

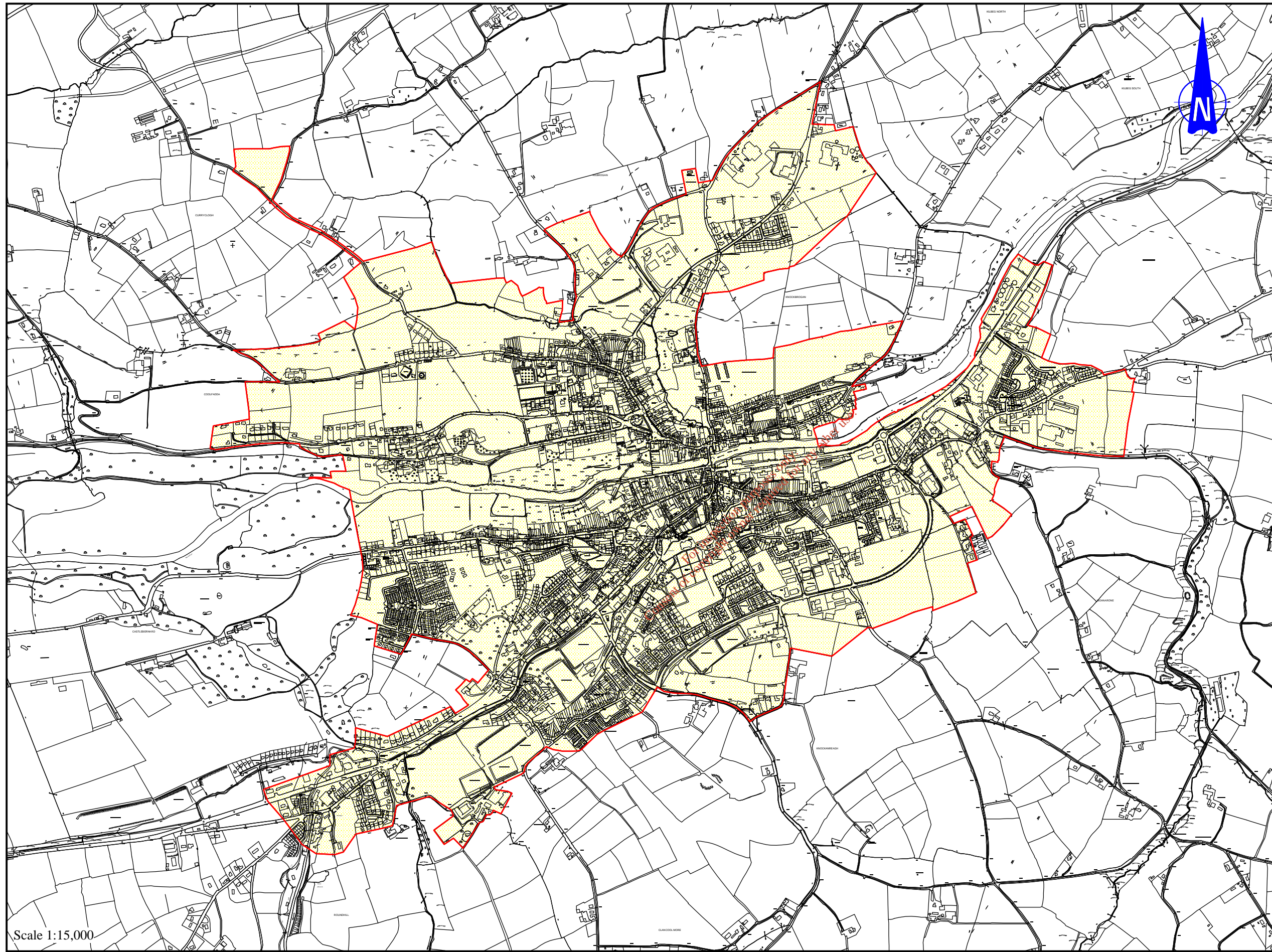
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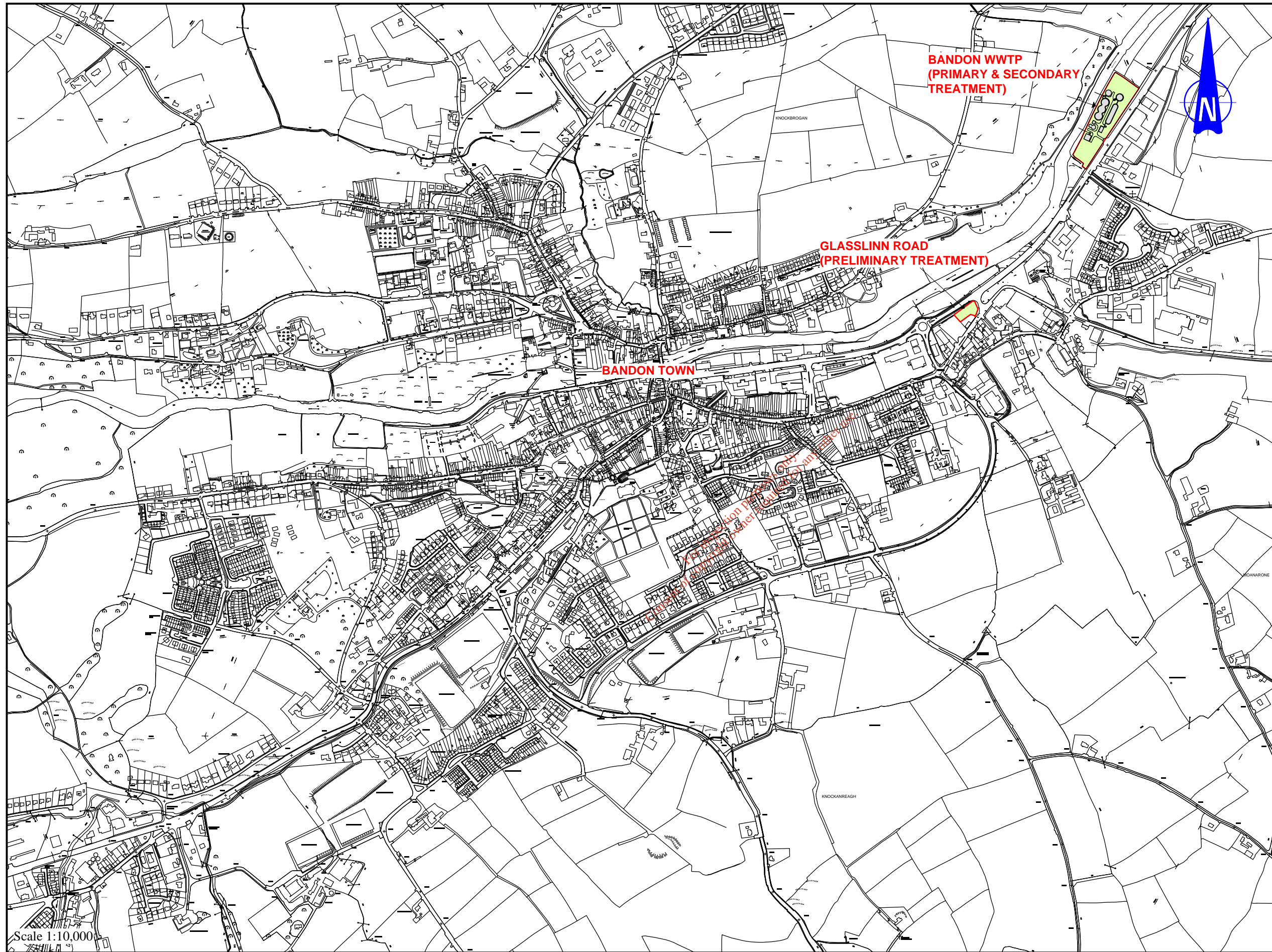
LEGEND

 AGGLOMERATION



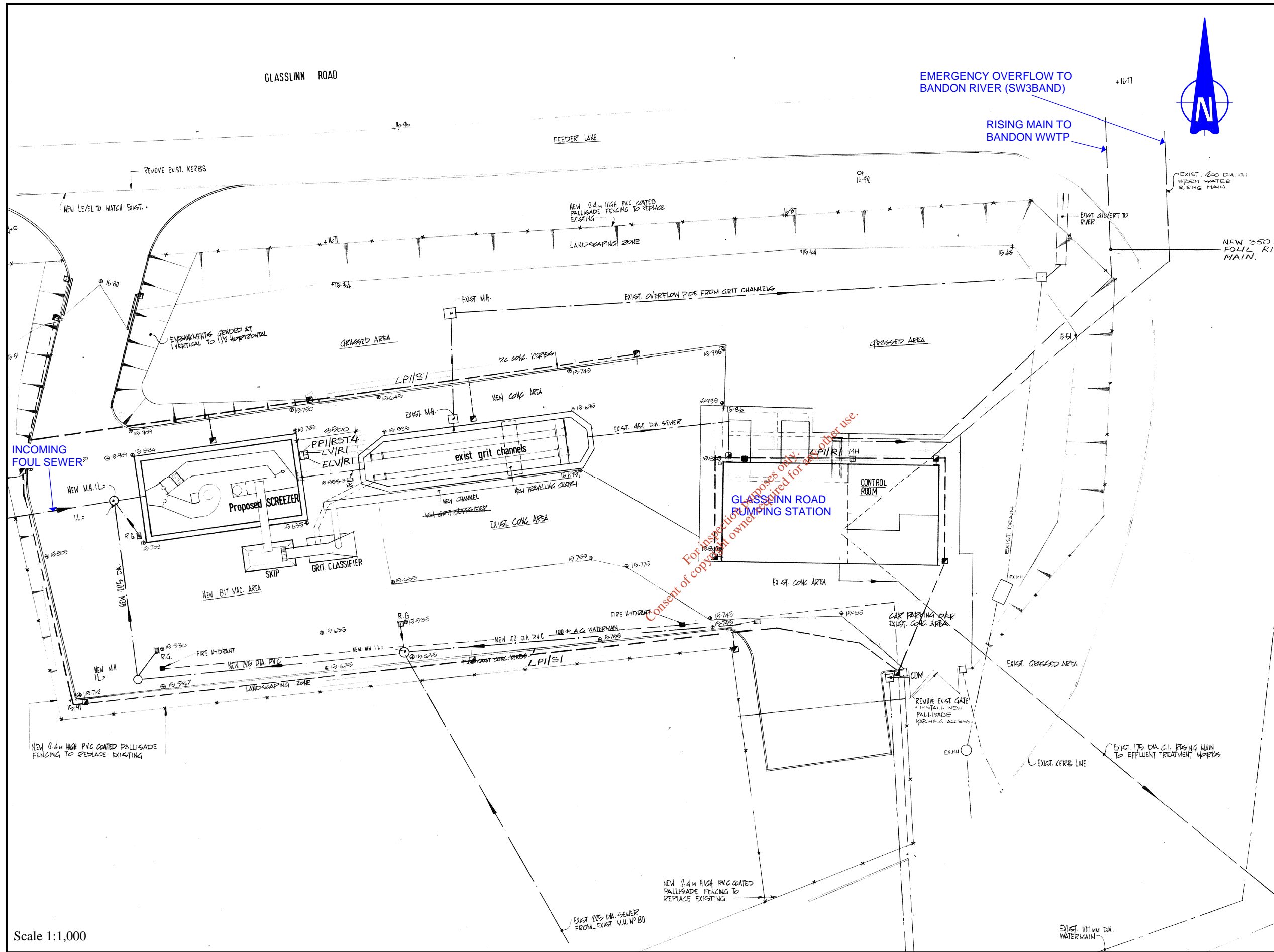
Scale 1:15,000

Approved : _____



Approved : _____





Scale 1:1,000

Approved : _____



MAP 3 - BANDON WWTTP SITE LAYOUT PLAN
PRELIMINARY TREATMENT AT GLASSLINN ROAD

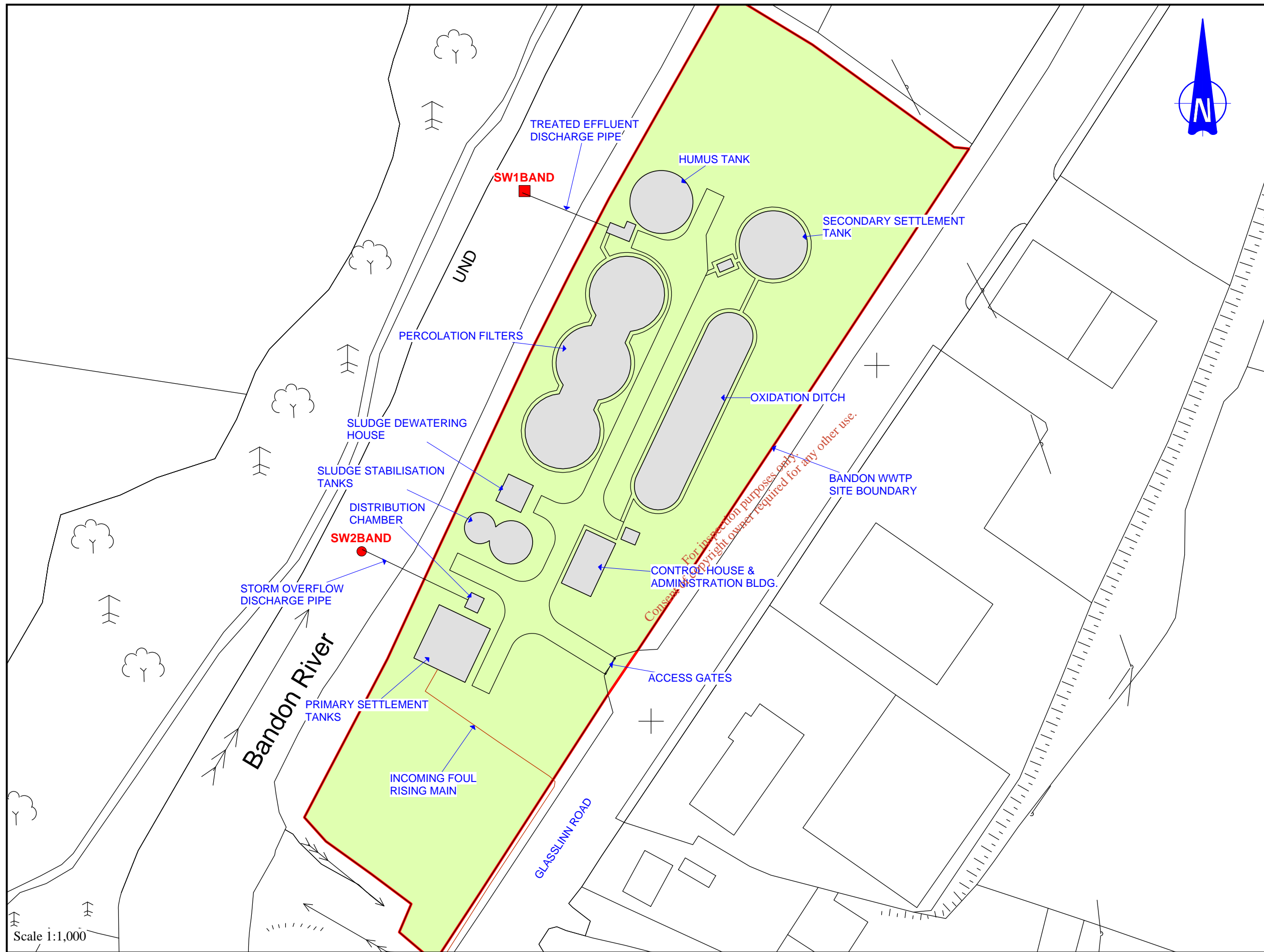
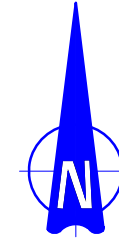
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DATE : SEPT. 2008

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ATTACHMENT B.2
MAP 4

LEGEND

- PRIMARY DISCHARGE LOCATION
- SECONDARY DISCHARGE LOCATION



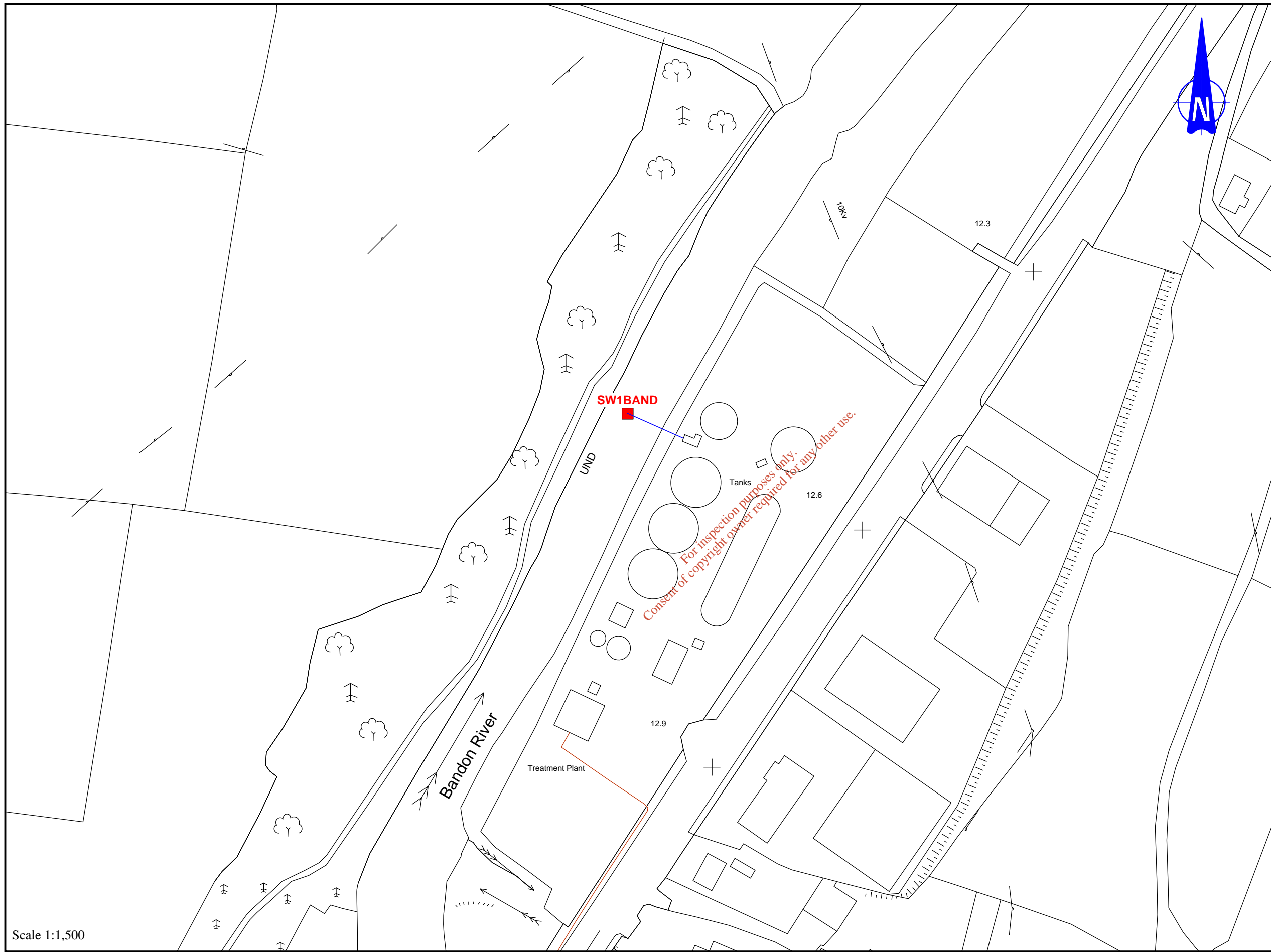
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ATTACHMENT B.3
MAP 5

