-d mg/L	Mg-d mg/L
P2001-2A	6/13/2010	FIELD BLANK	<0.005	1.50	<0.02	0.770	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	8.00	<0.05	<0.0005	<0.05
		Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	1	7.5	1	38.5	1	1	1	1	1	1	1	8	1	0.001	1	
	Comments	Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.									Blank concentration > PQL and correctly entered into emLine.				
	Action	Let Value Stand			Request Retest									Let Value Stand				
	Result	High blank value remains.			Retest performed, see results below.									High blank value remains.				
P2001-2A Retest	6/13/2010	FIELD BLANK	<0.005	<0.2	<0.02	0.720	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	0	0	0	36	0	0	0	0	0	0	0	0	0	0	0	0
	Comments				Retest for June 13 P2001-2A blank. Blank concentration > PQL and correctly entered into emLine.													
	Action	Let Value Stand			Request Retest									Let Value Stand				
	Result	New blank value entered into emLine.			Retest performed, see results below.									High blank value remains.				
V37	6/13/2010	FIELD BLANK	<0.005	12.40	<0.02	0.510	<50	<0.01	0.01	<0.05	<0.005	0.0250	<0.1	3.7200	45.00	<0.05	<0.0005	<0.05
		Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	1	62	1	25.5	1	1	1.6	1	1	5	1	74.4	45	1	0.001	1
	Comments	Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.						Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.				
	Action	Request Retest	Request Retest	Request Retest	Request Retest	Request Retest	Request Retest	Request Retest	Request Retest	Request Retest	Request Retest	Request Retest	Request Retest	Request Retest	Request Retest	Request Retest	Request Retest	Request Retest
	Result	Retest performed, see results below.	Retest performed, see results below.	Retest performed, see results below.	Retest performed, see results below.	Retest performed, see results below.	Retest performed, see results below.	Retest performed, see results below.	Retest performed, see results below.	Retest performed, see results below.	Retest performed, see results below.	Retest performed, see results below.	Retest performed, see results below.	Retest performed, see results below.	Retest performed, see results below.	Retest performed, see results below.	Retest performed, see results below.	Retest performed, see results below.
V37 Retest	6/13/2010	FIELD BLANK	<0.005	9.10	<0.02	0.460	<50	<0.01	0.01	<0.06	<0.008	0.0210	<0.1	4.3100	21.00	<0.05	<0.0005	<0.05
		Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	1	45.5	1	23	1	1	2.8	1.2	1.2	4.2	1	86.2	21	1	0.001	1
	Comments	Retest for June 13 V37 blank.	Retest for June 13 V37 blank. Blank concentration > PQL and correctly entered into emLine.	Retest for June 13 V37 blank.	Retest for June 13 V37 blank. Blank concentration > PQL and correctly entered into emLine.	Retest for June 13 V37 blank.	Retest for June 13 V37 blank.	Retest for June 13 V37 blank.	Retest for June 13 V37 blank.	Retest for June 13 V37 blank.	Retest for June 13 V37 blank.	Retest for June 13 V37 blank.	Retest for June 13 V37 blank. Blank concentration > PQL and correctly entered into emLine.	Retest for June 13 V37 blank. Blank concentration > PQL and correctly entered into emLine.	Retest for June 13 V37 blank.	Retest for June 13 V37 blank.	Retest for June 13 V37 blank.	Retest for June 13 V37 blank.
	Action	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand	Let Value Stand
	Result	New blank value entered into emLine.	New blank value entered into emLine.	New blank value entered into emLine.	New blank value entered into emLine.	New blank value entered into emLine.	New blank value entered into emLine.	New blank value entered into emLine.	New blank value entered into emLine.	New blank value entered into emLine.	New blank value entered into emLine.	New blank value entered into emLine.	New blank value entered into emLine.	New blank value entered into emLine.	New blank value entered into emLine.	New blank value entered into emLine.	New blank value entered into emLine.	New blank value entered into emLine.
SRK05-9	8/5/2010	FIELD BLANK	<0.005	1.50	<0.02	0.170	<50	<0.01	<0.005	<0.05	<0.005	0.0080	<0.1	<0.05	2.00	<0.05	<0.0005	<0.05
		Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	1	7.5	1	8.5	1	1	1	1	1	1.6	1	2	1	0.001	1	
	Comments	Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.													
	Action	Let Value Stand			Let Value Stand													
	Result	High blank value remains.			High blank value remains.													
SRK05-9 Retest	8/5/2010	FIELD BLANK	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Comments																	
	Action																	
	Result																	
SRK05-9	10/7/2010	FIELD BLANK	<0.005	1.90	<0.02	0.160	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	0.0600	2.00	<0.05	<0.0005	<0.05
		Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	1	9.5	1	8	1	1	1	1	1	1	1	1.2	2	1	0.001	1
	Comments	Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.													
	Action	Let Value Stand			Let Value Stand													
	Result	High blank value remains.			High blank value remains.													
SRK05-9 Retest	10/7/2010	FIELD BLANK	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Comments																	
	Action																	
	Result																	
SRK05-9	11/18/2010	FIELD BLANK	<0.005	0.90	<0.02	0.160	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.0005	<0.05
		Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	1	4.5	1	8	1	1	1	1	1	1	1	1	1	1	0.001	1
	Comments	Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.													
	Action	Let Value Stand			Let Value Stand													
	Result	High blank value remains.			High blank value remains.													
SRK05-9 Retest	11/18/2010	FIELD BLANK	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Comments																	
	Action																	
	Result																	

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit)

Station	Date	Sample Type	Ag-d µg/L	Al-d µg/L	As-d µg/L	Ba-d µg/L	B-d µg/L	Be-d µg/L	Bi-d µg/L	Ca-d mg/L	Cd-d µg/L	Co-d µg/L	Cr-d µg/L	Cu-d µg/L	Fe-d µg/L	K-d mg/L	Li-d mg/L	Mg-d mg/L
SRK05-9	12/16/2010	FIELD BLANK	<0.005	0.70	<0.02	0.060	<50	<0.01	0.17	0.12	<0.005	0.0170	<0.1	0.1000	5.00	<0.05	<0.0005	0.06
		Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.01	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	1	3.5	1	3	1	1	33.8	2.4	1	3.4	1	2	5	1	0.001	1.2
		Comments							Blank concentration > PQL and correctly entered into emLine.						Blank concentration equal to PQL and correctly entered into emLine.			
		Action							Request Retest						Let Value Stand			
		Result							Retest performed, see results below.						High blank value remains.			
SRK05-9 Retest	12/16/2010	FIELD BLANK							0.19									
		Deionized Water	<0.005	<0.2	<0.02	<0.02	<50	<0.01	<0.005	<0.05	<0.005	<0.005	<0.1	<0.05	<1	<0.05	<0.5	<0.05
		Times greater than DI water	0	0	0	0	0	0	37.8	0	0	0	0	0	0	0	0	0
		Comments							Retest for December 16 SRK05-9 blank. Blank concentration > PQL and correctly entered into emLine.									
		Action							Let Value Stand									
		Result							New blank value entered into emLine.									

