

Attachment E4-Castlemartyr Outlet

Sample Date	07/02/2008	28/02/2008	13/03/2008	03/04/2008	22/05/2008	10/07/2008	17/07/2008				17/01/2007	07/03/2007	04/04/2007	30/05/2007	06/06/2007	04/07/2007	08/08/2007	05/09/2007	17/10/2007	22/11/2007	12/12/2007	13/12/2007	
Sample	Effluent	Effluent	Effluent	Effluent	Effluent	Effluent	Effluent	Average	Kg/Day	Kg/year	effluent	effluent	effluent	effluent	effluent	effluent	effluent	effluent	effluent	effluent	effluent	effluent	
Flow M ³ /Day	266.6	219.5	405.5	260.6	126.7	253.2	244.4	253.79	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
pH	7.2	7.3	*	*	7.6	*	7.3	7.35	*	*	7.1	7.1	7.1	7.2	8	7.3	7.4	7.4	7.4	7.2	7.1	7.7	7
Temperature °C	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Cond 20°C	*	*	*	715	644	1208	683	812.5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SS mg/L	6	10	19	14	15	16	14	13.4	3.408	1243.9126	61	15	11	300	3	11	5	3	16	34	102	29	
NH ₃ mg/L	1.2	0.3	3.7	12.3	1.5	2.6	0.5	3.157	0.801	292.4518	*	*	*	*	<0.1	<0.1	0.1	0.2	0.5	0.5	1.1	*	
BOD mg/L	5.23	8	8.11	10.72	7.47	12	3.28	7.83	1.987	725.3069	11	5.7	4.1	90	1.2	2.6	2.7	1.7	5.04	*	29.9	5.41	
COD mg/L	<21	50	34	70	32	61	29	46.0	11.674	4261.0621	62	32	36	441	<21	26	25	<21	37	51	131	44	
TN mg/L	2.4	2.37	*	15.6	3.7	11.3	5.3	6.78	1.720	627.8891	13	11.7	24.2	18.5	7.55	*	11.2	4.9	7.6	26	17.1	18.9	
Nitrite mg/L	*	*	*	*	*	*	1.07	1.07	0.272	99.1160	*	*	*	*	*	*	*	*	*	*	*	*	*
Nitrate mg/L	*	*	*	*	*	*	3.96	3.96	1.005	366.8219	*	*	*	*	*	*	*	*	*	*	*	*	*
TP mg/L	2.1	1.99	1.3	4.75	1.32	0.68	1.19	1.90	0.483	176.3974	1.71	0.97	10.53	15.6	<0.2	3.3	1.29	1.41	*	3.83	2.47	2.49	
O-PO4-P mg/L	*	1.9	0.82	4.02	1.16	0.27	0.72	1.482	0.376	137.2494	*	*	*	*	*	*	0.4	1.28	1.86	*	*	*	
SO4 mg/L	48.4	55.9	*	*	*	*	49.5	51.3	13.011	4748.9229	*	*	*	*	*	*	58.8	65.8	59.1	42	50	48.7	
Phenols µg/L	*	*	*	*	*	*	<0.1	<0.1	<0.025379	<9.263335	*	*	*	*	*	*	*	*	*	*	*	*	*
Atrazine µg/L	*	*	*	*	*	*	<0.01	<0.01	<0.0025379	<0.9263335	*	*	*	*	*	*	*	*	*	*	*	*	*
Dichloromethane	*	*	*	*	*	*	<1.0	<1.0	<0.25379	<92.63335	*	*	*	*	*	*	*	*	*	*	*	*	*
Simazine µg/L	*	*	*	*	*	*	<0.01	<0.01	<0.0025379	<0.9263335	*	*	*	*	*	*	*	*	*	*	*	*	*
Toluene µg/L	*	*	*	*	*	*	<1.0	<1.0	<0.25379	<92.63335	*	*	*	*	*	*	*	*	*	*	*	*	*
Tributyltin µg/L	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Xylenes µg/L	*	*	*	*	*	*	<1.0	<1.0	<0.25379	<92.63335	*	*	*	*	*	*	*	*	*	*	*	*	*
Arsenic µg/L	*	*	*	*	*	*	1	1	0.000254	0.0926	*	*	*	*	*	*	*	*	*	*	*	*	*
Chromium mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.005076	<1.8526	*	*	*	*	*	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	*	*
Copper mg/L	<0.02	<0.02	0.135	<0.02	<0.02	<0.02	<0.02	0.1350	0.034261	12.5053	*	*	*	*	*	<0.02	<0.02	<0.02	<0.02	0.043	*	*	*
Cyanide µg/L	*	*	*	*	*	*	6	6	0.001523	0.5558	*	*	*	*	*	*	*	*	*	*	*	*	*
Fluoride µg/L	*	*	*	*	*	*	190	190	0.048219	17.6000	*	*	*	*	*	*	*	*	*	*	*	*	*
Lead mg/L	<0.02	<0.02	0.034	<0.02	<0.02	0.025	0.048	0.0357	0.009052	3.3039	*	*	*	*	*	<0.02	<0.02	<0.02	<0.02	<0.02	0.048	*	*
Nickel mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.005076	<1.8526	*	*	*	*	*	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	*	*
Zinc mg/L	0.025	0.025	<0.02	0.025	<0.02	<0.02	<0.02	0.0250	0.006345	2.3158	*	*	*	*	*	0.027	<0.02	<0.02	<0.02	<0.02	0.051	*	*
Boron mg/L	0.053	0.053	0.048	0.053	0.111	0.127	0.095	0.0771	0.019578	7.1459	*	*	*	*	*	*	*	*	*	*	*	*	*
Cadmium mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.005076	<1.8526	*	*	*	*	*	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	*	*
Mercury µg/L	*	*	*	*	*	*	0.5	0.5	0.000127	0.0463	*	*	*	*	*	*	*	*	*	*	*	*	*
Selenium µg/L	*	*	*	*	*	*	3	3	0.000761	0.2779	*	*	*	*	*	*	*	*	*	*	*	*	*
Barium mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.005076	<1.8526	*	*	*	*	*	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	*	*

