

Appendix E

HYDROLOGICAL CALCULATIONS



CALCULATION SHEET

Project title	Aussie Prawn Farm Redevelopment		Project Number	DEV402
Designed	Robin Cooper	Date	25/1/05	Document Number
Checked		Date		Sheet

(1) Freshwater Hydrology Calculations

(a) Calculated Rainfall and Runoff from catchment

Catchment Area	CA	GREEN = Calculation
Runoff Coefficient	C	BLUE = Input
Reservoir Runoff Coefficient	Cres	
Starting Volume	V1	617
Total Annual Drawoff	DO	228.70
Proportion of Evap Pan lost	EP	0.85

Year	Month	Rainfall (mm)	Evaporation (mm)	Runoff (ML/ha)	SA (ha)	Inflow (ML)	Start Vol (ML)	Evap Loss (ML)	Drawoff (ML)	Net Inc (ML)	End Vol (ML)	Failure	Drawoff allowed
1983	Nov	157	219	0.18	29.84	14	617	56	20	-62	555		
1983	Dec	177	229	0.38	28.74	41	555	56	0	-14.93	541		
1984	Jan	419	161	2.44	28.46	215	541	39	0	176.05	717		
1984	Feb	586	139	4.51	31.68	378	717	37	0	340.57	1057		
1984	Mar	359	161	2.06	37.94	203	1057	52	0	151.09	1145		
1984	Apr	151	198	0.9	39.59	89	1145	67	0	22.368	1145		
1984	May	0	233	0.19	39.59	8	1145	78	0	-70.41	1075		
1984	Jun	0	243	0	38.21	0	1075	79	88.2	-167.1	907		
1984	Jul	0	223	0	35.18	0	907	67	45	-111.7	796		
1984	Aug	45	202	0	33.15	13	796	57	0	-43.92	752		
1984	Sep	44	201	0	32.32	13	752	55	0	-42.22	710		
1984	Oct	0	260	0	31.50	0	710	70	75.5	-145.1	565		
1984	Nov	108	222	0	28.83	29	565	54	20	-45.4	519		
1984	Dec	90	202	0	28.00	24	519	48	0	-24.07	495		
1985	Jan	213	226	0.19	27.63	65	495	53	0	11.921	507		
1985	Feb	251	165	0.83	27.82	108	507	39	0	68.989	576		
1985	Mar	227	202	1.31	29.10	127	576	50	0	77.03	653		
1985	Apr	158	219	1.26	30.48	106	653	57	0	49.256	702		
1985	May	0	248	0.19	31.40	9	702	66	0	-57.2	645		
1985	Jun	0	222	0	30.39	0	645	57	88.2	-145.5	500		
1985	Jul	0	208	0	27.63	0	500	49	45	-93.85	406		
1985	Aug	0	214	0	25.98	0	406	47	0	-47.25	358		
1985	Sep	7	228	0	25.06	2	358	49	0	-46.56	312		
1985	Oct	64	257	0	24.23	16	312	53	75.5	-112.4	199		
1985	Nov	63	231	0	22.11	15	199	43	20	-48.41	151		
1985	Dec	164	251	0	21.28	38	151	45	0	-7.407	144		
1986	Jan	609	171	2.62	21.10	281	144	31	0	250.33	394		
1986	Feb	168	190	0.83	25.70	87	394	42	0	45.496	439		
1986	Mar	141	214	0.94	26.53	86	439	48	0	37.747	477		
1986	Apr	69	198	0.54	27.26	46	477	46	0	0.1164	477		
1986	May	0	211	0.19	27.26	9	477	49	0	-39.9	437		
1986	Jun	0	228	0	26.53	0	437	51	88.2	-139.6	298		
1986	Jul	0	205	0	23.95	0	298	42	45	-86.73	211		
1986	Aug	0	223	0	22.39	0	211	42	0	-42.43	169		
1986	Sep	6	243	0	21.56	2	169	45	0	-42.53	126		
1986	Oct	55	245	0	20.82	13	126	43	75.5	-105.9	20		
1986	Nov	0	249	0	9.10	0	20	19	0	-19.26	1		NO FRESHWATER
1986	Dec	0	249	0	0.00	0	1	0	0	0	1		
1987	Jan	322	217	0.75	0.00	110	1	0	0	110	111		
1987	Feb	350	134	2.5	20.55	215	111	23	0	191.6	303		
1987	Mar	128	220	0.75	24.04	72	303	45	0	27.04	330		
1987	Apr	83	207	0.36	24.50	40	330	43	0	-3.113	327		
1987	May	60	208	0.19	24.50	26	327	43	0	-17.32	309		
1987	Jun	0	208	0	24.14	0	309	43	88.2	-130.9	178		
1987	Jul	0	223	0	21.74	0	178	41	45	-86.21	92		
1987	Aug	0	233	0	20.18	0	92	40	0	-39.96	52		
1987	Sep	23	240	0	19.44	5	52	40	0	-34.66	17		
1987	Oct	10	267	0	7.04	2	17	16	0	-13.98	3		NO FRESHWATER
1987	Nov	159	252	0	0.00	33	3	0	20	13	16		
1987	Dec	381	236	0.94	7.04	131	16	14	0	116.88	133		
1988	Jan	288	208	1.69	20.92	157	133	37	0	120.02	253		
1988	Feb	237	191	1.39	23.12	132	253	38	0	94.46	348		
1988	Mar	285	220	1.13	24.87	133	348	47	0	86.491	434		
1988	Apr	54	189	0.54	26.44	42	434	42	0	-0.468	434		
1988	May	0	223	0	26.44	0	434	50	0	-50.11	384		
1988	Jun	0	222	0	25.52	0	384	48	88.2	-136.3	247		
1988	Jul	0	223	0	23.03	0	247	44	45	-88.66	159		
1988	Aug	0	254	0	21.38	0	159	46	0	-46.15	113		
1988	Sep	19	231	0	20.55	5	113	40	0	-35.34	77		
1988	Oct	149	239	0	19.90	34	77	40	0	-6.433	71		NO FRESHWATER
1988	Nov	339	216	0.72	19.81	115	71	36	20	58.627	129		



