CONSENTS OFFICER COPY

Gary Inight
Customer Contact Dept
Environment Agency Wales
Rivers House
St Mellons
Cardiff
CF3 0LT

25th November 2005

Tel 01443 452138

Dear Gary,

Cynon Final Effluent and Storm Consent Applications

Please find enclosed applications for variation of the final effluent consent AN0033701 and storm consent **AF4001901** for Cynon WwTW.

I enclose cheque no 4956 for Cynon WwTW FE (£772) and cheque number 4957 for Cynon WwTW Storm (£772).

Yours sincerely,

Scott Webster
Environment Performance Manger

ASIANTAETH YR AMGYLCHEDD
ENVIRONMENT AGENCY

WATER RESOURCES ACT 1991 (schedule 10)

(as amended by the Environment Act 1995)

Application for variation to an existing consent AF4001901 (Storm)

Regional/Area Address:	*Official Use Only*
The Regional Finance Manager Environment Agency Welsh Region PO Box 425 St Mellons Business Park CARDIFF CF3 0LT	*Dist/Area Ref:* 1303 *Application No.* AF4001901 *Date Received:* 21-10-05 *Fee Received:*

Each applicant must complete the main form and may need to complete a separate annexe if appropriate. Please look through the form and read the notes carefully before you complete it. Processing of your application will be aided by full and accurate completion of all relevant sections and provisions of the necessary plans. If you have any queries regarding the form please contact the person given in the notes.

NOTE:
All information contained within this application will be made available on the public register unless there is a request to withhold any of it. Any such request should provide a full justification stating why the information needs to be withheld (see note xiii).

1 SITE ADDRESS

1.1 Address or other sufficient description of land or premises to which this application applies.

Cynon WwTW
Mid Glamorgan

Post Code:

2 DETAILS OF DISCHARGE(S)

2.1 State the nature of the discharge(s) (see note i and ii) - tick one or more boxes as appropriate:

Sewage Effluent - volume of 5 cubic metres per day or less	
Sewage Effluent - volume greater than 5 cubic metres per day (**complete annexe 1**)	
Sewage Effluent discharged under storm or emergency conditions (**complete annexe 2**)	X
Cooling Water (**complete annexe 3**)	
Trade Effluent (*including site drainage*) (**complete annexe 3**)	
Others (*please specify*)	

2.2 Please state the maximum quantity it is proposed to discharge in any one day **46,713 m³/day**
Briefly state how this figure was calculated (see note ii).

See document number 151333 Population estimate and loading

2.3 a) Indicate proposed means of discharge - tick as appropriate and show on plan:
(for 1, 2 & 3 please state dimensions below)

1. Pipe	X	4. Borehole		7. Sub-Irrigation System	
2. Channel		5. Well		8. Combination of 6 & 7	
3. Culvert		6. Soakaway		9. Other (*please specify below*)	

1200mm

b) National Grid Reference(s) of point(s) of discharge (see note iii).

S	T	0	8	1	4	9	9	2	9	9	7

(please indicate on accompanying plans)

2.4 a) The Agency will normally require adequate provision for the taking of samples of the discharge in a safe and convenient manner at any time. Please indicate the means proposed (see note iv) - tick as appropriate and show on plan:

At the outlet [ ] At a manhole or sampling chamber [X]

Other *(please specify)*

b) National Grid Reference(s) of sampling point(s) (if different from 2.3 b) above).

S	T	0	8	1	1	5	9	3	0	6	5

(please indicate on accompanying plans)

c) What flow measurement facilities will be provided (see note v)?
Please give details.

Magnetic flow meter

2.5 a) Type of Treatment Plant(s) to be used *(please specify make and model)* - tick as appropriate:

Septic Tank [ ] Package Sewage Treatment Works [ ] Other [ ]

b) Will the treatment process involve the use of any chemicals (eg ferric salts, polyelectrolytes). If yes please give details. **Yes**

Ferric sulphate for phosphorus reduction
Please phrase consent to allow easy change of coagulant, subject to EA approval

2.6 a) On what date do you anticipate the discharge will commence? **31/03/06**

b) If you require the consent for a limited time period please give dates; from: / /

to: / /

c) If the discharge is not continuous please detail the period/circumstances when it will occur.