For inspection purposes only.
Consent of copyright owner required for any other use.

Attachment E4-Castlemartyr Inlet

Sample Date	07/02/2008	28/02/2007	03/04/2008	22/05/2008	17/07/2008		05/09/2007	08/08/2007	17/10/2007	22/11/2007
Sample	Influent	Influent	Influent	Influent	Influent		influent	influent	influent	influent
Flow M ³ /Day	*	*	*	*	*		*	*	*	*
pH	*	*	*	*	7.3		*	*	7.6	*
Temperature °C	*	*	*	*	*		*	*	*	*
Cond 20 °C	*	*	797	*	889		*	*	*	*
SS mg/L	*	88	*	*	418		*	*	*	*
NH ₃ mg/L	27.7	*	*	*	53.1		11.4	*	21.4	*
BOD mg/L	*	*	*	*	356		*	*	*	*
COD mg/L	294	340	1177	*	1083		1476	*	507	571
TN mg/L	43	*	*	*	*		*	*	37	*
Nitrite mg/L	*	*	*	*	0.0069		*	*	*	*
Nitrate mg/L	*	*	*	*	0.678		*	*	*	*
TP mg/L	5.23	*	*	*	13.8		33	*	*	*
O-PO ₄ -P mg/L	3.23	4.9	4.52	*	9.63		12.44	*	*	*
SO ₄ mg/L	41.7	*	*	*	62.4		43.7	*	49.1	*
Phenols µg/L	*	*	*	*	<0.1		*	*	*	*
Atrazine µg/L	*	*	*	*	<0.01		*	*	*	*
Dichloromethane µg/L	*	*	*	*	<1.0		*	*	*	*
Simazine µg/L	*	*	*	*	<0.01		*	*	*	*
Toluene µg/L	*	*	*	*	<1.0		*	*	*	*
Tributyltin µg/L	*	*	*	*	*		*	*	*	*
Xylenes µg/L	*	*	*	*	<1.0		*	*	*	*
Arsenic µg/L	*	*	*	*	1		*	*	*	*
Chromium mg/L	<0.02	*	*	<0.02	*		<0.02	0.056	<0.02	<0.02
Copper mg/L	0.135	*	*	0.187	*		1.153	1.95	<0.02	0.165
Cyanide µg/L	*	*	*	*	5		*	*	*	*
Fluoride	*	*	*	*	<100		*	*	*	*
Lead mg/L	<0.02	*	*	0.037	*		0.051	0.152	<0.02	0.096
Nickel mg/L	<0.02	*	*	<0.02	*		0.032	0.045	<0.02	<0.02
Zinc mg/L	0.061	*	*	0.091	*		0.727	1.568	<0.02	0.074
Boron mg/L	0.024	*	*	0.068	*		*	*	*	*
Cadmium mg/L	<0.02	*	*	<0.02	*		<0.02	<0.02	<0.02	<0.02
Mercury µg/L	*	*	*	*	0.4		*	*	*	*
Selenium µg/L	*	*	*	*	2		*	*	*	*
Barium mg/L	0.021	*	*	0.023	*		0.165	0.304	<0.02	<0.02