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1988 Dec	378	205	2.44	20.82	220	129	36	0	183.72	313
1989 Jan	341	208	1.88	24.23	186	313	43	0	143.17	456
1989 Feb	173	199	1.17	26.90	107	456	45	0	61.507	518
1989 Mar	525	183	3.94	28.00	345	518	44	0	301.45	819
1989 Apr	102	186	0.72	33.52	66	819	53	0	13.006	832
1989 May	0	205	0.38	33.80	15	832	59	0	-43.89	788
1989 Jun	0	204	0.18	32.97	7	788	57	88.2	-138.4	650
1989 Jul	0	229	0	30.48	0	650	59	45	-104.3	546
1989 Aug	0	264	0	28.55	0	546	64	0	-64.07	482
1989 Sep	1	228	0	27.36	0	482	53	0	-53.01	429
1989 Oct	30	260	0	26.34	9	429	58	75.5	-124.7	304
1989 Nov	67	267	0	24.04	19	304	55	20	-55.57	248
1989 Dec	182	226	0	23.03	51	248	44	0	6.7574	255
1990 Jan	386	198	0.94	23.22	154	255	39	0	114.93	370
1990 Feb	182	190	1	25.33	103	370	41	0	62.09	432
1990 Mar	333	233	2.44	26.44	216	432	52	0	163.65	596
1990 Apr	85	198	0.54	29.47	52	596	50	0	2.4003	598
1990 May	80	208	0.38	29.47	44	598	52	0	-8.105	590
1990 Jun	0	207	0.18	29.38	8	590	52	88.2	-131.9	458
1990 Jul	0	202	0	26.90	0	458	46	45	-91.18	367
1990 Aug	0	233	0	25.24	0	367	50	0	-49.99	317
1990 Sep	0	252	0	24.32	0	317	52	0	-52.09	265
1990 Oct	12	282	0	23.31	3	265	56	75.5	-128.4	137
1990 Nov	174	249	0	21.01	48	137	44	20	-16.46	120
1990 Dec	258	211	0.56	20.73	98	120	37	0	60.819	181
1991 Jan	664	208	3.75	21.84	370	181	39	0	331.4	512
1991 Feb	414	171	3.17	27.91	277	512	41	0	236.44	749
1991 Mar	220	192	1.69	32.23	149	749	53	0	96.399	845
1991 Apr	55	213	0.18	34.07	28	845	62	0	-33.69	811
1991 May	0	223	0.19	33.43	7	811	63	0	-56.36	755
1991 Jun	0	216	0	32.42	0	755	60	88.2	-147.7	607
1991 Jul	0	229	0	29.66	0	607	58	45	-102.7	505
1991 Aug	0	239	0	27.72	0	505	56	0	-56.32	448
1991 Sep	14	252	0	26.71	0	448	57	0	-57.21	391
1991 Oct	72	282	0	25.70	0	391	62	75.5	-137.1	254