St. Modwen Developments (Llanwern) Ltd

Glan Llyn

Surface Water Discharge Activity Environmental Permit Application Non-Technical Summary

June 2021

Project Ref: 02554/HH

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Contents

List of Tables

Appendices

1 Introduction

PJA Engineering Ltd has prepared this report on behalf of St. Modwen Developments (Llanwern) Limited (St. Modwen) to support St. Modwen's application to Natural Resources Wales (NRW) for a surface water discharge activity environmental permit for the Glan Llyn residential development.

The permit application is made under the Environmental Permitting (England and Wales) Regulations 2016.

2 Site Description

2.1 Location

The Glan Llyn residential development is located off the A4810 Queensway at the former Llanwern steelworks, approximately 4km to the east of Newport, South Wales. Centred on approximate National Grid Reference 336820, 186442, the Glan Llyn residential development covers approximately 200 hectares.

2.2 Residential Development

Currently comprising 834 occupied houses, as of June 2021, a primary school and Western Park, Glan Llyn is being constructed under outline planning decision notice 06/0471 and will ultimately comprise approximately 4,000 homes with a second school, a local centre and a series of lakes.

Reclamation, remediation and construction of Glan Llyn is being undertaken on a phased basis generally from west to east across the site. Developed and occupied areas in the west of Glan Llyn comprise buildings, areas of external hardstanding such as driveways, car parking, pavements and highways, and residential gardens, grass verges and public open space. Undeveloped areas in the east of Glan Llyn generally consist of bare ground and stockpiles of material.

2.3 Geology

A cover of Made Ground containing slag was placed at the site as part of construction of the Llanwern steelworks which was excavated to remove residual obstructions, validated for use and re-engineered to the required ground levels. The underlying natural ground comprises Tidal Flat Deposits (clay, silt, sand and peat) and bedrock of the Mercia Mudstone Group.

2.4 Hydrology

Monks Ditch, a main river, passes from north to south directly to the east of the Glan Llyn residential development in a deep piled concrete channel which is approximately 7m wide and 3m deep. The artificial channel is understood to have been constructed during development of the steelworks

and is currently hydraulically isolated from Glan Llyn. Monks Ditch flows in a natural channel to the north and south of Glan Llyn.

The River Usk is located approximately 2km to the west of Glan Llyn.

The site currently drains via the historic Tata Surface Water Drainage System. Water from this system is pumped into the Severn estuary. St Modwen do not have the legal right to discharge surface water from the developed areas of the site through the Tata system.

2.5 Designated Sites

The Gwent Levels Site of Special Scientific Interest (SSSI) is located approximately 500m to the south of Glan Llyn and extends approximately 3.6km to the south to the Severn Estuary.

3 Proposed Surface Water Discharge

3.1 Current Site Drainage

The Glan Llyn site is characterised by two surface water drainage systems, one which is a legacy of the historical Llanwern steelworks and a second which has been and continues to be newly constructed as part of the residential development.

The legacy drainage system is located in the undeveloped area of the site and discharges off-site to the south via a series of north-south aligned ditches which are culverted between the A4810 Queensway.

At present, the new drainage system is located in and around the developed area in the west of Glan Llyn, comprising a series of north-south aligned reens and an east-west aligned reen passing towards and alongside Monks Ditch into a settlement lagoon known as Monks Lake.

As construction of Glan Llyn progresses eastwards, the remaining legacy ditches will be removed and the remainder of the new reens and associated lakes will be formed.

3.2 Planning Approval

The Glan Llyn drainage strategy was approved with conditions under planning decision notice 16/1295.

3.3 Surface Water Discharge Activity

The permit application relates solely to surface water in the reens which have been constructed as part of the new drainage system to drain the developed area of Glan Llyn.

The surface water discharge activity comprises rainfall-dependent site drainage, with the reens in the new drainage system receiving the following inflows:

- surface water run off from the completed residential development;
- base flow from the engineered fill and natural ground surrounding the reens; and
- surface water run-off from land to the north of Glan Llyn.

The approved Glan Llyn drainage strategy requires discharge of this surface water via a settlement lagoon and surface water pumping station 1 (SWPS1) to Monks Ditch, at National Grid Reference 336762, 186783, as outlined in green on Drawing 02554-HH-001 in Appendix A.

3.4 Discharges Excluded from Surface Water Discharge Activity Permit Application

Surface water run-off and base flow from undeveloped areas of Glan Llyn is excluded from this application and will continue to discharge off-site to the south via the legacy drainage system.

Water arising from construction activities at Glan Llyn, such as dewatering, is excluded from this application and will be discharged to the legacy drainage system.

The remediation of the site is expected to be completed by autumn 2025. At this point all surface water is anticipated to be discharged via Monks Ditch.

3.5 Alternative Discharge Options

The nearest sewer is immediately adjacent to Surface Water Pumping Station No 2 on the east side of Monks Ditch. This pumping station has recently been constructed to take flows from the Business Park. The capacity of this pumping station is 14.70 l/s.

The nearest gravity sewer is approximately 3.05km away at the southwest corner of the site. This sewer is a 225mm sewer which does not have sufficient capacity for the site foul sewage.

The existing sewer along Meadows Road is to be upgraded by DCWW to take the flows from the foul drainage on the site. This sewer would not have sufficient capacity to take surface water from the site.

The only viable point of connection would therefore be the Nash Treatment Works which is approximately 5.5km from the site. Estimates for foul connections to this point were estimated at between £5.5 to £10m in 2007. This did not include upgrading of the treatment works.

The volume of water over a year from the site and the interconnected flows from the hills to the north is estimated at around 1,800,000cum. This excludes any breach flows from Monks Ditch which can enter the site via the culverts from the north of the site. Monks Ditch currently breaches north of Llanwern village, for floods of 1:50 year events and higher, this then floods the village, and the water then flows through a drainage system into the Glan Llyn system. This could add another 250,000cum per year depending upon storm events.

The discharge from Glan Llyn has been agreed at 750 l/s after a storm and 250 l/s for normal flows.

DCWW were approached in 2007 regarding foul water discharge from the site. The correspondence is included in Appendix B.

4 Relevant Legislation

The following legislation is considered to be relevant to the proposed surface water discharge activity:

- Environmental Protection Act 1990;
- Water Resources Act 1991;
- Environment Act 1995;
- Water Framework Directive (2000/60/EC);
- Environmental Permitting (England and Wales) Regulations 2016; and
- The Water Environment (Water Framework Directive) (England and Wales).

5 Relevant Guidance

The following guidance has been used in preparing the permit application and supporting information:

- Environmental permitting application form B2 guidance;
- Environmental permitting application form B6 guidance;
- Environmental permitting application form F2 guidance;
- Environmental Permitting Core Guidance, DEFRA, March 2020;
- How to comply with your environmental permit, Natural Resources Wales, October 2014;
- How to comply with your environmental permit: additional guidance for water discharge and groundwater (from point source) activity permits (EPR 7.01), Natural Resources Wales, 2014;
- LIT 10419 Modelling: surface water pollution risk assessment, Environment Agency, 2014;
- H1 Software Tool User Guide Version 2.78, Environment Agency, April 2017;
- H1 Annex D – Basic Surface water discharges, Environmental Agency
- H1 Annex E – Surface Water Discharges (complex), Environment Agency, December 2011.

6 Treatment

6.1 SuDS

The drainage strategy for the Glan Llyn residential development adopts a sustainable drainage system (SuDS) to minimise the impacts from the development on the quantity and quality of the

runoff and maximise amenity and biodiversity opportunities. In seeking to sustainably drain surface water from the site the "Management Train" methodology as set out in CIRIA C753 has been adopted, consisting of the following components:

- Prevention – good site design and upkeep to prevent runoff and pollution (e.g. limited paved areas, regular pavement/car park sweeping, clear adoption and maintenance programme of SuDS);
- Source Control – runoff control at/near to source (e.g., permeable paving, swales);
- Site Control – water management from different onsite compartments (e.g. route water from roofs, impermeable paved areas to one infiltration/holding site); and
- Regional Control – integrated runoff management from a number of sites (e.g. into a detention/settlement pond).

The main strategic attenuation features providing the necessary site control include a network of reens (blueways), greenways, online ponds/pools and offline lakes. In order to deliver the treatment train philosophy the Glan Llyn residential development also incorporates a combination of source control SuDS techniques to replicate, as closely as possible, the natural drainage from the site before development.

It is proposed that the following parameters are considered as a single treatment train:

- 25m of reen/swale;
- A pond with a width and length greater than 5 and 10 (respectively) times the adjacent swale width;
- A trapped gully (when in conjunction with a reen/swale);
- Permeable paving; and
- Filter trench 10m in length.

The new drainage system in the Glan Llyn residential development currently includes approximately 4.5km of reens naturally vegetated with reeds and rushes, and a final settlement pond. These incorporated SuDS features will allow for passive treatment of surface water in the new drainage system through attenuation, filtration and settlement.

7 Emissions

7.1 Flow Rates

The drainage strategy for Glan Llyn is based on intermittent discharge of water from SWPS1. The duration of pumping will depend on the volume of water in the new drainage system and the volume of water in Monks Ditch, both of which are rainfall-dependent.

In accordance with the approved Glan Llyn drainage strategy, a flow meter installed downstream in Monks Ditch will determine when flows in Monks Ditch are at a sufficiently low level to enable SWPS1 to operate. Surface water will therefore be stored in the new drainage system during intervals between pumped discharge.

NRW has specified that surface water runoff from the Glan Llyn residential development be attenuated and discharged at a maximum discharge rate of 3.5l/s/ha up to and including a 1 in 100yr + climate change event, which equates to a peak discharge rate of 750l/s. SWPS1 has therefore been designed and constructed to achieve a maximum flow rate of 0.75m^3/s after storm events, however the typical average flow rate during intermittent daily discharge will be 0.25m^3/s.

7.2 Water Quality

Extensive and comprehensive water quality monitoring has been undertaken in the new drainage system since its construction, together with water quality monitoring which has been carried out since 2019 in the settlement lagoon, Monks Lake.

Laboratory analysis has been undertaken for a range of substances including metals (total and dissolved) and other inorganics, phenols, polycyclic aromatic hydrocarbons (total and dissolved), total petroleum hydrocarbons criteria working group, semi-volatile organic compounds and volatile organic compounds.

A dataset for 56 surface water samples obtained from Monks Lake over a period of 20 months has been used to establish representative water quality for the purposes of the permit application.

Laboratory analysis shows the following Priority Hazardous Substances and Specific Pollutants have been recorded above the limit of detection in Monks Lake:

Table 7-1 Priority Hazardous Substances and Specific Pollutants in Monks Lake

Priority Hazardous Substances	Specific Pollutants
Anthracene Benzene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Cadmium Fluoranthene Lead Mercury Nickel	Ammoniacal Nitrogen Arsenic Chloride Chromium Chromium VI Copper Cyanide Iron Manganese Phenol Sulphate Toluene Vanadium Zinc

8 Environmental Risk Assessment

8.1 Introduction

An assessment of the risks associated with the surface water discharge activity has been carried out by using the Environment Agency H1 risk assessment tool in accordance with guidance published by DEFRA and the Environment Agency, https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit.

8.2 H1 Risk Assessment

The H1 risk assessment, referenced in Appendix D and presented as a Microsoft Access file, and laboratory analytical data referenced in Appendix E and presented as a Microsoft Excel file, shows that at the concentrations recorded, the majority of substances do not pose a risk to the receiving water. The following substances may require further assessment or detailed modelling based on the outcomes of water impact tests 1 to 4:

- Ammoniacal nitrogen;
- Benzo(b)fluoranthene;
- Benzo(g,h,i)perylene;
- Benzo(k)fluoranthene;
- Chromium VI;
- Cyanide;
- Fluoranthene;
- Indeno(1,2,3-cd)perylene;

- Vanadium; and
- Sulphate.

It is noted that in line with LIT 10419 '*Modelling: surface water pollution risk assessment risk assessment*' (Environment Agency, 2014), the surface water discharge is not 'liable to contain' chromium VI and cyanide because of an insufficient number of recorded concentrations above the respective limits of detection based on the size of the dataset.

Detailed water quality modelling has not been undertaken for the remaining seven substances as part of this permit application for the following reasons:

- Rather than a continuous discharge, the surface water discharge activity will comprise rainfall-dependent, intermittent pumped discharge for which there is no clear approach to detailed modelling set out in NRW or Environment Agency guidance.
- It is understood that it will be necessary for NRW to undertake detailed modelling for the purposes of deriving water quality permit emission limits in line with the Environmental Permitting (England and Wales) Regulations 2016 taking into account the risks to the Monks Ditch receiving water.

9 Monitoring

9.1 Introduction

As summarised in Section 7.2, an established water quality monitoring regime has been undertaken at the Glan Llyn residential development for a number of years, the aim of which is to assess water quality at specified locations in the reens across the new drainage system and in the settlement lagoon.

The surface water discharge activity will also be subject to water quality monitoring, the proposals for which are summarised in Sections 9.2 to Section 9.6 .

It is acknowledged that monitoring proposals will need to be agreed with NRW.

9.2 Monitoring Locations

It is proposed that the principal sampling location for monitoring the quality of the surface water discharge in relation to Environmental Permit conditions is the chamber within SWPS1 directly at the outfall to Monks Ditch.

Surface water sampling will also be undertaken in Monks Lake and in the reens across the new drainage system to provide information on local water quality fluctuations within the reen network, to determine the ongoing effectiveness of the passive SuDS treatment train, and to inform an assessment of longer term trends in the operational drainage system. However, laboratory

analytical data obtained from this wider programme of monitoring will not be used to assess permit compliance.

The principal sampling location is shown on Drawing 02554-HH-002, presented in Appendix A.

9.3 Monitoring Frequency

It is proposed that a water sample is taken weekly from the SWPS1 chamber for the first month of operation, and on a monthly basis thereafter. Sampling will be dependent on the requirement for operation of SWPS1 which will be subject to prevailing weather conditions on the basis that the discharge is rainfall-dependent.

The wider programme of monitoring in the new drainage system will continue to be undertaken.

9.4 Methodology

Sampling will be carried out from the SWPS1 chamber via a tap using the specified sampling containers provided by the laboratory appropriate for the analytical suite in general accordance with BS EN ISO 5667:2006 and in accordance with a task-specific health and safety risk assessment and method statement. This location allows for the surface water discharge to be sampled as it flows out via SWPS1.

Sampling in the wider new drainage system will be carried out using a telescopic sampler, taking care not to disturb sediment on the base of the reens and Monks Lake.

Samples will be stored in coolboxes packed with ice blocks and dispatched to the laboratory on the day of sampling.

9.5 Laboratory Analysis

The analytical laboratory will have UKAS accreditation and use MCERTS-accredited analytical methods where possible. Laboratory analysis of surface water samples will be carried out on a standard five-day turnaround for each substance which has a numeric limit specified by NRW in the permit which permits the surface water discharge.

Analytical results will be issued by the laboratory in MCERTS PDF and Microsoft Excel format.

9.6 Assessment Criteria

Laboratory analytical data for the SWPS1 sampling location will be compared against the emission limits specified in the environmental permit.

Additional laboratory analytical data obtained from the wider surface water drainage system will be assessed against emission limits, where available, and against freshwater EQS set out in the Water Framework Directive.

Should assessment of the SWPS1 analytical data show there to be non-compliances, these will be reported in accordance with the procedures and timescales stipulated by NRW together with proposals to rectify the non-compliance.

10 Environmental Management Systems

St. Modwen's in-house Environmental Management Procedure is presented in Appendix F.

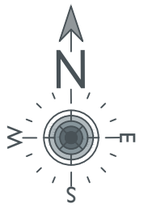
11 Provision of Further Information

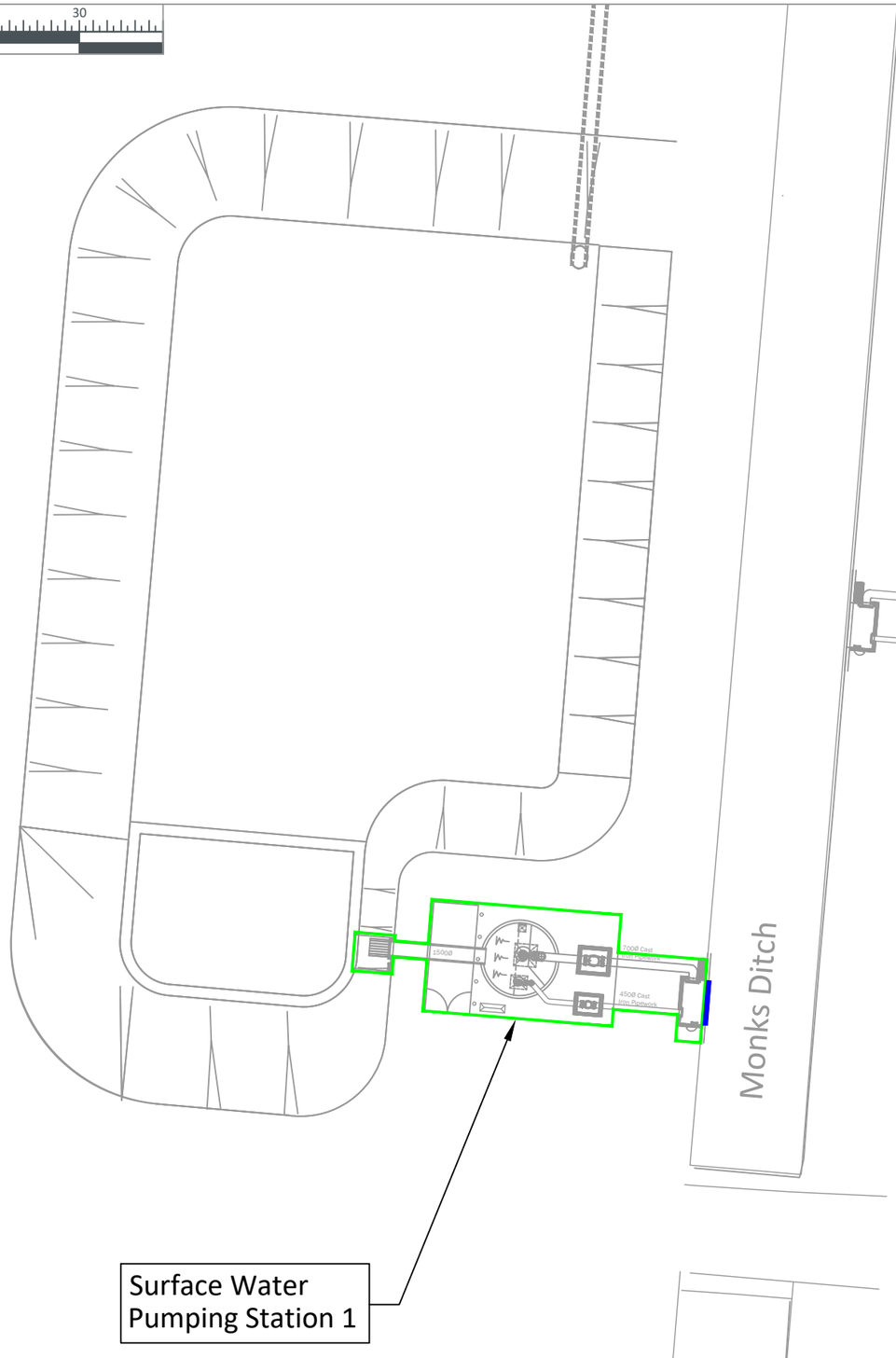
It is proposed that an agreed maintenance plan is implemented to manage the new reen system and settlement lagoon. Maintenance activities will include management of vegetation and removal of silt.

