

ProTen Monitoring Data 2025

**Narrandera Poultry
Production Complex – Sturt
Highway, Euroley NSW 2700**



September 2025

PROTEN PTY LTD

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Table 1 – Meteorology Data

Monthly Average

Meteorological Information	Sep-25	Aug-25	Jul-25	Jun-25	May-25	Apr-25
Total Rainfall (mm)	32.4	17	21.2	40.4	28.4	5.6
Minimum Temperature at 2m (°C)	-0.2	-1.1	-2.9	-3.2	-0.2	4.5
Average Temperature at 2m (°C)	13.1	10.3	8.78	7.94	12.6	18.1
Maximum Temperature at 2m (°C)	29.4	21.4	18.7	22.5	26.6	30.9
Minimum Temperature at 10m (°C)	2.1	1.1	-0.5	-0.8	2.1	7.0
Average Temperature at 10m (°C)	14	11.2	9.73	8.97	13.8	19.1
Maximum Temperature at 10m (°C)	29.5	21.5	18.8	22.6	26.5	31.4
Average Wind Speed (m/s)	3.08	2.86	2.85	2.52	2.43	2.33
Average Wind Direction (degrees)	1.73	2.44	3.63	5	6.72	9.65
Average Ground Solar Radiation (W/m2)	211.9	170.9	116.1	109.7	146.5	193.6

Table 2 – Meteorological Data Prior Year

(Monthly Average)

Meteorological Information	Sep-25	Aug-25	Jul-25	Jun-25	May-25	Apr-25	Mar-25	Feb-25	Jan-25	Dec-24	Nov-24	Oct-24	Sep-24
Total Rainfall (mm)	32.4	17	21.2	40.4	28.4	5.6	36	11.4	12.8	15.4	89.4	28.2	22.6
Minimum Temperature at 2m (°C)	-0.2	-1.1	-2.9	-3.2	-0.2	4.5	9.1	7.3	10.9	9.6	4.7	2.2	-0.6
Average Temperature at 2m (°C)	13.1	10.3	8.78	7.94	12.6	18.1	24.1	25.7	25.6	24.2	22	17.3	12.8
Maximum Temperature at 2m (°C)	29.4	21.4	18.7	22.5	26.6	30.9	38.8	39.2	41.2	40.5	37.1	31.9	29.4
Minimum Temperature at 10m (°C)	2.1	1.1	-0.5	-0.8	2.1	7.0	9.7	8.8	11.9	11.5	7.7	4.6	0.3
Average Temperature at 10m (°C)	14	11.2	9.73	8.97	13.8	19.1	24.7	26.2	26.1	24.9	22.7	18	13.7
Maximum Temperature at 10m (°C)	29.5	21.5	18.8	22.6	26.5	31.4	38.6	39	41.3	40.6	37	32.4	29.6
Average Wind Speed (m/s)	3.08	2.86	2.85	2.52	2.43	2.33	3.27	3.5	3.57	3.05	3.02	3.33	13.1
Average Wind Direction (degrees)	1.73	2.44	3.63	5	6.72	9.65	16.2	26.5	41.4	62.8	100.8	124.5	133.9
Average Ground Solar Radiation (W/m2)	211.9	170.9	116.1	109.7	146.5	193.6	249.3	313.5	343.8	377.3	305	288.2	220.1

