

## **Appendix 14.10: Historic Water Quality Discharge**



**Table 14.10.1 Summary of Water Quality Discharge to Release Point W1, for the Quarter October to December 2012**

Parameter	Reporting Units				Limit
		Oct	Nov	Dec	
Phenol	Max Load (kg/day)	170.3	237.5	201.6	350
	Mean Load (kg/day)	46.2	49.1	37.5	
	Max conc. (mg/l)	2.5	4.5	3.4	
	Mean conc. (mg/l)	0.8	1.0	0.7	2
Soluble Chromium	Max Load (kg/day)	13.7	7.8	6.2	
	Mean Load (kg/day)	3.5	2.2	4.2	
	Load (kg/mth)	109.48	66.36	129.60	200
	Max conc. (mg/l)	0.20	0.20	0.10	
	Mean conc. (mg/l)	0.06	0.05	0.09	0.2
Soluble Lead	Max Load (kg/day)	7.18	25.11	11.92	
	Mean Load (kg/day)	2.17	3.55	5.14	
	Load (kg/mth)	67.4	106.6	159.2	300
	Max conc. (mg/l)	0.12	0.40	0.20	
	Mean conc. (mg/l)	0.04	0.07	0.11	0.3
Soluble Iron	Max Load (kg/day)	50.6	213.5	103.1	
	Mean Load (kg/day)	16.7	21.3	23.3	
	Max conc. (mg/l)	0.8	3.4	2.1	
	Mean conc. (mg/l)	0.3	0.4	0.5	
Free Cyanide	Max Load (kg/day)	12.7	5.3	9.0	45
	Mean Load (kg/day)	1.9	1.1	2.6	
	Max conc. (mg/l)	0.2	0.1	0.2	
	Mean conc. (mg/l)	0.03	0.02	0.05	0.2
PAH's	Load (kg/mth)	7.7	16.4	53.6	250
	Concentration (mg/l)	0.004	0.011	0.036	1

**Table 14.10.2 Summary of Water Quality Discharge to Release Point W5, for the Quarter October to December 2012**

Parameter	Reporting Units				Limit
		Oct	Nov	Dec	
Dock Return Suspended Solids	Max. monthly conc. of return (mg/l)	*	*	*	20 above background
	Max daily back – ground conc. (mg/l)	36.0	42.0	92.0	
	Mean background conc. (mg/l)	12.7	17.6	22.3	
Dock Flow	Max daily flow rate (m <sup>3</sup> /day)	55	8	6	350000
	Mean daily flow rate (m <sup>3</sup> /day)	17	3	2	
	Max flowrate (m <sup>3</sup> /hour)	4	2	1	16000
	Mean flowrate (m <sup>3</sup> /hour)	1	0	0	
Abstracted Flows (Afan docks feeder)	Max daily abstraction rate (m <sup>3</sup> /day)	31141	27991	17787	
	Mean daily abstraction rate (m <sup>3</sup> /day)	27502	23135	15696	
Dock Return Temperature	Max daily discharge temperature (C)	**	**	**	36
	Mean daily discharge temperature (C)	**	**	**	

\* Uncertainty of data too great to report.

\*\* Dock return temperature probe communication error.

**Table 14.10.3 Summary of Water Quality Discharge to Release Point W3, for the Quarter October to December 2012**

Parameter	Reporting Units				Limit
		Oct	Nov	Dec	
Suspended Solids	Max. Daily concentration (mg/l)	39	37	39	200
	Mean daily concentration (mg/l)	19	17	18	
Oil and Grease	Max. Daily concentration (mg/l)	6	4	5	20
	Mean daily concentration (mg/l)	3	3	2	
Number of days of discharge in the month		28	30	30	

**Table 14.10.4 Annual release summary to release point W1 for the year 2012**

Substance	Annual Release (kg)	Limit (kg)
Suspended Solids	581056	2250000
Oil and Grease	62702	360000
Free cyanide	748	2700
Ammoniacal nitrogen	247536	400000
Phenol	12774	18000
Soluble lead	524	
Soluble chromium	515	
PAH's*	423	
Total iron	57743	
Soluble iron	3637	
Total aluminum	10693	
Total manganese	6427	
Total zinc	21821	
Soluble zinc	9709	

**Table 14.10.5 Release Summary for the Month December 2012 for Margam No.1 Sump**

<b>Parameter</b>	<b>Average (mg/l)</b>	<b>Minimum (mg/l)</b>	<b>Maximum (mg/l)</b>	<b>Standard Deviation</b>
pH	7.9	6.4	8.9	0.5
Suspended Solids	25	8	56	13
Oil and Grease	1	0	2	0
Soluble Zinc	0.3	0.0	5.4	0.9
Total Zinc	0.5	0.0	5.9	1.0