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit)

Station	Date	Sample Type	Mn-d µg/L	Mo-d µg/L	Na-d mg/L	Ni-d µg/L	Pb-d µg/L	Sb-d µg/L	Se-d µg/L	Si-d µg/L	Sn-d µg/L	Sr-d µg/L	Ti-d µg/L	Ti-d µg/L	U-d µg/L	V-d µg/L	Zn-d µg/L	Zr-d µg/L	
P2001-2A	6/13/2010	FIELD BLANK	0.400	<0.05	<0.05	<0.05	0.030	0.1440	<0.02	<0.04	<100	<0.01	0.12	<0.5	<0.002	<0.002	<0.2	1.700	<0.1
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	<0.1
		Times greater than DI water	8	1	1	1.5	28.8	1	1	1	1	2.4	1	1	1	1	17	1	1
		Comments	Blank concentration > PQL and correctly entered into emLine.				Blank concentration > PQL and correctly entered into emLine.				Blank concentration > PQL and correctly entered into emLine.				Blank concentration > PQL and correctly entered into emLine.				
		Action	Let Value Stand				Request Retest				Request Retest				Let Value Stand				
		Result	High blank value remains.				Retest performed, see results below.				High blank value remains.				High blank value remains.				
P2001-2A Retest	6/13/2010	FIELD BLANK					0.1440												
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	<0.1
		Times greater than DI water	0	0	0	0	28.8	0	0	0	0	0	0	0	0	0	0	0	0
		Comments					Retest for June 13 P2001-2A blank. Blank concentration > PQL and correctly entered into emLine.												
		Action					Let Value Stand												
		Result					New blank value entered into emLine.												
V37	6/13/2010	FIELD BLANK	1.340	<0.05	<0.05	0.120	2.0100	<0.02	<0.04	<100	0.07	0.18	<0.5	<0.002	<0.002	<0.2	5.500	<0.1	<0.1
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	<0.1
		Times greater than DI water	26.8	1	1	6	402	1	1	1	7	3.6	1	1	1	1	55	1	1
		Comments	Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.				
		Action	Request Retest			Request Retest			Request Retest			Request Retest			Request Retest				
		Result	Retest performed, see results below.			Retest performed, see results below.			Retest performed, see results below.			Retest performed, see results below.			Retest performed, see results below.				
V37 Retest	6/13/2010	FIELD BLANK	1.060	<0.05	<0.05	0.090	1.3500	<0.02	<0.04	<100	0.10	0.19	<0.5	<0.002	<0.002	<0.2	4.400	<0.1	<0.1
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	<0.1
		Times greater than DI water	21.2	1	1	4.5	270	1	1	1	10	3.8	1	1	1	1	44	1	1
		Comments	Retest for June 13 V37 blank. Blank concentration > PQL and correctly entered into emLine.			Retest for June 13 V37 blank.			Retest for June 13 V37 blank. Blank concentration > PQL and correctly entered into emLine.			Retest for June 13 V37 blank.			Retest for June 13 V37 blank.				
		Action	Let Value Stand			Let Value Stand			Let Value Stand			Let Value Stand			Let Value Stand				
		Result	New blank value entered into emLine.			New blank value entered into emLine.			New blank value entered into emLine.			New blank value entered into emLine.			New blank value entered into emLine.				
SRK05-9	8/5/2010	FIELD BLANK	0.580	<0.05	<0.05	0.040	0.4360	<0.02	<0.04	<100	<0.01	0.09	<0.5	<0.002	0.0030	<0.2	2.200	<0.1	<0.1
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	<0.1
		Times greater than DI water	11.6	1	1	2	87.2	1	1	1	1	1.8	1	1	1.5	1	22	1	1
		Comments	Blank concentration > PQL and correctly entered into emLine.				Blank concentration > PQL and correctly entered into emLine.				Blank concentration > PQL and correctly entered into emLine.								
		Action	Let Value Stand				Request Retest				Request Retest								
		Result	High blank value remains.				Retest performed, see results below.				Retest performed, see results below.								
SRK05-9 Retest	8/5/2010	FIELD BLANK					0.4880												
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	<0.1
		Times greater than DI water	0	0	0	0	97.6	0	0	0	0	0	0	0	0	0	23	0	0
		Comments					Retest for August 5 SRK05-9 blank. Blank concentration > PQL and correctly entered into emLine.				Retest for August 5 SRK05-9 blank. Blank concentration > PQL and correctly entered into emLine.								
		Action					Let Value Stand												
		Result					New blank value entered into emLine.				New blank value entered into emLine.								
SRK05-9	10/7/2010	FIELD BLANK	0.510	<0.05	<0.05	0.030	0.2610	<0.02	<0.04	<100	<0.01	0.08	<0.5	<0.002	0.0050	<0.2	1.500	<0.1	<0.1
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	<0.1
		Times greater than DI water	10.2	1	1	1.5	52.2	1	1	1	1	1.6	1	1	2.5	1	15	1	1
		Comments	Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.							
		Action	Let Value Stand			Request Retest			Request Retest			Request Retest							
		Result	High blank value remains.			Retest performed, see results below.			High blank value remains.			High blank value remains.							
SRK05-9 Retest	10/7/2010	FIELD BLANK					0.2730												
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	<0.1
		Times greater than DI water	0	0	0	0	54.6	0	0	0	0	0	0	0	0	0	0	0	0
		Comments					Retest for October 7 SRK05-9 blank. Blank concentration > PQL and correctly entered into emLine.												
		Action					Let Value Stand												
		Result					New blank value entered into emLine.												
SRK05-9	11/18/2010	FIELD BLANK	0.130	<0.05	<0.05	0.030	0.1510	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	0.500	<0.1	<0.1
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	<0.1
		Times greater than DI water	2.6	1	1	1.5	30.2	1	1	1	1	1	1	1	1	1	5	1	1
		Comments	Blank concentration > PQL and correctly entered into emLine.				Blank concentration > PQL and correctly entered into emLine.				Blank concentration equal to PQL and correctly entered into emLine.								
		Action	Request Retest				Request Retest				Let Value Stand								
		Result	Retest performed, see results below.				Retest performed, see results below.				High blank value remains.								
SRK05-9 Retest	11/18/2010	FIELD BLANK					0.1710												
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1	<0.1
		Times greater than DI water	0	0	0	0	34.2	0	0	0	0	0	0	0	0	0	0	0	0
		Comments					Retest for November 18 SRK05-9 blank. Blank concentration > PQL and correctly entered into emLine.												
		Action					Let Value Stand												
		Result					New blank value entered into emLine.												

