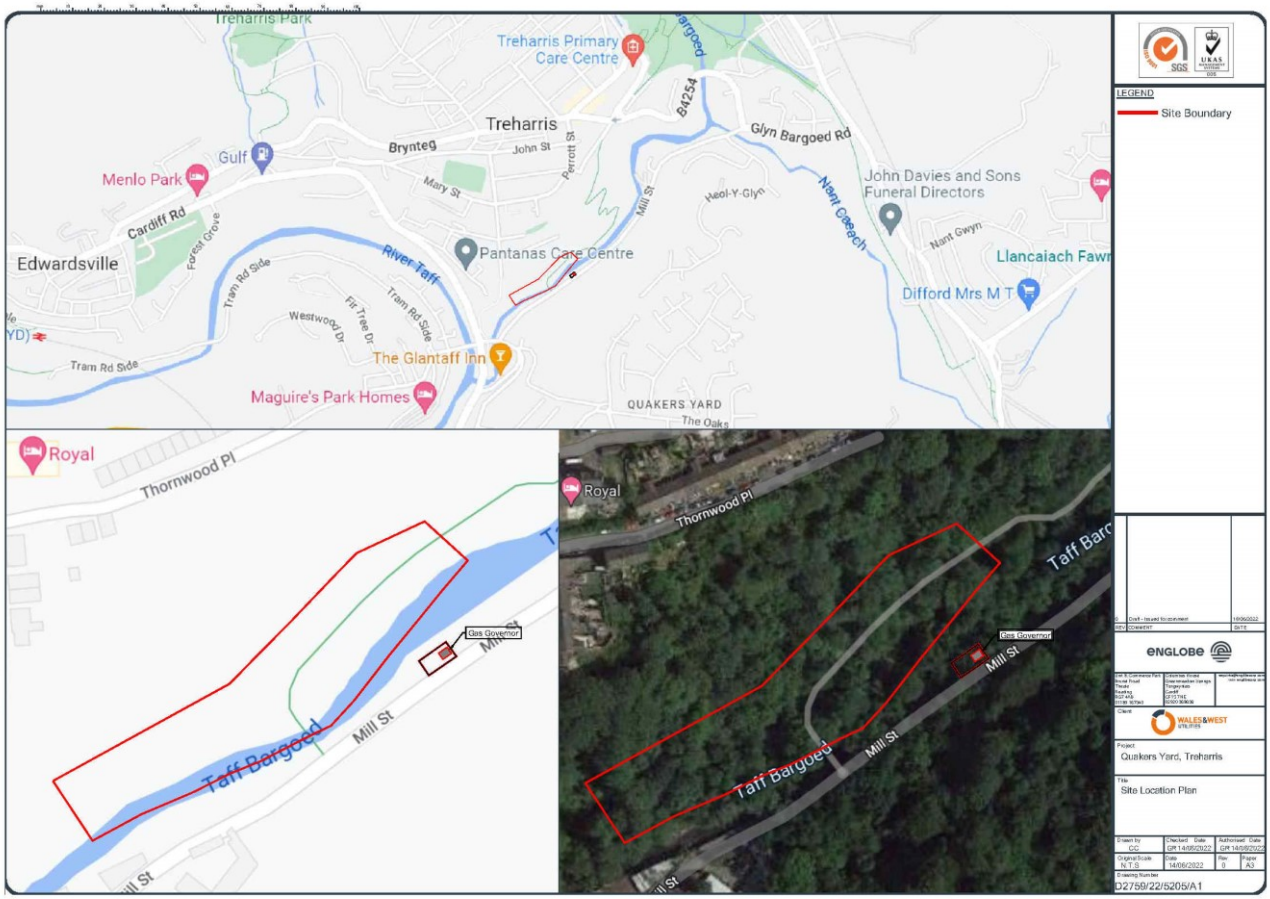
Quakers Yard

Supplementary Information for Mobile Plant Permit Deployment Application

Wales & West Utilities
R1871/23/5340 - Rev. 1I

June 2024



Site Address:	Mill Street, Quakers Yard, Treharris, CF46 5AG	Tracking Code	
Report Title	Quakers Yard - Supplementary Information for Mobile Plant Permit Deployment Application		
Report Type:	Contamination	Retention Period	
Site Code		Author (Company)	Englobe
Report Date	June 2024	Factual/Interpretative	Factual
Draft / Final	Rev. 1I	H & S File?	No
Work Stage	Supplementary Information for Mobile Plant Permit Deployment Application		
Brief description of contents	Supplementary Information for Mobile Plant Permit Deployment Application		
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R1871/23/5340 - Rev. 1I

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1 Introduction

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.

Englobe Regeneration UK Limited (Englobe) operates and manages its remediation treatment works in accordance with its Mobile Plant Permit (MPP), reference AP3195FG, which may be deployed in England or Wales as determined the Environment Agency (EA) or National Resources Wales (NRW) respectively.

Englobe have been commissioned by Wales & West Utilities (WWU) to undertake land remediation works at the former Quakers Yard Gasworks site. 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. The objective of the works is to render the site suitable for its continued current use as public open space and not be considered 'contaminated land' under the Environmental Protection Act 1990.

1.1 Site Location and Setting

The site is situated on Mill Street, Quakers Yard, Treharris, CF46 5AG. The Site is roughly rectangular in shape, ground elevation across the site varies from 98 m to 105 m AOD approximately south-west/north-east and covers an area of approximately 0.55 hectares.

The location of the site and land ownership is shown on Drawing D1871/23/5302/A1, and general layout shown on Drawing D1871/23/5302/A2, Appendix A.

The site has generally no distinct visual boundaries, with the exception of the site's southern limit which is bordered by the River Bargoed Taff. To the north, east and west, the defined site limits are contiguous with the adjacent broad-leaved woodland. The unfenced site mainly consists of a flat area sloping from east to west bounded by dense woodland and a steep slope to the north and the Afon (river) Taff Bargoed to the south. There is currently no easy existing vehicle access to the site and the two main ways to enter is either from either the top of the hill or the base of the valley.

From the top of the hill where the town of Treharris is located, access can be gained through the east of the site via a macadam cycle path that is begins in the south eastern corner of Perrott Street Public Car

Park. The Sustrans Route 47 cycle path runs down a steep banking in a zig zag formation towards the east of the site where it traverses a comparably flat section of the site that runs perpendicular to the hillside. The path exits the south of the site at the Taff Bargoed river over a Metal Cycle Bridge which acts as the second entrance on Mill Street.

There is no operational plant at the vacant site and other than some stone columns and walls, the only appreciable structure is an abandoned river level monitoring station near the footbridge that is surrounded by some aging palisade fencing. Other than public open space and the cycle track that runs through the site (this is part of the national cycleways system and provides an offshoot to the nearby Taff Trail), there is no other use on the site.

The heavily wooded site is not fenced, but unhindered site access to the site at the bottom of the valley from anything other than the cycle path is not easy with natural barriers of steep topography and woodland to the north, river to the south and dense woodland to the east and west reducing.

1.2 Site Surroundings

Set in a woodland the nearest main residential area is 65 m to the north of the site (Thornwood Place).

An operational W&WU gas governor building is located to the southeast of the site on the opposite side of the river, although this falls outside part of the 'site'. A small single storey building also located along the southern limit is a river monitoring station historically used by Natural Resources Wales (NRW). It is understood that the river monitoring station is now disused (sometimes marked as electrical substation on historical plans).

A cycleway/footpath (Sustrans Route 47) traverses the site's north-eastern section, from which the site can be accessed on foot/bicycle from either a pedestrian bridge off Mill Street or from the north-east cycleway section, adjacent to the Perrott Street Car Park. There is currently no vehicular access to the site.

To the east of the site is dense woodland and approximately 100 m to the west beyond dense woodland the hamlet of Quakers Yard can be found. There are some smaller residential properties and commercial ventures a little nearer to the south west of the site with a small chicken farm over the river of the south west of the site.

The southern boundary is the Afon Bargoed Taff with Mill Street running parallel.

1.3 Previous Site Investigation/Remediation/Other Assessments

The site has been subject to some site assessments and as outlined below.

- Environmental Assessment Factual Site Investigation Report: (Final) Advisian. Document Number 305001-00009 51810-01. January 2016.
- Environmental Assessment Site Investigation Factual Report (FINAL). Advisian. Document Number 305001-00009 51810-02- - January 2017.
- Ecological Appraisal. Keystone V4.4 10/11/2014 Dated July 2015
- Ad Hoc Riverbank Stability Assessment.Advisian, Document Number 305001-00009_00106_Final December 2021.
- Factual Site Investigation. Englobe. Ref. R1871/22/5270. May 2023.
- Geo-environmental Detailed Quantitative Risk Assessment. Yellow Sub Geo. Document Ref. P23545_R1 Rev04. May 2023.

2 Specified Remediation Activities to be carried out at the site

2.1 Areas of Notable Contamination

The site investigations are quite conclusive in identifying legacy gasworks contamination at the site which in some areas are quite significant.

The reports note that the central area of the site to the east of the former gasworks house throughout the former production areas up to Gasholder No. 2 is heavily impacted with hydrocarbon-based contamination throughout both the deeper made ground above and below the former site hardstand level into the underlying Alluvial Deposits.

Very strong hydrocarbon, tar and phenolic odours are recognised throughout the central area with Non Aqueous Phase Liquids (NAPL) positively identified on perched waters within or near former building structures, black staining in both made ground and natural sands/gravels with tar seepages and tar globules in many investigative locations thought this central zone both within and outside of structures.

Both the former underground gasholders in the east of the site are impacted with contamination with very strong tar odours, NAPL and tar-stained clinker identified at depth in former gasholder No. 1/tar well with strong coal tar/phenolic/hydrocarbon odours from 1.1 m bgl and black staining at depth.

The far west of the site, beyond former Gasholder No 2, appears to be less impacted with contamination which should be expected but investigative data in this area is sparse.

Tar has also been noted seeping through exposed stonework in the riverbank and a strong hydrocarbon odour is noted with exposed broken pipework and surrounding materials particularly south of Former Gasholder No. 1. In addition large, exposed deposits of spent oxide have been noted in parts of the bank where river erosion is strongly advancing.

To the east of the site behind the former gasworks house, the ground conditions are considerably less impacted and more confined to deeper stratum with a hydrocarbon sheen and moderate hydrocarbon odours noted in drift deposits from 1.65 – 2.05 m bgl in MW16.03 and 'petrol' odours noted in groundwater and on the cored cobbles of MW16-11 towards the south west corner of the site. It should also be noted that investigative data in the area to the west of former Gasholder 3 is absent due to the historical problems with Japanese Knotweed at the site.

Groundwater recorded that the highest concentrations of dissolved phase hydrocarbons was noted in MW16-01 and with concentrations of 12 mg/l and 18 mg/l respectively in the well installed within tar stained gravels. Low concentrations of dissolved phase hydrocarbons were also noted in groundwater recovered from MW16-02 and MW16-08.

Typical of a gasworks, asbestos has been identified in sporadic areas at the site. Generally, traces of asbestos are present in shallow made ground approximately 0.4 to 0.5 m bgl, exceptions to this are asbestos debris recorde in TP 16-12 where the former gasworks house was located and trace asbestos found at the surface of TP16-01 in the area of the former gasholder No. 3.

2.2 Key Historical Structures

Historical features and previous site investigation positions are shown on Drawing D1871/23/5302/A5, Appendix A.

2.2.1 Former River Monitoring Station

Located in the south of the site to the west of the Mill Street foot bridge. The former river monitoring station has been abandoned. Surrounded by an ageing palisade fence NRW has indicated that it can be demolished and removed during remediation works.

2.2.2 Former Gasholder No. 1/ Tar Well

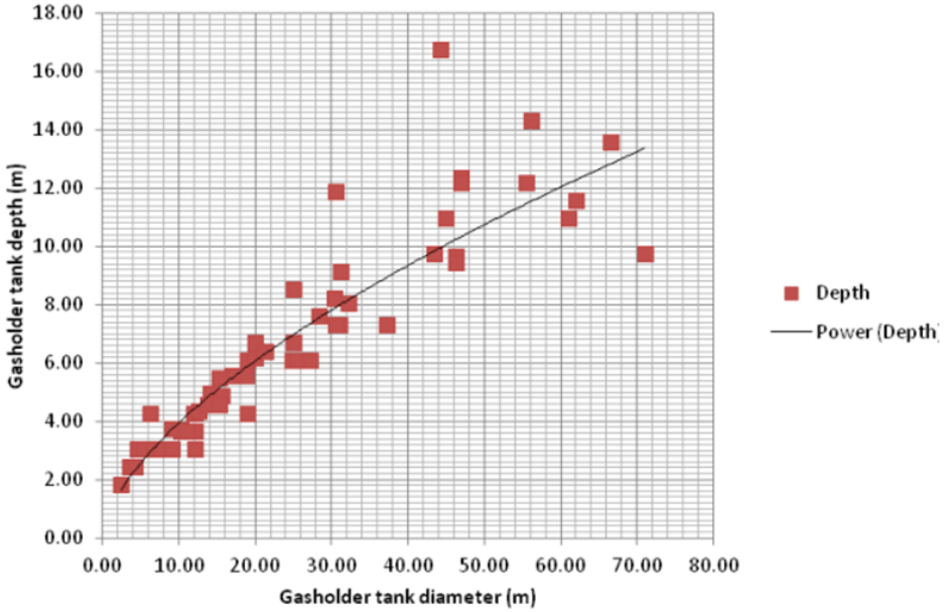
Located in the centre of the east half of the site previous reports expected the well to be between 3-4 m deep with a 10 m diameter. TP16-08 was advance to 3.2 m bgl and although abandoned due to the ingress of groundwater the driver reported a potential firm structure at 3.2 m bgl. MW 16-09 was advanced to 3.8 m bgl and potential base reported at 3.4 m bgl where sandstone and limestone gravels were recovered.

