FORMER MERITOR SITE

GRANGE ROAD
CWMBRAN
NP44 3XU

SUPPLEMENTARY INFORMATION FOR MTL DEPLOYMENT FORM

NOVEMBER 2018

REPORT REF: R1744-18-4930

CONTENTS

1.0 INTRODUCTION

This report is to be read in combination with the MTL deployment form attached. Sections correlate directly to the sections within the deployment form and contain additional information that is required.

B2 SPECIFIED ACTIVITIES TO BE CARRIED OUT AT THE SITE

As part of site development and construction works being completed by Kier at the Former Meritor Site, Grange Road, Cwmbran, NP44 3XU a programme of groundwater pumping and treatment is proposed such as to facilitate excavation and pile installation works.

Recovered water will be subject to treatment, testing and discharge under the current Dwr Cymru consent to foul sewer a copy of which is included in Appendix E.

The programme of works at the site is to be confirmed however it is expected to be over a period of approximately 52 weeks. Any changes in programme duration shall be communicated upon confirmation by the Client and Principal Contractor.

B2.1 BRIEF SUMMARY OF CONTAMINANTS TO BE TREATED

The project involves perched and groundwater treatment associated with site development to include open excavation and advanced pile location dewatering. Dewatering will principally involve treatment of perched ground and rainwater as excavations will not extend significantly below the underlying groundwater table. Potential contaminants to be treated are total petroleum hydrocarbons (TPH).

It is also noted that works may consist of the treatment of concrete delivery wagon cleaning effluent, and as such elevated pH concentrations maybe observed. In the event of this being confirmed the proposed water treatment system (detailed below and in Appendix A) shall be modified to include an additional treatment stage via siltbuster PHD unit. Details of this system have been included in Appendix A of this submission.

B2.2 AUTHORISED TREATMENT TECHNOLOGIES AND DESCRIPTION OF OPERATIONS THAT ARE TO BE CARRIED OUT AT THE SITE

The methodologies to be employed at the site are:

- Suspended solids removal;
- Potential treatment of yet to be identified TPH contamination;
- Potential treatment of Cement wagon delivery effluent via additional PHD unit (to be confirmed).

A process flow diagram (PFD) for the proposed water treatment system (WTS) is present in Drawing Cwmbran PFD, Appendix A.

Water will be recovered from site excavations and pile locations by the main contractor and delivered to the Celtic WTS via a 4 inch centrifugal pump and associated pipework. Pumping shall be completed from areas of deeper water with the inlet hose set at the midway point within the water body to minimise the collection of suspended solids that require treatment. A strainer shall be used at the point of water collection by the main contractor to ensure no significant debris or significant suspended solid content can be recovered.

Water from the excavations will initially pass into a settlement tank followed by silt buster unit to remove suspended solids. Following this dissolved phase contamination shall be removed via Granulated Activated Carbon (GAC) filtration. The system will also include an automated back washing sand filter to remove any suspended solids from the waste stream and prevent the GAC vessel suffering from blinding. The system shall be fitted with a telemetry system so that the system can be shut-down remotely in the event of overcapacity in the foul sewer network or a problem in the treatment system (e.g. loss of power, high level alarm, loss of pressure).

Water Treatment Area

The water treatment system shall be installed within an area of heras fencing, in the location shown on Celtic WTS and Environmental Monitoring Location Plan, Appendix A. The area will be prepared to protect the underlying ground conditions, and an impermeable bund will be constructed with the capacity of at least 110% of the largest vessel. The area will be subject to regular inspection and maintenance (weekly) to ensure no leaks or spills impact the underlying ground.

Water from excavations will be transferred to the treatment area via a liquids transfer pump, which will be controlled by an automated valve system so that should a pump failure occur the system will fail safe. The system will also utilise pressure sensors and bund float switches. All switches will be connected via a centralised control panel which will be connected to a telemetry system to alert staff of any issues during non-working hours.

