

SWITCH Building, Harbourside

Supplementary Information for Mobile Plant Permit

Morgan Sindall

R3092/25/5472 - Final

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Prepared by:

Name of Tim Vickers

Project Manager

Operations centre or business unit

Revised by:

Name of technical manager

Title at Biogenie

Operations centre or business unit

Approved by:

Martin Holmes

Operations Director

Operations centre or business unit

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1 Introduction and Objectives

This report is to be read in combination with the online NRW Mobile Plant Permit Deployment Application and provides additional supplementary information to support the application.

Biogenie Regeneration UK Limited (Biogenie) operates and manages its remediation treatment works in accordance with its Mobile Plant Permit (MPP), reference EPR/AP3195FG, which may be deployed in England or Wales as determined the Environment Agency (EA) or National Resources Wales (NRW) respectively. The licence is deployed after demonstration to, and agreement with, the regulator that the remediation activities will pose no risk to the environment.

Biogenie have been commissioned by Morgan Sindall (MS) to undertake groundwater remediation works at SWITCH Building, Habourside, Port Talbot. The works are being undertaken on a voluntary basis to address potential statutory liabilities associated with contamination resulting from the historical legacy of the site.

A phase of risk mitigation design has previously been undertaken (by others) and remediation is required to address residual contamination sources which pose potentially unacceptable risk, with the primary remediation objective being to render the site suitable for commercial development comprising offices, light industry, highway reconfiguration and landscaping works.

The objective of the works is to render the site suitable for its proposed development and not be considered 'contaminated land' under the Environmental Protection Act 1990.

1.1 Site Location and Setting

The site is located to the south of Port Talbot Parkway Railway Station car park and to the west of Oakwood Road, Port Talbot, SA13 1DE. The National Grid Reference is 276610E 189470N.

The site is irregular in shape covering an area of approximately 2.07 ha. The site is currently open derelict land with an access road bisecting the site into a northern and southern half. The site is covered in made ground comprising gravel of concrete, slag, brick and asphalt

Site topography is generally flat with small changes in levels of 0.5m down to the base of the drainage ditch which runs parallel to the south of the access road. The level of the site reduces further in the east of the site by approximately 1m to accommodate a SuDs pond feature.

The site lies within an area of industry associated with Port Talbot.

1.2 Site History

The site originally formed part of the Port Talbot Steel Works, a gasworks and a chemical works. The site was active from 1910 until the 1990's when demolition of the site occurred. The northwestern part of the site was utilised as a container storage yard in the early 2000's until all remaining structures were demolished by 2010.

In 2020/2021 ground remediation works were undertaken by WSP/Andrew Scott Ltd which comprised removal of hydrocarbon impacted soils and the removal of light non aqueous phase liquids (LNAPL) from open excavations across the site.

1.3 Site Sensitivity

The site lies within an industrial area of Port Talbot. The Hydrock, Phase 1 and Phase 2 Desk Study and Phase 2 Ground Investigation Report. (Ref. 26CB02-HYD-XX-T-10-O-1000) does not identify any sensitive land uses with 1km of the site boundary.

1.4 Previous Site Investigation / Remediation / Site Assessments

The site has been the subject of previous site investigations and assessments. These are summarised below.

- Opus, July 2017. Neath Port Talbot Harbourside Ground Investigation Phase 1 Desk Study Report. Ref: V-C8602.01/OIC/00/XX/RP/01.
- Opus, October 2017. NPT Harbourside - Addendum Ground Gas Letter Report. Ref: V-X8602.01-OIC-20171012-NPTCBC-L-01.
- Opus, March 2018. Neath Port Talbot Harbourside Interpretive Geo-Environmental Ground Investigation Report. Ref: V-C8602.01/OIC/00/XX/RP/02.
- WSP, February 2020. Port Talbot Harbourside Controlled Waters Quantitative Risk Assessment. Ref. 62253048-002.
- WSP, March 2020. Port Talbot Harbourside Generic Quantitative Risk Assessment Supplementary Site Investigation Report. Ref. 62253048_001.
- WSP, March 2020. Port Talbot Harbourside Factual Report - Additional Product Investigation. Ref. 62253048-003.
- WSP, May 2020. Port Talbot Harbourside Geotechnical Assessment - R2 (Memorandum). WSP, June 2020. Remediation Strategy Port Talbot Harbourside. Ref. 622530-48-004.
- WSP, April 2022. Port Talbot Harbourside Remediation Verification Report. Ref. 70057278-RV1.
- Hydrock, April 2024. SWITCH Building. Phase 1 and Phase 2 Desk Study and Phase 2 Ground Investigation Report. Ref. 26CB02-HYD-XX-T-10-O-1000

- Hydrock, July 2024. SWITCH Building. Remediation Strategy and Verification Plan. Ref 26CB02-HYD-XX-T-10-O-1001

1.5 Regulatory Approval

The proposed work will form part of a wider development including the construction of a new building comprising offices, research and development and light industry (B1 use) alongside reconfiguration of the highway and drainage engineering operations to provide culverts and outfall headwall. Together with parking, access, landscaping, site drainage, plant, substations, gas store, pv panels and associated works and infrastructure.

These works have been granted approval of full planning permission (Ref: P2024/0736) dated 25 November 2024.

1.6 Summary of Contamination

The site is contaminated with typical gas works wastes. These include.

- Total petroleum hydrocarbons (TPH) Aromatic (EC5-EC7, >EC7-EC8, >EC10-EC12 and >EC35-EC44).
- Benzene, toluene, ethylbenzene and xylenes (BTEX)
- Polyaromatic Hydrocarbons (PAHs)
- Metals
- free phase diesel and TPH - previous reports identified these contaminants in the form of light non-aqueous phase liquid (LNAPL) albeit localised rather than site wide.

Laboratory analysis of soils and groundwater has confirmed the presence of the above contaminants.

In the likelihood that NAPL is encountered this will be contained within the water treatment system and then stored within drums/IBCs located within a bunded area. This will be analysed for waste classification and subsequently removed from site to a licenced waste treatment facility under current duty of care legislation.

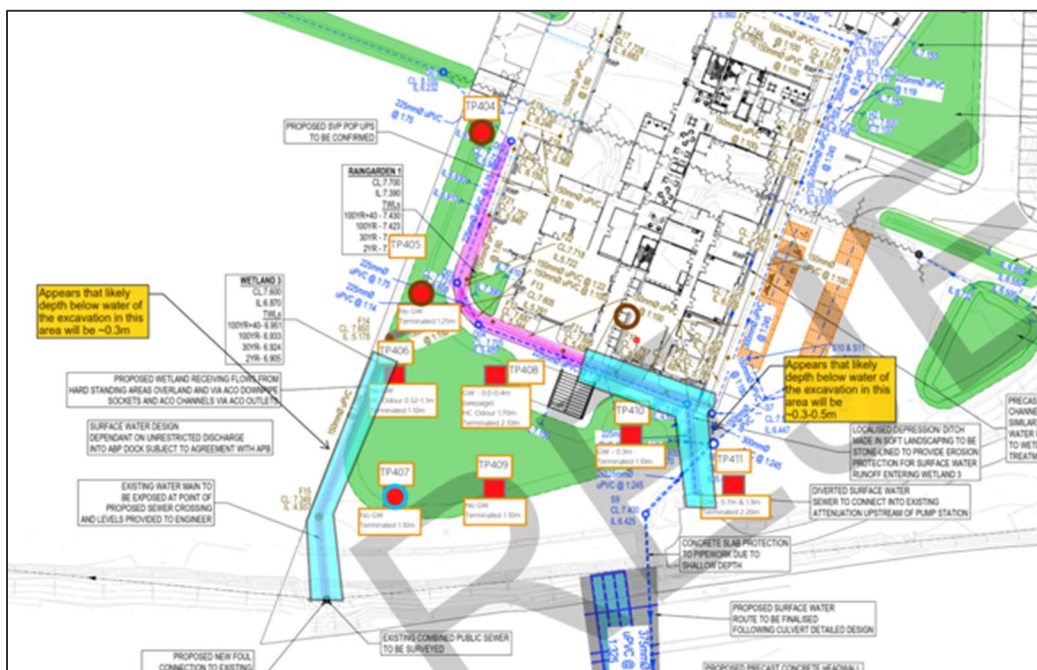
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2 Specified Remediation Activities to be undertaken at the site