Given consideration that the ground level is elevated approximately 1.2 m above what would have been the historical working level of the site, these observations would put the base of the gasholder at 2.0 to 2.2 m of original site levels.

Based on Englobes experience of gasworks site and also utilising the research of Dr Russel Thomas in CL:AIRE publication Gasworks Profile B: Gasholders and their tanks it should be expected that the gasholder base would be at least 3 m deep and possibly up to 4 m deep. Figure 1 below taken from this publication presents the expected diameter to depth relationship based on observations.

A dumpling would be unexpected in any below ground gasholder less than 16 m in diameter that required water proofing unless built in rock or stiff clay.

Figure 1 – Gasholder Depth to Diameter Comparisons. (CL:AIRE 2014)



Based on the above information, and not discounting the onsite observations for the purposes of our remediation estimations until more contemporaneous information becomes available in the proposed Pre- Remediation Works, we have assumed the former flat bottomed gasholder/tar well to be 10 m wide and 3.5 m deep (below original site levels) providing a volume of 275 m^3.

2.2.3 Former Gasholder No. 2

Initially estimated be between 4-5 m deep with a diameter of 15 m there have been several advancements in the northern area of the gasholder.

Without the identification of the gasholders walls it is not clear as to the exact location of the gasholder although the current estimations are not unreasonable. Concrete has been encountered from 4.9 to 5.1 m bgl in MW 16-13 and with 'original' tarmac levels encountered in nearby locations at circa 1 m below existing site levels. this would put the original gasholder base at approximately 4 m. Based on our knowledge of gasworks and typical gasholder depths presented in Figure 1, a 4 m gasholder base be unusual for a 15 m wide gasholder and that a 4.5 m deep gasholder would be more plausible.

Until more investigative information can be collected during the proposed Pre-Remediation Works, for the purposes of providing a coherent treatment volume we have assumed the gasholder to be flat bottomed, 15 m wide and 4.5 m deep giving a volume of 795 m^3.

2.2.4 Former gasholder No. 3

Located in the south west of the site the concrete gasholder base is located approximately 0.9 to1 m below existing site levels and is overlain by a mix of vegetation, soil and demolition rubble. Identified as circa 400 mm thick the 17 m wide gasholder base retain approximately 90 m^3 of in-situ concrete.

2.2.5 Other Structures and Bases

Existing site investigative data suggest that the based and foundations of much of the gasworks infrastructure was left in place following demolition. Concrete bases, brick walls and other structures are

commonly encountered between 0.9 m and 1.8 m which was likely the former site level have been covered with demolition rubble, soil and vegetation.

Some dilapidated walls in both the north and south of the site, including the northern wall of the retort house are still evident and provide limited retaining capacity. A stone buttress is also located in the river bank to the south east of former Gasholder No. 2, but it is not clear as to whether this formed a buttress for the gasholder frame as a stone buttress would be unusual where concrete would normally be favoured. Recent inspection during the site walkover suggests that this is an independent structure, but heavy vegetation made it difficult to confirm.

Not so much of a structure, but a feature is a disused substation is located in the south west of the site near former Gasholder No. 3 and the river.

2.3 Unacceptable Risks at the Site

Based on Englobes review and assessment of the site, the unacceptable risks are currently considered to be:

— Direct NAPL migration from areas of unsaturated made ground.

— Direct NAPL migration from within and adjacent to underground structures or overlying original site levels.

— Dissolved phase contamination migration from made ground in unsaturated zone (and smear zone) to shallow and surface waters.

— Dissolved phase contamination migration from made ground within structures to shallow water, surface waters.

— Asbestos exposure from asbestos fibres in soft surface coverings where there is insufficient ‘clean’ coverage.

2.4 Proposed Remedial Areas

In order to address the identified potentially unacceptable risks detailed in the previous section, remedial works are required in the following areas:

— The hydrocarbon impacted area of the site from approximately gasholder house eastwards up to and including former gasholder no 2. This is from the northern boundary to the southern river bank.

— Significant areas of Spent Oxide in made ground.

— Hotspots of shallow asbestos impacted soils.

Remediation Areas are shown in Drawing D1871/23/5302/A6, Appendix A.

Further specific details on the remediation works is provided in the Englobe Remediation Implementation Plan ref. R1871/23/5302.

3 Conceptual Site Model and Risk Assessment

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 Table 1 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: Human Health RPLs and Preliminary Risk Evaluation

Source	Pathways	Potential Receptors	Probability of Exposure	Consequence	Magnitude of Risk	Notes & Control Measures	Risk After Controls
Contaminated Made Ground	▪ Direct contact ▪ Dust ▪ Vapour inhalation	▪ Site Staff & Visitors ▪ Adjacent third-party workers ▪ Public at site boundary ▪ Below ground soils ▪ Groundwater ▪ Surface waters	Medium	Medium	Medium	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 Method Statements.	Low
Contaminated Groundwater Potential vapour generated from water treatment system (if NAPL present in influent)	▪ Direct contact ▪ Vapour inhalation	▪ Site Staff & Visitors ▪ Adjacent third-party workers ▪ Public at site boundary ▪ Below ground soils ▪ Groundwater ▪ Surface waters	Medium	Medium	Medium	Site workers and visitors may come into contact with contaminanted waters. Controlled by containment, information, inductions, training, good working practices, wearing appropriate PPE and RPE, signage, Site monitoring, Site welfare facilities and by following Method Statements. 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.	Low
Chemical reagents used in the treatment process (e.g. cement/PFA for stabilisation)	▪ Direct contact ▪ Dust ▪ Inahaltion	▪ Site staff ▪ Site visitors ▪ Public at site boundary	Low	High	Medium	All chemicals present on site will be appropriately stored within their proper containers and or stored appropriately to minimise dust generation. Weekly inspection of all containers and dosing equipment & pipework will be carried out by a systems engineer, with any defects reported and addressed appropriately.	Low

Source	Pathways	Potential Receptors	Probability of Exposure	Consequence	Magnitude of Risk	Notes & Control Measures	Risk After Controls
						Staff will be trained, inducted, will be working under Safe Systems of Work and have suitable PPE to minimise risk of exposure.	
Wastes generated from the treatment process (solids, spent media, potential NAPL)	▪ Direct contact ▪ Vapour inhalation ▪ Leakage / spillage	▪ Site staff ▪ Site visitors ▪ Groundwater beneath the site ▪ Surface water ▪ Below ground soils	Low	Medium	Low-medium	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 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. 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.	Low
Noise during active site works	▪ Noise emissions	▪ 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	▪ Direct contact Vapour inhalation	▪ Site staff ▪ Site visitors ▪ Public at site boundary	Low	High	Medium	All chemicals present on site will be appropriately stored within their proper containers and or stored appropriately to minimise dust generation. Weekly inspection of all containers and dosing equipment & pipework will be carried out by a systems engineer, with any defects reported and addressed appropriately. Staff will be trained, inducted, will be working under Safe Systems of Work and have suitable PPE to minimise risk of exposure. Site monitoring.	Low

4 Management Supervision

The Technically Competent Manager (TCM) will attend site during the commissioning of the system and monthly thereafter (based on 30-week programme estimate 7 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 Englobe 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 Englobe personnel in the event of any fault. The site will be accessible to Englobe 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.

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 Englobe'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 propose 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 D1871/23/5340/A3 and D1871/5302 EMP, 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

*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

Dust levels will be visually assessed on an ongoing daily basis by all Englobe staff who shall be encouraged to manage and mitigate dust levels during their daily works and communicate any issues to the site manager.

Dust monitoring will be carried out at the seven proposed environmental monitoring points as outlined in Drawing D1871/5340/A3 and D1871/5302EMP, 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. The monitoring will be undertaken once a day using a portable handheld calibrated Dustmate instrument. The monitoring results will be fed back to the site manager so that mitigation measures can be deployed as necessary.

The IAQM guidance on monitoring in the vicinity of construction and demolitions sites for dust presents a site action level respirable dust (PM10) of 190 µg /m^3 over a 1 hour period to the sensitivity of offsite receptors (adjacent residential properties and gardens).

Dust mitigation measures will be undertaken pro-actively as part of the normal site operations and a management plan shall be in place as part of the Englobe site health and safety management plan. Should there be visible dust, or exceedance of the action level value for dust, then works will be stopped and the dust management measures re-assessed, adapted or upgraded. Further follow up monitoring shall be undertaken to confirm that the corrective actions have successfully managed dust levels.

Typical remedial actions to manage dust impacts that shall be deployed on site include:

- Traffic routes shall be sprayed with water to control potential dust generation. There will be a limit to all unnecessary traffic across the site and all haul routes shall be subject to routine and regular inspection.
- The speed limit for the site shall be limited to 5 mph in order to minimise the potential generation of debris/dust.
- Dust netting and fencing shall be erected in advance of works across areas of site on a phased basis to mitigate the potential for cross boundary migration.
- During periods of high winds (in the direction of key receptors) the works and activities with the potential to generate dust shall be suspended or amended until wind speeds reduce to acceptable levels and / or alternative working and control methods can be deployed.

Englobe propose to use a combination of fixed dust suppression systems in high dust risk activities areas such as break out and stabilisation with additional mobile suppression via dust cannons or rotary atomisers on site for deployment and relocation based on works progress and observed site conditions.

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 Englobe'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 open excavations for extended periods, minimise contaminated material stockpile volumes and remove, where encountered, free NAPL and perched water within excavations with appropriate controlled on-site storage prior to off-site disposal. In addition, odour suppression equipment shall be made available which may include fixed boundary dispersal and mobile rotary atomiser systems to allow deployment and movement based on encountered conditions and contamination.

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

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

Englobe will be responsible for the environmental monitoring of VOCs in ambient air within Englobe 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.

Englobe 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.

Englobe 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 seven proposed environmental monitoring points as outlined in Drawing D1871/5340/A3 and D1871/5302EMP, 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 Englobe 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 six proposed environmental monitoring points as outlined in Drawing D1871/5340/A10, 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:

Frequency	How often an individual is exposed to odour
Intensity	The individual's perception of the strength of the odour
Duration	The overall duration that individuals are exposed to an odour over time
Odour unpleasantness	Odour unpleasantness describes the character of an odour as it relates to the 'hedonic tone', and will be measured on a standard none-point scale
Location	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.

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		
Relative Odour Exposure (Impact)		Low	Medium	High
	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 Englobe safety health and environment report.

Englobe 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. Englobe 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.

Englobe shall complete works in accordance with a submitted Section 61 document and deploy mitigation measures as required. 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;
- Englobe shall position treatment activities as far away from sensitive receptors as reasonably practicable;
- Englobe shall restrict the movement of plant and position haul routes away from the sensitive boundaries and minimise the works required in these areas;
- Englobe 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.

Englobe 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 Englobe 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 Englobe will endeavour not to exceed >10 dB of these average and maximum noise levels throughout the works.

If Englobe 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 such as residential housing to the west or the gym to the south of the proposed breakout works. Englobe will confirm with WWU 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 Asbestos Monitoring

Based upon the ground investigation and laboratory testing undertaken at the site Englobe propose to undertake some background, reassurance, asbestos air monitoring. This will be undertaken on a weekly basis during excavation works and cover operational areas and key identified receptors.

Asbestos assurance monitoring shall be completed by a specialist sub-contractor with all results provided on day of testing to allow a proactive and immediate review and response based on any identified elevated concentrations.

The monitoring shall include occupational health monitoring of site staff, general works area monitoring and boundary monitoring targeting the most applicable potential receptors based on atmospheric conditions.

Specific asbestos air monitoring shall be undertaken prior to the start of works to provide a baseline and in works areas and the site boundary in the event previously unidentified or asbestos materials of a different nature are recorded.

A watching brief for asbestos in soils shall be undertaken by environmental monitoring staff and all other staff during the works. An asbestos watching brief and discovery strategy shall be formulated, agreed and distributed to all identified stakeholders.

Any watching brief and associated further review of PPE and RPE shall be presented and updated as part of Englobe site-specific safety health and environmental report.

Asbestos monitoring data shall be presented as part of both the weekly and monthly report submissions and immediately should levels dictate an immediate suspension or change to works, working methodologies, controls, PPE or RPE.

It is noted that the controls detailed for dust mitigation will also serve to mitigate any potential asbestos generation based on the current data and current low risk level.

5.7 Fuel Storage

Englobe will store diesel for power for generators and operations plant. Englobe 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.

5.8 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 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 Englobe 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 Englobe's Mobile Treatment Licence/Environmental Permit Compliance form Pre-Operational Check and also check that the site meets the provisions of Englobe's Health, Safety and Environmental Integrated Management System by using Englobe'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 Englobe's Site Works Audit form in Appendix C to ensure compliance with Englobe's Health, Safety and Environmental Plan and IMS.

