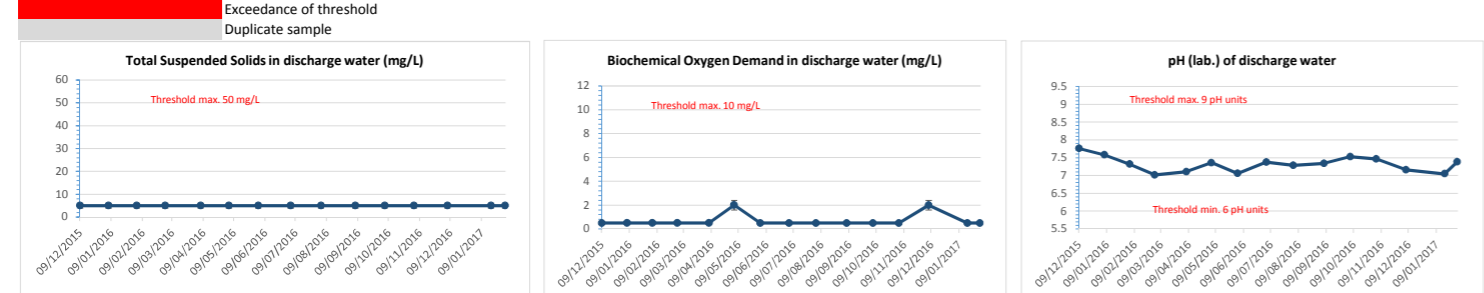


DCS2 - Discharge Point

Parameter	Discharge Consent Threshold	Detection limit (typical)	27/11/2014	16/12/2014	18/12/2014	14/01/2015	04/02/2015	Duplicate/DCS7	11/02/2015	Duplicate/DCS7	Duplicate	23/03/2015	26/03/2015	Duplicate	23/04/2015	Duplicate	28/05/2015	28/05/2015	02/06/2015	30/07/2015	04/08/2015	Duplicate	02/09/2015	28/09/2015	Duplicate	01/10/2015	22/10/2015	
Total Suspended Solids	50	10	3	11	18	22	6	<3	13	11	8	3	27	31	7	10	23	36	39	<10	14	23	11	<10	12	12	<10	
Biochemical Oxygen Demand	10	1	<1	<1	<1	1.58 <sup>#</sup>	1.76 <sup>#</sup>	1.61 <sup>#</sup>	1.03 <sup>#</sup>	<1	<2	<2	1.23 <sup>#</sup>	<2	1.04 <sup>#</sup>	<2	1.71 <sup>#</sup>	1.49 <sup>#</sup>	<1	<1	1	8	3	3	3	2	2	
pH	>6 & <9	-	7.38	7.47	7.08	7.18	7.34 (7.00)	6.92	7.5 (7.48)	7.68	7.8	7.7	7.83 (8.54)	7.8	7.83	7.9	8.29	8.27	7.82	7.98	7.69 (8.41)	7.7	8.09	7.74	7.73	8.96	7.35	
Total zinc <sup>4</sup>	33.8	3	<18	<18	30	30	<18	<18	<18	11.47	11.47	10.21	<18	30.07	<18	<3.73	17.8	14.6	<18	4	6	14.59	13	28	31	7	12	
Dissolved mercury <sup>4</sup>	1.7	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.2	<0.1	<0.04	<0.01	<0.01	<0.1	<0.01	<0.01	1.051	<0.01	<0.5	<0.5	0.5	<0.5	
Dissolved cadmium <sup>4</sup>	0.7	0.03	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.09	<0.09	<0.6	<0.09	<0.6	<0.05	<0.1	<0.1	<0.6	0.13	0.06	0.121	0.36	0.2	0.21	0.25	0.16	
Dissolved iron <sup>4</sup>	3.9	0.0047	<0.23	<0.23	<0.23	<0.23	<0.23	0.34	<0.23	<0.23	0.04908	0.03045	<0.23	0.8087	<0.23	0.18	<0.019	<0.019	<0.23	<0.0047	0.1384	0.9932	0.0082	0.5821	0.5538	0.3261	0.6625	
Dissolved copper <sup>4</sup>	16.2	3	12	10	<9	<9	<9	<9	<9	<9	9.065	7.101	10	2.202	<9	4.765	9.39	8.77	<9	<3	<3	13.99	<0.3	5	5	4	<3	
Dissolved chromium <sup>2</sup>	8.1	0.2	<2	<2	2	7	2	<2	<2	<2	<0.68	<0.68	<2	<0.68	<2	<0.28	2.13	2.01	<2	<0.2	<0.2	<0.68	0.6	<0.2	<0.2	0.2	<0.2	
Chromium VI	N/A	2	<5	<5	<5	9	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<30	<5	<2	<2	<2	<2	<2	<2	<2	<2	
Chromium III	N/A	2	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<2	<2	<2	<2	<2	<2	<2	<2	
Dissolved nickel <sup>3</sup>	20	0.2	<3	<3	6	14	10	<3	14	11	12.01	6.544	5	0.833	7	5.578	5.22	5.09	5	6.5	7	9.321	5.3	5	4.9	2.7	3.3	
Dissolved arsenic <sup>1</sup>	50	0.9	1	<1	<1	3	4.8	1.1	5.1	4.3	6.23	2.971	7.9	1.929	2.5	2.214	16	13.7	7.7	6.7	6.5	8.64	4.2	7.5	6.5	4.7	3.5	
Dissolved lead <sup>3</sup>	7.2	0.4	<6	<6	<6	<6	<6	<6	<6	<6	<0.173	<0.173	<6	<0.173	<6	<0.12	<0.02	<0.02	<6	2.6	2.5	0.37	4.7	4.4	4.5	<0.4	1.9	
Total hardness as CaCO3	N/A	1	123	137	132	135	137	24.1	150	146	139	136	106	114	147	159	140	148	141	179	175	183	163	157	157	93	167	
Visible oil or grease	N/A	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:  
 pH values presented in pH units. Values in brackets are field pH measurements. Total Suspended Solids, Biochemical Oxygen Demand, Total hardness & Dissolved iron concentrations are presented in mg/L, all other parameters are in µg/L.  
<sup>1,2&3</sup> Discharge Consent Threshold from The Water Framework Directive (Priority Substances and Classification) Regulations (Northern Ireland) 2011  
<sup>1</sup> Annual mean value presented for 'Good Standard for rivers and freshwater lakes'  
<sup>2</sup> Annual mean environmental standard for chromium III (4.7µg/L) plus annual mean environmental standard for chromium VI (3.4µg/L) presented for 'Good Standard for rivers and freshwater lakes'  
<sup>3</sup> Annual mean environmental standard (AA-EQS) value presented for priority substance and its compounds for all rivers and lakes  
<sup>4</sup> Department Specific