LEGEND

■ PRIMARY DISCHARGE LOCATION

Point	Easting	Northing
SW1BAND ■	150411	055785



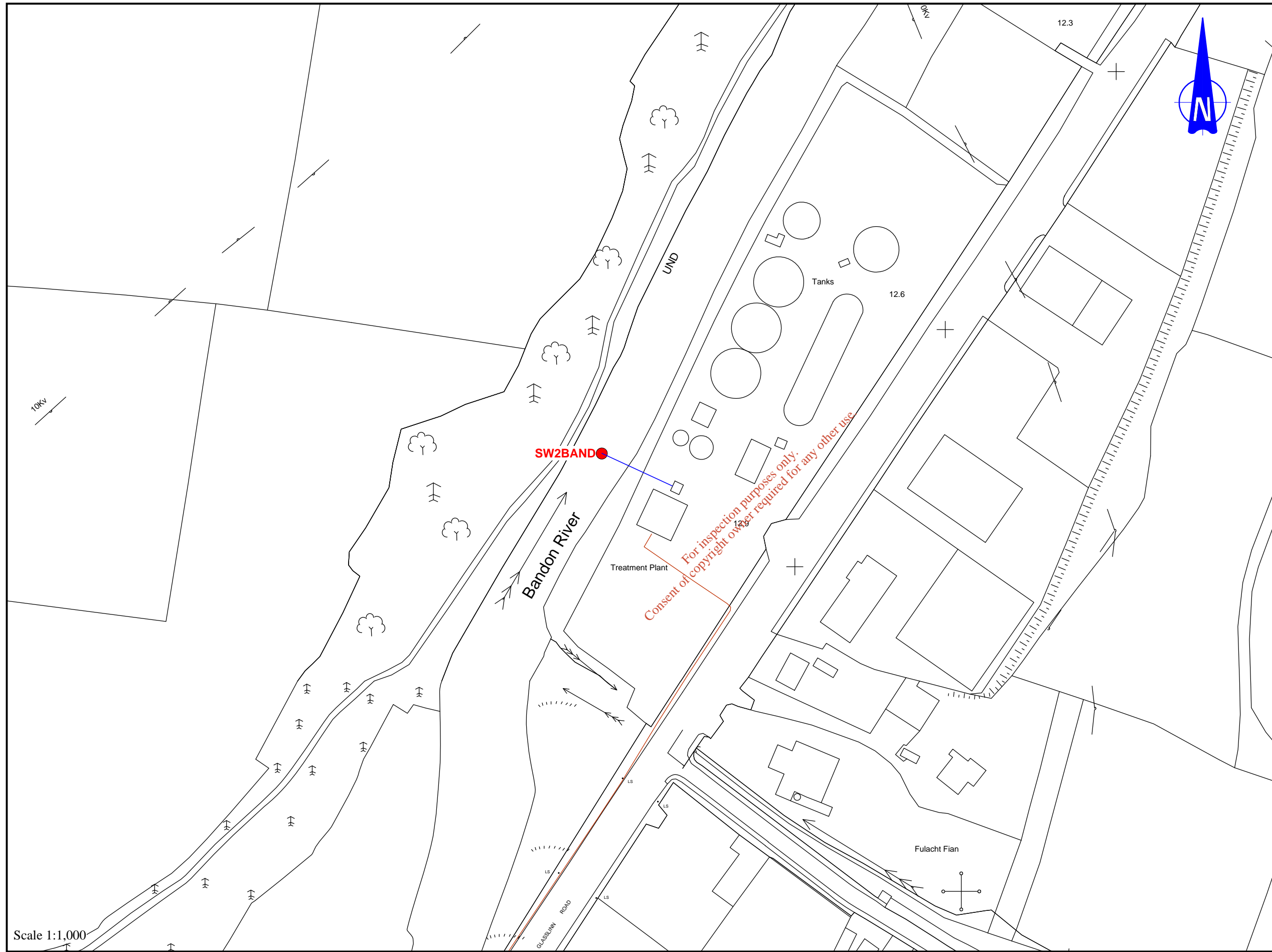
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ATTACHMENT B.4
MAP 6

LEGEND

- SECONDARY DISCHARGE LOCATION

Point	Easting	Northing
SW2BAND ●	150368	055690



Scale 1:1,000

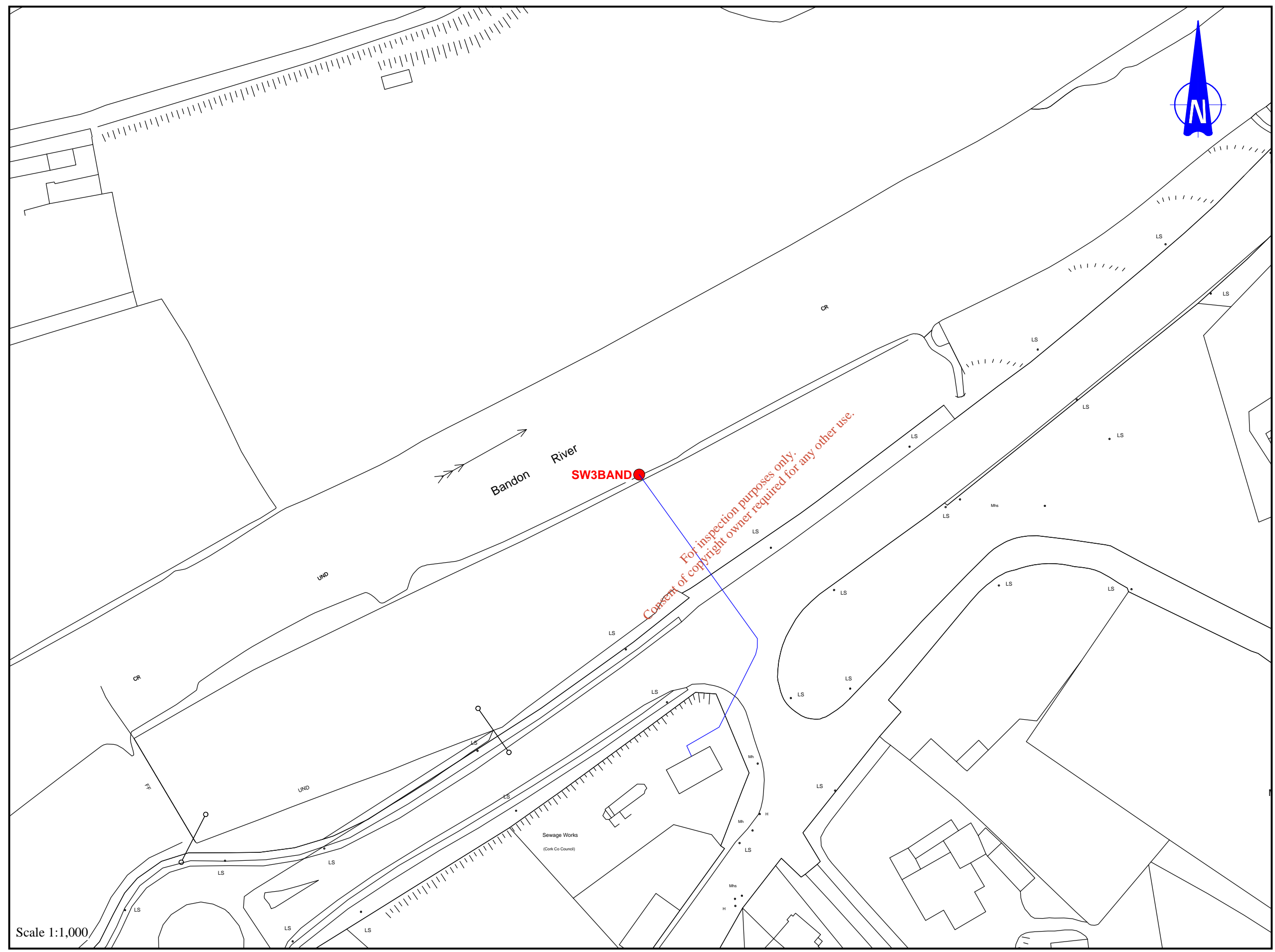
Approved : _____

ATTACHMENT B.4
MAP 7

LEGEND

● SECONDARY DISCHARGE LOCATION

Point	Easting	Northing
SW3BAND ●	150074	055292



Scale 1:1,000

Approved : _____



MAP 7 - SECONDARY DISCHARGE LOCATION (SW3BAND)

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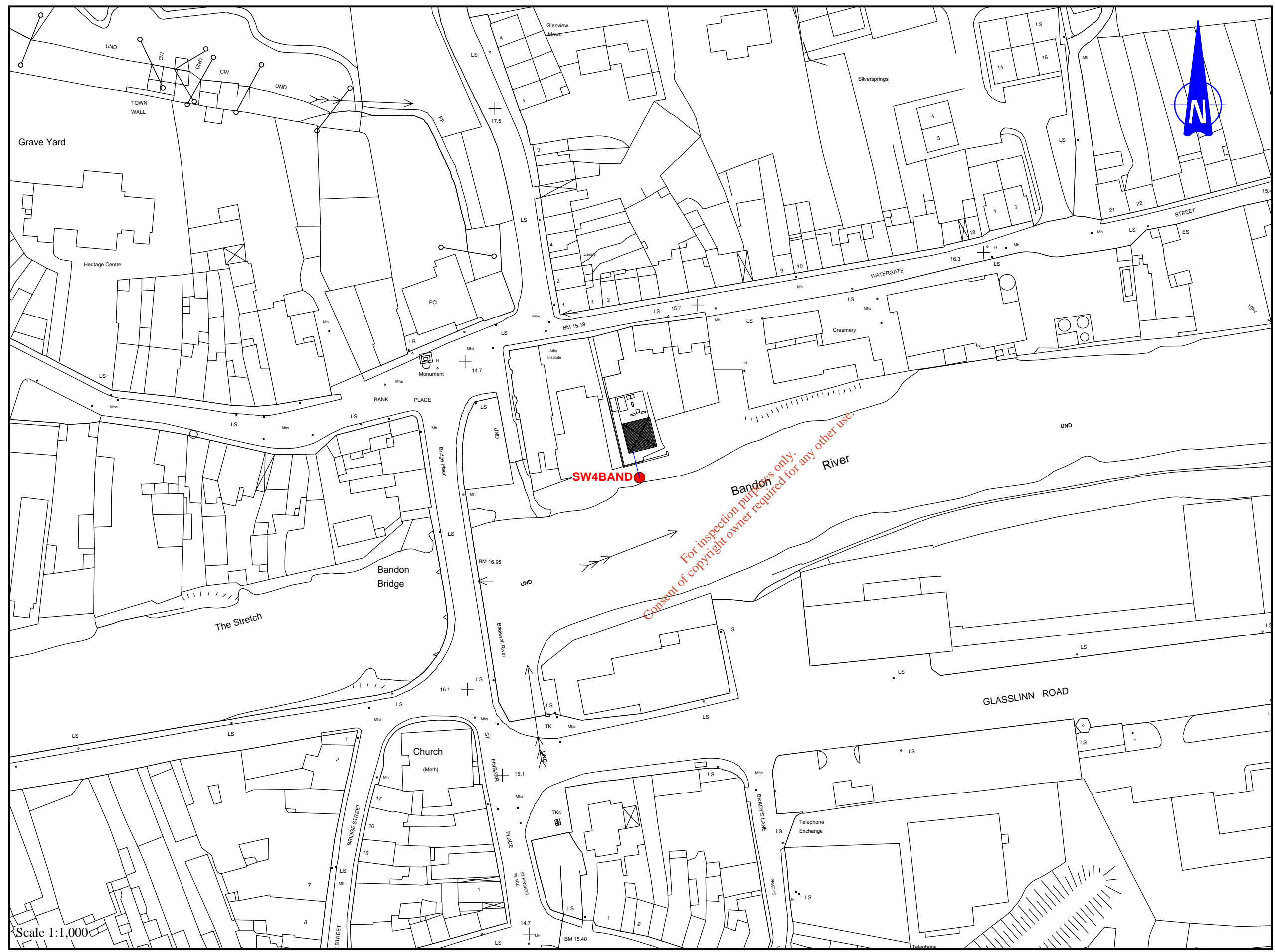
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ATTACHMENT B.4
MAP 8

LEGEND

● SECONDARY DISCHARGE LOCATION

Point	Easting	Northing
SW4BAND ●	149316	055103



Scale 1:1,000

Approved : _____



MAP 8 - SECONDARY DISCHARGE LOCATION (SW4BAND)

REVISION : A
DATE : SEPT. 2008

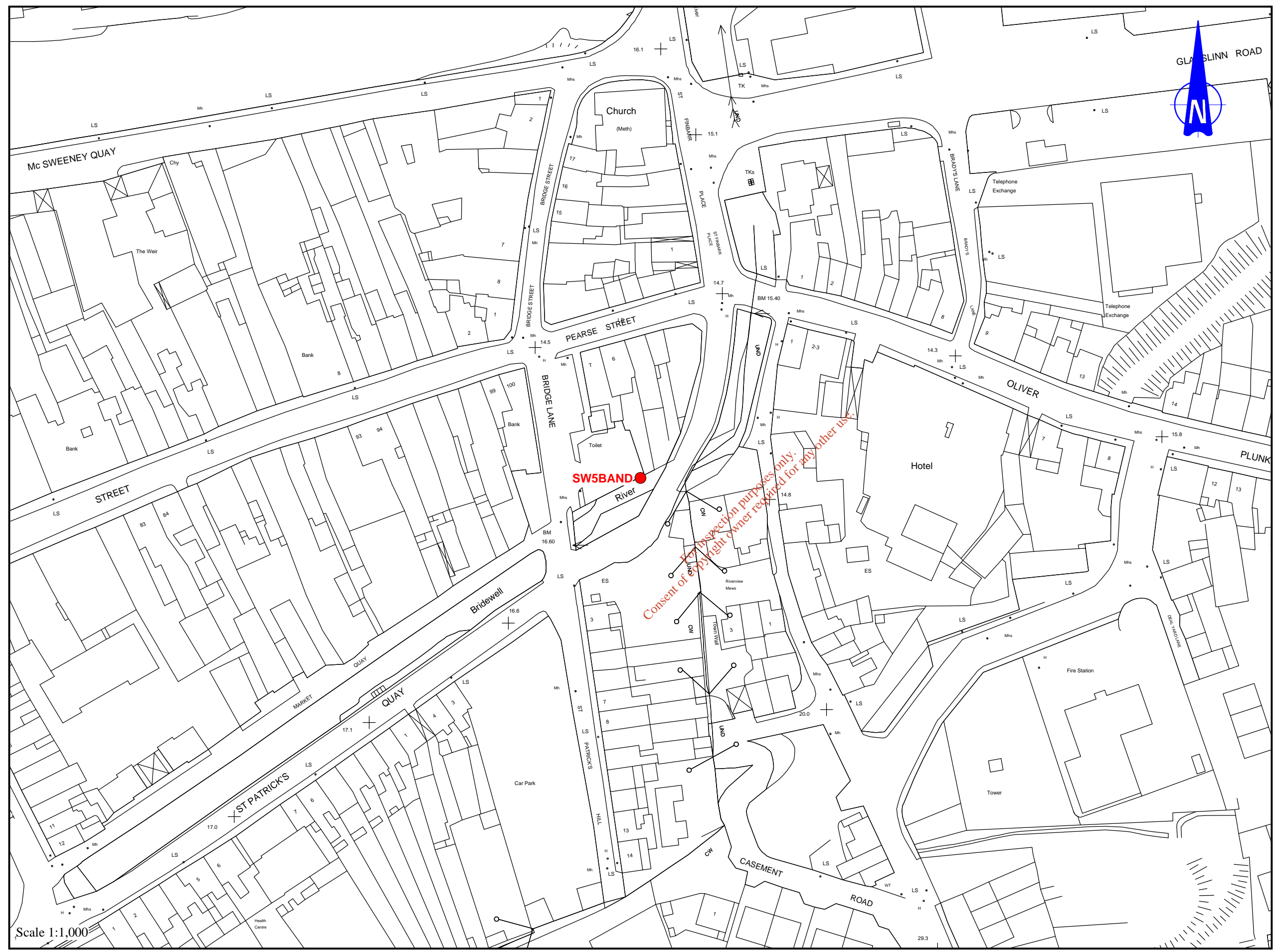
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ATTACHMENT B.4
MAP 9