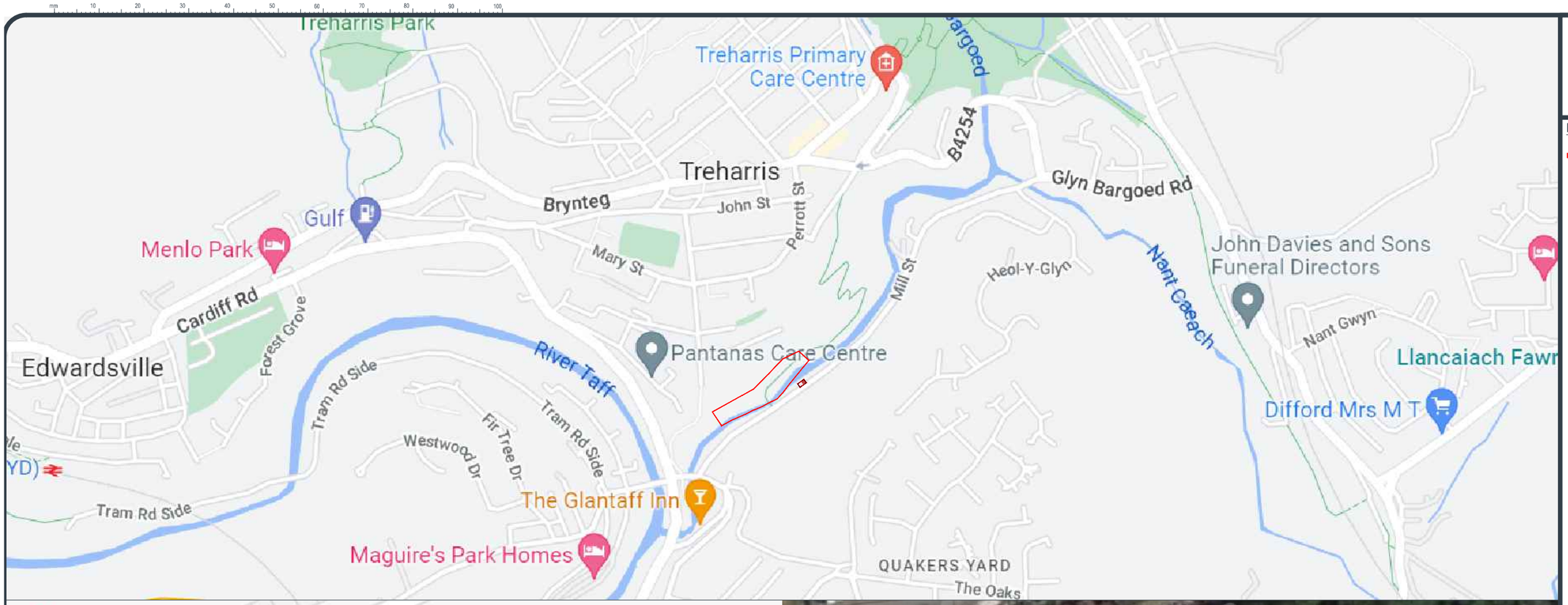
The pro-forma for the environmental monitoring that will be undertaken at the site can be found in Appendix B.

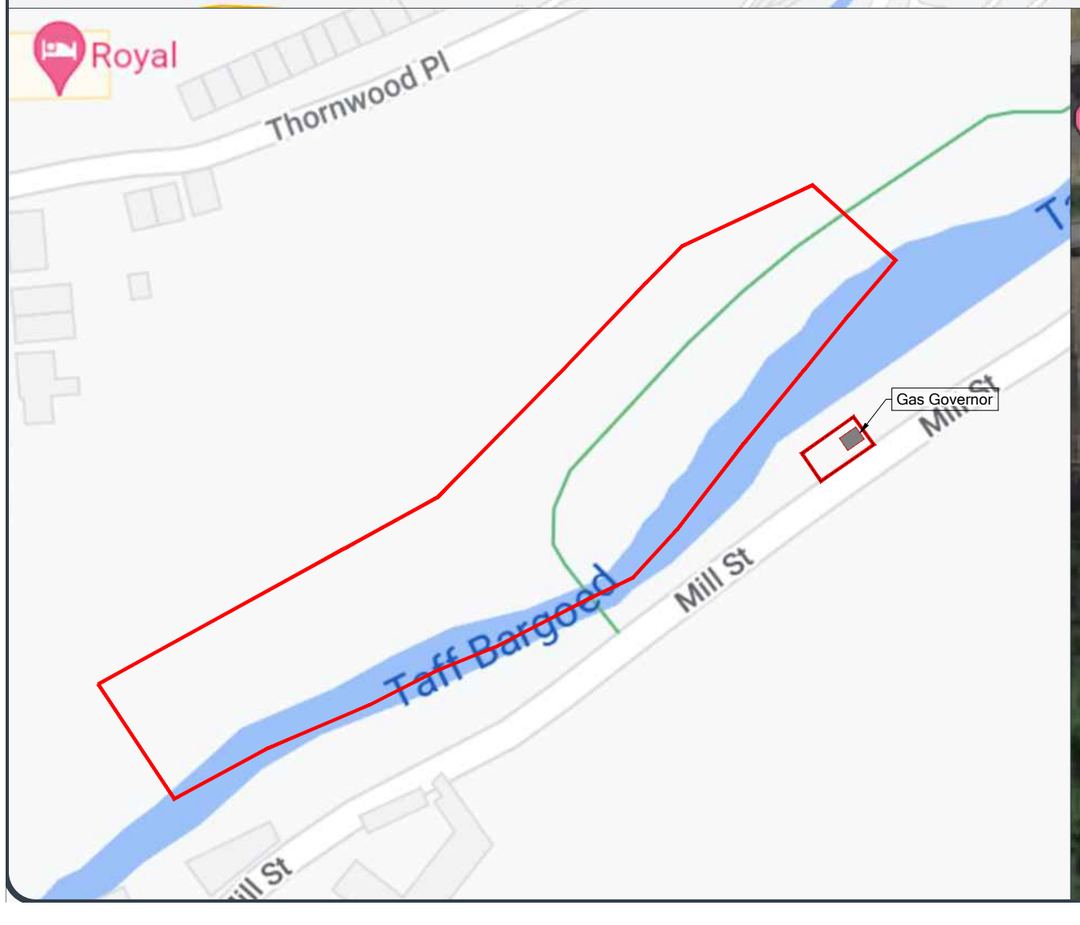
The Technically Competent Manager (TCM) will attend site for a day per monthly thereafter (based on 3 month programme estimate minimum 4 visits during site-setup and operation). The TCM will spend time on inspection audits of the treatment process during the remediation.

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 will be required from Dwr Cymru Welsh Water.

Appendix A





LEGEND

Site Boundary

REV	COMMENT	DATE
1	Updated details	18/05/23
0	Issued for information	20/10/2022

ENGLOBE

Unit 8, Commerce Park
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Client: WALES&WEST UTILITIES

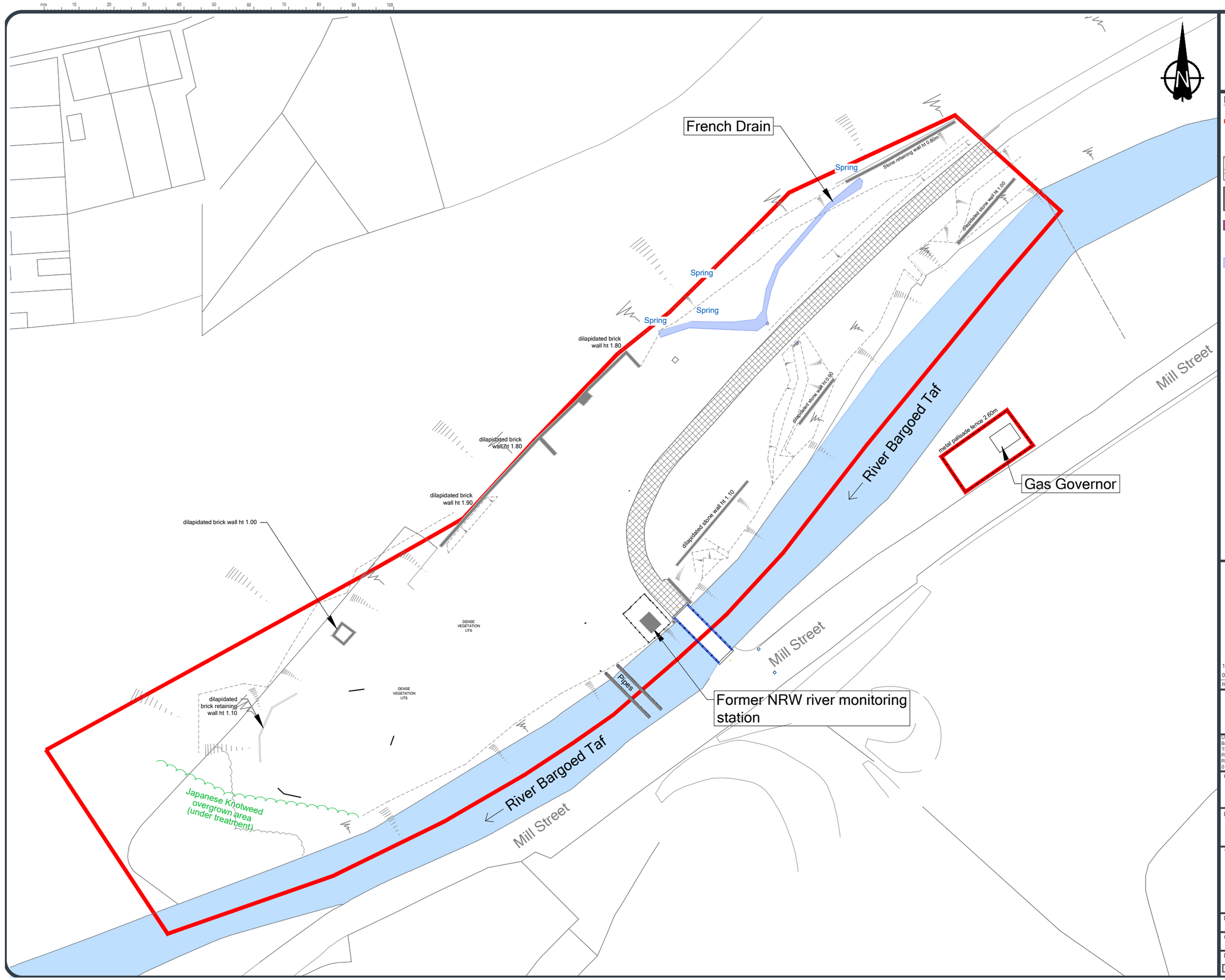
Project: Quakers Yard, Treharris

Title: Site Location Plan

Drawn by	Checked Date	Authorised Date
CC	SK 20/10/2022	SK 20/10/2022

Original Scale	Date	Rev	Paper
N.T.S	20/10/2022	0	A3

Drawing Number: D1871/23/5302/A1



LEGEND

- WWU Limited Site Boundary
- Tarmac
- Current Structures
- Pipeline (surveyed)
- French Drain (surveyed)
- Spring (surveyed)

NOTE: Site is heavily wooded

REV	COMMENT	DATE
1	Details amended	18/05/2023
0	Issued for information	20/10/2022