2.1 Groundwater Treatment

Biogenie propose to install and operate a temporary water treatment system (WTS) to facilitate the installation of proposed foul and surface water drainage (undertaken by others). Localised dewatering will be required at two key areas as shown on the sketch plan below.

Figure 1 - Indicative Dewatering Locations (highlighted in blue)



Length of foul sewer - 40m linear

Length of surface water - 50m linear

2.2 Summary of Ground and Groundwater

2.2.1 Ground Conditions

Made ground comprising fine to coarse gravel of limestone, sandstone, concrete, brick, slag and asphalt from ground level to a proven depth of 2.8 mbgl.

Tidal Flat Deposits comprising firm to stiff grey slightly silty clay with occasional fine to coarse sand horizons to depths of between 2.7m and 3.6m bgl; overlying,

Alluvial Fan Deposits composed of dense dark brownish grey slightly sandy rounded fine to coarse gravel of sandstone with a low to medium sandstone cobble content to between 2.5m and 8.5m+ bgl.

Evidence of hydrocarbon contamination comprising mild to strong odours and occasional oily sheens was encountered within investigation locations largely in the northern half of the site and in the vicinity of the southwestern site boundary.

2.2.2 Hydrogeology

Tidal Flat Deposits are classified as a Secondary Undifferentiated Aquifer and the South Wales Middle Coal Measures are classified as a Secondary A Aquifer.

Groundwater vulnerability mapping (presented within the Envirocheck Report) indicates the site is within an area of high vulnerability for both the superficial and the bedrock aquifer. Groundwater was encountered during the Hydrock Phase 2 intrusive investigation and subsequent monitoring visits. A shallow water table was present within the Made Ground at elevations of between 5.62m and 5.24m AOD (2.3 - 2.7 mbgl) and confirmed to flow in generally south direction towards the Docks and sea beyond.

2.2.3 Hydrology

There are three surface water features located in the immediate vicinity of the site.

- Drainage ditch located to the south of the central road
- Attenuation pond located in the southeastern corner of the site
- Former docks - located 50m south of the site

The site lies within a low risk from flooding between 1 in 1000 (0.1%) and 1 in 100 (1%).

2.3 Groundwater Dewatering

To facilitate the installation of surface and foul drainage systems, localised dewatering is considered necessary. This will be undertaken with the installation of a one-sided well point system (installed by others) using conventional water jetting and augering. The wells will be installed at 1.5 m centres to a maximum depth of 6.0 mbgl. Each well point will have a 1-2mm silica sand filtration back.

Groundwater dewatering will be undertaken for a maximum period of 4 weeks (28 days).

Following a review of the guidance and the short duration of these works it has been concluded that these works are exempt and do not require an abstraction licence.

2.4 Groundwater Treatment

Biogenie propose to design and install a WTS suitable for the treatment of the identified contamination (e.g. hydrocarbons, TPH, PAHs, suspended solids, metals).

The treatment system will comprise the following components.

- Lamella separation.
- Oil Water Separation (OWS) and pump tank.
- Transfer pump.
- 1 x 2m³ Granular Activated Carbon Vessel.
- Clean water/ backwash tank.
- Backwash/ Discharge pump.
- Totalising meter.

The WTS is housed within bunds of at least 110% volume capacity of the largest treatment system components. All treatment system components are either enclosed or are covered. The system is equipped with a number of high-level safety shut-offs in both tanks, treatment system components and bunds. The system is equipped with a telemetry system to warn staff of any issue with the system including safety shut-off triggers, high pressure warnings, low flow warnings, etc. The system will include a remote control function that enables remote operation and monitoring via mobile phones and computers. The control system also has limiters installed which can limit the daily abstraction or discharge volumes.

The discharge rate is assumed as 3-5 litres per second with a maximum throughput of 15m³/hr. Biogenie have consulted with Dwr Cymru (Welsh Water) for a temporary trade effluent discharge consent. Consent was granted on the 04th July 2025. A copy of this is provided in Appendix B

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3 Conceptual Site Model

A conceptual site model illustrating the source-pathway-receptor relationship has been undertaken for the Site and is provided in Hydrock's, July 2024. SWITCH Building. Remediation Strategy and Verification Plan. Ref 26CB02-HYD-XX-T-10-O-1001 (refer to Section 3 of this report for more detail).

It was concluded that the perched water within the Made Ground soils are likely to be contaminated with metals, PAH and petroleum hydrocarbons. Given the shallow nature of the Alluvial Fan groundwater body, Hydrock considered that the perched water is in hydraulic continuity with the underlying Alluvial Fan Deposits groundwater and that as the water migrates downwards, and then laterally away from the site, dilution and degradation of the leachate is likely to be occurring.

In summary, Previous remediation of the site has occurred and has been accepted by the Local Planning Authority with the discharge of contamination conditions of Planning Application P2022/0823 relating to remedial and enabling works completed on site to facilitate the regeneration of the former brownfield land for future commercial development. Therefore, despite the recorded exceedances of the EQS, it was concluded that the site does not pose a significant risk to controlled waters, with no requirement for any further remediation.

A conceptual site model illustrating the source-pathway-receptor relationship has been carried out for works occurring under the Mobile Treatment Licence. This is presented in **Error! Reference source not found.** overleaf.

The principal control measures, to minimise emissions and prevent pollution and harm, focus around containment, training, PPE and monitoring. The treatment layout and activities have also been designed to be as far away as possible from neighbouring properties. Machines and equipment will be turned off when not in use to prevent unnecessary noise.

Contaminated soils excavated on-site will be stored and treated in a contained area to prevent cross contamination and leachate run-off. When not being treated or moved, the materials will be covered with plastic membrane to minimise rainwater ingress and nuisance emissions such as dust and odours.