LEGEND

● SECONDARY DISCHARGE LOCATION

Point	Easting	Northing
SW5BAND ●	149265	054933



Scale 1:1,000

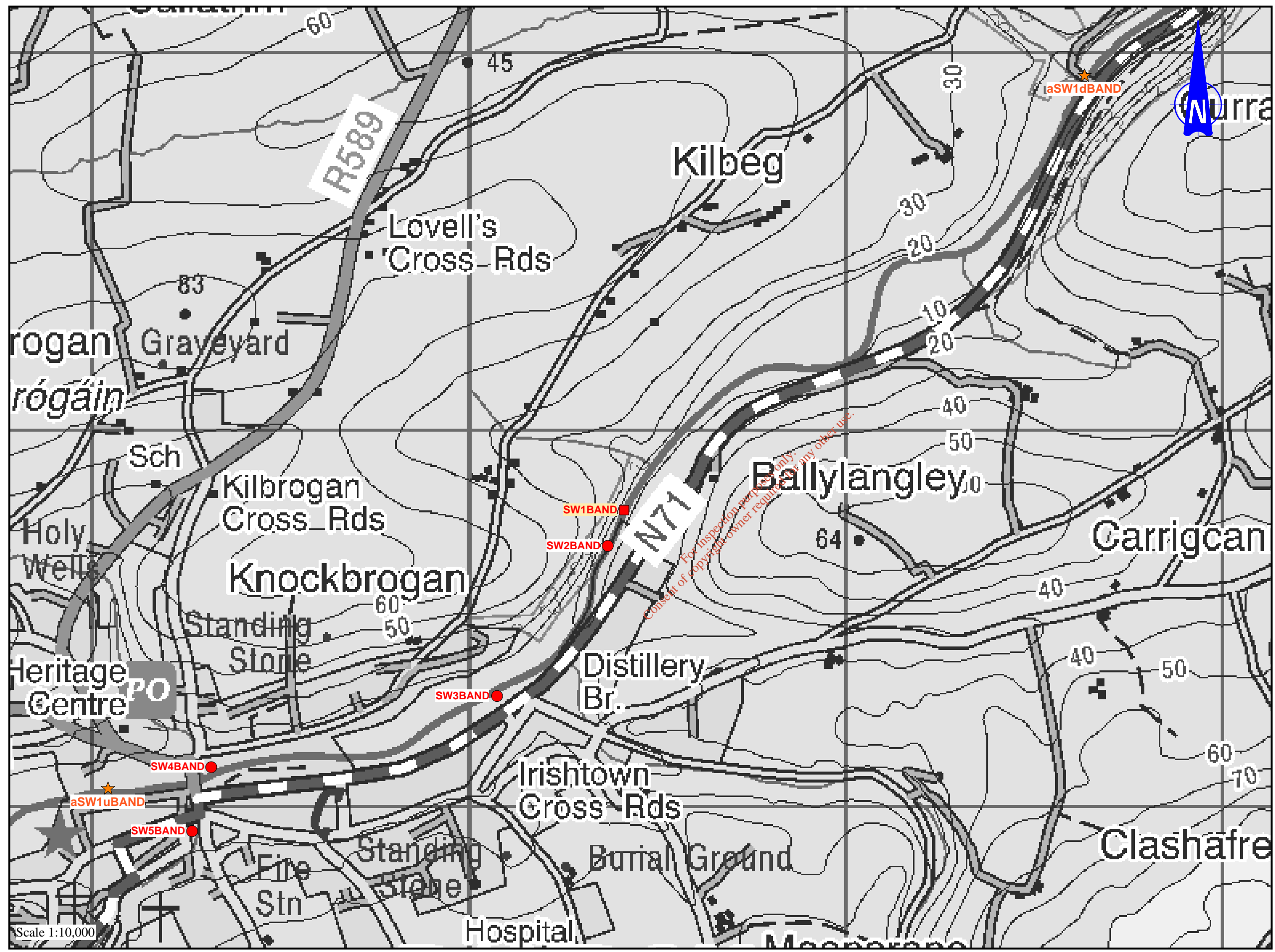
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MAP 9 - SECONDARY DISCHARGE LOCATION (SW5BAND)

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- LEGEND**
- PRIMARY DISCHARGE LOCATION
 - SECONDARY DISCHARGE LOCATION
 - ★ MONITORING LOCATION

Point	Easting	Northing
aSW1uBAND ★	149042	055048
aSW1dBAND ★	151633	056940

Scale 1:10,000

Approved : _____



MAP 10 - MONITORING LOCATIONS

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DATE : SEPT. 2008

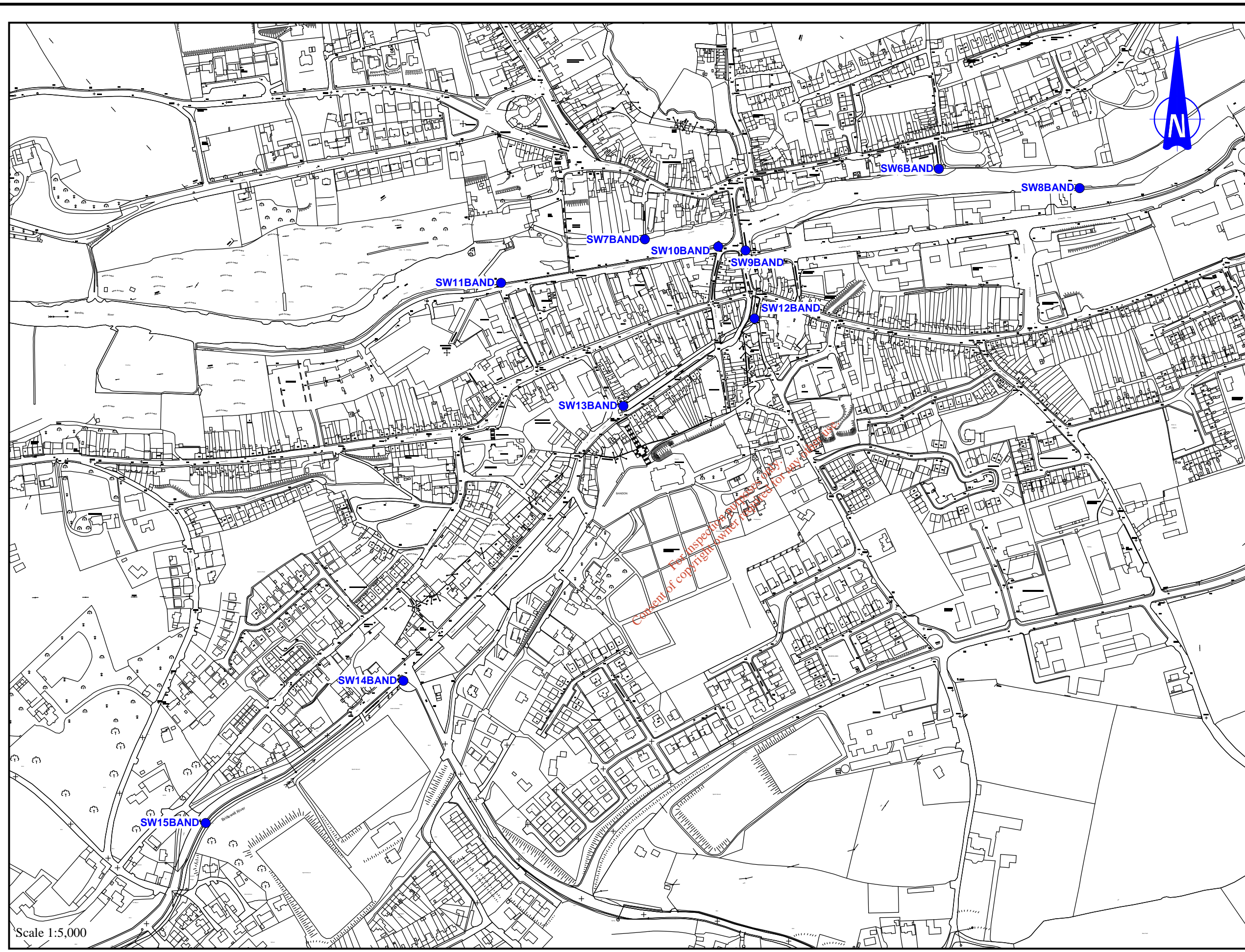
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CORK COUNTY COUNCIL
PROJECT Nr. 249282
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ATTACHMENT B.5
MAP 11

LEGEND

● STORMWATER OVERFLOW LOCATION

Point	Easting	Northing
SW6BAND ●	149542	055150
SW7BAND ●	149145	055055
SW8BAND ●	149732	055124
SW9BAND ●	149281	055040
SW10BAND ●	149244	055045
SW11BAND ●	149951	054996
SW12BAND ●	149293	054948
SW13BAND ●	149116	054830
SW14BAND ●	148819	054459
SW15BAND ●	148552	054267



Approved : _____



MAP 11 - STORMWATER OVERFLOW LOCATIONS

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CORK COUNTY COUNCIL

SITE NOTICE

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTEWATER DISCHARGE LICENCE

In accordance with the Waste Water Discharge (Authorisation) Regulations 2007, Cork County Council (South), Floor 5, County Hall, Cork is applying to the Environmental Protection Agency for a Waste Water Discharge Licence for the agglomeration of Bandon at the following locations:

Plant Name	Location	National Grid Ref.
Bandon WWTP	Glasslynn Road, Bandon	E150425 N055700

Discharge	Function	Townland	Receptor	Grid Reference
Primary	Main	Ballylangley	Bandon River	E150411 N055785
Secondary	Emergency	Ballylangley	Bandon River	E150368 N055690
Secondary	Emergency	Clogheenavodig	Bandon River	E150074 N055292
Secondary	Emergency	Knockbrogan	Bandon River	E149316 N055103
Secondary	Emergency	Gully	Bridewell River	E149265 N054933

A copy of the application for the Waste Water Discharge Licence and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the Application shall as soon as is practicable after receipt by the Agency be available for inspection or purchase at the

- Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford, Lo Call 1890 335599 Telephone: 053-9160600 Fax: 053-9160699 Email: info@epa.ie
- and at
- Cork County Council Offices, Glasslynn Road, Bandon, Co. Cork, Telephone: 023-41181 Fax: 023-29792

Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters described above.

Cork County Council Western Division

**APPLICATION TO THE ENVIRONMENTAL
PROTECTION AGENCY FOR A WASTEWATER
DISCHARGE LICENCE**

In accordance with the Waste Water Discharge (Authorisation) Regulations 2007, Cork County Council (South), Floor 5, County Hall, Cork is applying to the Environmental Protection Agency for a Waste Water Discharge Licence for the agglomeration of Bandon at the following locations:

Plant Name	Location	National Grid Ref.
Bandon WWTP	Glasslynn Road, Bandon	E150425 N055700

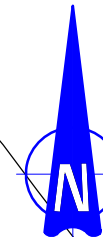
Discharge	Function	Townland	Receptor	Grid Reference
Primary	Main	Ballylangley	Bandon River	E150411 N055785
Secondary	Emergency	Ballylangley	Bandon River	E150368 N055690
Secondary	Emergency	Clogheenavodig	Bandon River	E150074 N055292
Secondary	Emergency	Knockbrogan	Bandon River	E149316 N055103
Secondary	Emergency	Gully	Bridewell River	E149265 N054933

A copy of the application for the Waste Water Discharge Licence and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the Application shall as soon as is practicable after receipt by the Agency be available for inspection or purchase at the

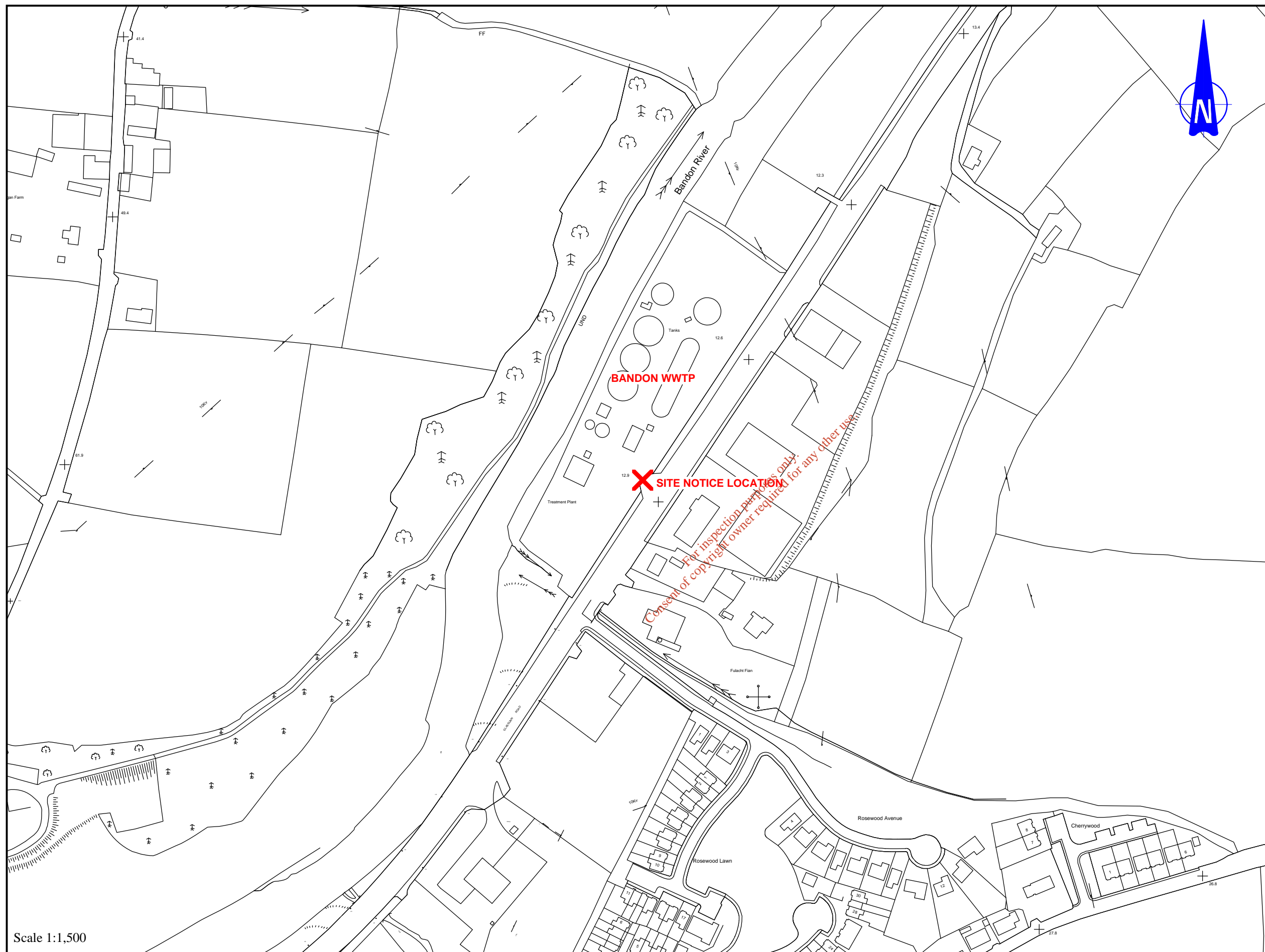
- Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford, Lo Call 1890 335599 Telephone: 053-9160600 Fax: 053-9160699 Email: info@epa.ie
and at
- Cork County Council Offices, Glasslynn Road, Bandon, Co. Cork, Telephone: 023-41181 Fax: 023-29792

Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters described above.

ATTACHMENT B.8
MAP 12



Description	Easting	Northing
SITE NOTICE LOCATION	150434	055660



Scale 1:1,500

Approved : _____



MAP 12 - SITE NOTICE LOCATION

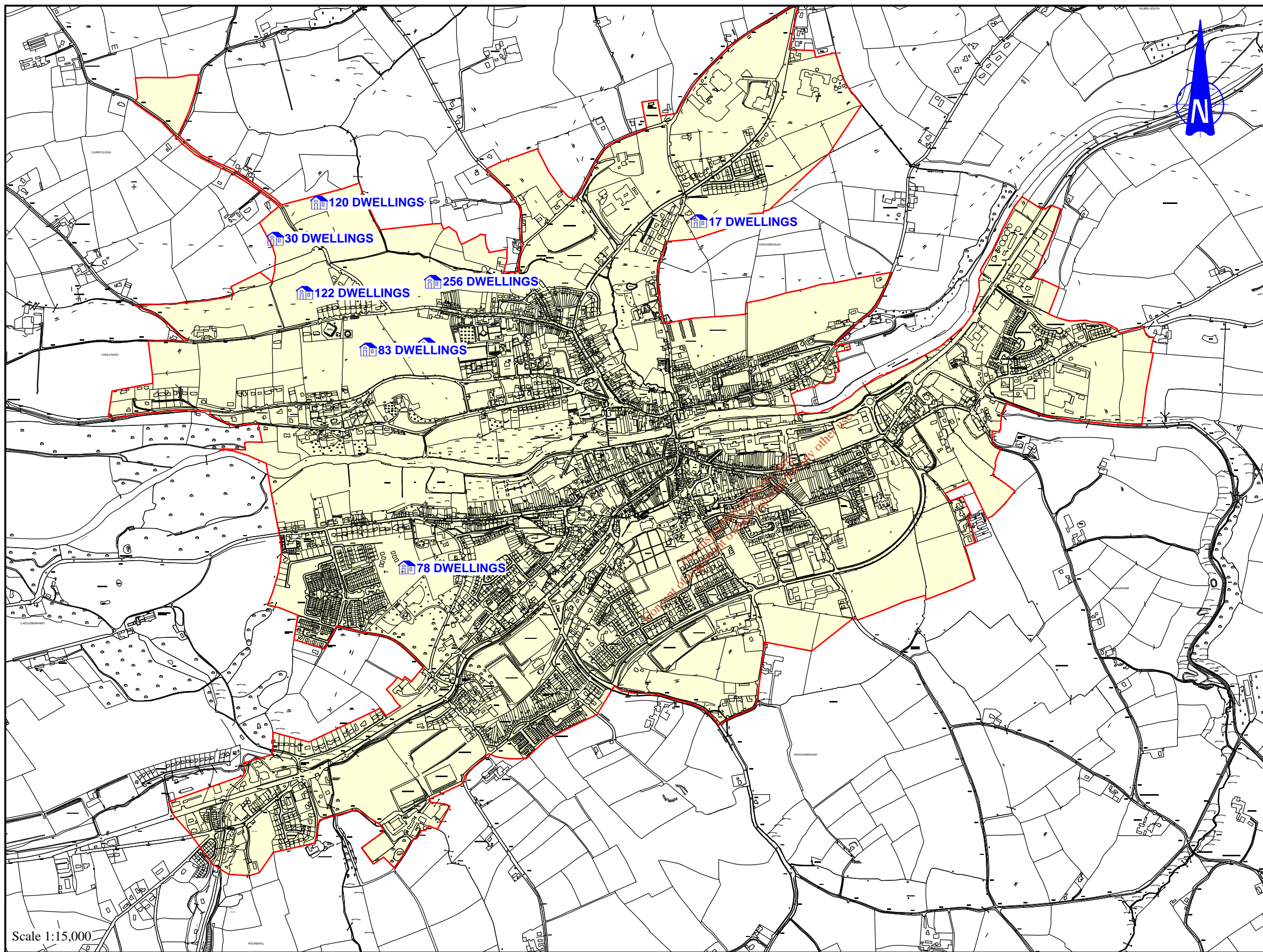
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DATE : SEPT. 2008

BANDON WASTE WATER DISCHARGE LICENCE APPLICATION
CORK COUNTY COUNCIL
PROJECT Nr. 249282
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LEGEND