2.7 a) Are there any existing consents for discharges from the premises (see note vi)? **Yes**
If yes, please give the reference numbers *(Any further information should be given in Section 5.3).*

AN0033701 - FE 1998 (final effluent) and AF4001901 (storm)

b) Has any person had a Prohibition Notice serviced on them in respect of this site? **No**
If yes, please give the reference number.

3 SITE DETAILS

3.1 Please give the name of the relevant Planning Authority.

The Vale of Glamorgan

3.2 Please give details of the premises - tick as appropriate:

1. Single Dwelling	[ ]	6. Fish Farm	[ ]
2. Multiple Dwellings	[ ]	7. Mineral Workings	[ ]
3. Industrial Premises	[ ]	8. Water Services plc STW	[X]
4. Vehicle Parking Area	[ ]	9. Water Supply	[ ]

5. Commercial Premises *(please specify)* ☐ 10. Other *(please specify)* ☐

3.3 Please indicate source of the water supply - tick as appropriate: **N/A**

1. Well ☐ 5. River *(please give name below)* ☐
2. Borehole ☐ 6. Estuary *(please give name below)* ☐
3. Precipitation (eg rain or snow) ☐ 7. Coastal Water *(please give name below* ☐
4. Mains *(please state water supply company)* ☐

4 DETAILS OF RECEIVING ENVIRONMENT

4.1 Receiving Medium - tick the category(s) to which the proposed discharge(s) is(are) to be made:

1. Estuarial Water (tidal river or stream) ☐ 5. Into Land ☐
2. River or Stream (non-tidal) [X] 6. Onto Land ☐
3. Canal ☐ 7. Directly into Groundwater ☐
4. Lake, Lock or Pond ☐ 8. Coastal Water (see note vii) ☐

State name of receiving water if known:

River Clun

4.2 In the case of sub-irrigation systems, soakaways or boreholes: **N/A**

(a) Is any part of the system within 5 metres of the boundary of the premises? Y/N

(b) Is any part of the system within 10 metres of a watercourse? Y/N

(c) Is any part of the system within 50 metres of a borehole or spring? Y/N

(d) For wells and boreholes state dimension(s) in metres. m

(e) For sub-irrigation systems, soakaway pits, wells and boreholes, state maximum depth in metres. m

(f) For boreholes, state details of lining in metres:

(i) Depth of lining m

(ii) Depth of perforated lining | m

(iii) Depth of unperforated lining | m

(g) A percolation test must be carried out in accordance with British Standard BS6297:1983. Have the results been provided? | Y/N

4.3 Is there a foul sewer available to which the discharge(s) could be made (see note viii)? | Y/N

If yes, please give the reasons it is not practical to connect to it (eg distance, flow etc).

TREATED EFFLUENT

5 DETAILS OF APPLICANT AND OTHER INFORMATION

5.1 (See general notes and note ix)

(a) Full name and postal address of applicant. This should be the person who will become the consent holder should consent be issued.

* Dwr Cymru Cyfyngedig
* Pentwyn Road
* Nelson
* Treharris
* Mid Glam

Post Code: CF46 6LY

Daytime Telephone Number:

Company Registration Number (if appropriate): 236677

(b) Agent (if any) - Full name and postal address.

*
*
*
*
*
*

Post Code:

Contact Name and Daytime Telephone Number:

5.2

Please give full name and address to which bills should be sent if different to that given above:

*
*
*
*
*
*

Post Code:

Daytime Telephone Number:

5.3 Are there any other factors to be taken into account? Please continue on a separate sheet if necessary.

TREATED EFFLUENT

DECLARATION

I/We:

1. apply under the Water Resources Act 1991 (as amended by the Environment Act 1995) for consent to discharge, as described in this Application. "This Application" means this page, all the other pages of this form and any attached annexes, the attached plan(s), any other sheets attached, and any other written information supplied to support the application.