Table 1 - Summary of Relevant Pollutant Linkages

Source	Pathways	Potential Receptors	Probability of Exposure	Consequence	Magnitude of Risk	Notes & Control Measures	Risk After Controls
Contaminated Made Ground	<ul style="list-style-type: none"> ▪ Direct contact ▪ Dust ▪ Vapour inhalation 	<ul style="list-style-type: none"> ▪ Site Staff & Visitors ▪ Adjacent third-party workers ▪ Public at site boundary ▪ Below ground soils ▪ Groundwater ▪ Surface waters 	Medium	Medium	Medium	<p>Site workers and visitors may come into contact with contaminants. Controlled by containment, information, inductions, training, good working practices, wearing appropriate PPE and RPE, signage, Site monitoring, Site welfare facilities and by following Safe system of working (Risk Assessment and method statements)</p> <p>The works are unlikely to generate any significant quantity of dust.</p>	Low
<p>Contaminated Groundwater</p> <p>Potential vapour generated from water treatment system (if NAPL present in influent)</p>	<ul style="list-style-type: none"> ▪ Direct contact ▪ Vapour inhalation 	<ul style="list-style-type: none"> ▪ Site Staff & Visitors ▪ Adjacent third-party workers ▪ Public at site boundary ▪ Below ground soils ▪ Groundwater ▪ Surface waters 	Medium	Medium	Medium	<p>Site workers and visitors may come into contact with contaminated waters. Controlled by containment, information, inductions, training, good working practices, wearing appropriate PPE and RPE, signage, Site monitoring, Site welfare facilities and by following Safe system of working (Risk Assessment and method statements)</p> <p>The water treatment systems will be contained within bunds of capacity of 110% volume or more of the largest system component's capacity. High level float switches will ensure that the system is automatically switched off should any leakage occur within the system. Regular inspections of the treatment system and pipework will also be carried out by a competent engineer. Any impacted waters will undergo treatment prior to discharge. Weekly sampling of effluent will ensure only water acceptable to the Bespoke Environmental Permit is discharged.</p>	Low
Wastes generated from the treatment process (solids, spent media, potential NAPL)	<ul style="list-style-type: none"> ▪ Direct contact ▪ Vapour inhalation ▪ Leakage / spillage 	<ul style="list-style-type: none"> ▪ Site staff ▪ Site visitors ▪ Groundwater beneath the site 	Low	Medium	Low-medium	<p>All wastes generated through the treatment process will be managed appropriately in-line with good practice. Stockpiles of quarantine material on plastic membrane and covered. Potential waste accumulating within water treatment system components (tanks & pressure vessels) and within a water</p>	Low

Source	Pathways	Potential Receptors	Probability of Exposure	Consequence	Magnitude of Risk	Notes & Control Measures	Risk After Controls
		<ul style="list-style-type: none"> Surface water Below ground soils 				<p>treatment system bund of 110% capacity of the largest system item. Drums / IBC, stored within the water treatment system bund, will be used to store any separated NAPL prior to off-site disposal or reuse.</p> <p>Workers inspecting the treatment system may come into contact with contaminants. Controlled by information, inductions, good working practices, wearing appropriate PPE and RPE, signage, Site monitoring, Site welfare facilities and by following Method Statements.</p>	
Noise during active site works	Noise emissions	<ul style="list-style-type: none"> Site Staff Adjacent third-party workers Public at site boundary. 	Low	Low	Low	Noise will be monitored during works using a decibel meter including pre works baseline monitoring. Should noise levels be above trigger levels set for the site then works will be stopped and noise reducing measures will be employed. In addition, the potential effects of noise emitting activities will be mitigated by relevant PPE if required.	Low
Fuel e.g. diesel	<ul style="list-style-type: none"> Direct contact Vapour inhalation 	<ul style="list-style-type: none"> Site staff Site visitors Public at site boundary 	Low	High	Medium	<p>All chemicals present on site will be appropriately stored within their proper containers and or stored appropriately to minimise dust generation.</p> <p>Weekly inspection of all containers and dosing equipment & pipework will be carried out by a systems engineer, with any defects reported and addressed appropriately.</p> <p>Staff will be trained, inducted, will be working under Safe Systems of Work and have suitable PPE to minimise risk of exposure. Site monitoring.</p>	Low
Installation / operational works	<ul style="list-style-type: none"> Ground disturbance Noise Dust Leakage/Spillage 	<ul style="list-style-type: none"> Ecological habitat 	Medium	Low	Medium	<p>The site has previously be designated as a Site of Interest for Nature Conservation. This has been reviewed and mitigated as the planning stage between Morgan Sindall and the Regulators.</p> <p>To minimise impact to the surrounding environment Biogenie will adopt environmental monitoring for noise, dust,</p>	Low

Source	Pathways	Potential Receptors	Probability of Exposure	Consequence	Magnitude of Risk	Notes & Control Measures	Risk After Controls
						<p>vapours, gases and odours - refer to Section 5 below.</p> <p>The works are only of short duration (4 weeks). Long term disturbance to surround habitat from these works is considered low.</p>	

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4 Management Supervision

The Technically Competent Manager (TCM) will attend site during the commissioning of the system and weekly thereafter (based on 4-week programme estimate 4 visits during operation). The TCM will inspect the setup of the treatment facilities on site prior to commencement of the treatment works. The TCM will spend the remaining time on inspection audits of the treatment process during the remediation. The majority of audits will be carried out during the active phase of works. The WAMITAB certificate for the TCM can be found in Appendix D.

The treatment system is designed to run 24 hours a day, 7 days per week with minimal supervision required. Monitoring and maintenance activities will be carried out by Biogenie Engineers during normal site working hours.

The system, to be housed within a bund of 110% capacity, will be fully automated with multiple safety devices, including tank high levels sensors, bund high level sensors and pressure sensors. All information will be fed to a central Programmable Logic Controller (PLC), which will be programmed to automatically detect and react appropriately to any detected issue. Remote system access and telemetry will enable notification of Biogenie personnel in the event of any fault. The site will be accessible to Biogenie engineers 24 hours per day, 7 days a week in the event of a callout.

As part of the maintenance program all level switches, pumps and emergency cut-off switches are manually triggered weekly to ensure they are in good working order and are fit for use. All water treatment systems will be secured with fencing to prevent unauthorised access.

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5 Emissions Monitoring and Pollution Control Plan

Prior to any works commencing on site, a baseline environmental monitoring survey will be completed to assess the current environmental conditions within the area of the site. This survey will be completed prior to works commencing to ensure representative data is collected. A minimum of two monitoring rounds will be carried out for the baseline survey which will include monitoring points within the treatment system area and at the compound fenced boundary.

The survey will include assessments of pre-work dust, noise, vapour and odour levels. This data will be retained on site and used to assess the environmental impact of the remediation works as they progress. This baseline data will be available for inspection by any concerned party, including the Local Authority, NRW etc.

Once works have commenced and in line with the terms and conditions of Biogenie's Mobile Plant Permit and its deployment, environmental monitoring will be undertaken during active site works to ensure the works have no adverse impact on the immediate and wider environments.

There are five proposed monitoring locations within the remediation area (at the bottom of the valley) and then two others, one within the site compound in the car park area and a second half way down the footpath. There are also two defined river monitoring locations upstream and downstream of the site.

The proposed monitoring points are shown on Drawing Landscape MasterPlan and Drainage Layout, Appendix A. Monitoring will be carried out daily at these locations from the start of the works until the works are complete.

The pro-forma for the environmental monitoring that will be undertaken at the site can be found in Appendix B.

