Taylor Wimpey South Wales Ltd.

Environmental Permit Application – Supporting Notes (OF1 & OF2)

Cefn Yr Hendy, Miskin

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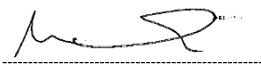
Author	Michael Knott	
Project Manager	Andrew Przewieslik	
Technical Reviewer and Quality Assurance Representative	Andrew Przewieslik	

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1 INTRODUCTION

This document is presented in support of an application for an Environmental Permit to discharge surface waters during the construction phase of the Cefn Yr Hendy development, Miskin. Additional and supporting information to that provided in the application forms is included herein.

Sections 1 and 2 also provide a non-technical summary of the planned discharge.

The site is located within an area of undeveloped land to the north and north-east of the existing and well-established residential development within Cefn-Yr-Hendy in Miskin, at National Grid Reference (NGR) ST 04850 81860. A site location plan is presented as **Figure 1**.

The site is roughly 'L' shaped and occupies an area of approximately 20 hectares (Ha). The site comprises eight grass-covered fields separated by mature hedgerow and trees, and a small area of woodland.

The site predominantly comprises undeveloped greenfield land. However, the site and the surrounding area does have a mining legacy (predominantly associated with historical ironstone workings originating from the former 'Bute Hematite Works'), which is located along the south-eastern boundary of the development site. There is also anecdotal evidence for shallow historical lead mining on land immediately to the north of the site.

The boundaries of the site are defined by woodland and undeveloped fields to the north; existing residential development to the south-west; the estate road to the south-west of the southern area; mixed development and an existing road to the south-east of the southern area; and Cefn Parc Farm and the A4119 to the east. Disused quarries are located beyond the road to the south of the site.

Access to development is via Ffordd Cefn-Yr-Hendy, which is located to the south of the development area and connects to the parcels via Heol Waunhir that in turn connects to the A4119.

The following general construction elements are anticipated as part of the development. A proposed development plan is presented as **Figure 2**:

- Construction of residential units across the Cefn Yr Hendy development.
- The majority of the development will comprise hardstanding with public open space (POS) designated across the development site.
- Construction of several public highways to provide access to new residential areas, including associated infrastructure (foul and surface water (storm) drainage).

All public highways will comprise of standard highway specification. Engineering drawings are presented in Appendix C of the Surface Water Management Plan presented in **Appendix A**.

Development activities within the development site will be separated into two phases. The first will see the development of the residential properties in the northern part of the development site. The second phase of the development will comprise of the construction of the residential properties within the eastern part of the development site.

Three discharge points from the development site are proposed. Two of these discharged points, OF1 and OF2 are located along the northern boundary of the development site, whilst the third, OF3, is located in the south-eastern corner of the development site.

The primary surface water receptor is the Afon Clun to which all surface water (rainfall) will be discharged, during the enabling works phase, construction phase and when the development is complete. The Afon Clun is hydraulically connected to the River Ely, which in turn flows into Cardiff Bay and thereafter into the Bristol Channel.

This application seeks to secure an Environmental Permit for the discharges from designated points along the northern boundary of the development site, which discharge into the Afon Clun. These are referenced as OF1 and OF2, which are located at approximate NGR of ST 04733 82102 and ST 05089 82109, respectively.

Discharges associated with discharge point OF3, located at NGR ST 05247 81680 are covered under a separate Environmental Permit Application.

2 SURFACE WATER DISCHARGE DESCRIPTION

A copy of the engineering drawings for the site are included in Appendix C of the Surface Water Management Plan presented in **Appendix A** and should be referred to. The drawings set out the drainage system for surface waters (referenced storm drainage in ***blue*** lines on the plans) for the development area. With respect to the development, surface water refers to rainfall falling across the development footprint. There are no streams, culverts or rivers that cross or adjoin the site that might also be considered to be surface water. The surface water drainage system comprises a series of below ground pipes that collect surface waters from roofs, roads, pavements and areas of hardstanding and convey this water towards designated surface water detention basins that in turn connect to the designated outfalls (OF1 and OF2) along the northern boundary of the development site.

The surface water basins will be engineered to prevent the potential for infiltration into the underlying geology.

A surface water management plan (SWMP), presented within **Appendix A**, has been developed for the site with the surface water mitigation set out within that report, already installed by January 2023. Furthermore, regular inspections and updates of the SWMP will be undertaken through the lifespan of the development to ensure that the mitigation strategy remains appropriate. A site-specific Construction Environmental Management Plan (CEMP) has also been produced for this site and is included in **Appendix B**.