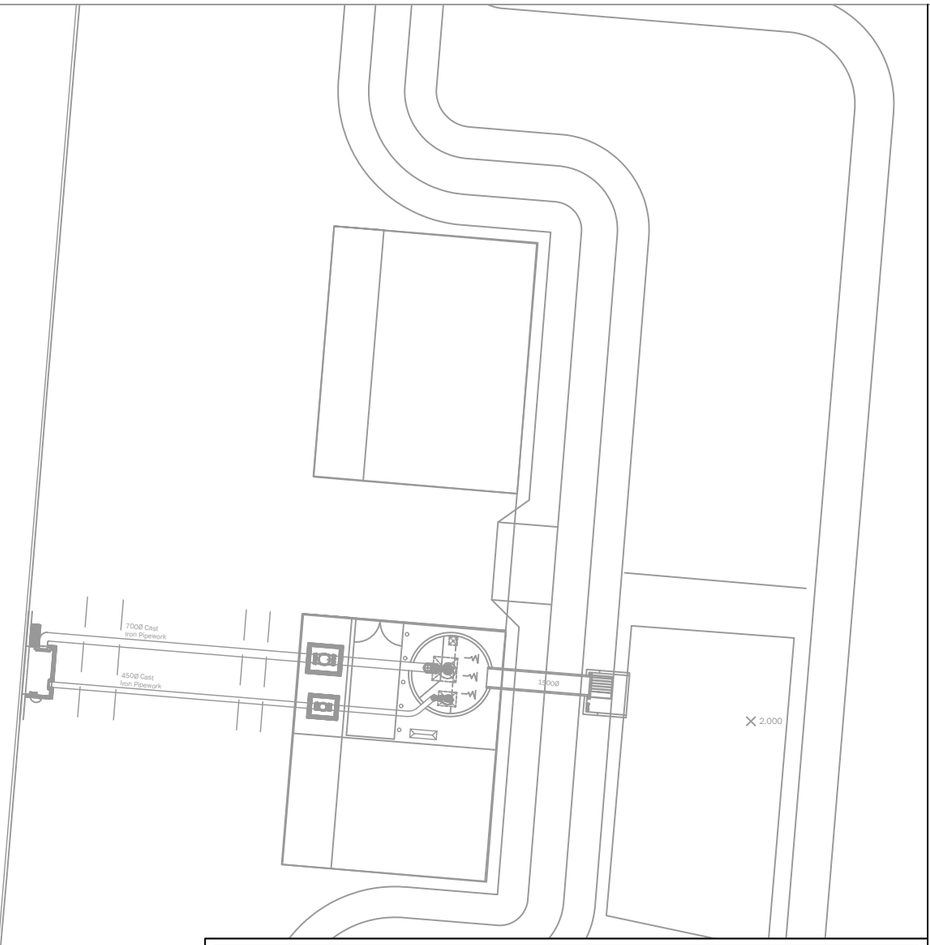
Surface water pumping station SWPS1 will be operated and maintained in accordance with an operation and maintenance manual.

Appendix A Drawings

A3 1:500 10 20 30







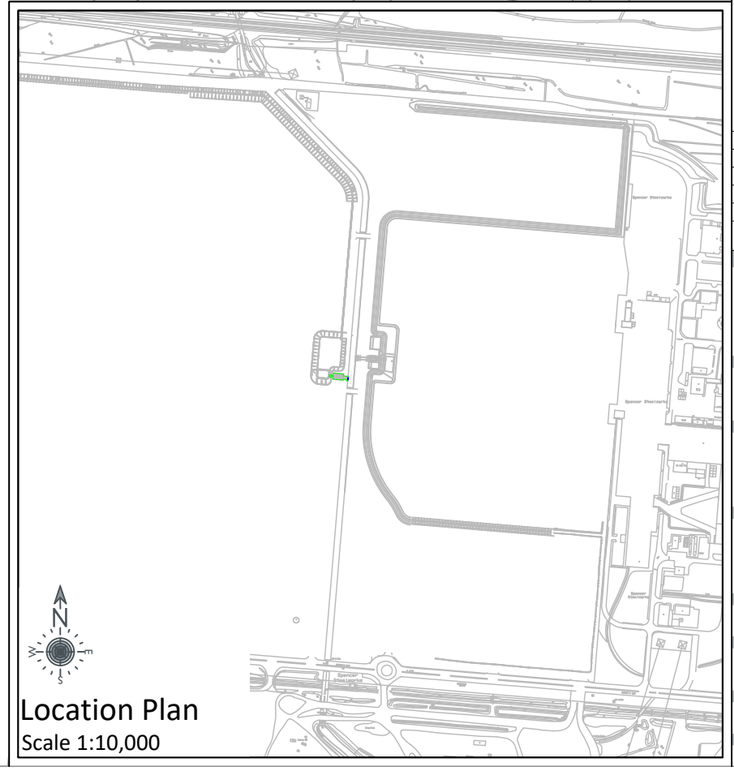
NOTES

These drawings have been produced with reference to the CDM Regulations 2015. Please note that these are pre-construction phase drawings and should be subject to further design risk management as required in accordance with Regulation 9

Key

Site Boundary

Surface Water Discharge Location



Location Plan
Scale 1:10,000

REV	DATE	REVISION NOTE	BY
P1	25.06.21	First Issue	DS

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Birmingham · Bristol
Exeter · London · Reading
pja.co.uk

CLIENT
St Modwen Developments

PROJECT
Glan Llyn

DRAWING TITLE
Monks Ditch Discharge Site Boundary Plan

DRAWING ISSUE STATUS
INFORMATION

PJA JOB No.	SUB-CODE	DRAWING NO.	REVISION
02554	- HH-	001	- P1

Revision Lesser : P = Prelim / A = Approval / T = Tender / C = Construction

BIM DRAWING REFERENCE

SCALE	DRAWN	REVIEWED	DATE
A3@1:500	DS	CS	25/06/21

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PROJECT	DRAWING TITLE	PJA JOB No.	SUB-CODE	DRAWING NO.	REVISION
Glan Llyn	Monks Ditch Discharge SWPS1 Sampling Location Plan	02554	HH	002	P1

Revision Letter : P - Prelim / A - Approval / T - Tender / C - Construction

CLIENT

St Modwen Developments

DRAWING ISSUE STATUS

INFORMATION

REV	DATE	REVISION NOTE	BY
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BIM DRAWING REFERENCE

SCALE	DRAWN	REVIEWED	DATE
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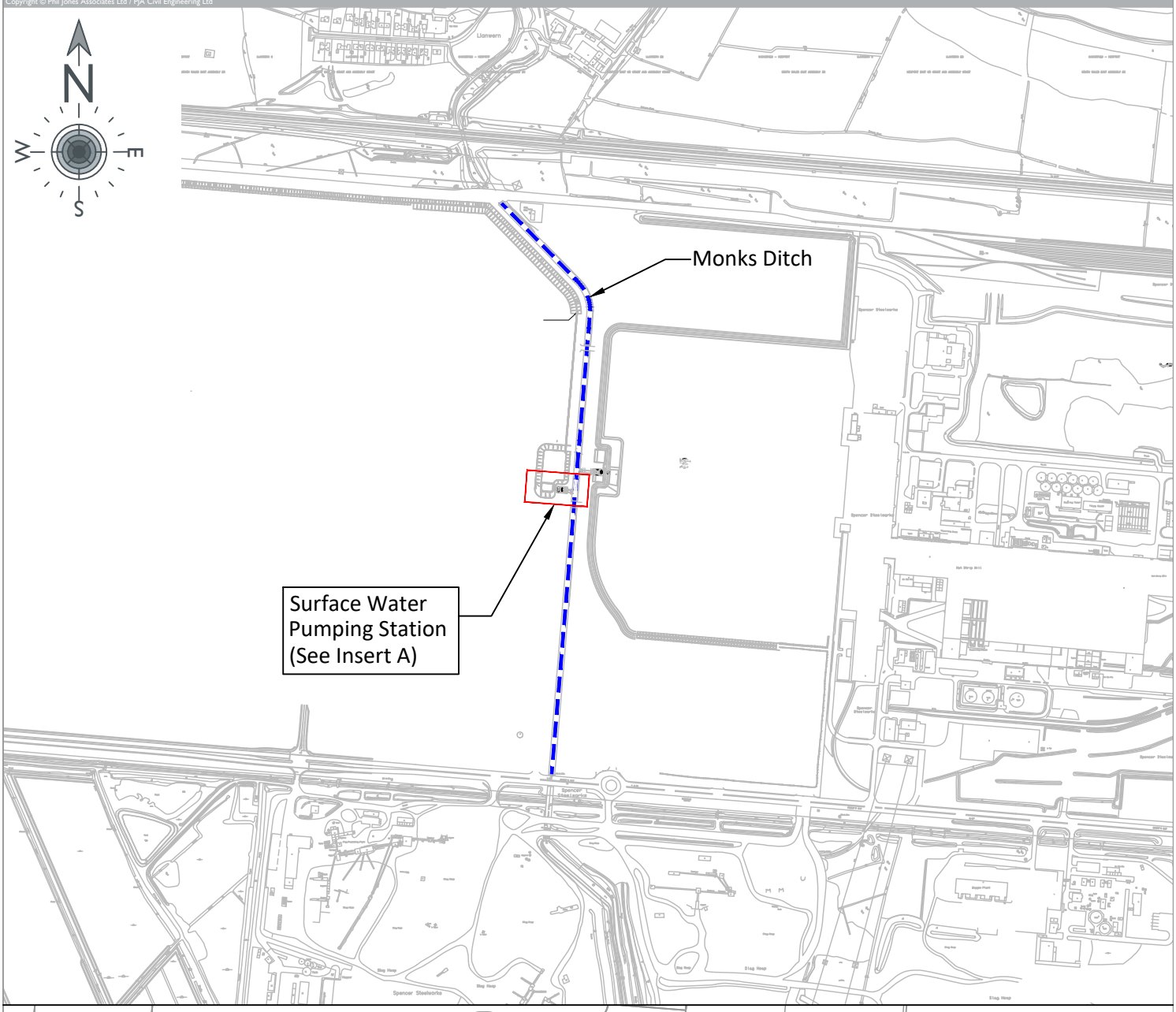

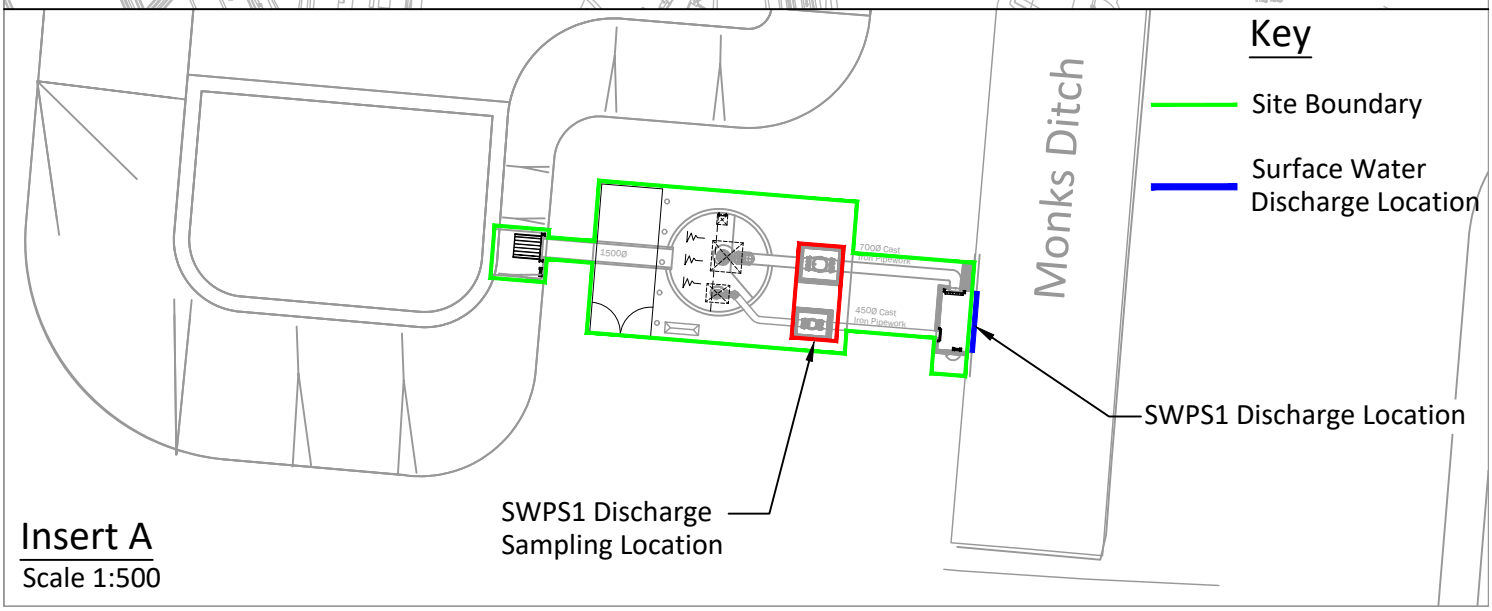

Insert A

Scale 1:500

Appendix B DCWW Correspondence 2007

Dŵr Cymru
Welsh Water

South East Team
Willowford
Main Avenue
Treforest Industrial Estate
Pontypridd
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Fax: 01443 848641
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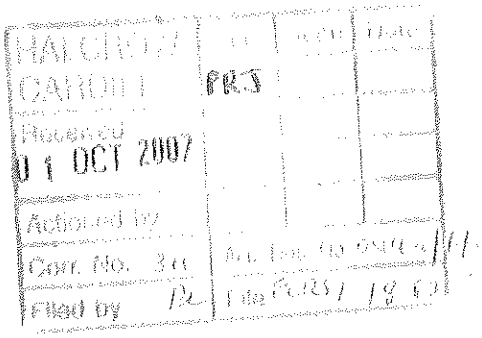


JSW/10217212/NP125R
25th September 2007

For the attention of- Mr.P Jones

Dear Sir

REQUISITION – LLANWERN REGENERATION SITE (NP125R)

Dwr Cymru Welsh Water are investing £1.2 billion, over a five year period, between 2005 – 2010 to improve, maintain and operate its assets Morgan Est is working with Welsh Water to improve the sewerage system in South East Wales and Herefordshire.

Following our recent requisition client progress meeting find attached a breakdown of budget scheme costs, which could be subject to a variance of + or – 25%, for the three options discussed during our meeting.

If you have any queries relating to the attached plans and budgets then please contact me on 01443 848600.

Yours faithfully

Sean Murray
Catchment Manager

Encl.

Cc & Encl.

Mr A M Thomas - DCC
Mr J Hill - NDC (S)

NP 137 R - LLANWERN STEELWORKS REGENERATION

OPTION 1

Drawing Number: NP 137 R (00) - 101

Scope of works

New pumping station located at Llanwern Steelworks development site. Capacity required - approximately 500m3 in wet well. Wet well approximately 10 meters deep and to be sectioned during lower flow phases. Pumps to discharge at a maximum rate of 150 l/s at 10 m static head, after final phase. Access for tankers must be provided. Rising main laid in open cut trench along Meadows Road / Nash Road / west Nash Road at shallow depth (approximately 2m). 3.9 km of 400mm diameter rising main required (assuming six degree bends). Rising main would connect into 525mm diameter gravity sewer tunnelled 500m west into Nash WWTW. Positioning of 4-5 drive pits would be required across privately owned land. Gradient would be approximately 1 in 150, with connection into the inlet works at the 0.65m AOD invert level.

Item	Qty	Unit	Rate	Cost (£)	Comments
Pumping Station					
Pumping Station & Wet Well (Civils)	1	sum	375,000	375,000	Budget based on £750/m3
Pumping Station & Wet Well (M&E)	1	sum	130,000	130,000	As discussion with DT (Imtech Process) - Similar output to Alma Road Pumping Station
Pumping Station Compound	1	sum	10,000	10,000	Including access, landscaping and fencing
Pipework					
Open Cut Trenching (depth not exceeding 2 meters)					
400mm diameter DI sewer in road	3900	meters	385	1,501,500	See breakdown
Crossings	78	nr	250	19,500	Say 1 every 50 meters
Thrust blocks	13	nr	700	9,100	Say 1 every 300 meters
Air Valve Chambers	13	nr	3,750	48,750	Say 1 every 300 meters
Tunnelling					
Mobilise & Site Set Up	1	sum	10,000	10,000	
Drive / Reception Pit Set Up	5	nr	5,000	25,000	
Drive / Reception Pits	5	nr	12,500	62,500	
525mm diameter pipeline	500	meters	900	450,000	
		Sub - Total # 1		2,641,350	
Site Set Up & Clear Site	1	sum	10,000	10,000	
Route Prove	1	sum	20,000	20,000	
Demobilisation	1	sum	5,000	5,000	
		Sub - Total # 2		2,676,350	
Preliminaries		30%		802,905	
		Sub - Total # 3		3,479,255	
Risk @ 10%		10%		347,926	
		Sub - Total # 4		3,827,181	
David Lewis Civil Engineering		8%		306,174	
		Sub - Total # 5		4,133,355	
Coreteam		20%		826,671	
Site Investigation				5,000	
Land Agents Fees				15,000	
Design Fees				100,000	
Post Construction CCTV				2,500	
Fixed Fee		7%		355,777	
		Sub - Total # 4		5,438,303	
Land, Compensation & Easements				20,000	
Cost Consultant Fees		2.70%		147,374	
Client Risk				25,000	
Insurance		0.50%		28,153	
		Sub - Total # 5		5,658,830	
DCWW Overheads		5%		282,942	
		TOTAL		5,941,772	

NP 137 R - LLANWERN STEELWORKS REGENERATION

OPTION 2

Drawing Number NP 137 R - 002 - 01

Scope of works

Foul flows on the Llanwern Steelworks site reach connection point. Flows connect into a 525mm diameter gravity sewer laid at a gradient of 1 in 350. DWF channel added to allow self cleaning velocity in early phases of construction. Sewer travels 900m in an open cut trench before depth makes tunnelling the preferred method. 2.5km of tunnelling takes the gravity sewer through the Great Treston Meadows and underneath the sludge beds north of Nash WWTW. Positioning of 25-30 drive pits would be required across privately owned land, including the nature reserve. New terminal pumping station located at Nash WWTW to pump flows up to invert of inlet works (0.65m AOD) - 4m static head. Capacity required approximately 500m3 of storage in wet well / gravity sewer. Wet well will be 12m deep as a result of storage requirement. Pump to discharge at maximum rate of 150l/s.