ENGLOBE

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www.englobecorp.com

Client: WALES&WEST UTILITIES

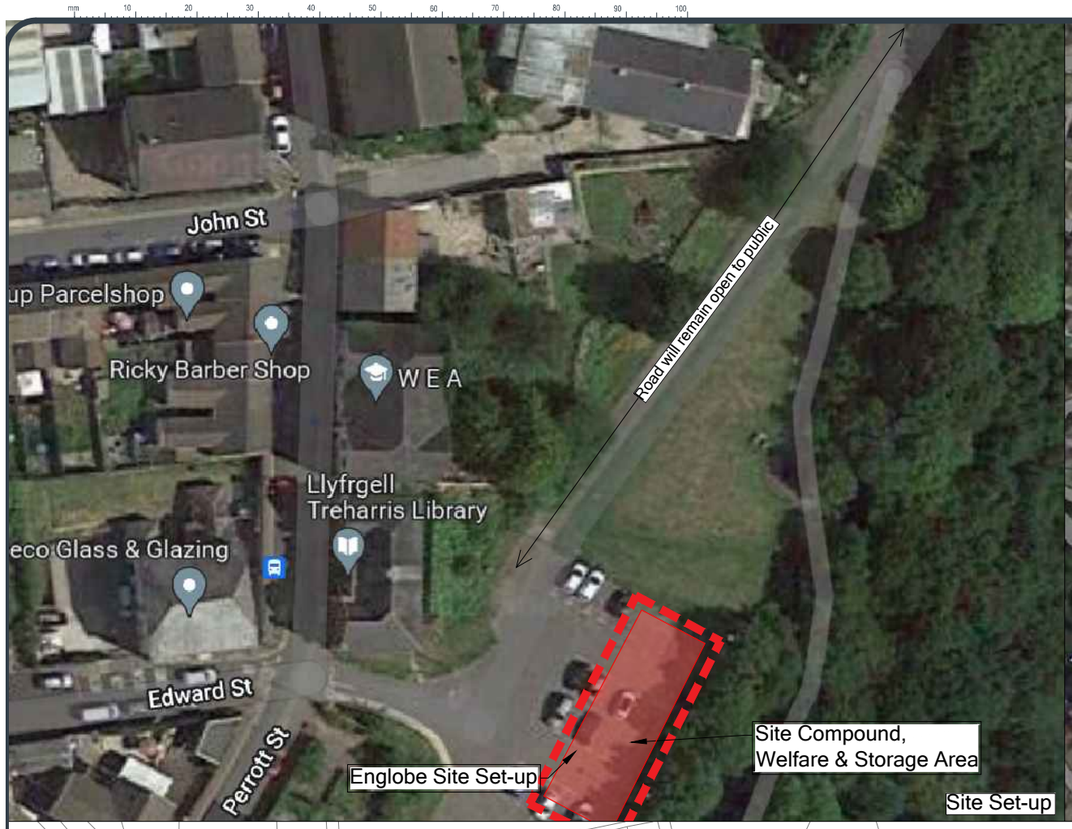
Project: Quakers Yard, Treharris

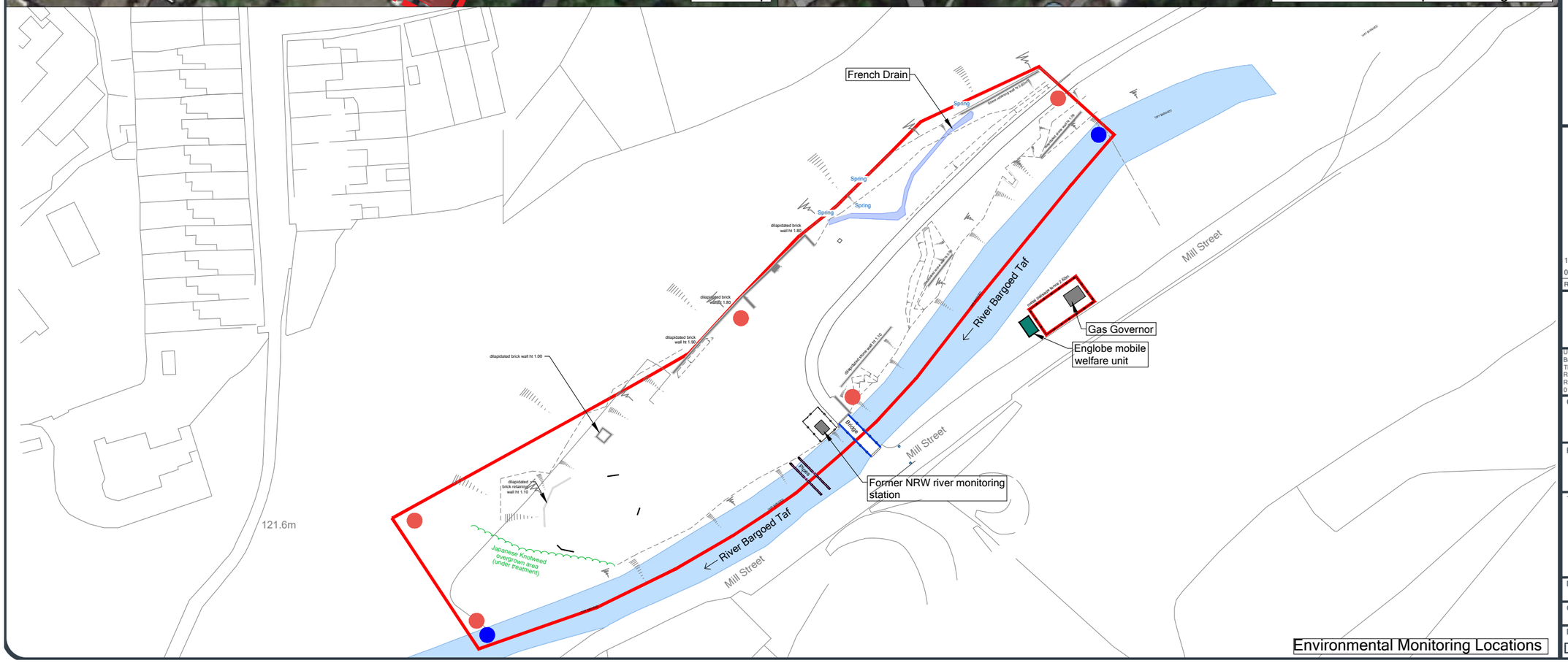
Title: Site Layout

Drawn by	Checked Date	Authorised Date
CC	SK 20/10/2022	SK 20/10/2022

Original Scale	Date	Rev	Paper
1:500	20/10/2022	1	A3

Drawing Number: D1871/23/5302/A2





LEGEND

- WWU Limited Site Boundary
- Englobe Site Set-up boundary
- Access route between Englobe Site set-up and Site Working Area (will be closed to the public)
- Mobile Welfare Unit
- Environmental Monitoring Locations
- River Monitoring Locations

REV	COMMENT	DATE
1	Updated information	18/05/2023
0	Issued for information	20/10/2022

ENGLOBE

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Client: WALES&WEST UTILITIES

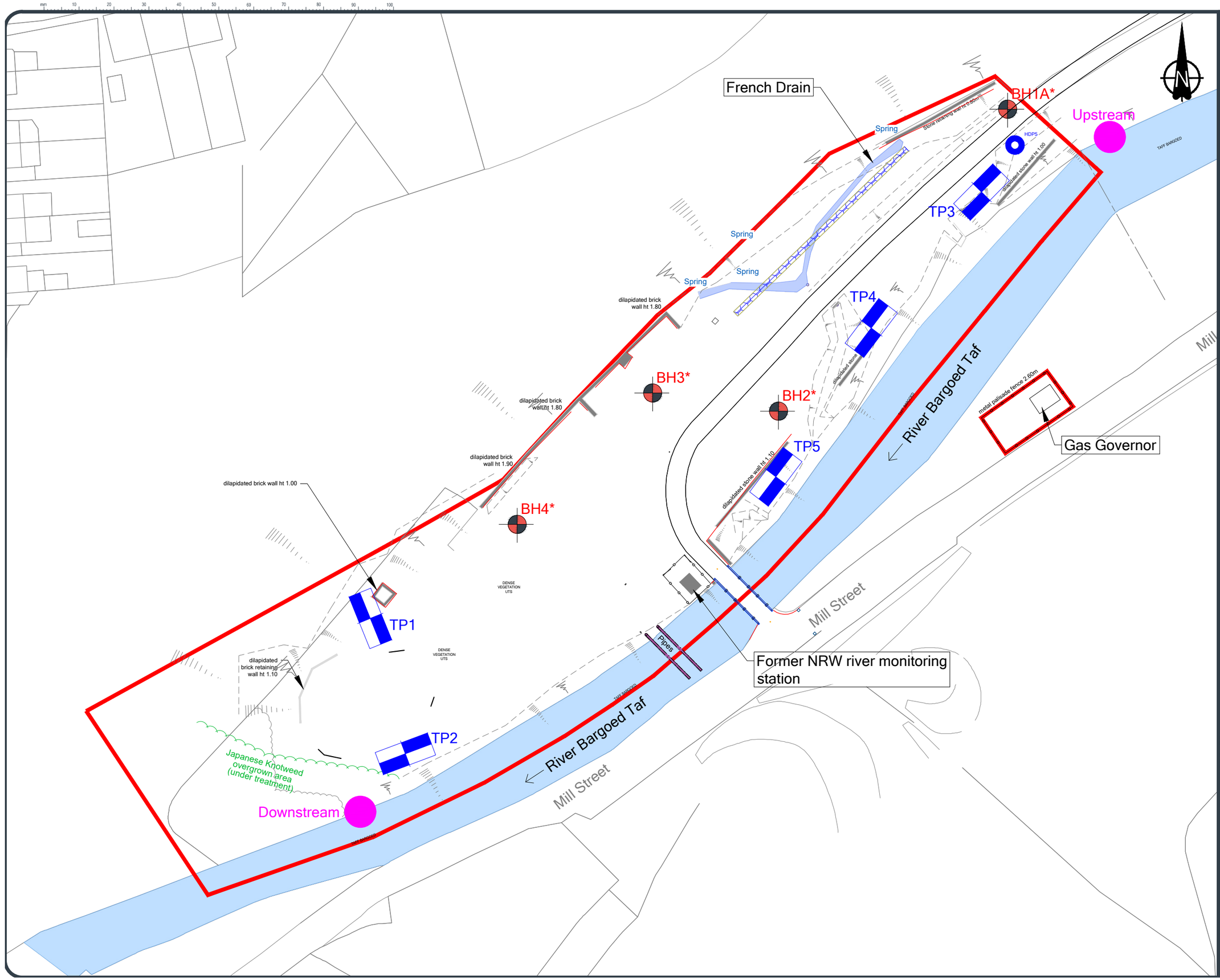
Project: Quakers Yard, Treharris

Title: Site Set-up and Environmental Monitoring Locations

Drawn by	Checked Date	Authorised Date
CC	SK 20/10/2022	SK 20/10/2022

Original Scale	Date	Rev	Paper
N.T.S	20/10/2022	1	A3

Drawing Number: D1871/23/5302/A3



LEGEND

- WWU Limited Site Boundary
- BH2 — Englobe Borehole
- Surface Water Sampling Location
- Trial Pit
- HDP5 — Hand Dug Pit

NOTES:

Borehole with * in name denotes that site team undertook a hand dug pit to 1.5m at location before drilling took place.

REV	COMMENT	DATE
0	Firs Issue	08/06/23

ENGLOBE

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Client: WALES&WEST UTILITIES

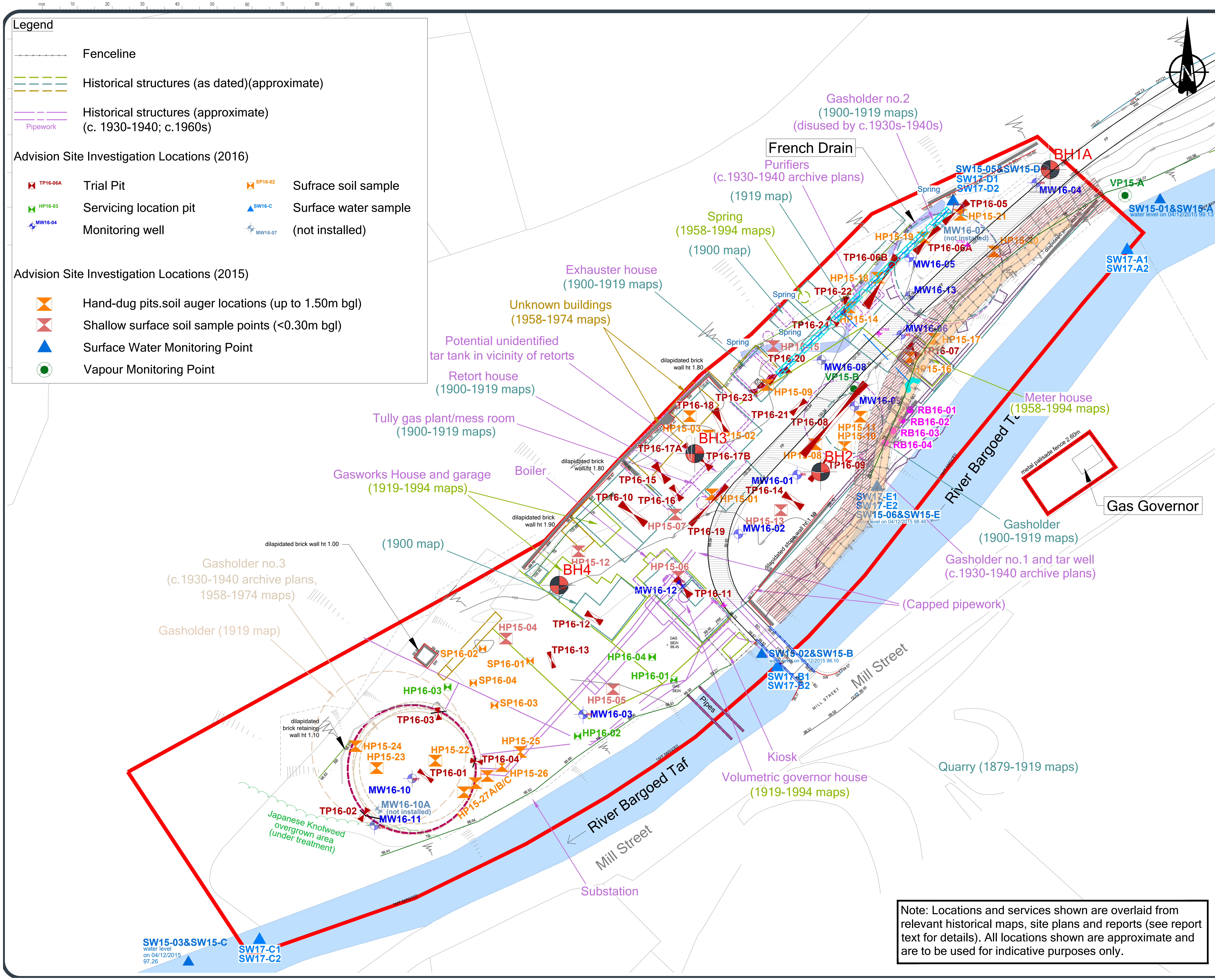
Project: Quakers Yard, Treharris

Title: Borehole Survey Locations

Drawn by	Checked Date	Authorised Date
CC	SK 08.06.23	SK 08.06.23

Original Scale	Date	Rev	Paper
1:500	08.06.23	1	A3

Drawing Number: D1871/23/5270/A4


Legend
Fenceline
Historical structures (as dated)(approximate)
Historical structures (approximate) (c. 1930-1940; c.1960s)
Pipework
Advision Site Investigation Locations (2016)
Trial Pit
Servicing location pit
Monitoring well
Sufrace soil sample
Surface water sample
(not installed)
Advision Site Investigation Locations (2015)
Hand-dug pits.soil auger locations (up to 1.50m bgl)
Shallow surface soil sample points (<0.30m bgl)
Surface Water Monitoring Point
Vapour Monitoring Point
Gasholder no.2 (1900-1919 maps) (disused by c.1930s-1940s)
French Drain
Purifiers (c.1930-1940 archive plans)
(1919 map)
Spring (1958-1994 maps)
(1900 map)
Exhauster house (1900-1919 maps)
Unknown buildings (1958-1974 maps)
Potential unidentified tar tank in vicinity of retorts
Retort house (1900-1919 maps)
Tully gas plant/mess room (1900-1919 maps)
Gasworks House and garage (1919-1994 maps)
Boiler
(1900 map)
Gasholder no.3 (c.1930-1940 archive plans, 1958-1974 maps)
Gasholder (1919 map)
Meter house (1958-1994 maps)
Gas Governor
Gasholder (1900-1919 maps)
Gasholder no.1 and tar well (c.1930-1940 archive plans)
(Capped pipework)
Kiosk
Volumetric governor house (1919-1994 maps)
Quarry (1879-1919 maps)
Substation
River Bargoed Taf
Mill Street
Japanese Knotweed overgrown area (under treatment)
BH1A
BH2
BH3
BH4
SW15-05&SW15-D
SW17-D1
SW17-D2
MW16-04
VP15-A
SW15-01&SW15-A
SW17-A1
SW17-A2
SW15-02&SW15-B
SW17-B1
SW17-B2
SW17-E1
SW17-E2
SW15-06&SW15-E
SW15-03&SW15-C
SW17-C1
SW17-C2
dilapidated brick wall ht 1.80
dilapidated brick wall ht 1.90
dilapidated brick wall ht 1.00
dilapidated brick retaining wall ht 1.10
metal palisade fence 2.60m
Note: Locations and services shown are overlaid from relevant historical maps, site plans and reports (see report text for details). All locations shown are approximate and are to be used for indicative purposes only.

