Client	Carbon Energy Limited								RC & SN Lohrse	Kagan Braemar Landcare	RC & SN Lohrse			QGC				andmark Dal	DERM									Carbon Energy Limited					Published Water Quality Objectives [1]		
Date	FEB 10.								March 03.	11.01.2010	05 March 10.			23-Mar-10				07-Apr-10	08-Jul-10									July 29, 2010							
Laboratory	EH&S Systems								CASCO	SGS Agritech	SGS Agritech			Leeder				Yara Phosin	ALS Labs									ALS Lab Group							
Location	Bloodwood Creek					Kogan Creek			Creek On Kia-Ora / Warra	Kogan Creek, Lohse Property	Garden Water	Drinking Water	Dam Water	Kogan Creek				Kogan Creek	Kogan Creek Lohrse									Bloodwood Creek					Livestock [2,3]	Aquatic Ecosystems [2,4]	Drinking Water [5]
	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Result					Upstream	Glen Mona	Downstream	Average Samp	C Creek	DC001	DC002	DC009	DC010	DC003	DC004	DC005	DC006	DC007	Site 1	Site 2	Site 3	Site 4	Site 5			
In Situ																																			
Temperature C	23.47	26.09	25.06	32.05	28.07	26.12	26.01	27.34																											
Electr Conductof Water uS/c	0.795	0.75	0.67	0.7	0.88	0.96	0.7	0.71		90							7440																		
EC mS/cm	125.5	134	108.5	94.5	120.5	167.5	92.5	88																											
Salinity ppt	0.4	0.375	0.33	0.34	0.44	0.49	0.35	0.37																											
pH	6.33	6.4	6.1	6.4	6.2	6.4	6.2	6.4		7.13							8.3																	6.5-7.5	6.5 - 8.5
Dissolved Oxygen %sat	11.7	40.4	22.95	70.7	83.45	20.35	49.8	68.2																										90-110	>85 *
Dissolved Oxygen mg/L	0.95	3.3	1.95	5.75	6.5	1.6	4	5.2																											
Dissolved Silica (mg/L)																	6.15																		
Turbidity NTU	298	140.9	143.6	32.2	15.95	486.5	23.1	66.8																											5 *
Suspended Solids (mg/L)																	1644																		
Metals - Total																																			
Arsenic - Total (ug/L)	6	2.4	2.5	2.2	1.3	4.4	3	2.3		<7	<7	10	<7	3	2	2	2.5		2	<1			2	2									500	37 [a]	7
Cadmium - Total (ug/L)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		<2	<2	<2	<2				0.3																10	0.2	2
Chromium - Total (ug/L)	11	4.7	4.8	2.1	<1	17	2.4	5															2	2									1000	1 [b]	50 [c]
																																	400 (sheep)		
	2.5	2.9	2.5	1.2	<1	11	1.9	2.1	60	0.0001							19	<5	2	1			2	3									1000 (cattle)		
Copper - Total (ug/L)																																	5000 (pigs & poultry)	1.4	2000
Manganese - Total (ug/L)	450	690	360	140	210	270	340	88	180	30								<50										120	200	60	150	100		1900000	100 *
Nickel - Total (ug/L)	6.7	4.4	4	1.8	1	10	3.1	2.8									0.007		3	2			4	4									1000	11	20
Lead - Total (ug/L)	4.6	3.9	-	<1	<1	7.6	<1	1.6		<0.01	<0.01	<0.01	<0.01				0.037		2	<1			3	3									100	3.4	10
Silver - Total (ug/L)	<1	<1	<1	<1	<1	<1	<1	<1																										0.05	100
Zinc - Total (ug/L)	41	38	55	35	37	97	43	39	170	30							0.14	<0.02					6	<5				10	<10	<10	<10	<10	20000	8	3000 *
Mercury -Total (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001																	0.002	600 [d]	0.001
Aluminium - Total (mg/L)	29	9.5	9.6	3.6		34	2.6	5.3	14	25							0.02											0.5	4.16	0.62	0.5	1.03	5	55000 *	0.2 *
Antimony - (mg/L)																												0.01	0.01	0.01	<0.01	<0.01			0.003
Barium - (mg/L)																	1.4											0.1	0.1	<0.1	<0.1	<0.1			0.7
Iron - Total (mg/L)	20	7.3	7.7	3.8	2	23	5.1	6.4	6.5	12							0.005	11.8										5.41	8.72	5.85	3.67	4.47			0.3 *
Boron (mg/L)									0.54	0.15							0.43	<0.02															5	370000	<4
Molybdenum (mg/L)									<0.05	<0.05								<0.01															0.15		0.05
Selenium (mg/L)																	0.0088											<0.01	<0.01	<0.01	0.01	0.02		11000	0.01
Metals - Dissolved																																			
Arsenic - Dissolved (ug/L)	2.3	1.6	1.6	1.4	1	1.6	2.1	1.5																											
Cadmium - Dissolved (ug/L)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2																											
Chromium - Dissolved (ug/L	<1	<1	<1	<1	<1	1.7	<1	1.2																											
Copper - Dissolved (ug/L)	<1	1.7	1.3	<1	<1	1.2	1.5	1.2																											
Iron - Dissolved (ug/L)	450	400	560	390	600		620	980																											
Manganese - Dissolved (ug/l	280	510	290	79	190	88	20	52																											