Item	Qty	Unit	Rate	Cost (£)	Comments
Pumping Station					
Pumping Station & Wet Well (Civils)	1	sum	375,000	375,000	Budget based on £750/m3
Pumping Station & Wet Well (M&E)	1	sum	130,000	130,000	As discussion with DT (Imtech Process) - Similar output to Alma Road Pumping Station
Pumping Station Compound	1	sum	10,000	10,000	Including access, landscaping and fencing
Pipework					
Open Cut Trenching (Average depth 3 - 4 meters)					
400 x 600mm Ovoid Sewer in road	800	meters	1,100	990,000	See breakdown
Crossings	18	nr	450	8,100	Say 1 every 50 meters
1500mm diameter manholes	9	nr	5,000	45,000	Say 1 every 100 meters
Tunnelling					
Mobilise & Site Set Up	1	sum	10,000	10,000	
Drive / Reception Pit Set Up	30	nr	5,000	150,000	
Drive / Reception Pits	30	nr	12,500	375,000	
525mm Sewer	2500	meters	900	2,250,000	
		Sub - Total # 1		4,343,100	
Site Set Up & Clear Site	1	sum	10,000	10,000	
Route Prove	1	sum	10,000	10,000	
Demobilisation	1	sum	5,000	5,000	
		Sub - Total # 2		4,368,100	
Preliminaries		30%		1,310,430	
		Sub - Total # 3		5,678,530	
Risk @ 10%		10%		567,853	
		Sub - Total # 4		6,246,383	
David Lewis Civil Engineering		8%		499,711	
		Sub - Total # 5		6,746,094	
Coreteam		20%		1,349,219	
Site Investigation				30,000	
Land Agents Fees				25,000	
Design Fees				100,000	
Post Construction CCTV				2,500	
Fixed Fee		7%		577,697	
		Sub - Total # 4		8,830,509	
Land, Compensation & Easements				75,000	
Cost Consultant Fees		2.70%		240,449	
Client Risk				25,000	
Insurance		0.50%		45,855	
		Sub - Total # 5		9,216,813	
DCWW Overheads		5%		460,841	
		TOTAL		9,677,653	

NP 137 R - LLANWERN STEELWORKS REGENERATION

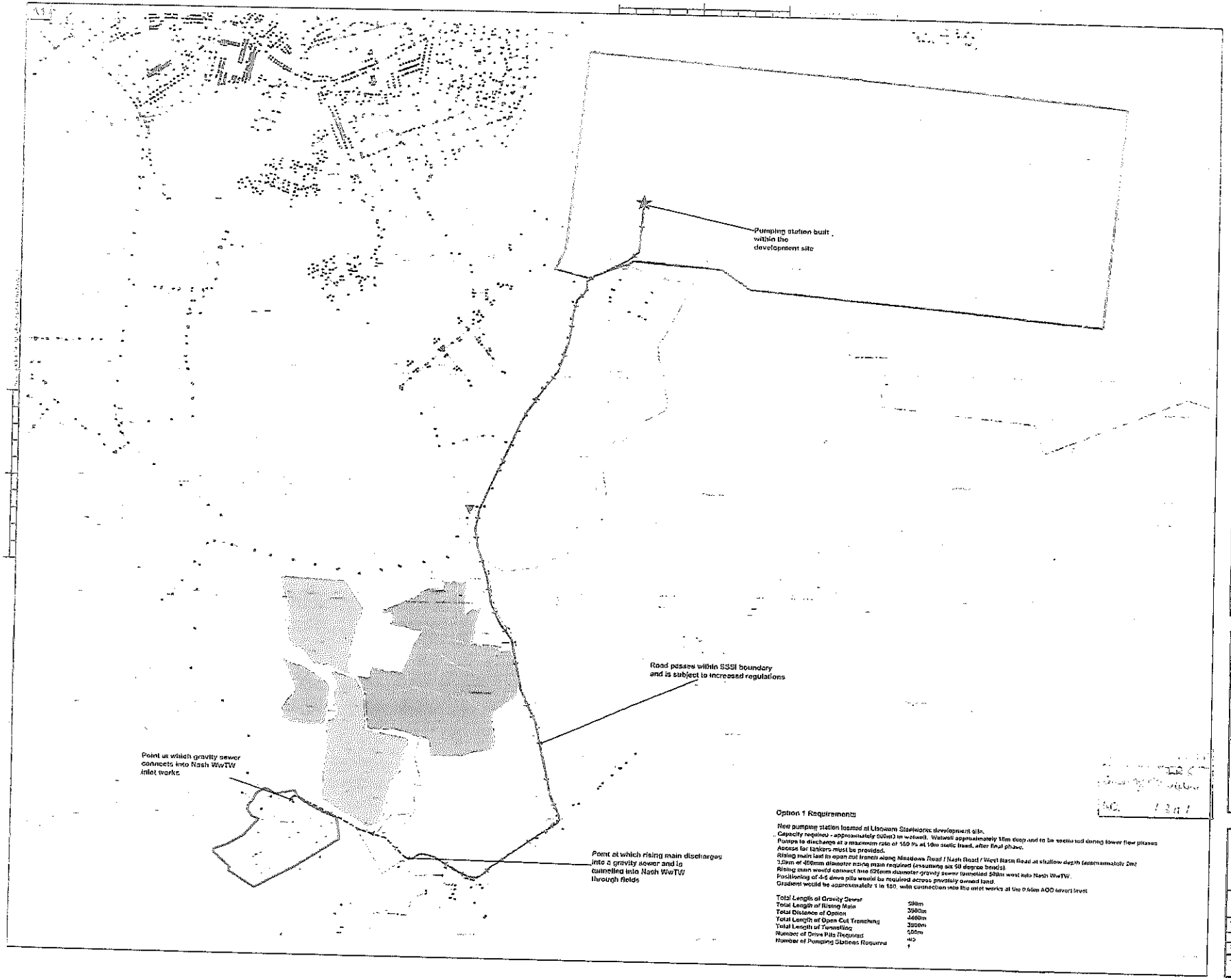
OPTION 3

Drawing Number: NP 137 R - 035 - 101

Scope of works

Foul flows on the Llanwern Steelworks site reach connection point. Flows connect into a 525mm diameter gravity sewer laid at a gradient of 1 in 400. DWF channel added to allow self cleaning velocity in early phases of construction. Flows then connect into Pye Corner PS at an invert level of 0.93m AOD. Additional storage likely to be required in order to get the capacity up to the required level. Pump rates and flows in and out of the pumping station are required. This will determine if pumps require upsizing and whether a third pump is needed. The power source at the pumping station site will need further investigation and a determination made of the additional energy sources required on site. The 422m of asbestos cement rising main is likely to need replacing in order to pass health and safety requirements. Further surveys will determine if maintanance work is required to gravity sewer prior to its use in passing the flows forward to Nash WWTW. Including flow monitors, manhole surveys and 1km of CCTV

Item	Qty	Unit	Rate	Cost (£)	Comments
Pumping Station					
Pumping Station & Wet Well (Civils)	1	sum	82,500	82,500	Budget based on £750/m3
Pumping Station & Wet Well (M&E)	1	sum	130,000	130,000	As M&E works @ Alma Rd.
Pipework					
Open Cut Trenching (Average depth 3 - 4 meters)					
400 x 600mm Ovoid Sewer in road	1500	meters	1,100	1,650,000	See breakdown
Crossings	30	nr	450	13,500	Say 1 every 50 meters
1500mm diameter manholes	15	nr	5,000	75,000	Say 1 every 100 meters
Open Cut Trenching (depth not exceeding 2 meters)					
400mm diameter DI sewer in road	422	meters	385	162,470	See breakdown
Crossings	8	nr	250	2,000	Say 1 every 50 meters
Thrust blocks	4	nr	700	2,800	Say 1 every 100 meters
Air Valve Chambers	4	nr	3,750	15,000	Say 1 every 100 meters
		Sub - Total # 1		**2,133,270**	
Site Set Up & Clear Site	1	sum	10,000	10,000	
Route Prove	1	sum	10,000	10,000	
Demobilisation	1	sum	5,000	5,000	
		Sub - Total # 2		**2,158,270**	
Preliminaries		30%		647,481	
		Sub - Total # 3		**2,805,751**	
Risk @ 10%		10%		280,575	
		Sub - Total # 4		**3,086,326**	
David Lewis Civil Engineering		8%		246,906	
		Sub - Total # 5		**3,333,232**	
Coreteam		20%		666,646	
Site Investigation				10,000	
Land Agents Fees				25,000	
Design Fees				100,000	
Post Construction CCTV				2,500	
Fixed Fee		7%		289,617	
		Sub - Total # 4		**4,426,995**	
Land, Compensation & Easements				150,000	
Cost Consultant Fees		2.70%		123,579	
Client Risk				15,000	
Insurance		0.50%		23,578	
		Sub - Total # 5		**4,739,152**	
DCWW Overheads		5%		236,958	
		TOTAL		**4,976,109**	



Option 1 Requirements

New pumping station located at Llanwern Steelworks development site.
Capacity required - approximately 600m3 in wetwell. Wetwell approximately 18m deep and to be sectional dosing tower flow phases
Pumps to discharge at a maximum rate of 150 l/s at 16m static head, after final phase.
Access for tankers must be provided.
Rising main laid in open cut trench along Meadows Road / Nash Road / West Nash Road at shallow depth (approximately 2m)
3.05m of 400mm diameter rising main required (assuming six 90 degree bends).
Rising main would connect into 825mm diameter gravity sewer tunnelled 50m west into Nash WwTW.
Positioning of 4-5 drive pits would be required across privately owned land.
Gradient would be approximately 1 in 150, with connection into the inlet works at the 0.56m AOD invert level.

Total Length of Gravity Sewer	50m
Total Length of Rising Main	3980m
Total Distance of Option	4400m
Total Length of Open Cut Trenching	3900m
Total Length of Tunnelling	500m
Number of Drive Pits Required	4/5
Number of Pumping Stations Required	1

INFORMATION

amec / Atkins

Llanwern Steelworks Regeneration

Appendix J - Option 1

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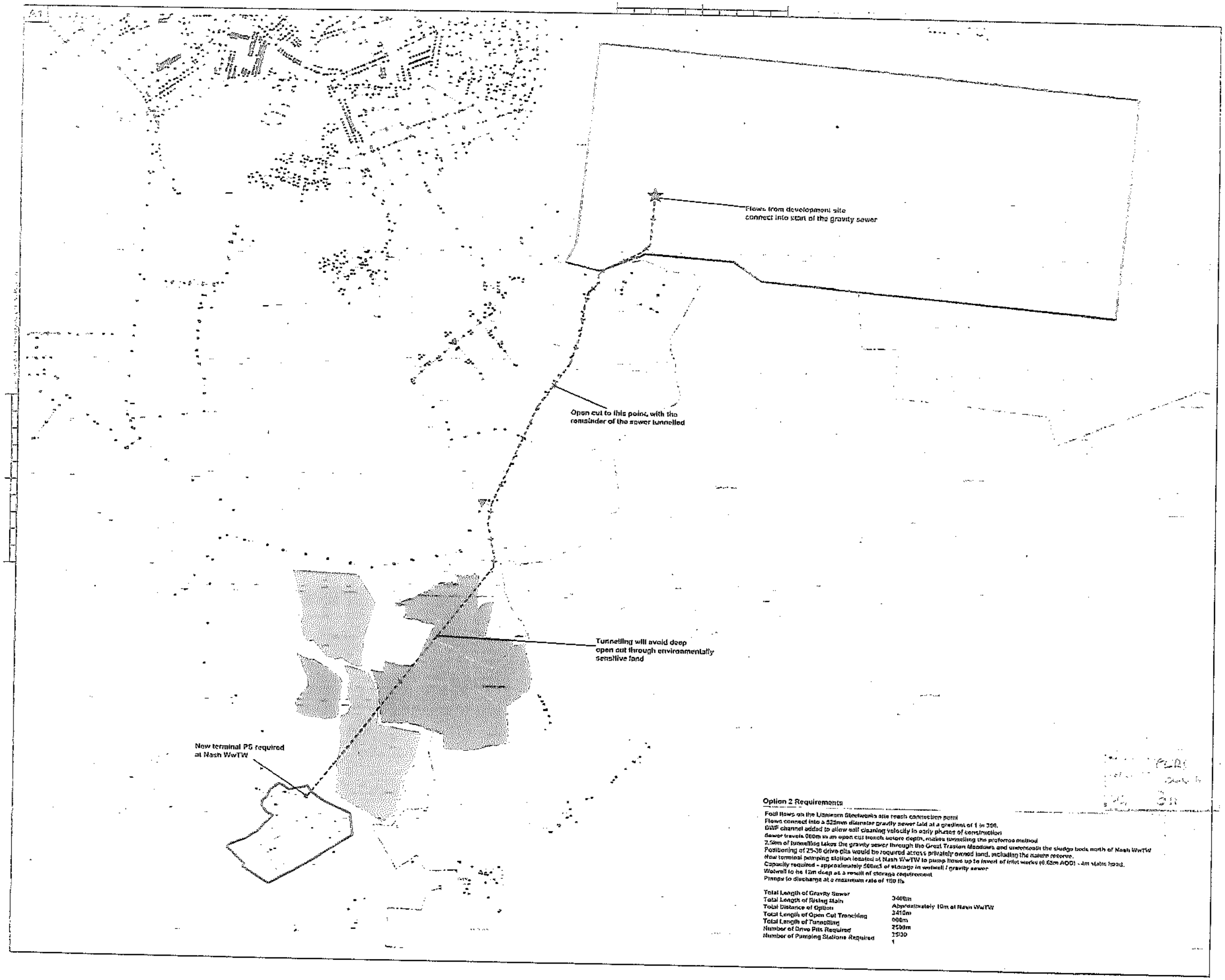

Option 2 Requirements

Foul flows on the Llanwern Steelworks site reach connection point
Flows connect into a 525mm diameter gravity sewer laid at a gradient of 1 in 396.
DWF channel added to allow self cleaning velocity in early phases of construction
Sewer travels 900m in an open cut trench before depth, makes tunnelling the preferred method
2.5km of tunnelling takes the gravity sewer through the Great Traston Meadows and underneath the sludge beds north of Nash WwTW
Positioning of 25-30 drive pits would be required across privately owned land, including the nature reserve.
New terminal pumping station located at Nash WwTW to pump flows up to invert of inlet works (6.65m AOD) - 4m static head.
Capacity required - approximately 500m3 of storage in wetwell / gravity sewer
Wetwell to be 12m deep as a result of storage requirement
Pumps to discharge at a maximum rate of 100 l/s

Total Length of Gravity Sewer	3400m
Total Length of Rising Main	Approximately 10m at Nash WwTW
Total Distance of Option	3410m
Total Length of Open Cut Trenching	900m
Total Length of Tunnelling	2500m
Number of Drive Pits Required	25/30
Number of Pumping Stations Required	1

INFORMATION

amec

Llanwern Steelworks Regeneration

Appendix J - Option 2

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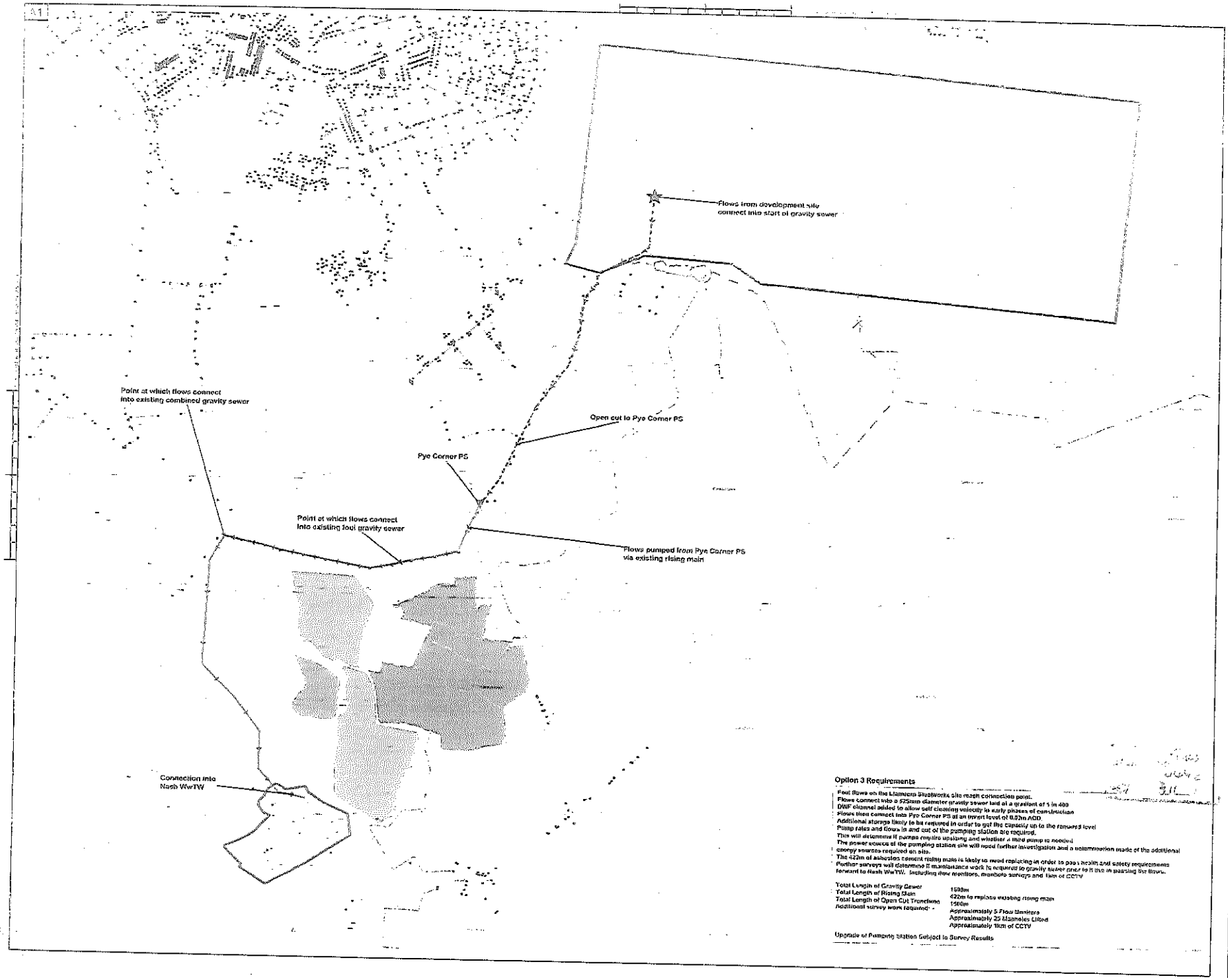
A1
Flows from development site
connect into start of gravity sewer
Point at which flows connect
into existing combined gravity sewer
Open cut to Pye Corner PS
Pye Corner PS
Point at which flows connect
into existing foul gravity sewer
Flows pumped from Pye Corner PS
via existing rising main
Connection into
Nash WwTW
Option 3 Requirements
Foul flows on the Llanwern Steelworks site reach connection point.
Flows connect into a 525mm diameter gravity sewer laid at a gradient of 1 in 400
DWF channel added to allow self cleaning velocity in early phases of construction
Flows then connect into Pye Corner PS at an invert level of 8.02m AOD.
Additional storage likely to be required in order to get the capacity up to the ranured level
Pump rates and flows in and out of the pumping station are required.
This will determine if pumps require upsizing and whether a mini pump is needed
The power source of the pumping station site will need further investigation and a determination made of the additional
energy sources required on site.
The 422m of asbestos cement rising main is likely to need replacing in order to pass health and safety requirements
Further surveys will determine if maintenance work is required to gravity sewer prior to it this in passing the flows
forward to Nash WwTW. Including flow monitors, manhole surveys and 15km of CCTV
Total Length of Gravity Sewer 1500m
Total Length of Rising Main 422m to replace existing rising main
Total Length of Open Cut Trenchless 1500m
Additional survey work required: - Approximately 5 Flow Monitors
Approximately 25 Manholes Lifted
Approximately 15km of CCTV
Upgrade of Pumping Station Subject to Survey Results
INFORMATION
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Llanwern Steelworks
Regeneration
Appendix J- Option 3
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Appendix C Application Forms

Application for an environmental permit: Part A – About you

Fill in this part A if you are applying for a new permit, applying to change or surrender an existing permit, or want to transfer an existing permit to yourself.