Blank value < PQL  
Blank value is a detection limit higher than that of DI water  
Blank value > PQL and < retest limit  
Blank value > retest limit (20X DI Water Detection Limit)

Table D-25: Vangorda Creek Drainage Groundwater Quality  
2010 QA/QC Field Blanks - Dissolved Metals



Station	Date	Sample Type	Mn-d µg/L	Mo-d µg/L	Na-d mg/L	Ni-d µg/L	Pb-d µg/L	Sb-d µg/L	Se-d µg/L	Si-d µg/L	Sn-d µg/L	Sr-d µg/L	Ti-d µg/L	Ti-d µg/L	U-d µg/L	V-d µg/L	Zn-d µg/L	Zr-d µg/L
SRK05-9	12/16/2010	FIELD BLANK	1.300	<0.05	<0.05	0.090	0.0450	<0.02	<0.04	<100	<0.01	0.43	<0.5	<0.002	0.0070	<0.2	4.800	<0.1
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1
		Times greater than DI water	26	1	1	4.5	9	1	1	1	1	8.6	1	1	3.5	1	48	1
		Comments	Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.			Blank concentration > PQL and correctly entered into emLine.			
		Action	Request Retest			Let Value Stand			Let Value Stand			Request Retest						
		Result	Retest performed, see results below.			High blank value remains.			High blank value remains.			Retest performed, see results below.						
SRK05-9 Retest	12/16/2010	FIELD BLANK	1.240														4.600	
		Deionized Water	<0.05	<0.05	<0.05	<0.02	<0.005	<0.02	<0.04	<100	<0.01	<0.05	<0.5	<0.002	<0.002	<0.2	<0.1	<0.1
		Times greater than DI water	24.8	0	0	0	0	0	0	0	0	0	0	0	0	0	48	0
		Comments	Retest for December 16 SRK05-9 blank. Blank concentration > PQL and correctly entered into emLine.			Retest for December 16 SRK05-9 blank. Blank concentration > PQL and correctly entered into emLine.			Retest for December 16 SRK05-9 blank. Blank concentration > PQL and correctly entered into emLine.			Retest for December 16 SRK05-9 blank. Blank concentration > PQL and correctly entered into emLine.						
		Action	Let Value Stand			Let Value Stand			Let Value Stand			Let Value Stand						
		Result	New blank value entered into emLine.			New blank value entered into emLine.			New blank value entered into emLine.			New blank value entered into emLine.						

Blank value < PQL  
 Blank value is a detection limit higher than that of DI water  
 Blank value > PQL and < retest limit  
 Blank value > retest limit (20X DI Water Detection Limit)

Table D-26: Vangorda Creek Drainage Groundwater Quality  
2010 QA/QC Duplicates - General Parameters

Station	Date	Sample Type	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3 mg/L	CaCO3-d mg/L	Chloride mg/L	CN(wad) mg/L	CNTHIO mg/L	CO3 mg/L	Colour TCU	COND µmho/cm	DOC mg/L	HCO3 mg/L	NH3 mg/L	OH mg/L	pH	SO4-d mg/L	TDS mg/L	TOC mg/L	TSS mg/L	TURB NTU
V37	6/13/2010	M	<0.5	3.3	440	14		490	1.2			16		956		500		<0.5	8.5	160				70
V37	6/13/2010	DUPLICATE	<0.5	3	430	12		475	1			14		943		500		<0.5	8.4	130				63
RPD (%)			N/A	9.52	2.30	15.38	N/A	3.11	18.18	N/A	N/A	13.33	N/A	1.37	N/A	0.00	N/A	N/A	0.10	20.69	N/A	N/A	10.53	N/A
Comments																								
Action																								
Result																								
P2001-2A	6/13/2010	M	<0.5	39.1	450	<0.5		971	1.7			<0.5		1630		550		<0.5	7.5	550				3300
P2001-2A	6/13/2010	DUPLICATE	<0.5	26.9	400	<0.5		985	1.9			<0.5		1560		490		<0.5	7.8	550				1000
RPD (%)			N/A	36.97	11.76	N/A	N/A	1.43	11.11	N/A	N/A	N/A	N/A	4.39	N/A	11.54	N/A	N/A	0.30	0.00	N/A	N/A	106.98	N/A
Comments			Both values > PQL and correctly entered into emLine.																					
Action			Let Value Stand																					
Result			Discrepancy between values remains. Retest not carried out because insufficient sample remaining to reanalyze.																					
P2001-2B	6/13/2010	M	<0.5	27.1	410	<0.5		790	1.5			<0.5		1430		500		<0.5	7.8	450				2200
P2001-2B	6/13/2010	DUPLICATE	<0.5	27.4	420	<0.5		855	1.9			<0.5		1450		510		<0.5	7.7	460				3500
RPD (%)			N/A	1.10	2.41	N/A	N/A	7.90	23.53	N/A	N/A	N/A	N/A	1.39	N/A	1.98	N/A	N/A	0.10	2.20	N/A	N/A	45.61	N/A
Comments																								
Action																								
Result																								
P09-LCD1	9/20/2010	M	<0.5	16.90	270.00	<0.5		441.00	0.50			<0.5		843.00		330.00		<0.5	7.90	160.00				580.00
P09-LCD1	9/20/2010	DUPLICATE	<0.5	16.30	270.00	<0.5		439.00	<0.5			<0.5		838.00		330.00		<0.5	7.84	160.00				540.00
RPD (%)			N/A	3.61	0.00	N/A	N/A	0.45	N/A	N/A	N/A	N/A	N/A	0.59	N/A	0.00	N/A	N/A	0.06	0.00	N/A	N/A	7.14	N/A
Comments																								
Action																								
Result																								
V36	9/18/2010	M	<0.5	40.30	500.00	<0.5		1760.00	0.60			<0.5		2720.00		600.00		<0.5	7.58	1300.00				42.00
V36	9/19/2010	DUPLICATE	<0.5	46.70	500.00	<0.5		1780.00	<0.5			<0.5		2760.00		610.00		<0.5	7.62	1300.00				21.00
RPD (%)			N/A	14.71	0.00	N/A	N/A	1.13	N/A	N/A	N/A	N/A	N/A	1.46	N/A	1.65	N/A	N/A	0.04	0.00	N/A	N/A	66.67	N/A
Comments			Both values > PQL and correctly entered into emLine.																					
Action			Let Value Stand																					
Result			Discrepancy between values remains. Retest not carried out because remainder of samples had been discarded.																					

