



## APPENDIX 10

### MITIGATION AND MONITORING SCHEDULE



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1.

# SCHEDULE OF MITIGATION & MONITORING PROPOSALS

All mitigation and monitoring measures relating to the pre-commencement, construction, operational and decommissioning phases of the Proposed Project are set out in the NIS and associated appendices.

All mitigation which will be implemented during the various phases of the Proposed Project to protect the Natura 2000 sites and their qualifying interests are presented in Table 1-1 below.

All monitoring measures which will be implemented during the pre-commencement, construction, operational and decommissioning phases of the Proposed Project are outlined in Table 1-2. All monitoring measures were set out in the NIS and associated appendices. The monitoring proposals are presented in terms of the monitoring requirement, frequency of monitoring and the mechanism for reporting results where applicable. By presenting the monitoring proposals in the below format, it is intended to provide a monitoring schedule that can be reviewed and tracked during all phases of the Proposed Project to ensure all the required monitoring is completed as required.

It is intended that the CEMP will be updated where required prior to the commencement of construction to include all mitigation and monitoring measures, planning conditions and or alterations to the EIAR and application documents should they emerge during the course of the planning process and would be submitted to the Planning Authority for written approval prior to the commencement of development. Similarly the decommissioning plan will be updated and agreed with the local authority prior to the commencement of any decommissioning works.

1.1

## NIS Mitigation Measures

Table 1-1 Schedule of Mitigation Measures

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
<b>Pre-construction</b>					
MM1	Potential for Indirect Effects on European Sites - Otter	Section 6.2 of the AASR/NIS	<ul style="list-style-type: none"> <li>➤ Prior to the commencement of construction works associated with the installation of watercourse crossings, a pre-commencement otter survey will be undertaken to ensure that no otter holts/breeding sites have been established since the original surveys were undertaken (TII, 2008). This will be undertaken by a suitably qualified ecologist in accordance with standard best practice guidance.</li> <li>➤ Should any otter holt be identified within 150m of the proposed works during the pre-construction surveys, it will be subject to exclusion procedures as outlined in the TII guidelines (2006) in consultation with the NPWS.</li> </ul>		
<b>Construction</b>					
MM2	Potential for Indirect Effects on European Sites – Deterioration of Water Quality (Sediment Control)	6.2.1.1.1 in the AASR/NIS  Appendix 6	<p>A Surface Water Management Plan is provided in Appendix 6 of the NIS/AASR</p> <p><b>Proposed Mitigation by Avoidance:</b></p> <p>The key mitigation measure during the construction phase is the avoidance of sensitive hydrological features where possible, by application of suitable buffer zones (i.e. 50m to main watercourses, and 10m to main drains). All of the key Proposed Project areas are located significantly away from the delineated 50m watercourse buffer zones with the exception of the upgrading of the existing watercourse crossing, new drain crossing and upgrades to existing site access tracks. Additional control measures, which are outlined further on in this section, will be undertaken at these locations.</p>		