A sampling point shall be located at discharge from the treatment unit to allow sampling and laboratory analysis. Samples shall be recovered to determine water quality and ensure compliance with the discharge consent.

A flow meter shall be located immediately prior to final discharge to sewer to measure total volumes discharged.

Access to the sampling point and flow meter shall be maintained at all times to allow Dwr Cymru and 3rd Party sampling as required.

Discharge Consent

The works shall be undertaken under the current local water authority (Dwr Cymru) discharge consent that shall be extended beyond the 31st December 2018. The waters from the treatment system as detailed above will be discharged to foul sewer for the duration of the project. Discharge of waters from the WTS shall not exceed 200m^3 in any 24-hour period or a rate of 4 litres / second.

B4 MANAGEMENT SUPERVISION

B4.1 SITE SUPERVISION PLAN FOR TECHNICALLY COMPETENT MANAGER

The Technically Competent Managers (TCM, Trevor Bamber, Gavin Rodway) will record a minimum site attendance of 0.5 days per month of WTS operation. The current remedial programme is approximately 52 weeks (365 days) and the TCM will spend a minimum of 0.5 days on site per month on site (6 days in total). In the event that the programme of works is reduced the frequency and number of visits shall be reduced accordingly. The TCM will inspect the setup of the facilities on site prior to commencement of the recovery operations. The TCM will spend the remaining time on inspection of the treatment process

during the dewatering programme in addition to conducting MTL compliance audits on a monthly basis.

The WAMITAB certificate for the TCMs can be found in Appendix D.

B6 ACCEPTANCE PROCEDURES

B6.1 ADOPTED PROCEDURES TO ENSURE THAT ONLY THOSE MATERIALS THAT ARE TREATABLE WITH THE SPECIFIED TECHNOLOGY WILL BE TREATED

All works at the WTS shall be undertaken by Celtic staff for the duration of the project.

Water will be recovered from site excavations and pile locations by the main contractor and delivered to the Celtic WTS via a 4-inch centrifugal pump and associated pipework. Pumping shall be completed from areas of deeper water with the inlet hose set at the midway point within the water body to minimise the collection of suspended solids that require treatment. A strainer shall be used at the point of water collection by the main contractor to ensure no significant debris or significant suspended solid content can be recovered.

Samples of treated water will be collected on a monthly basis. The samples will be collected from a sampling point which is accessible to third parties (e.g. Dwr Cymru).

B6.2 RESIDUAL WASTE HANDLING

During works to complete perched and groundwater recovery it is possible that filter media may require replacement. Suspended solids will be adsorbed to sand; following appropriate sampling and classification, saturated sand will be disposed of or recycled off-site by a licensed operator.

B6.3 MAXIMUM CAPACITIES OF QUARANTINE FACILITIES

Due to the nature of the project there is no quarantine facility. Sampling of water will be conducted prior to any discharge and on a regular, monthly basis during recovery operations. If there is any requirement for re-testing or modified treatment, the pumping operations will be halted, and discharge suspended until this can be accomplished within the defined limits of the discharge consent.

B7 CONCEPTUAL SITE MODEL

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.

Table 1 – Conceptual Site Model

SOURCES	PATHWAYS	POTENTIAL RECEPTORS	NOTES (Including Control Measures)	RISK AFTER CONTROL**
Impacted water recovered from site excavation and pile installation operations.	▪ Water – Direct Contact ▪ Water – Over land flow	▪ Site workers ▪ Site Visitors	▪ **Potentially Complete Pollutant Linkage**: Staff and site workers will have limited contact with contaminated water. Any potential contact will be mitigated by relevant PPE/RPE. ▪ **Incomplete Pollutant Linkage:** Impacted waters will be treated within a bunded area prior to disposal.	**Low**
	▪ Vapour inhalation ▪ Explosive Vapours	▪ Site staff – outdoors ▪ Public – Site boundary ▪ Site workers	▪ **Potential Pollutant Linkage**: Vapours associated with the water contamination may be a risk to workers on the site. However, monitoring and associated contingency plans should reduce this to an insignificant level. Celtic will monitor vapour levels for inhalation risk with the use of a Photo Ionisation Detector (PID) during the installation of water treatment equipment.	**Negligible - Low**
Operational water treatment system (water recovered from excavations)	▪ Contact with contaminated materials around the water treatment area (inhalation, ingestion and dermal contact)	▪ Site workers ▪ Site visitors	▪ **Potentially Complete Pollutant Linkage:** 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 and maintenance, and by following Method Statements.	**Low**
	▪ Leakage / spillage	▪ Groundwater beneath the site ▪	▪ **Potentially Complete Pollutant Linkage:** The water treatment system will be contained within a bund of capacity of 110% volume or more of the total system components 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.	**Low**