Please check that this is the latest version of the form available from our website.

Please read through this form and the guidance notes that come with it. All relevant guidance documents can be found on our website.

Where you see the term 'document reference' on the form, give the document references and send the documents with the application form when you've completed it.

Contents

1 About you

Are you applying as an individual, an organisation of individuals (for example, a partnership), a company (this includes Limited Liability Partnerships) or a public body?

An individual	☐	*Go to section 2*
An organisation of individuals (for example, a partnership)	☐	*Go to section 3*
A public body (such as a local council)	☐	*Go to section 4*
A registered company or other corporate body	☒	*Go to section 5*

2 Applications from individuals

2a Please give us the following details

Title		
First name		
Last name		*Go to section 6*

3 Applications from organisations of individuals

3a Organisation details

Organisation name	
Type of organisation	
If 'Other', please specify	

3b Main representative's details

Title	
First name	

Last name

3c Second representative's details:

Title

First name

Last name

3d Other representative's details

If relevant, please provide details of all other representatives on a separate sheet and tick here to show that you have done so. ☐ *Go to section 6*

4 Applications from public bodies

4a Public body details

Public body name

Type of public body

If 'Other', please specify

4b Executive officer's details

The executive is an officer of the public body authorised to sign on your behalf.

Title

First name

Last name

Position *Go to section 6*

5 Applications from a registered company or other corporate body

5a Company details

Company name: St. Modwen Developments (Llanwern) Ltd

Company registration number: EXTUID_327317

Date of registration: 22/05/2017

If you are applying as a corporate organisation that is now a limited company, please provide evidence of your status and tell us the reference number you have given this document with this evidence.

Document reference: N/A *Go to section 6*

6 Your address

6a Your main (registered office) address

For companies this *must* be the address on record at Companies House.

Address: 47 Esplanade

St. Helier

	Jersey
Postcode	JE1 0BD
Telephone - mobile	
Telephone - office	
Email address	

If you are applying as an organisation of individuals, every partner needs to give us their details, including their title. If necessary, continue on a separate sheet and tell us the reference you have given the sheet.

Document reference	

6b UK business address *only* if different from above

Address	
Postcode	
Telephone - mobile	
Telephone - office	
Email address	

Go to section 7

7 Contact details

7a Who can we talk to about your application?

This can be someone acting as a consultant or 'agent' for you.

Title	
First name	Charlotte
Last name	Smith
Address	Brew House
	Jacob Street
	Tower Hill

	Bristol
Postcode	BS2 0EQ
Telephone - mobile	07540 034728
Telephone - office	
Email address	charlotte.smith@pja.co.uk

7b Who can we talk to about your operation?

Same as the application contact in 7a	☒
Title	
First name	
Last name	
Address	
Postcode	
Telephone - mobile	
Telephone - office	
Email address	

7c Who can we talk to about your billing or invoice?

Same as the application contact in 7a	☐
Same as the operation contact in 7b	☐
Title	
First name	Jonathan
Last name	Hearing
Address	St. Modwen Developments
	Green Court

	Kings Weston Lane
	Avonmouth
Postcode	BS11 8AZ
Telephone - mobile	07973 835390
Telephone - office	
Email address	jonathan.hearing@stmodwen.co.uk

Application for an environmental permit: Part B2 – General: new bespoke permit

Fill in this part of the form together with parts A and F1 or F2, if you are applying for a new bespoke permit. **You also need to fill in part B3, B4, B5, B6, or B7 (depending on what activities you are applying for).** Please check that this is the latest version of the form available from our website. Please read through this form and the guidance notes that came with it. All relevant guidance documents can be found on our website.	Contents 1 About the permit 2 About the site (not mobile plant) 3 Your ability as an operator 4 Consultation 5 Supporting information 6 Environmental risk assessment Appendix 1 – Low impact installation checklist

1 About the permit

1a Discussions before your application

If you have had discussions with us before your application, give us the case reference or details on a separate sheet.

Case or document reference: N/A

1b Is the permit for a site or for a mobile plant?

Note: The term 'mobile plant' does not include mobile sheep dipping unit.

Site ☒ *Go to section 2*

Mobile Plant ☐ *Go to section 1c*

1c Have we told you during pre-application discussions that we believe that a mobile permit is suitable for your activity?

No ☒

Yes ☐

1d Have there been any changes to your proposal since this discussion?

No ☒ *Go to section 3*

Yes ☐ Send us a description of the activity you want to carry out, highlighting the changes made since our pre-application discussions. Give us the reference, below.

Document reference: _____ *Go to section 3*

2 About the site (not mobile plant)

2a What is the site name, address, postcode and national grid reference?

Site name: Glan Llyn

Address: Queensway

Newport

Postcode	NP19 4QZ
National grid reference for the site (12 digit)	

2b How many regulated facility types are you applying for?

One	☒	*Go to section 2c*
Two or more	☐	*Go to section 2d*

2c What type of regulated facility are you applying for? (For one facility type only.)

Installation	☐	*Tick the relevant box in 2c1*
Waste operation	☐	*Tick the relevant box in 2c2*
Mining waste operation	☐	*Tick the relevant box in 2c3*
Water discharge activity (all)	☒	*Go to section 3d*
Medium Combustion Plant Only	☐	*Tick the relevant box in 2c4*
Medium Combustion Plant/Specified Generator combined	☐	*Tick the relevant box in 2c4*
Specified Generator Only	☐	*Tick the relevant box in 2c4*

What is the national grid reference for the regulated facility? (See the guidance notes on part B1 and note the different requirement for water discharge activities.)

As in 2a above	☒	
Different from 2a	☒	Please fill in the national grid reference below
National grid reference for the facility	336762, 186783	

What is the type of activity?

2c1 Installation		**2c2 Waste Operation**	
Intensive farming installation	☐	Landfill gas facility (closed landfill)	☐
Local authority (Part A (2) and Part B)	☐	Opra charged activity	☐
Low impact installation (see question 2e below)	☐	Tier 2 charged bespoke activity (see charging guidance for list)	☐
Opra charged activity	☐	Pet cemetery	☐
Directly associated activity	☐		
Paragraph-17 installation	☐		

2c3 Mining waste operation		**2c4 Medium Combustion Plant/Specified Generator**	
Non-Opra charged activity	☐	Tier 2 charged complex bespoke activity (see charging guidance)	☐
Opra charged activity ***Go to section 2e***	☐	Tier 2 charged simple bespoke activity (see charging guidance)	☐

2d What types of regulated facilities are you applying for? (For two or more facility types.)

Regulated Facility 1

National grid reference (12 digit)		
Installation	☐	*Tick the relevant box in 2d1*
Waste operation	☐	*Tick the relevant box in 2d2*
Mining waste operation	☐	*Tick the relevant box in 2d3*
Water discharge activity (all)	☐	*Go to section 3d*
Medium Combustion Plant only	☐	*Tick the relevant box in 2d4*
Medium Combustion Plant/ Specified Generator combined	☐	*Tick the relevant box in 2d4*
Specified Generator only	☐	*Tick the relevant box in 2d4*

2d1 Installation		**2d2**	**Waste Operation**	
Intensive farming installation	☐		Landfill gas facility (closed landfill)	☐
Local authority (Part A (2) and Part B)	☐		Opra charged activity	☐
Low impact installation (see question 2e below)	☐		Tier 2 charged bespoke activity (see charging guidance for list)	☐
Opra charged activity	☐		Pet cemetery	☐
Directly associated activity	☐			
Paragraph-17 installation	☐			

2d3 Mining waste operation		**2d4**	**Medium Combustion Plant/Specified Generator**	
Non-Opra charged activity	☐		Tier 2 charged complex bespoke activity (see charging guidance)	☐
Opra charged activity	☐		Tier 2 charged simple bespoke activity (see charging guidance)	☐

Regulated Facility 2

National grid reference (12 digit)		
Installation	☐	*Tick the relevant box in 2d1*
Waste operation	☐	*Tick the relevant box in 2d2*
Mining waste operation	☐	*Tick the relevant box in 2d3*
Water discharge activity (all)	☐	*Go to section 3d*
Medium Combustion Plant only	☐	*Tick the relevant box in 2d4*
Medium Combustion Plant/Specified Generator combined	☐	*Tick the relevant box in 2d4*
Specified Generator only	☐	*Tick the relevant box in 2d4*

2d1 Installation		**2d2**	**Waste Operation**	
Intensive farming installation	☐		Landfill gas facility (closed landfill)	☐
Local authority (Part A (2) and Part B)	☐		Opra charged activity	☐
Low impact installation (see question 2e below)	☐		Tier 2 charged bespoke activity (see charging guidance for list)	☐

Opra charged activity	☐	Pet cemetery	☐
Directly associated activity	☐		
Paragraph-17 installation	☐		

2d3 Mining waste operation		**2d4 Medium Combustion Plant/Specified Generator**	
Non-Opra charged activity	☐	Tier 2 charged complex bespoke activity (see charging guidance)	☐
Opra charged activity	☐	Tier 2 charged simple bespoke activity (see charging guidance)	☐

Regulated Facility 3 etc.

Do you want three or more facilities?

No ☐ *Go to section 2e*

Yes ☐ Use a separate sheet and send it to us with your application form. Tell us below the reference you have given this separate sheet.

Document reference | | *Go to section 2e*

2e Low impact installations (installations only)

Are any of the regulated facilities low impact installations?

No ☒ *Go to section 2f*

Yes ☐

Please give us a description of your proposed activity telling us how you meet the conditions for a low impact installation and send it to us with your application form.

Document reference |

Tick the box to confirm you have filled in the low impact installation checklist in Appendix 1 for each regulated facility. ☐

2f Treating batteries

Are you planning to treat batteries? (See the guidance notes on part B2.)

No ☒

Yes ☐ Tell us how you will do this, send us a copy of your explanation and tell us the reference you have given this explanation.

Document reference |

2g Multi-operator installation

If the site is a multi-operator site (that is there is more than one operator of the installation) then fill in the table below the application reference for each of the other permits.

Table 1 – Other permit application references

3 Your ability as an operator

If you are only applying for a water discharge activity, you only have to fill in question 3d.

3a Relevant offences – installations, waste operations, medium combustion plant and specified generators (See the guidance notes on part B2)

Have you, or any other relevant person, been convicted of any relevant offence?

No ☐ *Go to section 3b*

Yes ☐ Please give details below

Title	
First name	
Last name	
Date of birth (DD/MM/YYYY)	
Position held at the time of the offence	
Name of the court where the case was dealt with	
Date of conviction (DD/MM/YYYY)	
Offence and penalty set	
Date any appeal against the conviction will be heard (DD/MM/YYYY)	

If necessary, use a separate sheet to give us details of other relevant offences, and tell us below the reference number you have given the extra sheet.

Document reference	

3b Technical ability - relevant waste operations only (See the guidance notes on part B2)

3b1 Which approved scheme are you using to show you have the suitable technical skills and knowledge to manage your facility?

CIWM / WAMITAB ☐

ESA / EU ☐

3b2 Do you already hold the relevant, formal qualifications to manage your facility?

Yes ☐ Tick to confirm you've included all original and continuing competence evidence. ☐

No ☐ Tick to confirm you've included evidence you've registered with a Scheme. ☐

3c Finances (installations, waste operations, medium combustion plant, specified generators and mining waste operations only)

Do you or any relevant person have current or past bankruptcy or insolvency proceedings against you?

No ☐ *Go to section 3d.*

Yes ☐ Please give details below of the required set-up costs (including infrastructure), maintenance and clean up costs for the proposed facility against which a credit check may be assessed.

Please note: We may want to contact a credit reference agency for a report about your business's finances.

Landfill, Category A mining waste facilities and mining waste facilities for hazardous waste only

How do you plan to make financial provision (to operate a landfill or a mining waste facility you need to show us that you are financially capable of meeting the obligations of closure and aftercare)?

Bonds	☐
Escrow account	☐
Trust fund	☐
Lump sum	☐
Other	☐

Provide a plan of your estimated expenditure on each phase of the landfill or mining waste facility.

Document reference	

3d Management systems (all)

You can find guidance on management systems in our 'How to Comply' document. We have also developed environmental management toolkits for some business sectors which you can use to produce your own management system. You can get this by calling 0300 065 3000 or by downloading it from our guidance webpages.

3d1 Does your management system meet the conditions set out in our guidance?

Yes ☒

No ☐

3d2 What management system will you provide for your regulated facility?

EC Eco-Management and Audit Scheme (EMAS)	☐
ISO 14001	☐
BS 8555 (Phases 1–5)	☐
Green Dragon	☐
Own management system	☒

3d3 Make sure you included a summary of your environment management system with the application. Tick the box to conform you've done this and tell us the document reference, below. ☒

Document reference	SHE-GRP-PDR-018 St. Modwen Environmental Management Procedure

Water discharge activities: *Go to section 5.*

4 Consultation (fill in 4a to 4c for installations and waste operations and 4d for installations only. Fill in 4e for medium combustion plant and specified generators only)

Could the waste operation or installation involve releasing any substance into any of the following?

4a A sewer managed by a sewerage undertaker

No ☐

Yes ☐ Please name the sewerage undertaker

4b A harbour managed by a harbour authority

No ☐

Yes ☐ Please name the harbour authority

4c Direct into relevant territorial waters or coastal waters within the sea fisheries district of a local fisheries

No ☐

Yes ☐ Please name the fisheries committee

4d Is the installation on a site for which:

4d1 a nuclear site licence is needed under section 1 of the Nuclear Installations Act 1965?

No ☒

Yes ☐

4d2 a policy document for preventing major accidents is needed under regulation 5 of the Control of Major Accident Hazards?

No ☒

Yes ☐

4e Is the medium combustion plant or specified generator located within an Air Quality Management Area (AQMA)?

No ☐

Yes ☐ What is the name of the AQMA?

What is the name of the Local Authority?

5 Supporting information

5a Provide a plan or plans for the site (but not mobile plant)

Mark the site boundary in green (See guidance notes on part B2 for more information on what should be included)

Document reference: Monks Ditch Discharge Site Boundary Plan

5b Provide the relevant sections of a site condition/baseline report, if this applies

Document reference: N/A

If you are applying for an installation, tick the box to confirm that you have sent in a baseline report. ☐

5c Provide a non-technical summary of your application (see the guidance notes on part B2)

Document reference: Glan LlynSurface Water Discharge Activity Environmental Permit Application Non-Technical Summary, June 2021

6 Environmental risk assessment

Provide an assessment of the risks each of your proposed regulated facilities poses to the environment. The risk assessment must use H1 or an equivalent method.

Document reference	Glan Llyn_H1 Assessment (Microsoft Access file)

Appendix 1 – Low impact installation checklist (see guidance notes on part B2)

Installation reference					
Condition	**Response**				**Do you meet this?**
A – Management techniques	Provide references to show how your application meets A.				Yes ☐ No ☐
	References				
B – Aqueous waste	Effluent created		m3/day		Yes ☐ No ☐
C – Abatement systems	Provide references to show how your application meets C.				Yes ☐ No ☐
	References				
D - Groundwater	Do you plan to release any hazardous substances or non-hazardous pollutants into the ground?		Yes ☐ No ☐		Yes ☐ No ☐
E – Producing waste	Hazardous waste		Tonnes per year		Yes ☐ No ☐
	Non-hazardous waste		Tonnes per year		
F – Using energy	Peak energy consumption		MW		Yes ☐ No ☐
G – Preventing accidents	Do you have appropriate measures to prevent spills and major releases of liquids? (See 'How to comply'.)		Yes ☐ No ☐		Yes ☐ No ☐
	Provide references to show how your application meets G.				
	Reference				
H - Noise	Provide references to show how your application meets H.				Yes ☐ No ☐
	Reference				
I - Emissions of polluting substances	Provide references to show how your application meets I.				Yes ☐ No ☐
	Reference				
J – Odours	Provide references to show how your application meets J.				Yes ☐ No ☐
	Reference				
K – History of keeping to the regulations	Say here whether you have been involved in any enforcement action as described in Compliance History Appendix 1 explanatory notes.		Yes ☐ No ☐		

Application for an environmental permit:

Part B6 – New bespoke water discharge activity and groundwater (point source) activity

Fill in this part of the form, together with parts A, B2 and F2, if you are applying for a new bespoke permit for a water discharge activity or a point source discharge groundwater activity.

Please check that this is the latest version of the form available from our website.

Please read through this form and the guidance notes that came with it. All relevant guidance documents can be found on our website.

If you want to apply for a standalone discharge of treated domestic sewage effluent of up to fifteen cubic metres (15m3) a day to ground or up to twenty cubic metres (20m3) a day to surface water, please fill in form B6.5.

Contents

1 About the effluent

1a Give a brief description of the effluent discharge you want a permit for, for example, treated domestic sewage effluent.

The discharge of surface water from the new reen network at the Glan Llyn residential development which comprises surface water run off from the developed area of the site, surface water run-off from land to the north of Glan Llyn and base flow.

1b Give this effluent a unique name

You must use this name to identify this effluent throughout this application and all associated documents.

Effluent name: SWPS1

1c Is this a release from a dam, weir or sluice ('reservoir release') under Schedule 21 of the EPR meaning of water discharge activity?