Surface water across the site will comprise rainfall, falling onto the development area, including haul roads, building footings and areas of disturbed/exposed ground following the installation of below ground infrastructure and the raising of site levels to finished floor levels (FFL). As a result of general construction activity, silt may become entrained within the surface water runoff, for which mitigation has been prescribed to minimise the remobilisation of silt and for the removal of silt from water, prior to discharge to surface waters. The proposed treatment may comprise both passive and/or active methods to remove silt from water, with a focus on passive mitigation. However, the future requirement for water treatment using chemical flocculants cannot be fully discounted and is subject to future site conditions. Therefore an Environmental Permit is being applied for that includes provision to use flocculants in the future, if necessary.

Water discharged from the proposed discharge points will consist of rainwater run-off that has been generated and collected within the development site. It is confirmed that no foul water will be present in the proposed discharge and that this permit application is not associated with the pumping or treatment of foul water.

Owing the nature of activities associated with the development site, silt may become entrained within the rainfall run-off generated within the site. Accordingly, silt mitigation in the form of passive, gravity-driven water treatment and supplemented by active treatment measures (if required) has been prescribed to minimise the remobilisation of silt and for the removal of silt from water, prior to discharge to surface waters.

A site plan showing the indicative treatment, pumping, monitoring and discharge arrangements associated with the proposed development is presented on **Figure 3**.

3 ENVIRONMENTAL MANAGEMENT SYSTEMS

Taylor Wimpey have environmental management systems in place. This are detailed below.

The environmental management systems for Taylor Wimpey have been built around the requirements of both ISO14001:2004 and OHSAS18001:2018. Taylor Wimpey seek to minimise the impact of their site operations, particularly in relation to climate change, energy, water, waste biodiversity through compliance with these certified systems. Taylor Wimpey is audited on a regular basis with relevant employees provided with specific environmental training.

4 QUALITY OF DISCHARGE WATER

The site has been subject to numerous site investigation works with the most recent completed in October 2022 by Intégral Géotechnique (Wales) Limited (document reference: 12976/JJ/22/SI/RevA), which also included an addendum geotechnical site investigation report. A copy of the relevant ground investigation reports are presented in **Appendix C**.

The reports describe a site wide investigation of soil and controlled water conditions.

The 2022 ground investigation report included a contamination risk assessment supported by laboratory analysis of samples collected from the site. This assessment identified the presence of elevated concentrations of lead within the topsoil and natural subsoil at several locations across the northern part of the development site.

The 2022 ground investigation also recorded elevated concentrations of beryllium in the Made Ground and infill material composed of pulverised fuel ash (PFA) within a quarry located in the south-eastern area of the site, and locally elevated concentrations of polycyclic aromatic hydrocarbons (PAH) and petroleum hydrocarbons in the general Made Ground encountered in the north-western area of the site.

In order to protect future site end users and vegetation, the 2022 ground investigation report recommended that soils with localised elevated hydrocarbon concentrations were to be removed and disposed of at a suitably licensed facility and that a capping layer of a minimum 600 mm thickness, of clean imported subsoil and topsoil (with an underlying geotextile separation membrane) should be placed in appropriate locations within the development site.

The 2022 ground investigation report did not identify significant contamination that could pose a significant risk to controlled waters.

An absence of shallow groundwater was also identified during the 2022 ground investigation. However, the 2022 ground investigation did identify the presence of anomalous drilling conditions considered to represent evidence of suspected cavities/voids associated with dissolution / solution features encountered within the bedrock strata; Mercia Mudstone Group (typically comprising dolomitic conglomerate), in several boreholes and at variable depths.

Targeted remedial work will be undertaken prior to commencement of construction activities to either remove or disconnect identified contamination from the surrounding environment. This includes the proposed surface water detention basins and associated surface water treatment proposed for this development site.

During construction work, the storage and use of fuel and lubricating oils and possibly other materials typical of an active construction site, will be necessary. However, all such activities will be undertaken in accordance with current regulations and best practice.

With these controls in place, construction activities present a negligible risk of causing hazardous substances to be present in the discharged surface water. Furthermore, surface waters are not likely to result in the remobilisation of historical contaminants from across the Cefn Yr Hendy development site (if present) due to the remedial works. If required, suitable piles, such as pre-cast driven piles, will be used that not result in arisings having been brought to the surface. Drainage runs will also not be over deepened.