 AGGLOMERATION

 APPROVED FUTURE DEVELOPMENT



Scale 1:15,000

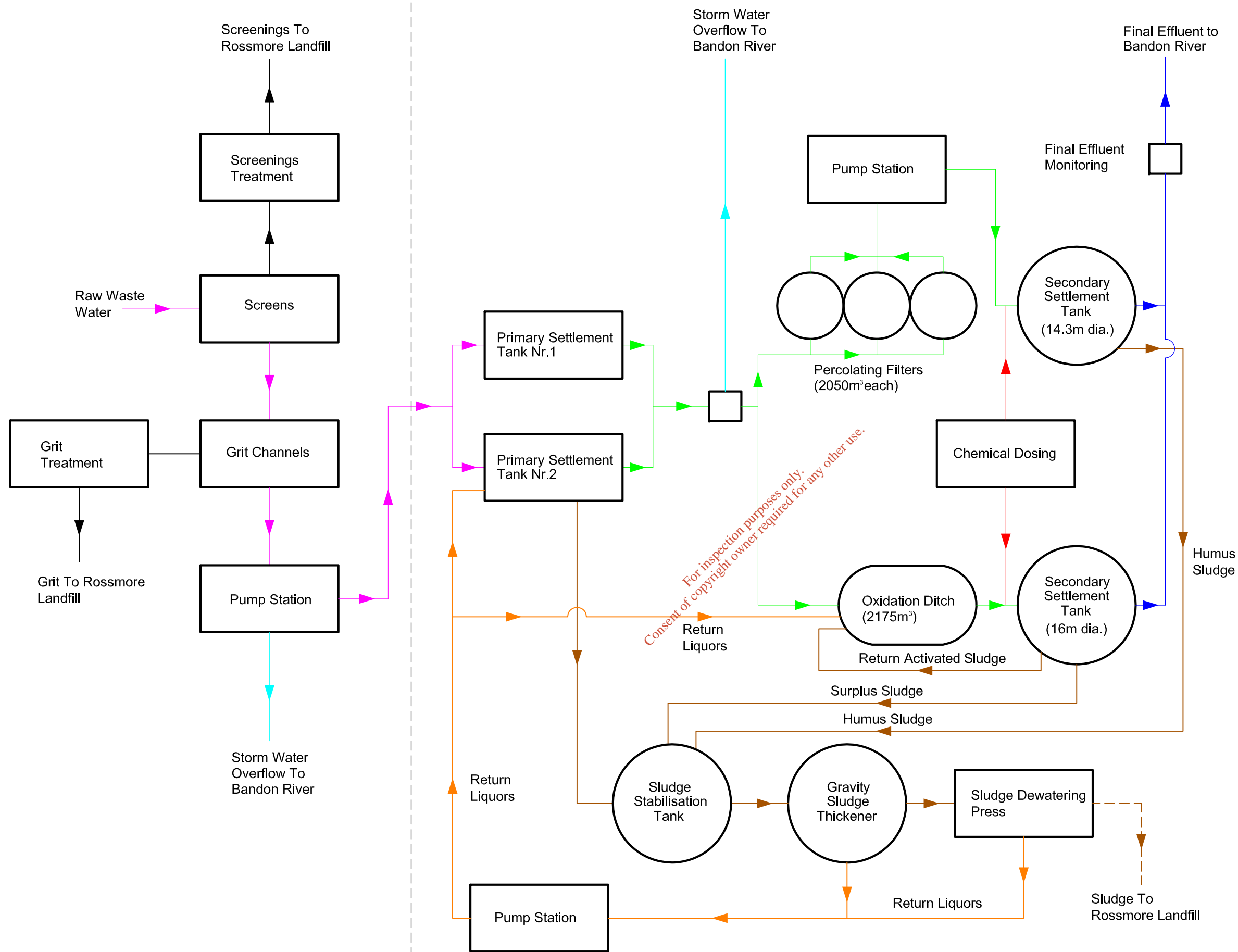
Approved : _____

ATTACHMENT C.1

MAP 14

Legend

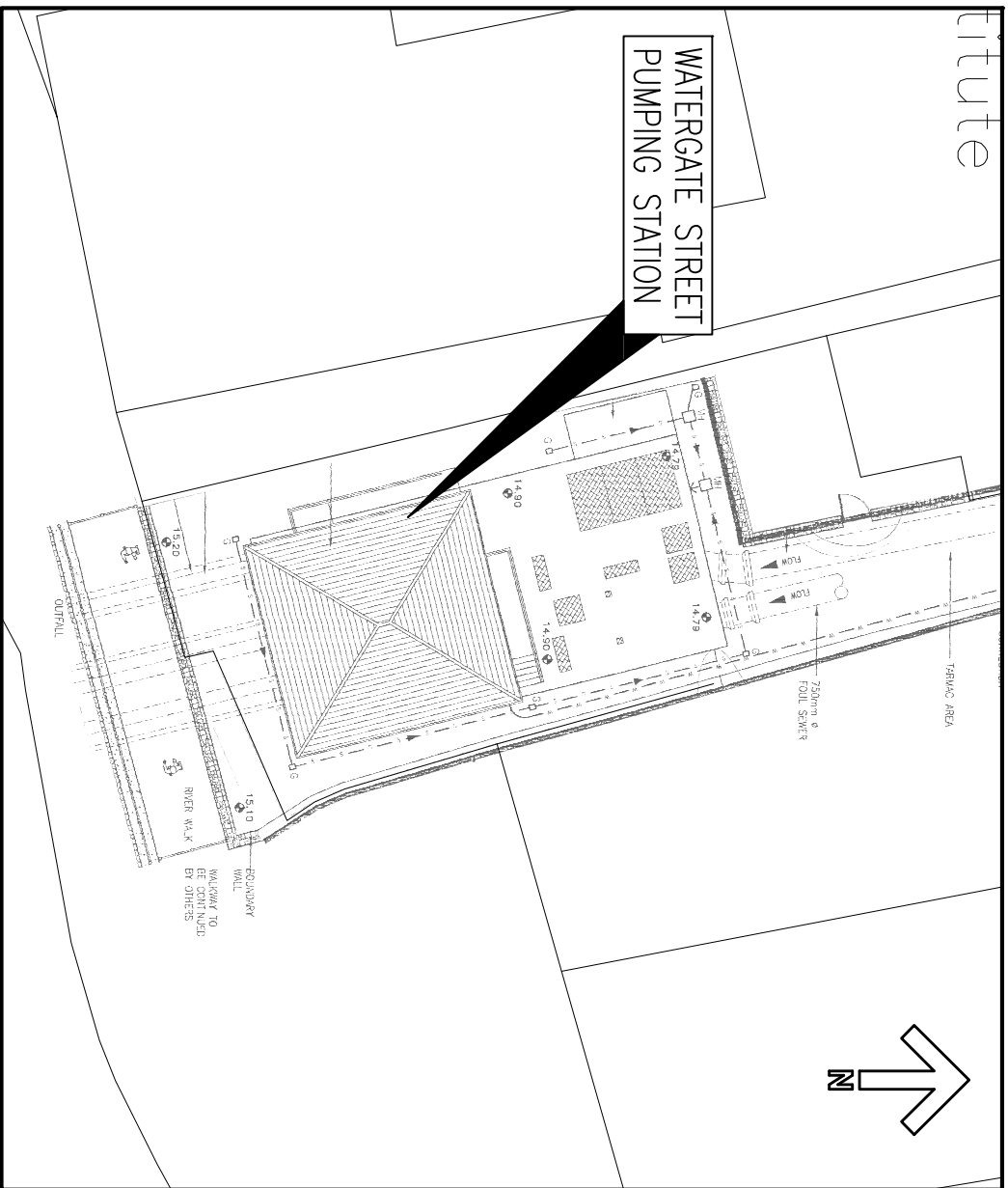
- Raw Waste Water
- Final Effluent
- Sludge
- Dewatered Sludge
- Flow to Secondary Tanks
- Screenings/Grit
- Storm Water
- Return Liquors
- Chemical Dosing



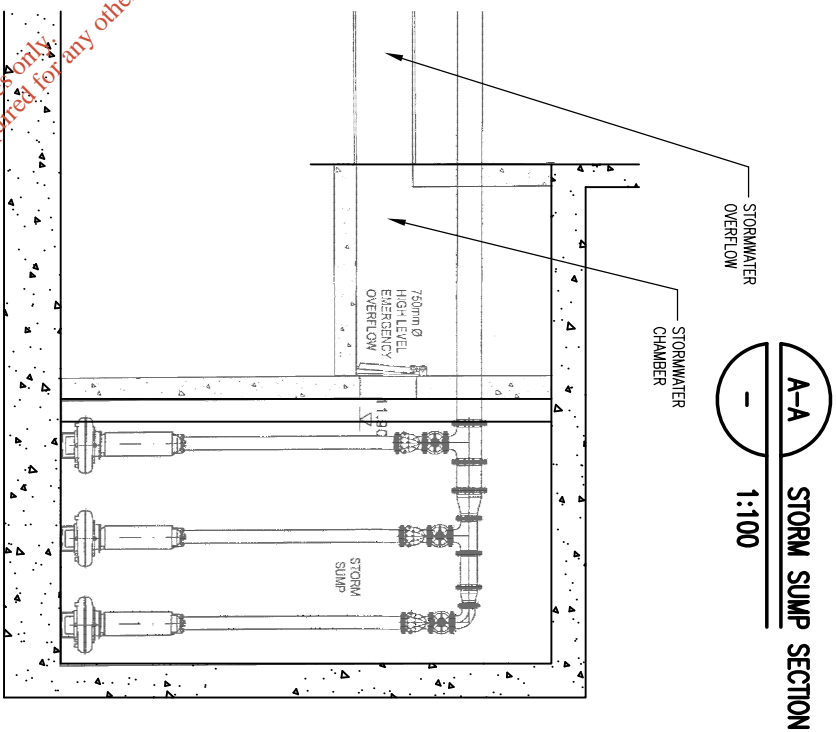
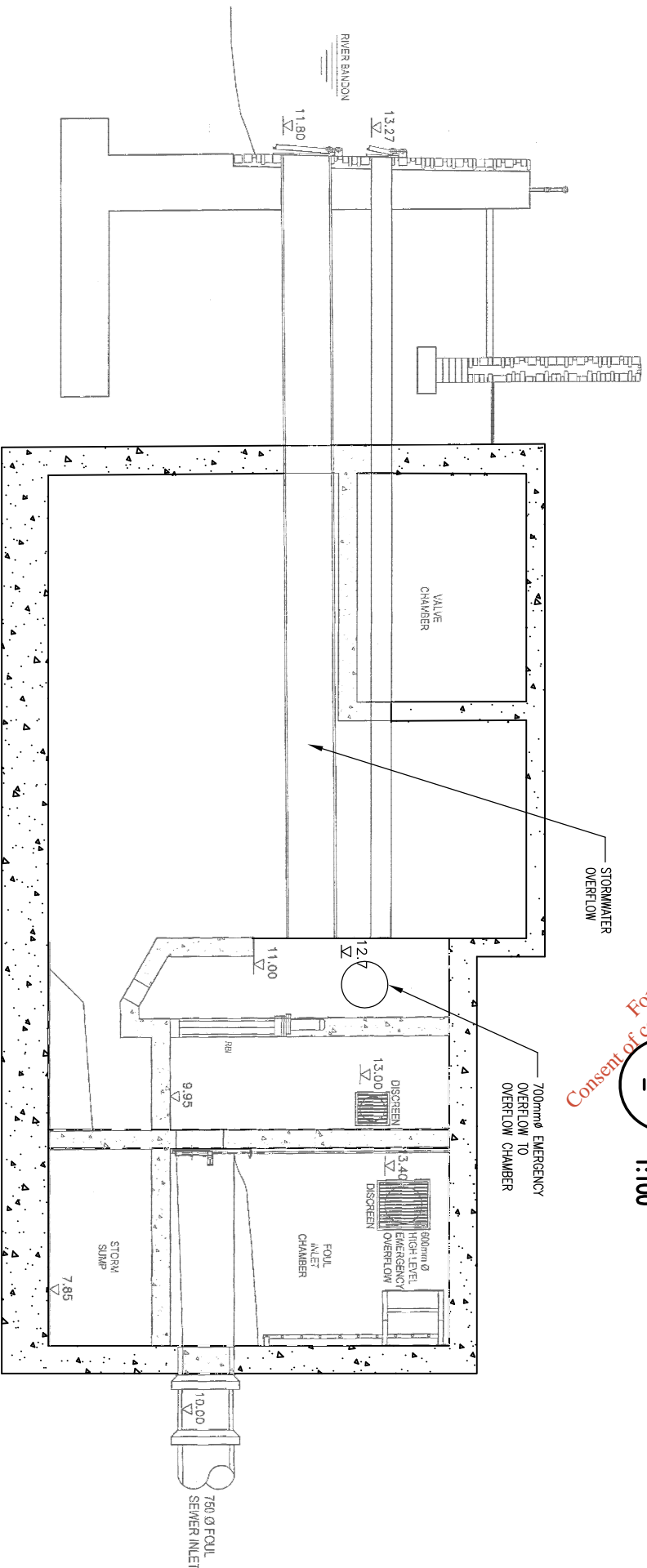
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Preliminary Treatment Works @ Glasslinn Road
1 Km Upstream Of Main Site

Secondary Treatment - Main Site (Glasslinn Road)
Parallel to N71 Bandon To Cork Road



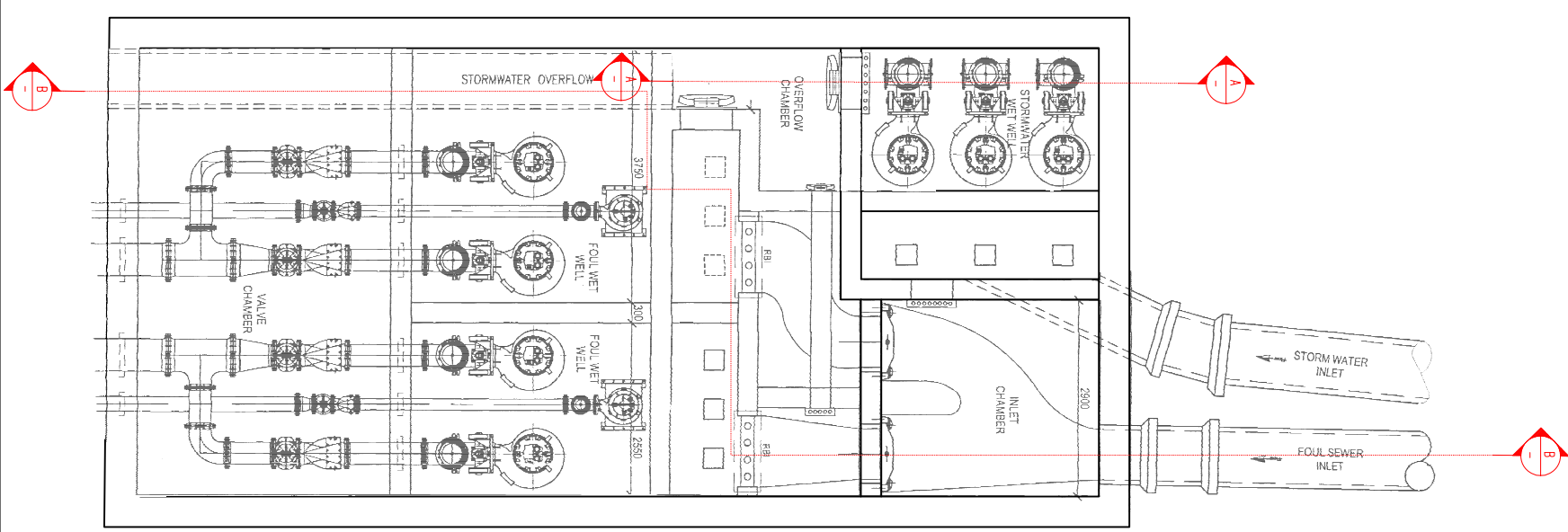
LAYOUT PLAN
SCALE 1:250



A-A STORM SUMP SECTION
1:100

B-B PUMP STATION SECTION
1:100

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**TABLE D.1(i)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Primary Discharge Point)**

Discharge Point Code: SW01BAND

Source of Emission:	Bandon WWTP Primary Discharge
Location:	Ballylangley Bandon
Grid Ref. (12 digit, 6E, 6N):	150411E 055785N
Name of receiving waters:	River Bandon
River Basin District:	South Western River Basin District
Designation of receiving waters:	No designation at discharge location
Flow rate in receiving waters:	<p style="text-align: right;"><u>0.36</u> m³.sec⁻¹ Dry Weather Flow</p> <p style="text-align: right;"><u>0.78</u> m³.sec⁻¹ 95%ile flow</p>

Emission Details:

(i) Volume emitted			
Normal/day	2370 m ³	Maximum/day	9037 m ³
Maximum rate/hour	Not available m ³	Period of emission (avg)	<u>60</u> min/hr <u>24</u> hr/day <u>365</u> day/yr
Dry Weather Flow	Require PE to get DWF m ³ /sec		

TABLE D.1(i)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of the emission (Primary Discharge Point)

Discharge Point Code: SW1BAND

Number	Substance	As discharged	
		Max. daily average	
1	pH	7.1	n/a
2	Temperature	Not available	n/a
3	Electrical Conductivity(@25°C)	498.25	n/a
		Max. daily average (mg/l)	Kg/day
4	Suspended Solids	35	316.3
5	Ammonia (as N)	5	45.2
6	Biochemical Oxygen Demand	25	225.9
7	Chemical Oxygen Demand	125	1129.6
8	Total Nitrogen (as N)	Not applicable	Not applicable
9	Nitrite (as N)	Not applicable	Not applicable
10	Nitrate (as N)	Not applicable	Not applicable
11	Total Phosphorus (as P)	6	54.2
12	Orthophosphate (as P) ^{Note 1}	5	45.2
13	Sulphate (SO ₄)	Not applicable	Not applicable
14	Phenols (sum) ^{Note 2} (ug/l)	Not applicable	Not applicable

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45µm filter paper.

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

TABLE D.1(i)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS

Primary Discharge Point - Characteristics of the emission

Discharge Point Code: SW01BAND

Number	Substance	As discharged		
		Max. daily average (µg/l)*	kg/day*	Kg/year*
1	Atrazine	Not applicable	Not applicable	Not applicable
2	Dichloromethane	Not applicable	Not applicable	Not applicable
3	Simazine	Not applicable	Not applicable	Not applicable
4	Toluene	Not applicable	Not applicable	Not applicable
5	Tributyltin	Not applicable	Not applicable	Not applicable
6	Xylenes	Not applicable	Not applicable	Not applicable
7	Arsenic	Not applicable	Not applicable	Not applicable
8	Chromium**	Not applicable	Not applicable	Not applicable
9	Copper**	Not applicable	Not applicable	Not applicable
10	Cyanide	Not applicable	Not applicable	Not applicable
11	Fluoride	Not applicable	Not applicable	Not applicable
12	Lead **	Not applicable	Not applicable	Not applicable
13	Nickel**	Not applicable	Not applicable	Not applicable
14	Zinc	Not applicable	Not applicable	Not applicable
15	Boron**	Not applicable	Not applicable	Not applicable
16	Cadmium**	Not applicable	Not applicable	Not applicable
17	Mercury	Not applicable	Not applicable	Not applicable
18	Selenium	Not applicable	Not applicable	Not applicable
19	Barium	Not applicable	Not applicable	Not applicable

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45µm filter paper.