Attachment E4-Castlemartyr Upstream

Sample Date	07/02/2008	28/02/2008	13/03/2008	03/04/2008	22/05/2008	10/07/2008	17/07/2008		17/01/2007	07/03/2007	04/04/2007	30/05/2007	06/06/2007	04/07/2007	08/08/2007	05/09/2007	17/10/2007	22/11/2007
Sample	River	River	River	River	River	River	River		river	river	river	river	river	river	river	river	river	river
Flow M ³ /Day	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
pH	7.9	8.1	*	*	7.9	*	8		7.9	7.6	*	7.8	7.2	*	*	8	7.8	7.9
Temperature °C	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
Cond 20°C	*	*	*	332	262	234	318		*	*	*	*	*	*	*	*	*	*
SS mg/L	7	5	5	4	11	13	3		6	11	13	5	10	3	8	6	<2.5	<2.5
NH ₃ mg/L	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	0.4	<0.1	<0.1
BOD mg/L	<1	<1	1.61	<1	2.61	1.39	1.73		<1	<1	<1	3.2	4.1	<1	<1	1.1	1.44	1.03
COD mg/L	<21	*	*	*	*	*	<21		*	*	*	<21	*	*	*	*	<21	*
TN mg/L	7	6.64	*	*	3.9	6.5	6.1		5.9	6.4	6.6	7.06	5.66	<1	13.3	12	5.2	9.5
Nitrite mg/L	*	*	*	*	*	*	0.0219		*	*	*	*	*	*	*	*	*	*
Nitrate mg/L	*	*	*	*	*	*	5.44		*	*	*	*	*	*	*	*	*	*
TP mg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	1.01	<0.2	<0.2	<0.2	*	<0.2
O-PO4-P mg/L	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.05		*	*	*	*	*	*	<0.05	0.11	0.07	<0.05
SO4 mg/L	<30	<30	*	*	*	*	<30		*	*	*	*	*	<30	<30	<30	<30	<30
Phenols µg/L	*	*	*	*	*	*	<0.1		*	*	*	*	*	*	*	*	*	*
Atrazine µg/L	*	*	*	*	*	*	<0.01		*	*	*	*	*	*	*	*	*	*
Dichloromethane	*	*	*	*	*	*	<1.0		*	*	*	*	*	*	*	*	*	*
Simazine µg/L	*	*	*	*	*	*	<0.01		*	*	*	*	*	*	*	*	*	*
Toluene µg/L	*	*	*	*	*	*	<1.0		*	*	*	*	*	*	*	*	*	*
Tributyltin µg/L	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
Xylenes µg/L	*	*	*	*	*	*	<1.0		*	*	*	*	*	*	*	*	*	*
Arsenic µg/L	*	*	*	*	*	*	<0.96		*	*	*	*	*	*	*	*	*	*
Chromium mg/L	<0.2	<0.2	<0.2	<0.2	<0.02	*	<0.02		*	*	*	*	*	<0.02	<0.02	<0.02	<0.02	<0.02
Copper mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	*	<0.02		*	*	*	*	*	<0.02	<0.02	<0.02	<0.02	<0.02
Cyanide µg/L	*	*	*	*	*	*	<5		*	*	*	*	*	*	*	*	*	*
Fluoride	*	*	*	*	*	*	<100		*	*	*	*	*	*	*	*	*	*
Lead mg/L	<0.02	<0.02	0.026	<0.02	0.039	*	<0.02		*	*	*	*	*	<0.02	<0.02	<0.02	<0.02	<0.02
Nickel mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	*	<0.02		*	*	*	*	*	<0.02	<0.02	<0.02	<0.02	<0.02
Zinc mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	*	<0.02		*	*	*	*	*	<0.02	<0.02	<0.02	<0.02	<0.02
Boron mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	*	0.062		*	*	*	*	*	*	*	*	*	*
Cadmium mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	*	<0.02		*	*	*	*	*	<0.02	<0.02	<0.02	<0.02	<0.02
Mercury µg/L	*	*	*	*	*	*	0.8		*	*	*	*	*	*	*	*	*	*
Selenium µg/L	*	*	*	*	*	*	1		*	*	*	*	*	*	*	*	*	*
Barium mg/L	<0.02	<0.02	<0.02	<0.02	0.035	*	0.028		*	*	*	*	*	<0.02	<0.02	<0.02	<0.02	<0.02