			<p>The large setback distance from sensitive hydrological features means that adequate room is maintained for the proposed drainage mitigation measures (discussed below) to be properly installed and operate effectively. The proposed buffer zone will:</p> <ul style="list-style-type: none"> <li>➤ Avoid physical damage (river/stream banks and river/stream beds) to watercourses and associated release of sediment;</li> <li>➤ Avoid excavations within close proximity to surface watercourses;</li> <li>➤ Avoid the entry of suspended sediment from earthworks into watercourses; and,</li> <li>➤ Avoid the entry of suspended sediment from the construction phase drainage system into watercourses, achieved in part by ending drain discharge outside the buffer zone and allowing percolation across the vegetation of the buffer zone.</li> </ul> <p>In addition, and as outlined above the Proposed Project drainage system will link into the existing bog drainage system, and discharge from the bog via existing large settlement ponds, which are some distance from the Proposed Project footprint. As such, there is significant distance for wind farm related surface water to travel before it actually reaches the edge of the bogs and joins any receiving waters outside of the overall bog boundaries.</p> <p><b>Proposed Mitigation by Design:</b></p> <p>There is an extensive network of drains already existing at the Proposed Project site. The existing drainage infrastructure is operating in accordance with IPC licence requirements, with environmental monitoring and silt control measures being implemented. The existing drainage system at the Proposed Project site will be maintained and expanded locally as required for use within the Proposed Project drainage system. The key elements are the upgrading and improvements to water treatment elements, such as in-line controls and treatment systems, including wind farm related silt traps and settlement ponds.</p> <p>The elements of interaction with existing drains will be as follows:</p> <ul style="list-style-type: none"> <li>➤ Interceptor drains will convey clean runoff water around works areas to the existing downstream drainage system (field drains and main drains). Where required, interceptor</li> </ul>		
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			<p>drains will be installed in advance of any construction works commencing. This will ensure that clean water is kept clean by diverting surface water flow around excavations, construction areas and temporary storage areas. Where possible (depending on orientation), existing field drains can be used as interceptors drains;</p> <ul style="list-style-type: none"> <li>➤ Collector drains will be used to intercept and collect runoff from construction areas (from turbine base/hardstand areas, construction compounds, and the substation). During the construction phase temporary settlement ponds will be used to attenuate and treat runoff from the construction areas (from turbine base/hardstand areas, construction compounds, and the substation) and treated water will then discharge into existing field drains and main drains. Temporary settlement ponds will be removed at the end of the construction phase (end of high risk period), and wind farm runoff will discharge into existing field drains and main drains;</li> <li>➤ During the construction phase, temporary silt traps (silt fences) will be used as an additional water protection measure around the existing bog drainage network, particularly where works are proposed within 50m of a natural watercourse. The silt fences will be placed in the existing drains downstream of construction works, and the associated construction area run-off water will be diverted into proposed interceptor drains, or culverted under/across the works area;</li> <li>➤ During the construction phase, dewatering silt bags will also be used as required. They can be used downgradient of turbine bases, where temporary pumping is required. Discharge from dewatering silt bags will flow into settlement ponds and treated water from settlement ponds will outfall to existing field drains and main drains;</li> <li>➤ Within the proposed site layout there are section of proposed floating road between turbine infrastructure. In these sections, and depending on intermediate topography, a collector drain (dirty water system as described above) may be used during construction stage, or over the edge (OTE) drainage will occur. Over the edge drainage allows runoff from access tracks to flow into local field drains and be managed via the existing site drainage system. OTE drainage will only occur where topography allows, and it is only proposed in areas of low risk and remote from outfall locations (at least 150m from bog outfall locations. Silt traps and check dams will be installed in field drains downstream of OTE drainage areas, and these will provide attenuation and treatment of dirty water; and,</li> <li>➤ Culverts will be required where site roads and proposed hardstands cross the main bog drainage networks. These will be installed with a minimum gradient to reduce the</li> </ul>		
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			<p>entrainment of suspended solids. All culverts will be inspected regularly and maintained where appropriate. Culverts will remain in-situ during the operational phase of the Proposed Project.</p> <p><b>Water Treatment Train</b></p> <p>If the discharge water from construction areas fails to be of a high quality, then a filtration treatment system (such as a ‘siltbuster’ or similar equivalent treatment train (sequence of water treatment processes)) will be used to filter and treat all surface discharge water collected in the dirty water drainage system. This will apply throughout the construction phase.</p> <p><b>Silt Fences:</b></p> <p>Silt fences will be emplaced within drains down-gradient of all construction areas. Silt fences are effective at removing heavy settleable solids. This will act to prevent entry to the existing drainage network of sand and gravel-sized sediment, released from excavation of mineral sub-soils of glacial and glacio-fluvial origin and entrained in surface water runoff. Regular inspection and maintenance of these structures during construction phase is critical to their functioning to stated purpose. They will remain in place throughout the entire construction phase.</p> <p><b>Silt Bags:</b></p> <p>Silt bags will be used where small to medium volumes of water need to be pumped from excavations (e.g. the proposed underpass locations). As water is pumped through the bag, most of the sediment is retained by the geotextile fabric allowing filtered water to pass through.</p> <p><b>Pre-emptive Site Drainage Management:</b></p> <p>The works programme for the construction stage of the development will also take account of weather forecasts and predicted rainfall in particular. Large excavations and movements of peat/subsoil or peat stripping will be suspended or scaled back if heavy rain is forecast. The</p>		