<sup>#</sup> BOD over diluted, therefore result indicative only      <sup>A</sup> Container with headspace



Notes:  
 Half detection limit used for graphing when parameter less than detect  
 Error bars of 20% to reflect limit of acceptable duplicate reproducibility

Jones Env. Duplicate	Jones Env. 05/11/2015	Jones Env. Duplicate	Jones Env. 09/12/2015	Jones Env. Duplicate	Jones Env. 06/01/2016	Jones Env. Duplicate	Jones Env. 03/02/2016	Jones Env. Duplicate	Jones Env. 03/02/2016 Retest	Jones Env. Duplicate Retest	Jones Env. 02/03/2016	Jones Env. Duplicate	Jones Env. 06/04/2016	Jones Env. Duplicate	Jones Env. 04/05/2016	Jones Env. Duplicate	Jones Env. 02/06/2016	Jones Env. Duplicate	Jones Env. 04/07/2016	Jones Env. Duplicate	Jones Env. 03/08/2016	Jones Env. Duplicate	Jones Env. 06/09/2016	Jones Env. Duplicate	Jones Env. 05/10/2016	Jones Env. Duplicate	Jones Env. 03/11/2016	Jones Env. Duplicate	Jones Env. 06/12/2016	Jones Env. Duplicate	Jones Env. 18/01/2017	Jones Env. Duplicate	Jones Env. 01/02/2017	Jones Env. Duplicate	
<10	<10	<10	<10	<10	<10	<10	<10	<10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
1	1	<1	<1	1	<1	<1	<1	<1	-	-	<1	3	1	1	2	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	2	<1	<1	<1	<1	<1	
7.14	7.85 (7.53)	8.06	7.76 (7.28)	8.07	7.58 (7.05)	7.47	7.32 (7.10)	7.27	-	-	7.08 (7.02)	7.09	7.27 (7.11)	7.42	7.36 (7.07)	7.39	7.06 (7.35)	7.07	7.38 (7.08)	7.17	7.29 (6.95)	7.19	7.34 (7.18)	7.37	7.53 (6.81)	7.06	7.47 (6.91)	7.29	7.16 (6.88)	7	7.05 (7.00)	6.68	7.39 (7.18)	7.53	
10	5	5	13	12	9	9	33	35	30	30	13	11	19	18.6	<3	<3	5	6	3	3	3	3	<3	<3	7	6	7	6	<3	<3	25	26	29	28	
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	
0.21	0.24	0.14	0.43	0.19	0.25	0.12	<0.03	<0.03	-	-	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	
0.6613	0.2782	0.2208	0.0352	0.0075	0.1227	0.2064	0.1852	0.2213	-	-	0.4409	0.3247	0.4914	0.4934	0.5691	0.596	0.4472	0.4561	0.9222	0.9363	0.4984	0.5022	0.4894	0.4811	0.3381	0.3371	0.5496	0.6054	0.4327	0.44	0.1683	0.1642	0.1571	0.1609	
<3	<3	<3	<3	<3	<3	<3	<3	<3	-	-	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	
<0.2	<0.2	<0.2	1.4	<0.2	0.3	<0.2	0.7	<0.2	-	-	0.5	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	0.3	<0.2	<0.2	0.5	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	0.3	<0.2	0.2	<0.2	
<2	<2	<2	<2	<2	<2	<2	<2	<2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<6	<6	<6	<6	<0.006	<0.006	<0.006	<0.006	<6	<6	
<2	<2	<2	<2	<2	<2	<2	<2	<2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<6	<6	<6	<6	<0.006	<0.006	<0.006	<0.006	<6	<6	
3.7	5.5	5.2	7.4	5.8	5.5	5.1	5.3	4.7	-	-	6.3	4.4	3	3	4.5	3.2	4.7	4.9	3.3	4.7	4.6	4	3.3	3.5	5.6	5.2	5.4	5.3	4.2	3.2	5.9	5.7	8	7.6	
1.8	3.2	3.9	0.9	2.6	6.7	5.1	<0.9	<0.9	-	-	2.4	<0.9	<0.9	<0.9	2.5	6	2.6	2.5	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	4	5.6	3.9	4.3	3.3	2	2.6	2.2	
1.8	3.6	2.8	6.5	3.8	3.3	4	<0.4	<0.4	-	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	
168	197	198	200	202	208	207	195	193	-	-	171	170	189	191	190	212	223	215	194	195	179	176	186	186	176	177	192	200	197	190	284	284	196	199	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## DCS1 - Curraghinalt Burn upstream