Yes ☐

No ☒

1d Tell us the effluent type.

Choose which type of effluent you are applying for, from the options in Table 1 below.

You must answer the relevant questions, as set out in Table 1, depending on the type of effluent you want to discharge.

Fill in a separate copy of this **form** and the appropriate appendix or appendiceis for each type of effluent you plan to discharge.

Table 1 – About the effluent												
Type of effluent	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
Domestic sewage – up to 20 m3 a day discharged to surface water or – up to 15m3 a day discharged to groundwater	☐	All	a, b, c, d	a, b	b, f	-	All	-	b, f*, g	-	-	All
Domestic sewage – 20m3 a day or more discharged to surface water or – 15m3 a day or more discharged to groundwater	☐	All	a, b, c, d	a, b	b, f	-	All	b, d, e	b, d*, e*, f*, g*	All	b, c, d, e	All
Intermittent settled storm sewage	☐	All	a, b	-	-	a, b, e, f, g, h, l, m	All	a, d, e	b, g	All	a, b, c, d, e	All
Intermittent combined sewer overflow	☐	All	a, b	-	-	c, d, e, f, g, h, i, m	All	a, d, e	b, g	All	a, b, c, d, e	All
Intermittent emergency overflow	☐	All	a, b	-	-	j, k, l	All	a, d, e	b, g	All	a, b, c, d, e	All
Sewage – water company WwTW final effluent	☐	All	a, b	-	a, f (b is optional)	-	All	a, b, c, d, e	a, b, c, d*, e*, f*, g (see note below)	All	a, b, c, d, e	All
Trade – known volume	☐	All	a, b, c, d	a, b	b, c, f	-	All	b, c, d, e, f	b, d*, e*, f*, g (see note below)	All	b, c, d, e	All
Trade – rainfall dependent	☐	All	a, b	-	b, c, f	-	All	b, c, d, e	b, d*, e*, f*, g	All	b, c, d, e	All
Trade – returned abstracted water (including ground source heating and cooling schemes)	☐	All	a, b, c, d	-	b, c, f	-	All	b, c, d, e, f	a, b, d*, e*, f*, g	All	b, c, d, e	All
Mixed effluent – all effluent volumes	☐	All	a, b, c, d	a, b	b, c, f	-	All	b*, d*, e* (see note below)	b, d*, e*, f*, g (see note below)	All	b, c, d, e	All
Mixed effluent – containing any rainfall dependent effluent	☒	All	a, b, c, d	a, b	b, c, d, e, f	-	All	b, c, d, e, f	b, d*, e*, f*, g (see note below)	All	b, c, d, e	All
*Check the relevant question and our guidance notes on part B6 to see if you need to give an answer.												

2 How long will you need to discharge?

2a What date do you want the permit for this effluent to start? 01/11/2021

Please note that this is the date that your annual subsistence charges will start, even if you have not started to discharge, unless you contact us to change (delay) the start date.

2b Is the discharge time limited?

No ☒

Yes ☐ Please give the date you expect the discharge to end but

Please note that your permit will not end on that date and you will still need to notify us to surrender the permit.

2c Will the discharge take place all year?

Yes ☒

No ☐ Please give details below, of the months when you will make the discharge

2d Will the discharge take place on more than six days in any year?

Yes ☒

No ☐

3 Discharges to sewer

3a How far away is the nearest sewer (in metres)? 30m

You will need to check this with your sewerage undertaker (usually your local water company) and you may also need to check if it is possible to connect to a private sewer.

3b Tell us why you think you cannot discharge your effluent into a sewer.

You must explain why you cannot discharge your effluent into a sewer.

Your justification must:

- show the extra cost of connecting to a sewer compared to the treatment you propose
- provide details of any physical obstacles; for example, roads, railways, rivers or canals.

Where you are proposing a discharge from a private sewage treatment system in an area where it appears reasonable to discharge your effluent into a sewer, you must, *as a minimum*:

- send us evidence that you have approached the sewerage undertaker, and
- send us their formal response regarding connection.

The guidance notes on part B6 will help you understand what information you need to provide in answer to this question. If you fail to send this information with your application, it may be returned to you without processing.

Tell us the reference you've given the document detailing your justification.

Document reference	Surface Water Discharge Activity Environmental Permit Application Non-Technical Summary, June 2021

4 How much do you want to discharge?

4a What is the daily dry weather flow (in cubic metres)?

4b What is the maximum volume of effluent you will discharge in a day (in cubic metres)?

40,000cum

4c What is the maximum rate of discharge (in litres a second)?

750 l/s

4d What is the maximum volume of non-rainfall dependent effluent you will discharge in a day (in cubic metres)?

0cum

4e What is the maximum rate of rainfall dependent discharge (in litres per second)?

750 l/s

4f For each answer in question 4, show how you worked out the figure on a separate sheet

Document reference

Form B6 Question 4 Workings

5 Intermittent sewage discharges

5a For each answer to b to j below, show how you worked out the figure on a separate sheet.

Document reference

5b What is the total volume of the storm tank storage (in cubic metres)?

5c What is the pass forward flow at the settled storm overflow setting (in litres per second)?

5d What is the pass forward flow at the storm overflow setting (in litres per second)?

5e What is the total volume of storage (in cubic metres)?

5f Is the discharge screened?

No ☐ *Go to section 5k*

Yes ☐

5g What is the mesh screen spacing (in millimetres)?

5h What is the minimum flow through the mesh screen (in litres per second)?

5i What is the bar screen spacing (in millimetres)?

5j What is the minimum flow through the bar screen (in litres per second)?

5k Explain how this asset is built to good engineering design – tell us the document reference for this supporting evidence.

5l What is the emergency storage capacity of the sewer and wet well (in cubic metres)?

5m What is the storage time within the sewer and the wet well above the top water level at dry weather flow (in hours and minutes)?

5n What is the pass forward flow at the pumping station (in litres per second)?

6 How will the effluent be treated?

6a Do you treat your effluent?

Yes ☒ *Go to section 6b*

No ☐ You must explain why the effluent will not be treated. Tell us the reference you have given the document setting out your justification.

Document reference

6b Tell us about the treatments.

Fill in Table 2 for each stage of the treatments carried out on your effluent in the order in which they are carried out.

Fill in a separate copy of this **form** for each type of effluent you plan to discharge.

Table 2		
Effluent name	**SWPS1**	
Order of treatment	Code number	Description
First	10	Lagoon settlement
Second		
Third		
Fourth		

Continue on a separate sheet if you need more rows. If you prefer, you can also send us an overall design for the whole treatment process. Tell us the reference you've given the separate sheet or design.

Document reference

6c Final effluent discharge quality.

You must provide details on a separate sheet of the final effluent discharge quality that the overall treatment system is designed to achieve. Tell us the reference for this document.

Document reference: Glan Llyn Surface Water Discharge Activity Environmental Permit Application Non-Technical Summary, June 2021

7 What will be in the effluent?

Note: You do not need to fill in this section if you are applying for a discharge of treated domestic sewage effluent of up to fifteen cubic metres ($15m_3$) a day to ground, or up to twenty cubic metres ($20m_3$) a day to surface water.

For all applications, whether to surface water, or onto or into ground you should still check to see if your discharge is likely to contain any of the substances listed in Horizontal Guidance H1 Environmental Risk Assessment Annex D, Appendix A and answer the relevant questions for your discharge below.

7a Are any of the substances listed in Horizontal Guidance H1 Environmental Risk Assessment Annex D, Appendix A likely to enter the sewerage system upstream of the discharge through any authorised or known inputs?

Yes ☐

No ☐

7b Are any of the substances listed in Horizontal Guidance H1 Environmental Risk Assessment Annex D, Appendix A added to or present in the effluent as a result of the activities on the site?

Yes ☒

No ☐

7c Have any of the substances listed in Horizontal Guidance H1 Environmental Risk Assessment Annex D, Appendix A been detected in samples of the effluent or in the sewerage catchment upstream of the discharge?

Yes ☒

No ☐

7d Are there any other harmful or hazardous substances in your effluent not mentioned in Horizontal Guidance H1 Environmental Risk Assessment Annex D, Appendix A?

Yes ☒

No ☐

7e Have you answered yes to any of the above?

No ☐ *Go to section 7f*

Yes ☒ You must give relevant details in Table 3 below.

Table 3

Substance	Unit	Maximum concentration	Minimum concentration	Average concentration	Number of samples	Total or dissolved
Table 3 provided on separate sheet - sufficient number of rows cannot be added to the table in this form.						

You must also send us any information on samples that you may have. Tell us the reference for the sample information, below.

Document reference	Monks Ditch Environmental Permit Application Sampling Lab Data

7f Give the maximum temperature of your discharge in degrees Celsius	20 (estimated)

7g The maximum expected temperature change compared to the incoming water supply

Increase in degrees Celsius	
Decrease in degrees Celsius	

8 Monitoring arrangements

8a What is the national grid reference of the inlet sampling point?	
8b What is the national grid reference of the effluent sample point?	336754, 186789

8c Do you have an Urban Waste Water Treatment Directive final effluent sampling point?

Yes	☐	Provide the 12 digit national grid reference (for example, SJ 12345 67890)	
No	☐		

Note: If your effluent has a maximum volume of no more than 50 cubic metres a day you do not need to complete question 8d or 8e and you can move direct to 8f.

8d What is the national grid reference of the flow monitoring point?	N/A

8e Does the flow monitor have an MCERTS certificate?

Yes	☐	Please give the certificate number	N/A
No	☐		

8f Do you have a UV disinfection efficacy monitoring point?

Yes	☐	Provide the 12 digit national grid reference (for example, SJ 12345 67890)	N/A
No	☐		

8g You should clearly mark on the plan the locations of any of the above that apply to this effluent

Document reference	Monks Ditch Discharge SWPS1 Sampling Location Plan

9 Emissions of substances not controlled by emission limits management plan

Note: You do not need to fill in this section if you are applying for a discharge of treated domestic sewage effluent of up to fifteen cubic metres (15m3) a day to ground, or up to twenty cubic metres (20m3) a day to surface water.

9a Does your H1 - Environmental Risk Assessment show that emissions of substances not likely to be controlled by emission limits in your permit are an important issue?

No	☒	*Go to section 10*
Yes	☐	

9b Have you got an emissions management plan which meets the requirements set out in guidance document 'How to comply'?

No	☐		
Yes	☐	Please send us your emissions management plan	
		Document reference	

10 Design criteria

Note: You do not need to fill in this section if you are applying for a discharge of treated domestic sewage effluent of up to fifteen cubic metres (15m_3) a day to ground, or up to twenty cubic metres (20m_3) a day to surface water.

10a Sewer modelling report (for discharges of final effluent from a water company WwTW or intermittent sewage discharges)

You must carry out sewer modelling following the guidance in 'Horizontal Guidance Note H1 Annex E – Surface Water Discharges (complex)'. Send us details of how the modelling was carried out and the outcome.

Document reference

10b Discharges to lakes, estuaries, coastal waters or bathing waters

You must carry out modelling following the guidance in 'H1 Risk Assessment Horizontal Guidance Note H1 Annex E – Surface Water Discharges (complex)'. Send us details of how the modelling was carried out and the outcome.

Document reference

10c Discharges to non-tidal rivers

You may need to carry out modelling following the guidance in 'H1 Risk Assessment Horizontal Guidance Note H1 Annex E – Surface Water Discharges (complex)'. Have you carried out any river quality modelling?

No ☒

Yes ☐ Send us details of how the modelling was carried out and the outcome.

Document reference

10d Discharges to groundwater

You must carry out a groundwater quantitative risk assessment following the guidance in 'H1 Risk Assessment Horizontal Guidance Note H1 – Groundwater sections'. Send us details of how the modelling was carried out and the outcome.

For groundwater remediation schemes you must send us a site-specific remediation strategy which has been agreed with the local Natural Resources Wales Geoscience Team.

Document reference

10e Environmental impact assessment

Yes ☐ Send us details of how the assessment was carried out and the outcome.

Document reference

No ☒

11 Where will the effluent discharge to?

11a tell us where the effluent discharges to.

Mark in Table 4 where this effluent discharges to and fill in the relevant questions and appendix or appendices.

You must use the name you gave to this effluent in answer to question 1b of this form when filling in your relevant appendix or appendices.

Table 4 – Where the effluent discharges to

Receiving environment		Complete appendix
Non-tidal river, stream or canal	☒	1
Tidal river, tidal stream, estuary or coastal waters	☐	2

Lake or pond	☐	3
Into land (for example, through a drainage system)	☐	4
Onto land	☐	5
Borehole or well	☐	6

11b Is this effluent discharged through more than one outlet?

No ☒

Yes ☐ **You must give details of the circumstances under which each outlet would be used by this effluent, on a separate sheet, and tell us the reference below.**

Document reference

You must clearly show each of the discharge points used by this effluent on your discharge point appendix/appendices and site plan.

You must give us all the details we need for each of the discharge points used by this effluent.

Document reference

12 More information from you

Are there any other factors we need to take into account as part of your application?

No ☒

Yes ☐ Please provide details and give us the reference for the document, below.

Document reference

Appendix 1 – Discharges to non-tidal river, stream or canal

Answer all the questions below and enter the answers to questions 1, 2 and 3 in the table provided. Use a separate line for each effluent if more than one effluent discharges using this discharge point.

Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

1 Give the discharge point a unique name For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)	SWPS1
2 Give the national grid reference of the discharge point	336762, 186783
3 Give the name of the watercourse, canal or the main watercourse it is a tributary of if you know it	Monks Ditch

4 Is the discharge into a (tick an option)

Non-tidal river ☒

Stream ☐

Canal ☐

5 Does the discharge reach the watercourse or canal by flowing through a surface water sewer?

Yes ☐ Give the national grid reference where the discharge enters the surface water sewer

No ☒

6 Does the watercourse dry up for part of the year?

Yes ☐

No ☒

Answers table

Discharge point name (question 1)	National grid reference (question 2)	Name (question 3)	Name of effluent discharged through this discharge point (question 1b effluent form)
SWPS1	336762, 186783	Monks Ditch	SWPS1

Appendix 2 – Discharges to tidal river, tidal stream, estuary or coastal waters

Answer all the questions below and enter the answers to questions 1, 2 and 3 in the table provided. Use a separate line for each effluent if more than one effluent discharges using this discharge point.

Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

1 Give the discharge point a unique name For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

2 Give the 12 digit national grid reference of the discharge point

3 Give the name of the tidal river, tidal stream, estuary or area of coastal water if you know it

4 Is the discharge into a (tick an option)

Tidal river ☐

Tidal stream ☐

An estuary ☐

Coastal water ☐

5 Does the discharge reach the watercourse by flowing through a surface water sewer?

Yes ☐ Give the national grid reference where the discharge enters the surface water sewer

No ☐

6 Is the discharge point above the mean low water spring tide mark?

Yes ☐ Please explain, on a separate sheet, why the discharge cannot be made below this point

Document reference

No ☐

7 How is the effluent dispersed? For example, open pipe or diffuser system.

If diffuser system you must answer question 8.

8 Give details, on a separate sheet, of the design of the diffuser system

Answers table			
Discharge point name (question 1)	National grid reference (question 2)	Name (question 3)	Name of effluent discharged through this discharge point (question 1b effluent form)

Appendix 3 – Discharges to a lake or pond

if more than one effluent discharges using this discharge point.

Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

1 Give the discharge point a unique name For example 'Outlet 1' (you must use this name to identify the discharge point on the plan)

2 Give the national grid reference of the discharge point

3 Give the name of the lake or pond if you know it

4 Select from the following table the type of lake or pond you will be discharging to and answer the relevant questions

Type of lake or pond		Relevant questions
Lake or pond which does not discharge into a river or watercourse or another pond which discharges into a river or watercourse	☐	Permit not required*
Lake or pond which does not discharge into a river or watercourse or another pond which discharges into a river or watercourse where you have had a notice served under paragraph 5 of Schedule 21 of the Environmental Permitting (England and Wales) Regulations 2016	☐	5, 6, 7
Lake or pond which discharges into a river or watercourse	☐	5, 6, 7
*Unless a Notice has been served under paragraph 5 of Schedule 21 of the Environmental Permitting (England and Wales) Regulations 2016		

5 What is the surface area of the lake or pond (in square metres)?

6 What is the maximum depth of the lake or pond (in metres)?

7 What is the average depth of the lake or pond (in metres)?

Answers table			
Discharge point name (question 1)	National grid reference (question 2)	Name (question 3)	Name of effluent discharged through this discharge point (question 1b effluent form)

Appendix 4 – Discharges into land

Answer the questions below and enter the answers to questions 1 and 2 in the table provided. Use a separate line for each effluent if more than one effluent discharges using this discharge point.

Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

1 Give the discharge point a unique name, For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

2 Give the national grid reference of the discharge point

3 Is your infiltration system new or existing? (Existing means in place prior to 6/04/2010)

New ☐ *Go to section 5*

Existing ☐ Answer question 4 and then answer questions 5 to 8 if you are able to.

4a When was it built?

You must answer questions 5–8 if you are able to, if not leave them blank and go to question 9.

5 Is your infiltration system designed and built to British Standard 6297:2007 + A1:2008?

Yes ☐

No ☐ Please provide details, on a separate sheet, of the design criteria used for your infiltration system

Document reference

6 On what date did you carry out a percolation test and dig a trial hole in line with British Standard 6297:2007 + A1:2008?

7 What is your percolation value (Vp) result (seconds per millimetre)?

You must show in the table below how you worked out the percolation value.

	Trial 1	Trial 2	Trial 3	Average
Hole 1				
Hole 2				
Hole 3				
Hole 4				

8 What is the surface area of your infiltration system (in square metres)?

9 Mark the extent of the infiltration system on the plan you have provided .

10 Is any part of your infiltration system within 50 metres of a well, spring or borehole?

No ☐

Yes ☐ Identify the location of the well spring or borehole on the plan you have provided.

11 Is the well spring or borehole you have identified used to supply water?

No ☐

Yes ☐ You must describe in the box below what the water supplied is used for.

12 Is any part of your infiltration system within 10 metres of a watercourse?

No ☐

Yes ☐ Identify the location of the watercourse on the plan you have provided for section 4 of part B6.

Answers table		
Discharge point name (question 1)	National grid reference (question 2)	Name of effluent discharged through this discharge point (question 1b effluent form)

Appendix 5 – Discharges onto land

Answer all the questions below and enter the answers to questions 1 and 2 in the table provided. Use a separate line for each effluent if more than one effluent discharges using this discharge point.

Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

1 Give the discharge point a unique name For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

2 Give the national grid reference of the discharge point

3 In what type of area will the effluent is disposed of? (Tick an option)

Unlined reed bed ☐

Unlined grass plot ☐

Unlined wetland ☐

Other ☐ Please specify in the box below.

4 What is the surface area of the land used for your disposal (in square metres)?

5 Is any part of your infiltration system within 50 metres of a well, spring or borehole?

No ☐

Yes ☐ Identify the location of the well spring or borehole on the plan you have provided.