Table 3 – Surface Water Monitoring Results

		General			Nutrients			
Site	Date Sampled	pH (pH Units)	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Total Nitrogen (mg/L)	Nitrate/Nitrite as N (mg/L)	Total Phosphorus (mg/L)
ANZECC Criteria Limits		6.5 - 8.0	125 - 2,200	-	-	0.5	0.04	0.05
NSW Water Quality Objectives		6.5 - 8.5	125 - 2,200	-	-	0.5	-	0.05
Entry	14-Jul-16	7.2	141	277	2	3	0.9	0.3
Freezer Room Table Drain		7.2	125	193	2	3	1.1	0.4
Farm 77 Sth Table Drain		7.3	103	657	2	3	1.1	0.3
Farm 77 Nth Table Drain		7.4	140	347	2	3	0.9	0.3
Farm 78 SE Dam		7.6	137	1,360	2	4	1.6	0.6
Farm 79 SE Dam		7.8	170	1,330	4	6	1.7	0.6
Farm 78 SW Dam		7.7	155	1,330	<2	2	2	0.5
Farm 79 NW Dam		7.4	140	287	2	3	1	0.3
Farm 78 Sediment Dam	29-Sep-16	7.6	146	796	2	3	1.1	0.7
Farm 78 Swale Drain		7.8	139	2,560	2	3	1.1	1.2
Farm 79 Sediment Dam		7.4	160	230	2	7	5.3	0.9
Farm 79 Swale Drain		6.9	145	1,260	4	4	0.5	1.3
Farm 75 Roadside table	17-Mar-17	7.8	133	6,160	6	7	0.9	1.7
Farm 78 Sediment Dam		7.5	213	604	2	5	2.7	0.8
Farm 79 Sediment Dam		7.7	275	89	2	<2	0.9	0.2
Concrete batch plant table drain		7.5	230	3,350	5	5	0.1	1.2
S1	17-Jun-17	7.3	146	238	2	-	0.5	0.2
S2		7.2	301	688	5	-	0.5	0.2
S3		7.6	113	56	3	-	0.5	0.1
PPU1		7.7	272	744	2	-	0.5	0.2
PPU2		7.5	67	732	2	-	0.5	0.3
PPU3		7.4	266	288	3	-	0.9	0.4
PPU4		7.5	246	13	2	-	3.5	0.3
PPU5		7.4	187	88	2	-	4.6	0.6
PPU1	28-Sep-17	7.8	360	116	<2	<2	0.6	<0.01
PPU2		7.3	361	345	15	16	1.4	2.7
PPU3		7.6	327	10	3	7	3.6	0.5
PPU4		8.2	303	9	2	8	5.9	0.2
PPU1	11/01/2018	7.5	268	1,000	2	4	1.8	0.1
PPU2		7.2	213	510	9	9	0.2	0.6
PPU3		9.2	374	221	3	3	0.1	0.1
PPU4		9.1	258	218	5	5	0.1	0.3
PPU5		8.2	222	115	2	6	4.5	0.4
PPU1	05-Mar-18	9.7	493	29	2	2	<0.5	0.3
PPU2		8.7	388	1,280	10	14	3.8	2.1
PPU3		8.5	729	1,660	14	14	<0.5	2.2
PPU4		8.1	514	454	10	10	<0.5	1.2
PPU5		8.2	301	87	<2	2	2.5	0.7
PPU1	03-Jun-18	9.4	677	28	19	19	0.2	0.2
PPU2		7.9	479	1,100	21	21	0.3	2.8
PPU3		9	833	39	4	5	1.4	0.3
PPU4		8.5	456	13	2	3	0.9	0.8
PPU5		8.3	370	129	<2	3	3.1	0.9
PPU1	04-Sep-18	8	720	69	78	79	0.8	1.2
PPU2		7.9	389	27	79	80	1.2	1.7
PPU3		8.2	407	32	4	4	0.2	0.9
PPU4		9	573	390	25	25	0.4	2
PPU5		8.1	395	49	3	6	3	1.1
PPU1	18-Dec-18	7	708	12	4	4	<0.5	0.6
PPU2		7.2	388	117	5	5	<0.5	1.6
PPU3		7.2	701	106	7	8	0.5	1.2
PPU4		7.6	411	15	2	2	<0.5	1
PPU5		8.6	482	21	2	3	0.8	0.7
PPU1	19-Mar-19	8.3	862	129	6	6	<1	0.6
PPU2		7.4	447	1,220	18	18	<1	3.7
PPU3		7.9	249	330	46	46	<1	0.5
PPU4		7.4	434	11	2	2	<1	0.7
PPU5		7.4	636	55	7	7	<1	1
PPU1	19-Jun-19	7.6	271	-	3	3	<0.5	0.4
PPU2		7.4	253	-	3	3	<0.5	0.4
PPU3		7.4	202	-	5	8	2.8	1.4
PPU4		7.7	318	-	<2	<2	<0.5	0.6