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

TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)

Discharge Point Code: **SW2BAND**

Source of Emission:	Bandon WWTP Emergency and Storm Overflow
Location:	Ballylangley Bandon
Grid Ref. (12 digit, 6E, 6N):	150368E 0556902N
Name of receiving waters:	River Bandon
River Basin District:	South Western River Basin District
Designation of receiving waters:	No designation at discharge point
Flow rate in receiving waters:	<div style="text-align: right;"> <u>0.36</u> m³.sec⁻¹ Dry Weather Flow <u>0.78</u> m³.sec⁻¹ 95%ile flow </div>

Emission Details:

(i) Volume emitted - No data available			
Normal/day	m ³	Maximum/day	m ³
Maximum rate/hour	m ³	Period of emission (avg)	_____ min/hr _____ hr/day _____ day/yr
Dry Weather Flow	m ³ /sec		

TABLE D.1(ii)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of the emission (1 table per discharge point)

(Secondary Discharge Point)

Discharge Point Code: **SW2BAND**

Number	Substance	As discharged	
		Max. daily average	
1	pH	Not available	Not available
2	Temperature	Not available	Not available
3	Electrical Conductivity (@25°C)	1000	Not available
		Max. daily average (mg/l)	kg/day
4	Suspended Solids	200	Not available
5	Ammonia (as N)	30	Not available
6	Biochemical Oxygen Demand	200	Not available
7	Chemical Oxygen Demand	400	Not available
8	Total Nitrogen (as N)	55	Not available
9	Nitrite (as N)	Not available	Not available
10	Nitrate (as N)	Not available	Not available
11	Total Phosphorus (as P) ^{Note 1}	Not available	Not available
12	Orthophosphate (as P)	Not available	Not available
13	Sulphate (SO ₄)	Not available	Not available
14	Phenols (sum) ^{Note 2} (ug/l)	Not available	Not available

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45µm filter paper.

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

TABLE D.1(ii)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS

Secondary Discharge Point - Characteristics of the emission (1 table per discharge point)

Discharge Point Code: **SW2BAND**

Number	Substance	As discharged		
		Max. daily average ($\mu\text{g/l}$)	kg/day	kg/year
1	Atrazine	Not available	Not available	Not available
2	Dichloromethane	Not available	Not available	Not available
3	Simazine	Not available	Not available	Not available
4	Toluene	Not available	Not available	Not available
5	Tributyltin	Not available	Not available	Not available
6	Xylenes	Not available	Not available	Not available
7	Arsenic	Not available	Not available	Not available
8	Chromium	Not available	Not available	Not available
9	Copper	Not available	Not available	Not available
10	Cyanide	Not available	Not available	Not available
11	Fluoride	Not available	Not available	Not available
12	Lead	Not available	Not available	Not available
13	Nickel	Not available	Not available	Not available
14	Zinc	Not available	Not available	Not available
15	Boron	Not available	Not available	Not available
16	Cadmium	Not available	Not available	Not available
17	Mercury	Not available	Not available	Not available
18	Selenium	Not available	Not available	Not available
19	Barium	Not available	Not available	Not available

**TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)**

Discharge Point Code: SW3BAND

Source of Emission:	Emergency Overflow
Location:	Clogheenavodig Bandon
Grid Ref. (12 digit, 6E, 6N):	150074E 055292N
Name of receiving waters:	River Bandon
River Basin District:	South Western River Basin District
Designation of receiving waters:	No designation at discharge point
Flow rate in receiving waters:	<p style="text-align: right;">_____ $0.36 \text{ m}^3 \cdot \text{sec}^{-1}$ Dry Weather Flow</p> <p style="text-align: right;">_____ $0.78 \text{ m}^3 \cdot \text{sec}^{-1}$ 95%ile flow</p>

Emission Details:

(i) Volume emitted - No data available			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3	Period of emission (avg)	_____ min/hr _____ hr/day _____ day/yr
Dry Weather Flow	m^3/sec		

TABLE D.1(ii)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of the emission (1 table per discharge point)

(Secondary Discharge Point)

Discharge Point Code: **SW3BAND**

Number	Substance	As discharged	
		Max. daily average	
1	pH	Not available	Not available
2	Temperature	Not available	Not available
3	Electrical Conductivity (@25°C)	1000	Not available
		Max. daily average (mg/l)	kg/day
4	Suspended Solids	Not available	Not available
5	Ammonia (as N)	Not available	Not available
6	Biochemical Oxygen Demand	Not available	Not available
7	Chemical Oxygen Demand	Not available	Not available
8	Total Nitrogen (as N)	Not available	Not available
9	Nitrite (as N)	Not available	Not available
10	Nitrate (as N)	Not available	Not available
11	Total Phosphorus (as P) ^{Note 1}	Not available	Not available
12	Orthophosphate (as P)	Not available	Not available
13	Sulphate (SO ₄)	Not available	Not available
14	Phenols (sum) ^{Note 2} (ug/l)	Not available	Not available

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45µm filter paper.

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

TABLE D.1(ii)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS

Secondary Discharge Point - Characteristics of the emission (1 table per discharge point)

Discharge Point Code: **SW3BAND**

Number	Substance	As discharged		
		Max. daily average ($\mu\text{g/l}$)	kg/day	kg/year
1	Atrazine	Not available	Not available	Not available
2	Dichloromethane	Not available	Not available	Not available
3	Simazine	Not available	Not available	Not available
4	Toluene	Not available	Not available	Not available
5	Tributyltin	Not available	Not available	Not available
6	Xylenes	Not available	Not available	Not available
7	Arsenic	Not available	Not available	Not available
8	Chromium	Not available	Not available	Not available
9	Copper	Not available	Not available	Not available
10	Cyanide	Not available	Not available	Not available
11	Fluoride	Not available	Not available	Not available
12	Lead	Not available	Not available	Not available
13	Nickel	Not available	Not available	Not available
14	Zinc	Not available	Not available	Not available
15	Boron	Not available	Not available	Not available
16	Cadmium	Not available	Not available	Not available
17	Mercury	Not available	Not available	Not available
18	Selenium	Not available	Not available	Not available
19	Barium	Not available	Not available	Not available

**TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)**

Discharge Point Code: SW4BAND

Source of Emission:	Emergency Discharge Watergate Street Pumping Station
Location:	Knockbrogan
Grid Ref. (12 digit, 6E, 6N):	149316E 055103N
Name of receiving waters:	River Bandon
River Basin District:	South Western River Basin District
Designation of receiving waters:	No designation at discharge point
Flow rate in receiving waters:	0.36 m ³ .sec ⁻¹ Dry Weather Flow 0.78 m ³ .sec ⁻¹ 95%ile flow

Emission Details:

(i) Volume emitted - No data available			
Normal/day	m ³	Maximum/day	m ³
Maximum rate/hour	m ³	Period of emission (avg)	_____min/hr _____hr/day _____day/yr
Dry Weather Flow	m ³ /sec		

**TABLE D.1(ii)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of the emission (1 table per discharge point)
(Secondary Discharge Point)**

Discharge Point Code: **SW4BAND**

Number	Substance	As discharged	
		Max. daily average	
1	pH	Not available	Not available
2	Temperature	Not available	Not available
3	Electrical Conductivity (@25°C)	Not available	Not available
		Max. daily average (mg/l)	kg/day
4	Suspended Solids	Not available	Not available
5	Ammonia (as N)	Not available	Not available
6	Biochemical Oxygen Demand	Not available	Not available
7	Chemical Oxygen Demand	Not available	Not available
8	Total Nitrogen (as N)	Not available	Not available
9	Nitrite (as N)	Not available	Not available
10	Nitrate (as N)	Not available	Not available
11	Total Phosphorus (as P) ^{Note 1}	Not available	Not available
12	Orthophosphate (as P)	Not available	Not available
13	Sulphate (SO ₄)	Not available	Not available
14	Phenols (sum) ^{Note 2} (ug/l)	Not available	Not available

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45µm filter paper.

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

TABLE D.1(ii)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS

Secondary Discharge Point - Characteristics of the emission (1 table per discharge point)

Discharge Point Code: SW4BAND

Number	Substance	As discharged		
		Max. daily average ($\mu\text{g/l}$)	kg/day	kg/year
1	Atrazine	Not available	Not available	Not available
2	Dichloromethane	Not available	Not available	Not available
3	Simazine	Not available	Not available	Not available
4	Toluene	Not available	Not available	Not available
5	Tributyltin	Not available	Not available	Not available
6	Xylenes	Not available	Not available	Not available
7	Arsenic	Not available	Not available	Not available
8	Chromium	Not available	Not available	Not available
9	Copper	Not available	Not available	Not available
10	Cyanide	Not available	Not available	Not available
11	Fluoride	Not available	Not available	Not available
12	Lead	Not available	Not available	Not available
13	Nickel	Not available	Not available	Not available
14	Zinc	Not available	Not available	Not available
15	Boron	Not available	Not available	Not available
16	Cadmium	Not available	Not available	Not available
17	Mercury	Not available	Not available	Not available
18	Selenium	Not available	Not available	Not available
19	Barium	Not available	Not available	Not available

**TABLE D.1(iii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Storm Water Overflow) (1 table per discharge point)**

Discharge Point Code: **SW5BAND**

Source of Emission:	Bridge Street Pumping Station Emergency Overflow
Location:	Gully Bandon
Grid Ref. (12 digit, 6E, 6N):	149265E 054933N
Name of receiving waters:	Bridewell River
River Basin District:	South Western River Basin District
Designation of receiving waters:	No designation at discharge point
Flow rate in receiving waters:	<u>No data available</u> m ³ .sec ⁻¹ Dry Weather Flow <u>No data available</u> m ³ .sec ⁻¹ 95%ile flow

Emission Details:

(i) Volume emitted - No data available			
Normal/day	m ³	Maximum/day	m ³
Maximum rate/hour	m ³	Period of emission (avg)	_____min/hr _____hr/day _____day/yr

**TABLE D.1(iii)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of the emission (1 table per discharge point)
(Secondary Discharge Point)**

Discharge Point Code: **SW5BAND**

Number	Substance	As discharged	
		Max. daily average	
1	pH	Not available	
2	Temperature	Not available	
3	Electrical Conductivity (@25°C)	Not available	
		Max. daily average (mg/l)	kg/day
4	Suspended Solids	Not available	Not available
5	Ammonia (as N)	Not available	Not available
6	Biochemical Oxygen Demand	Not available	Not available
7	Chemical Oxygen Demand	Not available	Not available
8	Total Nitrogen (as N)	Not available	Not available
9	Nitrite (as N)	Not available	Not available
10	Nitrate (as N)	Not available	Not available
11	Total Phosphorus (as P) ^{Note 1}	Not available	Not available
12	Orthophosphate (as P)	Not available	Not available
13	Sulphate (SO ₄)	Not available	Not available
14	Phenols (sum) ^{Note 2} (ug/l)	Not available	Not available

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45µm filter paper.

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

TABLE D.1(iii)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS

Secondary Discharge Point - Characteristics of the emission (1 table per discharge point)

Discharge Point Code: **SW5BAND**

Number	Substance	As discharged		
		Max. daily average (µg/l)	kg/day	kg/year
1	Atrazine	Not available	Not available	Not available
2	Dichloromethane	Not available	Not available	Not available
3	Simazine	Not available	Not available	Not available
4	Toluene	Not available	Not available	Not available
5	Tributyltin	Not available	Not available	Not available
6	Xylenes	Not available	Not available	Not available
7	Arsenic	Not available	Not available	Not available
8	Chromium	Not available	Not available	Not available
9	Copper	Not available	Not available	Not available
10	Cyanide	Not available	Not available	Not available
11	Fluoride	Not available	Not available	Not available
12	Lead	Not available	Not available	Not available
13	Nickel	Not available	Not available	Not available
14	Zinc	Not available	Not available	Not available
15	Boron	Not available	Not available	Not available
16	Cadmium	Not available	Not available	Not available
17	Mercury	Not available	Not available	Not available
18	Selenium	Not available	Not available	Not available
19	Barium	Not available	Not available	Not available

**TABLE D.1 iii (a): EMISSIONS TO SURFACE/GROUND WATERS
(Storm Water Overflow) (1 table per discharge point)**

Discharge Point Code: SW6BAND

Source of Emission:	Storm Overflow
Location:	Bandon
Grid Ref. (12 digit, 6E, 6N):	149542E 055150N
Name of receiving waters:	Bandon River
River Basin District:	South Western River Basin District
Designation of receiving waters:	No designation at discharge point
Flow rate in receiving waters:	<p style="text-align: right;">_____ 0.025 m³.sec⁻¹ Dry Weather Flow</p> <p style="text-align: right;">_____ 0.05 m³.sec⁻¹ 95%ile flow</p>

Emission Details:

(i) Volume emitted - No data available			
Normal/day	m ³	Maximum/day	m ³
Maximum rate/hour	m ³	Period of emission (avg)	_____min/hr _____hr/day _____day/yr

**TABLE D.1 iii (a): EMISSIONS TO SURFACE/GROUND WATERS
(Storm Water Overflow) (1 table per discharge point)**

Discharge Point Code: **SW7BAND**

Source of Emission:	Storm Overflow
Location:	Bandon
Grid Ref. (12 digit, 6E, 6N):	149145E 055124N
Name of receiving waters:	Bandon River
River Basin District:	South Western River Basin District
Designation of receiving waters:	No designation at discharge point
Flow rate in receiving waters:	<p style="text-align: right;">_____ <u>0.025</u> m³.sec⁻¹ Dry Weather Flow</p> <p style="text-align: right;">_____ <u>0.05</u> m³.sec⁻¹ 95%ile flow</p>

Emission Details:

(i) Volume emitted - No data available			
Normal/day	m ³	Maximum/day	m ³
Maximum rate/hour	m ³	Period of emission (avg)	_____min/hr _____hr/day _____day/yr

**TABLE D.1 iii (a): EMISSIONS TO SURFACE/GROUND WATERS
(Storm Water Overflow) (1 table per discharge point)**

Discharge Point Code: **SW8BAND**

Source of Emission:	Storm Overflow
Location:	Bandon
Grid Ref. (12 digit, 6E, 6N):	149732E 055124N
Name of receiving waters:	Bandon River
River Basin District:	South Western River Basin District
Designation of receiving waters:	No designation at discharge point
Flow rate in receiving waters:	<div style="text-align: right;"> _____ 0.025 m³.sec⁻¹ Dry Weather Flow _____ 0.05 m³.sec⁻¹ 95%ile flow </div>

Emission Details:

(i) Volume emitted - No data available			
Normal/day	m ³	Maximum/day	m ³
Maximum rate/hour	m ³	Period of emission (avg)	_____min/hr _____hr/day _____day/yr

**TABLE D.1 iii (a): EMISSIONS TO SURFACE/GROUND WATERS
(Storm Water Overflow) (1 table per discharge point)**

**TABLE D.1 iii (a): EMISSIONS TO SURFACE/GROUND WATERS
(Storm Water Overflow) (1 table per discharge point)**

Discharge Point Code: **SW10BAND**

Source of Emission:	Storm Overflow
Location:	Bandon
Grid Ref. (12 digit, 6E, 6N):	149244E 055045N
Name of receiving waters:	Bandon River
River Basin District:	South Western River Basin District
Designation of receiving waters:	No designation at discharge point
Flow rate in receiving waters:	<p style="text-align: right;">_____ 0.025 m³.sec⁻¹ Dry Weather Flow</p> <p style="text-align: right;">_____ 0.05 m³.sec⁻¹ 95%ile flow</p>

Emission Details:

(i) Volume emitted - No data available			
Normal/day	m ³	Maximum/day	m ³
Maximum rate/hour	m ³	Period of emission (avg)	_____ min/hr _____ hr/day _____ day/yr

**TABLE D.1 iii (a): EMISSIONS TO SURFACE/GROUND WATERS
(Storm Water Overflow) (1 table per discharge point)**

Discharge Point Code: **SW11BAND**

Source of Emission:	Storm Overflow
Location:	Bandon
Grid Ref. (12 digit, 6E, 6N):	149951E 054996N
Name of receiving waters:	Bandon River
River Basin District:	South Western River Basin District
Designation of receiving waters:	No designation at discharge point
Flow rate in receiving waters:	<p style="text-align: right;"><u>0.025</u> m³.sec⁻¹ Dry Weather Flow</p> <p style="text-align: right;"><u>0.05</u> m³.sec⁻¹ 95%ile flow</p>

Emission Details:

(i) Volume emitted - No data available			
Normal/day	m ³	Maximum/day	m ³
Maximum rate/hour	m ³	Period of emission (avg)	_____ min/hr _____ hr/day _____ day/yr

		(avg)	
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**TABLE D.1 iii (a): EMISSIONS TO SURFACE/GROUND WATERS
(Storm Water Overflow) (1 table per discharge point)**

Discharge Point Code: **SW13BAND**

Source of Emission:	Storm Overflow
Location:	Bridewell River
Grid Ref. (12 digit, 6E, 6N):	149116E 054830N
Name of receiving waters:	Bridewell River
River Basin District:	South Western River Basin District
Designation of receiving waters:	No designation at discharge point
Flow rate in receiving waters:	_____ 0.025 m ³ .sec ⁻¹ Dry Weather Flow _____ 0.05 m ³ .sec ⁻¹ 95%ile flow

Emission Details:

(i) Volume emitted - No data available			
Normal/day	m ³	Maximum/day	m ³
Maximum rate/hour	m ³	Period of emission (avg)	_____ min/hr _____ hr/day _____ day/yr

**TABLE D.1 iii (a): EMISSIONS TO SURFACE/GROUND WATERS
(Storm Water Overflow) (1 table per discharge point)**

Discharge Point Code: SW14BAND

Source of Emission:	Storm Overflow
Location:	Bridewell River
Grid Ref. (12 digit, 6E, 6N):	148819E 054959N
Name of receiving waters:	Bridewell River
River Basin District:	South Western River Basin District
Designation of receiving waters:	No designation at discharge point
Flow rate in receiving waters:	<p>_____ 0.025 m³.sec⁻¹ Dry Weather Flow</p> <p>_____ 0.05 m³.sec⁻¹ 95%ile flow</p>

Emission Details:

(i) Volume emitted - No data available			
Normal/day	m ³	Maximum/day	m ³
Maximum rate/hour	m ³	Period of emission (avg)	_____min/hr _____hr/day _____day/yr

**TABLE D.1 iii (a): EMISSIONS TO SURFACE/GROUND WATERS
(Storm Water Overflow) (1 table per discharge point)**

Discharge Point Code: **SW15BAND**

Source of Emission:	Storm Overflow
Location:	Bridewell River
Grid Ref. (12 digit, 6E, 6N):	148552E 054267N
Name of receiving waters:	Bridewell River
River Basin District:	South Western River Basin District
Designation of receiving waters:	No designation at discharge point
Flow rate in receiving waters:	<p style="text-align: right;">_____ $0.025 \text{ m}^3.\text{sec}^{-1}$ Dry Weather Flow</p> <p style="text-align: right;">_____ $0.05 \text{ m}^3.\text{sec}^{-1}$ 95%ile flow</p>

Emission Details:

(i) Volume emitted - No data available			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3	Period of emission (avg)	_____ min/hr _____ hr/day _____ day/yr