LEGEND

- WWU Limited Site Boundary
- Current Structures
- Pipeline (surveyed)
- French Drain (surveyed)
- Spring (surveyed)

REV	COMMENT	DATE
1	Updated drawing details	19/05/2023
0	Issued for information	20/10/2022

ENGLOBE

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Client: WALES&WEST UTILITIES

Project: Quakers Yard, Treharris

Title: Previous Site Investigations and Historical Features

Drawn by	Checked	Date	Authorised	Date
CC	SK	20/10/2022	SK	20/10/2022

Original Scale	Date	Rev	Paper
1:500	20/10/2022	1	A3

Drawing Number: D1871/23/5302/A5

Legend

- Fenceline
- Historical structures (as dated)(approximate)
- Historical structures (approximate) (c. 1930-1940; c.1960s)
- Pipework

Turnover and excavation of unsaturated made ground. Grub up foundations to 1.50m below formation.

Excavate and stabilise gasholders

Remove foundations

Gasholder No. 2

Gasholder No. 1

Gasholder No. 3

Gas pipe

Stone retaining wall ht 0.80m

dilapidated stone wall ht 1.00

dilapidated brick wall ht 1.80

dilapidated stone wall ht 0.90

dilapidated brick wall ht 1.90

dilapidated stone wall ht 1.10

dilapidated brick wall ht 1.00

dilapidated brick retaining wall ht 1.10

metal palisade fence 2.60m

Gas Governor

River Bargoed Taf

Mill Street

Bridge

Pipes

Japanese Knotweed overgrown area

Asbestos hot spot removal

Remove pipework

Hotspot removal:
Excavate and screen overlying soils, break out foundation and crush

Note: Locations and services shown are overlaid from relevant historical maps, site plans and reports (see report text for details). All locations shown are approximate and are to be used for indicative purposes only.

LEGEND

- WWU Limited Site Boundary
- Current Structures
- Pipeline (surveyed)
- French Drain (surveyed)
- Remediation Areas
  - Gasholder stabilisation
  - Asbestos removal works (as shown)
  - Foundation removal works (as shown)
  - Exacation works (as shown)
  - Demolition works (as shown)
  - Pipework removal works (as shown)
  - Source Area A
  - Source Area B
  - Source Area C

REV	COMMENT	DATE
1	Updated drawing details	19/05/2023
0	Issued for information	20/10/2022

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Client: WALES&WEST UTILITIES

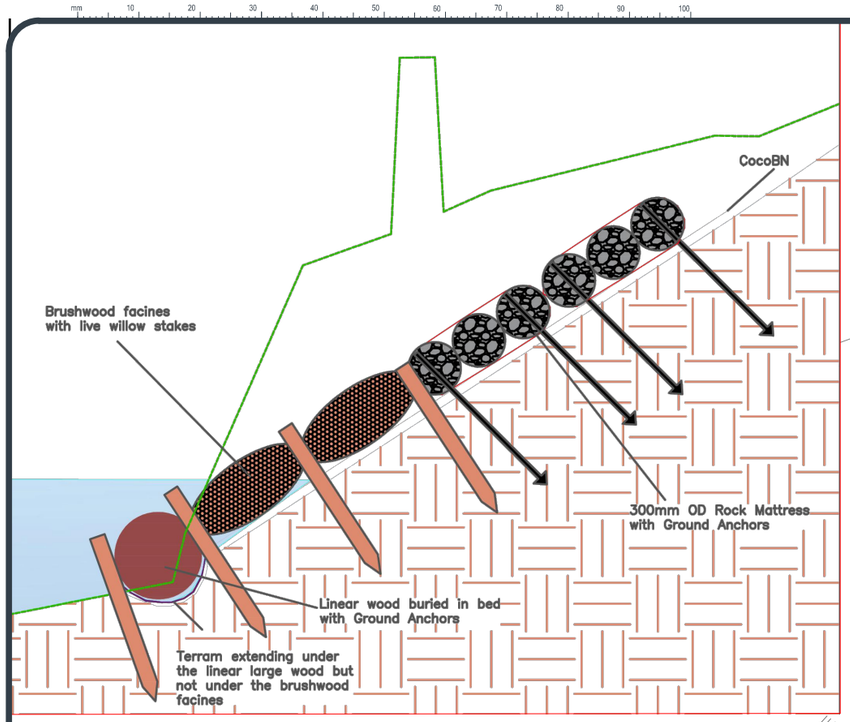
Project: Quakers Yard, Treharris

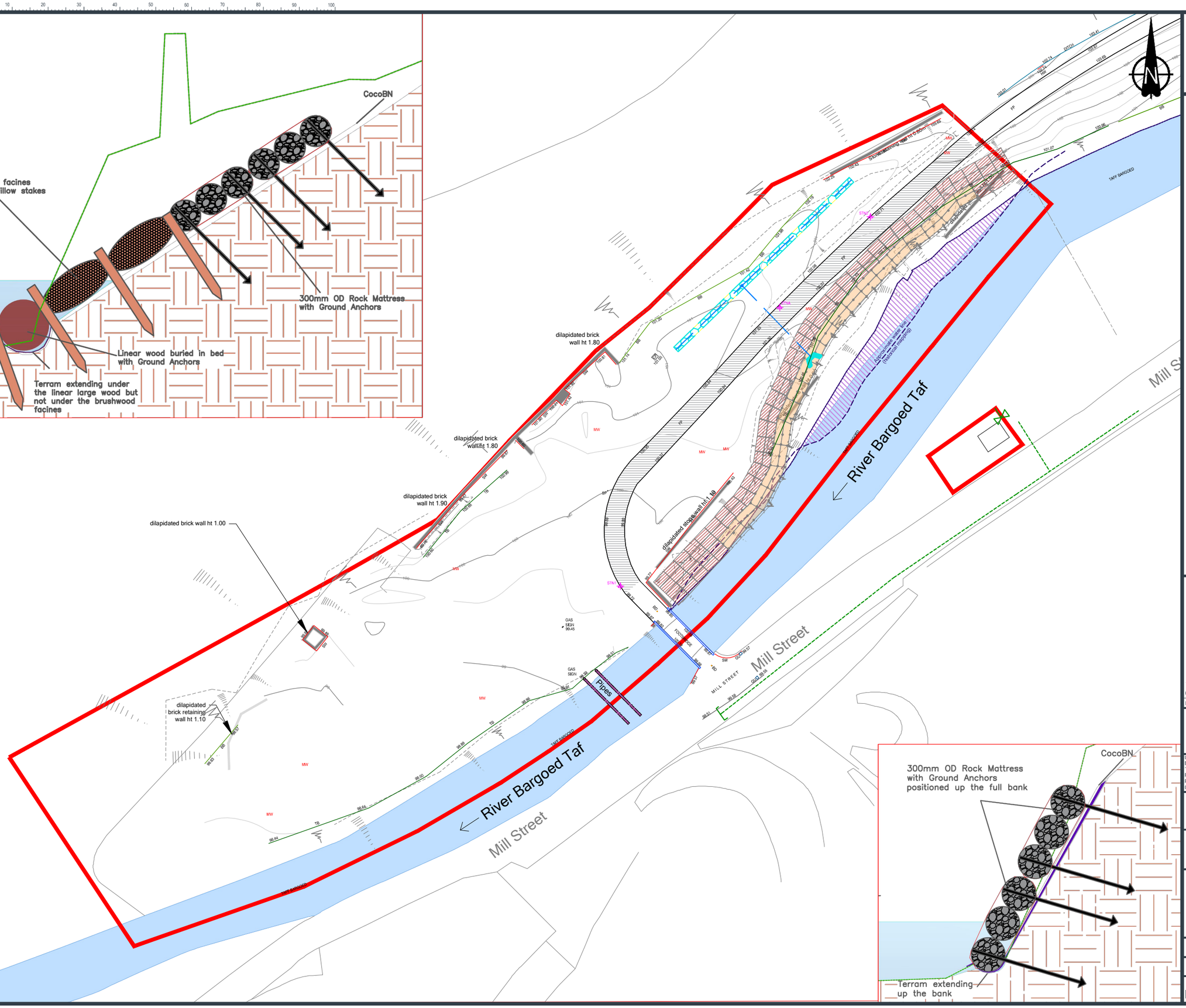
Title: Remediation Areas

Drawn by	Checked Date	Authorised Date
CC	SK 20/10/2022	SK 20/10/2022

Original Scale	Date	Rev	Paper
1:500	20/10/2022	1	A3

Drawing Number: D1871/23/5302/A6





LEGEND

- WWU Limited Site Boundary
- Current Structures
- Pipeline (surveyed)
- French Drain (surveyed)
- Brushwood facines
- Proposed rock mattress bank protection
- Live willow stakes
- Large wood toe protection

REV	COMMENT	DATE
1	Updated drawing details	19/05/2023
0	Issued for information	20/10/2022

ENGLOBE

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Client: WALES&WEST UTILITIES

Project: Quakers Yard, Treharris

Title: Final Site Conditions

Drawn by	Checked Date	Authorised Date
CC	SK 20/10/2022	SK 20/10/2022

Original Scale	Date	Rev	Paper
1:500	20/10/2022	1	A3

Drawing Number: D1871/23/5302/A7

Legend

- Fenceline
- Historical structures (as dated)(approximate)
- Historical structures (approximate) (c. 1930-1940; c.1960s)

Pipework

Turnover and excavation of unsaturated made ground. Grub up foundations to 1.50m below formation.

Excavate and stabilise gasholders

Remove foundations

Gas Governor

Quarantine/Stockpile Areas:
A ~75m2
B ~150 m2
C ~100m2
D ~50m2

The quarantine/stockpile areas will have a soil bund constructed around it and both the base and bund will be lined with 2000 gauge impermeable plastic membrane. The area will have the capacity to accommodate up to 750m3 if required but unlikely due to site constraints and phased approach to earthworks. Materials to be covered with plastic membrane to minimise rainwater ingress and nuisance emissions such as dust and odours.

Asbestos hot spot removal

Remove pipework

Hotspot removal:
Excavate and screen overlying soils, break out foundation and crush

Note: Locations and services shown are overlaid from relevant historical maps, site plans and reports (see report text for details). All locations shown are approximate and are to be used for indicative purposes only.

LEGEND

- WWU Limited Site Boundary
- Current Structures
- Pipeline (surveyed)
- French Drain (surveyed)

Remediation Areas

- Gasholder stabilisation
- Asbestos removal works (as shown)
- Foundation removal works (as shown)
- Exacation works (as shown)
- Demolition works (as shown)
- Pipework removal works (as shown)
- Source Area A
- Source Area B
- Source Area C

REV	COMMENT	DATE
1	Updated drawing details	19/05/2023
0	Issued for information	20/10/2022

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Client: WALES&WEST UTILITIES