PPU5		8	400	-	4	5	0.6	0.7
SW		6.9	366	-	3	3	<0.5	0.2
PPU1	19-Sep-19	7.2	293	124	5	5	<1	0.2
PPU2		7	317	677	6	20	14	0.2
PPU3		7.5	268	301	4	6	2	0.6
PPU4		7.5	397	54	4	11	7	2.4
PPU5		7.4	410	45	4	8	4	1.8
PPU1		7.1	429	242	3	5	1.8	0.9
PPU2		7.4	409	946	9	9	<0.1	2.7
PPU3		7.4	413	309	6	7	1.1	2.1

PPU4	03-Dec-19	7.4	525	643	8	8	<0.1	2.4
PPU5		7.5	465	94	<2	<2	0.9	0.7
PPU1	20-Mar-20	6.6	368	135	3	4	0.6	0.5
PPU2		6.6	211	37	5	5	<0.1	1.2
PPU3		6.8	242	26	2	2	0.5	0.8
PPU4		7.2	215	19	3	3	<0.1	1.2
PPU5		7.3	415	59	2	2	0.3	0.8
PPU1	12-Jun-20	6.9	308	4	2	2	<1	0.6
PPU2		6.7	192	121	4	6	2	1
PPU3		6.7	243	74	4	5	1	1.2
PPU4		6.8	253	21	2	2	<1	0.6
PPU5		7.2	294	56	5	6	1	0.7
PPU1	19-Nov-20	7.5	327	444	3	3	<0.1	0.2
PPU2		7.5	265	144	6	6	<0.1	0.9
PPU3		8.4	266	49	5	5	<0.1	0.5
PPU4		8.1	356	64	4	4	0.4	1.5
PPU5		7.9	338	60	4	6	1.8	1
PPU1	14-Apr-21	7.2	214	9	<2	<2	<0.1	<0.01
PPU2		7.2	173	132	6	6	<0.1	0.59
PPU3		7.2	271	102	5	6	1.3	0.55
PPU4		7.2	205	80	4	4	<0.1	0.98
PPU5		7.5	215	37	3	3	0.4	<0.01
S1		7.3	290	318	-	-	<1	0.18
PPU1	24-Sep-21	7.3	222	35	2	2	0.2	0.39
PPU2		7.3	248	114	3	6	3	0.81
PPU3		7.3	268	91	4	6	2.5	0.94
PPU4		7.4	198	44	2	2	0.3	0.21
PPU5		7.4	254	30	5	6	0.7	0.88
PPU1	04-May-22	6.8	180	15	2	4	2	<0.01
PPU2		6.9	77	30	8	8	<0.01	0.55
PPU3		6.8	166	24	3	6	3.1	0.54
PPU4		6.8	152	33	3	7	4	1.11
PPU5		6.9	170	7	3	4	1	<0.1
PPU1	09-Sep-22	7	205	103	3	7	4.1	0.86
PPU2		7.1	129	68	2	3	0.9	0.57
PPU3		7.1	180	36	2	6	4.2	0.75
PPU4		7.2	189	29	5	8	2.9	1.06
PPU5		7.3	190	24	4	6	2.4	0.7
PPU1	15-Mar-23	6.7	220	88	2	2	0.4	0.15
PPU2		8.8	245	55	7	7	0.4	0.23
PPU3		8.4	255	20	4	6	2	0.42
PPU4		9.2	200	11	3	3	0.1	0.21
PPU5		8.5	204	10	2	3	1.4	0.32
PPU1	23-Sep-23	7.2	317	111	7	8	1.1	1.01
PPU2		7.2	288	72	12	12	0.5	1.1
PPU3		7.3	283	45	8	11	3.4	1.48
PPU4		7.3	236	32	7	8	0.6	1.13
PPU5		7.3	267	32	10	11	1	1.99
PPU1	20-Mar-24	6.3	312	126	3	6	0.1	1.82
PPU2		6.6	205	760	6	6	<0.1	1.23
PPU3		6.7	214	43	4	4	<0.1	0.74
PPU4		6.8	228	48	2	2	0.3	0.56
PPU5		6.8	306	83	3	4	0.5	0.87
PPU1	24-Sep-24	8.5	324	28	2	3	1	1.16
PPU2		7.5	211	40	6	8	2.1	1.34
PPU3		7.6	273	25	3	4	0.9	1.24
PPU4		7.6	244	52	5	6	1.2	1.1
PPU5		7.8	298	49	4	9	4.8	1.31
PPU1	25-Mar-25	7.3	454	224	3	3	0.3	2.13
PPU2		7.2	252	253	5	5	0.4	1.36
PPU3		7.6	259	49	2	2	0.5	0.96
PPU4		7.1	306	183	4	9	4.9	1.2
PPU5		8.4	452	268	2	3	1.1	1.06
PPU1	24-Sep-25	7.8	489	53	7	8	1.3	2.1
PPU2		7.5	253	52	5	6	0.9	1.5
PPU3		7.6	319	33	5	6	1.1	1.01
PPU4		7.6	302	52	2	6	4.2	1.91
PPU5		7.4	308	74	<2	4	4.2	2.3
	MIN	6.3	67	4	2	2	0.1	0.1
	MAX	9.7	862	6160	79	80	14	3.7
	AVERAGE	7.6	304.5	318.7	6.1	7.5	1.7	0.9