Attachment E4 Bandon Outlet-Discharge

Sample Date	3-Apr-08	22-May-08	4-Jun-08	17-Jul-08		17-Jan-07	7-Feb-07	12-Apr-07	3-May-07	13-Jun-07	4-Jul-07	9-Aug-07	6-Sep-07	14-Nov-07
Sample	Effluent	effluent	effluent	Effluent	Average	effluent	effluent	effluent	effluent	effluent	effluent	effluent	effluent	effluent
Flow M ³ /Day	1587	963	1535	1253	1334.5	*	*	*	*	*	*	2475	*	*
pH	*	7	7.3	7	7.1	7.2	7.2	7.4	7	7.2	7.1	6.9	6.8	7.1
Temperature °C	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Cond 20°C	475	432	537	549	498.25	*	*	*	*	*	*	*	*	*
SS mg/L	13	129	8	9	39.75	8	13	10	8	14	5	16	11	17
NH ₃ mg/L	*	0.2	0.2	0.5	0.3	*	*	*	*	*	0.5	1	1	1.7
BOD mg/L	12.1	24.1	7.81	7.7	12.9275	2.3	16	7.4	6.6	7.4	7.45	10	13	11.94
COD mg/L	57	134	37	41	67.25	23	40	37	43	<21	34	46	35	58
TN mg/L	24.3	95	*	27.5	48.93	6.8	24.1	18	31.6	19	*	36	*	56
Nitrite mg/L	*	*	*	0.32	0.32	*	*	*	*	*	*	*	*	*
Nitrate mg/L	*	*	*	28.5	28.5	*	*	*	*	*	*	*	*	*
TP mg/L	1.85	4.3	*	4.23	3.46	0.94	3.58	2.38	2.45	4.5	2.88	4.33	2.44	4.38
O-PO ₄ -P mg/L	4.04	3.03	3.64	3.4	3.53	*	*	*	*	*	*	3.63	*	4.03
SO ₄ mg/L	*	*	*	56.4	56.4	*	*	*	*	*	*	44.3	*	57.5
Phenols µg/L	*	*	*	<0.1	<0.1	*	*	*	*	*	*	*	*	*
Atrazine µg/L	*	*	*	<0.01	<0.01	*	*	*	*	*	*	*	*	*
Dichloromethane	*	*	*	<1.0	<1.0	*	*	*	*	*	*	*	*	*
Simazine µg/L	*	*	*	<0.01	<0.01	*	*	*	*	*	*	*	*	*
Toluene µg/L	*	*	*	<1.0	<1.0	*	*	*	*	*	*	*	*	*
Tributyltin µg/L	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Xylenes µg/L	*	*	*	<1.0	<1.0	*	*	*	*	*	*	*	*	*
Arsenic µg/L	*	*	*	2	2	*	*	*	*	*	*	*	*	*
Chromium mg/L	*	<0.02	<0.02	*	<0.02	*	*	*	*	*	*	*	<0.02	<0.02
Copper mg/L	*	<0.02	<0.02	*	<0.02	*	*	*	*	*	*	*	<0.02	<0.02
Cyanide µg/L	*	*	*	<5.0	5	*	*	*	*	*	*	*	*	*
Fluoride	*	*	*	260	260	*	*	*	*	*	*	*	*	*
Lead mg/L	*	<0.02	0.023	*	0.023	*	*	*	*	*	*	*	<0.02	0.081
Nickel mg/L	*	<0.02	<0.02	*	<0.02	*	*	*	*	*	*	*	<0.02	<0.02
Zinc mg/L	*	0.386	0.073	*	0.230	*	*	*	*	*	*	*	0.047	0.061
Boron mg/L	*	<0.02	0.038	*	0.038	*	*	*	*	*	*	*	<0.02	0.06
Cadmium mg/L	*	<0.02	<0.02	*	<0.02	*	*	*	*	*	*	*	<0.02	<0.02
Mercury µg/L	*	*	*	0.3	0.3	*	*	*	*	*	*	*	*	*
Selenium µg/L	*	*	*	2	2	*	*	*	*	*	*	*	*	*
Barium mg/L	*	0.101	0.026	*	0.064	*	*	*	*	*	*	*	<0.02	<0.02

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Attachment E4 Bandon Inlet-to Waste Water Plant

Sample Date	9/08/207	03/04/2008	04/06/2008	17/07/2008		
Sample	influent	Influent	influent	Influent	Average	
Flow M ³ /Day	*	*	1574	*	1574	
pH	*	*	*	7.6	7.6	
Temperature °C	*	*	*	*	*	
Cond 20°C	*	633	493	723	616.3333	
SS mg/L	*	*	*	276	276	
NH ₃ mg/L	*	*	20.5	46.8	33.65	
BOD mg/L	*	*	*	261	261	
COD mg/L	428	510	472	233	405	
TN mg/L	*	*	*	64	64	
Nitrite mg/L	*	*	*	*	*	
Nitrate mg/L	*	*	*	*	*	
TP mg/L	*	6.43	*	8.75	7.59	
O-PO4-P mg/L	4.32	3.34	2.87	5.78	3.996667	
SO4 mg/L	*	*	*	48.4	48.4	
Phenols µg/L	*	*	*	<0.1	<0.1	
Atrazine µg/L	*	*	*	<0.01	<0.01	
Dichloromethane µg/L	*	*	*	<1.0	<1.0	
Simazine µg/L	*	*	*	<0.01	<0.01	
Toluene µg/L	*	*	*	<1.0	<1.0	
Tributyltin µg/L	*	*	*	*	*	
Xylenes µg/L	*	*	*	<1.0	<1.0	
Arsenic µg/L	*	*	*	<0.96	<0.96	
Chromium mg/L	<0.02	*	<0.02	*	<0.02	
Copper mg/L	0.045	*	0.021	*	0.021	
Cyanide µg/L	*	*	*	<5	<5	
Fluoride	*	*	*	*	*	
Lead mg/L	<0.02	*	<0.02	*	<0.02	
Nickel mg/L	<0.02	*	<0.02	*	<0.02	
Zinc mg/L	0.107	*	0.139	*	0.139	
Boron mg/L	*	*	0.175	*	0.175	
Cadmium mg/L	<0.02	*	<0.02	*	<0.02	
Mercury µg/L	*	*	*	0.4	0.4	
Selenium µg/L	*	*	*	1	1	
Barium mg/L	<0.02	*	0.035	*	0.035	

Sample Date	19/06/2008
Sample	storm Overflow
Flow M ³ /Day	*
pH	*
Temperature °C	*
Cond 20°C	533
SS mg/L	103
NH ₃ mg/L	24.8
BOD mg/L	147
COD mg/L	339
TN mg/L	55

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Attachment E4 Bandon Upstream-Table E

Sample Date	03/04/2008	22/05/2008	17/07/2008	Average	17-Jan-07	7-Feb-07	12-Apr-07	3-May-07	13-Jun-07	4-Jul-07	9-Aug-07	6-Sep-07	14-Nov-07
Sample	River	River	River	Average	river	river	river	river	river	river	river	river	river
Flow M ³ /Day	*	*	*	*	*	*	*	*	*	*	*	*	*
pH	*	7.5	7.9	7.7	7.6	7.6	*	*	8	*	7.7	8.2	7.8
Temperature °C	*	*	*	*	*	*	*	*	*	*	*	*	*
Cond 20°C	210	163.5	239	204.1667	*	*	*	*	*	*	*	*	*
SS mg/L	5	23	<2.5	14	6	7	13	74	6	5	,2.5	<2.5	<2.5
NH ₃ mg/L	<0.1	0.1	<0.1	0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BOD mg/L	1.42	4.78	2.1	2.766667	<1	<1	1.2	6	2	1.8	1.8	1.5	2.06
COD mg/L	*	*	<21	<21	*	*	*	*	<21	*	*	*	<21
TN mg/L	*	*	*	*	4.1	13.5	5.4	5.2	*	<1	5.3	3.5	2.8
Nitrite mg/L	*	*	0.0047	0.0047	*	*	*	*	*	*	*	*	*
Nitrate mg/L	*	*	2.86	2.86	*	*	*	*	*	*	*	*	*
TP mg/L	<0.02	<0.02	<0.02	<0.02	<0.2	<0.2	<0.2	0.28	<0.2	<0.2	<0.2	<0.2	<0.2
O-PO ₄ -P mg/L	<0.05	0.05	<0.05	0.05	*	*	*	*	*	<005	<0.05	<0.05	<0.05
SO ₄ mg/L	*	*	<30	<30	*	*	*	*	*	<30	<30	<30	<30
Phenols µg/L	*	*	<0.1	<0.1	*	*	*	*	*	*	*	*	*
Atrazine µg/L	*	*	<0.01	<0.01	*	*	*	*	*	*	*	*	*
Dichloromethane	*	*	<1.0	<1.0	*	*	*	*	*	*	*	*	*
Simazine µg/L	*	*	<0.01	<0.01	*	*	*	*	*	*	*	*	*
Toluene µg/L	*	*	<1.0	<1.0	*	*	*	*	*	*	*	*	*
Tributyltin µg/L	*	*	*	*	*	*	*	*	*	*	*	*	*
Xylenes µg/L	*	*	<1.0	<1.0	*	*	*	*	*	*	*	*	*
Arsenic µg/L	*	*	<0.96	<0.96	*	*	*	*	*	*	*	*	*
Chromium mg/L	<0.02	*	<0.02	<0.02	*	*	*	*	*	*	*	<0.02	<0.02
Copper mg/L	<0.02	*	<0.02	<0.02	*	*	*	*	*	*	*	<0.02	<0.02
Cyanide µg/L	*	*	<5	<5	*	*	*	*	*	*	*	*	*
Fluoride	*	*	<100	<100	*	*	*	*	*	*	*	*	*
Lead mg/L	<0.02	*	<0.02	<0.02	*	*	*	*	*	*	*	<0.02	<0.02
Nickel mg/L	<0.02	*	<0.02	<0.02	*	*	*	*	*	*	*	<0.02	<0.02
Zinc mg/L	<0.02	*	<0.02	<0.02	*	*	*	*	*	*	*	<0.02	<0.02
Boron mg/L	<0.02	*	<0.02	<0.02	*	*	*	*	*	*	*	*	<0.02
Cadmium mg/L	<0.02	*	<0.02	<0.02	*	*	*	*	*	*	*	<0.02	<0.02
Mercury µg/L	*	*	<0.2	<0.2	*	*	*	*	*	*	*	*	*
Selenium µg/L	*	*	1	1	*	*	*	*	*	*	*	*	*
Barium mg/L	<0.02	*	0.022	0.022	*	*	*	*	*	*	*	<0.02	<0.02

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Attachment E4 Bandon Downstream-Table E

Sample Date	3-Apr-08	22-May-08	17-Jul-08	Average	17-Jan-07	7-Feb-07	12-Apr-07	3-May-07	13-Jun-07	4-Jul-07	9-Aug-07	6-Sep-07	14-Nov-07
Sample	River	River	River	Average	river	river	river	river	river	river	river	river	river
Flow M ³ /Day	*	*	*	*	*	*	*	*	*	*	*	*	*
pH	*	7.4	7.9	7.65	7.4	7.5	*	*	8.2	*	7.7	8.6	7.8
Temperature °C	*	*	*	*	*	*	*	*	*	*	*	*	*
Cond 20°C	209	147.8	237	197.9333	*	*	*	*	*	*	*	*	*
SS mg/L	5	42	<2.5	23.5	*	*	*	*	*	*	*	*	<2.5
NH ₃ mg/L	<0.1	0.1	<0.1	0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BOD mg/L	2.33	5.86	<1.0	4.095	<1	<1	1.2	2	2	2.7	<1	1.1	1.74
COD mg/L	*	*	<21	<21	*	*	*	*	*	*	*	*	<21
TN mg/L	*	15	6.4	10.7	4.6	10.6	5.2	4.5	*	*	9.8	5.1	4.1
Nitrite mg/L	*	*	0.0135	0.0135	*	*	*	*	*	*	*	*	*
Nitrate mg/L	*	*	3.22	3.22	*	*	*	*	*	*	*	*	*
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	<0.2	<0.2
O-PO ₄ -P mg/L	<0.05	0.06	<0.05	0.06	*	*	*	*	*	<0.05	<0.05	<0.05	<0.05
SO ₄ mg/L	*	*	<30	<30	*	*	*	*	*	<30	<30	<30	<30
Phenols µg/L	*	*	<0.1	<0.1	*	*	*	*	*	*	*	*	*
Atrazine µg/L	*	*	<0.01	<0.01	*	*	*	*	*	*	*	*	*
Dichloromethane	*	*	<1.0	<1.0	*	*	*	*	*	*	*	*	*
Simazine µg/L	*	*	<0.01	<0.01	*	*	*	*	*	*	*	*	*
Toluene µg/L	*	*	<1.0	<1.0	*	*	*	*	*	*	*	*	*
Tributyltin µg/L	*	*	*	*	*	*	*	*	*	*	*	*	*
Xylenes µg/L	*	*	<1.0	<1.0	*	*	*	*	*	*	*	*	*
Arsenic µg/L	*	*	<0.96	<0.96	*	*	*	*	*	*	*	*	*
Chromium mg/L	<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
Cyanide µg/L	*	*	<5	<5	*	*	*	*	*	*	*	*	*
Fluoride	*	*	50	50	*	*	*	*	*	*	*	*	*
Lead mg/L	<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
Zinc mg/L	<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
Cadmium mg/L	<0.02	<0.02	<0.02	<0.02	*	*	*	*	*	*	*	<0.02	<0.02
Mercury µg/L	*	*	<0.2	<0.2	*	*	*	*	*	*	*	*	*
Selenium µg/L	*	*	1	1	*	*	*	*	*	*	*	*	*
Barium mg/L	<0.02	<0.02	<0.02	<0.02	*	*	*	*	*	*	*	<0.02	<0.02

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Project	Location	Location Reference	Sample Template	Sample Reference	Sample Date	Comment	Molybdate	Ammonium	Nitrate	Nitrite	Appearance	Temperature	Dissolved	Dissolved	pH	BOD	Colour	Chloride	Conductivity @ 20 °C	Hardness	Alkalinity	Copper (Dissolved)	Total Zinc	Mg	Ca
							Reactive Phosphorus						Oxygen	Oxygen % Saturation											
							P	NH4	NO3	NO2			O2	150	Varies	Varies	Varies	--	--	--	--	--	--	--	
							Max.	Varies	Varies	Varies	0.05	--	--	15	150	Varies	Varies	Varies	--	--	--	--	--	--	
							Target	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
							Min.	--	--	--	--	--	5	50	Varies	--	--	--	--	--	--	--	--	--	--
Project	Location	Location Reference	Sample Template	Sample Reference	Sample Date	Comment	mg/l	mg/l	mg/l	mg/l	Descriptive	Degrees C	mg/l	% O2	pH units	mg/l	Hazen	mg/l	µS/cm	mg/l	mg/l	mg/l	mg/l	mg/l	
Bandon	Baillbuidhe Br.	20B020300	WFD Operational	2007/0057	10-Jan-07			0.086	8.5	0.018					6.8	< 1	56		100	29	18				
Bandon	Murragh (desert station)		WFD Surveillance	2007/0056	10-Jan-07			0.095	23.4	0.057					7.6	< 1	44		192	76	52				
Bandon	Murragh (desert station)		WFD Surveillance	2007/0292	20-Feb-07		0.044	0.083	9.5	0.044		8.3	10.9	94	7	1.6	100	17	130						
Bandon	Baillbuidhe Br.	20B020300	Salmonoid	2007/0293	20-Feb-07		0.022	0.051	6.6	0.02		7.5	11.3	96	7	1	49	16.4	104		20	0.001	0.001		
Bandon	Innishannon	20B020900	WFD Operational	2007/0553	21-Mar-07		0.02	0.065	20.6	0.04	clear	7	10.4	83	7.8	0.7		24.6	204	82	46				
Bandon	Baillbuidhe Br.	20B020300	WFD Operational	2007/0557	21-Mar-07		0.012	0.039	9.1	0.014	clear	6.6	10.2	84	7.4	0.2		18.6	124	42	28				
Bandon	Enniskean B	20B020550	WFD Operational	2007/0555	21-Mar-07		0.014	0.067	12.1	0.039	clear	6.8	9.8	82	7.5	0.5		24.5	184	57	42				
Bandon	Manch Br.	20B020400	WFD Operational	2007/0567	21-Mar-07		0.007	< 0.026	11.1	0.013	clear	6.8	10.8	88	7.4	0.3		19.4	131	48	32				
Bandon	Murragh (desert station)		WFD Surveillance	2007/0556	21-Mar-07		0.025	0.03	24	0.021	clear	7	10.4	86	8	0.2		18.4	197	88	50				
Bandon	Baxters Br.	20B020700	WFD Operational	2007/0554	21-Mar-07		0.016	0.046	15.9	0.034	clear	7	10.2	80	7.5	0.4		24.1	193	68	54				
Bandon	Murragh (desert station)		WFD Surveillance	2007/0740	19-Apr-07		0.024	0.033	13.1	0.063	clear	15.1	12.8	127	7.9	1.7	20		336	84	74				
Bandon	Murragh (desert station)		WFD Surveillance	2007/0893	15-May-07		0.04	0.11	9.4	0.115	clear	15.2	9.6	96	7.5	1.2	31	36	254	69	56				
Bandon	Foot Br.Ban	20B020770	WFD Surveillance	2007/1271	05-Jul-07		0.028	0.052		0.032		14.7	9.3	93	7.6	0.8		31.3	223	63	48				
Bandon	Baxters Br.	20B020700	WFD Operational	2007/1270	05-Jul-07		0.021	0.028		0.027		14.7	9.4	94	7.6	0.8		30.8	224	72	52				
Bandon	1.5km D/Sbandon Br.	20B020800	WFD Operational	2007/1269	05-Jul-07		0.086	0.061		0.044		17.9	12.5	133	7.8	0.9		28.9	224	72	48				
Bandon	Enniskean B	20B020550	WFD Operational	2007/1272	05-Jul-07		0.028	0.095		0.031		14.8	9.2	92	7.6	1.1		31.6	220	56	44				
Bandon	Baillbuidhe Br.	20B020300	WFD Operational	2007/1273	05-Jul-07		0.011	0.098		0.037		14.6	10.1	101	7.3	0.9		16.8	117	43	28				
Bandon	Innishannon	20B020900	WFD Operational	2007/1268	05-Jul-07		0.048	< 0.026		0.04		17.8	12.8	137	7.8	0.9		26.4	216	73	48				
Bandon	Murragh (desert station)		WFD Surveillance	2007/1494	02-Aug-07		0.043	< 0.026	16.8	< 0.013		15.3	8.9	90	7.8	< 1	27		204	96	54				
Bandon	Murragh (desert station)		WFD Surveillance	2007/1810	05-Sep-07		0.033	< 0.026	17.3	< 0.013		14.3	11.6	113	7.7	0.3	20		211	88	56				
Bandon	Innishannon	20B020900	WFD Operational	2007/2036	03-Oct-07		0.082	0.167		0.092		14.9	11	109	7.9	1.7		30.2	246	92	54				
Bandon	1.5km D/Sbandon Br.	20B020800	WFD Operational	2007/2037	03-Oct-07		0.135	0.116		0.157		15.2	11.1	110	7.7	1.7		33.6	261	79	54				