Parameter	Jones Env. Detection limit (typical)	McQuillan 27/11/2014	McQuillan 16/12/2014	McQuillan 18/12/2015	McQuillan 14/01/2015	McQuillan 04/02/2015	McQuillan 11/02/2015	Fitz Scientific Duplicate	McQuillan 26/03/2015	McQuillan 23/04/2015	McQuillan 21/05/2015	McQuillan 28/05/2015	McQuillan 02/06/2015	McQuillan 28/07/2015	Jones Env. 30/07/2015
Total Suspended Solids	10	<3	<3	<3	9	<3	<3	<2	18	<3	3	5	4	9	<10
Biochemical Oxygen Demand	1	<1	<1	<1	1.87 <sup>#</sup>	1.39 <sup>#</sup>	<1	<2	1.23 <sup>#</sup>	<1	1.29 <sup>#</sup>	<1	<1	1.49 <sup>#Δ</sup>	1
pH	-	6.7	6.75	7	6.9	7.23 (6.73)	6.8 (7.33)	8.2	6.81 (7.05)	6.99	7.19	7.7	6.57	5.94 (6.49)	6.85
Total zinc	3	<18	<18	<18	20	<18	<18	5.394	<18	<18	<18	7.49	<18	14	8
Dissolved mercury	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.01	<0.1	0.51	<0.01
Dissolved cadmium	0.03	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.09	<0.6	<0.6	<0.6	<0.1	<0.6	6.9	<0.03
Dissolved iron	0.0047	2.07	0.52	0.67	0.39	0.36	0.36	0.6633	<0.23	1.34	1.34	1.47	0.52	1.2	2.569
Dissolved copper	3	<9	<9	<9	<9	<9	<9	7.207	<9	<9	<9	2.56	<9	9.6	<3
Dissolved chromium	0.2	<2	<2	<2	<2	<2	<2	<0.68	<2	<2	<2	0.956	<2	4.7	<0.2
Chromium VI	2	<5	<5	<5	<5	<5	<5		<5	<5	<5	<30	<5	<20	<2
Chromium III	2	<30	<30	<30	<30	<30	<30		<30	<30	<30	<30	<30	<20	<2
Dissolved nickel	0.2	<3	<3	<3	<3	<3	<3	0.702	<3	<3	<3	0.913	<3	3.1	0.7
Dissolved arsenic	0.9	2.4	<1	<1	<1	1.3	<1	1.197	2	3.2	2.2	3.69	1.2	2.8	2.5
Dissolved lead	0.4	<6	<6	<6	<6	<6	<6	0.284	<6	<6	<6	0.315	<6	2.1	<0.4
Total hardness as CaCO3	1	21.7	16.2	21.1	30.1	24.2	19.7	19	13.4	33.1	17.6	29.4	9.98	<15	229
Visible oil or grease	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## Notes:

pH values presented in pH units. Values in brackets are field pH measurements. Total Suspended Solids, Biochemical Oxygen Demand, Total hardness & Dissolved iron concentrations are presented in mg/L, all other parameters are in µg/L.