Table 4 – Shallow Aquifer Piezometer Groundwater Monitoring Results

(Shepparton Formation)

Piezo ID	Date	General Parameters			Major Ions							Alkalinity			Nutrients			Misc
		pH	Electrical Conductivity uS/cm	Total Dissolved Solids mg/L	Sodium mg/L	Calcium mg/L	Potassium mg/L	Magnesium mg/L	Chloride mg/L	Sulphate mg/L	Carbonate as CaCO3 mg/L	Bicarbonate as CaCO3 mg/L	Ammonia as N mg/L	Nitrate as N mg/L	Phosphorus mg/L	Total organic carbon mg/L		
ANZECC Guidelines		6.5 - 8.5	-	1,200	180	-	-	-	250	250	200	200	0.5	50	-	-		
Piezo 1 Deep	Apr-16	7.1	253	215	39	8.7	3	4.7	13	5	2	116	0.1	1	0.11	11		
	Oct-16	7.2	190	148	33.3	4.4	2.3	3.2	13.3	5	2	167	0.1	1	0.04	0.7		
	Mar-17	7.1	190	135	31.6	4.8	1.1	3.7	15.6	4.6	2	91	0.1	0.1	0.16	4.4		
	Jun-17	7	181	152	24.8	5.3	0.8	2.7	11.6	2.5	2	76	0.1	0.5	0.01	0.6		
	Sep-17	7.2	186	133	24.6	4.7	1.6	4	11.5	2.5	2	76	1.1	0.5	0.01	0.7		
	Jan-18	7.5	196	79	26.6	4.2	1.4	4	18.3	8	2	75	0.1	0.5	0.01	0.5		
	Mar-18	9.1	191	140	30.9	5.2	1.6	2.9	12	9.3	2		0.1	1	0.09	1		
	Jun-18	7.4	191	141	27.7	2.7	0.6	2.2	20.8	3.8	-	77	0.1	0.1	0.09	0.5		
	Sep-18	7.5	182	119	31	2.6	2	0.7	11.6	4.1	2	80	0.1	0.5	0.11	0.7		
	Dec-18	8.2	244	137	38.8	4.7	1.2	3.9	14.9	4.8	2	76	0.1	0.5	0.09	0.9		
	Mar-19	7.7	200	170	36.5	2.8	2.1	2.3	20	5.9	2	369	0.3	1	0.18	0.6		
	Jun-19	8.1	175	149	39.6	5.1	1.7	2.8	11.2	3.2	-	77	22	0.5	0.19	0.7		
	Sep-19	7.5	189	142	40.8	3.9	1.7	2.3	13	6	2	81	0.1	1	0.01	0.8		
	Dec-19	7.7	186	149	30.1	5.5	1.7	2.6	11.2	4.5	2		0.1	0.1	0.01	0.5		
	Mar-20	6.8	183	124	28.8	3.8	0.9	3	16.3	2.7	2		2.5	0.1	0.03	0.5		
	Jun-20	7.4	190	191	29.4	2.8	0.9	3.2	7.8	1.9	2	83	0.2	1	0.06	0.5		
	Nov-20	7.8	283	130	32	-	1.1	3	13	11.2	2		0.1	1	0.01	0.9		
	Apr-21	7.3	193	178	39.7	3.44	2.2	2.89	9.6	2.8	<2	82	0.1	1	0.01	0.5		
	Sep-21	7.5	183	141	28.1	4.48	<2.00	2.22	12	5	<2		0.1	0.3	<0.1	<0.5		
	May-22	6.7	167	116	40	3.66	2	2.95	11.5	2.5	<2		<0.1	0.4	<0.01	<0.5		
	Sep-22	7.6	186	170	30	4.8	1.3	3.1	41	<5	<2		<0.1	<1	0.24	0.6		
	Mar-23	6.3	195	119	28.6	4.65	2.6	3.11	12.7	4.1	<2		0.3	0.3	0.16	0.5		
	Sep-23	8.4	190	122	34	4.68	2	3.2	41	10.4	2		0.4	1	0.36	0.5		
	Mar-24	6.4	191	138	30.1	5.01	2.0	3.01	6.6	3	2		0.1	0.3	0.16	0.6		
	Sep-24	6.8	198	153	29.9	4.34	<2.0	3.32	11.5	3	<2		<0.1	0.1	0.1	0.8		
	Mar-25	7.2	306	152	40	4	2.1	2.88	9.9	3	<2		<0.1	0.2	0.16	0.8		
	Sep-25	7.1	283	116	29.7	4.15	<2	2.94	11.4	11.2	<2		<0.1	0.2	<0.01	<0.5		
	Avg		7.4	203.8	142.9	32.4	4.4	1.7	3.0	14.9	5.0	2.0	109.0	1.3	0.5	0.1	1.2	
Piezo 2 Deep	Apr-16	7.1	305	220	49	9.2	3.4	5.7	22	5	2	122	0.1	1	0.12	5		
	Oct-16	6.9	179	141	17.2	-	1.1	3.5	69.1		2	71	0.1	0.5	0.08	0.5		
	Mar-17	7.2	276	172	48.7	5.9	1.3	4.6	19.2	5.5	2	126	0.1	0.1	0.02	0.8		
	Jun-17	7	266	190	36.8	7.9	1.6	4.3	16.4	4.1	2	110	0.1	0.5	0.05	1.4		
	Sep-17	7.1	269	200	35.4	6.9	1.7	5.6	20.5	4.8	2	104	0.3	0.5	0.01	0.8		
	Jan-18	7.3	293	205	35.6	6.9	1.9	5.3	24.9	6.9	2	104	0.1	0.5	0.01	0.8		
	Mar-18	8.5	281	204	45.5	7.7	2.4	4.8	19	11.2	2		0.1	1	0.04	0.8		