Table 1. Continued

SOURCES	PATHWAYS	POTENTIAL RECEPTORS	NOTES	RISK AFTER CONTROL**
Noise emitted from during active site works	▪ Noise emissions during remedial operations	• Site Staff • Adjacent third-party workers • Public at site boundary.	• **Incomplete Pollutant Linkage**: Project design includes using low noise output equipment where possible, fitting acoustic shields or baffles where possible and limiting Staff contact with any prolonged noise emitting activity. Noise will be monitored during works using a decibel meter. 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 • **Incomplete Pollutant Linkage**: No significant impact to adjacent third-party workers. Celtic will undertake noise monitoring at the site boundaries during the treatment period. • **Incomplete Pollutant Linkage**: No significant impact to the public at site boundary. Celtic will undertake noise monitoring at the site boundaries during the treatment period.	**Low**
Effluent discharge	▪ Direct Contact ▪ Foul Sewer	▪ Site Staff ▪ Local sewerage system	▪ **Potentially Complete Pollutant Linkage:** All recovered water will be treated via on site treatment plant prior to discharge to foul sewer. All recovered water will be monitored on a weekly basis and sampled prior to initial discharge to ensure compliance with the consent. ▪ Staff will be trained, inducted and have suitable PPE to minimise risk of exposure.	**Low**

** Risk ranking of Negligible, Low, Medium, High

B8 POLLUTION CONTROL

Celtic will undertake background monitoring and design a monitoring programme to be implemented during the site works. Background levels, Occupational Exposure Limits (OEL's) and risk derived values will form the basis for site specific trigger values.

Monitoring records will include:

- determinants monitored;
- details of measurements (date, time, frequency, location);
- results;
- interpretation and review of results against trigger values; and
- validation of accuracy.

Should monitoring exceed the site-specific trigger values, control measures specified in the site specific contingency method statement will be implemented. This may include ventilation, filtering or active extraction.

The contingency plan will be designed and operated to:

- prevent hazard to human life, property or the environment;
- control and minimise any immediate risks of pollution of the environment;
- ensure the immediate initiation of necessary investigations and management; and
- actions to identify, mitigate and remediate the causes of the exceedance.

Monitoring and Control of Ambient Gases, Vapours and Aerosols

Mobile treatment plant under the control of Celtic is highly unlikely to give rise to emissions of vapours and aerosols during normal operation. In open areas of the site normal air circulation will prevent the accumulation of SVOCs, VOCs and vapours

Prior to and during the system commissioning phase, Celtic staff will monitor volatile organic compounds (VOCs) using a PID at the specified monitoring point (1 point as per WTS and Environmental Monitoring Location Plan, Appendix A). The PID will be operated and calibrated prior to use and maintained in accordance with the manufacturer's instructions. Measurements will be recorded in the site diary and in the Health & Safety File. A copy of the records will be made available to the Natural Resources Wales on a monthly basis.

Representative samples of gases, vapours and aerosols will be taken within the operational area if routine PID monitoring identifies a significant hazard. If such sampling is required, passive samples will be taken using Tenax tubes at each of the monitoring stations.