RPD > 50%



Station	Date	Sample Type	Ag-d µg/L	Al-d µg/L	As-d µg/L	Ba-d µg/L	B-d µg/L	Be-d µg/L	Bi-d µg/L	Ca-d mg/L	Cd-d µg/L	Co-d µg/L	Cr-d µg/L	Cu-d µg/L	Fe-d µg/L	Hg-d µg/L	K-d mg/L	Li-d mg/L	Mg-d mg/L	Mn-d µg/L	Mo-d µg/L	Na-d mg/L	Ni-d µg/L	Pb-d µg/L	Sb-d µg/L	S-d mg/L	Se-d µg/L	Si-d µg/L	Sn-d µg/L	Sr-d µg/L	Ti-d µg/L	Tl-d µg/L	U-d µg/L	V-d µg/L	Zn-d µg/L	Zr-d µg/L
V37	6/13/2010	M	<0.005	24.3	1.96	77.6	<50	<0.01	0.026	59.7	0.016	0.558	0.2	1.01	359	5.95	0.0259	82.7	103	18	29.8	1.59	0.624	0.06	50	<0.04	2620	0.06	546	1.2	<0.002	1.09	<0.2	4.5	0.2	
V37	6/13/2010	DUPLICATE	<0.005	17.4	1.74	77.3	<50	<0.01	<0.005	62.6	0.013	0.486	0.2	0.24	393	5.75	0.0267	77.5	97.8	17.3	27.7	1.36	0.279	0.04	47	<0.04	2850	0.05	541	0.9	<0.002	0.983	<0.2	3.9	<0.1	
RPD (%)			N/A	33.09	11.89	0.39	N/A	N/A	N/A	4.74	20.69	13.79	0.00	123.20	9.04	N/A	3.42	3.04	6.49	5.18	3.97	7.30	15.59	76.41	40.00	6.19	N/A	8.41	18.18	0.92	28.57	N/A	10.32	N/A	14.29	N/A
Comments			Both values correctly entered into emLine; however, duplicate value not > PQL. Therefore, RPD analysis not valid in this case.											Both values > PQL and correctly entered into emLine.																						
Action			Let Value Stand											Let Value Stand																						
Result			Discrepancy between values remains.											Discrepancy between values remains.																						
P2001-2A	6/13/2010	M	<0.03	9	10.1	16.1	<300	<0.05	<0.03	218	<0.03	0.47	<0.5	1.7	430	5.7	0.029	104	94.2	2	11.3	2.8	0.27	0.2	175	<0.2	5000	<0.05	1190	<3	<0.01	33.4	<1	11.2	<0.5	
P2001-2A	6/13/2010	DUPLICATE	<0.03	3	9.8	15.5	<300	<0.05	<0.03	223	<0.03	0.42	<0.5	<0.3	387	4.1	0.028	104	93.2	1.3	6.4	3.4	0.37	0.2	173	<0.2	5190	<0.05	1180	<3	<0.01	32.8	<1	5.7	<0.5	
RPD (%)			N/A	100.00	3.02	3.80	N/A	N/A	N/A	2.27	N/A	11.24	N/A	N/A	10.53	N/A	32.65	3.51	0.00	1.07	42.42	55.37	19.35	31.25	0.00	1.15	N/A	3.73	N/A	0.84	N/A	N/A	1.81	N/A	65.09	N/A
Comments			Both values correctly entered into emLine; however, duplicate value not > PQL. Therefore, RPD analysis not valid in this case.											Both values > PQL and correctly entered into emLine.																						
Action			Let Value Stand											Let Value Stand																						
Result			Discrepancy between values remains.											Discrepancy between values remains.																						
P2001-2B	6/13/2010	M	<0.005	7.4	14.4	23.4	<50	<0.01	<0.005	177	0.016	1.13	<0.1	0.4	107	4.34	0.029	84.8	178	6.88	13.3	4.39	1.25	0.71	145	0.15	4980	0.06	1010	<0.5	0.004	23.6	0.3	2.9	0.2	
P2001-2B	6/13/2010	DUPLICATE	<0.005	3.2	17.2	22.7	<50	<0.01	<0.005	175	0.019	1.32	<0.1	0.07	95	4.94	0.0321	102	201	6.92	15.9	4.96	2.73	0.69	169	0.13	4740	0.03	970	<0.5	0.004	23.1	0.4	3.6	0.2	
RPD (%)			N/A	79.25	17.72	3.04	N/A	N/A	N/A	1.14	17.14	15.51	N/A	140.43	11.88	N/A	12.93	10.15	18.42	12.14	0.58	17.81	12.19	74.37	2.86	15.29	14.29	4.94	66.67	4.04	N/A	0.00	2.14	28.57	21.54	0.00
Comments			Both values > PQL and correctly entered into emLine.											Both values > PQL and correctly entered into emLine.																						
Action			Let Value Stand											Let Value Stand																						
Result			Discrepancy between values remains.											Discrepancy between values remains.																						
P09-LCD1	9/20/2010	M	0.04	186.00	89.00	68.00	<50	<0.01	0.01	122.00	0.07	0.62	0.70	1.02	3850.00	2.82	0.01	33.30	530.00	5.59	16.80	1.29	39.50	0.12	74.00	<0.04	7290.00	0.06	762.00	5.20	0.020	6.95	0.40	10.80	<0.1	
P09-LCD1	9/20/2010	DUPLICATE	0.02	159.00	88.50	66.70	<50	<0.01	0.01	121.00	0.06	0.62	0.60	0.99	3850.00	2.85	0.01	33.10	530.00	5.71	17.20	1.28	41.40	0.11	75.00	<0.04	7120.00	0.06	785.00	5.00	0.019	7.04	0.30	9.20	<0.1	
RPD (%)			54.55	15.65	0.56	1.93	N/A	N/A	13.33	0.82	19.85	0.00	15.38	2.99	0.00	N/A	1.06	4.69	0.60	0.00	2.12	2.35	0.78	4.70	8.70	1.34	N/A	2.36	0.00	2.97	3.92	5.13	1.29	28.57	16.00	N/A
Comments			Both values correctly entered into emLine; however, duplicate value not > PQL. Therefore, RPD analysis not valid in this case.											Both values > PQL and correctly entered into emLine.																						
Action			Let Value Stand											Let Value Stand																						
Result			Discrepancy between values remains.											Discrepancy between values remains.																						
V36	9/18/2010	M	<0.005	2.40	2.55	8.24	<50.0	<0.01	<0.005	368.00	0.39	1.87	<0.1	1.96	14.00	4.71	0.04	204.00	132.00	1.31	7.54	12.10	2.41	0.15	409.00	0.70	5510.00	0.08	1790.00	<0.5	0.087	46.60	0.60	49.80	0.20	
V36	9/19/2010	DUPLICATE	<0.005	3.30	2.41	8.12	<50.0	<0.01	0.01	367.00	0.31	1.91	<0.1	2.11	12.00	4.71	0.04	209.00	131.00	1.05	7.56	12.00	2.39	0.12	435.00	0.58	5460.00	0.03	1770.00	<0.5	0.083	47.10	0.60	41.10	<0.1	
RPD (%)			N/A	31.58	5.65	1.47	N/A	N/A	N/A	0.27	22.35	2.12	N/A	7.37	15.38	N/A	0.00	6.41	2.42	0.76	22.03	0.26	0.83	0.83	22.22	6.16	18.75	0.91	90.91	1.12	N/A	4.71	1.07	0.00	19.14	N/A
Comments			Both values correctly entered into emLine; however, duplicate value not > PQL. Therefore, RPD analysis not valid in this case.											Both values > PQL and correctly entered into emLine.																						
Action			Let Value Stand											Let Value Stand																						
Result			Discrepancy between values remains.											Discrepancy between values remains.																						
			RPD > 50%											RPD > 100%																						





Table D-28: Vangorda Creek Drainage Groundwater Quality  
2010 QA/QC Splits - General Parameters