	Jun-18	7.2	271	193	38.7	4.4	1	3.7	12.5	2.4	-	105	0.1	0.1	0.12	0.5		
	Sep-18	7.3	283	200	48.8	3.6	2.8	1.8	21.1	6.4	2	111	0.1	0.5	0.08	0.7		
	Dec-18	8	301	191	48.7	6.4	1.6	4.8	17.6	5.8	2	104	0.1	0.5	0.06	0.8		
	Mar-19	7.5	275	222	49.9	4.8	2.6	3.6	18	6.1	2	110	0.1	1	0.09	0.5		
	Jun-19	7.4	271	204	52	6.9	2	4.7	19.3	4.1	-	108	34	0.5	0.09	0.6		
	Sep-19	7.3	281	219	61.1	6.5	2.8	4.5	19	7	2	115	0.1	1	0.01	0.8		
	Dec-19	7.3	272	196	43.2	5.8	2.3	4.8	18.2	6.1	2		0.1	0.2	0.01	0.5		
	Mar-20	6.8	264	180	37.5	5.6	1.7	4.3	16.3	3.1	2		0.1	0.2	0.04	0.5		
	Jun-20	7.2	277	205	46.2	5.2	1.2	4.7	14.8	2.3	2	112	0.1	1	0.01	0.5		
	Nov-20	7.6	294	188	46	-	1.6	4.9	22.8	14.5	2		0.1	1	0.01	1		
	Apr-21	7.2	280	198	60.3	6.44	3.4	4.99	15.4	4	2	116	0.1	2	0.01	0.6		
	Sep-21	7.2	345	215	50.4	9.4	2	5.55	22	7	<2		<0.1	0.4	<0.01	<0.5		
	May-22	6.8	350	243	55.5	6.5	3	5	46.2	6	<2		<0.1	0.4	<0.01	<0.5		
	Sep-22	7.4	380	233	57	9.9	2	6.8	10	<5	<2		<0.1	<0.1	0.04	0.6		
	Mar-23	6.3	426	233	54.5	9.57	3.2	6.84	72.9	5.7	<2		<0.1	0.5	<0.01	0.6		
	Sep-23	7.6	459	294	69.9	13.4	2.4	8.69	11	12.8	2		0.1	0.1	0.05	0.5		
	Mar-24	6.0	211	137	51.8	9.66	2.9	6.66	12.8	7	2		0.1	0.3	0.20	0.9		
	Sep-24	6.9	188	115	24.2	6.09	<2.0	4.81	13.6	3	<2		<0.1	0.2	0.06	0.7		
	Mar-25	6.9	289	155	34.2	7.38	2.6	5.55	21.4	5	<2		<0.1	0.3	0.14	1.2		
	Sep-25	6.9	507	165	30.8	11.1	2	7.81	39	18.5	<2		<0.1	0.8	0.07	0.6		
	Avg		7.2	299.7	197.0	45.5	7.3	2.2	5.1	23.5	6.6	2.0	108.4	1.8	0.6	0.1	0.9	
Piezo 3 Deep	Apr-16	7.2	278	194	41	11.4	4.9	6.7	17	5	2	131	0.1	1	0.35	5.9		
	Oct-16	6.8	224	154	31.2	7.3	2.8	5.6	21.1	9	2	74	0.1	1	0.03	6.5		
	Mar-17	7	182	132	27.2	5.7	1.2	4.6	14	3.4	2	72	0.1	0.1	0.09	0.7		
	Jun-17	7.4	192	165	21.9	7.9	1.8	4.7	13.1	2.5	2	76	0.1	0.5	0.09	0.8		
	Sep-17	7.2	182	157	19.2	6.7	1.6	5.4	13.2	2.5	2	70	1.3	0.5	0.01	0.6		
	Jan-18	7.2	182	117	18.2	6.6	1.8	5.2	13.4	6.1	2	66	0.1	0.5	0.01	0.7		
	Mar-18	8.3	182	122	22	6.7	1.8	4	14	7.5	2		0.1	1	0.06	0.5		
	Jun-18	7.1	180	139	21.7	5.1	1.1	4.1	15.6	2.8	-	65	0.1	0.1	0.13	0.5		
	Sep-18	7.2	181	124	20.8	3.2	2.3	1.5	13.6	3.6	2	70	0.1	0.5	0.1	0.6		
	Dec-18	8	177	137	25	5.9	1.4	4.6	12.6	3.8	2	65	0.1	0.5	0.07	0.6		
	Mar-19	7.4	189	161	27.2	4.6	2.6	3.4	13	4.1	2	71	0.1	1	0.01	0.6		
	Jun-19	7.2	174	149	29.3	7.3	2.6	5.1	12.6	3	-	66	0.1	0.5	0.14	0.6		
	Sep-19	7.2	173	137	30.2	5.8	2.3	3.9	13	5	2	70	0.1	1	0.01	0.5		
	Dec-19	7.3	174	134	21.6	5.4	2.1	4.1	12.8	3.9	2		0.1	0.1	0.01	0.5		
	Mar-20	6.8	168	114	18.6	5.1	1.3	4	7.6	1.9	2		0.1	0.2	0.01	0.5		
	Jun-20	7	169	138	21.5	4.5	1.1	4.49	10.7	1.1	2	71	0.1	1	0.03	0.5		
	Nov-20	7.4	534	128	23	-	1.4	4.2	11.9	10	2		0.1	1	0.01	0.7		
	Apr-21	7.1	193	149	32.1	6.56	3.1	4.68	12.5	2.5	2	73	0.1	1	0.01	0.6		
	Sep-21	7.2	178	105	21.8	6.35	<2.00	3.76	11	<5	<2		0.1	0.3	<0.01	<0.5		
	May-22	6.8	182	154	30.5	6.51	3.1	4.55	13.6	3	<2		<0.1	0.6	<0.01	<0.5		
	Sep-22	7.4	190	137	24	6.8	1.7	4.5	64	6	<2		<0.1	<1	0.1	0.6		
	Mar-23	6.2																