2. enclose the required application fee, payable to the Environmental Agency (see note x).

3. enclose 3 copies of the plan(s) and location maps with all relevant information clearly marked (see note xi).

4. will pay required advertising costs (see note xii).

5. confirm that I/we* will notify the Environment Agency of any changes in the information in this application which might be material to the continuation of the consent.

6. confirm that the information given in this application and any questions which the Environment Agency may have about it is/will* be true to the best of my/our* knowledge, information and belief and am/are* not aware of any other facts or information which might affect the granting of a consent, or conditions which might be put on it (see note xiii).

7. confirm that I/we* will pay any annual charges due should a consent be granted YES/NO*. If no please indicate who will be completing section 5.2 above (see note xiv).

(* Delete as appropriate)

SIGNED: S Weeks **PRINT NAME:** Scott Weeks

ON BEHALF OF: Dwr Cymru Cyf **DATED:** 25th November 2005.

CONFIDENTIALITY

I/we apply for commercial confidentiality and enclose a full written justification (see note xv).

SIGNED: ..... **DATED:** .....

PLEASE RETURN THIS FORM TO THE ADDRESS GIVEN ON THE FRONT PAGE

ASIANTAETH YR AMGYLCHEDD
ENVIRONMENT AGENCY

ANNEXE 2 (Storm)
SEWAGE EFFLUENT DISCHARGED IN STORM OR EMERGENCY CONDITIONS

Please complete this annexe if you are proposing to make a discharge of sewage in emergency or storm conditions (if the effluent is to contain a trade component Annexe 3 should also be completed).

Official Use Only
Application No.

1. Site Name.

Cynon WasteWater Treatment Works

2. State the type of discharge - tick as appropriate:

Storm tanks	X
Combined Sewer Overflow from sewerage system	
Combined Sewer Overflow from pumping station	
Emergency overflow from sewerage system	
Emergency overflow from pumping station	
Other *(please specify)*	

The discharge will be screened to 6 mm at the inlet works prior to discharge in the storm tanks

3. For effluents discharging from sewage treatment works, is the storm/emergency effluent discharged via the same outlet as the treated effluent? **Yes**

If no please give: a) the National Grid Reference of the treated effluent outlet.

b) the consent or application number covering the treated effluent discharge

If yes please give the National Grid Reference of the storm/emergency sampling point (see notes)

S	**T**	**0**	**8**	**1**	**1**	**5**	**9**	**3**	**0**	**6**	**5**

4. For effluents discharging from combined sewer overflows, is the discharge via a dedicated pipe? Y/N

If no please give the National Grid Reference of the overflow into the sewer.

5. Overflow settings

a)	Overflow setting to storm tanks	**540.7 l/s***
b)	Maximum flow to storm tanks	**1340.5 l/s+**
c)	Overflow setting to storm sewage overflow	l/s
d)	Maximum flow to storm sewage overflow	l/s

6. Storage capacity

a)	Volume of Storm tanks	5,227m³
b)	Retention time of storm tanks at maximum flow (future FFT -540.7/s or 46,713m3/d)	2.7 hours
c)	Storage capacity of sewer/wet well	m³

7. Please provide full details of the design criteria that have been used to support this application.

8. Will facilities be provided to raise alarms (eg telemetry)? **No**
If yes, please give details.

9. Will facilities be provided to prevent the discharge of gross solids? **Yes**
If yes, please give details (for screens give bar spacing or aperture).

6 mm screen (existing screens)

10. What provisions will be made to deal with:

a) power failure (eg standby generators)?

Not required-Gravity Flow

b) mechanical breakdown (eg standby pumps)?

Not required-Gravity Flow

c) rising main failure?

Not required

d) tanker access?

Yes

Notes (see also the notes on the main form):
Full details of the design criteria must be provided in order for the application to be determined. If you have any queries about what information is required please contact the person given in notes attached to the main form.