6 Is the well spring or borehole you have identified used to supply water?

No ☐

Yes ☐ You must describe in the box below what the water supplied is used for.

7 Is any part of your infiltration system within 10 metres of a watercourse?

No ☐

Yes ☐ Identify the location of the watercourse on the plan you have provided.

Answers table		
Discharge point name (question 1)	National grid reference (question 2)	Name of effluent discharged through this discharge point (question 1b effluent form)

Appendix 6 – Discharges to a borehole or well (or other deep structure such as a mineshaft)

Answer all the questions below. Use a separate line for each effluent if more than one effluent discharges using this discharge point.

Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

1 The discharge point name

Give the discharge point a unique name. For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

2 The national grid reference of the discharge point

3 Is the discharge to ground via a (tick an option)

Well ☐

Borehole ☐

Other deep structure ☐ Please give details in the box below.

4 Total depth of the borehole or well

What is/or will be the total depth of the borehole or well (in metres) below ground or other reference level (please specify the reference level you are using)?

5 Is the borehole or well or structure already constructed?

Yes ☐

No ☐

6 To what depth is the borehole or well or structure sealed with unperforated linings or casing (in metres) below your reference level?

7 Is any part of your discharge within 50 metres of another well, spring or borehole?

No ☐ *Go to section 9*

Yes ☐ You must identify the location of the well, spring or borehole on the plan you have provided.

8 Is the other well, spring or borehole you have identified used to supply water?

No ☐

Yes ☐ You must describe in the box below, what the water supplied is used for.

9 Does the borehole or well or structure into which you are intending to make your discharge intermittently or permanently contain standing water?

No ☐ *Go to section 11*

Yes ☐

10 If your discharge falls into any of the following groups of activities please tick the appropriate box. If not just leave blank.

Injection of water containing substances resulting from the operations for exploration and extraction of hydrocarbons or mining activities ☐

Reinjection of pumped groundwater from mines and quarries or associated with the construction or maintenance of civil engineering works (includes the treatment and reinjection of contaminated groundwater for the purposes of remediation) ☐

Injection of natural gas or liquefied petroleum gas for storage purposes ☐

Construction, civil engineering and building works and similar activities on or in the ground (for example discharge arising from the grouting of old mineshafts) ☐

Discharges of small quantities of substances for scientific purposes for characterisation, protection (including use of substances as tracers) or remediation of groundwater, where such activities are not eligible for a registered exemption ☐

The artificial recharge or augmentation of a body of groundwater for the purposes of groundwater management ☐

Reinjection of pumped groundwater used for geothermal purposes (including ground source heat systems) ☐

11 What is the highest level the standing water reaches in the borehole or well or structure (in metres) below your reference level?

Monks Ditch Surface Water Discharge Activity Environmental Permit Application

Form B6 Question 4 Workings

4b 750 l/s for 15 hours per day = approximately 40,000cum.

4c NRW defined greenfield flow for the Gwent Levels 3l/s. Area of site 250 Ha.

Flow from the site is restricted by the water level in Monks Ditch and tide locking of Monks Ditch at Goldcliff.

The period when discharge can occur will be dependant upon the state of the tides and will vary daily.

Monks Ditch Surface Water Discharge Activity Environmental Permit Application – Form B6 Table 3

Substance	Unit	Maximum Concentration	Minimum Concentration	Average Concentration	Number of Samples	Total or Dissolved
Arsenic	µg/l	5.7	1	2.96	56	Total
Anthracene	µg/l	0.0268	0.0025	0.0098	53	Total
Benzene	µg/l	0.5	0.5	0.5000	53	Total
Benzo(b)fluoranthene	µg/l	0.0819	0.0025	0.0148	53	Total
Benzo(g,h,i)perylene	µg/l	0.0472	0.0025	0.0091	53	Total
Benzo(k)fluoranthene	µg/l	0.0309	0.0025	0.0072	53	Total
Cadmium	µg/l	0.04	0.04	0.0400	56	Dissolved
Chloride	mg/l	54.2	21.6	30.275	53	Total
Chloride	*µg/l*	*54200*	*21600*	30275.47	53	Total
Chromium	µg/l	1.18	0.5	0.5314	56	Dissolved
Chromium, Hexavalent	mg/l	0.0491	0.015	0.0166	53	Total
Chromium, Hexavalent	*µg/l*	*49.1*	*15*	*16.62*	53	Total
Copper	µg/l	3.31	0.15	1.7404	56	Dissolved
Cyanide, Free	mg/l	0.025	0.025	0.025	53	Total
Cyanide, Free	*µg/l*	25	25	*25.00*	53	Total
Fluoranthene	µg/l	0.138	0.0106	0.0493	53	Total
Indeno(1,2,3-cd)pyrene	µg/l	0.0407	0.0025	0.0069	53	Total
Iron	mg/l	1.79	0.012	0.43	56	Total
Iron	*µg/l*	1790	12	*432.80*	56	Total
Iron	mg/l	0.0628	0.0095	0.0159	56	Dissolved
Iron	*µg/l*	62.8	9.5	15.91	56	Dissolved
Lead	µg/l	0.76	0.1	0.1354	56	Dissolved
Manganese	µg/l	95.4	1.5	9.70	53	Dissolved
Mercury	µg/l	0.0172	0.005	0.0074	56	Dissolved
Naphthalene	µg/l	0.224	0.005	0.0936	53	Total
Nickel	µg/l	5.67	0.901	2.8084	56	Dissolved
Phenol	µg/l	9.07	0.5	1.3226	53	Total
Benzo(a)pyrene	µg/l	0.0496	0.001	0.0077	53	Total
Sulphate	mg/l	226	74	162.34	53	Total
Sulphate	*µg/l*	226000	74000	*162343.40*	53	Total
Toluene	µg/l	0.5	0.5	0.50	53	Total
Vanadium	µg/l	30.2	5.76	15.71	56	Total
Zinc	µg/l	134	0.5	9.57	56	Dissolved
pH	pH Units	11.6	7.95	9.71	56	
Phosphate (Ortho as PO_4)	mg/l	0.295	0.025	0.036	53	Total
Phosphate (Ortho as PO_4)	*µg/l*	*295*	*25*	*35.64*	53	Total
Suspended solids, Total	mg/l	74.5	2	17.42	56	Total
Suspended solids, Total	*µg/l*	*74500*	*2000*	*17422.32*	56	Total
Ammoniacal Nitrogen as NH_4	mg/l	3.57	0.339	1.71	56	Total
Ammoniacal Nitrogen as NH_4	*µg/l*	*3570*	*339*	*1712.38*	56	Total

Notes:

- Maximum, minimum and average concentrations are based on a calculated value of 0.5 LOD for all concentrations recorded at <LOD.
- Calculated concentrations in µg/l are shown in *blue italics*.

Application for an environmental permit:
Part F2 – Charging for discharges (C for D) charges and declarations

Fill in this part for applications for water discharge and point source groundwater discharge activities only.

Please check that this is the latest version of the form available from our website.

For applications for water discharge and point source groundwater discharge activities you need to fill in part F2 instead.

Please read through this form and the guidance notes that came with it. All relevant guidance documents can be found on our website.

Contents

1 Working out charges (you must fill in this section)

You have to submit an application fee with your application.

You can find out the charge by looking at our current environmental permitting charging scheme. This can be found on our 'How we regulate you' webpages.

Please remember that the charges are revised on 1 April each year and that there is an annual subsistence charge to cover the costs we incur in the ongoing regulation of the permit.

Table 1 – Working out charges

Type of application	Surface water discharge activity

Summary of charges

Type of water discharge activity or groundwater activity	Standard or reduced charge	Number of activities at this charge rate	Charge for each facility (£)	Charges due (£)
Surface water discharge activity	Reduced	1	£125	£125
Other charges				
Ground source hearing and colling system scheme (water resources charge)				
			Total charges due	£125

2 Water discharge activity and groundwater activity point source discharges

The application charge is a fixed charge, although two rates exist: standard and reduced. The reduced application charge is applicable where the effluent is:

- sewage effluent where the proposed volume is five cubic metres or less per day;
- sewage effluent which contains trade effluent or other matter where the proposed volume is five cubic metres or less per day;

- trade effluent from cooling or heat exchange where the proposed volume is ten cubic metres or less per day;
- surface water not containing trade effluent;
- site drainage;
- effluent or substance discharged or disposed onto or into land where the proposed volume is five cubic metres or less per day and discharge is on not more than six days per year or any such equivalent disposal.

The standard application charge applies in all other situations.

The charge applies to each discharge you will be making. Therefore two discharges of sewage effluent of five cubic metres a day will attract two reduced rate charges.

Please contact us, for details of current reduced and standard application charges.

3 Payment

3a How do you want to pay?

Tick an option below to show how you will pay.

Electronic transfer (for example, BACS)	☐	*Go to section 3b*
Credit or debit card	☒	*Go to section 3c*
Cheque	☐	*Go to section 3d*
Postal order	☐	*Go to section 3d*

3b Paying by electronic transfer

If you choose to pay by electronic transfer use the following information to make your payment.

Company name:	Natural Resources Wales
Company address:	Income Dept., PO BOX 663, Cardiff, CF24 0TP
Bank:	RBS
Address:	National Westminster Bank Plc, 2 ½ Devonshire Square, London, EC2M 4BA
Sort code:	60-70-80
Account number:	10014438

Reference number

You can use any reference number but we prefer the number to be 'EPR' followed by the first five letters of your organisation name followed by a four-digit number.

For example, for a company named Joe Bloggs Ltd, the reference number might be EPRJOEBLOGGS0001. (Remember you can use any four-digit number at the end.)

The reference number you will provide will appear on our bank statements so we can check your payment. We may need to contact your bank to make sure the reference number is quoted correctly.

You should also email your payment details and payment reference number to banking.team@naturalresourceswales.gov.uk / banking.team@cyfoethnaturiolcymru.gov.uk or fax it to 0300 065 3001 and enter it in the space provided below.

BACS reference	
Amount paid	

Making payments from outside the UK

These details have changed. If you are making your payment from outside the United Kingdom (which must be received in sterling), our IBAN number is GB70 NWBK6070 8010 0144 38 and our SWIFT/BIC number is NWBKGB2L.

If you do not quote your payment reference number, there may be a delay in processing your payment and application.

3c Paying by credit or debit card

If you are paying by credit or debit card, please fill in the separate form CC1.

You can download this from our website or you can ask for one of our customer service providers to send one by post. We will destroy your card details once we have processed your payment. We can accept payments by Visa, MasterCard or Maestro UK card only.

3d Paying by cheque or postal order

You should make cheques or postal orders payable to Natural Resources Wales and they should be marked 'A/c Payee'.

We *will not* accept post-dated cheques (cheques with a future date written on them).

Cheque/ postal order number	
Amount paid	

4 The Data Protection Act 1998 and General Data Protection Regulations

We, the Natural Resources Body for Wales (hereafter "Natural Resources Wales"), will process the information you provide so that we can:

- deal with your application;
- make sure you keep to the conditions of the licence, permit or registration;
- process renewals; and
- keep the public registers up to date.

We may also process or release the information to:

- offer you documents or services relating to environmental matters;
- consult the public, public organisations and other organisations (for example, the Health and Safety Executive, local authorities, the emergency services, the Department for Environment, Food and Rural Affairs) on environmental issues;
- carry out research and development work on environmental issues;
- provide information from the public register to anyone who asks;
- prevent anyone from breaking environmental law, investigate cases where environmental law may have been broken, and take any action that is needed;
- assess whether customers are satisfied with our service, and to improve our service; and
- respond to requests for information under the Freedom of Information Act 2000 and the Environmental Information Regulations 2004 (if the Data Protection Act allows). We may pass the information on to our agents or representatives to do these things for us.

5 Confidentiality and national security

We will normally put all the information in your application on a public register of environmental information. However, we may not include certain information in the public register if this is in the interests of national security, or because the information is confidential

Confidentiality

You can ask for information to be made confidential by enclosing a letter with your application giving your reasons. If we agree with your request, we will tell you and not include the information in the public register. If we do not agree with your request, we will let you know how to appeal against our decision, or you can withdraw your application.

Only tick the box below if you wish to claim confidentiality for your application.

Please treat the information in my application as confidential ☐

Tick the box to confirm you have provided evidence to support your confidentiality claim and give us the document reference, below. ☐

Document reference

National security

You can tell the Welsh Ministers that you believe including information on a public register would not be in the interests of national security.

You must enclose a letter with your application telling us that you have told the Welsh Ministers and you must still include the information in your application. We will not include the information in the public register unless the Welsh Ministers decides that it should be included.

You can find guidance on national security in 'Core Environmental Permitting Guidance' published by Defra and available via the Environment Agency website http://www.environment-agency.gov.uk.

You cannot apply for national security via this application.

6 Application checklist (you must fill in this section)

Tell us about the supporting evidence and information you have sent with this application.

Application fee

You must submit the correct application fee in line with our current charging scheme. Tick the box to say you have included the correct fee. ☒

List all the documents you have included in Table 2. Please see the guidance notes for examples on how to complete the checklist.

If the relevant information for a question forms part of a larger document, please specify the relevant section(s) of the document. This will speed up the process of checking your application and making decisions.

If necessary, continue on a separate sheet and tell us the reference you have given the document below.

Document reference

Table 2 – application checklist

Question reference	Document title/ reference	Document section
Part B2 3d3	SHE-GRP-PDR-018 St. Modwen Environmental Management Procedure	All
Part B2 5a and Part B6 8g	Monks Ditch Discharge Site Boundary Plan and Monks Ditch Discharge SWPS1 Sampling Location Plan	N/A
Part B2 5c	Glan LlynSurface Water Discharge Activity Environmental Permit Application Non-Technical Summary, June 2021	All
Part B2 6	Glan Llyn_H1 Assessment	All
Part B6 3b	Surface Water Discharge Activity Environmental Permit Application Non-Technical Summary, June 2021	Section 3.5
Part B6 4	Form B6 Question 4 Workings	All
Part B6 6c	Glan Llyn Surface Water Discharge Activity Environmental Permit Application Non-Technical Summary, June 2021	Section 6
Part B6 Table 3	Part B6 Form Table 3 and Monks Ditch Environmental Permit Application Sampling Lab Data.xls	All

7 Declaration

You must read this section before making the declaration and sending your form to us.

For transfer applications - Both you and the person receiving the permit must make the declaration.

Section 7d must be completed by the current holder *and* Section 7e must be completed by the proposed new holder.

A relevant person should make the declaration. You must be a relevant person or have the authority of a relevant person to sign this application on their behalf. An agent acting on behalf of an applicant is NOT a relevant person.

Each individual (or individual trustee) who is applying for their name to appear on the permit must complete this declaration. You can send a separate document with the relevant information if there are not enough spaces to sign, below.

Relevant people means each applicant, and in the case of a company, a director, manager, company secretary or any similar officer or employee listed on current appointments in Companies House. In the case of a Limited Liability Partnership (LLP), it includes any partner. If the permit holder is an organisation of individuals, each individual (or individual trustee) must complete the declaration.

To simplify and speed up the application process we recommend that the declaration is filled in by an officer of a company or one of the partners in a Limited Liability Partnership (LLP).

If you wish a manager, employee or consultant etc. to sign the declaration on behalf of a relevant person, we will need written confirmation from a relevant person; that is, an officer of the company, a partner in the LLP or the individual, confirming that the person has the authority to fill in the declaration.

If you are joint permit holders you should each fill in your own declaration. We have provided extra spaces for this below. Please send in a separate sheet with your application if you need more room for signatories.

Where the operator is the subject of any insolvency procedure, the declaration must be filled in by the official receiver/appointed insolvency practitioner.

7a Are you signing the form on *behalf of* a relevant person?

If you are *not* a relevant person, but want to sign the application on their behalf, you must include confirmation that you can do this.

I have included written confirmation from a relevant person to confirm I can sign on their behalf. ☐

7b Does your application include a standard facility?

If your application includes a standard facility, you also need to confirm that you are able to meet all relevant criteria of the standard rule set/sets for which you are applying.

I confirm that my standard facility will fully meet the rules that I have applied for. ☐

7c Does your application include ecological survey information?

If your application includes ecological survey information, please see the guidance notes on part F1 and tick the box below to confirm that you have no issue with us using information from any ecological survey you have supplied with your application.

I confirm I am happy for the ecological survey information I have supplied to be used as set out in the guidance. ☐

7d Declaration

If you're transferring the permit, the current holder or holders should sign this section of the declaration, and the proposed new holder or holders of the permit, should sign the declaration in section 7e.

If you knowingly or recklessly make a statement which is false or misleading to help you get an environmental permit (for yourself or another person), you are committing an offence under the Environmental Permitting (England and Wales) Regulations 2016.

I declare that the information in this application is true to the best of my knowledge and belief. I understand that this application may be refused or approval withdrawn if I give false or incomplete information.

I understand that if I knowingly or recklessly make a false or misleading statement:

- **I may be prosecuted; and**
- **if convicted, I may have to pay a fine and/or go to prison.**

By signing below, you are confirming that you understand and agree with the declaration above.

Title		Mr

First name	Neil
Last name	Williams
On behalf of (if relevant)	
Today's date	28.06.21

If you knowingly or recklessly make a statement which is false or misleading to help you get an environmental permit (for yourself or another person), you are committing an offence under the Environmental Permitting (England and Wales) Regulations 2016.

I declare that the information in this application is true to the best of my knowledge and belief. I understand that this application may be refused or approval withdrawn if I give false or incomplete information.

I understand that if I knowingly or recklessly make a false or misleading statement:

- **I may be prosecuted; and**
- **if convicted, I may have to pay a fine and/or go to prison.**

By signing below, you are confirming that you understand and agree with the declaration above.

Title		
First name		
Last name		
On behalf of (if relevant)		
Today's date		

7e Declaration for the person or persons *receiving* the permit (transfers only)

The persons 'receiving the permit' is the proposed new permit holder.

Note: If you cannot trace a person or persons holding the permit you may be able to transfer the permit without their declaration (in section 7d above). Please contact us to discuss this and supply evidence in your application to confirm you are unable to trace one or all of the permit holders.

If you knowingly or recklessly make a statement which is false or misleading to help you get an environmental permit (for yourself or another person), you are committing an offence under the Environmental Permitting (England and Wales) Regulations 2016.

I declare that the information in this application is true to the best of my knowledge and belief. I understand that this application may be refused or approval withdrawn if I give false or incomplete information.

I understand that if I knowingly or recklessly make a false or misleading statement:

- **I may be prosecuted; and**
- **if convicted, I may have to pay a fine and/or go to prison.**

By signing below, you are confirming that you understand and agree with the declaration above.

Title		
First name		
Last name		

On behalf of (if relevant)	
Today's date	

If you knowingly or recklessly make a statement which is false or misleading to help you get an environmental permit (for yourself or another person), you are committing an offence under the Environmental Permitting (England and Wales) Regulations 2016.