The monitoring will comprise, noise via handheld noise meters, odour by qualitative assessment and vapour via Photo Ionisation Detector (PID). These are summarised in Table 3, below.

Table 2: Summary of Environmental Monitoring

	Ambient Vapour / Odour	Ambient Noise	Treated Water
Sampling Method(s)	Photo Ionisation Detector (PID) / Qualitative odour assessment	Decibel Noise Meter	Laboratory Analysis
Trigger Level	RPE - 1 ppm VOC (8 hour TWA) Stop Work - 10 ppm VOC (8 hour TWA) NB: This is based on most conservative TWA (8 hour) for the COCs (benzene).	Lower exposure action values are: 80 dB (A) and 135 dB (C) Upper exposure action values are: 85 dB (A) and 137 dB (C) Exposure limit values are: 87 dB (A) and 140 dB (C) 5 dB (5 min TWA) above background monitoring data at site perimeter monitoring locations.	Subject to agreed discharge criteria
Baseline (All Locations)	2 rounds	2 rounds	Not applicable
Active Works Phase	Fortnightly - during maintenance visit	Fortnightly - during maintenance visit	Weekly sampling
Post Works	Not Applicable	Not Applicable	Not Applicable

NOTE

*The most toxic compound/marker recorded at the site is benzene and we will conservatively assume this represents 100% of the total vapour emissions for Total VOCs recorded during monitoring. If VOCs are detected at or above 1 ppm (15 min TWA), representative samples/monitoring will be undertaken to identify individual compounds and appropriate actions taken as necessary.

5.1 Proposed Mitigation Measures During Works

Based on the proposed works which include mechanical excavation, breakout of hard materials, transport of materials on and off site, processing of materials, stabilisation and groundwater recovery and treatment, the potential for odour, dust, noise and vibration exist. These risks have been identified as part of pre-works planning and will be subject to on-going monitoring throughout the works.

In order to address and manage the identified risks, it is proposed that the following mitigation and monitoring measures are employed during the works.

The proposed working hours will be restricted to Monday to Friday 07:30 - 18:00 hrs (site staff morning briefings from 07:00). In the unlikely event that Saturday working is required, this will be restricted to 08:00 - 13:00 hrs. No works will be undertaken on Sundays or Public Holidays.

5.2 Dust

The works are unlikely to generate any significant quantities of dust. Dust levels will be visually assessed on an ongoing basis during maintenance visits by all Biogenie staff who shall be encouraged to manage and mitigate dust levels during their daily works and communicate any issues to the site manager.

5.3 Vapours and Gases

A method statement detailing how odours and vapours will be minimised for remediation works during the handling of contaminated materials (including stabilisation and bulk excavations) will be available as part of Biogenie's safety, health and environmental management plan.

Based on the known site contaminants and surrounding stakeholders, works will be progressed in a manner where practicable to minimise any open excavations for extended periods, minimise contaminated material stockpile volumes and remove, where encountered, free NAPL and groundwater with appropriate controlled on-site storage prior to off-site disposal.

Mobile treatment plant for waters will be under the strict control of Biogenie and are unlikely to create significant emissions of vapours and gases during normal operations.

Monitoring of volatile organic carbons (VOCs) will be undertaken during working hours for the duration of site works and maintenance visits. Monitoring will be undertaken from the first day of site works in order to determine background levels. A Photo Ionisation Detection meter (PID meter) will be kept on-site for this purpose.

Biogenie will be responsible for the environmental monitoring of VOCs in ambient air within Biogenie work areas. Monitoring will be undertaken at a minimum of once per day, during working hours for the duration of site works. Monitoring will be undertaken prior to main works in order to determine baseline levels. A Photo Ionisation Detection meter (PID meter) will be kept on site for this purpose.

Monitoring will be carried out once a day for a duration of at least 15 minutes. Monitoring will be carried out with a PID meter calibrated to respond to an appropriate organic contaminant (e.g. benzene), to assess vapours quantitatively. The 15-minute average for each location and maximum concentration will be recorded, together with the time that the monitoring was carried out.

During periods where the intermittent monitoring is not being carried out, a PID meter will be located at a dust monitoring station or other location downwind of current works areas and set to log the average vapour concentration (time weighted average) at that location. Once again, the average vapour concentration at that location and maximum concentration will be recorded, together with the time that the monitoring was carried out.

Biogenie will be responsible for daily calibration of any PID meter used on site. The site Engineer will record all monitoring information in electronic format (table format) on a weekly basis.

The threshold levels for vapour monitoring set out in EH40/2005 (Health and Safety Executive Workplace Exposure Limits) and subsequent amendments will be observed during the works. However, in practice, a maximum limit for the time weighted average concentration of 1 ppm will be set for vapours. If ambient levels on site approach or exceed this concentration, works on-site and contingency measures deployed will be reviewed with the aim of mitigating vapour levels to below the threshold levels.

Biogenie will also monitor personnel most at risk from odours/ vapours and gases whilst on site and will provide sufficient personal monitoring instruments to do this. Typically, this will include excavation operators, banksmen, operatives carrying out hand excavation works and plant operators carrying out bulk excavation in the contaminated areas/ removal of gasworks structures. For personal monitoring, PID meters will be placed on the operative and set to record the average vapour concentration (time weighted average). The average vapour concentration and maximum concentration will be recorded, together with the time that the monitoring was carried out.

Vapour monitoring will be carried out at three proposed environmental monitoring points as outlined in Drawing Landscape MasterPlan, Appendix A., located at each corner of the site together with any additional monitoring locations based on actual working areas, which will be agreed at the daily activity briefing based on proposed works areas and activities.

These procedures will be reviewed during the work and potentially revised for activities deemed to be higher risk. All monitoring data shall be recorded as per Biogenie EA permit requirements.

5.4 Odour

Odour monitoring (olfactory sniff test) will be undertaken twice daily at the edge of the works zone and at the most relevant site boundary to offsite receptors, dependent on work locations and weather conditions.

Odour monitoring will be carried out at three proposed environmental monitoring points as outlined in Drawing Landscape MasterPlan, located at each corner of the site together with any additional monitoring locations based on actual working areas, which will be agreed at the daily activity briefing based on proposed works areas and activities.

The FIDOL factors will be recorded which are represented as follows:

<u>F</u> requency	How often an individual is exposed to odour
<u>I</u> ntensity	The individual's perception of the strength of the odour
<u>D</u> uration	The overall duration that individuals are exposed to an odour over time
<u>O</u> odour unpleasantness	Odour unpleasantness describes the character of an odour as it relates to the 'hedonic tone', and will be measured on a standard nine-point scale
<u>L</u> ocation	The location of odour and nature of human activities on the vicinity of an odour source, including receptor characteristics

Odour intensity will be measured and recorded on a 1-5 scale where:

- 1 - No odour;
- 2 - Faint odour;
- 3 - Distinct odour;
- 4 - Strong odour;
- 5 - Extremely strong odour.

The trigger criteria are as follows:

- **Action Levels** shall be set at 3 or above for intensity at which point odour reduction measures should be put in place. This includes covering of stockpiles, limiting area of open excavations and deodorising sprays.
- **Stop Work Levels** shall be set at 4 or above for intensity at which point works will cease until the odour problem can be rectified.