For inspection purposes only. Consent of copyright owner required for any other use.

Attachment E4-Castlemartyr Downstream

Sample Date	07/02/2008	28/02/2008	13/03/2008	03/04/2008	22/05/2008	10/07/2008	17/07/2008		17/01/2007	07/03/2007	04/04/2007	30/05/2007	04/07/2007	08/08/2007	05/09/2007	17/10/2007	22/11/2007
Sample	river	river	river	river	river	river	river		river	river	river	river	river	river	river	river	river
Flow M ³ /Day	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*
pH	7.2	7.9	*	*	7.9	*	7.8		7.7	7.6	*	7.8	*	*	7.8	7.7	7.8
Temperature °C	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*
Cond 20°C	*	*	*	349	303	286	289		*	*	*	*	*	*	*	*	*
SS mg/L	6	9	15	3	7	5	6		*	*	*	*	*	*	*	*	*
NH ₃ mg/L	1.2	<0.1	<0.1	<0.1	<.1	<0.1	<0.1		<0.1	<0.1	<0.1	0.4	0.1	<0.1	<0.1	0.1	<0.1
BOD mg/L	5.23	<1	1.97	1.31	2.41	1.97	2.34		<1	<1*	2.1	3.8	1.7	<1	2.7	2.07	1.84
COD mg/L	<21	<21	*	*	*	*	<21		*	6.1	*	<21	*	*	*	<21	*
TN mg/L	2.4	6.19	*	*	3.4	4.5	4.5		5.6	*	9.7	7.14	<1	12.6	5.9	3.6	*
Nitrite mg/L	*	*	*	*	*	*	0.053		*	*	*	*	*	*	*	*	*
Nitrate mg/L	*	*	*	*	*	*	5.43		*	<0.2	*	*	*	*	*	*	*
TP mg/L	2.1	<0.2	<0.2	<0.2	<.2	<0.2	<0.2		<0.2	*	<0.2	0.21	0.2	<0.2	0.24	*	<0.2
O-PO4-P mg/L	*	0.1	<0.05	<0.05	0.06	<0.05	0.06		*	*	*	*	0.15	<0.05	0.14	0.21	0.15
SO4 mg/L	48.4	<30	*	*	*	*	<30		*	*	*	*	<30	<30	<30	<30	<30
Phenols µg/L	*	*	*	*	*	*	<0.1		*	*	*	*	*	*	*	*	*
Atrazine µg/L	*	*	*	*	*	*	<0.01		*	*	*	*	*	*	*	*	*
Dichloromethane	*	*	*	*	*	*	<1.0		*	*	*	*	*	*	*	*	*
Simazine µg/L	*	*	*	*	*	*	<0.01		*	*	*	*	*	*	*	*	*
Toluene µg/L	*	*	*	*	*	*	<1.0		*	*	*	*	*	*	*	*	*
Tributyltin µg/L	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*
Xylenes µg/L	*	*	*	*	*	*	<1.0		*	*	*	*	*	*	*	*	*
Arsenic µg/L	*	*	*	*	*	*	<0.96		*	*	*	*	*	*	*	*	*
Chromium mg/L	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02		*	*	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02
Copper mg/L	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02		*	*	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02
Cyanide µg/L	*		*	*			<5		*	*	*		*	*	*	*	*
Fluoride	*		*	*			<100		*	*	*		*	*	*	*	*
Lead mg/L	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02		*	*	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02
Nickel mg/L	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02		*	*	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02
Zinc mg/L	0.023		0.029	<0.02	<0.02	<0.02	<0.02		*	*	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02
Boron mg/L	0.053		<0.02	<0.02	<0.02	<0.02	0.022		*	*	*		*	*	*	*	*
Cadmium mg/L	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02		*	*	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02
Mercury µg/L	*		*	*			0.8		*	*	*		*	*	*	*	*
Selenium µg/L	*		*	*			1		*	*	*		*	*	*	*	*
Barium mg/L	<0.02		<0.02	<0.02	0.027	0.029	0.024		*	*	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02