I declare that the information in this application is true to the best of my knowledge and belief. I understand that this application may be refused or approval withdrawn if I give false or incomplete information.

I understand that if I knowingly or recklessly make a false or misleading statement:

- **I may be prosecuted; and**
- **if convicted, I may have to pay a fine and/or go to prison.**

By signing below, you are confirming that you understand and agree with the declaration above.

Title		
First name		
Last name		
On behalf of (if relevant)		
Today's date		

Application for an environmental permit:
Part CC1 – Credit and Debit Card payments only

Fill in this form if you are paying by credit or debit card. Send it to us along with your application form and other supporting documents.

We can accept payments by MasterCard, Maestro UK or Visa cards only.

Please fill in the following details.

What amount is the fee you need to pay?

Please take £ from my account.

What type of card do you want to use? (Tick the appropriate box)

MasterCard ☐

Maestro UK ☐

Visa ☒

Card details

Cardholder's name

Card number (the number on the front of the card, without spaces)

Expiry date (MM/YY)

Start date (if this applies) (MM/YY)

Issue number (if this applies)

Security number (the last three digits on the signature strip)

Sign and date

Cardholder's signature

Date (DD/MM/YYY)

Appendix D H1 Risk Assessment

Appendix E Water Quality Laboratory Analytical Data

Appendix F Environmental Management Procedure

ST.MODWEN

ENVIROMENTAL MANAGEMENT PROCEDURE

Environmental Management Procedure	**DOC REF:**	SHE-GRP-PDR-018	**AUTHOR(S):**	L Jennings, R King
	VERSION NO:	1	**APPROVER(S):**	L Jennings, R King
	DATE OF ISSUE:	Jun-2018	**REVIEW DATE:**	Jun-2021

CONTENTS

1 INTRODUCTION

It is generally recognised that all products and services generate environmental impacts and there must be a commitment to minimise our negative impacts and improve environmental performance. An environmental policy is a public declaration of an organisation's commitment to improve its environmental performance. The policy should include aims and objectives and these should be in line with the activities, products or services it provides.

An environmental policy should be an integral part of the organisation's business policies.

In general, it should be:

- Company-wide - applies to all parts of the organisation;
- Strategic - directed towards an organisation's activities, products and services.

Water pollution is the contamination of water bodies (e.g. lakes, rivers, oceans and groundwater). Water pollution affects plants and organisms living in these bodies of water; and, in almost all cases the effect is damaging either to individual species and populations, but also to the natural biological communities. Water pollution occurs when pollutants are discharged directly or indirectly into water bodies without adequate treatment to remove harmful compounds. Loss of oil to surface waters is highly visible and likely to attract the immediate attention of the Local Authorities and/or members of the public even if the quantities involved are minute. As little as one gallon of oil can cover an area of water of approximately 100 sq. metres.

Land may be considered to be contaminated when it contains a sufficient quantity of toxic or otherwise harmful material to pose a threat to the health and safety of users of the land or workers engaged in its development. The integrity of buildings and vegetation may also be at risk. Contamination is invariably man-made and with the exception of the problems associated with waste disposal, it arises mainly in land used for industrial purposes.

2 PLANNING AND IMPLEMENTATION

Where construction work is undertaken the main arrangement, The Company will use to manage our work/operation on a project is a Construction Environment Management Plan (CEMP). The purpose of the CEMP is to reduce the risk of adverse impact from construction work on sensitive environmental resources and to minimise disturbance to local residence, businesses and infrastructure.

This CEMP describes how The Company will provide the management framework needed for the planning and implementation of construction activities in accordance with environmental commitments identified in our Environmental Policy and any requirements of planning conditions or legal agreements. The CEMP will be regularly monitored and revised to reflect and incorporate any arising requirements.

The Company will make adherence to the CEMP a contractual requirement of any construction contract associated with any project we work on. It is designed and written to direct the management of a contractor's activities and those of any sub-contractor working under the main contractor's control. The CEMP defines the minimum requirements that have to be met.

All works conducted on site will be carried out in accordance with The Company Safety, Health and Environmental Management System and The Company Environmental Policy.

The Company recognises the environmental benefits of a robust CEMP ensuring:

- Reduced damage to our natural environment;
- Reduced demand for natural resources;

- Reduced disturbance to our neighbours.

The Company also recognises the economic benefits of improved environmental performance and recognises that, 'pollution prevention is always better than remediation'.

All company operatives will follow the guidelines listed here to help ensure efficient and effective management of environmental issues:

- Plan ahead, try to avoid problems and give regulators advance warning of potential problems;
- Give regulators the time needed to process any enquiries;
- Display the relevant emergency number for the regulatory agencies and put on the site notice board;
- Ensure that all site personnel know the correct procedures for reporting incidents – they should let the site manager know before contacting the regulatory agencies.

Notify through the project manager the Environment Agency and the Local Authority of any significant uncontrolled spill and/or contamination.

2.1 Management of contractors on a construction project

The Project Manager will ensure that all contractors employed by The Company understand their obligations towards the environment and meet them.

To achieve this, the Project Manager will ensure the following:

- Contractors are made aware of our approach to environmental management before starting work on site through our Work Package Plan, this is issued to all contractors to inform them of what is expected on this project in all areas of risk management and quality control;
- Contractors are made aware of their environmental obligations on the project during initial site induction;
- The past record on environmental performance is checked prior to appointment and proper controls are included in their sub-contracts to ensure conformance with all reasonable requirements with regard to the environment, and encouragement to achieve good environmental performance.

The Company will also insist on contractors signing up to an environmental code of practice which will be distributed as part of Work Package Plan, this environmental code of practice will commit the contractor to:

- Minimise any disturbance or negative impact (in terms of noise, dust and inconvenience) caused by the construction site to the immediate neighbourhood;
- Manage their work activities with due regard to the environment;
- Ensure necessary care is taken to prevent damage, accidental or otherwise, to natural features, especially
- Eradicate offensive behaviour and language from construction sites.

2.2 Raising awareness

Raising Awareness amongst all staff, operatives and contractors will be achieved through a series of toolbox talks that will be held at regular intervals commensurate with the stage of the development.

The toolbox talks will be based on the text included in the Construction Confederation Tool Box Talks Series and will include the following topics:

- Spill Control
- Water Pollution Prevention
- Dust & Air Quality
- Noise & Vibration
- Water Pollution - Silt
- Water Pollution – Cement & Concrete
- Waste Management – Reduce! Reuse! Recycle Storage of Waste
- Storage & Use of Petrol
- Material Handling & Housekeeping
- Archaeology
- Bentonite
- Pumping & Over pumping
- Washing Down Plant & Machinery
- Tree Protection

2.3 Liaising with the Client and designers

In regular meetings with the Client environmental issues affecting the design will be raised and discussed. Alternative approaches and alterations to the design may be required where environmental improvements can be achieved, and these will be discussed and agreed with the Client and designers as the works proceed.

2.4 Liaising with neighbours

At the start of the contract the interests of site "neighbours" must be carefully considered. The Company will hold meetings to ensure that the construction work programme and Environmental Policy are explained.

Any likely nuisances to "neighbours" will be clearly stated together with the measures taken to minimise disturbance and impacts. Dependent upon local needs, these meetings should be repeated to continue monitoring of the effectiveness of mitigation measures and to advise of any changes to the programme.

3 SITE OPERATIONS

3.1 Site Management and Control

The Project Manager will have ultimate responsibility to ensure that all environmental responsibilities have been defined and that site personnel understand that environmental issues must be taken seriously. Personnel must be made aware their responsibilities and liabilities to all environmental standards and obligations.

3.2 Considerate Constructors

The Company will sign up to the Considerate Contractor Scheme for most of the projects we work on.

This arrangement is to solicit feedback from a third party (other than our H&S auditors) to target environmental issues. The following guidelines are the minimum we would strive for:

Considerate: All work is to be carried out with positive consideration to the needs of traders and businesses, site personnel and visitors, and the general public. Special attention is to be given to the needs of those with sight, hearing and mobility difficulties.

Environment: Noise from construction operations and all other sources is to be kept to a minimum at all times. Efforts should be made to select and use local resources wherever possible. Attention should be paid to waste management and the avoidance of pollution. Recycling, and the use of recycled materials, is encouraged.

Cleanliness: The working site is to be kept clean and in good order at all times. Safety barriers, lights and warning signs are to be maintained in a clean and safe condition. Surplus materials and rubbish should not be allowed to accumulate on the site or spill over into the surroundings. Dirt and dust from construction operations should be kept to a minimum.

Good Neighbour: General information regarding the Scheme should be provided for all neighbours affected by the work. Full and regular communication with neighbours, including adjacent traders and businesses, regarding programming and site activities should be maintained from pre-start to completion.

Respectful: Respectable and safe standards of dress should be maintained at all times. Lewd or derogatory behaviour and language should not be tolerated under threat of severe disciplinary action. Pride in the management and appearance of the site and the surrounding environment is to be shown at all times. Operatives should be instructed in dealing with the general public.

Safe: Construction operations and site vehicle movements are to be carried out with care and consideration for the safety of site personnel, visitors and the general public. No building activity should be a security risk to others.

Responsible: Ensure that everyone associated with the site understands implements and complies with this code.

Accountable: The Considerate Constructors poster is to be displayed where clearly visible to the general public. A site's contact details should be obvious to anyone affected by its activities.

3.3 Good Housekeeping

Good housekeeping is an important part of good environmental practices and it helps everyone to maintain a safe and efficient site. The site should be tidy, secure and have clear access routes that are well signposted.

The measure below will be adopted to manage housekeeping on a daily basis:

- Segregate waste as it is produced. Remove waste frequently from the site;
- Keep the site tidy and clean, all operatives to pursue a "clean as you go" culture;
- Ensure that material and plant storage areas are properly managed;
- Keep hoardings tidy – repair them and repaint them when necessary, remove any flyposting;
- Frequently brush-clean the wheel-washing facilities.

Regular checks will be carried out to ensure that litter has not blown around the site or perimeter fencing, and we will adopt a policy that any litter within 20m of our site is ours and will be cleaned up by our personnel.

3.4 Public Relations

The Company recognises that a significant duty as Client and Principal Contractor is to minimise the risk of disturbance to neighbours and that good public relations is imperative.

Some arrangements to be considered are outlined below:

- Visit occupants of particularly sensitive buildings and keep them informed of progress;
- Prepare a leaflet and distribute it to nearby residents or occupiers. Provide regular updates;
- Identify key local community representatives, such as parish councillors and keep them informed;
- Write articles about the progress on site in the local press;
- Display a considerate contractor contact board at the site perimeter so that the public know who to contact if they have a complaint or a comment to make. Use this board to display information on the phasing and other relevant matters;
- Establish a complaint line and check that it works by calling it;
- When complaints arise deal with them quickly and in accordance with a defined complaints procedure. Create a log of complaints;
- Consider providing a position so that passers-by can observe activities on site;
- Be able to identify your neighbours and understand their views.

3.4 Managing materials

The following will be adopted when ordering and receiving deliveries:

- Order the right quantity and quality of materials to arrive at the time when they are needed. This reduces the length of time materials have to be stored on site and therefore reduces the potential for damage or theft to occur;
- When ordering, find out in what form the materials will be delivered, so that the appropriate unloading plant can be arranged;
- After placing an order, check the arrangements for handling and storing materials as soon as they arrive on site;
- Arrange for deliveries to be received by a member of site personnel who is able to supervise the delivery, carry out a quality inspection and ensure that the materials are unloaded to the appropriate place.

Storage - There will be a combination of central storage and workplace storage used on site, the balance between them will depend on the works in progress. It is important to manage storage areas well because they set an example for the site.

Keep the following points in mind:

- Ensure that the material suppliers" instructions on storage are being followed;
- Store materials that are valuable or attractive to thieves in a secure area;
- Store materials away from waste storage containers and from vehicle movements that could cause accidental damage;
- Secure lightweight materials to protect them from wind damage or loss;
- Take special; care over the storage of materials that are potentially polluting.

Handling - There are many methods of moving materials around site. Options include cranes, trucks, forklifts and even manual handling. Ensure that the supplier's instructions on handling their materials are followed to minimise damage to materials and injury to site personnel.

3.5 Waste management

The project will produce waste materials as a natural part of the work. This waste material, due to the volumes involved, and the limited space at temporary compounds and depots, must be disposed of swiftly, cost effectively and in full compliance with all legal requirements.

'Duty of Care'- All those who produce or handle wastes from demolition, earthworks and construction activities have legal responsibilities, duty of care, for its safe keeping, transport and subsequent recovery or disposal.

Duty of care requires you to take care of your waste while it's in your control, check that the person to whom you give your waste is authorised to receive it, make out a waste transfer note when the waste is handed over and to take all reasonable steps to prevent unauthorised handling or disposal by others. For example, checking that your waste goes to the intended facilities can avoid fly- tipping. Examples of authorised persons are council waste collectors, registered waste carriers, holders of a waste management licence or holders of a registration of an exemption from the need to hold a waste licence.

Waste Classification - Wastes from construction, demolition and excavation operations will normally be a controlled waste, classified as commercial or industrial waste and hence subject to waste-related legislation. However, certain types of controlled waste have properties that make them especially hazardous or difficult to dispose of. These wastes are referred to as Hazardous Waste and require a pre-consignment note system for their recovery or disposal.

Site Waste Management Plan (SWMP) - Due to the costs and environmental impact of the project, The Company will manage a detailed SWMP in line with the Site Waste Management Plan Regulations 2008. The Company shall name the person responsible for preparing, reviewing and updating the plan.

The plan shall be provided in sufficient detail at the start of the works to ensure that site preparation works can be undertaken compliant with the plan and shall be reviewed and updated in response to changing conditions and to future programmed activities. The plan shall be provided to the Client's agent for information and agreement.

The Company will provide proposals for waste management which will cover waste segregation, re-use, re-cycling and recovery of materials from the works arising's, including segregation of recoverable material streams and non-recoverable waste so that recoverable materials are placed at an agreed location on site.

The Company will ensure best practice regarding site waste management and sort out waste into their appropriate recyclable and landfill skips as required and incorporate skips/containers for any contaminated material.

Waste skips will not be situated:

- Near the site boundary where arson can be a consequence;
- Close to structures/buildings which can result in the spread of fire, more than 8 metres away;
- Near to drains, sewers or water courses to prevent contamination.

All wastes generated from the works shall be dealt with in full compliance with the statutory 'Duty of Care' as defined by the Environmental Protection Act 1990 and all subsequent amendments. It is anticipated that the waste planed for disposal will be classified predominantly as non-hazardous waste, although there may be a certain amount classified as hazardous waste.

The Company shall be the "Waste Producer"; it shall be a The Company responsibility to comply with all regulatory and duty of care obligations in the transportation and disposal of these materials. Copies of the licences of receiving sites shall be supplied to the Client's agent at least 14 days prior to start of disposal. Copies of all consignment and transfer notes shall be supplied to the Client's agent on completion of the works.

The Company is responsible for the offsite disposal of all "Unsuitable" materials. Materials classified as "Unsuitable" including waste identified as being hazardous arising from the works, will be tested by The Company for compliance with the required waste acceptance criteria if disposal to licensed landfill is required.

Acceptable waste is to be transferred by The Company to a facility licensed to take the waste. The Company will be responsible for all "Pre-Treatment" of waste. The Company shall, before commencing any part of the works, submit to the Clients agent a list of locations of tips off site that they propose to use for the disposal of materials arising from the temporary and permanent works, which are authorised by the local authorities.

The Company will ensure all skips, where required are sheeted prior to removal from site to eliminate airborne debris during transit. If dust and dirt become an issue, The Company will provide cleaning procedures i.e. a road sweeper or wheel wash facility.

Waste material will not be allowed to accumulate within the compound. This means controlling build-up of waste at local points around the site, particularly where they impede access and egress, as well as any major accumulation points.

In accordance with the duty of care, The Company will provide copies of all controlled waste transfer notes relating to the disposal of materials arising from the temporary and permanent works. "Cradle-to-grave" waste audits will be undertaken at regular intervals. Where removal and disposal of waste is sub-let, The Company shall ensure that the contractor complies in full of the requirements of the regulations.

There will be NO burning of timber, rubbish or any other waste materials on site.

The SWMP will be used to identify and monitor recycling activities and to quantify the disposal of different types of waste.

All site waste reused or recycled on site, sent off site for disposal or recycling must be accounted for. The site waste management information sheet must be completed and sent to The Company Project Manager.

The Site Waste Management Plan is to be utilised by The Company that includes the following:

- Organisational responsibility for the preparation and implementation of the plan
- The types and quantity of waste anticipated
- The measures that will be used to monitor delivery of the plan
- The available options for waste management and preferences
- The waste disposal sites and contractors that are proposed. All sites must be approved by the appropriate Waste Regulation Authority
- Identify how hazardous and non-hazardous waste is to be disposed
- Include how the necessary familiarisation and training to make the plan effective is going to be implemented
- The measures to be used to ensure the efficient use of materials and minimise the production of waste and its handling
- The means of monitoring how much and what types of waste are produced
- A review process that monitors performance against targets and implements improvement actions where appropriate. The review period is to be every 3 months.

The objectives of the plan are to deliver the following:

- To minimise the creation of waste wherever possible;
- To remove rubbish, debris, surplus material and spoil regularly and keep the site clean and tidy
- To ensure that waste disposal is managed in a controlled way;
- To ensure that surplus material is minimised, and any non-usable surplus is recycled;
- To provide all necessary waste transfer documentation.

3.6 Haulage routes and construction traffic

The Company will develop a Traffic Management Plan (TMP) for the project taking into account various items, including but not limited to, the concerns of the local community and LPA, limiting traffic movements, socio-economic factors and impacts on the local area, environmental impact to the area and the restrictions involved in the practicalities of completing the project.

Vehicle access to work sites should be pre-agreed using specific routes as determined by client engineers, local authorities and local residents.

The Company recognise that a key concern for local communities and the surrounding areas are disturbances caused by traffic.

Therefore, we will develop our construction design and methodology to:

- Minimise generation of traffic;
- Use agreed routes avoiding built up areas and having the least impact on road infrastructure in the area;
- Safely manage pedestrians;
- Endeavour to ensure that materials delivered by road travel as short a distance as possible;
- Maintain access for pedestrians;
- Liaise with the local population to ensure that our proposed access to the site has a limited impact and we will programme our works accordingly.

Fuel consumption will be minimised by using local materials and sub-contractors. The Company has strategies in place to reduce both noise and dust emissions during the construction processes.

Traffic management will always be an integral part of any proposed solution. Measures will include:

- Removal of a major source of congestion in the area by providing holding area space for delivery and material movement vehicles on site;
- Provision of onsite parking at appropriate locations to minimise the amount of traffic movement on site;
- The early completion of road infrastructure around the development;
- Maximising the use of existing hard standing for parking and storage of materials and waste;
- Use of surplus excavated material as fill to any reclaimed area;
- Use of demolition material as fill to any reclaimed area.