ASIANTAETH YR AMGYLCHEDD
ENVIRONMENT AGENCY

ANNEXE 3 (Storm)
TRADE EFFLUENT DISCHARGES

Please complete this annexe if you are proposing to make a discharge trade effluent (this includes site drainage).

Official Use Only
Application No.

1. Site Name.

Cynon Waste Water Treatment Works

2. a) Describe in full the trade effluent and the process(es) from which it arises.

See attached document nr 151333 Population Estimate and Loading

b) Please state the type and number of treatment units you are proposing to use *(if site drainage please include details of oil/petrol interception facilities).*

Inlet channels and mechanical screens; 4 nr. (21.3 m) diameter primary settlement tanks (PSTs); 4 nr. (21.3 m) diameter storm tanks; 8 nr. (10.4 x 10.7 m x 6m deep) aeration tanks equipped with fine bubble diffused aeration (FBDA) system; 1 nr recirculation pump station; 4 nr. (21.3 m) diameter final settlement tanks (FSTs); 1 nr. (9 m) diameter sludge decanting tank (not in use); 2 nr (18 m) diameter sludge tanks (not is use); 1 nr. 1200mm outfall to River Taff

3. Rainfall Dependent Discharges

a) Is the volume going to be rainfall dependent? **No**

b) If yes, please give the total area drained. m^2

c) Please give details of any activities which occur in the drainage area which could contaminate surface water (see note b)

4. Rainfall Independent Discharges

a) What is the maximum rate of discharge? 42.8 l/s

b) What is the average daily flow? **(maximum consented flow)** 1059 m^3/d

c) For discharges where the source of supply is other than mains water:

i) give the abstraction licence number

ii) give the National Grid Reference of a point where the influent can be sampled.

(please mark on the plan)

5. a) Will any self monitoring take place? **N**
If yes, please give details

b) Will automatic sampling equipment be provided? **N**
If yes, please give details of type, frequency and location *(please indicate on plan)*

6. a) Please state the maximum temperature in degrees Celsius of the effluent when discharged if different from ambient.

Ambient

b) Will the discharge be monitored for temperature? **N**
If yes, please give details of type and location *(please indicate on plan)*

7. Has an application for Authorisation been made for a 'prescribed process' as defined in Part 1 of the Environmental Protection Act 1990? **N**

If yes, please complete the following:

a) The application reference.

b) Contact name of case officer.

8. a) Please indicate if any of the specified substances given below or their compounds will be present in the effluent and if so at what maximum concentration (please give values in micrograms per litre - ug/l). Please see note c.

SUBSTANCE	CONCENTRATION (ug/l)			SUBSTANCE	CONCENTRATION (ug/l)		
	Max	Min	Mean		Max	Min	Mean
Iron				Lead			
Arsenic				Malathion			
Atrazine				Mercury			
Azinphos-ethyl				Nickel			
Azinphos-methyl				PCB's			
Boron				PCSD's			
Cadmium				Parathion			
Carbon tetrachloride				Parathion-methyl			
Chloroform				Pentachlorophenol (PCP)			
Chromium				Perchloroethylene			
Copper				Permethrin			
Cyanide				pH <5.5 or >9.0			
Cyfluthrin				Phosphorus			
DDT				Polychlorinated biphenyls			
1,2 Dichloroethane				Simazine			
Dichlorovos				Sulcofuron			
Dioxins				Tetrachloroethylene			
Drins (eg Aldrin, Dieldrin)				Tributyltin compounds			
Endosulfan				Trichlorobenzene			
Fenitrothion				Trichloroethane			
Fenthion				Trichloroethylene			
Flucofuron				Trifluralin			
Hexachlorobenzene (HCB)				Triphenyltin compounds			
Hexachlorobutadiene (HCBD)				Vanadium			
Hexachlorocyclohexanes (HCH's)				Zinc			

b) Are there any other significant chemical components used on site which may be contained in the effluent, including biocides or additives? **Yes**
If yes, please give details.