For inspection purposes only. Copyright of copyright owner required for any other use.



LOCATION PLAN - SCALE 1:50,000

ENGINEERING MANAGEMENT ENVIRONMENTAL PLANNING
 UNIT 2 UNIVERSITY TECHNOLOGY CENTRE CURAHEEN ROAD BISHOPTOWN CORK
 TEL: +353 (0)21 4933200 e-mail: cork@wyg.com
 White Young Green Ireland

PROJECT:
 CASTLEMARTYR WASTE WATER PLANT: WASTE WATER DISCHARGE LICENCE APPLICATION
 CLIENT:
 CORK COUNTY COUNCIL

A ISSUE A
 REV DESCRIPTION BY CHK APP DATE
 MK 19/07/08

DRAWING TITLE:
 APPLICATION FORM ATTACHMENT F1 - MAP 12
 CASTLEMARTYR WWTW DISCHARGE LOCATION AND
 PROPOSED SHELLFISH DESIGNATION IN YOUGHAL BAY

SCALE @ A3 AS SHOWN	DRAWN MK	DATE 12/08/08	CHECKED SL	DATE 12/08/08	APPROVED KT	DATE 12/08/08
C006842	1201	C	F1-MAP 12	A		

© White Young Green Ireland Ltd. SHEET SIZE : A3 LANDSCAPE

TABLE F.1(i)(a): SURFACE/GROUND WATER MONITORING
(Primary Discharge Point – one table per upstream and downstream location)