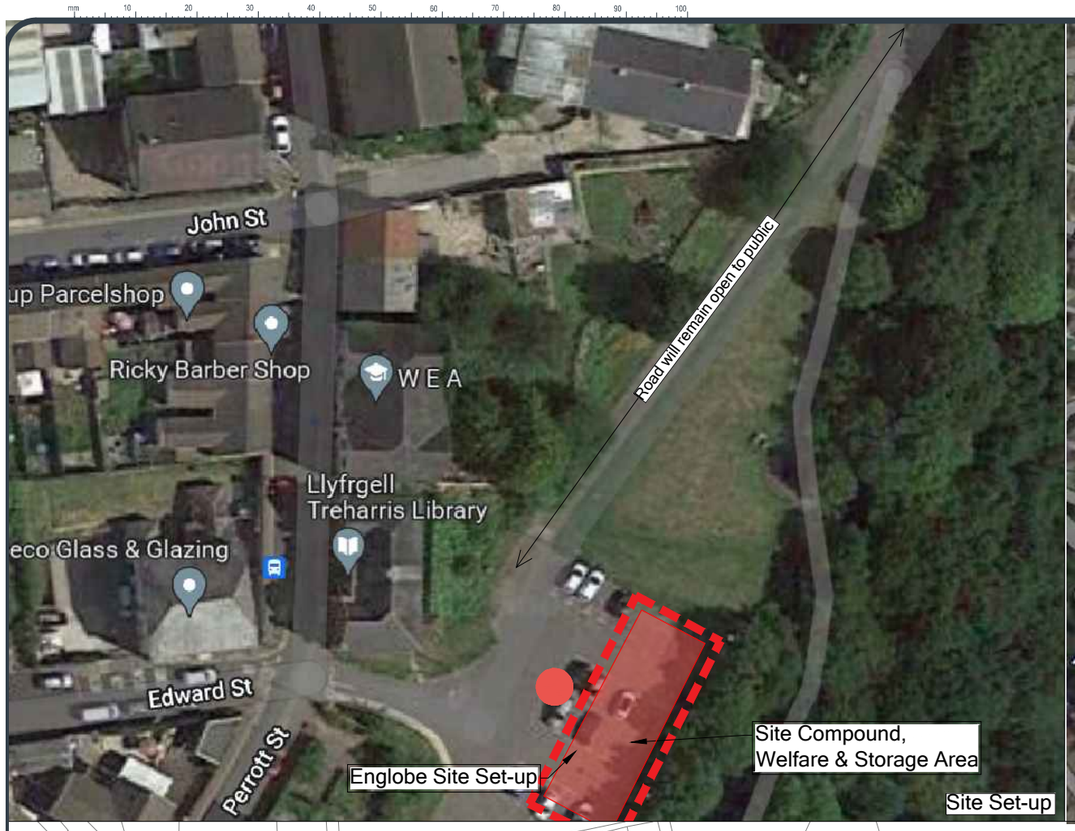
Project: Quakers Yard, Treharris

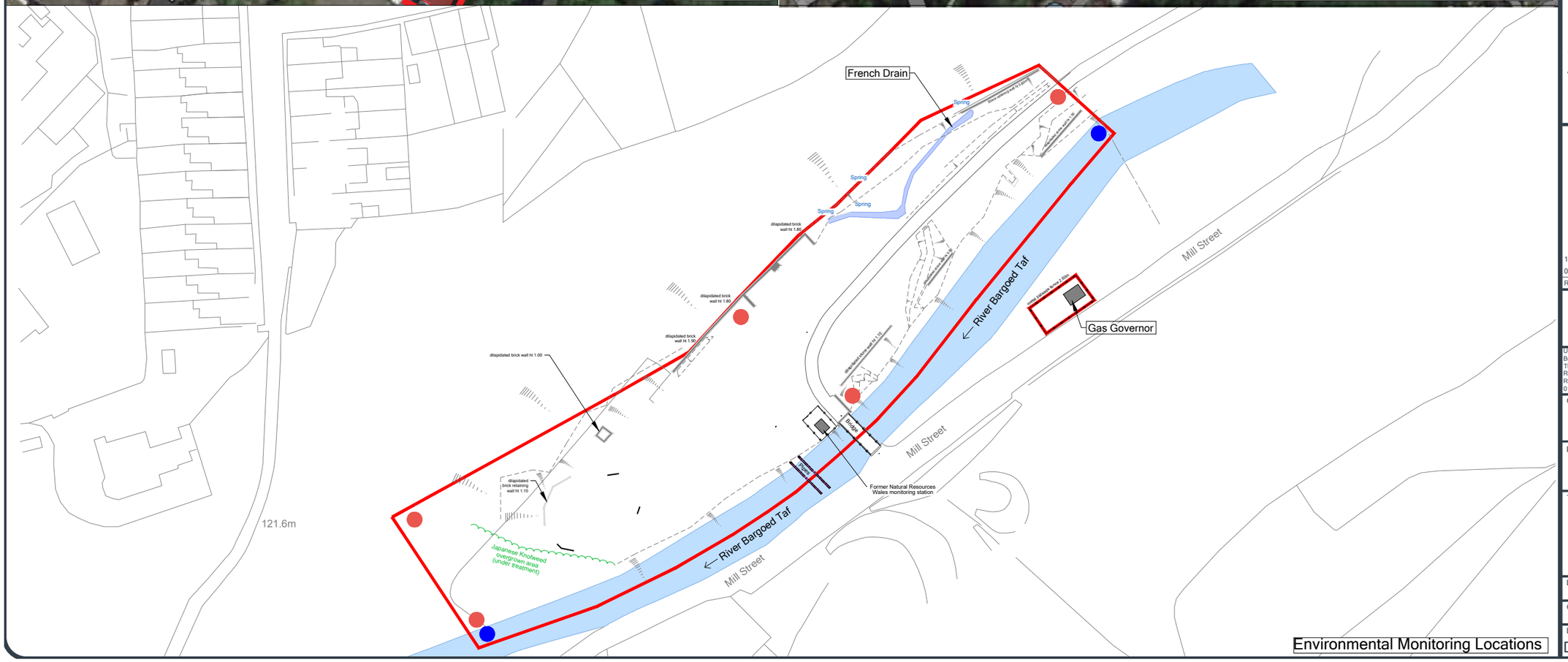
Quarantine & Stockpile Areas

Drawn by	Checked	Date	Authorised	Date
CC	SK	20/10/2022	SK	20/10/2022

Original Scale	Date	Rev	Paper
1:500	20/10/2022	1	A3

D1871 – Quarantine & Stockpile Areas





LEGEND

- WWU Limited Site Boundary
- Englobe Site Set-up boundary
- Access route between Englobe Site set-up and Site Working Area (will be closed to the public)
- Environmental Monitoring Locations
- River Monitoring Locations

Environmental Monitoring shall include
1.PID (VOCs)
2.Dust (PM10 and 2.5)
3.Tenax Tubes
4. Odour (Olfactory)
5. Noise

REV	COMMENT	DATE
1	Updated information	18/05/2023
0	Issued for information	20/10/2022

ENGLOBE

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Client: WALES&WEST UTILITIES

Project: Quakers Yard, Treharris

Title: Site Set-up and Environmental Monitoring Locations

Drawn by	Checked Date	Authorised Date
CC	SK 20/10/2022	SK 20/10/2022

Original Scale	Date	Rev	Paper
N.T.S	20/10/2022	1	A3

Drawing Number: D1871/23/5302/EMP

Appendix B

SAR-PC-32
Environmental Monitoring/ Occupational Monitoring Proforma

Vapour Trigger Values **Off site receptors** Stop Work at _____ ppm (5 min TWA) at site boundary **On site receptors** RPE Criteria _____ ppm (15 min TWA) at treatment area Stop Work at _____ ppm (15 min TWA) at treatment area when RPE worn **Odour limit and action values:** Action level: Intensity 3 Extent 3 Stop work Criteria: Intensity 4 Extent 4	**Dust action/limit value** General Dust Exposure Action Limit Values:_____ µg/m3 (PM10 15 min TWA) **Noise exposure limit values and action values** Action Level: 80 dB(A) (5 min average) when ear protection worn Stop work Criteria 85 dB(A) (5 min average) **Off site receptors** >5 dB background values background value for site: dB

Site:

Date:

Round Number:

Weather:
Wind Direction:
mB:

Monitoring Equipment Pre-Checks Completed DustMateY - N - N/A
Noise MeterY - N - N/A
PIDY - N - N/A

PID Calibration Passed: Y/N

Location	Time	VOC		NOISE		DUST								ODOUR		Comments (Action required?/ Action taken)
		Average over 5 mins (ppm)	Peak over 5 mins (ppm)	Average over 5 mins (dBA)	Peak over 5 mins (dBA)	TSP (µg/m3)		PM10 (µg/m^3)		PM2.5 (µg/m^3)		PM1 (µg/m^3)		Intensity 1-5	Extent 1-5	
						5 mins	15 mins	5 mins	15 mins	5 mins	15 mins	5 mins	15 mins	see below		
IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.																
Use below to record occupational health monitoring readings in active work areas. i.e. Remediation technologies Processes at excavation/ drilling location (Voc's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise , VOC's), Consideration should be given to use of Datalogging PID for work shift exposure monitoring and use of PErsonal PID etc for workers undertaking tasks where exposure is occuring.																

Odour Monitoring Criteria

Intensity
1 No detectable odour
2 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
3 Moderate odour (odour easily detected while walking & breathing normally, possibly offensive)
4 Strong odour (bearable, but offensive odour)
5 Very strong odour (very offensive, possibly causing nausea)

Extent (assuming odour detectable, if not then 0)
1 Local & transient (only during brief periods when wind drops or blows)
2 Transient as above, but detected away from installation boundary
3 Persistent, but fairly localised
4 Persistent and pervasive up to 50m from plant or installation boundary
5 Persistent and widespread (odour detected >50 m from installation boundary)

SAR-PC-32
Environmental Monitoring/ Occupational Monitoring Proforma

Vapour Trigger Values **Off site receptors** Stop Work at _____ ppm (5 min TWA) at site boundary **On site receptors** RPE Criteria _____ ppm (15 min TWA) at treatment area Stop Work at _____ ppm (15 min TWA) at treatment area when RPE worn **Odour limit and action values:** Action level: Intensity 3 Extent 3 Stop work Criteria: Intensity 4 Extent 4	**Dust action/limit value** General Dust Exposure Action Limit Values:_____ µg/m3 (PM10 15 min TWA) **Noise exposure limit values and action values** Action Level: 80 dB(A) (5 min average) when ear protection worn Stop work Criteria 85 dB(A) (5 min average) **Off site receptors** >5 dB background values background value for site: dB

Site:

Date:

Round Number:

Weather:
Wind Direction:
mB:

Monitoring Equipment Pre-Checks Completed DustMateY - N - N/A
Noise MeterY - N - N/A
PIDY - N - N/A

PID Calibration Passed: Y/N

Location	Time	VOC		NOISE		DUST								ODOUR		Comments (Action required?/ Action taken)
		Average over 5 mins (ppm)	Peak over 5 mins (ppm)	Average over 5 mins (dBA)	Peak over 5 mins (dBA)	TSP (µg/m3)		PM10 (µg/m^3)		PM2.5 (µg/m^3)		PM1 (µg/m^3)		Intensity 1-5	Extent 1-5	
						5 mins	15 mins	5 mins	15 mins	5 mins	15 mins	5 mins	15 mins	see below		
IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.																
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Appendix C

Environmental Permit / License Compliance Audit Form (formerly MTL)

Project Name:	Project Number:	
Scope of Audit: general operational or audit of specific area / section of the works?		

Mobile Treatment Permit

Treatment Technologies	Undertaken on site?
Air Sparging	
Bioremediation	
Biosparging	
Bioventing	
Chemical Treatment	
Soil Vapour Extraction	
Soil Flushing	
Soil Washing	
Solidification	
Stabilisation	
Thermal Treatment	
Treatment Plant (blending, mixing, screening, particle separation, etc)	
Other	

EA/NRW/SEPA? Deployment Ref. and operational start and end dates:

Permited Activity	Issuing Body and Document Ref.
EP/ Mobile Treatment Permit	
Abstraction	
Discharge (surface, groundwater or sewer)	

Compliance Assessment: Guidance notes and prompts for completion are detailed in the rear of this document and should be read before completing the audit / assessment.

Infrastructure	Assess	Non-Compliance
1) Engineering for prevention and control of emissions		
2) Closure and decommissioning		
3) Site drainage engineering (clean and foul)		
4) Containment of stored materials		
5) Plant and equipment		

Comments (areas for improvement and points of good practice):
1)
2)
3)
4)
5)

General Management	Assess	Non-Compliance
1) Staff competency/ training		
2) Management system and operating procedures		
3) Materials acceptance		
4) Storage, handling, labelling and segregation		

Comments (areas for improvement and points of good practice):
1)
2)
3)
4)

Incident Management	Assess	Non-Compliance
1) Site security		
2) Accident, emergency and incident planning		

Comments (areas for improvement and points of good practice):
1)
2)

Emissions	Assess	Non-Compliance
1) Air		
2) Land and groundwater		
3) Surface water		
4) Sewer		
5) Waste		

Comments (areas for improvement and points of good practice):
1)
2)
3)
4)
5)

Amenity	Assess	Non-Compliance
1) Odour		
2) Noise		
3) Vibration		
4) Dust/ fibres/ particulates and litter		
5) Pets, birds and scavengers		
6) Deposits on road		

Comments (areas for improvement and points of good practice):
1)
2)
3)
4)
5)

Monitoring and Records, Maintenance and Reporting	Assess	Non-Compliance
1) Monitoring of emissions and environment		
2) Records of activity, diary, any complaints received		
3) Maintenance records		
4) Reporting and notification to the Environment Agency		

Comments (areas for improvement and points of good practice):
1)
2)
3)
4)

Resource Efficiency	Assess	Non-Compliance
1) Efficient use of raw materials		
2) Energy efficiency		

Comments (areas for improvement and points of good practice):
1)
2)

Technically Competant Person: Is attendance by a COTC WAMITAB qualified person being recorded on site files and does their attendance meet the minimum as set out in the deployment form?

Corrective Actions for Any Non-Compliance / Visit Comments

1
2
3
4
5
6

Project Manager:	**Signed:**	**Date:**
Site Manager:	**Signed:**	**Date:**
Auditor:	**Signed:**	**Date:**

Notes For Completion

Key to Completion:

A = Assessed/ Assessed in part (no evidence of non-compliance)
ATL = Approach to Limit - E.G. Environmental reports due, dusts near site limit etc.
N/A = Not Applicable - E.G. No discharge to drainage etc.
N = Not Assessed - E.G. Deposits on road as outside MTL etc.
AR= Action Required, e.g. an issues which needs resolving

Compliance Classification Scheme (CCS):

Cat 1 Breach - A non compliance which has a potentially major environmental effect.
E.G. - Contamination spillage to waterway or drainage linked to waterways. Dusts to residential
Cat 2 Breach - A non compliance which has a potentially significant environmental effect
E.G. - On site contaminative spillage due to filled/ broken bunds. Unbunded contaminated stockpiles etc
Cat 3 Breach - A non compliance which has a potentially minor environmental effect
E.G. - Uncovered stockpiles releasing odours/vapours, excessive noise, unlocked IBCs, missing monitoring.
Cat 4 Breach - A non compliance which has no potential environmental effect.
E.G. Uncompleted site diary, uncompleted EA monitoring reports, missing signage and paperwork

Typical examples and further prompts on items to check under each section.