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		<p>extent to which works will be scaled back or suspended will relate directly to the amount of rainfall forecast.</p> <p>The following forecasting systems are available and will be used on a daily/weekly basis, as required, to allow site staff to direct proposed and planned construction activities:</p> <ul style="list-style-type: none"> <li>➤ General Forecasts: Available on a national, regional and county level from the Met Éireann website (<a href="http://www.met.ie/forecasts">www.met.ie/forecasts</a>). These provide general information on weather patterns including rainfall, wind speed and direction but do not provide any quantitative rainfall estimates;</li> <li>➤ MeteoAlarm: Alerts to the possible occurrence of severe weather for the next 2 days. Less useful than general forecasts as only available on a provincial scale;</li> <li>➤ 3-hour Rainfall Maps: Forecast quantitative rainfall amounts for the next 3 hours but does not account for possible heavy localised events;</li> <li>➤ Rainfall Radar Images: Images covering the entire country are freely available from the Met Éireann website (<a href="http://www.met.ie/latest/rainfall_radar.asp">www.met.ie/latest/rainfall_radar.asp</a>). The images are a composite of radar data from Shannon and Dublin airports and give a picture of current rainfall extent and intensity. Images show a quantitative measure of recent rainfall. A 3-hour record is given and is updated every 15 minutes. Radar images are not predictive; and,</li> <li>➤ Consultancy Service: Met Éireann provide a 24-hour telephone consultancy service. The forecaster will provide interpretation of weather data and give the best available forecast for the area of interest.</li> </ul> <p>Using the safe threshold rainfall values will allow planned works to be safely executed (from a water quality perspective) in the event of forecasting of an impending high rainfall intensity event.</p> <p>Earthworks should be suspended if forecasting suggests any of the following is likely to occur:</p> <ul style="list-style-type: none"> <li>➤ &gt;10 mm/hr (i.e. high intensity local rainfall events);</li> <li>➤ &gt;25 mm in a 24-hour period (heavy frontal rainfall lasting most of the day); or,</li> <li>➤ &gt;half monthly average rainfall in any 7 days.</li> </ul>		
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		<p>Prior to earthworks being suspended the following control measures should be completed:</p> <ul style="list-style-type: none"> <li>&gt; Secure all open peat/spoil excavations.</li> <li>&gt; Provide temporary or emergency drainage to prevent back-up of surface runoff; and,</li> <li>&gt; Avoid working during heavy rainfall and for up to 24 hours after heavy events to ensure drainage systems are not overloaded.</li> </ul> <p><b>Management of Runoff from Peat and Subsoil Storage Areas:</b></p> <p>It is proposed that excavated peat and spoil will be used for landscaping close to its original extraction point. Peat will also be stored in the designated Peat Deposition Areas, whilst excess peat and spoil will be placed in the proposed onsite borrow pits. During the initial placement of peat and spoil, silt fences, straw bales and biodegradable geogrids will be used to control surface water runoff from the storage areas as required. Interceptor and collector drains will be used at storage areas. ‘Siltbuster’ treatment trains will be employed if previous treatment is not to a high quality.</p> <p><b>Timing of Site Construction Works:</b></p> <p>Construction of the site drainage system will only be carried out during periods of low rainfall, and therefore minimum runoff rates. This will minimise the risk of entrainment of suspended sediment in surface water runoff, and transport via this pathway to surface watercourses. Construction of the drainage system during this period will also ensure that attenuation features associated with the drainage system will be in place and operational for all subsequent construction works.</p> <p><b>Proposed Drainage and Water Quality Monitoring</b></p> <p>An inspection and maintenance plan for the on-site drainage system will be prepared in advance of commencement of any works and will be included in the CEMP. Regular inspections of all installed drainage systems will be undertaken, especially after heavy rainfall,</p>		
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			<p>to check for blockages, and ensure there is no build-up of standing water in parts of the systems where it is not intended.</p> <p>Any excess build-up of silt levels at dams, the settlement ponds, or any other drainage features that may decrease the effectiveness of the drainage feature, will be removed.</p> <p>During the construction phase field testing (visual, supplemented with pH, electrical conductivity, temperature, dissolved oxygen and turbidity monitoring), sampling and laboratory analysis of a range of parameters<sup>1</sup> with relevant regulatory limits and EQSs will be undertaken for each primary watercourse, and specifically following heavy rainfall events (i.e. weekly, monthly and event-based). The data will be processed and analysed and works will cease if elevated turbidity concentrations are recorded. In this event, all upstream silt traps and drainage routes will be inspected to identify the cause of the elevated turbidity levels. Works will not recommence until any issues have been resolved and the turbidity concentrations have returned to background concentrations.</p> <p>Where (temporary) deep excavations are proposed, cut-off drains or existing field drains will be used to reduce the amount of surface water entering the excavation. This will be the case around turbine base excavations.</p>		
MM3	Potential for Indirect Effects on European Sites – Deterioration of Water Quality (Control of Hydrocarbons)	6.2.1.1.2 in the AASR/NIS Appendix 6	<ul style="list-style-type: none"> <li>&gt; All plant will be inspected and certified to ensure they are leak free and in good working order prior to use on site;</li> <li>&gt; On-site re-fuelling of machinery will be carried out using a mobile double skinned fuel bowser. The fuel bowser, a double-axel custom-built refuelling trailer or truck will be re-filled off site and will be towed/driven around the site to where machinery are located. The 4x4 jeep/fuel truck will also carry fuel absorbent material and pads in the event of any accidental spillages. The fuel bowser will be parked on a level area in the construction compound when not in use and only designated trained and competent operatives will be authorised to refuel plant on site. Mobile measures such as drip trays and fuel absorbent mats will be used during all refuelling operations;</li> </ul>		