Discharge Point Code: SWO1 CASTLEMARTYR
MONITORING POINT CODE: aSWO1uCAST

Parameter	Results (mg/l ^{Note 1})				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	03/04/2008	22/05/2008	10/07/2008	17/07/2008			
pH	Not available	7.9	Not available	8	Grab	2	Electrochemical
Temperature	Not available	Not available	Not available	Not available	Grab	N/A	N/A
Electrical Conductivity (@20°C)	332	262	234	318	Grab	0.5 µmhos/cm	Electrochemical
Suspended Solids	4	11	13	3	Grab	0.5 mg/L	Gravimetric
Ammonia (as N)	<0.1	<0.1	<0.1	<0.1	Grab	0.02 mg/L	Colorimetric
Biochemical Oxygen Demand	<1	2.61	1.99	1.73	Grab	0.06 mg/L	Electrochemical
Chemical Oxygen Demand	Not available	Not available	Not available	<21	Grab	8 mg/L	Digestion + Calorimetric
Dissolved Oxygen	Not available	Not available	Not available	Not available	Grab	N/A	N/A
Hardness (as CaCO ₃)	Not available	Not available	Not available	Not available	Grab	N/A	N/A
Total Nitrogen (as N)	Not available	3.9	6.5	6.1	Grab	0.5 mg/L	Digestion + Calorimetric
Nitrite (as N)	Not available	Not available	Not available	0.0219	Grab	0.004mg/L	Colorimetric
Nitrate (as N)	Not available	Not available	Not available	5.44	Grab	0.4 mg/L	Colorimetric
Total Phosphorus (as P)	<0.2	<0.2	<0.2	<0.2	Grab	0.2 mg/L	Digestion + Calorimetric
Orthophosphate (as P) - unfiltered	<0.05	0.05	<0.05	<0.05	Grab	0.02 mg/L	Colorimetric
Sulphate (SO ₄)	Not available	Not available	Not available	<30	Grab	30 mg/L	Turbidimetric
Phenols (sum) ^{Note 2} (ug/l)	Not available	Not available	Not available	<0.1	Grab	0.1 µg/L	GC-MS 2

Note 1: Or other unit as appropriate – please specify.

Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

TABLE F.1(i)(b): SURFACE/GROUND WATER MONITORING (Dangerous Substances)
(Primary Discharge Point - one table per upstream and downstream location)

Discharge Point Code: SWO1 CASTLEMARTYR

MONITORING POINT CODE: aSWO1uCAST

Parameter	Results (µg/l)				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	03/04/2008	22/05/2008	10/07/2008	17/07/2008			
Atrazine	Not available	Not available	Not available	<0.01	Grab	0.96 µg/L	HPLC
Dichloromethane	Not available	Not available	Not available	<1.0	Grab	1 µg/L	GC-MS 1
Simazine	Not available	Not available	Not available	<0.01	Grab	0.01 µg/L	HPLC
Toluene	Not available	Not available	Not available	<1.0	Grab	0.02 µg/L	GC-MS 1
Tributyltin	Not available	Not available	Not available	Not available	Not available	1 µg/L as Sn	GC-MS 1
Xylenes	Not available	Not available	Not available	<1.0	Grab	0.96 µg/L	GC-MS 1
Arsenic	Not available	Not available	Not available	<0.96	Grab	0.02 mg/L	ICP-MS
Chromium	<200	<20	Not available	<20	Grab	0.02 mg/L	ICP-OES
Copper	<20	<20	Not available	<20	Grab	5 mg/L	ICP-OES
Cyanide	Not available	Not available	Not available	<5	Grab	0.01 µg/L	Colorimetric
Fluoride	Not available	Not available	Not available	<100	Grab	100 µg/L	ISE
Lead	<20	39	Not available	<20	Grab	0.02 mg/L	ICP-OES
Nickel	<20	<20	Not available	<20	Grab	0.02 mg/L	ICP-OES
Zinc	<20	<20	Not available	<20	Grab	0.02 mg/L	ICP-OES
Boron	<20	<20	Not available	62	Grab	0.02 mg/L	ICP-OES
Cadmium	<20	<20	Not available	<20	Grab	0.02 mg/L	ICP-OES
Mercury	Not available	Not available	Not available	0.8	Grab	0.02 µg/L	ICP-MS
Selenium	Not available	Not available	Not available	1	Grab	0.74 µg/L	ICP-MS
Barium	<20	35	Not available	28	Grab	0.02 mg/L	ICP-OES

TABLE F.1(i)(a): SURFACE/GROUND WATER MONITORING
(Primary Discharge Point – one table per upstream and downstream location)