The principal potential contaminant to surface waters is therefore silt (suspended solids) associated with exposed soil and rainfall runoff, which is further assessed in Section 5. The quality of water will also be rainfall dependant and vary over the season.

5 RISK ASSESSMENT

An assessment of the environmental risks of the operations covered under this application for a discharge consent has been prepared in accordance with the principles of the H1 methodology stated below:

- Step 1 – identify risks
- Step 2 – assess risks
- Step 3 – justify appropriate measures (if needed)
- Step 4 – present the assessment.

The initial groundwork for the Cefn Yr Hendy development has commenced, with an indicative commencement of the build by late 2023.

Step 1: Identify Risks

The H1 overview document identifies the following different types of risk to the environment.

- odour – there are no potentially odorous activities or chemicals associated with the construction work.
- noise & vibration – construction noise & vibration will occur but be limited to the allowed working hours (0800-1800 Monday to Friday and 0800 to 1400 Saturday). Noise & vibration resulting from the discharge activity are not envisaged as being significantly more noticeable than from the other construction activities at the site.
- accidents – the potential for accidents to occur exists. The potential for contamination of the receiving surface water (Afon Clun) will be managed to acceptable levels by the control measures put in place for the construction activities.
- fugitive emissions to air and water - no significant risks have been identified for emissions to air. The potential for contamination of the surface water receptor (Afon Clun) will be managed to acceptable levels by the control measures put in place for the construction activities.
- controlled releases to air – there are no point source emissions to air.
- controlled discharges to surface water – a discharge locations have been identified to the Afon Clun, reference **Figure 3**.
- controlled discharges to ground or groundwater – there are no point source discharges to groundwater.
- global warming potential – insignificant.
- site waste – the quantity of site waste generated will be small and consist primarily of silt/sediment removed from the surface water management system. This would be disposed of at an off site landfill.

Steps 2/3/4 – Assess Risks etc

In accordance with the H1 methodology guidance the following have been assessed.

- Accidents.
- surface water discharges.

Due to the proximity of nearby surface waters, the absence of recorded shallow groundwater and that the surface water detention basins within the development site will be engineered to prevent infiltration into the underlying geology, it is not considered necessary to consider risks to groundwater. Any groundwater beneath the site is considered to be in hydraulic continuity with the receiving surface water.

Accidents

The site will be secured by fencing with no public access. Therefore accidental releases as a result of vandalism is not likely. However, the potential for accidents/accidental releases of contaminants on the construction site cannot be discounted and is assessed.

A risk assessment for accidents, in line with H1 Annex A, follows the next section.

Surface Water Discharges

The water to be discharged comprises solely rainwater having fallen on the development area and flowed across the surface into the surface drainage network, or over ground towards the site boundaries. It may also at times be necessary to pump rainwater from excavations into the surface drainage network. The amount of surface water run-off requiring discharge will be dependent upon rainfall rates and seasonality. Surface water run-off will be clean and uncontaminated (after solids removal).

Under conditions prior to development works, rainwater falling across the wider development would have either infiltrated into the topsoil and either percolated further into the underlying geology (which is in hydraulic connection with the Afon Clun) or been intercepted by vegetation or flowed into the Afon Clun via overland flow. As such, the water to be discharged during this construction period would naturally enter the identified surface water receptor. Under the proposals for the works there is the potential for additional solids to be mobilised due to the construction activity on site, however as stated above and below, these will be reduced by settlement and filtration methods, and on site management practices set out in the SWMP to reduce silt on roadways. The impact of the discharge of clean and uncontaminated water from the site can therefore be considered to be not significant in terms of the impact on the Afon Clun. Water will discharge the development site via two discharge points and will enter the Afon Clun via a combination of channelled drainage and overland flow across established vegetation.

The discharge will be at ambient conditions so there will be no temperature effects as a result of the discharge.

As the discharge will not normally contain any hazardous substances, sanitary determinants or other pollutants, detailed assessments in line with H1 Annexes D1 and D2 are not necessary, as indicated in the flow chart of H1 Annex D. The only assessment required is for accidents. This assessment follows.