Station	Date	Sample Type	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3 mg/L	CaCO3-d mg/L	Chloride mg/L	CN(wad) mg/L	CNTHIO mg/L	CO3 mg/L	Colour TCU	COND µmho/cm	DOC mg/L	HCO3 mg/L	NH3 mg/L	OH mg/L	pH	SO4-d mg/L	TDS mg/L	TOC mg/L	TSS mg/L	TURB NTU
P09-VC1	9/20/2010	M	<0.5	3.40	140.00	<0.5		178.00	<0.5			<0.5		390.00		170.00		<0.5	8.02	62.00			42.00	
P09-VC1	9/20/2010	SPLIT	<0.5	3.30	140.00	<0.5		175.00	<0.5			<0.5		395.00		170.00		<0.5	7.99	55.00			39.00	
RPD (%)			N/A	2.99	0.00	N/A	N/A	1.70	N/A	N/A	N/A	N/A	N/A	1.27	N/A	0.00	N/A	N/A	0.03	11.97	N/A	N/A	7.41	N/A
Comments																								
Action																								
Result																								
SRK05-9	11/4/2010	M	<0.5	22.30	340.00	<0.5		1560.00	<0.5			<0.5		2300.00		420.00		<0.5	8.23	1200.00			360.00	
SRK05-9	11/4/2010	SPLIT	<0.5	17.10	350.00	<0.5		1580.00	0.70			<0.5		2300.00		430.00		<0.5	8.11	1200.00			320.00	
RPD (%)			N/A	26.40	2.90	N/A	N/A	1.27	N/A	N/A	N/A	N/A	N/A	0.00	N/A	2.35	N/A	N/A	0.12	0.00	N/A	N/A	11.76	N/A
Comments																								
Action																								
Result																								

RPD > 50%



Table D-29: Vangorda Creek Drainage Groundwater Quality  
2010 QA/QC Splits -Dissolved Metals

Station	Date	Sample Type	Ag-d	Al-d	As-d	Ba-d	B-d	Be-d	Bi-d	Ca-d	Cd-d	Co-d	Cr-d	Cu-d	Fe-d	Hg-d	K-d	Li-d	Mg-d	Mn-d	Mo-d	Na-d	Ni-d	Pb-d	Sb-d	S-d	Se-d	Si-d	Sn-d	Sr-d	Ti-d	Tl-d	U-d	V-d	Zn-d	Zr-d			
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L			
P09-VC1	9/20/2010	M	<0.005	3.70	18.30	20.00	<50	<0.01	<0.005	53.60	0.01	0.04	<0.1	0.16	741.00	1.25	0.01	10.80	33.00	2.54	13.50	0.27	0.16	0.05	22.00	<0.04	5750.00	<0.01	714.0	<0.5	<0.002	5.32	<0.2	9.10	<0.1				
P09-VC1	9/20/2010	SPLIT	<0.005	5.10	17.90	21.00	<50	<0.01	<0.005	53.00	0.01	0.04	<0.1	0.15	743.00	1.23	0.01	10.40	32.90	2.40	12.90	0.27	0.16	0.07	22.00	<0.04	5730.00	<0.01	736.0	<0.5	<0.002	5.47	<0.2	9.40	<0.1				
		RPD (%)	N/A	31.82	2.21	4.88	N/A	N/A	N/A	1.13	0.00	4.88	N/A	6.45	0.27	N/A	1.61	1.65	3.77	0.30	5.67	4.55	0.00	0.64	33.33	0.00	N/A	0.35	N/A	3.03	N/A	N/A	2.78	N/A	3.24	N/A			
<b>Comments</b>																																							
<b>Action</b>																																							
<b>Result</b>																																							
SRK05-9	11/4/2010	M	<0.03	4.00	0.60	38.70	<300	<0.05	<0.03	290.00	0.28	0.17	<0.5	2.10	26.00	5.10	0.01	204.00	27.60	1.10	11.70	2.40	0.66	<0.1	424.00	0.60	4940.00	0.10	904.0	<3	<0.01	31.90	<1	81.20	<0.5				
SRK05-9	11/4/2010	SPLIT	<0.03	4.00	0.70	38.30	<300	<0.05	<0.03	291.00	0.25	0.10	<0.5	1.80	12.00	5.20	0.01	207.00	12.80	1.00	11.80	1.50	0.53	<0.1	435.00	0.60	4990.00	0.09	891.0	<3	<0.01	31.40	<1	87.90	<0.5				
		RPD (%)	N/A	0.00	15.38	1.04	N/A	N/A	N/A	0.34	11.32	51.85	N/A	15.38	73.68	N/A	1.94	0.00	1.46	73.27	9.52	0.85	46.15	21.85	N/A	2.56	0.00	1.01	10.53	1.45	N/A	N/A	1.58	N/A	7.92	N/A			
<b>Comments</b>												Both values correctly entered into emLine; however, split value not > PQL. Therefore, RPD analysis not valid in this case.			Both values correctly entered into emLine; however, split value not > PQL. Therefore, RPD analysis not valid in this case.					Both values > PQL and correctly entered into emLine.																			
<b>Action</b>												<b>Let Value Stand</b>			<b>Let Value Stand</b>					<b>Let Value Stand</b>																			
<b>Result</b>												Discrepancy between values remains.			Discrepancy between values remains.					Discrepancy between values remains.																			

RPD > 50%  
RPD > 100%



Table D-30: Vangorda Creek Drainage Groundwater Quality  
2010 QA/QC Lab vs. Field Comparison

Station	Date	COND µmho/cm	CONDF µmho/cm	RPD %	Comments	Action	Result	pH	pHF	Difference	Comments	Action	Result
BH05-9B-R	6/12/2010	628	562	11.09				8.2	7.92	0.28			
BH05-9B-R	9/20/2010	624	625	0.16				8.07	7.68	0.39			
P09-GS1A	9/17/2010	1450	1430	1.39				7.92	6.82	1.1	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.
P09-GS1B	9/16/2010	1260	1300	3.13				7.74	7.14	0.6			
P09-LCD1	6/12/2010	823	776	5.88				8	7.34	0.66			
P09-LCD1	9/20/2010	843	910	7.64				7.9	7.23	0.67			
P09-LCD4	9/21/2010			#DIV/0!	Sample not collected. Samplers noted "Insufficient water to sample."					0	Sample not collected. Samplers noted "Insufficient water to sample."		
P09-LCD6	6/12/2010	878	832	5.38				8	7.44	0.56			
P09-LCD6	9/20/2010	876	920	4.90				7.84	7.33	0.51			
P09-VC1	6/12/2010	369	360	2.47				8.1	7.81	0.29			
P09-VC1	9/20/2010	390	390	0.00				8.02	8.08	0.06			
P09-VC2	9/20/2010	404	420	3.88				7.84	7.68	0.16			
P2001-2A	6/13/2010	1630	1638	0.49				7.5	8.47	0.97			
P2001-2A	9/18/2010	1750	1684	3.84				7.73	6.65	1.08	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.
P2001-2B	6/13/2010	1430	1264	12.32				7.8	7.43	0.37			
P2001-2B	9/18/2010	1660	1741	4.76				7.81	6.72	1.09	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.
P2001-3	6/19/2010	917	989	7.56				8.2	7.34	0.86			
P2001-3	9/15/2010	976	885	9.78				8.09	7.23	0.86			
SRK05-5C	6/12/2010	790	734	7.35				8.2	7.64	0.56			
SRK05-5C	9/20/2010	787	610	25.34	Field and lab values correctly entered into emLine.	Let Value Stand	Discrepancy between lab and field values remains.	7.82	7.85	0.03			
SRK05-7	9/21/2010			#DIV/0!	Sample not collected. Samplers noted "Insufficient amount to sample."					0	Sample not collected. Samplers noted "Insufficient amount to sample."		
SRK05-8	6/12/2010	2130	1918	10.47				7.4	6.97	0.43			
SRK05-8	9/20/2010	2290	2399	4.65				7.69	7.23	0.46			