Remedial actions and mitigation measures shall be documented, and odour monitoring undertaken again to ensure that the remedial measures have achieved the appropriate level of improvement.

If monitored odours are considered to exceed the action levels, records of sensitivity of the location will also be made as follow:

High Sensitivity Receptor	Surrounding land use where: Users can reasonably expect enjoyment of a high level of amenity; and People would reasonably be expected to be present here continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land. Examples may include residential dwellings, hospitals, schools/education and tourist/cultural.
Medium Sensitivity Receptor	Surrounding land use where: Users would expect a reasonable level of amenity, but wouldn't reasonably expect to enjoy the same level of amenity as in their home; or People wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land. Examples may include places of work, commercial/retail premises and playing/recreational fields.

Low Sensitivity Receptor	Surrounding land use where: The enjoyment of amenity would not reasonably be expected; or There is transient exposure, where the people would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land. Examples may include industrial use, farms, footpaths and roads.
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The suggested descriptor for magnitude of odour effects is illustrated within Table 3. Where the overall effect is greater than 'slight adverse', the effect is likely to be considered significant.

Table 3: Suggested Descriptor for Magnitude of Odour Effects

		Receptor Sensitivity		
		Low	Medium	High
Relative Odour Exposure (Impact)	Very large	Moderate adverse	Substantial adverse	Substantial adverse
	Large	Slight adverse	Moderate adverse	Substantial adverse
	Medium	Negligible	Slight adverse	Moderate adverse
	Small	Negligible	Negligible	Slight adverse
	Negligible	Negligible	Negligible	Negligible

Appropriate PPE and RPE will be made available for use by workers if odours exceed action levels. PPE and RPE shall be assessed under separate works and requirements presented within the Biogenie safety health and environment report.

Biogenie will proactively deploy odour management measures in addition to the controls detailed above as part of works. These shall be set in advance in areas of known contamination and could be relocated based on nature of contamination and odour assessment. It is proposed that both fixed and mobile odour suppression units shall be used to include fixed fence line atomisers and mobile atomisers. Biogenie would, based on an assessment of odours, also look to deploy odour neutralising and masking agents via both mobile and fixed atomiser systems.

5.5 Monitoring/ Control of Noise and Vibration

Best practicable means of noise control will be applied during the remediation works to minimise noise (including vibration) at neighbouring residential properties and other sensitive receptors arising from the remediation activities.

Mitigation and planning shall include the following:

- Restrict site working hours to 07:30 - 18:00 Monday to Friday and 08:00 - 13:00 Saturdays and not work public holidays;
- Biogenie shall position treatment activities as far away from sensitive receptors as reasonably practicable;
- Biogenie shall restrict the movement of plant and position haul routes away from the sensitive boundaries and minimise the works required in these areas;
- Biogenie shall select plant and machinery in good working order and less than 3 years old and, where available, use quiet and low vibration equipment; and
- Vehicles and plant will be maintained in a good and effective working order and operated in a manner to minimise noise emissions.

Biogenie shall review phasing and operations to limit the overlap and duration of highest noise and vibration level activities.

Noise monitoring shall be carried out by Biogenie daily at the designated environmental monitoring points as per the works progression and phasing. These points shall be confirmed during the daily site briefings and confirmation of works areas. Noise monitoring shall be carried out using a calibrated and certified Decibel Noise Meter.

Baseline noise monitoring will be collected prior to the start of works and Biogenie will endeavour not to exceed >10 dB of these average and maximum noise levels throughout the works.

If Biogenie operations produce and record unacceptable noise and vibration levels then additional measures including further acoustic shielding/enclosures, works re-phasing and assessment of operational hours shall be completed.

Vibration monitoring to be undertaken during breakout works or significant ground disturbance activities within proximity to the nearest receptors Biogenie will confirm with Morgan Sindall any vibration monitoring requirements of pipework of compounds based on the proposed works. Control and monitoring of vibration shall be undertaken in accordance with the current revision of BS 5228-2:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites - Part 2: Vibration.'

All monitoring data shall be available and provided to the Client's team as part of both weekly and monthly reporting with additional information to support remedial measures in the event of a complaint or continued exceedance of action levels.

5.6 Fuel Storage

Biogenie will store diesel for power for generators and operational plant. Biogenie will ensure that associated fuel storage is in the form of a double skinned fuel tank and appropriate spill kit materials are located next to the fuel tank.

5.7 Control of Litter

The nature of the work does not pose a risk of litter migration outside the site boundary. The site will be operated in a safe, tidy and hygienic manner. Operatives will be required to dispose of any litter generated on site during daily routine tasks where safe to do so. A skip will be used for any large items of general waste.

The site diary will record that monitoring checks have been carried out daily to confirm points above.

6

6 Record Keeping – Commissioning, Operating and Maintenance

Prior to delivery to site, valid maintenance certificates will be required for all plant and equipment, together with valid calibration certificates for appropriate items (monitoring instruments etc). During the works a regular (minimum fortnightly) maintenance checklist, including checks on all applicable system components, will be carried out by a Biogenie engineer.

On completion of the setting up of the treatment working area, the Technically Competent Manager (TCM) will inspect the setup of the treatment facilities on site prior to commencement of the treatment works. Prior to the commencement of the treatment works, the TCM will complete Biogenie's Mobile Treatment Licence/Environmental Permit Compliance form Pre-Operational Check and also check that the site meets the provisions of Biogenie's Health, Safety and Environmental Integrated Management System by using Biogenie's Site Works Inspection Audit Form. The forms are included in Appendix C.

During the works, a diary will be maintained by the site manager, together with details of site staff. Monitoring recorded as part of the environmental monitoring plan will be recorded and retained electronically for the duration of the works. The site manager will check the environmental monitoring data on a daily basis of any exceedances of trigger levels and the monitoring technicians will have a brief to inform the site manager for any exceedances for immediate management/contingency action. The site will also self-audit on a monthly basis using Biogenie's Site Works Audit form in Appendix C to ensure compliance with Biogenie's Health, Safety and Environmental Plan and IMS.

The pro-forma for the environmental monitoring that will be undertaken at the site can be found in Appendix B.

The Technically Competent Manager (TCM) will attend site for one day per week. The TCM will spend time on inspection audits of the treatment process during the remediation.