In order to avoid aggravating peak hour traffic congestion on the local road infrastructure contractors will be expected to have most of their staff on site by 08.00hrs. The start of the working day will recognise the constraints of the condition on noise.

The philosophy of minimising road use as far as reasonably practicable will continue through the construction planning and the development of the TMP. All planning and procurement relating to large items of plant and their usage will be based around keeping these items on site for the duration of an activity, rather than the normal practice of plant coming and going from site to keep hire rates/standing time to a minimum, this will be of a greater cost to the project.

In order to minimise the impact of personal car use, The Company will ensure that personnel working on the scheme share cars as much as possible and use the car park on site and not surrounding roads. This will minimise traffic movement in the area.
Facilities to obtain food and drink on site during the working day will be provided to ensure personnel do not need to leave the site during the working day, which again minimises the traffic through the local community.

Where off-site road usage is essential, all employees, sub-contractors and supply-chain members will be advised in the induction and subcontracts of the need to adhere to local speed limits, use the dedicated route to and from site and will be made aware of potential risks associated with the local 'school-run' and peak traffic flows.

3.7 Site security

Site security is an important component of good environmental management. Vandals often cause damage that harms the environment by:

- Opening taps on tanks containing fuel;
- Tipping out other liquids from drums and containers;
- Smashing/stealing raw materials;
- Playing on plant;
- Spraying graffiti or flyposting on site hoardings;
- Destroying works in progress.

The incidence of vandalism is higher on sites in urban areas, especially where they are close to schools or housing estates. Help to reduce vandalism by securing the site and moving valuable items and those prone to theft from public view. Store these goods in a locked container or storage area.

The following rules and examples of good practice will also be implemented to further improve security:

- Avoid stacking materials against the site boundary or fence as this may help vandals and thieves to scale it;
- Within the site ensure that materials that are potentially hazardous to the environment are well secured. Lock fuel outlets when not in use;
- Secure plant to prevent vandalism;
- Immobilise plant and equipment overnight;
- Install deterrents such as lights, warning notices, 24-hour security guards and alarm systems;
- Control the movement of people on and off site by using site passes;
- Position the Project Manager's office to give a good view of the site;
- If the site is large or at high risk from trespassers, consider installing CCTV cameras;
- Inform local police about the site and seek their advice on security.

3.8 Storage of fuels and oil

The Water Resources Act 1991 makes it an offence to cause pollution to controlled waters, either deliberately or accidentally. Controlled waters include all watercourses and water contained in underground strata (groundwater).

The EA has issued "Pollution Prevention Guidelines" relevant to oil and fuel storage and handling (Preventing Pollution on Industrial Sites; Above Ground Oil Storage).

Although the guideline "Pollution Prevention on Industrial Sites" was prepared for permanent industrial sites, the principles of care also apply to temporary sites, specifically:

- Containers should be clearly labelled;
- Storage areas should be bunded;
- Bunding of tanks should include all delivery points;
- Only appropriate tanks or containers that will not leak or corrode should be used for storage;
- Delivery of oils etc., should be supervised by a responsible person, and spillages contained and reported immediately;
- The volume of oil and fuel stored at any time should be kept to the minimum volume necessary for operations;
- A nominated member of staff should be responsible for fuel storage and handling;
- Oil and fuel should only be stored in suitable containers which are clearly labelled;
- Oil and fuel MUST NOT be stored outside the designated storage area. Any containers found outside these areas should be confiscated.

Storage areas will be located at a distance from surface waters or any surface water drains and have an impermeable surface and a bund with 110% containment of the stored fuel. This can also be achieved by a mobile storage rack/tank with integral spillage containment, or by using several layers of heavy duty polythene sheeting with edges raised to contain even major leakages. Double skinned tanks can be an alternative.

Storage areas will be marked and will only be located in areas without danger of accidental damage by vehicles to stored equipment. Storage areas will be locked or otherwise protected to reduce the risk of vandalism and theft which may result in pollution incidents.

Storage containers (tanks, drums, other containers) will be checked regularly for signs of corrosion or physical damage and will be routinely inspected by the nominated "responsible person".

Any material contaminated with oil (e.g. soil, rags, and other absorbent materials) is hazardous waste and will be disposed of.

The development site will store some fuel oil for plant and machines and diesel fuel for vehicles. The volumes will vary, depending on demand.

Storage and handling of fuel and oil may result in spillages due to operator error, mechanical damage to containers, and corrosion of containers. This may result in soil contamination and possibly subsequent groundwater contamination and also contamination of surface waters, depending on proximity to watercourses. Cleaning up of contaminated waters can be very expensive, it is therefore imperative to act immediately, to prevent environmental damage and avoid possible substantial costs against The Company.

Soakage materials will be held on all sites where fuel/oils are stored, and staff will be trained in their use. An Emergencies Procedure will be issued when required and it will be prominently displayed in all site/depots accommodation.

4 ECOLOGICAL ISSUES

4.1 Protection of habitats, wildlife and archaeological sites

The Wildlife and Countryside Act 1981 – makes provisions for the protection of flora and fauna and sets up the framework for designating areas which have special development restrictions. This legislation is relevant to The Company in the planning and construction stages of new projects. Consideration is also required during demolition and land reclamation work, to ensure provisions are made if, since the original construction, an area has become a designated area under the Act.

The Town and Country Planning Act 1990 – requires Local Authorities to address issues of conservation and environmental improvement. Therefore, Local Authorities will be contacted to determine whether there are any restrictions on activities in certain areas due to the necessity for environmental protection.

The Planning (Listed Buildings and Conservation Areas) Act 1990 – requires the Local Planning Authority to ensure sites which are designated as a conservation area are maintained. These sites will be given special consideration during the planning of new contracts.

Our work is highly visible and subject to scrutiny by the Environment Agency, Clients, Consultant Engineering Companies acting on behalf of government departments, members of the public and environmental groups whose interests lie fundamentally in the protection of important features of the countryside and archaeological sites.

Protection of the above areas involves preventing physical damage to wildlife and eco systems by using environmentally friendly work methods and materials which will avoid damage or destruction of trees, plants, nests, sets, warrens, etc.
Avoiding undue interference to wildlife, and damage to archaeological sites, should such sites be encountered.

When working in certain areas (especially the countryside), the views of the Client representatives, local residents and environmental groups will be taken into consideration when disturbing and then re-instating the natural habitat.

In the case of indications of previously unknown archaeological sites being unearthed (e.g. human remains or artefacts such as coins, metalwork, clay objects), work must be stopped immediately and brought to the attention of an Agent, Engineer or Project Manager. The Client representative and County Archaeologist should be contacted as soon as possible.

If natural or archaeological features are accidentally damaged, work must be stopped, the Project Manager/Asset Manager must be informed, and the County Archaeologist should be contacted.

4.2 Ecology and the protection of trees

To ensure the appropriate retention and protection of local ecology including trees, The Company will normally commission an Arboriculture Implication Study to be completed, detailing how retained trees would be affected by the proposed development.

To take this further The Company will study the implications during the construction phase regarding the positioning of temporary site offices, storage space for materials, temporary services (such as telephone, electricity and water links) and working space. The Company will also consider issues such as soil level changes, services, surface treatments and any other actions or alterations that may affect trees on the site.

The Company will take measures to alleviate or mitigate the impact from the construction work through this CEMP and the Construction Phase Safety, Health and Environmental Plan.

Existing trees and hedges are to be protected and retained wherever possible. Trees and hedges that are to be retained will be clearly identified and are to be protected from construction activity. In the event that trees and hedgerows have to be removed this needs to be outside the nesting season, and trees should have been surveyed to ensure that there are no bat roosts present.

Retained trees are to be protected in line with British Standard: 5837 "Trees in Relation to Construction".

The part of the tree most susceptible to damage is the root system. BS 5837 advises that in order to avoid damage to the roots or root environment of retained trees, a root protection area (RPA) should be determined. The RPA is the minimum area that should be left undisturbed during construction and is designed to prevent any significant long-term damage to the tree by protecting the root plate and to some extent the lower branches of the tree.

Each tree to be retained in an area for construction is to have its RPA calculated and protective fencing erected around the full perimeter of its RPA.
The protective fencing should be at least 1.2m and of rigid construction, for example chestnut pale fencing, Heras fencing. It must be erected prior to work commencing on site and remain until construction activities have been completed. This protective zone is to be considered sacrosanct.

4.3 Protection of Water Resources

Sources of water pollution on building sites include: diesel and oil; paint, solvents, cleaners and other harmful chemicals; and construction debris and dirt. When land is cleared it causes soil erosion that leads to silt-bearing run-off and sediment pollution. Silt and soil that runs into natural waterways turns them turbid which leads to a restriction of sunlight filtration, destroying aquatic life.

Surface water run-off also carries other pollutants from the site, such as diesel and oil, toxic chemicals, and building materials like cement. When these substances get into waterways they poison water life and any animal that drinks from them. Pollutants on construction sites can also soak into the groundwater, a source of human drinking water. Once contaminated, groundwater is much more difficult to treat than surface water.

Measures to prevent water pollution; The Company will ensure good construction site practice to help control and prevent pollution; the following measures will be taken to mitigate the risks:

- We will prevent erosion and run-off, minimise land disturbance and leave maximum vegetation cover;
- Cover piles of building materials like cement, sand and other powders, regularly inspect for spillages, and locate them where they will not be washed into waterways or drainage areas;
- Use non-toxic paints, solvents and other hazardous materials wherever possible;
- Segregate, tightly cover and monitor toxic substances to prevent spills and possible site contamination;
- Cover up and protect all drains on site;
- Collect any wastewater generated from site activities in settlement tanks, screen, discharge the clean water, and dispose of remaining sludge according to environmental regulations.

Concrete is highly alkaline and corrosive and can have a serious impact on watercourses. It is essential to take particular care with all works involving concrete and cement. Suitable provision is to be made for the washing out of concrete mixing plant or ready mix concrete lorries so that washings do not flow into any drain or watercourse or seep underground.

In the event of a spillage on site, the material must be contained (using an absorbent material such as sand or soil or commercially available booms). All spillages are to be reported to the Project Manager who will inform the Environment Agency in the event of a significant occurrence.

4.4 Protection of amenity - noise, air quality, mud and vibration

The Environmental Act (Part III) 1990 – requires local authorities to inspect their areas to detect statutory nuisances (e.g. noise, accumulation of waste). The Act makes provisions for individuals to act in the case of a grievance involving a statutory nuisance, for example, noise.

The Environmental Act (Part IV) 1990 - makes it an offence to leave litter at work sites and depots (unless a prior agreement with the landowner has been arranged).

Noise

Noise from plant and tools as well as vehicles is a major source of complaints from residents. Before the commencement of development, The Company will carry out an acoustic survey on the site boundaries at locations agreed with the LPA to establish background noise levels.

Before the commencement of development, The Company will submit a scheme to the LPA setting out means of regular monitoring of the noise levels at these locations and this shall be approved and implemented before the commencement of development.

To prevent noise pollution The Company will be carrying out acoustic surveying to set the background noise levels. These will be the benchmark from which contractors are to apply the prescribed noise levels. The Company will be monitoring noise levels on a regular basis (no less than 3 monthly) to ensure noise reduction measures is being adhered to.

The Company will ensure equipment meets the advised sound limits. World Health Organisation limits for daytime outdoor noise are recommended at 55 decibels to prevent annoyance.

In addition to the above, The Company and their contractors will comply with the following:

- All statutory or other identified noise control limits;
- Locate machinery as far away as possible from local housing, animal farms, etc;
- Where necessary, plant and equipment will be silenced, screened and/or enclosed in accordance with the guidance of BS5228 and particularly noisy activities will be shielded by the erection of hoardings or screening;
- The use of radios on-site is banned;
- Where possible use available equipment to dampen noise on tools and plant (e.g. a muffler on a jack hammer should be used);
- All plant and tools should be checked for excessive noise levels and replaced or repaired as necessary.

Air Quality

Dust control is essential and will almost certainly be required at various stages of development - the need will be assessed at the time of contract start-up. Water bowsers and sprays must be held in readiness and roadways kept as clean as possible at all times.

The location of the site and the planned construction activities do not give rise to a serious risk to air quality. However, contractors will be expected to take measures to minimise the presence of air borne dust during construction. It is anticipated that dust will travel a considerable distance from where it is generated.

The principle mitigation measures to avoid contamination to neighbouring properties and infrastructure is to keep construction activities as far away from the site perimeter as possible and reduce dust at source with water and/or vacuumed extraction measures.

As well the following additional measures are to be taken:

- Design controls are to be implemented for construction equipment and vehicles, and appropriately designed vehicles are to be used for materials handling;
- Completed earthworks are to be vegetated as soon as practicable;
- The site is to be regularly inspected and site boundaries checked for dust deposits and removed as necessary. In addition, local roads are to be checked and cleaned when necessary;
- There is to be no burning of materials on site.

Mud

The Company shall take all reasonable measures to avoid mud being deposited on public roads. Adjacent roads and footways must be regularly inspected and cleaned.

Measures to be adopted shall include:

- The provision of easily cleaned and properly drained hard standing for vehicles entering, parking on and leaving the site;
- The provision of wheel-washing facilities, with sumps and catch-pits;
- The use of approved mechanical road sweepers, to clean hard-standings and any mud or debris deposited by site vehicles on roads or footpaths in the vicinity of the site;
- Secure sheeting of lorries carrying spoil or other particulate materials.

The Company shall take all reasonable measures to minimise sedimentation of highway drainage systems. This may include the use of sediment traps and/or barriers to prevent mud and/or contaminated materials entering the system.

Vibration

Activities such as piling which could cause vibration at levels to have an effect upon site "neighbours" or services/structures must be anticipated. Site "neighbours" must be kept advised of company activities and given needed reassurances and maximum information.

Perimeter vibration testing will be carried out wherever an issue is anticipated and appropriate including alternative construction methods.

4.5 Visual Impact

The Company will carry out an environmental impact assessment (in which visual impact would feature prominently) and adopt reasonable measures to mitigate the visual impact upon the landscape. We will also, in consultation with LPA, reinstate the landscape to their requirements.

This issue normally refers to man-made constructions on or near the countryside but can also refer to the same in towns or cities. Also affected by this issue is the disturbance of the natural landscape. Temporary site accommodation, fencing and materials storage areas will be sited to minimise visual impact.

Visual impact will be considered throughout the project. At this stage every effort will be made to minimise the environmental impact of visual intrusion considering the practical constraints and LPA requirements.

4.6 Soil and Land Management

Any ground contamination detected during site works shall be reported to the LPA. A programme of remediation for this contamination shall be agreed with the LPA in writing and fully implemented prior to any further development of that part of the site.

Before the commencement of development, a method of sampling and validation of imported and excavated soil and ground materials shall be put in place to ensure that such materials that are used on site are not contaminated. This should include details of the origin of such materials. Areas of localised contamination may be encountered during the site preparation and ground works phase.

Remedial measures in these areas will therefore be required and the following options are available:

- Excavation of the contaminated soil for disposal elsewhere, followed by replacement with clean material;
- Chemical, biological or physical treatment to destroy or immobilise the contaminations;
- Mixing the contaminated material with clean soil or sub-soil in order to reduce the maximum concentrations of contaminants to below the threshold trigger values.

Site services such as water, gas, drainage, electrical and telecommunications can be protected by excavating all the contaminated soil from a trench large enough to contain the service and then back-filling it with clean inert material before installing the services.

Concrete to be used in aggressive ground conditions must be adjusted to provide adequate resistance against sulphate and other substances.

Where good quality top-soil is in short supply, plants with shallow roots are suitable for re-vegetating the site. If trees or saplings have to be planted, the ground may need to be prepared first by excavating to the root zone and back- filled with clean top-soil.

Monitoring will be undertaken to ensure that the decision either to proceed with development plans or to take remedial action remains justifiable. The scale and duration of the monitoring required depends on the certainty of the evidence on which the original decision was based. In some sites, such as those reclaimed for amenity purposes, it may suffice simply to check that the remedial action has been carried out satisfactorily. In others, such as those where there is a need to check the safety of a building or protect human health, more thorough monitoring may be necessary, and the cost accepted as part of the costs of developing and maintaining the site.

4.7 Run-off Waters and Silt Pollution

All water pollution is an offence under the Water Resources Act 1991. The Act makes it an offence to cause pollution to controlled waters either deliberately or accidentally. Controlled waters include all water courses and water contained in underground strata (groundwater).

Although not so obvious a cause of water pollution as chemicals or farm waste, for example, silt causes six percent of all water pollution incidents. Any works which create silt therefore pose a serious threat to the water environment.

Silt causes lasting damage to river life by:

- Clogging gills, so fish suffocate and die;
- Destroying spawning sites;
- Injuring fish by its abrasive action;
- Destroying insect habitats on the riverbed, starving fish of their food source;
- Stunting aquatic plant growth, limiting oxygen supplies, shelter and a food source;
- Building up to cause flooding.

Also, oil and chemicals are often present in silt, especially from roads, land reclamation, and construction sites. This causes even more dangerous pollution. Preventing silt pollution in the first place is the best solution – and can be done by careful planning and taking suitable precautions.
The construction industry is a major cause of silt pollution. There are many reasons e.g. rainfall running off disturbed or stripped ground. Virtually all development and construction works are likely sources of silt pollution.

These include:

- Land reclamation;
- Any pipelines construction and repairs;
- Dewatering or pumping out excavations;
- Demolition;
- Concreting;
- Culvert cleaning;

- Sand blasting;
- Road cutting;
- Bridge works, and road works generally.

Before any such activities are carried out, those responsible (including subcontractors) should contact the Environment Agency for advice.

It is vital to inform all employees, staff and subcontractors on the site of the risks and causes of silt pollution and ensure they are informed of what action to take:

- Plan carefully for silty discharges resulting from development, demolition or any pipelines works, pumping out excavations or from road works generally.
- Ask advice from the EA and obtain any needed consents before any discharge is made off site.
- Ensure you have suitable treatment facilities such as settlement lagoons or grass plots on site and check any discharges from the site regularly.
- Divert clean water away from bare ground.
- Divert silty water away from drains, using sand bags, for example.

5 Measuring Performance

The Company will assess arrangements for complying with environmental legislation including the Construction (Design and Management) Regulations 2007 on an annual basis or earlier when situations require it, with a view to determining whether the controls comply with our policies and the company intent towards best practice. The Work Package Plan will be continually reviewed throughout the project to ensure it is being utilised correctly to protect the environment.

The Company will also undertake a project review following any project where we were Client or acted as Principal Contractor, with a view to assessing our environmental compliance and identifying any improvements which could be taken forward into any other projects.

6 Supporting Documents

Section 1 – Policies Environmental Policy

- Environmental Audit Form
- Environmental Code of Practice
- Environmental Incident Form
- Daily Noise & Dust Record
- Inclement Weather Record
- Daily Temperature Record