Nickel - Dissolved (ug/L)	2.3	2.3	2.1	1	<1	3.2	2.4	1.8																											
Lead - Dissolved (ug/L)	<1	<1	<1	<1	<1	<1	<1	<1																											
Silver - Dissolved (ug/L)	<1	<1	<1	<1	<1	<1	<1	<1																											
Zinc - Dissolved (ug/L)	110	130	140	40	17	58	160	72																											
Mercury - Dissolved (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001																											
Aluminium - Dissolved (mg/l	0.79	0.6	0.73	0.28		2.9	0.63	1.2																											
Major Ions																																			
Calcium - Total (mg/L)	2.5	7.1	5.2	4.8	5.6	3.8	4.9	2.4	7.3	2							19.5	7										12	10	9	11	9	1000		
Magnesium - Total(mg/L)	4.4	3.1	2.9	2.9	2.3	5	2.4	1.9	2.8	1.5							5.2	5										6	4	4	4	4			
Sodium - Total(mg/L)	15	14	12	8.7	9.8	23	7	8.9	16	33							1900	25										58	35	37	37	39			180 *
Strontium (mg/L)																	2.55											0.2	0.1	0.1	0.1	0.1			
Thallium (mg/L)																												<0.01	0.01	<0.01	<0.01	<0.01			
Titanium (mg/L)																												<0.01	0.02	<0.01	<0.01	<0.01			
Vanadium (mg/L)																												<0.01	0.02	0.01	<0.01	0.01			
Potassium - Total (mg/L)	5.4	5	6.1	4.2	5.6	4.5	6.2	3.6	7.2	4							8.05	7										7	7	8	8	9			
Phosphorus -Total (mg/L)	0.23	0.21	0.31	0.15	0.14	0.26	0.43	0.14	0.1258	<1								<1.000																	
Chloride (mg/L)	16	18	14	8	9	21	4	6		32							1900	27																	250 *
Cobalt (mg/L)																	0.005																		
Sulphate (mg/L)	15	3	2	1	1	4	1	<1	3.9	3																							1000		250 *
Total Alkalinity (mg/L)	24	33	30	27	27	27	31	20																											
Total Alkalinity (mg CaCo3/L)										868							1300																		
Bicarbonate (mg/L)	30	41	37	33	33	34	38	25									40																		
Bicarbonet Alkalinity (mg CaCo3/L)										868.5							1300																		
Carbonate (mg/L)	<1	<1	<1	<1	<1	<1	<1	<1																											
Total Dissolved Ions (mg/L)										57.6							4552																		
Fluoride (mg/L)										<1							1.6																2		1.5
Sulphur (mg/L)										<1								2										2	1	2	1	1			
Salt from Chloride (mg/L)										53																									250 *
Nutrients																																			
TN (ug/L)	1800	1600	2000	1500	2800	2300	3500	1300																										250	
Ammonia (ug/L)	17	14	13	12	6	14	14	11																										900	500 *
Nitrogen Oxides (ug/L)	61	57	41	36	7	68	63	23																										15	
Nitrate (mg/L)										1							0.01	<0.50															400	700000	50
Nitrite (mg/L)										1							0.01																30		3
TP (ug/L)	140	160	310	170	130	160	410	130																										30	
FRP (ug/L)	2	5	13	3	3	5	16	13																										15	
TSS (mg/L)	34	27	23	10	11	21	29	22																											
DOC (mg/L)	15	12	14	11	11	13	17	12																											
EP080/071:Total Petroleum Hydrocarbons																																			
C15 - C28 Fraction (ug/L)																100	100											260	250	180	520	350			
C29 - C36 Fraction (ug/L)																60	60											170	180	150	360	260			
C10 - C36 Fraction (sum) (ug/L)																160	160											430	430	330	880	610			
EP132A:Phenolic Compounds																																			
Phenol (ug/L)																												0.3	<0.1	0.2	<0.1	<0.1		320	

Notes

[1] Queensland Water Quality Guidelines (DERM, 2009) advises insufficient information is currently available to set reliable Queensland guidelines for the Murray Darling Region (ie. region of interest). Users are directed to the ANZECC (2000) guidelines.

[2] Water Quality Objectives based on those published within ANZECC (2000) guidelines

[3] Based on low risk trigger value

[4] Based on freshwater ecosystem (95% level for species protection)

[5] Water Quality Objectives based on those published within the Australian Drinking Water Guidelines (2004)

* Based on aesthetic considerations, otherwise values based on health considerations

[a] Based on trigger value for As(III) of 24 ug/L and As(V) of 13ug/L

[b] Based on chromium (Cr(VI))

[c] Based on hexavalent chromium (Cr(VI))

[d] Based on inorganic mercury

[e] Based on pH >6.5