<sup>1</sup> example suite: pH (field measured), Electrical Conductivity (field measured), temperature (field measured), Dissolved Oxygen (field measured), Turbidity (NTU) (sonde measured), Flow (m/s), Total Suspended Solids (mg/l), Ammonia, Nitrite (NO<sub>2</sub>) (mg/l), Ortho-Phosphate (P) (mg/l), Nitrate (NO<sub>3</sub>) (mg/l), Phosphorus (unfiltered) (mg/l), Chloride (mg/l), and BOD (mg/l).

			<ul style="list-style-type: none"> <li>➤ Fuels stored on site will be minimised. Any storage areas will be bunded appropriately for the fuel storage volume during the construction phase;</li> <li>➤ The electrical control building will be bunded appropriately to the volume of oils likely to be stored and to prevent leakage of any associated chemicals and to groundwater or surface water. The bunded area will be fitted with a storm drainage system and an appropriate oil interceptor;</li> <li>➤ The plant used will be regularly inspected for leaks and fitness for purpose;</li> </ul> <p>An emergency plan for the construction phase to deal with accidental spillages will be contained within the Construction Environmental Management Plan (CEMP) (Appendix 4-4). Spill kits will be available to deal with accidental spillages</p>		
MM4	Potential for Indirect Effects on European Sites – Deterioration of Water Quality (Control of Cement-Based products)	6.2.1.1.3 in the AASR/NIS Appendix 6	<ul style="list-style-type: none"> <li>➤ No batching of wet-cement products will occur on site. Ready-mixed supply of wet concrete products and where possible, emplacement of pre-cast elements, will take place;</li> <li>➤ Where possible pre-cast elements for culverts and concrete works will be used;</li> <li>➤ No washing out of any plant used in concrete transport or concreting operations will be allowed on-site;</li> <li>➤ Where concrete is delivered on site, only the chute will be cleaned, using the smallest volume of water possible. No discharge of cement contaminated waters to the construction phase drainage system or directly to any artificial drain or watercourse will be allowed. Chute cleaning water is to be isolated in temporary lined wash-out pits located near proposed site compounds. These temporary lined wash-out pits will be removed from the site at the end of the construction phase;</li> <li>➤ Any washing out of concrete pumping plant will also be into the temporary lined wash-out pits;</li> <li>➤ Will use weather forecasting to plan dry days for pouring concrete; and,</li> </ul> <p>Will ensure pour site is free of standing water and plastic covers will be ready in case of sudden rainfall event</p>		
MM5	Indirect Effects on European Sites – Deterioration of Water Quality	6.2.1.1.4 in the AASR/NIS	<ul style="list-style-type: none"> <li>➤ There are a total of 5 no. proposed construction compounds associated with the Proposed Project;</li> </ul>		