<sup>#</sup> BOD over diluted, therefore result indicative only

<sup>Δ</sup> Container with headspace

## DCS3 - Curraghinalt Burn downstream

Parameter	Jones Env. Detection limit (typical)	McQuillan 27/11/2014	McQuillan 16/12/2014	McQuillan 18/12/2014	McQuillan 14/01/2015	McQuillan 04/02/2015	McQuillan 11/02/2015	McQuillan 26/03/2015	McQuillan 23/04/2015	McQuillan 21/05/2015	McQuillan 28/05/2015	McQuillan 02/06/2015	Fitz Scientific Duplicate	McQuillan 28/07/2015	Jones Env. 30/07/2015
Total Suspended Solids	10	3	8	4	5	3	5	28	72	<3	18	9	3	16	<10
Biochemical Oxygen Demand	1	1.08 <sup>#</sup>	<1	<1	1.65 <sup>#</sup>	1.91 <sup>#</sup>	<1	1.31 <sup>#</sup>	<1	1.25 <sup>#</sup>	1.22 <sup>#</sup>	<1	<2	1.42 <sup>#Δ</sup>	1
pH	-	7.19	7.46	6.95	7.44	7.16 (6.93)	7.45 (7.2)	6.91 (7.31)	7.82	7.88	7.76	6.81	7.4	6.02 (6.28)	7.12
Total zinc	3	<18	<18	<18	20	<18	<18	<18	<18	<18	11.2	<18	36.51	13	9
Dissolved mercury	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.1	<0.2	<0.5	<0.01
Dissolved cadmium	0.03	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.1	<0.6	<0.09	0.45	<0.03
Dissolved iron	0.0047	1.78	0.54	0.65	0.38	0.25	0.25	0.24	0.8	1.13	1.03	0.52	1.485	1.2	2.634
Dissolved copper	3	<9	<9	<9	<9	<9	<9	<9	<9	<9	5.58	<9	19.83	4.2	3
Dissolved chromium	0.2	<2	<2	<2	6	<2	<2	<2	<2	<2	1.8	<2	1.017	4.6	<0.2
Chromium VI	2	<5	<5	<5	8	<5	<5	<5	<5	<5	<30	<5		<20	<2
Chromium III	2	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30		<20	<2
Dissolved nickel	0.2	<3	<3	<3	<3	<3	4	<3	<3	<3	2.12	<3	6.816	4.6	0.7
Dissolved arsenic	0.9	2.1	<1	<1	<1	2	1.3	2.7	5.3	8.3	7.7	1.5	7.069	1.3	<0.9
Dissolved lead	0.4	<6	<6	<6	<6	<6	<6	<6	<6	<6	0.187	<6	0.381	<1	1
Total hardness as CaCO3	1	35.5	27.5	21	34.5	41.4	49.4	13.7	71.4	36.6	65.1	10.8	25	<15	21
Visible oil or grease	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## Notes:

pH values presented in pH units. Values in brackets are field pH measurements. Total Suspended Solids, Biochemical Oxygen Demand, Total hardness & Dissolved iron concentrations are presented in mg/L, all other parameters are in µg/L.