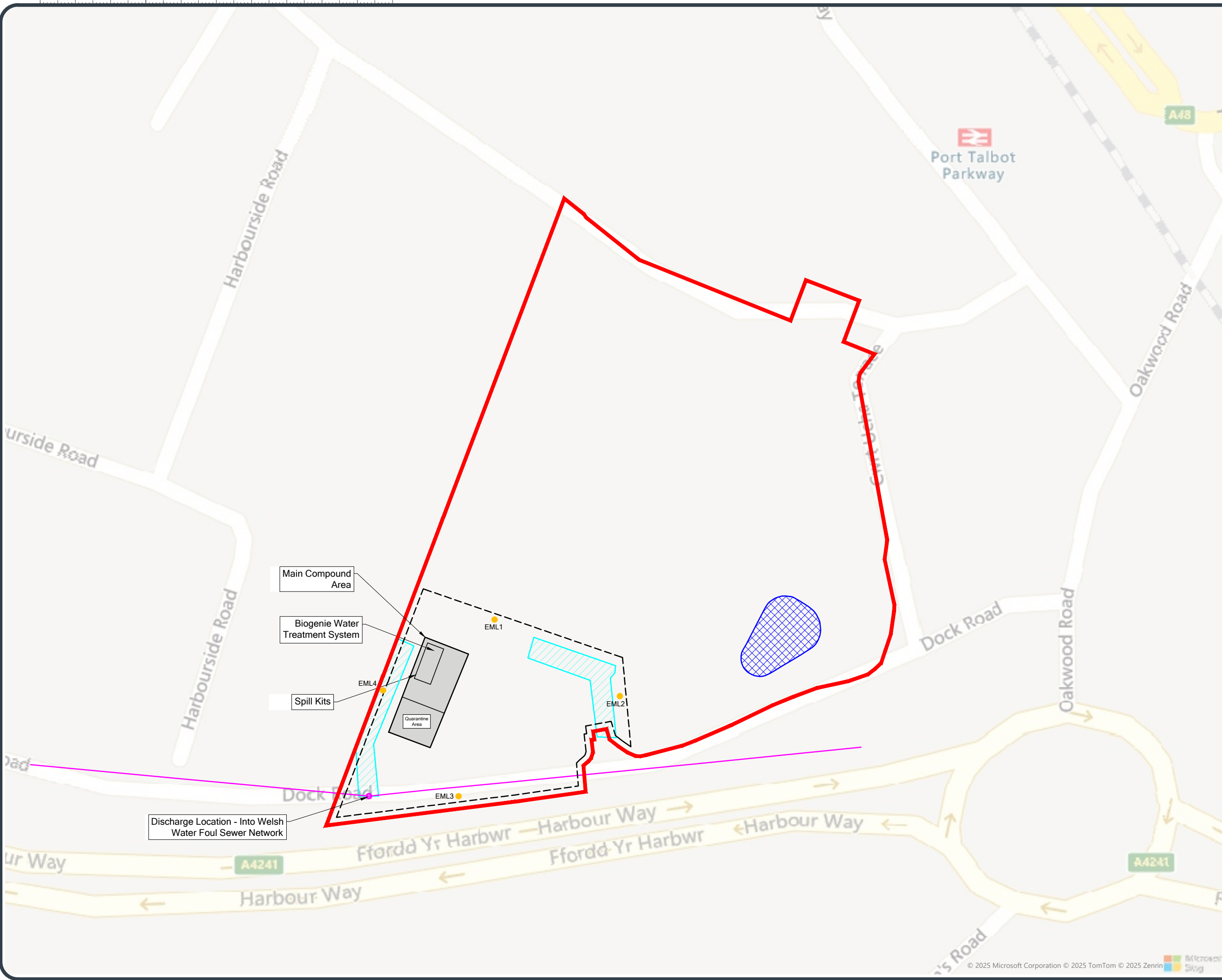
Works shall be undertaken in line with the CL:AIRE Definition of Waste: Development Industry Code of Practice (DoWCoP) and associated Materials Management Plan (MMP) requirements and an application shall be made upon receipt of all supporting information. Works shall be completed in line with the submission and verification report provided upon completion of works as per the guidance requirements. Details of all on-site and off-site material movements will be recorded and completed in accordance with the Duty of Care regulations and MMP. Waste transfer/consignment notes and disposal certificates will be provided for each load of material removed from site so that an auditable trail of the dates, volumes and destination of material removed from site can be maintained.

In order to undertake dewatering works a discharge to sewer consent has been obtained from Dwr Cymru Welsh Water. Refer to Appendix B.

Appendix A

Drawings

- LEGEND**
- Morgan Sindall Site Hoarding
 - Water Feature Onsite
 - Biogenic Working Area
 - Welsh Water Foul Sewer Network
 - Area of Groundwater Dewatering



0	First Draft	DATE
REV	COMMENT	DATE



Unit 8, Commerce Park Brunel Road Theale Reading RG7 4AB 01189 167340	Columbus House Greenmeadow Springs Tongwynlais Cardiff CF15 7NE 02920 368636	Chadwick House Warrington Road Birchwood Park Warrington WA3 6AE 01184 670847
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Client
Morgan Sindall

Project
SWITCH Port Talbot

Title
Site Layout

Drawn by JA	Checked Date	Authorised Date
Original Scale NTS	Date 09/05/25	Rev 0 Paper A3

Drawing Number
P6100/3092/25/A1



LEGEND

- Morgan Sindall Site Hoarding
- - - Biogenie Working Area

0	First Draft	DATE
REV	COMMENT	DATE



Unit 8, Commerce Park Brunel Road Theale Reading RG7 4AB 01188 167340	Columbus House Greenmeadow Springs Tongwynlais Cardiff CF15 7NE 02920 368636	Chadwick House Warrington Road Birchwood Park Warrington WA3 6AE 01184 670847
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Client
Morgan Sindall

Project
SWITCH Port Talbot

Title
Local Receptors

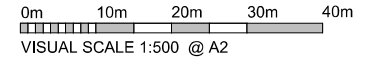
Drawn by JA	Checked Date	Authorised Date
Original Scale NTS	Date 09/05/25	Rev 0
Paper A3		

Drawing Number
P6100/3092/25/A2



MH
FW

Construction Period
May 2025 to Oct 2026



VISUAL SCALE 1:500 @ A2

- Notes**
- Drawing is copyright of fenton+reece
 - Only labelled dimensions are to be taken from this drawing. Do not scale from this drawing.
 - Contractor is responsible for taking and checking all dimensions, below ground services and setting out.
 - All elements of design should be checked on site and conflicts reported to responsible designer. **If in doubt ask**

Temporary Carrier Drain for Site Water Management

Hoarding

Herras

G Gate

H Hut for Gate Person

Location of Biogenie WTS

Temporary Filtration Silt Basin/Pond

Outfall to Existing DCWW FW manhole

Outfall to Existing DCWW SW Pumping Station

Temporary Spoil Storage Area during early groundworks activities

Legend

Hardworks:

- Existing Vehicular Tarmac: Roads retained and repaired as necessary
- Existing Pedestrian Tarmac: Paths retained and repaired as necessary
- Proposed Pedestrian Tarmac (active travel route): Permeable tarmac - Buff coloured To Engineers build-up specification
- Proposed Pedestrian Block Paving: Permeable paving units - Dark Grey colour To Engineers build-up specification
- Proposed Vehicular Tarmac (to highway): Permeable tarmac - Black/ grey colour To Engineers build-up specification
- Proposed Vehicular Tarmac (to building apron): Permeable tarmac - Light Grey colour To Engineers build-up specification
- Proposed Vehicular Block Paving (parking bays): Permeable block paving - Black/ grey colour To Engineers build-up specification

Softworks:

- Building Edge Planting Mix: Low maintenance grass, perennial and herbaceous mix
- Proposed SUDS Features: Wet-meadow seed mix with supplementary native marginal Locally sourced
- Proposed Meadow Mix: Grass and wildflower seed mix to match previous biodiversity mitigator areas
- Native Edge Mix: Native wildflower mix. Flowering native species for berries & pollinators 1m centres, 80-100cm whips
- Proposed Tree Planting: Tree planting, focussed on native flowering species beneficial to pollinators, rootball and staked

Site Features:

- Cycle Storage: Covered shelter, cycle hoops Habitat integrated features & growing fence walls
- Bee Towers: Feature concrete solitary bee posts Green and Blue Beeposts or equal
- Undisturbed Mitigation Planting: Area of site to remain untouched as to not affect existing mitigation planting implemented on site in previous works

P05	Turning head revised and planting revised	MR	RF	240613
P04	Parking surfacing updated	MR	RF	240319
P03	Turning head in visitor car park added	MR	RF	240314
P02	Issued for PAC Approval	MR	RF	240301
P01	Issued for Comment	MR	RF	240222
Rev.	Revision description	Drawn	Checked	Date



Project	SWITCH HARBOURSIDE for MORGAN SINDALL
Title	Landscape Masterplan
Project Status	S1 - For Co-Ordination
Drawing Number	26CB02-FRL -30-XX-D-L-1001
Rev.	P05



Filename: Y:\26000-26899\26279 - SWITCH\CH01 - WP\DR - Drawings\26899\26279-HYD-52-ZZ-D-C-0600 - Drainage Layout - P07.dwg

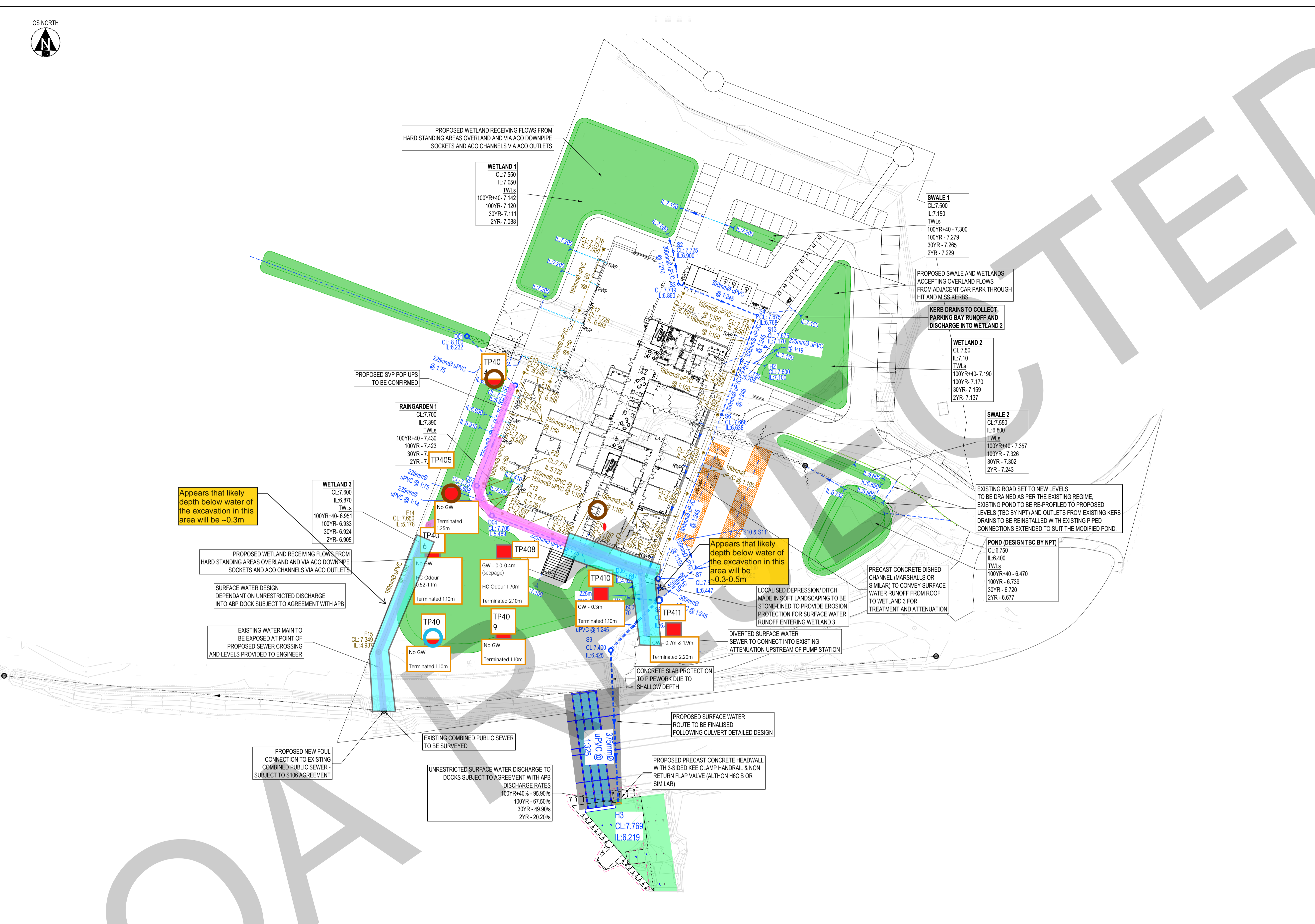
Appears that likely depth below water of the excavation in this area will be -0.3m

Appears that likely depth below water of the excavation in this area will be -0.3-0.5m

KEY

- BIORETENTION/SWALES/ WETLANDS
- PROPOSED SURFACE WATER SEWER AND MANHOLE/INSPECTION CHAMBER
- PROPOSED DIVERSION OF EXISTING HIGHWAY SURFACE WATER SEWER AND MANHOLES
- PROPOSED FOUL WATER SEWER
- EXISTING DRAINAGE TO BE DIVERTED/REMOVED
- EXISTING COMBINED WATER DOWN PUBLIC SEWER - LEVELS TO BE SURVEYED AND REPORTED TO ENGINEER
- EXISTING SURFACE WATER SEWER - TO BE MAINTAINED
- PROPOSED CONCRETE HEADWALL WITH NON RETURN FLAP VALVE
- PROPOSED ACO OUTLET/INLET
- PROPOSED LINEAR DRAINAGE CHANNEL
- PROPOSED BEANIE BLOCK KERBING
- PROPOSED PERMEABLE PAVING