Ferric Sulphate

Notes (see also the notes attached to the main form):

a) *For direct trade effluent discharges, full details of the type of the effluent are required (eg cooling water from air conditioning units), along with typical analytical details and the results of any toxicity studies on the effluent or its constituents. In certain circumstances the Agency may require that specific samples be taken and tests and analysis carried out. The Agency is empowered to recover any costs incurred as a result of special studies.*

b) *Possible sources of contamination include oil/chemical storage areas, vehicle loading/unloading areas, heavy vehicle parking areas and oil/petrol filling points. Any other potential sources of contamination should be detailed.*

c) *Where discharges of trade effluent take place to a sewerage system, as covered by this application, please give details of all authorised discharges of substances listed in table 8 overleaf.*

Trade Effluent Consents

	Max Flow (m3/d)	**Flow rate** (m3/h)	**TSS** (mg/l)	**Actual Flow** (m3/d)	**Type of discharge**
Amgen	200	8.3	400	121	Tip leachate
Nissin	72	4	400	83	rinse waters
Clares	72	3	400	13	Metal pre-treat
Styropack	40	20	400	24	polystyrene proc
A B Connectors	120	7	400	17	Electropating
Aberdare Sports Centre	225	15.0	400		Pool backwash
Abercynon Sports Centre	330	96.8	400		Pool backwash
Total	**1059**	**154.1**		**258**	
		42.81			

The current flows being discharged to Cynon WWTW are much lower than what is estipulated as maximum daily trade effluent discharge.

The two discharges from the Sports Centre are only carried out once a year at a time to be agreed with operations (usually at lower flows to the works). The impact of these discharges has shown to be negligible.

ASIANTAETH YR AMGYLCHEDD
ENVIRONMENT AGENCY

ANNEXE 4 (Storm)
WELSH REGION SUPPLEMENTARY INFORMATION ANNEXE

Please complete this annexe for every proposed discharge.

Official Use Only
Application No.

For all proposed discharges:

1. Site Name.

Cynon Wastewater Treatment Works

2. Is this application being made to reinstate a lapsed Consent? **No**

If so, please state the Number of the lapsed Consent:

IMPORTANT: If you are in need of advice on either part of Question 2, please contact the Agency Regional Consents Section on 01222 770088.

3. If the proposed discharge is to be made down a pipe, channel or culvert (as given in Section 2.3 of the main application form), please state the diameter (including units):

1200 mm

4. Please indicate the anticipated cost of the proposed scheme, including any alternatives which may have been considered:

£707,000 (based on business plan)

5. Is there any trade effluent component in the proposed discharge? **Yes**

If yes, please confirm here that you have completed and enclosed Annexe 3: *Tick* **X**

6. Will the proposed discharge be pumped or made under gravity? (please circle) **Gravity**

If pumped, please state the maximum pump rate in l/sec: l/s

For proposed discharges of sewage in storm or emergency conditions:

7. Please confirm here that you have completed and enclosed both Annexes 1 and 2: *Tick*

8. Please state:

Population served (head)	69,104p.e. (design population including growth)
Consumption (l/head/day) default = 180	180
Infiltration (m^3/day)	6219
Industrial effluent flow (m^3/day)	1,059
Dry Weather Flow (m^3/day)	19,717
Soc A (l/sec)	1340.5
Predicted spill frequency (per annum)	N/A

IMPORTANT NOTES FOR ALL CONSENT APPLICATIONS:

1. **Whoever signs the declaration on the main application form takes responsibility for the discharge, and will become the registered consent holder, if consent is given. In the case of a 'body corporate' (eg a public limited company ('plc'), limited, company, local authority), the 'body corporate' will be the registered consent holder, and the person with the delegated authority to sign on behalf of the 'body corporate' should give their job title.**

2. **Agents making an application on behalf of a client, must attach their clients written authority.**

3. **If the name and/or address of the applicant changes after submission of this application to the Environment Agency, the applicant must inform the Agency in writing.**