<sup>#</sup> BOD over diluted, therefore result indicative only

<sup>Δ</sup> Container with headspace

Jones Env. 04/08/2015	Jones Env. 02/09/2015	Jones Env. 01/10/2015	Jones Env. 22/10/2015	Jones Env. 05/11/2015	Jones Env. 09/12/2015	Jones Env. 06/01/2015	Jones Env. 03/02/2015	Jones Env. 02/03/2016	Jones Env. 06/04/2016	Jones Env. 04/05/2016	Jones Env. 02/06/2016	Jones Env. 04/07/2016	Jones Env. 03/08/2016	Jones Env. 06/09/2016	Jones Env. 05/10/2016	Jones Env. 03/11/2016	Jones Env. 06/12/2016	Jones Env. 18/01/2017	Jones Env. 01/02/2017
<10	32	<10	<10	17	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2	1	2	<1	2	2	1	<1	2	2	2	<1	<1	2	2	2	1	1	<1	9
5.74 (8.36)	7.46	6.75	7.34	7.74 (7.54)	6.79 (6.49)	7.59 (6.64)	6.09 (4.82)	7.18 (6.87)	6.70 (6.71)	6.94 (7.5)	7.21 (7.78)	7.04 (7.34)	6.51 (6.99)	6.5 (7.52)	7.76 (7.33)	7.81 (7.42)	6.55 (7.36)	6.85 (7.33)	6.57 (6.66)
7	8	7	6	28	4	4	20	8	4	<3	<3	5	10	7	7	5	3	4	5
<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.5	<0.5	<0.01
<0.03	<0.03	<0.03	<0.03	0.09	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
2.046	6.269	6.646	5.39	4.41	1.131	1.276	0.3198	0.7347	0.7676	1.861	3.229	1.876	3.405	3.162	8.689	7.586	3.364	0.6952	0.7231
<3	4	<3	<3	4	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	4	6	<3	<3	<3
0.6	1.2	0.4	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.5	<0.2	0.5	0.2	0.7
<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.006	<0.006	<0.006	<6	<6	<0.006	<0.006	<6
<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.006	<0.006	<0.006	<6	<6	<0.006	<0.006	<6
1	1.6	1.3	0.3	0.7	<0.2	1.2	0.4	0.3	<0.2	<0.2	0.3	0.4	0.7	0.2	2.2	1.5	0.9	0.5	0.6
2.6	4.6	5.9	2.8	<0.9	1.2	1.8	<0.9	<0.9	<0.9	2.5	2.9	4	<0.9	1.1	7.2	10.5	5.4	0.9	<0.9
<0.4	2.7	<0.4	<0.4	1.2	1.1	1.2	<0.4	0.6	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.9	<0.4	<0.4
12	23	30	24	37	7	12	18	16	9	21	33	16	16	14	27	31	27	18	13
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Jones Env. 04/08/2015	Jones Env. 02/09/2015	Jones Env. 01/10/2015	Jones Env. 22/10/2015	Jones Env. 05/11/2015	Jones Env. 09/12/2015	Jones Env. 06/01/2015	Jones Env. 03/02/2015	Jones Env. 02/03/2016	Jones Env. 06/04/2016	Jones Env. 04/05/2016	Jones Env. 02/06/2016	Jones Env. 04/07/2016	Jones Env. 03/08/2016	Jones Env. 06/09/2016	Jones Env. 05/10/2016	Jones Env. 03/11/2016	Jones Env. 06/12/2016	Jones Env. 18/01/2017	Jones Env. 01/02/2017
<10	<10	<10	<10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2	1	1	<1	2	3	<1	<1	2	2	1	1	1	2	1	2	<1	1	<1	<1
5.95 (6.40)	7.12	6.45	7.46	7.73 (7.5)	7.45 (6.5)	7.47 (6.68)	7.35 (5.77)	6.86 (7.14)	7.12 (6.77)	7.4 (7.25)	7.06 (7.47)	6.74 (7.20)	6.95 (7.12)	7.02 (7.13)	7.52 (7.12)	7.62 (6.97)	7.45 (6.91)	7.32 (6.74)	7.48 (6.71)
7	9	7	8	17	4	6	18	8	4	<3	5	5	6	6	7	7	6	8	10
<0.01	<0.01	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.5	<0.5	<0.01
<0.03	<0.03	<0.03	<0.03	0.07	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1.843	3.455	6.574	3.424	2.834	1.016	0.993	0.305	0.508	0.7319	1.043	1.172	1.901	3.003	3.11	3.905	3.272	1.987	0.5208	0.7368
<3	3	<3	<3	7	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
<0.2	<0.2	<0.2	<0.2	0.9	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.4	0.3	1.3
<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.006	<0.006	<0.006	<6	<6	<0.006	<0.006	<6
<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.006	<0.006	<0.006	<6	<6	<0.006	<0.006	<6
0.4	2.4	1.4	2.3	2.5	<0.2	1.1	0.7	1	<0.2	1.8	3	<0.2	1	0.4	3.7	3.9	2.2	1.6	1.2
2	3.4	6.5	3.9	3.6	2.8	5.3	1.3	<0.9	<0.9	2.1	1.6	4.2	1.4	3.8	1.3	7.4	4.2	<0.9	2.4
0.7	1.2	0.9	<0.4	2.8	<0.4	0.8	2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
21	68	31	84	100	22	57	33	41	12	102	157	26	35	35	110	124	93	71	23
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## DCS4 - Owenkillew River upstream

Parameter	Jones Env. Detection limit (typical)	McQuillan 27/11/2014	McQuillan 16/12/2014	McQuillan 18/12/2014	McQuillan 14/01/2015	McQuillan 04/02/2015	McQuillan 11/02/2015	McQuillan 26/03/2015	Fitz Scientific Duplicate	McQuillan 23/04/2015	Fitz Scientific Duplicate	McQuillan 21/05/2015	McQuillan 02/06/2015	McQuillan 07/07/2015	McQuillan 28/07/2015	Jones Env. 30/07/2015
Total Suspended Solids	10	<3	<3	6	<3	<3	<3	42	43	<3	<2	6	9	13	9	<10
Biochemical Oxygen Demand	1	<1	<1	<1	1.47 <sup>#</sup>	1.29 <sup>#</sup>	<1	2.57 <sup>#</sup>	8	<1	<2	1.95 <sup>#</sup>	1.28 <sup>#</sup>	2.47 <sup>#</sup>	1.95 <sup>#A</sup>	1
pH	-	6.84	7.07	6.68	6.77	6.7 (5.92)	7.06 (8.15)	6.9 (8.54)	7.7	7.93	7.2	7.23	6.79	(7.36)	6.1 (6.50)	6.68
Total zinc	3	<18	<18	<18	<18	<18	<18	<18	9.716	<18	<0.63	<18	<18	6.7	9.6	6
Dissolved mercury	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.03	<0.1	<0.1	<0.5	<0.5	0.04
Dissolved cadmium	0.03	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.09	<0.6	<0.01	<0.6	<0.6	<0.08	0.6	<0.03
Dissolved iron	0.0047	1.05	0.5	0.45	0.43	0.4	0.36	0.25	0.2771	0.56	0.806	0.53	0.36	0.56	0.78	1.146
Dissolved copper	3	<9	<9	<9	<9	<9	<9	<9	20.09	<9	0.445	<9	<9	1.1	3.2	<3
Dissolved chromium	0.2	<2	<2	<2	<2	<2	<2	<2	<0.68	<2	<0.58	<2	<2	<1	5.8	<0.2
Chromium VI	2	<5	<5	<5	<5	<5	<5	<5		<5		<5	<5	<20	<20	<2
Chromium III	2	<30	<30	<30	<30	<30	<30	<30		<30		<30	<30	<20	<20	<2
Dissolved nickel	0.2	<3	57	<3	<3	<3	<3	4	6.45	<3	0.569	<3	<3	<1	6.3	0.4
Dissolved arsenic	0.9	<1	<1	<1	<1	<1	<1	4.8	5.032	1.5	1.399	1.4	1.1	<1	1.2	2.4
Dissolved lead	0.4	<6	<6	<6	<6	<6	<6	<6	0.543	<6	<0.02	<6	<6	<1	<1	2.2
Total hardness as CaCO3	1	28.8	24.3	19.1	25.1	31	27.9	17.6	21	37.5	38	23.7	16.2	30	<15	25
Visible oil or grease	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## Notes:

pH values presented in pH units. Values in brackets are field pH measurements. Total Suspended Solids, Biochemical Oxygen Demand, Total hardness & Dissolved iron concentrations are presented in mg/L, all other parameters are in µg/L.

<sup>#</sup> BOD over diluted, therefore result indicative only

<sup>A</sup> Container with headspace

## DCS5 - Owenkillew River downstream

Parameter	Jones Env. Detection limit (typical)	McQuillan 27/11/2014	McQuillan 16/12/2014	McQuillan 18/12/2014	McQuillan 14/01/2015	McQuillan 04/02/2015	McQuillan 11/02/2015	Fitz Scientific 23/03/2015	McQuillan 26/03/2015	McQuillan 23/04/2015	McQuillan 21/05/2015	Fitz Scientific Duplicate	McQuillan 02/06/2015	McQuillan 07/07/2015	McQuillan 28/07/2015	Jones Env. 30/07/2015
Total Suspended Solids	10	<3	<3	8	<3	<3	<3	5	35	<3	<3	2	<3	14	12	<10
Biochemical Oxygen Demand	1	<1	<1	<1	1.61 <sup>#</sup>	1.37 <sup>#</sup>	<1	<2	2.59 <sup>#</sup>	<1	1.17 <sup>#</sup>	<2	1.1 <sup>#</sup>	2.01 <sup>#</sup>	2.04 <sup>#A</sup>	1
pH	-	7.04	7.15	6.61	6.76	6.66 (5.54)	7.03 (7.45)	7.5	6.9 (6.77)	7.71	6.94	7.5	6.88	7.23 (7.41)	6.2 (6.96)	6.88
Total zinc	3	<18	<18	<18	<18	<18	<18	11.69	20	<18	<18	4.396	<18	8.8	11	7
Dissolved mercury	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.5	<0.5	0.05
Dissolved cadmium	0.03	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.09	<0.6	<0.6	<0.6	<0.09	<0.6	<0.08	0.5	<0.03
Dissolved iron	0.0047	0.98	0.5	0.42	0.43	0.37	0.39	0.6379	0.25	0.58	0.56	0.5218	0.38	0.63	0.83	1.241
Dissolved copper	3	<9	<9	<9	<9	<9	<9	0.322	<9	<9	<9	2.819	<9	<1	3.2	<3
Dissolved chromium	0.2	<2	<2	<2	<2	<2	<2	<0.68	<2	<2	<2	<0.68	<2	<1	6.5	<0.2
Chromium VI	2	<5	<5	<5	8	<5	<5		<5	<5	<5		<5	<20	<20	<2
Chromium III	2	<30	<30	<30	<30	<30	<30		<30	<30	<30		<30	<20	<20	<2
Dissolved nickel	0.2	<3	<3	<3	<3	<3	<3	0.649	<3	<3	<3	0.997	<3	<1	7.1	0.5
Dissolved arsenic	0.9	<1	<1	<1	<1	1.2	<1	1.158	5	1.5	1.3	1.183	1.1	<1	1.2	2.4
Dissolved lead	0.4	<6	<6	<6	<6	<6	<6	<0.173	<6	<6	<6	<0.173	<6	<1	<1	2.4
Total hardness as CaCO3	1	29.3	23.8	18.2	25.3	31	27.1	35	17.2	41.6	23	25	16.3	31	<15	27
Visible oil or grease	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## Notes:

pH values presented in pH units. Values in brackets are field pH measurements. Total Suspended Solids, Biochemical Oxygen Demand, Total hardness & Dissolved iron concentrations are presented in mg/L, all other parameters are in µg/L.