Bandon	Murragh (desert station)		WFD Surveillance	2007/2039	03-Oct-07	0.025	0.205		0.107		14.2	8.4	84	7.4	0.6		41.8	292	72	60		
Bandon	Baillbuidhe Br.	20B020300	WFD Operational	2007/2041	03-Oct-07	0.038	0.167		0.078		14.1	9.6	94	7.2	0.7		17.9	131	54	32		
Bandon	Baxters Br.	20B020700	WFD Operational	2007/2038	03-Oct-07	0.027	0.027		0.069		14.4	8.9	88	7.5	0.7		37.1	265	75	62		
Bandon	Enniskean B	20B020550	WFD Operational	2007/2040	03-Oct-07	0.04	0.425		0.112		14.7	9.1	90	7.4	1.7		44.7	304	76	66		
Bandon	Murragh (desert station)		WFD Surveillance	2007/2298	01-Nov-07	0.024	0.063	8.2	0.031	clear	12.3			7.6	1.8		22.2	174	26	42		
Bandon	Murragh (desert station)		WFD Surveillance	2007/2493	27-Nov-07	0.05	0.06	10	0.04		9.4	8.4	72	7.7	0.4	20		215	69	58		
Bandon	Baxters Br.	20B020700	WFD Operational	2007/2571	05-Dec-07	0.031	0.084	11	0.039		10.4	10.7	95	7.3	0.4	66	20.7	147	59	30		
Bandon	1.5km D/Sbandon Br.	20B020800	WFD Operational	2007/2570	05-Dec-07	0.04	0.063	11.6	0.045		10.6	10.8	99	7.4	1.4	70	21	151	60	34		
Bandon	Enniskean B	20B020550	WFD Operational	2007/2572	05-Dec-07	0.023	0.058	8.8	0.029		10.5	10.3	94	7.2	1	81	20.9	133	51	34		
Bandon	Innishannon	20B020900	WFD Operational	2007/2569	05-Dec-07	0.038	0.08	12.4	0.043		10.6	10.8	98	7.4	0.7	76	21.6	158	62	38		
Bandon	Murragh (desert station)		WFD Surveillance	2008/0007	03-Jan-08	0.034	0.105	10.3	0.038	Good	7.3	9	76	7.4	< 0.1		24.1	148	61	28		
Bandon	Murragh (desert station)		WFD Surveillance	2008/0248	21-Feb-08	0.021	0.07	18	0.029	clear	8.4	11	95	7.6	0.5	11		207	69	56	3.5	22
Bandon	Baxters Br.	20B020700	WFD Operational	2008/0350	05-Mar-08					clear	7.4	10.5	85	7.6	0.5	17		204	61	50	3.1	19
Bandon	1.5km D/Sbandon Br.	20B020800	WFD Operational	2008/0349	05-Mar-08					clear	8.2	13.1	109	7.9	1	24		216	67	48	3.7	21
Bandon	Enniskean B	20B020550	WFD Operational	2008/0351	05-Mar-08					clear	7.3	10.7	87	7.4	0.7	25		207	54	48	2.8	17
Bandon	Innishannon	20B020900	WFD Operational	2008/0348	05-Mar-08					clear	8	12	100	8.3	0.5	18		209	68	48	3.8	21
Bandon	Baillbuidhe Br.	20B020300	WFD Operational	2008/0488	26-Mar-08	< 0.006	< 0.026	9.1	0.016		8.7	12.6	110	7.5	< 0.1	11		137	47	30		
Bandon	Murragh (desert station)		WFD Operational	2008/0487	26-Mar-08	0.031	0.028	14.1	0.026		9	11.9	105	7.8	0.6	17		233	74	56		
Bandon	Murragh (desert station)		WFD Surveillance	2008/0570	03-Apr-08		0.068	13	0.024		10.5	10.3	91	7.5	0.8	24	29.3	206	59	52		
Bandon	bridge in bandon town		Phosphate Regs	2008/0857	07-May-08	0.02				0.131	clear	15.1	9					206		52		
Bandon	Murragh (desert station)		WFD Surveillance	2008/0853	07-May-08	0.018		9	0.113	clear	14.3	7.9	76	7.5	1.9		30.8	229	24	58		
Bandon	Baxters Br.	20B020700	WFD Operational	2008/0854	07-May-08	0.019		9.7	0.13	clear	15.3	8.8	88	7.6	1.3		28.3	211	11	56		
Bandon	Enniskean B	20B020550	WFD Operational	2008/0855	07-May-08	0.013		7.9	0.068	clear	14.1	7.8	77	7.4	1.2		27.9	199	2	54		
Bandon	1.5km D/Sbandon Br.	20B020800	WFD Operational	2008/0856	07-May-08	0.032		11.3	0.135	clear	15.2	9.4	93	7.7	1.6		30.3	214	76	52		
Bandon	bridge in bandon town		Phosphate Regs	2008/1143	04-Jun-08	0.024	< 0.026			0.072												
Bandon	Ballineen B	20B020500	Phosphate Regs	2008/1149	04-Jun-08	0.019	0.102		0.039													
Bandon	Enniskean B	20B020550	WFD Operational	2008/1141	04-Jun-08	0.049	0.279	9.7	0.083	clear	15.8	8.7	88	7.4	2.7		34.6	273	66	74		
Bandon	Br. D/S Bandon (Driscolls Br.)		Phosphate Regs	2008/1144	04-Jun-08	0.037	0.026			0.084												

Bandon	Baillbuidhe Br.	20B020300	WFD Operational	2008/1140	04-Jun-08	0.016	0.047	7.2	0.053	weeds	14.5	9.7	96	7.2	0.7	18.1	140	52	38
Bandon	Long Br.		Phosphate Regs	2008/1145	04-Jun-08	< 0.006	< 0.026		0.017										
Bandon	Murragh (desert station)		WFD Surveillance	2008/1139	04-Jun-08	0.066	0.066	12.4	0.099	clear	15.1	8.5	85	7.4	1	32.8	266	64	68
Bandon	Innishannon Br. D/S Bandon	20B020900	WFD Operational	2008/1142	04-Jun-08	0.061	0.071	17.4	0.091	clear	16.8	10.3	106	7.9	2.6	31.1	256	60	74
Bandon	(Driscolls Br.) bridge in bandon town		WFD Operational	2008/1354	02-Jul-08	0.054	0.116		0.051		15.2	9.2	93						
Bandon	Long Br.		WFD Operational	2008/1353	02-Jul-08	0.046	0.078		0.045		15	9.3	93						
Bandon	Bridewell Rv. in Bandon		WFD Operational	2008/1355	02-Jul-08	0.017	< 0.026		0.015		13.8	10.1	99						
Bandon	Long Br.		WFD Operational	2008/1356	02-Jul-08	0.054	0.035		0.049		14.1	9.8	97						
Bandon	Murragh (desert station)		WFD Surveillance	2008/1352	02-Jul-08	0.041	0.126	6.8	0.042		14.3	9.1	90	7.4	1.2	18.9	156	47	46
Bandon	Baillbuidhe Br.	20B020300	WFD Operational	2008/1357	02-Jul-08	0.02	0.053		0.023		14.1	9.4	94						
Bandon-b	Blackwater bridge		WFD Operational	2007/0558	21-Mar-07	0.02	0.05	13.2	0.025	cvlear	6.2	10.7	86	7.7	0.2	18.1	172	75	46
Bandon-b	Blackwater bridge		WFD Operational	2007/1274	05-Jul-07	0.033	0.04		0.056		14.6	9.6	96	7.7	1.1	17.8	178	75	52
Bandon-b	Blackwater bridge		WFD Operational	2007/2042	03-Oct-07	0.026	0.039		0.021		90	9.3	90	7.4	0.7	18.5	186	79	56
Bandon-b	Blackwater bridge		WFD Operational	2007/2574	05-Dec-07	0.052	0.071	17.4	0.051		10.1	10.7	96	7.4	0.5	92	21.7	182	
Bandon-b	Blackwater bridge		WFD Operational	2008/0353	05-Mar-08					clear	6.8	10.1	81	7.6	< 0.1	28	189	74	50
Bandon-b	Blackwater bridge		WFD Operational	2008/1146	04-Jun-08	0.024	< 0.026	11.7	0.027	clear	13.3	9.3	90	7.5	0.9	19.2	194	73	64

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

Discharge Point Code: SW1BAND
MONITORING POINT CODE: aSW1u BAND

Parameter	Results (mg/l ^{Note 1})				Sampling method (grab etc)	Limit of Quantitati on	Analysis method / technique
	14/11/07	03/04/08	22/05/08	17/07/08			
pH	Not available	Not available	7.5	7.9	Grab	2	Electrochemical
Temperature	Not available	Not available	Not available	Not available	Grab	N/A	N/A
Electrical Conductivity (@20°C)	210	210	163.5	239	Grab	0.5 µmhos/cm	Electrochemical
Suspended Solids	5	5	23	<2.5	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	1.42	1.42	4.78	2.1	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	Not available	Not available	Not available	Grab	0.5 mg/L	Digestion + Calorimetric
Nitrite (as N)	Not available	Not available	Not available	0.0047	Grab	0.004 mg/L	Colorimetric
Nitrate (as N)	Not available	Not available	Not available	2.86	Grab	0.4 mg/L	Colorimetric
Total Phosphorus (as P)	<0.20	<0.20	<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)(a): SURFACE/GROUND WATER MONITORING

(Primary Discharge Point – one table per upstream and downstream location)

Discharge Point Code: SW1BAND

MONITORING POINT CODE: aSW1dBAND

Parameter	Results (mg/l ^{Note 1})				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	14/11/07	03/04/08	22/05/08	17/07/08			
pH	7.8	Not available	7.4	7.9	Grab	2	Electrochemical
Temperature	Not available	Not available	Not available	Not available	Grab	N/A	N/A
Electrical Conductivity (@20°C)	Not available	209	147.8	237	Grab	0.5 µmhos/cm	Electrochemical
Suspended Solids	<2.5	5	42	<2.5	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	1.74	2.33	5.86	<1.0	Grab	0.06 mg/L	Electrochemical
Chemical Oxygen Demand	<21	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)	4.1	Not available	15	6.4	Grab	0.5 mg/L	Digestion + Calorimetric
Nitrite (as N)	Not available	Not available	Not available	0.0135	Grab	0.004 mg/L	Colorimetric
Nitrate (as N)	Not available	Not available	Not available	3.22	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	0.06	<0.05	Grab	0.02 mg/L	Colorimetric
Sulphate (SO ₄)	<30	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: SW1BAND

MONITORING POINT CODE: aSW1dBAND

Parameter	Results (µg/l)				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	14/11/07	03/04/08	22/05/08	17/07/08			
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	50	Grab	0.02 mg/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	<20	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	<0.02	Grab	0.02 µg/L	ICP-MS
Selenium	Not available	Not available	Not available	1	Grab	0.74 µg/L	ICP-MS
Barium	<20	<20	<20	<20	Grab	0.02 mg/L	ICP-OES

INNISHANNON

SURFACE WATER - Introduction

Scores should be inserted (where appropriate) into the blue boxes in Sections 1 to 10. The scores for each section will be automatically totalled (in the yellow box) and a summary of the scores for each section will appear on this sheet. The section scores will be totalled automatically on this summary sheet. The population of supply should be entered into the blue box below on this page and the overall Cryptosporidium Risk Assessment Score will be automatically calculated for the supply.

	Section Score	Total Score
Surface Water Catchment Risk Scores		
Section 1 - Animals within the Catchment		22
Section 2 - Agricultural Practices within the Catchment		23
Section 3 - Discharges to the Catchment/Water Source		15
Section 4 - Water Source Type		8
Section 5 - Catchment Inspections		-6
Section 6 - Raw Water Intake Management for Abstractions		-2
Total Surface Water Catchment Risk Score		60
Surface Water - Treatment and Supply Risk Score		
Section 7 - Water Treatment Processes		-10
Section 8a - Treatment Works Monitoring of Coagulation and Filtration		5
Section 8b - Treatment Works Monitoring of Coagulation and Filtration		-1
Section 8c - Treatment Works Monitoring of Coagulation and Filtration		7
Section 8d - Treatment Works Monitoring of Coagulation and Filtration		
Section 8e - Treatment Works Monitoring of Coagulation and Filtration		
Section 8f - Treatment Works Monitoring of Coagulation and Filtration		
Section 9 - Rapid Gravity and Pressure Filter Works Performance		2
Section 10 - Treatment Works Operation		-4
Total Surface Water - Treatment and Supply Risk Score		-1
Surface Water Risk Assessment Score		59
Population		16000
Population Weighting Factor (0.4 x log ₁₀ (population))		1.68164799
Final Weighted Risk Assessment Score		99.2172316
Water Supply Risk Classification		

Section 1 - Animals Within the Catchment

Section No.	Pressure Risk Factor	RA Score	Actual Score
1.1	Cattle/calves at less than or equal to one livestock unit per hectare of forage area *	5	10
	Cattle/calves at more than one one livestock unit per hectare of forage area*	10	
	No cattle/calves in the catchment	0	
1.2	Sheep/lambs at less than or equal to one one livestock unit per hectare of forage area *	5	5
	Sheep/lambs at more than one one livestock unit per hectare of forage area *	10	
	No sheep/lambs in the catchment	0	
1.3	Wild or farmed deer in the catchment	2	0
	No wild or farmed deer in the catchment	0	
1.4	Pig farms in the catchment	2	2
	No pig farms in the catchment	0	
1.5	Animals have direct access to water sources including feeder streams	4	4
	Fencing prevents access to water sources including feeder streams	-4	
1.6	High numbers of birds	2	
1.7	Any other farmed animals or birds	1	1
Total for Section 1			22

Section 2 - Agricultural Practices Within the Catchment

Section No.	Risk Factor	RA Score	Actual Score
2.1	Slurry spraying within the catchment	6	6
2.2	Dung spreading within the catchment	3	
3			
2.3	Slurry or dung stores	3	3
6			
2.4	Sheep pens or cattle sheds	6	6
2.5	Lambing or calving on the catchment	8	8
2.6	Full compliance with the Good Agricultural Practice Regulations verified by catchment inspection	-6	
Total for Section 2			23

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Section 3 - Discharges to the Catchment/Water Source

Section No.	Risk Factor	RA Score	Actual Score
3.1	Population equivalent served by individual on-site wastewater treatment systems < 100 PE	4	6
	Population equivalent served by individual on-site wastewater treatment systems > 100 PE	6	
3.2	Population equivalent served by all wastewater works <500	4	6
	Population equivalent served by all wastewater works 500 to 5,000	5	
	Population equivalent served by all wastewater works 5,001 to 20,000	6	
	Population equivalent served by all wastewater works 20,001 to 50,000	7	
	Population equivalent served by all wastewater works > 50,000	8	
3.3	Storm water overflows	2	2
3.4	Section 4 or Integrated Pollution Prevention Control (IPPC) Licence discharge from intensive agricultural activity or agriculturally related discharge	2	2
3.5	All wastewater treatment plants complying with the UWWT Regulations quality standards	-1	-1
3.6	All wastewater treatment plants complying with the UWWT Regulations quality standards	-1	
	UV inactivation at outlet of wastewater treatment plants	-2	
Total for Section 3			15

Section 4 - Water Source Type

Section No.	Risk Factor	RA Score	Actual Score
4.1	Upland reservoir/lake	2	8
	Lowland long term storage reservoir/lake	4	
	Upland river or stream - bankside storage	5	
	Upland river or stream – direct abstraction	6	
	Lowland river or stream – direct abstraction or bankside storage	8	
Total for Section 4			8

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Section 5 - Catchment Inspections

Section No.	Risk Factor	RA Score	Actual Score
5.1	Catchment inspections carried out at least monthly	-3	-3
	Catchment inspections carried out less frequently	6	
5.2	Procedures in place to deal with irregularities on the catchment	-3	-3
Total for Section 5			-6

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Section 6 - Raw Water Intake Management for Abstractions

Section No.	Risk Factor	RA Score	Actual Score
6.1	No appropriate water quality monitor on intake	3	-2
	Appropriate water quality monitor on intake that is alarmed and connected to telemetry	-2	
	Automatic intake shut down when poor water quality	-4	
	Manual intake shut down when poor water quality	-1	
	No intake shut down when poor water quality	3	
Total for Section 6			-2

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Section 7 - Water Treatment Processes

Section No.	Risk Factor	RA Score	Actual Score
7.1	Simple sand filtration (not slow sand filtration)	8	-10
	Simple sand filtration (not slow sand filtration) with UV treatment	6	
	Coagulation followed by DAF/sedimentation and filtration	-10	
	Coagulation followed by DAF/sedimentation and filtration followed by UV treatment	-16	
	Coagulation followed by rapid gravity or pressure filtration (no flotation or sedimentation)	-7	
	Coagulation followed by rapid gravity or pressure filtration (no flotation or sedimentation) followed by UV treatment	-13	
	Slow sand filtration	-9	
	Slow sand filtration followed by UV treatment	-15	
	Membrane Filtration (DWI approved)	-16	
	Membrane filtration (Not DWI approved)	-2	
Total for Section 7			-10

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Section 8 - Treatment Works Monitoring of Coagulation and Filtration

Coagulation			
Section No. 8a	Risk Management Factor	RA Score	Actual Score
8.1	Manual coagulant dose control – not flow proportional	5	5
	Manual coagulant pH control	5	
	Coagulant pH monitored and alarmed	-5	
Total for Section 8a			5

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Section 8 - Treatment Works Monitoring of Coagulation and Filtration

Clarification			
Section No. 8b	Risk Management Factor	RA Score	Actual Score
8.2	Clarified water turbidity monitor/particle counters	-1	-1
	Clarified water turbidity alarm/particle counters	-1	
Total for Section 8b			-1

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Section 8 - Treatment Works Monitoring of Coagulation and Filtration

Rapid gravity and pressure filters			
Section No. 8c	Risk Management Factor	RA Score	Actual Score
8.3	Turbidity meter/particle counter on each filter with alarm on telemetry	-5	-5
	Turbidity meter/particle counter on each filter but no alarm on telemetry	0	
	One turbidity meter/particle counter shared by more than one filter with alarm on telemetry	-2	
	One turbidity meter/particle counter shared by more than one filter but no alarm on telemetry	2	
	No turbidity meters/particle counters monitoring filter performance	10	
8.4	Final water turbidity meter/particle counter with alarm on telemetry	-2	5
	Final water turbidity meter/particle counter but no alarm on telemetry	2	
	No final water turbidity meter/particle counter	5	
8.5	Continuous residual coagulant monitor on combined filtrate or works outlet with alarm	-5	5
	Continuous residual coagulant monitor on combined filtrate or works outlet but no alarm	-1	
	No continuous residual coagulant monitor on combined filtrate or works outlet	5	
8.6	Routine discrete monitoring of treated water for turbidity/residual coagulant	-2	2
	No routine discrete monitoring of treated water for turbidity/residual coagulant	2	
8.7	Turbidity of backwash supernatant monitored when recycled	-2	
	Turbidity of backwash supernatant not monitored when recycled	2	
Total for Section 8c			7