**Table 14.10.6 Release summary for the month December 2012 to release point W1**

	S.Solids		Oil & Grease		Ammonia		Sol Zinc		Flowrate			Temperature		pH		
	Conc. (mg/l)	Load (kg)	Conc. (mg/l)	Load (kg)	Conc. (mg/l)	Load (kg)	Conc. (mg/l)	Load (kg)	Max Hr (m <sup>3</sup> /hr)	Mean (m <sup>3</sup> /hr)	Daily (m <sup>3</sup> )	Max Hr	Mean			
1-Dec-12	6	248	4	165	20	827	0.6	25	832	1724	41372	19	18	8.2	6.9	7.6
2-Dec-12	16	638	3	104	15	598	0.3	12	813	1662	39882	18	17	7.9	7.1	7.5
3-Dec-12	24	887	1	52	21	776	0.4	15	827	1539	36946	17	16	8.2	6.6	7.4
4-Dec-12	14	585	7	309	14	585	0.1	4	871	1742	41811	17	17	8.8	6.7	7.8
5-Dec-12	38	1407	7	252	11	407	0.2	7	990	1543	37022	18	17	8.7	6.9	7.9
6-Dec-12	56	2526	4	198	11	496	0.2	9	812	1879	45098	18	18	8.4	6.8	7.5
7-Dec-12	32	1589	3	159	16	795	0.3	15	778	2069	49667	18	17	7.9	7.1	7.6
8-Dec-12	4	185	4	185	15	695	0.4	19	911	1929	46308	19	18	8.4	7.5	7.9
9-Dec-12	16	687	3	129	14	601	0.3	13	866	1790	42964	19	19	8.4	6.8	7.4
10-Dec-12	28	1160	2	87	14	580	0.7	29	653	1727	41438	17	17	8.0	6.8	7.3
11-Dec-12	6	263	3	127	10	439	0.2	9	703	1829	43903	18	17	8.1	7.3	7.8
12-Dec-12	14	673	5	250	12	576	0.4	19	764	2002	48038	17	16	8.0	7.1	7.7
13-Dec-12	18	825	5	215	15	688	0.3	14	813	1910	45849	18	16	8.2	7.3	7.9
14-Dec-12	24	1239	7	341	15	775	0.3	15	816	2152	51640	16	15	8.1	7.4	7.8
15-Dec-12	24	1431	4	232	14	835	0.5	30	974	2484	596615	16	16	8.1	7.0	7.7
16-Dec-12	20	1180	3	177	7	413	0.7	41	1059	2458	58981	16	15	7.6	7.1	7.4
17-Dec-12	22	1305	3	178	8	474	0.6	36	1257	2471	59307	16	16	8.3	7.1	7.6
18-Dec-12	18	1124	2	150	12	749	0.7	44	1167	2602	62456	16	16	7.6	6.7	7.2
19-Dec-12	50	2782	1	39	9	501	0.3	17	1104	2318	55640	16	15	8.0	6.8	7.4
20-Dec-12	34	1774	3	151	10	522	1.1	57	1025	2174	52178	17	16	9.0	7.8	8.4
21-Dec-12	22	1138	3	176	11	569	0.1	5	931	2155	51720	18	17	8.9	7.2	8.3
22-Dec-12	48	2699	5	275	20	1124	0.1	6	922	2343	56224	17	16	8.7	6.6	7.9
23-Dec-12	68	3195	5	225	17	799	0.2	9	937	1957	46978	18	17	8.2	6.3	7.5
24-Dec-12	38	2255	1	59	17	1009	0.4	24	758	2473	59352	18	16	8.2	6.8	7.6
25-Dec-12	46	2438	1	48	11	583	0.4	21	1011	2208	53002	16	16	8.2	7.2	7.8
26-Dec-12	28	1275	1	46	10	455	0.5	23	846	1897	45538	17	16	8.3	7.7	8.1
27-Dec-12	26	1247	4	201	12	576	0.1	5	2950	1999	47976	17	16	8.9	6.4	7.5
28-Dec-12	26	1276	6	290	16	785	0.0	0	3431	2045	49074	16	15	8.3	6.4	7.6
29-Dec-12	26	923	4	146	16	568	0.6	21	3179	1479	35502	14	14	8.7	6.6	8.0

**Table 14.10.6 Release summary for the month December 2012 to release point W1**

	S.Solids		Oil & Grease		Ammonia		Sol Zinc		Flowrate			Temperature		pH				
	Conc. (mg/l)	Load (kg)	Conc. (mg/l)	Load (kg)	Conc. (mg/l)	Load (kg)	Conc. (mg/l)	Load (kg)	Max Hr (m <sup>3</sup> /hr)	Mean (m <sup>3</sup> /hr)	Daily (m <sup>3</sup> )	Max Hr	Mean					
30-Dec-12	28	1037	4	159	17	629	0.2	7	2388	1543	37028	18	16	9.6	7.1	8.6		
31-Dec-12	38	1887	3	149	20	993	0.5	25	2519	2069	49664	14	13	9.2	7.0	7.9		
Mean	28	1351	4	170	14	659	0.4	19	-	2006	48135	17.1	16.2	-	-	7.7		
Monthly Limit	150	-	25	-	27.5	-	2.5	-	-	-	-	-	-	-	-	-		
Max	-	3195	-	341	-	1124	-	57	3431	-	62456	19.3	18.8	9.6	6.3	8.6		
Daily limit	-	27500	-	3150	-	4000	-	-	6000	-	-	45.0	40.0	10	6	-		
							Month total (kg)	575							Max pH	Min pH		
							Monthly limit (kg)	2100										