	Apr-21	6.9	586	363	118	18.9	-	10.8	85.5		2	142	<0.1	<1	<0.01	0.6
	Sep-21	7	606	329	92.3	17.6	3.9	10.5	65	9	<2		0.4	0.1	0.57	<0.5
	May-22	6.7	600	364	100	15.9	9.9	10.1	105	9.5	<2		<0.1	0.8	<0.01	<0.5
	Sep-22	7.2	507	298	36	13	2.1	9	28	8	<2		<0.1	<1	0.5	0.5
	Mar-23	6.5	474	276	63.8	12.3	6.7	10.3	77.4	11.7	<2		0.2	0.2	0.04	0.5
	Sep-23	7.5	545	349	96.8	13.8	2.7	10.6	33	20.7	2		0.1	1	0.31	0.5
	Mar-24	6.4	377	298	59.8	12	6	9.55	25.5	7	2		0.1	0.4	0.31	0.9
	Sep-24	7	480	120	73.6	12	4.1	9.45	72.3	8	<2		3	0.5	0.54	1.5
	Oct-24 (Sep Retest)	7.1	548	285	78.6	11.4	2.1	10.2	85.4	8	<2		<0.1	0.5	0.03	<0.5
	Mar-25	6.7	378	101	73.9	8.97	3.1	8.05	37.8	7	<2		<0.1	0.5	0.21	1
	Sep-25	7	378	208	53.7	9.74	2	8.28	31.6	16.8	<2		<0.1	0.4	0.1	0.9
	Avg	7.0	585.9	319.6	79.3	14.1	4.6	18.0	56.9	10.5	2.0	180.0	0.7	0.6	0.8	1.4
Piezo 4 Shallow	Nov-20	7.1	555	301	67	-	7.1	17	90.1	14.1	2		1.7	1	0.58	1.7
	Sep-23	7.5	545	349	96.8	13.8	2.7	10.6	33	20.7	2		0.1	0.1	0.31	0.5
	Mar-24	6.4	377	298	59.8	12	6	9.55	25.5	7	2		0.2	0.4	0.31	0.9
	Avg	7.0	492.3	316.0	74.5	12.9	5.3	12.4	49.5	13.9	2.0	#DIV/0!	0.7	0.5	0.4	1.0
Piezo 5 Deep	Apr-16	6.9	273	214	37	11.7	3.3	7.9	12	5	2	122	0.1	1	0.07	2.2
	Oct-16	6.7	178	139	17.7	-	1.2	3.7	13.7		2	68	0.1	0.5	0.08	0.5
	Mar-17	6.9	246	174	38.7	9.3	1.8	7.1	15.2	5.4	2	108	0.1	0.1	0.07	1.2
	Jun-17	6.9	236	184	26.3	10.5	1.2	5.9	11.9	2.5	2	105	0.1	0.5	0.03	1
	Sep-17	6.6	239	190	25.1	9.3	1.7	7.5	12.9	3	2	103	0.1	0.5	0.01	0.6
	Jan-18	7	241	191	23.5	9.2	1.8	6.9	12.5	6.3	2	100	0.1	0.5	0.01	0.7
	Mar-18	7.8	234	79	30.1	9.8	2	6	13	17.9	2		0.1	1	0.03	0.5
	Jun-18	6.9	234	162	28.6	7.5	1.2	5.8	15.2	3.2	-	98	0.1	0.1	0.13	0.5
	Sep-18	7	266	190	35.8	5	3.1	3.5	17.8	7.2	2	108	0.8	0.5	0.12	0.9
	Dec-18	7.6	232	168	32.8	9.2	1.5	6.7	11.2	4.1	2	100	0.1	0.5	0.05	0.6
	Mar-19	7.5	272	220	43.1	7.7	2.6	5.4	21	8.4	2	104	0.1	1	0.08	0.5
	Jun-19	6.7	236	171	35.7	9.6	2.2	6.3	13.3	4.4	-	100	0.1	0.5	0.16	1
	Sep-19	7.1	238	173	42.2	9.2	2.7	5.9	14	5	2	102	0.1	1	0.01	0.9
	Dec-19	7	232	171	28.8	8.2	2.3	6.2	12.1	4.9	2		0.1	0.1	0.05	0.7
	Mar-20	6.7	253	172	28.1	8.1	1.4	7.1	11.5	4.9	2		0.1	0.2	0.04	0.6
	Jun-20	6.8	241	203	30.3	7.8	1.3	6.8	9.6	2.4	2	107	0.1	1	0.04	0.5
	Nov-20	7	242	156	30	-	1.5	6.5	10	2.5	2		0.1	1	0.01	0.9
	Apr-21	6.9	236	195	40	9.26	2.9	6.49	10.8	2.6	2	107	0.1	1	0.01	0.5
	Sep-21	7	238	168	31.1	8.95	<2.00	6.01	14	<5	<2		0.2	0.2	0.06	<0.5
	May-22	6.7	265	198	44.4	9.66	3	6.55	20.5	4	<2		<0.1	0.5	<0.01	<0.5
	Sep-22	7	324	267	36	13	2	9.3	50	13	<2		<0.1	1	0.05	<0.5
	Mar-23	6.4	337	224	36.1	12.5	34	8.62	38.9	17.5	<2		<0.1	1.2	0.03	<0.5
	Sep-23	7.3	310	198	42	12.7	2.2	8.08	52	16	2		0.1	1	0.08	0.5
	Mar-24	6.6	284	182	34.7	12	3.2	9.01	12	6	2		0.1	0.3	0.1	0.8
	Sep-24	6.7	271	133	34.5	10.7	<2.0	7.92	18.8	4	<2		0.3	0.2	0.07	1.1
	Mar-25	6.4	276	179	43	10.7	2.6	8.11	20.2	4	<2		<0.1	0.3	0.14	1.1
	Sep-25	6.6	272	145	30.9	10.3	<2	7.41	19.3	11.5	<2		<0.1	0.2	<0.01	0.6
	Avg	6.9	255.8	179.5	33.6	9.7	3.4	6.8	17.9	6.6	2.0	102.3	0.1	0.6	0.1	0.8
Piezo 6 Deep	Apr-16	7	409	276	56	18.5	4.8	11.5	35	5	2	210	0.1	1	0.15	5.2
	Oct-16	6.6	252	179	24.8	-	2	6.1	12.6		2	140	0.2	0.5	0.09	1.1
	Mar-17	6.8	347	271	50.6	13	2.3	9.2	36.1	6	2	119	0.1	0.2	0.08	1.1
	Jun-17	6.8	326	206	35.8	12	1.4	7.2	32.1	3.8	2	112	0.1	0.5	0.01	0.5
	Sep-17	6.7	391	253	43.7	13.4	3.2	11.2	43.6	8.2	2	122	1	0.5	0.01	1.1
	Jan-18	6.8	360	269	37.3	12.6	2.4	9.8	41	7.2	2	109	0.1	0.5	0.01	0.6
	Mar-18	7.5	347	213	43	12.9	2.5	8.1	38	15	2		0.1	1	0.02	0.5
	Jun-18	6.8	332	188	36.6	10.2	1.4	7.2	28.9	3.1	-	109	0.1	0.1	0.13	0.5
	Sep-18	7	339	174	45.6	7.5	3.1	5.9	37.8	6.6	2	114	0.1	0.5	0.1	0.8
	Dec-18	6.8	338	218	45.9	13	1.9	8.9	35	6.7	2	109	0.1	0.5	0.07	0.8
	Mar-19	7	344	240	48.3	10.4	3	6.3	36	7.1	2	107	0.1	1	0.13	0.5
	Jun-19	6.8	339	237	60.7	14.7	2.9	10.9	35.5	5.8	-	100	0.9	0.5	0.12	0.7
	Sep-19	7	338	220	56.9	12.6	2.9	8.3	43	5	2	111	0.1	1	0.01	0.7
	Dec-19	6.9	329	212	41.5	11.3	2.7	7.9	38.8	6.4	2		0.4	0.2	0.03	0.5
	Mar-20	6.6	319	217	34.3	10.4	1.9	7.5	29	3.6	2		0.1	0.3	0.24	0.6
	Jun-20	6.8	318	226	41.5	10.3	1.6	8.1	30	2.6	2	121	0.2	1	0.04	0.5
	Nov-20	6.8	325	197	39	-	1.7	8	27	2.5	2		0.1	1	0.01	1
	Apr-21	6.7	334	200	53.2	12.9	3.8	8.29	29.8	3.5	<2	116	<0.1	2	<0.01	0.8
	Sep-21	6.9	360	236	44.7	16.2	2.3	8.55	45	<5	<2		<0.1	0.4	<0.01	<0.5
	May-22	6.8	360	242		11.1	3.5	8.55	37.1	5	<2		<0.1	0.6	<0.01	<0.5
	Sep-22	6.9	332	256	40	14	2.2	8.7	44	6	<2		0.1	3	0.08	<0.5
	Mar-23	6.4	348	306	38.2	12.1	3.2	8.02	41.2	6.3	<2		<0.1	0.2	0.03	<0.5
	Sep-23	7.2	363	232	51.5	14.3	2.4	8.69	44	11.5	2		0.1	2	0.09	0.5
	Mar-24	6.6	379	227	35.5	12.5	3.2	8.22	27.1	6	2		0.1	0.3	0.1	1
	Sep-24	6.6	379	227	46.6	15	2	10.6	47.9	5	<2		<0.1	0.3	0.06	0.8
	Mar-25	6.5	404	242	62.2	14.1	3.1	10.2	53.8	10	<2		<0.1	0.3	0.1	1
	Sep-25	6.6	389	186	41.3	13.4	<2.0	9.99	45.3	13.4	<2		<0.1	0.4	<0.01	0.8
	Avg	6.8	348.2	227.8	44.4	12.7	2.6	8.6	36.8	6.5	2.0	121.4	0.2	0.7	0.1	0.9