Risk Assessment for Accidents

Hazard	Receptor	Pathway	Risk Management	Probability of exposure	Consequence	What is the overall risk?
Leak/spillage of hazardous material on site (e.g. oils and fuels)	Afon Clun	Via infiltration, overland flow or via the surface water drainage system (storm system)	Containment measures for storage. All fuel stored in bunded cells with double walls, additional capacity, dip trays/sump pallet and spill kits. Minimisation of storage volumes to those required for routine operations. Maintenance & inspection	Unlikely	Contamination of Afon Clun water with hazardous substances.	Low – due to procedures detailed in the Construction Environmental Management Plans (CEMP) (e.g. fuel/oil use and storage, waste/material storage). Distance from surface water receptor further reduces the likelihood.
Leak of oil/fuel from pumps used as part of a water treatment system or other temporary pumping activity	Afon Clun			Unlikely		
Discharge of water containing suspended solids (silt)	Afon Clun	Overland flow from site boundary, or discharged from the outfall	Silt mitigation measures set out within site-specific SWMP including silt fences, cut off bunds, bunging of the outfall, flocculant treatments. Monitoring and testing of discharge to be free of silt.	Low	Contamination of Afon Clun water with suspended solids (silt).	Low – with silt management measures in the SWMP to reduce the potential for additional silt to be present in the excavation water. Suspended solids to be removed from water via a combination of both active (Siltbuster) and passive (Frog Environmental) treatment systems prior to discharge. If the water shows signs of silt, the discharge will be suspended and the treatment systems inspected for signs of a fault. If no fault is identified, the treatment system supplier will be contacted and a revised dosing trial will be undertaken and chemical dosing rates will be updated as necessary.

Hazard	Receptor	Pathway	Risk Management	Probability of exposure	Consequence	What is the overall risk?
Discharge of water containing chemicals from active (Siltbuster) treatment process (Poly Aluminium Chloride & Aquatreat 2084)	Afon Clun	Overland flow from site boundary, or discharged from the outfall	Completion of a thorough chemical dosing trial by the supplier of the active treatment system to determine the appropriate chemical dosing rates prior to the commencement active treatment activities. Monitoring and testing of discharge.	Low	Contamination of Afon Clun water with dosing chemicals.	Low – The completion of a dosing trial by the supplier of the active treatment system will ensure that the correct volumes of the chemicals are applied to the incoming water and that there are no residual chemicals in the treated water upon discharge. If monitoring and testing identify the potential imbalance in chemical dosing rates, the treatment system supplier will be contacted and a revised dosing trial will be undertaken and chemical dosing rates will be updated as necessary.
Discharge of water containing chemicals from passive treatment process (WaterLynx flocculant)	Afon Clun	Overland flow from site boundary, or discharged from the outfall	Completion of a thorough chemical dosing trial by the supplier of the active treatment system to determine the appropriate chemical flocculants and dosing volumes prior to commencement passive treatment activities. Monitoring and testing of discharge.	Low	Contamination of Afon Clun water with dosing chemicals.	Low – The completion of a dosing trial by the supplier of the passive treatment system will ensure that the combination of flocculants volumes of the chemicals are applied to the incoming water and that there are no residual chemicals in the treated water upon discharge. If monitoring and testing identify the potential imbalance in chemical dosing rates, the treatment system supplier will be contacted and a revised dosing trial will be undertaken and chemical dosing rates will be updated as necessary.
Spillage of collected solids from settlement system	Afon Clun	Overland flow from site boundary, or discharged from the outfall	Method statement for cleaning settlement system.	Very unlikely	Contamination of Afon Clun water with suspended solids (silt).	Low – settlement system to be cleaned in such a way as to prevent silt spillage. Discharge outfalls to be bunged during cleaning. To be cleaned by specialist provider.

Hazard	Receptor	Pathway	Risk Management	Probability of exposure	Consequence	What is the overall risk?
Failure of pumping equipment – overflow of water from drainage etc.	Afon Clun	Via surface flow or surface water drainage system	Silt mitigation measures set out within site-specific SWMP	Unlikely	Contamination of Afon Clun water with suspended solids (silt).	Low – water is contained on site within surface water detention basins if pumps fail.
Vandalism	Afon Clun	Via surface flow	Site is secure without public access.	Unlikely	Contamination of Afon Clun water	Low - due to security arrangements

6 DISCHARGE VOLUMES

The maximum discharge rate from both outfalls OF1 and OF2 will be a combined total of 132 litres per second (l/s).

Depending on site arrangements during the construction process, discharges from the development site will be made using either OF1 or OF2 or both discharge points at the site time. This will depend upon the build programme.