AMP/NON AMP3 SCHEME SCOPING DOCUMENT

1. Asset Summary

Catchment Name : Cynon WwTW
Works Name : Cynon WwTW

1.1 Asset Summary (all continuous and intermittent assets– both AMP and non-AMP)

DCWW Asset Name	DC Number[1]	Drivers	Delivery date	Asset Type	NGR [2]
Cynon WwTW	DC30861	U3	31/03/06	WwTW	ST08149 92997

1 – Asset number
2 – Outfall discharge point

1.2 Drivers and expectations

Driver	Objective	Requirement associated with driver
U3	Compliance with UWWT	2 mg/l TP

(Aggregation statement for Shellfish or Bathing water schemes, including all listed CSOs or a subsection)

1.3 Population summary (for continuous discharges)

NEP Spreadsheet	Current[1]	Future
64,551	64,551	69,104

1 see doc number 151333 Population estimate and loading

2. **Local Inputs** (To be compiled by Designer, RWQ provide EM comments)

Consultees	Comments
Environmental Management	
DCWW Operations	
Sewerage Operations	
Network Development	Based on the UDP data, the growth in Rhiwsaeson area is 1,669 p.e (information provided by DCWW on the 10/12/2004).

3. **Consents** (To be completed by Designer)

3.1 Summary of continuous consents

	Consent No.	DWF m^3/d	FFT l/sec	BOD mg/l	SS mg/l	NH4 mg/l	Other
Current	AN0033701	24,950	689	30	40	9	Flow recording
NEP Indicative				30	40	9	**2 mg/l TP**

3.2 Summary of intermittent consents

	Consent No.	Pass Forward Flow l/sec	Storage Vol. m^3	Screen	Other
Current					
NEP Indicative					

3.3 Summary of trade consents

Trade	Consent No.	Max m^3/d	Rate l/sec	BOD mg/l	SS mg/l	NH4 mg/l	PE
(Enter for each discharge)							

4. **Summary of receiving Water** (provided by EAW once NGRs confirmed by designer)

Stretch/Area	Relevant Standard	Performance against relevant standard	EA concerns

5. Additional Investigations (To be compiled by Designer)

(List data/surveys required in support of consent application)

Appendix 1: Environmental information for river needs analysis
See template on following page

Appendix 2: Site information

A2.1 Site Location Plan
A2.2 Existing Catchment Schematic
A2.3 Existing STW PFD
A2.4 Copy of Consent(s)
A2.5 Existing STW/CSO Performance

Appendix 3: Justification of figures and source of data

A3.1 Summary of Population Justification
A3.2 Summary of Flow & Load data
A3.3 Rainfall Data (type, source, length of dataset)

Template for Appendix 1: Environmental information for river needs analysis

Summary of receiving water information (To be completed by RWQ once NGR confirmed by designer)

										Upstream			
					Target					NH4		BOD	
Unique ID	Consent Number	Location	River	discharge NGR	99%ile* 90%ile* NH4	99%ile* 90%ile* BOD	Q95	Mean River Flow	Amenity	Mean	SD	Mean	SD

Note: All flows in l/s and all concentrations in mg/l
*select as appropriate, 90%ile for continuous or 99%ile for intermittent

Table of standard concentration figures against RE class (for reference) (all figures in mg/l)

	BOD		Nh4	
Class	**90%ile**	**99%ile**	**90%ile**	**99%ile**
RE1 Target	2.5	5.0	0.25	0.6
RE2 Target	4.0	9.0	0.6	1.5

	BOD		**Nh4**	
	mean	**SD**	**mean**	**SD**
mid point RE1	1.03	0.62	0.07	0.04
mid point RE2	1.86	1.12	0.27	0.15

Calculations

Document Number : 151333

Title : Population estimate and loading

Tag No.

Client : DCWW

Contract Title : Cynon WWTW

Contract Number : 151333

Rev	Date	Revision Description	Pages	Prepared	Checked	Approved
A	27/09/2005	For information	3	PRC		

Reason for Issue

- ☐ **For Enquiry**
- ☑ **For Information**
- ☐ **For Construction**
- ☐ **For Review**
- ☐ **For Approval**

Black & Veatch Ltd
A Black And Veatch Company

BLACK & VEATCH

Client: DCWW	Subject: Population estimate and design loading

Background

The population on a Works can be determined from a number of sources.