<sup>#</sup> BOD over diluted, therefore result indicative only

<sup>A</sup> Container with headspace

Jones Env. 04/08/2015	Fitz Scientific Duplicate	Jones Env. 02/09/2015	Jones Env. 01/10/2015	Jones Env. 22/10/2015	Jones Env. 05/11/2015	Jones Env. 09/12/2015	Jones Env. 06/01/2015	Jones Env. 03/02/2015	Jones Env. 02/03/2016	Jones Env. 06/04/2016	Jones Env. 04/05/2016	Jones Env. 02/06/2016	Jones Env. 04/07/2016	Jones Env. 03/08/2016	Jones Env. 06/09/2016	Jones Env. 05/10/2016	Jones Env. 03/11/2016	Jones Env. 06/12/2016	Jones Env. 18/01/2017	Jones Env. 01/02/2017
12	3	<10	<10	<10	<10	11	<10	<10	<10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1	<2	2	1	2	2	1	1	1	2	2	1	1	<1	1	1	<1	1	2	1	1
7.28 (9.90)	7.4	7.79	6.45	7.46	7.65 (7.14)	6.83 (6.65)	7.1 (6.16)	7.08 (6.24)	7.19 (6.29)	7.2 (7.19)	7.08 (7.58)	7.23 (7.89)	6.74 (7.27)	7.08 (7.25)	7.07 (7.25)	7.61 (7.07)	7.73 (7.21)	7.59 (7.20)	7.39 (6.52)	7.38 (6.71)
6	10.31	4	3	<3	3	5	4	10	6	4	<3	<3	4	25	5	8	<3	<3	4	3.9
<0.01	<0.2	<0.01	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	0.39	<0.01	<0.01	<0.01	<0.01	<0.5	<0.5	<0.01
<0.03	<0.09	0.05	0.14	<0.03	0.08	0.2	0.15	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
2.459	1.482	1.806	1.503	0.9033	1.269	0.7594	0.7784	0.242	0.6605	0.6255	0.6549	0.8637	0.97	1.596	1.553	1.797	1.34	1.051	0.6403	0.7023
<3	11.24	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	3	<3	<3	<3	<3	<3	<3
<0.2	<0.68	1	0.6	<0.2	<0.2	<0.2	0.3	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.4	0.2	<0.2
<2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.006	<0.006	<0.006	<6	<6	<0.006	<0.006	<6
<2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.006	<0.006	<0.006	<6	<6	<0.006	<0.006	<6
0.7	1.513	1.3	0.6	0.4	0.7	<0.2	1.6	0.8	<0.2	<0.2	<0.2	<0.2	<0.2	0.6	0.6	0.4	1.3	1	<0.2	0.7
2.4	3.454	2.2	2.8	1.6	<0.9	2.7	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	2.5	<0.9	4.7	1.6	2.9	3.4	<0.9	<0.9
0.5	0.573	4	<0.4	<0.4	1.9	<0.4	<0.4	1.2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	1.5	<0.4	<0.4
23	22	32	41	29	38	16	15	21	17	20	26	43	25	45	26	37	43	39	28	19
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Jones Env. 04/08/2015	Jones Env. 02/09/2015	Jones Env. 01/10/2015	Jones Env. 22/10/2015	Jones Env. 05/11/2015	Jones Env. 09/12/2015	Jones Env. 06/01/2015	Jones Env. 03/02/2015	Jones Env. 02/03/2016	Jones Env. 06/04/2016	Jones Env. 04/05/2016	Jones Env. 02/06/2016	Jones Env. 04/07/2016	Jones Env. 03/08/2016	Jones Env. 06/09/2016	Jones Env. 05/10/2016	Jones Env. 03/11/2016	Jones Env. 06/12/2016	Jones Env. 18/01/2017	Jones Env. 01/02/2017
<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2	1	1	<1	1	2	1	1	2	2	2	1	1	1	1	<1	<1	2	2	<1
6.51 (7.41)	6.51	7.91	7.12	7.49 (7.11)	7.55 (6.66)	7.31 (6.49)	6.91 (6.22)	7.07 (6.32)	7.2 (7.23)	7.09 (7.7)	6.64 (7.87)	6.94 (7.11)	7.08 (7.29)	7.1 (7.20)	7.63 (6.90)	7.97 (7.17)	6.96 (7.18)	7.3 (6.59)	6.19 (6.74)
5	5	<3	4	4	5	5	9	5	4	<3	<3	5	4	5	4	<3	<3	3	4.4
0.03	0.01	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<0.01	0.06	<0.01	<0.01	<0.5	<0.5	<0.01
<0.03	0.19	<0.03	0.2	0.14	0.11	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
2.749	1.835	1.938	1.312	1.37	0.7792	0.7899	0.2365	0.6817	0.6246	0.646	0.8452	1.166	1.868	1.675	1.824	1.374	1.063	0.6517	0.6844
<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
0.3	1	<0.2	<0.2	0.3	<0.2	0.5	<0.2	0.8	<0.2	<0.2	<0.2	0.6	<0.2	<0.2	0.3	0.5	<0.2	0.7	<0.2
<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.006	<0.006	<0.006	<6	<6	<0.006	<0.006	<6
<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.006	<0.006	<0.006	<6	<6	<0.006	<0.006	<6
0.8	1.4	0.5	0.6	0.9	0.5	1.1	0.9	<0.2	<0.2	<0.2	<0.2	0.9	1.2	0.9	1.5	1	0.8	0.4	<0.2
5.4	<0.9	1.8	1.7	<0.9	<0.9	<0.9	<0.9	<0.9	1	<0.9	1.9	<0.9	<0.9	2.3	3.8	3.7	2.3	<0.9	<0.9
<0.4	2.2	<0.4	2.1	<0.4	<0.4	<0.4	0.6	0.8	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
21	36	43	30	41	16	18	22	18	21	29	47	26	38	29	43	45	45	30	21
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## DCS6 - Field Blanks