Table 5 – Deep Aquifer Production Bore Groundwater Monitoring Results

(Calivil Formation)

Bore ID	Date	General Parameters			Major Ions								Nutrients			Misc
		pH	Electrical Conductivity uS/cm	Total Dissolved Solids mg/L	Sodium mg/L	Calcium mg/L	Potassium mg/L	Magnesium mg/L	Chloride mg/L	Sulphate mg/L	Alkalinity Carbonate as CaCO3 mg/L	Bicarbonate as CaCO3 mg/L	Ammonia as N mg/L	Nitrate as N mg/L	Phosphorus mg/L	Total organic carbon mg/L
ANZECC Guidelines		6.5 - 8.5	-	1,200	180	-	-	-	250	250	200	200	0.5	50	-	-
Bore 1	Aug-15	6.6	685		84.3	29.7	1.9	22	144	19			0.1	0.5	0.04	0.5
	Apr-16	6.8	149	104	14	6.7	1.9	5.1	9	5	2	70	0.1	1	0.11	0.5
	Oct-16	7.3	145	122	16	5.9	2	5	9.7	3.4	2	67	0.1	0.1	0.01	0.5
	Jun-17	6.8	149	120	12.6	7.2	0.7	4.7	8.8	2.1	2	63	0.1	0.5	0.01	0.5
	Sep-17															
	Jan-18	7	152	129	11.4	6.1	1.2	5.5	8.6	2.4	2	61	0.1	0.5	0.01	0.5
	Jun-18	6.9	154	109	22.1	4.7	1.4	5.1	14.4	1	2	64	0.1	0.1	0.05	0.7
	Dec-18	6.9	153	107	18.8	6.5	1.1	5.4	8.5	3.3	2	61	0.1	0.5	0.02	0.5
	Jun-19	7	135	125	21.3	6.8	1.2	5.5	10.7	2.5		55	0.1	0.5	0.12	0.5
	Dec-19	7	141	108	13.2	5.4	1.6	4.4	9.4	3.1	2		0.1	0.1	0.08	0.5
	Jun-20	6.9	151	135	16	5.1	0.8	5.5	16.7	1.4	2	65	0.3	1	0.01	0.7
	Nov-20	6.9	154	106	16	-	1.1	5.1	7	2.5	2		0.1	1	0.01	0.6
	Apr-21	7.2	151	111	20.7	5.88	2.1	4.98	7.4	2.5	2	69	0.1	1	0.01	0.5
	Sep-21	7	149	119	16	6.29	<2.00	5.74	7.1	<5	<2		<0.1	<0.1	<0.01	<0.5
	May-22	7	155	123	15.9	5.6	2	4.85	9.6	1.5	<2		<0.1	<0.1	<0.01	<0.5
	Sep-22	7	153	142	18	6.9	1.3	5.3	10	<5	<2		<0.1	4	<0.01	<0.5
	Mar-23	6.5	152	95	15.9	5.93	2.2	4.71	9.6	3.1	<2		<0.1	<0.1	<0.01	<0.5
	Sep-23	7.3	153	98	18.9	6.35	<2.0	4.75	10	7.2	<2		<0.1	3	0.06	<0.5
	Mar-24	6.4	162	114	18	5.02	2	4.88	5.9	1	<2		<0.1	<0.1	0.13	8.8
	Sep-24	6.7	157	<2	16.7	6.33	<2.0	5.29	8.9	2	<2		<0.1	<0.1	<0.01	<0.5
	Mar-25	6.5	156	106	20.2	5.91	<2.0	4.55	8.7	2	<2		<0.1	<0.1	0.02	<0.5
	Sep-25	6.8	160	<2	13.7	6.13	<2	5.06	8.6	7.5	<2		<0.1	<0.1	<0.01	<0.5
	Avg	6.9	177.0	115.2	20.0	7.2	1.5	5.9	15.8	3.8	2.0	63.9	0.1	1.0	0.0	1.2
Bore 2	Apr-16	6.8	138	124	13.7	5.5	1.9	4.4	9.9	5	2	55	0.1	1	0.1	0.5
	Oct-16	7	132	117	15.7	5.4	2	4.6	9.5	2.3	2	56	0.1	0.3	0.01	0.5
	Jun-17	7	139	107	11.3	6.3	0.6	4.2	9.3	1.8	2	56	0.1	0.5	0.01	0.5
	Sep-17	6.7	139	128	11	5.9	1.1	5.4	9.2	2.5	2	55	0.3	0.5	0.01	0.5
	Jan-18	7	140	114	9.9	5.9	1.1	5	8.7	2.2	2	53	0.1	0.5	0.01	0.5
	Jun-18	6.9	139	94	19	4.8	1.3	4.8	19.4	6.6	2	57	1.2	0.3	0.07	1
	Dec-18	6.9	140	94	15.3	5.7	1	4.7	8.7	2.9	2	53	0.1	0.5	0.02	0.5
	Jun-19	6.8	138	117	22	6.8	1.2	5.4	9.3	2.5		55	0.1	0.5	0.08	0.5
	Dec-19	7	141	100	13.4	5.5	1.6	4.5	9.5	5	2		0.1	0.1	0.01	0.5
	Jun-20	6.9	139	114	14.4	5.1	0.8	5.1	32.8	1.3	2	59	0.1	1	0.04	0.7
	Nov-20	6.9	143	95	13	-	1	4.6	8	2.5	2	-	0.1	1	0.01	0.5
	Apr-21	6.6	139	83	17.7	5.63	2.1	4.94	7.5	2.5	2	59	0.1	1	0.01	0.5
	Sep-21	7	133	103	14.1	5.97	<2.00	5.35	7.03	<5	<2		0.1	<0.1	<0.01	<0.5
	May-22	6.7	141	117	15.8	5.55	2	4.9	9.4	2	<2		<0.1	<0.1	<0.01	<0.5
	Sep-22	6.9	142	115	15	6.5	1.2	4.9	16	<5	<2		0.2	2	0.02	<0.5
	Mar-23	6.5	139	77	14.1	5.59	2.1	4.37	9.6	2.8	<2		<0.1	<0.1	<0.01	<0.5
	Sep-23	7.2	208	133	17.6	20.8	<2.0	4.68	10	7.1	<2		<0.1	2	<0.01	<0.5
	Mar-24	6.4	155	180	17.5	5.05	2.1	4.8	9.4	2	<2		<0.1	<0.1	0.02	0.5
	Sep-24	6.6	147	<2	14.5	6.21	<2.0	4.98	9	3	<2.0		<0.1	<0.1	0.03	<0.5
	Mar-25	6.3	146	93	17.6	5.62	<2.0	4.65	8.8	2	<2		<0.1	<0.1	0.06	<0.5
	Sep-25	6.7	145	29	13.2	6.29	<2.0	4.87	8.8	8.4	<2		<0.1	<0.1	<0.01	<0.5
	Avg	6.8	144.0	106.7	15.0	6.5	1.4	4.8	10.9	3.4	2.0	55.8	0.2	0.8	0.0	0.6