Infrastructure

1) Engineering for prevention and control of emissions: Are covers on the stockpiles/biopiles/treatment
2) Closure and decommissioning: Are works being undertaken? Do they create environmental risks?

3) Site drainage: Are these present? What condition are they in? Environmental risks?
Are drainage plans available? Is it suitable for used i.e. damaged. Is discharge agreed? Is it protected?
4) Containment of stored materials: Are treatment liquids, fuels, oils etc. appropriately stored / contained?
5) Plant and equipment: Is there any obvious damage? Is it clean and in good condition? Are PUWER checks being undertaken / recorded. Does the plant compare to schematic drawing? Has the MTL area been installed in
5) Signage: Is all plant, waste and/or stockpiles signed appropriately? Is the MTL sign prominent and located on the front gate to the site?

General Management

1) Staff competency/ training: Is the member of staff managing the works fully conversant with the permit / licence requirments?

2) Management / Operating procedures: Are the appropriate RAMS, PPE/RPE understood, signed up to and operations accurately reflect these?

3) Materials acceptance: For bio - Is there assessment of excavations/quarantine by physical, olfactory or chemical means? for HVE Has the contamination been delineated and productive wells targeted?

4) Storage, handling, labelling and segregation. Is material under MTL appropriately stored and labelled. Are stockpiles segregated or treatment batches signed? Are all items of plant labeled and detailed on a site plan?

Incident Management

1) Site Security: Check infrastructure and proceedures in place (fencing, padlocks, CCTV, guards etc).

2) Accident, emergency and incident planning: Is the hospital location plan, incidence response flow chart and emergency contacts signage posted? Assess the proceedures, check when the last drill was undertaken, was it recorded and what were the lessons learned?

Emmissions

1) Air: Consider dust, fumes, vapours etc

2) Land and groundwater: Any spills to the ground? Underlying ground conditions and aquifer? Is this considered and managed in the RAMs and on site?

3) Surface water: Where are the nearest rivers/streams? Are they identified on the RAMs? What risks are posed to them and are they managed?

4) Sewer: Is the discharge permit in place? Sampling regime and laboratory results compaired against this permit?

5) Waste: Is this being suitably segragated, characterised, managed with the appropriate duty of care.

Amenity

1) and 2) Odour and Noise: Are odours or noise associated with the MTL works significant at the site boundary or welfare? Is the appropriate frequency of monitoring being undertaken and recorded?

3) Vibration: Is vibration considered to be significant? What are the potential receptors? Do we need to undertake monitoring?

4) Dust/ fibres/ particulates and litter: Is significant dust etc. associated with the MTL works blown around the site? Is there litter or other waste within the MTL areas or bunds? Is the MTL area clean / tidy?

5) Pets birds and scavangers: Consider the potential risks posed by things like cats/dogs, seagulls, foxs, rats. General maintinance in managing waste and waste containers

6) Deposits on road: Is there mud/liquids/debris on the roads associated with the MTL Works?

Monitoring and Records, Maintenance and Reporting

1) MTL Application: Is a copy of the MTL application, the licence, agreement and associated correspondence held on site? Is it understood by the site management?

2) MTL Monitoring Locations: Are the locations signed and do they match the MTL drawing? Are they protected from damage and theft?

3) Environmental Monitoring: Undertaken in accordance with the MTL requirements?

4) Maintenance records: Is maintenance and weekly checks undertaken in accordance with internal proceedures and MTL requirements?

5) Records of activity, site diary: Are operational times recorded? Is the site diary compliant with the MTL requirements? Check quantities of materials do not breach the relevant permit and that systems are in place so this cannot happen.

6) Reporting and notification to the Environment Agency: Are all the required reports sent to the EA on time? Are copies held on site?

Resource Efficiency

1) Use of raw materials: Is diesel being used appropriately i.e. is electricity available?

2) Energy efficiency: Is correct size genny used? Is running time reviewed? Is treatment system or turning optimised? Are there any renewable energy product alternatives available?

SITE WORKS AUDIT INSPECTION FORM

No	Overview of Amendment and Text affected	Effective Date	Authorisation
1	First Issue	24/05/13	VR
2	Update of logos, footers and first page	7/8/16	J Fuller
3	Update, hyperlinks to intranet IMS forms added, update alongside SOP08 undertaken	18/7/18	T Bamber
4	Review of regulations quoted. And added Work at Height Regulations 2005 for extra information in WAH section	10/06/19	T Bamber
5	Review and formatting update	20/11/20	T Bamber
6	Updated for new branding	14/022/22	P Pearson

SITE WORKS AUDIT INSPECTION FORM

Contract No:		**Date:**	
Site:		**Client:**	
Project Manager:		**Site Personnel:**	
Auditee:		**Auditor:**	

Activities been undertaken at time of audit:

Requirements	YES/NO	COMMENTS
ON ARRIVAL AT SITE		
Site is Secure	No	
Site is Adequately Signed	Yes	
Site Access Road Clear of Contamination	Yes	
MTL Notice as required		
Site PPE rules	Yes	
SITE INDUCTION		
Site File		
Welfare Provision		
PPE		
Manual Handling		
Emergency Actions and Reporting		
Records of Induction and Training		
SITE OFFICE		
Site Diary and Visitors Book		
Server Connection & Phone connection		
CDM		
Work Under CDM Requirements		
F10 Posted		
Role of ENGLOBE (circle all applicable)	PC PS/Coordinator SC Designer	

DISCHARGE / ABSTRACTION / OTHER CONSENT

SITE WORKS AUDIT INSPECTION FORM

(where appropriate) Available		
Conditions audited.		
Monitoring data available.		
OCCUPATIONAL HEALTH		
Noise		_____<80_____dB(A) [Mobile App estimation or Calibrated SPL meter[1]]
Clean / Dirty Segregation		
Personal Hygiene e.g. hand washing		
OH Monitoring Programme?		
SITE HOUSEKEEPING & CLEANLINESS		
Toilet/Hygiene Facilities		
Cabins/ office		
General Site Conditions		
SERVICES		
Auditor to confirm compliance with SOP1. Site services survey must be undertaken before any excavation Auditor must also check that all services are "marked- out" in accordance with SOP01 and site service drawings.		
All excavations/ BH's marked on plans containing services.		
Service Plans Available		
Services Located and Marked on site		
Hand/Vac Excavated Pits Completed		
Borehole Clearance Sheets Completed SAR-PC-47		
SUB CONTRACTORS		
Wearing Appropriate PPE for Tasks		
Machinery of Adequate Standard and Repair		
Equipment Certificates cited and valid		
SITE WORKS		
Equipment		

[1] Delete as applicable

SITE WORKS AUDIT INSPECTION FORM

Appropriate for use		
In a good working condition/ inspected		
SAMPLING		
Samples Stored Correctly		
Correct containers available		
Method of Sampling Correct		
Complete Logs and Records undertaken		
Custody Sheets Available and Up to Date		

SITE WORKS AUDIT INSPECTION FORM

Office Facilities

	All ENGLOBE sites shall have a clearly identified site office. The office shall project a professional and organised appearance, and must not be cluttered or used to store equipment or contaminated PPE. A means of heating the office must be provided.	*Observations*
	Note site boots or contaminated PPE in the office. No equipment other than small, clean hand-held items such as monitoring instruments, data loggers etc.	*Observations*
	Current and up to date project plans and time schedules should be displayed. We should also post Quality, Safety and Environmental Policies, and any site specific SHE objectives.	*Observations*
	Project organ gram, site plans and emergency procedures should be displayed in the office. ***Refer to (SAR-PC-01) Project Management for further guidance***	*Observations*
	Office Notice board and compulsory postings. We are legally required to fill in[i] and post the "Health and Safety Law" [ii]poster and a current copy of our Employers Liability Insurance Certificate.	*Observations*

Security

	Sites shall be kept secure to prevent unauthorised access. Temporary fencing must be kept in good order and checked weekly.	*Observations*
	Where there is a risk of theft, vandalism, arson or unauthorised occupancy, consideration shall be given to out of hour's surveillance, such as a security guard service or closed-circuit television.	*Observations Biffa*
	Tools, equipment and monitoring devices must be locked away or removed from site when not in use. Inventories of all assets shall be kept and checked regularly.	*Observations*

Signage

	Adequate signage shall be installed to satisfy Safety, Health, Environmental and Corporate Branding requirements.	*Observations*

SITE WORKS AUDIT INSPECTION FORM

ENGLOBE	All signs shall be of professional quality and should, where possible, bear the ENGLOBE brand and logo.	
 All visitors must report to site office	EN standard symbols[iii] shall be used on signs whenever practicable. At site entrances the standard ENGLOBE sign shall be mounted in a prominent position. Instructions for visitors and a summary of site rules, including PPE requirement shall be clearly visible.	*Observations*
ENVIRONMENT AGENCY Cyfoeth Naturiol Cymru Natural Resources Wales	Where applicable Mobile Plant Licence[iv] / Environmental details must be displayed in accordance with the Environment Agency's (NRW or SEPA) requirements. Copy of Company licence EAWML 30379 document should also be held on site. ***Refer to Englobe MTL/Env Permit for further information available on the intranet***	*Observations Biffa*

Facilities for Visitors

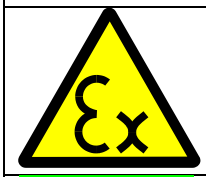
		Where practical, consideration should be given to facilities for visitors, including clients, contractors and enforcing agencies. Heated meeting room facilities may be required for on-site visits and meetings.	*Observations*

Welfare Requirements

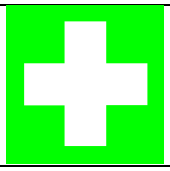
		Welfare facilities include toilets, washing, clothes drying facilities, changing and rest areas and wholesome drinking water	*Observations*
		Separate smoking and eating facilities. The means of preparing a hot drink must be provided.	*Observations*
		In addition to the provision of welfare facilities, regular maintenance, cleaning, and where necessary, emptying of them will be required.	*Observations*

SITE WORKS AUDIT INSPECTION FORM

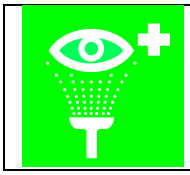
Fire Precautions & Emergency Preparedness

	Flammables such as fuels and gasses shall be stored and used away from sources of ignition. Smoking shall be permitted in designated areas only Flammable wastes shall be kept to a minimum and stored in covered skips	*Observations*
	Flammable chemicals shall be clearly marked with EN conforming safety labels	*Observations*
	All buildings, offices, storage units and process cabins shall be equipped with the appropriate fire extinguisher conforming to BS EN 3 or BS 6165. All fire extinguishers must be inspected and certified by a competent person annually. Only attempt to tackle fire if it is safe to do so.	*Observations*
	All potentially explosive atmospheres shall be identified and the required control measures shall be clearly communicated to all. Only authorised personnel are permitted to work with potentially explosive atmospheres.	*Observations*
	Fire escape routes and muster points shall be clearly identified, with due considerations to lighting etc. in times of poor visibility.	*Observations*
	A means of raising alarm shall be provided. Type and means of operation shall depend on site circumstances Refer to site specific emergency plan.	*Observations*
	Appropriate spill response facilities must be available. Take prompt action in the event of any spillage. Refer to site specific emergency plan.	*Observations*

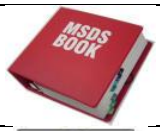
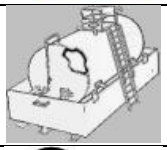
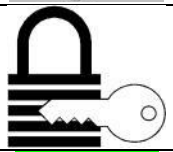
First Aid

	First aid facilities shall available in site offices, decontamination units and at other site cabins, as appropriate. Contents shall be subject to regular stock check.	*Observations*

SITE WORKS AUDIT INSPECTION FORM

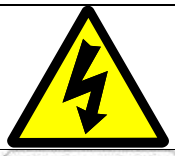
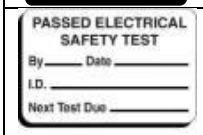
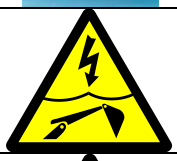
	Eyewash facilities shall available in site offices, decontamination units and at other site cabins, as appropriate. Contents shall be subject to regular stock check.	*Observations*

Chemicals

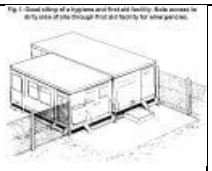
	All chemicals used on site must be suitably stored so that they do not pose a risk to site staff or the environment. (Sevron COSHH management system)	*Observations*
	No chemicals will be allowed on site until a Material Safety Data Sheet has been received and a risk assessment has been conducted.	*Observations*
	All storage facilities shall be clearly identified.	*Observations*
	All chemical containers shall be labelled with contents and standard safety information, such as hazard classification, risk and safety phrases and safety symbol.	*Observations*
	Small containers of chemicals shall be kept in a locked, bunded, flameproof cabinet that contains an inventory, maximum storage allowances if applicable, and an indication of where material safety data sheets are held. Flammables and corrosives shall not be stored together.	*Observations*
	Larger containers such as Drums, IBC's, Bowsers shall be stored in a designated bunded area, unless internally bunded.[v] Bunds shall be a minimum 110% stored volume and should not be allowed to fill with rainwater.	*Observations*
	Drums, IBC's, Bowsers etc. shall be locked when not in use.	*Observations*
	Where applicable emergency eyewash stations and showers shall be provided wherever chemicals are used, stored or decanted. Mains-fed units are preferable to small stored water units.	*Observations*