RPD > 50% or pH difference > 1.5 pH unit

RPD > 20% or pH difference > 1 pH unit

Table D-30: Vangorda Creek Drainage Groundwater Quality  
2010 QA/QC Lab vs. Field Comparison

Station	Date	COND µmho/cm	COND µmho/cm	RPD %	Comments	Action	Result	pH	pHF	Difference	Comments	Action	Result
SRK05-9	1/7/2010	2350	2210	6.14				7.7	6.96	0.74			
SRK05-9	1/21/2010	2280	2180	4.48				7.8	7.25	0.55			
SRK05-9	2/4/2010	2290	2110	8.18				7.9	7.25	0.65			
SRK05-9	2/18/2010	2210	2020	8.98				8	7.54	0.46			
SRK05-9	3/2/2010	2100	2020	3.88				7.9	7.47	0.43			
SRK05-9	3/23/2010	2080	1900	9.05				8.2	7.7	0.5			
SRK05-9	4/7/2010	2020	2030	0.49				8.2	7.24	0.96			
SRK05-9	4/19/2010	2050	2130	3.83				8.1	7.6	0.5			
SRK05-9	5/1/2010	1980	1750	12.33				8	8.18	0.18			
SRK05-9	5/18/2010	1880	1893	0.69				8.3	7.6	0.7			
SRK05-9	6/2/2010	2040	2190	7.09				8.3	7.53	0.77			
SRK05-9	6/20/2010	2200	2230	1.35				8.1	7.48	0.62			
SRK05-9	7/7/2010	2280	2520	10.00				7.88	7.47	0.41			
SRK05-9	7/22/2010	2340	2021	14.63				7.91	7.46	0.45			
SRK05-9	8/5/2010	2370	2410	1.67				7.78	7.44	0.34			
SRK05-9	8/18/2010	2380	2235	6.28				8.01	7.43	0.58			
SRK05-9	9/7/2010	2580	2503	3.03				8.03	7.21	0.82			
SRK05-9	9/23/2010	2440	2129	13.61				7.9	7.11	0.79			
SRK05-9	10/7/2010	2360	2330	1.28				7.89	7.84	0.05			
SRK05-9	10/21/2010	2160	2200	1.83				8.11	7.58	0.53			
SRK05-9	11/4/2010	2300	2218	3.63				8.23	7.47	0.76			
SRK05-9	11/18/2010	2310	2164	6.53				7.95	7.09	0.86			
SRK05-9	12/2/2010	2260	2270	0.44				8.11	7.48	0.63			
SRK05-9	12/16/2010	2230	2230	0.00				8.11	7.89	0.22			
V34	6/12/2010	1520	1468	3.48				7.9	7.29	0.61			
V34	9/18/2010	1670	1625	2.73				7.63	6.87	0.76			
V35	6/12/2010	3390	3002	12.14				7.5	6.99	0.51			
V35	9/18/2010	2760	2781	0.76				7.77	6.85	0.92			
V36	6/12/2010	2500	2166	14.32				7.5	7.03	0.47			
V36	9/18/2010	2720	2700	0.74				7.58	6.64	0.94			
V37	6/13/2010	956	997	4.20				8.5	9.19	0.69			
V37	9/18/2010	1100	1085	1.37				8.04	7.27	0.77			

RPD > 50% or pH difference > 1.5 pH unit

RPD > 20% or pH difference > 1 pH unit

Table D-31: Vangorda Creek Drainage Water Quality  
2010 QA/QC Duplicates - Pit Lakes - General Parameters

Station	Date	Sample Type	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3 mg/L	CaCO3-d mg/L	Cl-d mg/L	CO3 mg/L	COND µmho/cm	HCO3 mg/L	NH3 mg/L	NO2 mg/L	NO2/3 mg/L	NO3 mg/L	OH mg/L	oPO4 mg/L	P mg/L	pH	SO4-d mg/L	TDS mg/L	TSS mg/L
VL-1	6/16/2010	M	69.4	423	<0.5	<0.5	931	899	<0.5	<0.5	2210	<0.5	0.66	0.006	0.04	0.04	<0.5	<0.005	<0.005	3.18	1300	960	11
VL-1	6/16/2010	DUP	74.7	420	<0.5	<0.5	927	938	<0.5	<0.5	2190	<0.5	0.69	<0.005	0.04	0.04	<0.5	<0.005	<0.005	3.19	1300	1000	11
RPD (%)			7.36	0.71	N/A	N/A	0.43	4.25	N/A	N/A	0.91	N/A	4.44	N/A	0.00	0.00	N/A	N/A	N/A	0.01	0.00	4.08	0.00
Comments																							
Action																							
Result																							

RPD > 50%





Table D-32: Vangorda Creek Drainage Water Quality  
2010 QA/QC Duplicates - Pit Lakes - Dissolved Metals

Station	Date	Sample Type	Ag-d	Al-d	As-d	Ba-d	B-d	Be-d	Bi-d	Ca-d	Cd-d	Co-d	Cr-d	Cu-d	Fe-d	K-d	Li-d	Mg-d	Mn-d	Mo-d	Na-d	Ni-d	Pb-d	Sb-d	S-d	Se-d	Si-d	Sn-d	Sr-d	Ti-d	Tl-d	U-d	V-d	Zn-d	Zr-d		
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L			
VL-1	6/16/2010	M	<0.1	3170	1.7	23.9	<1000	0.5	<0.1	173	142	656	<2	1170	46300	2	0.04	114	47200	<1	4	522	307	<0.4	411	<0.8	4390	<0.2	875	<10	1.56	7.46	<4	177000	<2		
VL-1	6/16/2010	DUP	<0.1	3250	2	24.1	<1000	0.7	<0.1	185	143	658	<2	1190	49600	2	0.041	115	48200	<1	4	515	319	<0.4	415	<0.8	4680	<0.2	895	<10	1.46	7.41	<4	178000	<2		
RPD (%)			N/A	2.49	16.22	0.83	N/A	33.33	N/A	6.70	0.70	0.30	N/A	1.69	6.88	0.00	2.47	0.87	2.10	N/A	0.00	1.35	3.83	N/A	0.97	N/A	6.39	N/A	2.26	N/A	6.62	0.67	N/A	0.56	N/A		
Comments																																					
Action																																					
Result																																					

 RPD > 50%  
 RPD > 100%



Table D-33: Vangorda Creek Drainage Water Quality  
2010 QA/QC Duplicates - Pit Lakes - Total Metals