- House counts based on AIS.
- Population from the census.
- Population derived from collected load and flow data.
- Population recorded on client data base (SAP).

Any or each of these methods can be used in the calculation below. The accumulated data is then used to define the works population.

The loading onto the works is based on this population plus any industrial inputs known in the catchment.

In addition growth in the catchment is included both in the municipal and industrial sectors.

Municipal population from AIS.
AIS can be used to count the number of properties on the catchment. This number and the average population per household taken from the 2001 census data available on-line are used to calculate a municipal population. In addition to this, population associated with schools and other key discharges in the catchment can be added.

Population from Census data
The 2001 census on-line gives occupancy data for all of the UK broken into output areas. The data is presented by output area to give a back reference to the on-line data table.

Population from survey data
Any survey data available for the site is used to predict the population. Of the data available the ammonia load is likely to give the closest approximation to the actual population as it is soluble and easy to analyse. It is used in all cases unless use of another determinant can be justified.

Population from SAP
SAP is the DCWW database for all waste water assets. The population is calculated from the number of rate paying properties on the catchment multiplied by 2.7 persons per household. Where the census suggests a different number for the occupancy rate, this can be used to recalculate the population. Other data for the catchment is taken directly from the database. The industrial flows from SAP are recorded but used in the E calculation in the DWF rather than the population load. Trade loadings are taken from the individual consents.

Client: DCWW	Subject: Population estimate and design loading

Summary

A summary of the population estimate from different sources is shown below:

STAM Spreadsheet	64551	p.e.
SAP data	65207	p.e.
Flow and Load Surveys		
Year 2003 - based on BOD load	59500	p.e.
Year 2003 - based on NH4 load	71400	p.e.
Year 1999 - based on BOD load	54267	p.e.
Year 1999 - based on NH4 load	57625	p.e.

Population equivalent selected	64551	p.e.
Population growth (from UDP)	4553	p.e.
Design Population	69104	p.e.

Comments on Population Estimate

Analysis of the data available for the Cynon works suggests that the current STAM population for the works provides a good design basis. Both the flow and load survey carried out in 1999 and the flow survey carried out in April 2003 show load figures close to the ones calculated by using the estimated STAM population. The infiltration flow for this population was estimated based on the existing flow figures from the surveys.

Client: DCWW	Subject: Population estimate and design loading

1.0 Design basis for flow and loads calculations

Flow per capita	=	180	l/hd.d	
Infiltration (estimated)	=	90	l/hd.d	50 %
Minimum flow : DWF	=	0.7		
BOD per capita	=	0.060	kg/hd.d	
TSS per capita	=	0.072	kg/hd.d	
TKN per capita	=	0.012	kg/hd.d	
NH4-N per capita	=	0.008	kg/hd.d	
TP per capita	=	0.002	kg/hd.d	