- SAB DRAINAGE NOTES:**
- DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT PROJECT DRAWINGS.
 - THE SURFACE WATER DRAINAGE IS SUBJECT TO APPROVAL BY THE SAB.
 - THE SPECIFICATION IN ALL RESPECTS SHALL BE IN ACCORDANCE WITH THE CURRENT SPECIFICATION AND CONSTRUCTION PUBLICATION IN FORCE IN THE COUNTY AT THE TIME OF CONSTRUCTION.
 - ALL SWS PIPEWORK SIZING TO BE CONFIRMED
 - DRAINAGE TO ENGINEERED BATTERS AND GROUNDWATER RELIEF CUT OFF DRAINAGE TO BE CONFIRMED BY GEOTECHNICAL ENGINEERS, INCLUDING BUT NOT LIMITED TO ANY REQUIREMENT FOR FIN DRAINAGE ON SLOPES AND ANTICIPATED GROUNDWATER FLOWS.
 - DRAINAGE REQUIREMENTS FOR RETAINING STRUCTURES TO BE CONFIRMED BY STRUCTURAL ENGINEERS.
 - ALL LAND DRAINAGE TO BE 225mm PERFORATED PIPEWORK BE LAID AT MIN FALL OF 1:200 WITH MIN 600mm COVER TO TOP OF PIPE FROM PROPOSED GROUND LEVEL WITH 450 Ø PLASTIC CATCHPITS UNLESS OTHERWISE SPECIFIED. TYPE 1 (TURF FINISHED) AND TYPE 2 (GRAVEL FINISHED) TO BE USED IN ACCORDANCE WITH LANDSCAPE ARCHITECTS' PREFERENCES.
 - THRESHOLD DRAINAGE TO ARCHITECTS' SPECIFICATION.
 - ALL DRAINAGE OUTFALLS AND CONNECTIONS TO EXISTING FEATURES/SYSTEMS SHALL BE CHECKED & SURVEYED AND THE RESULTS PASSED TO THE OVERSEING AUTHORITY / CLIENT IN ADVANCE OF THE START OF DRAINAGE WORKS
 - ALL LINEAR DRAIN OUTLETS TO BE Ø100mm AT MINIMUM FALL OF 1 in 150 TO MAXIMUM FALL OF 1 in 10 UNLESS STATED.
 - ALL PRIVATE FWS DRAINS TO BE Ø100mm PLASTIC PIPEWORK LAID AT A MINIMUM SLOPE OF 1 in 40 UPSTREAM OF FIRST W.C. CONNECTION ON A RUN. AFTER CONNECTION OF 1st W.C. TO BE LAID AT MINIMUM SLOPE OF 1 in 80 UNLESS STATED.
 - PIPEWORK TO HAVE BED AND SURROUND AS FOLLOWS:
 - UNDERNEATH PRIVATE DRIVEWAYS, PARKING AREAS WITH RESTRICTIONS TO PREVENT ACCESS BY VEHICLES IN EXCESS OF 7.5T AND PATHWAYS ADJACENT TO VEHICLE ACCESS TO BE:
 - COVER TO TOP OF PIPE > 0.9m - TYPE S or TYPE T (PLASTIC)
 - COVER TO TOP OF PIPE < 0.9m - TYPE Z (CONCRETE SURROUND)
 - UNDERNEATH DOMESTIC GARDENS AND PATHWAYS WITH NO POSSIBILITY OF VEHICLE ACCESS TO BE:
 - COVER TO TOP OF PIPE > 0.35m - TYPE S or TYPE T (PLASTIC)
 - COVER TO TOP OF PIPE < 0.35m - TYPE Z (CONCRETE SURROUND).



REVISIONS

Rev	Date	Description	By	Ckd	App
P07	27/11/24	Revised for Full SAB Application	KG	CP	RB
P06	21/11/24	Revised for Planning	KG	CP	RB
P05	15/11/24	Updated to suit flood modelling levels	KG	KG	RB
P04	02/08/24	Updated to suit flood modelling levels	JH	JH	MA
P03	27/06/24	Updated drainage to suit to additional existing level information and layout alteration	JH	JH	MA
P02	19/04/24	Updated drainage to suit to additional existing level information and layout alteration	JH	JH	MA
P01	20/03/24	First Issue	HS	JH	MA
Rev	Date	Description	By	Ckd	App

Hydrock
 THIRD FLOOR, WHARTON PLACE
 13 WHARTON STREET
 CARDIFF
 CF10 1GS
 t: +44 (0) 2920 023665
 e: cardiff@hydrock.com

CLIENT
MORGAN SINDALL

PROJECT
SWITCH HARBOURSIDE

TITLE
DRAINAGE LAYOUT

HYDROCK PROJECT NO.
C-26279

SCALE @ A1
1:500

STATUS DESCRIPTION
FOR STAGE APPROVAL

DRAWING NO. (PROJECT ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)
26CB02-HYD-52-ZZ-D-C-0600

STATUS
S4

REVISION
P07

Appendix B

Discharge Consent

Tim Vickers
Biogenie Remediation UK Ltd
Columbus House
Village Way
CARDIFF
CF15 7NE

Date 4th July 2025

Dear Mr Vickers,

Ref:- Authorisation for the temporary disposal of treated wastewater derived from groundwater de-watering at the SWITCH Building, Port Talbot to the public foul sewer

Thank you for your recent enquiry regarding an authorisation to discharge trade effluent to the public foul sewer from the above address.

Based on the information provided, I can confirm that authorisation is given to discharge the trade effluent into the public foul sewer, subject to the following conditions and not otherwise:

1. The premises from which the trade effluent may be discharged is: SWITCH Building, Land North of Harbour Way, Harbourside Regeneration Area, Oakwood Road, Port Talbot, SA13 1DE
2. The maximum volume of trade effluent that may be discharged shall not exceed 360 cubic meters per day, please discharge at the lowest possible flow rate by gravity, but at a flow rate of no more than 5 litres per second.
3. The trade effluent to be discharged is derived from treated wastewater arising from a water treatment system (WTS). Pre-treatment is to be maintained using lamella separation, oil water separation and a granular activated carbon filter to remove solids, hydrocarbons, TPH, PAH and metals. Sampling post treatment must be undertaken to ensure the parameters identified above remain at trace levels and the pH is between 6 and 11.
4. No gross solids must be discharged.
5. Please ensure that the discharge is made to foul sewer only and that there is no risk of the contamination of any surface water drainage.
6. Flows must be introduced into the public sewer in such a way that will not affect the free flow of its contents, for example, settlement of suspended solids or surcharging upstream.

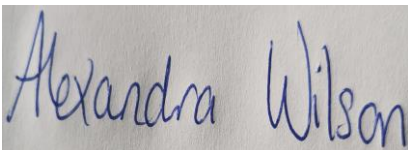
-2

7. A 3-metre gravity section must be incorporated into the design before connection to the public sewer should the discharge be pumped.
8. There will be no attempt to identify the volumes of domestic sewage and this trade effluent for charging purposes. Both volumes will be discharged at the current domestic rate with no minimum charge for trade effluent.
9. This permission is given on the understanding that:
 - a) it may be reviewed from time to time in accordance with the frequency applying in respect of a trade effluent consent issued under the Water Industry Act 1991, section 124.
 - b) Dwr Cymru-Welsh Water may review its Trade Effluent Policy and require a review of this permission subject to the restrictions in a) above.
 - c) If the nature of the discharge is changed then Dwr Cymru-Welsh Water must be informed of this and shall be entitled to review the permission.
10. This permission is valid from 1st September 2025 – 28th September 2025. If an extension is required, please contact the local Trade Effluent Officer on the e-mail address given below.
11. Permission has been given for a temporary connection. However, the permission has been given on the basis that you notify us once you no longer require the connection, as you will need to reinstate the public sewer manhole to its original condition. Upon completion of the work to your drain we will need to inspect the work to ensure no ground water infiltration is entering our sewer via your drain.

The standard trade effluent consent application fee, currently £437.42 (zero rated for VAT), is payable for the processing of the authorisation application as per the Dwr Cymru Welsh Water Scheme of Charges. You will be invoiced for this amount in due course.

In the meantime, if you have any queries or should the operation change in any way to affect the nature and volume of wastewater for disposal, please contact Lucy Geale, Trade Effluent Officer, on e-mail at Trade.Effluent@dwrcymru.com.

Yours sincerely



Alexandra Wilson
Science Manager