Nevertheless, regardless of which discharge points will be utilised, the maximum *cumulative* discharge rate from OF1 and OF2 will be 132 l/s. A breakdown of the associated daily volumes is provided below:

Maximum Instantaneous Pumping Rate	Maximum Pumping Rate (per minute)	Maximum Hourly Pump Rate
132 l/s	7,920 l/min	475,200 l/hr
0.132 m^3/sec	7.92 m^3/min	475.2 m^3/hr

Based on the above, this equates to a maximum discharge rate of **11,405 m^3/day**.

7 TREATMENT

It is proposed that the application of flocculants, as well as potentially coagulants and pH balancers are utilised in addition to passive, gravity-driven silt settlement methods, to ensure that clean, silt free water is discharged from the site. As mentioned earlier in this document, a SWMP has been prepared and is included at **Appendix A**, which should be read as it sets out in detail the proposed silt management strategy.

As outlined in the attached SWMP, the proposed silt management strategy will utilise passive / gravity driven systems installed across the development site. Mitigation is to be installed at surface water detention basins, surface water ditches and along the discharge routes from the site towards the Afon Clun.

The proposed passive / gravity driven systems include the deployment of headwall protection measures, silt mats and silt curtains. It is considered that through the operational practices contained in the SWMP, these systems would provide the main silt interception measures and remain in place throughout the year.

Due to site constraints and the proximity of the site to the receiving water, it is considered appropriate to supplement the deployment of the abovementioned passive / gravity driven systems. In RSK's experience, the use of the Gel Flocculant range of chemical flocculants (360, 394, 395, 398, and 494) in the appropriate combination has proven to be very effective for the safe removal of suspended solids. Copies of the appropriate flocculant material safety data sheets (MSDS) are presented within **Appendix D**.

Prior to the commencement of active treatment activities, a dosing trial will be completed by the treatment system supplier (Frog Environmental Limited) to confirm the appropriate combination of gel flocculants as well as the management calculations for the treatment system.

Given the site constraints, the most suitable application of flocculants would be utilising sediment collection equipment that is impregnated with flocculant, such as silt curtains and floc mats. In addition gel flocculant blocks can be placed at strategic locations across the development site to ensure appropriate dosing of collected surface water.

This approach would allow for the flocculant to be directly applied to water flowing over or through the passive management systems. If required, the water may need to be recirculated through pipe reactors containing additional gel flocculant within designated surface water detention basins to provide sufficient time for the floc to form.

It is proposed that the passive / gravity driven measures, supplemented by flocculant will remain in place throughout the year.

In addition to the abovementioned passive / gravity driven measures, it is proposed that the surface water silt management measures include the option for the deployment of active pump-assisted treatment systems. It is anticipated that these active treatment measures are utilised during periods of heavier rainfall; such as the winter months, to provide additional treatment and immediate discharge capacity across the development site.

The supplementary active silt treatment may include the potential deployment of pipe reactors containing the same gel flocculants discussed above and included in **Appendix D**, or the deployment of a Siltbuster treatment system using the appropriate flocculants, coagulants and pH balancer (if required).

The Siltbuster system will comprise of a chemical pre-treatment system, which will dose incoming water with a flocculant, coagulant and a pH balancer (if required). A flow-splitter manifold will then distribute the dosed water into multiple gravity operated settlement tanks (e.g. lamella tanks), which will remove the particles from suspension by gravity and capture them within the individual settlement tank units. The treated water will then be discharged from the treatment system and transferred via dedicated pipework to the designated discharge point(s).

The Siltbuster treatment system will utilise Poly Aluminium Chloride (PAC) as a coagulant and the anionic polymer AQ2084 (otherwise known as Aquatreat 2084) as the flocculant. Safety Data Sheets for both of these chemicals are included in **Appendix D**.

Prior to the commencement of active treatment activities, a dosing trial will be completed by the treatment system supplier (Siltbuster) to confirm the appropriate dosing rate for the treatment system.

In addition to the application of the aforementioned chemical coagulant and flocculant, if there is a lack of natural buffering within the on-site waters, there is the potential for the pH of the treated water to drop below 6 following the introduction of the PAC.

In such an event the chemical pre-treatment system will include the introduction of sodium hydroxide on a pH proportional basis to increase the water pH to neutral prior to adding the AQ2084 flocculant as the final dosing stage.