2.0 Loading based on STAM population estimate

Design population = 69104

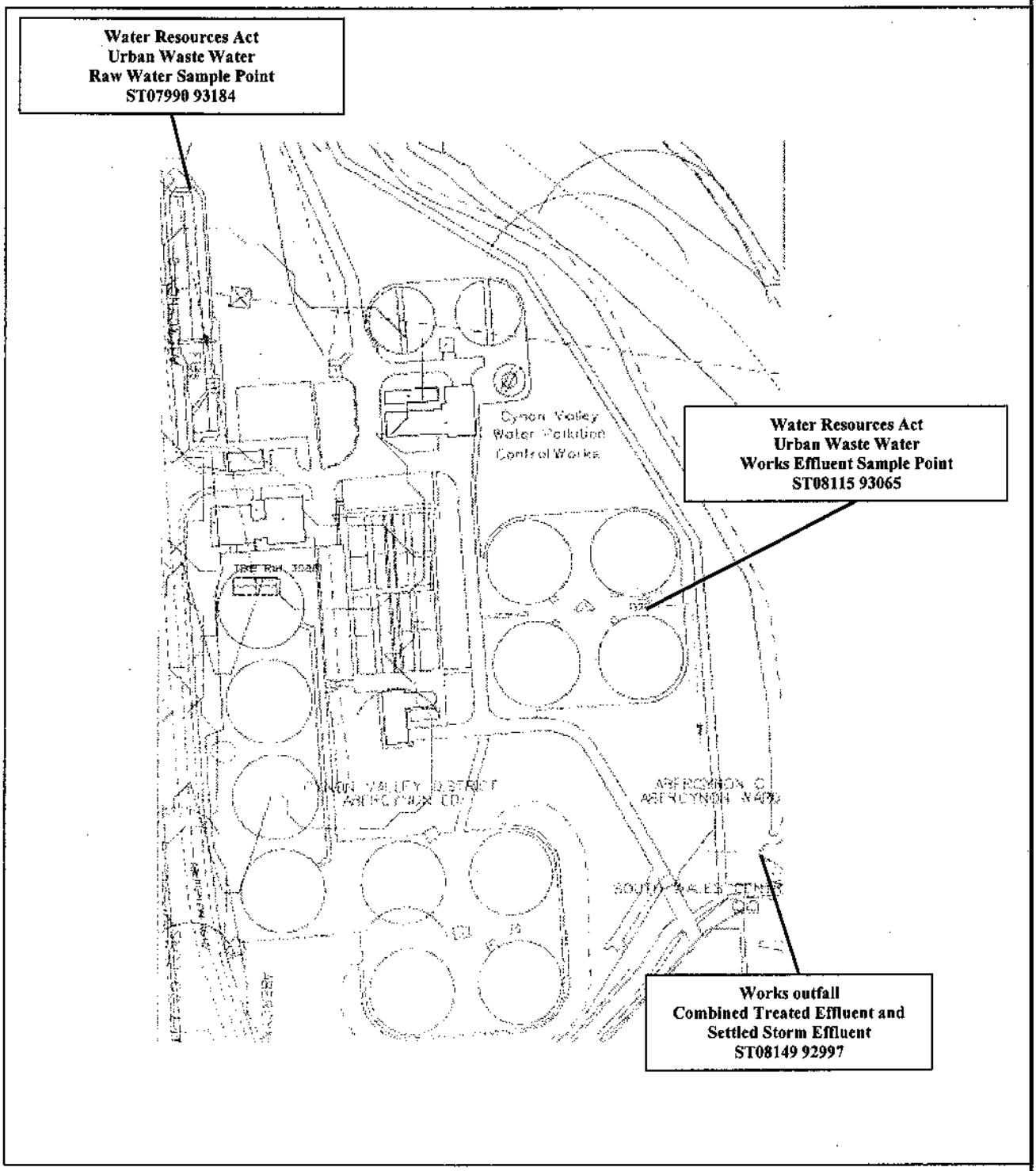
2.1 Flows

Industrial component		1059	m^3/d	12.26	l/s
Minimum Flow		13802	m^3/d	159.7	l/s
DWF	PG + I + E	19717	m^3/d	228.2	l/s
ADWF	1.2 DWF	23660	m^3/d	273.8	l/s
FFT	3PG + I + 3E	46713	m^3/d	540.7	l/s
SOCa	DWF+1.36P+2E	115817	m^3/d	1340.5	l/s

2.2 Loads

TSS	=	4975	kg/d
BODt	=	4146	kg/d
TKN	=	829	kg/d
NH4-N	=	553	kg/d
TP	=	138	kg/d

CYNON WwTW


Water Resources Act
Urban Waste Water
Raw Water Sample Point
ST07990 93184
Water Resources Act
Urban Waste Water
Works Effluent Sample Point
ST08115 93065
Works outfall
Combined Treated Effluent and
Settled Storm Effluent
ST08149 92997