Station	Date	Sample Type	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	S	Sb	Se	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr		
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	ug/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L			
VL-1	6/16/2010	M	0.2	3100	2.4	<1000	24.3	0.5	<0.1	188	145	638.0000	<2	1150	51800	2	0.04	112	46100	<1	4	501	308	429	<0.4	<0.8	4770	<0.2	884	<10	1.64	6.98	<4	172000	<2		
VL-1	6/16/2010	DUP	<0.1	3160	2.2	<1000	24	0.5	<0.1	181	146	659.0000	<2	1170	49600	2	0.042	115	48800	<1	4	510	314	441	<0.4	<0.8	4480	<0.2	890	<10	1.54	6.98	<4	179000	<2		
RPD (%)			N/A	1.92	8.70	N/A	1.24	0.00	N/A	3.79	0.69	3.24	N/A	1.72	4.34	0.00	4.88	2.64	5.69	N/A	0.00	1.78	1.93	2.76	N/A	N/A	6.27	N/A	0.68	N/A	6.29	0.00	N/A	3.99	N/A		
Comments																																					
Action																																					
Result																																					

RPD > 50%  
 RPD > 100%



Table D-34: Vangorda Creek Drainage Water Quality  
 2010 QA/QC Splits - Pit Lakes - General Parameters

Station	Date	Sample Type	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3 mg/L	CaCO3-d mg/L	Cl-d mg/L	CO3 mg/L	COND µmho/cm	HCO3 mg/L	NH3 mg/L	NO2 mg/L	NO2/3 mg/L	NO3 mg/L	OH mg/L	oPO4 mg/L	P mg/L	pH	SO4-d mg/L	TDS mg/L	TSS mg/L
VL-1	6/16/2010	M	69.4	423	<0.5	<0.5	931	899	<0.5	<0.5	2210	<0.5	0.66	0.006	0.04	0.04	<0.5	<0.005	<0.005	3.18	1300	960	11
VL-1	6/16/2010	SPLIT	74.7	420	<0.5	<0.5	927	938	<0.5	<0.5	2190	<0.5	0.69	<0.005	0.04	0.04	<0.5	<0.005	<0.005	3.19	1300	1000	11
RPD (%)			7.36	0.71	N/A	N/A	0.43	4.25	N/A	N/A	0.91	N/A	4.44	N/A	0.00	0.00	N/A	N/A	N/A	0.01	0.00	4.08	0.00
Comments																							
Action																							
Result																							

RPD > 50%



Table D-35: Vangorda Creek Drainage Water Quality  
2010 QA/QC Splits - Pit Lakes - Dissolved Metals

Station	Date	Sample Type	Ag-d	Al-d	As-d	Ba-d	B-d	Be-d	Bi-d	Ca-d	Cd-d	Co-d	Cr-d	Cu-d	Fe-d	K-d	Li-d	Mg-d	Mn-d	Mo-d	Na-d	Ni-d	Pb-d	Sb-d	S-d	Se-d	Si-d	Sn-d	Sr-d	Ti-d	Tl-d	U-d	V-d	Zn-d	Zr-d		
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		
VL-1	6/16/2010	M	<0.1	3170	1.7	23.9	<1000	0.5	<0.1	173	142	656	<2	1170	46300	2	0.04	114	47200	<1	4	522	307	<0.4	411	<0.8	4390	<0.2	875	<10	1.56	7.46	<4	177000	<2		
VL-1	6/16/2010	SPLIT	<0.1	3250	2	24.1	<1000	0.7	<0.1	185	143	658	<2	1190	49600	2	0.041	115	48200	<1	4	515	319	<0.4	415	<0.8	4680	<0.2	895	<10	1.46	7.41	<4	178000	<2		
RPD (%)			N/A	2.49	16.22	0.83	N/A	33.33	N/A	6.70	0.70	0.30	N/A	1.69	6.88	0.00	2.47	0.87	2.10	N/A	0.00	1.35	3.83	N/A	0.97	N/A	6.39	N/A	2.26	N/A	6.62	0.67	N/A	0.56	N/A		
Comments																																					
Action																																					
Result																																					

RPD > 50%  
 RPD > 100%





Table D-36: Vangorda Creek Drainage Water Quality  
 2010 QA/QC Splits - Pit Lakes - Total Metals

Station	Date	Sample Type	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	S	Sb	Se	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr			
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	ug/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L			
VL-1	6/16/2010	M	0.2	3100	2.4	<1000	24.3	0.5	<0.1	188	145	638.0000	<2	1150	51800	2	0.04	112	46100	<1	4	501	308	429	<0.4	<0.8	4770	<0.2	884	<10	1.64	6.98	<4	172000	<2			
VL-1	6/16/2010	SPLIT	<0.1	3160	2.2	<1000	24	0.5	<0.1	181	146	659.0000	<2	1170	49600	2	0.042	115	48800	<1	4	510	314	441	<0.4	<0.8	4480	<0.2	890	<10	1.54	6.98	<4	179000	<2			
RPD (%)			N/A	1.92	8.70	N/A	1.24	0.00	N/A	3.79	0.69	3.24	N/A	1.72	4.34	0.00	4.88	2.64	5.69	N/A	0.00	1.78	1.93	2.76	N/A	N/A	6.27	N/A	0.68	N/A	6.29	0.00	N/A	3.99	N/A			
Comments																																						
Action																																						
Result																																						

RPD > 50%  
 RPD > 100%



**Table D-37: Vangorda Creek Drainage Water Quality  
2010 - Ion Charge Balance**

Station	Date	Surface
LCD	5/12/2010	
LCD	6/16/2010	1.00
LCD	7/14/2010	
LCD	8/4/2010	0.92
LCD	9/7/2010	0.90
LCD	10/5/2010	
V1	1/7/2010	
V1	2/18/2010	
V1	3/29/2010	
V1	4/20/2010	
V1	5/12/2010	
V1	6/16/2010	1.00
V1	7/14/2010	
V1	8/4/2010	1.00
V1	9/7/2010	1.00
V1	10/5/2010	
V1	11/1/2010	
V1	12/1/2010	1.00
V17A	6/16/2010	1.00
V2	1/7/2010	
V2	2/3/2010	
V2	3/2/2010	
V2	4/7/2010	
V2	5/1/2010	
V2	5/18/2010	
V2	6/2/2010	
V2	6/20/2010	1.00
V2	7/7/2010	1.00
V2	7/22/2010	1.00
V2	8/5/2010	1.00
V2	8/18/2010	0.96
V2	9/7/2010	0.84
V2	9/23/2010	0.92
V2	10/7/2010	1.00
V2	10/21/2010	0.89
V2	11/4/2010	1.00
V2	12/2/2010	0.98
V20	6/1/2010	
V22	3/4/2010	
V22	6/16/2010	0.85
V22	9/7/2010	0.92
V22	12/16/2010	1.00
V23	3/4/2010	
V23	6/16/2010	1.00
V23	9/7/2010	0.93
V23	12/16/2010	0.97
V24	6/22/2010	0.72
V24	6/29/2010	0.85
V24	7/6/2010	0.76
V24	7/13/2010	1.00
V25	6/22/2010	0.84
V25	6/29/2010	1.10
V25	7/6/2010	1.00
V25	7/13/2010	1.10
V25	8/12/2010	
V25BSP	4/27/2010	
V25BSP	5/11/2010	
V25BSP	6/15/2010	0.99
V25BSP	6/22/2010	0.82
V25BSP	6/29/2010	1.10
V25BSP	7/6/2010	1.10
V25BSP	7/13/2010	1.10
V25BSP	8/5/2010	1.10
V25BSP	8/12/2010	
V25BSP	9/7/2010	0.88
V25BSP	10/5/2010	
V25BSP	11/1/2010	
V25BSP	12/2/2010	0.88
V27	1/18/2010	
V27	2/24/2010	
V27	3/29/2010	
V27	4/20/2010	
V27	5/12/2010	
V27	6/16/2010	1.00
V27	7/14/2010	
V27	8/4/2010	0.94
V27	9/7/2010	1.00
V27	10/5/2010	
V27	11/1/2010	
V27	12/1/2010	0.99