The application of a sodium hydroxide pH balancer is not required at every treatment site and it usage is determined by the natural buffering capacity of the on-site water. Accordingly, laboratory testing of the on-site waters will be completed by the supplier of the active treatment system prior to the commencement of treatment operations to confirm the natural buffering capacity of the on-site water. This will consequently determine whether the addition of sodium hydroxide is required for the proposed treatment system.

Regardless of whether the application of sodium hydroxide will be required for the proposed treatment activities, a copy of the sodium hydroxide MSDS; also referred to as caustic soda liquor, is included in **Appendix D**.

As mentioned previously, a site plan showing the indicative treatment, pumping, monitoring and discharge arrangements associated with the proposed development is presented on **Figure 3**.

Discharges from OF1 and OF2 will be made at NGR ST 04733 82102 and ST 05089 82109, respectively. As mentioned previously, discharges will be made from either one of both of these discharge points simultaneously.

It is considered important to highlight that owing to the nature of activities undertaken at the site, there is the potential for certain aspects of the proposed treatment system to be relocated to facilitate the continuation of wider site activities, such as updated vehicle movement routes or material storage areas.

The treatment system aspects that have the potential to be relocated include the final placement of the active treatment systems within the development area and the route of the dedicated pipework transferring to the appropriate discharge point(s).

Whilst it is considered that the routes and positions depicted in the enclosed site plan provides a representative arrangement layout, it was considered prudent to mark these as indicative locations in light of their potential to be relocated slightly during the construction lifecycle.

The sampling point would be at the designated OF1 and OF2 discharge points, namely, NGR ST 04733 82102 and ST 05089 82109, respectively.

Prior to any discharge of treated water to the surface water receptor, it would be necessary to test and monitor the water quality to ensure that the treatment has been successful and that suspended solids have been removed to the concentration stated within the Environmental Permit, assumed to be 50 mg/l.

Due to the use of a PAC coagulant, total aluminium would also be tested, to confirm that concentrations do not exceed the maximum threshold stated in the Environmental Permit, assumed to be 1,000 µg/l.

When operational, the treatment system would be visually inspected on a daily basis. Should any evidence of faults be identified the treatment and discharge will be suspended and suitable expertise from the supplier sought to address any issues or concerns prior to restarting the treatment process.

Water samples would be collected during the treatment process using flocculants and submitted to a laboratory for testing of total suspended solid (TSS) and pH. TSS is measured in milligrams per litre (mg/l), this relates to the dry weight of solids in a litre of water. This test therefore needs to be conducted at a laboratory, because the test requires the sediment to be filtered, dried, and weighed.

It may be necessary to monitor water quality whilst on site and at short notice for decision making on treatment and discharge options. To achieve this, a portable turbidity meter would be used. Turbidity (NTU) is measured in nephelometric turbidity units (NTU), this relates to the transparency or clarity of the water. This test can be conducted in a few minutes in the field using meters.

There is not a direct correlation between TSS and NTU. Therefore if on-site NTU measures are required, a relationship between TSS and NTU will be established. It is considered that this would be achieved through the preparation of an 18-point calibration curve. This would strengthen confidence in using an NTU value on site during short term decision making to equate to the TSS expressed. It is important to note that it is not an absolute value however, it is considered to be a robust quantitative method for assessing water quality whilst on site in the very short term.

Turbidity measurements would be collected during treatment for the final water (i.e. that leaving the treatment plant).

The use of a NTU calibration curve and NTU testing as an on site screening criterion would ensure that treated discharge is stopped immediately, if the NTU suggests that the TSS would be exceeded and allows for further corrective actions to be put in place.

Maintenance of the surface water mitigation measures, in the form of the settlement tanks, surface water detention basins and their de-silting would be needed throughout the operational functionality of the equipment. The maintenance of active silt treatment measures would be undertaken by the supplier of the equipment. Passive equipment is to be maintained by the site operator, with appropriate assistance from the equipment supplier. It is likely that silted tanks used for active treatment would be removed from site and replaced by clean tanks on a routine basis with the supplier undertaking the cleaning at this permitted depot. This would ensure that there is no risk to the receiving surface water from cleaning activity and that collected silt is taken to a licensed waste facility by the active treatment system supplier.

FIGURES

APPENDIX A
SITE-SPECIFIC SURFACE WATER MANAGEMENT PLAN

APPENDIX B
CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

APPENDIX C
SITE INVESTIGATION & REMEDIATION REPORTS

APPENDIX D
COAGULANT, FLOCCULENT AND PH BALANCER SAFETY DATA SHEETS