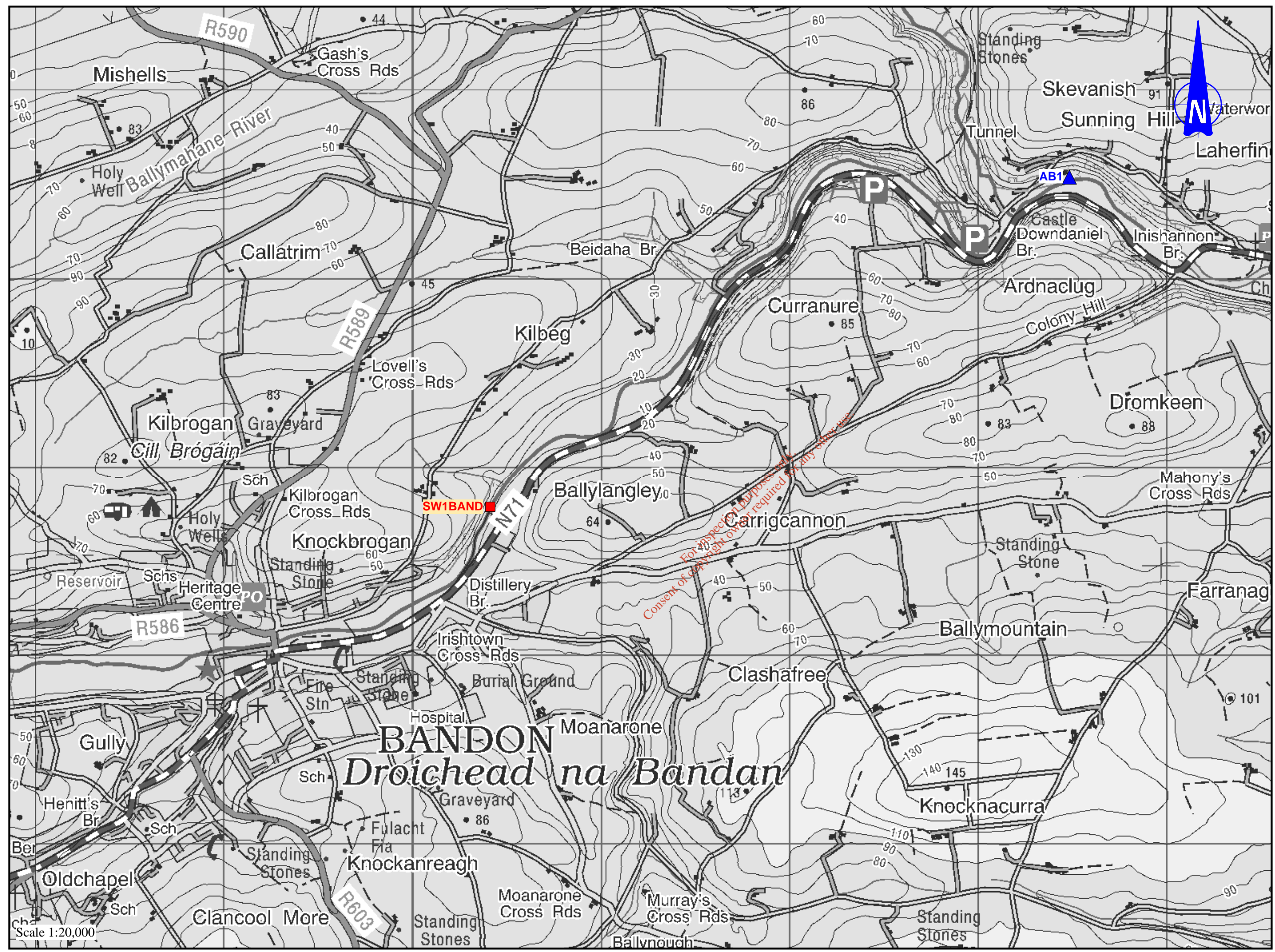
Section 9 - Rapid Gravity and Pressure Filter Works Performance

Item No.	Risk Factor	RA Score	Actual Score
9.1	Final water turbidity increases by more than 50%, excluding normal backwash period or turbidity in the final water >1.0 NTU	4	0
	Treated water turbidity increases by less than 50%, excluding normal backwash period and turbidity in the final water <1.0 NTU	0	
9.2	Media loss from any filter has brought media depth below design level	6	
	Media depth above minimum design level with audit trail maintained	-2	
9.3	Signs of media cracking on any filter	4	4
9.4	All filters have been drained, inspected and any necessary remedial action taken within last year	-2	0
9.5	Air scour and backwash maintained and operating efficiently as per maintenance manual	-2	-2
Total for Section 9			2

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Section 10 - Treatment Works Operation

Item No.	Risk Factor	RA Score	Actual Score
10.1	Plant with documented management systems that includes procedures and process control manuals	-2	-1
	Process control manuals specific to works available	-1	
	Process control manuals specific to works not available	1	
10.2	Auditable action plans available for dealing with deviations in quality and evidence of implementation of the plan	-1	1
	Auditable action plans not available for dealing with deviations in quality	1	
10.3	Slow start facility on filters operational	-4	-4
	No slow start facility on filters, or slow start facility not operational	4	
10.4	Filters run to waste for appropriate period after backwash	-6	4
	Filters run to head of works for a period following backwash	-4	
	Filters not run to waste or head of works for a period following backwash	4	
10.5	Backwash water and/or sludge supernatant has to be recycled	2	-2
	Other disposal route available for backwash water and sludge supernatant	-2	
10.6	Water flow through works when operating has not increased by >10% in <30 minutes in last 12 months	-2	-2
	Water flow through works when operating has increased by >10% in <30 minutes in last 12 months	2	
10.7	Flow through works above design flow for >10% of time in last 12 months	4	0
	Flow through works above design flow for =10% of time in last 12 months	0	
	Flow through works >130% above design flow for >50% of time in last 12 months	6	
10.8	Filters bypassed during the year	6	-4
Total for Section 10			-4



- LEGEND**
- PRIMARY DISCHARGE LOCATION
 - ▲ WATER ABSTRACTION LOCATION

Point	Easting	Northing
AB1 ▲	153484	057535

Approved : _____



MAP 16 - WATER ABSTRACTION LOCATION

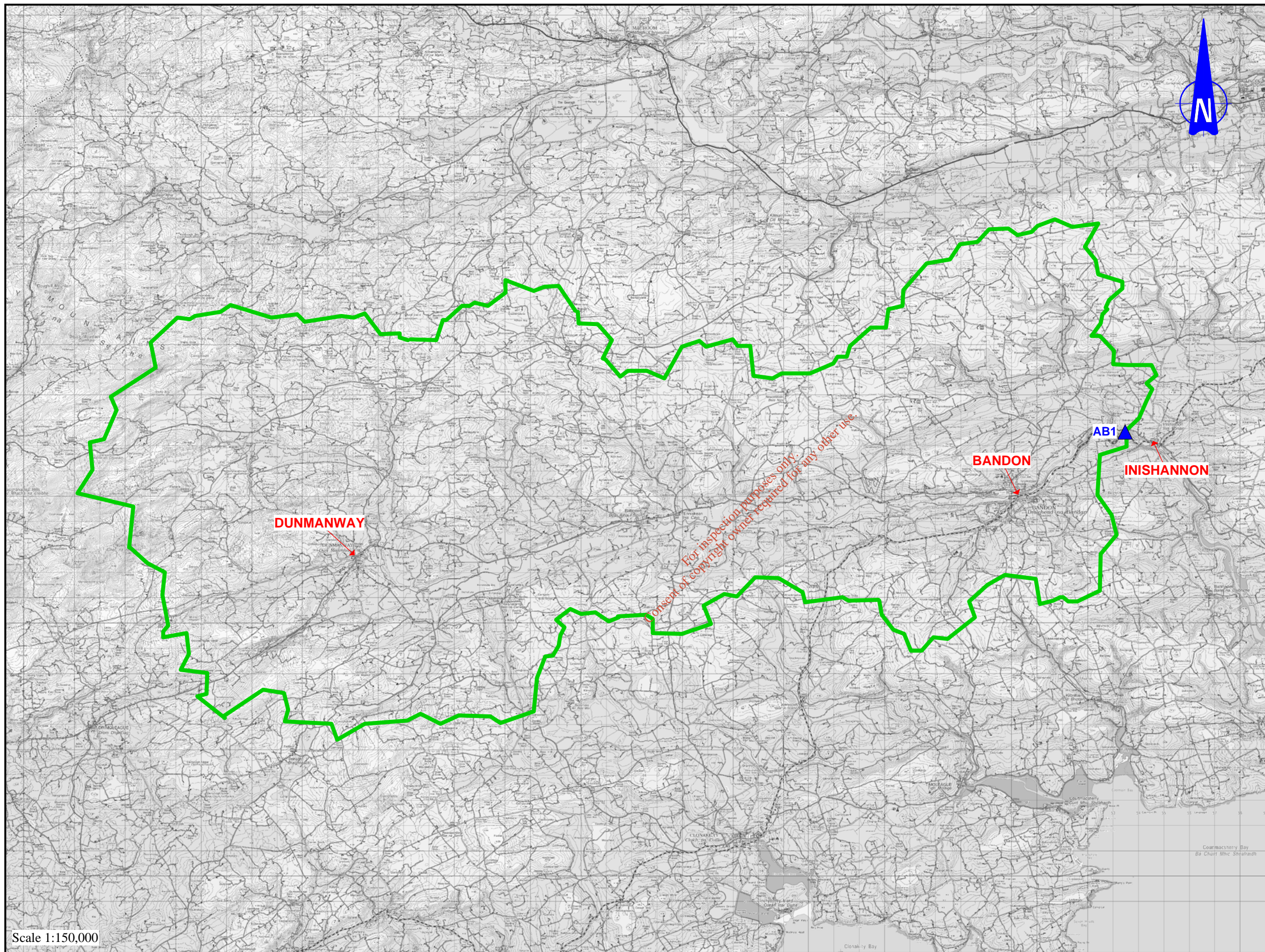
REVISION : A
DATE : SEPT. 2008

BANDON WASTE WATER DISCHARGE LICENCE APPLICATION
CORK COUNTY COUNCIL
PROJECT Nr. 249282
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LEGEND

 ZONE OF CONTRIBUTION

 WATER ABSTRACTION LOCATION



Scale 1:150,000

Approved : _____

R. Bandon – 20B02 (Section 1)	To maintain quality rating of Q4 of Station 0050 Br E of Keenrath House	Year 2006 Q4-5	Agricultural Measures	Review farming practices in the catchment. Farm Surveys carried out in various years (62 farms surveyed)	Review biological rating in updated EPA Report to determine any changes	31/07/2002	Env. (Ag. Section)	Oct 1996-Dec 2003 81 Visits. 21 Warning letters. Jan 2004-Dec 2007 37 Farm visits 41 Warning letters 4 Section 12s No Section 23s	Review 2008 Meeting held with Agriculture and Water Quality Sections. EPA Report & CCC Chemical Monitoring Reviewed. Sites 0300 + 0400 MRP and NO3 levels raised, NO2 surges. Follow up farm surveys completed. Jan 2008-Dec 2010 Not prioritised for Farm Surveys	
R. Bandon – 20B02 (Section 1) (cont)	To maintain quality rating of Q4 of Station 0150 Ardcahan Br	Year 2006 Q4	Sanitary Services Measures	Assess Dunmanway MWWTP (PE 1500, 1km u/s Ref 0300)	Upgrade Dunmanway WWTP	Not det'md	SS West/Env. Waste Water section	Dunmanway 2006/2007 MWWTP Monitory Programme UWWD Monitoring carried out.	Review 2008 Part of a 5 Scheme DBO. Contract in preparation to upgrade scheme to start construction in 2008. Phosphorus reduction to be included. Review priority when upgraded and fully commissioned and updated EPA data available. Licensing Dunmanway MWWTP submitted to EPA for licensing in September 2008.	31/07/2010
	To maintain quality rating of Q4 of Station 0300 - Bealboy Br/ Br 3km SE of Dunmanway	Year 2006 Q4	Environment Measures	Determine impact of Keohane Construction Ltd Sand & Gravel pit 0.574km u/s 0300	Clarify licensing status & regularize if necessary	31/07/2006	Env. Wastewater Section	Keohane Construction Ltd Sand & Gravel pit	Review 2008 Meeting held with wastewater section. Clarify status of Sand & Gravel pit	31/07/2010
	To improve rating of Station 0400 - Manch Br. from Q3-4 to Q4	Year 2006 Q4		Determine impact of Murray Bros Tarmacadam/ Quarry 4.5km u/s 0300	Clarify licensing status & regularize if necessary	31/07/2006	Env. Wastewater Section	Murray Bros Tarmacadam/ Quarry	Review 2008 Meeting held with wastewater section. Clarify status of Sand & Gravel pit	31/07/2010
				Determine impact of Garages.	Clarify licensing status & regularize if necessary	31/07/2008	Env. Wastewater Section	Garages on R. Bandon	Review 2008 Licence put in place in 2003, for Shortens, u/s site 0550 & Cahalanes u/s site 0800.	
R. Bandon – 20B02 (Section 2)	To maintain quality rating of Q4 of Station 0550 - Br. South of Enniskeane	Year 2006 Q3-4	Agricultural Measures	Review farming practices in the catchment.	Review biological rating in updated EPA Report to determine any improvement/ changes	31/07/2002	Env. Ag. Section	Jun 1996-Dec 2003 236 Farm visits. 142 Warning letters. Section 12 Section 23 2004-Dec 2007 50 Farm visits 32 Warning letters Section 12s Section 23s	Review 2008 Meeting held with Agriculture and Water Quality Sections. EPA Report & CCC Chemical Monitoring Reviewed. MRP levels slightly raised, NO3 levels raised, NO2 surges. Jan 2008-Dec 2010 Prioritised for follow up farm surveys on high & medium risk farms.	31/07/2010

R. Bandon – 20B02 (Section 2) (cont)	To maintain quality rating of Q4 of Station 0600 Br nr Desert Station	N/D 2006	Environment Measures	Determine impact of IPC Graingers Sawmill Limited (u/s ref 0550)	Liaise with EPA. Review effluent discharge details of IPC licence Sawmills.	31/07/2004	Env. Waste Water Section/EPA	EPA file examined and effluent license details reviewed. Treatment & protection of wood involving the use of preservative. No process water discharges	Review 2008 License Review by EPA.	31/07/2010
	To maintain quality rating of Q4 of Station 0700 Carhoo Br	Year 2006 Q4		IPC Carbery Milk Products (2km u/s of 0550), IPC AIBP Ltd (?km u/s 0800 d/s from MWWTP discharge) IPC Acorn Env (?km u/s). Bandon IDA	Liaise with EPA. Review effluent discharge details of IPC licence CMPs & IPC AIBP.	31/07/2002	Env. Waste Water Section/EPA	Jan 2004 Carbery Milk AER 2002 & 2003. Large number of OPO4 exceedences in 2002/2003. Exceedences of combined load improving 2001-2003. Surface water discharges (SW2(i)- high levels of Aluminium & BOD	Review 2008 Meeting required with EPA. Discuss surface water discharges SW2(I), Alcohol spillage & contamination of Bandon in May 2004. EPA issued proceedings.	31/07/2010
	To improve rating of Station 0800 - 1.5km d/s Bandon Br. from Q3 to Q3-4	Year 2006 Q4				31/07/2002	Env. Waste Water Section/EPA	Jan 2004 AIBP AER 2003 Consistent TN exceedences in 2003. Levels of 37.9mg/l TNH4 recorded by EPA.	Review 2008 Meeting required with EPA re. Nitrogen exceedences. AIBP to install new anoxic tank in July 2004 to assist in removal of TN from final effluent.	31/07/2010
	To maintain quality rating of Q4 of Station 0900 Innishannon Br.	Year 2006 Q4			Bandon I.D.A. WWTP, locate discharge point. Resolve licencing issue. Determine P loadings.	31/07/2002	Env. Wastewater	Bandon IDA 2006/2007 Industrial Monitoring Programme Completed as scheduled.	Review 2008 Meeting held with SS South Rural & Wastewater section. Extra aeration tank installed 2002. Fat trap installed by IDA late 2003 on inlet to plant. CCC to proceed with licencing of individual industrial units.	31/07/2010
			Sanitary Services Measures	Determine impact of Ballineen MWWTP (PE 350, 1.1 km u/s Ref 0550) Enniskeane Septic tank (PE?, 2.2km u/s Ref:0600. Bandon MWWTP	Ballineen Septic Tank Provision of sludge treatment facility at WWTP £275,000	Not determined	SS West/South	Ballineen New plant late 1999. Upgraded and expanded to cater for Enniskeane. Sludge facilities in place. 2006/2007 MWWTP Monitoring Programme UWWD Monitoring carried out.	Review 2008 Meeting with Wastewater Lab & SS West on 2007-2009 Needs Assessment Programme for further upgrade.	31/07/2010
R. Bandon – 20B02 (Section 2) (cont)					Enniskeane MWWTP Extend & improve existing WWTP. Agreement reached with Western Division	Not determined	SS South/SS West	Enniskeane Design of pump sumps and rising main to Ballineen sewer, progressing 2006/2007 MWWTP Monitoring Programme UWWD Monitoring carried out.	Review 2008 Meeting with SS West & Wastewater section. Award of contract to install pumping station & rising main approved by DoEHLG. Storm water tank, upgrade to Ballineen Priority No. 7, 2004-2006 Needs Assessment Programme.	31/07/2010

					Bandon WWTP. New Sewer network & Flood relief works Works. Carry out advance construction of sewers for Bandon WWTP. Contract Docs to be prepared	to be det'm	SS South	Bandon New sewer network & Floodworks progressing. Overflow system upstream near mart. Problems with blockages of siphon with dairy effluent resolved in 2003, improved treatment efficiency. 2006/2007 MWWTP Monitoring Programme UWWD Monitoring carried out.	Review 2008 Meeting held with SS South Rural & Wastewater section. Bandon stage 11 main contract documents completed for construction & provision of new sewers, storm water separation & nutrient reduction. Advance Contract 1 (Watergate street) construction commenced in July 2007. Advance Contract 2 (Town Park sewers) - contract tendered Nov 2007. Licensing Bandon MWWTP to be submitted to EPA in September 2008 for licensing.	31/07/2010
			Review of compliance date	Site 0550 is identified as a site under Article 3 (9) where there have been difficulties in achieving the standard by 2007				The impact of agricultural works may take 3-5 years to show. Industrial and sewerage infrastructural improvements are ongoing,		31/07/2013

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