Discharge Point Code: SWO1 CASTLEMARTYR
MONITORING POINT CODE: aSWO1dCAST

Parameter	Results (mg/l ^{Note 1})				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	03/04/2008	22/05/2008	10/07/2008	17/07/2008			
pH	Not available	7.9	Not available	7.8	Grab	2	Electrochemical
Temperature	Not available	Not available	Not available	Not available	Grab	N/A	N/A
Electrical Conductivity (@20°C)	349	303	286	289	Grab	0.5 µmhos/cm	Electrochemical
Suspended Solids	3	7	5	6	Grab	0.5 mg/L	Gravimetric
Ammonia (as N)	<0.1	<.1	<0.1	<0.1	Grab	0.02 mg/L	Colorimetric
Biochemical Oxygen Demand	1.31	2.41	1.97	2.34	Grab	0.06 mg/L	Electrochemical
Chemical Oxygen Demand	Not available	Not available	Not available	<21	Grab	8 mg/L	Digestion + Calorimetric
Dissolved Oxygen	Not available	Not available	Not available	Not available	Grab	N/A	N/A
Hardness (as CaCO ₃)	Not available	Not available	Not available	Not available	Grab	N/A	N/A
Total Nitrogen (as N)	Not available	3.4	4.5	4.5	Grab	0.5 mg/L	Digestion + Calorimetric
Nitrite (as N)	Not available	Not available	Not available	0.053	Grab	0.004mg/L	Colorimetric
Nitrate (as N)	Not available	Not available	Not available	5.43	Grab	0.4 mg/L	Colorimetric
Total Phosphorus (as P)	<0.2	<.2	<0.2	<0.2	Grab	0.2 mg/L	Digestion + Calorimetric
Orthophosphate (as P) - unfiltered	<0.05	0.06	<0.05	0.06	Grab	0.02 mg/L	Colorimetric
Sulphate (SO ₄)	Not available	Not available	Not available	<30	Grab	30 mg/L	Turbidimetric
Phenols (sum) ^{Note 2} (ug/l)	Not available	Not available	Not available	<0.1	Grab	0.1 µg/L	GC-MS 2

Note 1: Or other unit as appropriate – please specify.

Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

**TABLE F.1(i)(b): SURFACE/GROUND WATER MONITORING (Dangerous Substances)
(Primary Discharge Point - one table per upstream and downstream location)**

Discharge Point Code: SWO1 CASTLEMARTYR

MONITORING POINT CODE: aSWO1dCAST

Parameter	Results (µg/l)				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	03/04/2008	22/05/2008	10/07/2008	17/07/2008			
Atrazine	Not available	Not available	Not available	<0.01	Grab	0.96 µg/L	HPLC
Dichloromethane	Not available	Not available	Not available	<1.0	Grab	1 µg/L	GC-MS 1
Simazine	Not available	Not available	Not available	<0.01	Grab	0.01 µg/L	HPLC
Toluene	Not available	Not available	Not available	<1.0	Grab	0.02 µg/L	GC-MS 1
Tributyltin	Not available	Not available	Not available	Not available	Grab	1 µg/L as Sn	GC-MS 1
Xylenes	Not available	Not available	Not available	<1.0	Grab	0.96 µg/L	GC-MS 1
Arsenic	Not available	Not available	Not available	<0.96	Grab	0.02 mg/L	ICP-MS
Chromium	<20	<20	<20	<20	Grab	0.02 mg/L	ICP-OES
Copper	<20	<20	<20	<20	Grab	5 mg/L	ICP-OES
Cyanide	Not available	Not available	Not available	<5	Grab	0.01 µg/L	Colorimetric
Fluoride	Not available	Not available	Not available	<100	Grab	100 µg/L	ISE
Lead	<20	<20	<20	<20	Grab	0.02 mg/L	ICP-OES
Nickel	<20	<20	<20	<20	Grab	0.02 mg/L	ICP-OES
Zinc	<20	<20	<20	<20	Grab	0.02 mg/L	ICP-OES
Boron	<20	<20	<20	22	Grab	0.02 mg/L	ICP-OES
Cadmium	<20	<20	<20	<20	Grab	0.02 mg/L	ICP-OES
Mercury	Not available	Not available	Not available	0.8	Grab	0.02 µg/L	ICP-MS
Selenium	Not available	Not available	Not available	1	Grab	0.74 µg/L	ICP-MS
Barium	<20	27	29	24	Grab	0.02 mg/L	ICP-OES