SITE WORKS AUDIT INSPECTION FORM

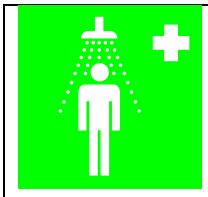
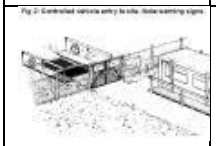
Electrical Safety

	No control panel to be opened without a qualified electrician and independent isolation from the supply. A Permit to Work (Electrical) (SAR-PC-24) is to be issued.	*Observations*
	All portable electrical appliances (e.g. with a 13A plug) shall be safety (PAT) tested at least on a annual basis. **110volt (CTE) Equipment tools require a weekly check, monthly formal inspection and a PAT test every 3 months**	*Observations*
	Fixed electrical installations, e.g. those operating on 415 volts and above or permanently hard-wired in place, must be installed by a competent electrician and certified as safe. . A Permit to Work (Electrical) (SAR-PC-24) is to be issued.	*Observations*
	Damaged or faulty equipment shall be immediately isolated, if safe to do so, locked off if possible, and reported to the site manager	*Observations*
	Hand held electrical equipment for use out of doors shall operate from an isolating transformer 110volt, centre tap to earth. ***Refer to Standard Operating Procedure (SOP-01) Service Identification for further guidance.***	*Observations*
	Contact with overhead services can be fatal	*Observations*
	Contact with any underground services can be fatal. ***Refer to Standard Operating Procedure (SOP-01) Service Identification for further guidance.***	*Observations*

Decontamination facilities

		Contaminated and clean areas shall be clearly segregated by suitable fences Contaminated and clean areas shall be clearly identified with signs. Personnel access and egress shall be through suitable decontamination facilities.	*Observations*

SITE WORKS AUDIT INSPECTION FORM

		Showers and washing facilities must be included in the decontamination unit to deal with accidental contact with contaminants Boot washing facilities shall be provide at the dirty entrance to the decontamination facility	*Observations*
		Vehicle access and egress shall be through suitable decontamination facilities. Open wagons must be sheeted Vehicles wheels must be washed to remove mud. Mud must not be allowed to contaminate the highway.	*Observations*

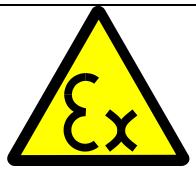
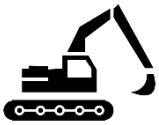
Excavations

	All excavations must be fenced and clearly signed. Where practicable, excavations shall be in filled or covered when unsupervised. Fencing to be a minimum of 2.0m from the edge of any excavation.	*Observations*
	Contact with underground services can be fatal. ***Refer to Standard Operating Procedure (SOP-01) Service Identification for further guidance.***	*Observations*
	Temporary works and excavation support should be subject to approved design as applicable.	*Observations*
	Approved specialist contractors should be used if Confined space access is required. Access will only be permitted to an excavation with an approved permit. see (SAR-PC-26) Excavations in contaminated land are considered CONFINED SPACES. Permits and access controls must be enforced.	*Observations*

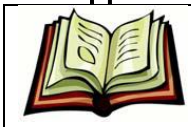
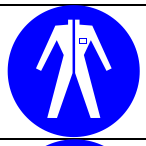
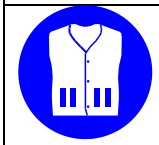
Plant and Equipment

	Internal Supplied Equipment subject to compliance with Engineering and Equipment procedures. (SAR-EC)	*Observations*

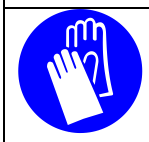
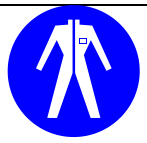
SITE WORKS AUDIT INSPECTION FORM

	Operations manuals, commissioning checklists, and weekly inspections in place.	
	All plant and equipment shall meet the latest standards. Evidence of conformance to European standards should be sought from suppliers.	*Observations*
	**LOLER**: Lifting equipment (including chains, slings, hooks, eyebolts, crane, HIAB etc) must have a certificate of inspection, and the operator must be certified as a competent person. A weekly check of the lifting equipment will be carried out and recorded on (SAR-PC-21)	*Observations*
	All equipment that may contain or create potentially explosive atmospheres shall be identified and the required control measures shall be clearly communicated to authorised personnel. (SAR-PC-09) is to be consulted if working within potentially explosive atmospheres.	*Observations*
	Site Managers/ Site Engineers should make themselves familiar with the operation and maintenance procedures for all equipment on site (hired and internal) prior to the use of the equipment. A hard copy of any available operation and maintenance manuals should be kept on site.	*Observations*
	Weekly PUWER inspection required (SAR-PC-20) Plant and equipment register established and maintained for the duration of site works	*Observations*
	Lift plans must be completed and sent for approval to company AP using (SAR-PC-25) to all lifts taking place.	*Observations*

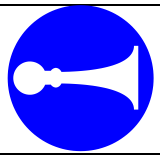
Site Apparel and Personal Protective Equipment (PPE/RPE)

		All issued PPE/RPE should be signed for and a register kept on all sites of issued PPE, appropriate training given as required in the use of issued PPE.	*Observations*
		Site staff shall dress in appropriate apparel for the work being undertaken. For all site locations and activities, the company issued uniform of cotton drill shirt and trousers must be worn. Clean company uniform and clean boots or shoes must be worn in the Site Office. NO	*Observations*

SITE WORKS AUDIT INSPECTION FORM

		site PPE is allowed in Welfare and office areas.	
		Non-contaminated areas. Company uniform, ENGLOBE HI-VIZ vest, Hardhat and gloves. Steel toe capped boots.	*Observations*
		Contaminated areas. Refer to PPE assessment. As per non-contaminated areas, with the addition of boiler suit, Tyvek suit, waterproof coveralls and respiratory protective equipment as required. PPE assessment see (SAR-PC-08) RPE assessment see (SAR-PC-09)	*Observations*

Traffic and Pedestrian Controls

		Pedestrian walkways must be clearly marked and separated from vehicle traffic. Traffic management plan (SAR-PC-46) and Traffic management drawing must be in place. Consider phased working	*Observations*
		Where pedestrians may come across vehicles, suitable warning signs and traffic demarcation must be used. Traffic management plan (SAR-PC-46)	*Observations*
		Slippery surfaces and trip hazards should be avoided or removed as much as possible. If they cannot be eliminated, suitable signs or other visual indicators should be used	*Observations*
		Appropriate site traffic rules shall be established and maintained. Traffic management plan (SAR-PC-46)	*Observations*

Working near the Highway

	All works on or near a highway or pedestrian walkway shall conform to the Code of Practice: Safety at Street works & Roadwork's 2001. Such works may require a permit from the local or highway authority. Chapter 8	*Observations*

	signage and fencing. Street works compliant design, competent persons.	

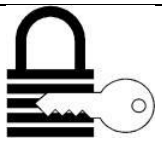
Working Near the Public

	Specific risk assessments and method statements should be considered where works might involve contact with the public. Children and the elderly or sensory-impaired are particularly at risk from entering working areas.	*Observations*

Working at Height

	All scaffolds must meet the requirements of EN39, BS5974, 1990, Work at Height **Regulations** 2005 and, the CDM 2015 Regulations, and be inspected by a competent person prior to use, after modification and every seven days thereafter.	*Observations*
	Ladders should be used for access to a workplace only and must not be used as a working platform. Ladders should be tied, firmly footed and free from defects. WAH assessments to be undertaken for all operations. Compliance with Work at Height **Regulations** 2005 required	*Observations*

Waste Management

		Fires must not be lit or permitted in skips or waste containers. Liquid wastes must not be poured into skips or waste containers. ***Refer to (SOP-06) Management and Waste Hierarchy for further guidance.***	*Observations*
		Recyclable materials should be separated wherever practicable (consider Waste hierarchy) Skips shall be locked when not in use to prevent fires, entrapment and unauthorised dumping. ***Refer to (SOP-06) Management and Waste Hierarchy for further guidance.***	*Observations*
		All skips must be covered and clearly marked with contents and CLP symbols Care shall be taken to prevent spillage and pollution.	*Observations*

SITE WORKS AUDIT INSPECTION FORM

		Waste shall only be removed by licensed carriers. Duty of care audit required on all Waste carriers.	
Cyfoeth Naturiol Cymru Natural Resources Wales	All sites producing Hazardous Wastes must be registered with the ~~Environment Agency~~/SEPA/NRW as applicable.		*Observations*

SITE WORKS AUDIT INSPECTION FORM

OVERALL ASSESSMENT OF SITE
Comments and Observations not Covered in the Checklist: *Initial findings report will be left on site at completion of Audit setting out remedial actions and action timescales.*

SITE WORKS AUDIT INSPECTION FORM

SHEQ AUDIT INSPECTION INITIAL FINDINGS REPORT On completion of remedial actions please copy to SHEQ Auditor					
		Page	1	of	
Site Name /Location		Contract No.		Date	

Item No.	Location of and Items Requiring Action	Action CAT 1,2,3	Date Remedied

Action Category Classification 1 Items requiring IMMEDIATE ACTION **i.e. within 24hrs**

Action Category Classification 2 Items requiring PROMPT ACTION. i.e. within 48hrs

Action Category Classification 3 Items requiring action **within 7 days**

Remarks:

Signed (Person Compiling Report) Auditor:

Copies to:	Name of Person Seen on Site	
SHEQ Manager/ Auditor	Designation i.e Site Engineer	
Regional Director	Signature	

SITE WORKS AUDIT INSPECTION FORM

References and Key legislation.

The Health & Safety (Consultation With Employees) Regulation 1996
The Health & Safety (Information for Employees) Regulations 1989
The Employers Liability (Compulsory Insurance) Act 1969 regulations 1998
The Construction (Design & Management) Regulations 2015
Safety Signs & Signals Regulations 1996
Pollution Prevention and Control (PPC) (England and Wales) Permitting 2009
The Waste Management Licensing (Scotland) Regulations 2008
The Workplace (Health, Safety & Welfare) Regulations 1992
Highly Flammable Liquids & Liquefied Petroleum Gasses Regulations 1972
The Dangerous Substances and Explosive Atmospheres Regulations 2002
The Fire Precautions Regulatory Reform (Fire Safety) Order 2005
Health & Safety (First Aid) Regulations 1981
The Control of Substances Hazardous to Health Regulations (C.O.S.H.H.) 2002 and 2005
The Chemical Hazard Information for Packaging & Supply Regulations (C.H.I.P.) 2002 plus 2005 amendment
EH40 Occupational Exposure Limits
The Control of Pollution (Oil Storage) (England) Regulations 2001
HS(G)107 Maintaining Portable and Transportable Electrical Equipment
The Electricity at Work Regulations 1989
HS(G)85 Electricity at Work – Safe Working Practices
HS(G)141 Electrical Safety on Construction Sites
HS (G)S6 Avoidance of Danger from Overhead Electrical Lines
HS(G)47 Avoiding danger from underground services
The Protection of Workers and the General Public during the Development of Contaminated Land – HS G (1990).
The Highway Code
The Confined Spaces Regulations 1997
The Provision & Use of Work Equipment Regulations (P.U.W.E.R) 1998
The Lifting Operations and Lifting Equipment Regulations (L.O.L.E.R) 1998
The Personal Protective Equipment Regulations1992
The Waste Management Regulations1996
Waste Management – The Duty of Care – DEFRA Code of Practice
Hazardous Waste (England and Wales) Regulations 2005ammended 2009

Additional Legislation and Regulations considered by this Audit inspection:

The Health and Safety at work act (HASAWA 1974)
The Environmental Protection Act (EPA) 1990
The New Roads and Street Works Act 1991
The Construction (Head protection) Regulations 1989
The Display Screen Equipment Regulations 1992
The Lead at Work Regulations 2002
The Manual Handling Regulations 1992
The Vibration at work Regulations 2005
The Work at Height Regulations (WAH) 2005 and amended 2007
The Pressure Systems Safety Regulations 2000
The Reporting of Injuries, Diseases and Dangerous Occurrences (RIDDOR) Regulations2013
The Site Waste Management Plans Regulations 2008
Trade Effluent (Prescribed Processes and Substances) (Amendment) Regulations 1990

Appendix D

CIWM

Continuing Competence Certificate

This certificate confirms that

Gavin Rodway

Has met the relevant requirements of the Continuing Competence scheme for the following award(s) which will remain current for two years from 13/09/2022

CLR Contaminated Land Remediation

Expiry Date: 13/09/2024

Verification date: 05/09/2022

Authorised:

Professional Services Director

Learner ID: 17539

Certificate No.: 5206934

Date of Issue: 13/09/2022

CIWM Chief Executive Officer

The Chartered Institution of Wastes Management

Scan code on reverse to authenticate that this is a genuine paper

WAMITAB

Waste Management Industry
Training and Advisory Board

The Chartered Institution
of Wastes Management

Certificate No. OCC-813

Operators Competence Certificate

Qualification Title:

Level 4 in Waste Management Operations - Managing Treatment Hazardous Waste (4TMH)

This Certificate is awarded to
Gavin Sean Rodway

Awarded: 04/02/2010

Authorised

WAMITAB Director General

CIWM Chief Executive Officer

This certificate is jointly awarded by WAMITAB and the Chartered Institution of Wastes Management (CIWM) and provides evidence to meet the Operator Competence requirements of the Environmental Permitting (EP) Regulations, which came into force on 6 April 2008.

WAMITAB. Waste Management Industry Training and Advisory Board. Peterbridge House, 3 The Lakes, Northampton, NN4 7
Telephone: 01604 231950 Fax: 01604 232457 Email: info.admin@wamitab.org.uk Website: www.wamitab.org

Appendix E

ENGLOBE