Table 6 – Production Bore Water Levels

Bore ID	Standing Water Level (mBGL)
	Aug-15
Bore 1	24.5
Bore 2	24.2

Table 7 – Piezometer Water Levels

Date	Standing Water Level (mTOC1)											
	Piezo 1 shallow	Piezo 1 deep	Piezo 2 shallow	Piezo 2 deep	Piezo 3 shallow	Piezo 3 deep	Piezo 4 shallow	Piezo 4 deep	Piezo 5 shallow	Piezo 5 deep	Piezo 6 shallow	Piezo 6 deep
Feb-16	n/a2	27.1	n/a2	25.9	n/a2	26	n/a2	25.7	n/a2	25.6	n/a2	25.6
Apr-16	n/a2	25.9	n/a2	25.9	n/a2	25.9	n/a2	25.7	n/a2	25.7	n/a2	25.7
Oct-16	n/a2	24.4	n/a2	n/a3	n/a2	24.9	n/a2	n/a3	n/a2	n/a3	n/a2	n/a3
Mar-17	n/a2	25.8	n/a2	25.4	n/a2	25.5	n/a2	25.6	n/a2	25.3	n/a2	25.3
Jun-17	n/a2	24.1	n/a2	24.8	n/a2	24.7	n/a2	25.5	n/a2	25	n/a2	25
Sep-17	n/a2	25	n/a2	24.6	n/a2	24.7	n/a2	25.4	n/a2	24.6	n/a2	24.6
Dec-17	n/a2	25.9	n/a2	25.5	n/a2	25.5	n/a2	25.4	n/a2	25.4	n/a2	25.4
Mar-18	n/a2	27.9	n/a2	26.1	n/a2	26.2	n/a2	25.7	n/a2	25.8	n/a2	25.8
Jun-18	n/a2	27.4	n/a2	25.9	n/a2	26.1	n/a2	25.9	n/a2	25.8	n/a2	25.8
Sep-18	n/a2	26.4	n/a2	25.8	n/a2	25.8	n/a2	26	n/a2	25.8	n/a2	25.7
Dec-18	n/a2	27.9	n/a2	26.3	n/a2	26.4	n/a2	26.1	n/a2	26	n/a2	26
Mar-19	n/a2	28.4	n/a2	26.9	n/a2	27.2	n/a2	26.3	n/a2	26.3	n/a2	26.5
Jun-19	n/a2	26.7	n/a2	27.4	n/a2	26.9	n/a2	26.4	n/a2	26.3	n/a2	26.5
Sep-19	n/a2	26.2	n/a2	26.3	n/a2	26.3	n/a2	26.4	n/a2	26.4	n/a2	26.3
Dec-19	n/a2	28.6	n/a2	26.9	n/a2	27.1	n/a2	27	n/a2	26.6	n/a2	26.6
Mar-20	n/a2	28	n/a2	27.2	n/a2	27.5	n/a2	27.2	n/a2	26.9	n/a2	26.9
Jun-20	n/a2	26.9	n/a2	27	n/a2	26.9	n/a2	27	n/a2	26.8	n/a2	26.9
Nov-20	n/a2	27.3	n/a2	26.9	n/a2	26.9	15.4	25.5	n/a2	26.8	n/a2	26.9
Apr-21	n/a2	26.9	n/a2	26.9	n/a2	26.9	n/a2	25.5	n/a2	26.9	n/a2	27.1
Sep-21	n/a2	25.9	n/a2	26.3	n/a2	26.1	n/a2	26.8	n/a2	26.5	n/a2	26.6
May-22	n/a2	25.3	n/a2	26	n/a2	25.8	n/a2	26.6	n/a2	26.1	n/a2	26.3
Sep-22	n/a2	24.5	n/a2	25.5	n/a2	25.3	n/a2	25.8	n/a2	25.8	n/a2	26
Mar-23	n/a2	24.4	n/a2	26	n/a2	24.8	n/a2	25.6	n/a2	25.7	n/a2	25.2
Sep-23	n/a2	23.3	19.2	22.8	n/a2	23.8	n/a2	24.6	8.6	24	n/a2	23.8
Mar-24	n/a2	24.8	n/a2	24.9	n/a2	25.3	n/a2	24.9	n/a2	25.1	n/a2	25.4
Sep-24	n/a2	23.9	n/a2	23.9	n/a2	25.6	n/a2	24.5	n/a2	24.1	n/a2	23.9
Mar-25	n/a2	27.1	n/a2	22.9	n/a2	25.9	n/a2	25.4	n/a2	25.4	n/a2	25.3
Sep-25	n/a2	24.9	n/a2	27	n/a2	25.3	n/a2	25.5	n/a2	25.3	n/a2	25
Average	n/a	26.1	19.2	25.8	n/a	25.9	15.4	25.9	8.6	25.8	n/a	25.8
Maximum	n/a	28.6	19.2	27.4	n/a	27.5	15.4	27.2	8.6	26.9	n/a	27.1
Minimum	n/a	23.3	19.2	22.8	n/a	23.8	15.4	24.5	8.6	24	n/a	23.8
GWL Trigger Values <2m		26.3		26		26		26		25.9		25.9

1 - metres below the top of the casing (mTOC)

2 - piezometer not monitored due to not being a component of the WMP at the time (historically dry)

3 - not monitored due to lack of access (flooding)