Parameter	Jones Env. Detection limit (typical)	McQuillan 27/11/2014	McQuillan 16/12/2014	McQuillan 18/12/2014	McQuillan 14/01/2015	McQuillan 04/02/2015	McQuillan 11/02/2015	Fitz Scientific 11/02/2015	McQuillan 26/03/2015	McQuillan 23/04/2015	McQuillan 21/05/2015	McQuillan 02/06/2015	McQuillan 07/07/2015	McQuillan 28/07/2015	Jones Env. 30/07/2015
Total Suspended Solids	10	<3	<3	<3	<3	<3	<3	<2	<3	<3	<3	<3	<3	<3	<10
Biochemical Oxygen Demand	1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1
pH	-	6.15	6.4	5.59	6	5.22	6.89	8.1	5.75	6.15	6.41	6.73	5.89	5.91	5.67
Total zinc	3	<18	<18	<18	<18	<18	<18	<3.73	<18	<18	<18	<18	4.7	6.9	3
Dissolved mercury	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.01
Dissolved cadmium	0.03	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.09	<0.6	<0.6	<0.6	<0.6	<0.08	0.43	<0.03
Dissolved iron	0.0047	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	0.003	<0.23	<0.23	<0.23	<0.23	<0.02	<0.02	<0.0047
Dissolved copper	3	<9	<9	<9	<9	<9	<9	1.454	<9	<9	<9	<9	<1	1.9	<3
Dissolved chromium	0.2	<2	<2	<2	<2	<2	<2	<0.68	<2	<2	<2	<2	<1	6.9	<0.2
Chromium VI	2	<5	<5	<5	11	<5	<5		<5	<5	<5	<5	<20	<20	<2
Chromium III	2	<30	<30	<30	<30	<30	<30		<30	<30	<30	<30	<20	<20	<2
Dissolved nickel	0.2	<3	<3	<3	<3	<3	<3	<0.374	<3	<3	<3	<3	<1	8.3	<0.2
Dissolved arsenic	0.9	<1	<1	<1	<1	<1	<1	<0.352	<1	<1	<1	<1	<1	<1	<0.9
Dissolved lead	0.4	<6	<6	<6	<6	<6	<6	<0.173	<6	<6	<6	<6	<1	<1	1.6
Total hardness as CaCO3	1	<3.2	<3.2	<3.2	<3.2	<3.2	<3.2	<5.2	<3.2	<3.2	<3.2	<3.2	<15	<15	<1
Visible oil or grease	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Notes:**

pH values presented in pH units. Values in brackets are field pH measurements. Total Suspended Solids, Biochemical Oxygen Demand, Total hardness & Dissolved iron concentrations are presented in mg/L, all other parameters are in µg/L.

<sup>Δ</sup> Container with headspace

Jones Env.  
**04/08/2015 02/09/2015 01/10/2015 22/10/2015 05/11/2015 09/12/2015 06/01/2015 03/02/2015 02/03/2016 06/04/2016 04/05/2016 02/06/2016 04/07/2016 03/08/2016 06/09/2016 05/10/2016 03/11/2016 06/12/2016 18/01/2017 01/02/2017**

<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	1	<1	<1	<1
5.76	5.37	7.68	7.77	7.29	7.76	7.64	6.31	6.48	5.55	5.93	5.87	6.1	5.89	5.84	7.55	7.72	7.04	5.43	5.62
<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<1.5	<3	<3	<3	<3	<3	<3	<3	<3	<1.5
<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.5	<0.5	<0.01
<0.03	0.08	<0.03	0.04	<0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
<0.2	0.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	0.3	0.5	<0.2	<0.2	<0.2
<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.006	<0.006	<0.006	<6	<6	<0.006	<0.006
<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.006	<0.006	<0.006	<6	<6	<0.006	<0.006
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.4	<0.2	<0.2	<0.2
<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9
<0.4	0.5	<0.4	1.1	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-