Should VOCs exceed the trigger level in the treatment area (RPE at 1 ppm 8-hour TWA and Stop works at 10 ppm 8-hour TWA); the action plan will be implemented. This will include RPE at the lower trigger level and evacuate the operational area if the upper trigger level is reached. Only resume work when VOC concentrations have dropped below the upper trigger level or contingency control measures are in place. Control measures may include ventilation, filtering or active extraction.

Dust, fibres and particulates

Water recovery and treatment operations are not considered likely to produce significant dust, fibres or particulates. The treatment system filter media are enclosed to eliminate vapour and particulate release. As such no dust monitoring is proposed to be undertaken as part of Celtic WTS operations.

Odour

Odours will be monitored on a weekly basis within the perimeter of the treatment area at one location and records will be kept in the site diary. If odours become an issue onsite, then contingency plans will be put in place to reduce the odour.

Methods of reducing odours are to include;

- Pre-assessing the wind direction and strength prior to operations.
- Implementing the use of odour suppressant / control measures during pumping operations.

If the odour reaches nuisance level, operations will be ceased, and the treatment area will be treated with industrial deodoriser spray designed for industrial operation use.

The level of odour will be assessed based on the following criteria:

Level of Odour Observation	Actions
No to very faint odour	No action
Occasional faint to moderate odour	Increase monitoring frequency
Frequent moderate to strong odour	Implement mitigation actions

Control of noise

All remedial processes will be carried out utilising low intensity works, where possible. Although site operational works will be undertaken on a 24 hour a day, 7 day a week basis, specific design such as super silenced generators have been considered to prevent annoyance to sensitive receptors. Onsite workers will be provided with suitable PPE. Monitoring will be undertaken on a regular basis (weekly at 1 location, please refer to Appendix A) using a hand-held calibrated sound level meter. All plant will be operated in accordance with manufacturer's instructions to minimise noise generation and ear protection will be worn in accordance with the machinery operating instructions.

In the unlikely event that levels are exceeded at or beyond the site boundary, a review of plant employed and working methods will be carried out. Initial mitigation measures will include altering the site layout and erecting acoustic shields or barriers.

Control of Recovered Water

The recovered water may contain limited dissolved phase hydrocarbons and in the event of cement wagon effluent treatment increased pH. The recovered water will be passed through the WTS detailed in Section B2.2 prior to being disposed of to foul sewer under the current Dwr Cymru discharge consent. Sampling controls will be applied as stipulated in the appropriate discharge licence.

Fuel Storage

Fuel associated with remediation works including pump / water treatment system requirements and any machinery use, shall be stored within appropriate containers held in bunded areas. A spill kit will also be available throughout the remediation works.

B9 EMISSIONS MONITORING PLAN

	Ambient Vapour	Ambient Noise	Groundwater / Perched Water	Treated Waters
Sampling Method(s)	Photo Ionisation Detector (PID)	Decibel Noise Meter	N/A	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.	N/A	As per Dwr Cymru Water Discharge Consent
Baseline (One Location)	1 round	1 round	Laboratory Analysis	Laboratory Analysis
Water Treatment System Commissioning Phase	Daily	Daily	N/A	Prior to discharge
Active Groundwater and Perched Water Treatment Works	Weekly	Weekly	Monthly	Monthly
Post Works	N/A	N/A	N/A	N/A

*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).

B9.1 INDICATOR PARAMETERS

Table 4 – Indicator Parameters

Indicator	Justification
Noise	Potential emission from machinery/plant during active site works as identified in Section B7.

B10 RECORD KEEPING – COMMISSIONING, OPERATING AND MAINTENANCE

All machinery checklists will be checked prior to the works being carried out. Any plant certificates and operator credentials will be checked and recorded.

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

Typical commissioning, operation and maintenance checklists for the treatment systems are presented in Appendix C.

APPENDIX A

DRAWINGS

APPENDIX B

MONITORING PROFORMAS

APPENDIX C

COMMISSIONING, OPERATION & MAINTENANCE CHECKLISTS

APPENDIX D

WAMITAB CERTIFICATE

APPENDIX E

ANALYSIS SUMMARY