Station	Date	Surface
V2A	2/3/2010	
V2A	3/2/2010	
V2A	4/7/2010	
V2A	5/1/2010	
V2A	5/18/2010	
V2A	6/2/2010	
V2A	6/15/2010	1.10
V2A	7/7/2010	0.97
V2A	7/22/2010	1.10
V2A	8/5/2010	1.00
V2A	8/18/2010	0.96
V2A	9/7/2010	0.85
V2A	9/23/2010	0.90
V2A	10/7/2010	1.00
V2A	10/21/2010	0.97
V2A	11/4/2010	1.00
V4	1/18/2010	
V4	2/24/2010	
V4	3/29/2010	
V4	4/20/2010	
V4	5/12/2010	
V4	6/16/2010	0.95
V4	7/14/2010	
V4	8/4/2010	1.00
V4	9/7/2010	0.90
V4	10/5/2010	
V4	11/1/2010	
V4	12/1/2010	1.00
V5	1/6/2010	
V5	2/18/2010	
V5	3/30/2010	
V5	4/20/2010	
V5	5/12/2010	
V5	6/17/2010	0.91
V5	7/14/2010	
V5	8/4/2010	1.00
V5	9/7/2010	0.90
V5	10/5/2010	
V5	11/2/2010	
V5	12/1/2010	1.00
V8	1/6/2010	
V8	2/18/2010	
V8	3/30/2010	
V8	4/20/2010	
V8	5/12/2010	
V8	6/17/2010	0.93
V8	7/14/2010	
V8	8/4/2010	1.00
V8	9/7/2010	0.92
V8	10/5/2010	
V8	11/2/2010	
V8	12/1/2010	1.00

Station	Date	Seepage
MOOSE SEEP	1/7/2010	
MOOSE SEEP	2/3/2010	
MOOSE SEEP	3/2/2010	
MOOSE SEEP	4/7/2010	
MOOSE SEEP	5/1/2010	
MOOSE SEEP	5/18/2010	
MOOSE SEEP	6/2/2010	
MOOSE SEEP	6/20/2010	0.99
MOOSE SEEP	7/7/2010	1
MOOSE SEEP	7/22/2010	1
MOOSE SEEP	8/5/2010	0.95
MOOSE SEEP	8/18/2010	0.95
MOOSE SEEP	9/7/2010	0.85
MOOSE SEEP	9/23/2010	0.92
MOOSE SEEP	10/7/2010	1
MOOSE SEEP	10/21/2010	1
MOOSE SEEP	11/4/2010	1
MOOSE SEEP	12/2/2010	0.96
V14	6/1/2010	

Table D-37: Vangorda Creek Drainage Water Quality  
 2010 - Ion Charge Balance

Station	Date	Groundwater
BH05-9B-R	6/12/2010	0.87
BH05-9B-R	9/20/2010	0.94
P09-GS1A	9/17/2010	0.92
P09-GS1B	6/11/2010	
P09-GS1B	9/16/2010	1
P09-LCD1	6/12/2010	0.99
P09-LCD1	9/20/2010	1.1
P09-LCD6	6/12/2010	0.97
P09-LCD6	9/20/2010	1.1
P09-VC1	6/12/2010	1
P09-VC1	9/20/2010	1
P09-VC2	9/20/2010	1
P2001-2A	6/13/2010	0.98
P2001-2A	9/18/2010	0.97
P2001-2B	6/13/2010	0.94
P2001-2B	9/18/2010	1
P2001-3	6/19/2010	0.98
P2001-3	9/15/2010	1.1
P96-6	6/15/2010	1.1
P96-6	9/21/2010	1.1
SRK05-5C	6/12/2010	1
SRK05-5C	9/20/2010	0.88
SRK05-8	6/12/2010	0.96
SRK05-8	9/20/2010	1.1
SRK05-9	1/7/2010	
SRK05-9	1/21/2010	
SRK05-9	2/4/2010	
SRK05-9	2/18/2010	
SRK05-9	3/2/2010	
SRK05-9	3/23/2010	
SRK05-9	4/7/2010	
SRK05-9	4/19/2010	
SRK05-9	5/1/2010	
SRK05-9	5/18/2010	
SRK05-9	6/2/2010	
SRK05-9	6/20/2010	1
SRK05-9	7/7/2010	1
SRK05-9	7/22/2010	1.1
SRK05-9	8/5/2010	0.98
SRK05-9	8/18/2010	0.98
SRK05-9	9/7/2010	0.92
SRK05-9	9/23/2010	0.96
SRK05-9	10/7/2010	1
SRK05-9	10/21/2010	0.96
SRK05-9	11/4/2010	
SRK05-9	11/18/2010	1
SRK05-9	12/2/2010	0.95
SRK05-9	12/16/2010	1
SRK08-P14	9/16/2010	0.99
SRK08-P15	9/16/2010	1
SRK08-P16	9/20/2010	
V34	6/12/2010	1.1
V34	9/18/2010	1.1
V35	6/12/2010	1.1
V35	9/18/2010	1
V36	6/12/2010	0.93
V36	9/18/2010	0.97
V37	6/13/2010	0.93
V37	9/18/2010	0.96

Station	Date	Pit Lakes
GL-1	4/29/2010	
	6/15/2010	
	7/13/2010	1.10
	8/10/2010	
	9/7/2010	0.98
GL-15	4/29/2010	
	6/15/2010	
	7/13/2010	1.00
	8/10/2010	
	9/7/2010	1.00
GL-3	4/29/2010	
	6/15/2010	
	7/13/2010	1.10
	8/10/2010	
	9/7/2010	1.00
GL-30	4/29/2010	
	6/15/2010	
	7/13/2010	1.00
	8/10/2010	
	9/7/2010	0.89
GL-40	4/29/2010	
GL-5	4/29/2010	
	6/15/2010	
	7/13/2010	1.10
	8/10/2010	
	9/7/2010	0.99
VL-1	4/29/2010	
	6/16/2010	
	7/14/2010	0.81
	8/11/2010	
	9/7/2010	1.00
VL-15	4/29/2010	
	6/16/2010	
	7/14/2010	0.83
	8/11/2010	
	9/7/2010	0.99
VL-3	4/29/2010	
	6/16/2010	
	7/14/2010	0.81
	8/11/2010	
	9/7/2010	0.97
VL-5	4/29/2010	
	6/16/2010	
	7/14/2010	0.79
	8/11/2010	
	9/7/2010	1.00