	(Wastewater Control)	Appendix 6	<ul style="list-style-type: none"> <li>➤ During the construction phase, a self-contained port-a-loo with an integrated waste holding tank will be used at each of the site compounds, maintained by the providing contractor, and removed from site on completion of the construction works;</li> <li>➤ Water supply for the site office and other sanitation will be brought to site and removed after use from the site to be discharged at a suitable off-site treatment location; and,</li> <li>➤ No water or wastewater will be sourced on the site, nor discharged to the site.</li> </ul>		
MM6	Potential for Indirect Effects on European Sites – Deterioration of Water Quality (Piled Foundations)	6.2.1.1.5 in the AASR/NIS  Appendix 6	<p>Proposed mitigation measures relative to piling works will comprise:</p> <ul style="list-style-type: none"> <li>➤ Where driven piles are used, they will have a cross section without re-entrant angles;</li> <li>➤ Strict QA/QC procedures for piling works will be followed;</li> <li>➤ Piles will be kept vertical during piling works;</li> <li>➤ Good workmanship will be employed during all piling works; and,</li> <li>➤ Where required use bentonite seal to prevent upward/downward movement of surface water/groundwater.</li> </ul>		
<b>Operation</b>					
MM7	Potential for Indirect Effects on European Sites – Deterioration of Water Quality	6.2.1.2 in the AASR/NIS	<p><b>Proposed Mitigation by Design:</b></p> <p>As the part of the Proposed Project drainage design, it is proposed that runoff from the proposed infrastructure will be collected locally in new proposed silt traps, settlement ponds and vegetated buffer areas prior to release into the existing drainage network. The new proposed drainage measures will then create significant additional attenuation to what is already present. The operational phase drainage system will be installed and constructed in conjunction with the existing bog drainage network and will include the following:</p> <ul style="list-style-type: none"> <li>➤ Interceptor drains will be installed up-gradient of all proposed infrastructure to collect clean surface runoff, in order to minimise the amount of runoff reaching areas where suspended sediment could become entrained. It will then be directed to areas where it can be re-distributed into downstream field drains;</li> </ul>		

			<ul style="list-style-type: none"> <li>➤ Collectors drains will be used to gather runoff from access roads and turbine hardstanding areas of the site, likely to have entrained suspended sediment, and channel it to new local settlement ponds for sediment settling;</li> <li>➤ On sections of access road transverse drains ('grips') will be constructed where appropriate in the surface layer of the road to divert any runoff off the road into swales/roadside drains;</li> <li>➤ Check dams will be used along sections of access road drains to intercept silts at source. Check dams will be constructed from a 4/40mm non-friable crushed rock;</li> <li>➤ Settlement ponds, emplaced downstream of access road sections and at proposed turbine locations, will buffer volumes of runoff discharging from the drainage system during periods of high rainfall, by retaining water until the storm hydrograph has receded, thus reducing the hydraulic loading to existing drains;</li> <li>➤ Settlement ponds will be designed in consideration of the greenfield runoff rate, existing bog settlement ponds will also buffer discharges from Lemanaghan Bog; and,</li> <li>➤ Finally, all surface water runoff from the Proposed Project will have to pass through the settlement ponds at the existing bog outfall locations.</li> </ul> <p>The potential for effects due to the release of wastewater will be managed by the installation of a sealed underground holding tank for effluent (wastewater) from the substation building. The tank shall be routinely emptied by a licensed contractor. A level sensor will be installed in the tank which shall be linked to the on-site SCADA system. If the level of the tank contents rise to a predetermined 'high' level a warning shall appear on the overall SCADA system for the site and automatic notification shall be sent to the facility manager. A formal service agreement will be entered into with a suitably permitted waste contractor, in relation to the servicing and de-sludging of the wastewater holding tank on site. There will be no discharge of wastewater to ground at the site, and no potential to impact surface water quality.</p> <p>Proposed mitigation measures (by design) for the control of hydrocarbons:</p> <ul style="list-style-type: none"> <li>➤ Onsite re-fuelling of normal operational vehicles will not be carried out during the operational phase of the development. These vehicles will be refuelled offsite;</li> </ul>		
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			<ul style="list-style-type: none"> <li>➤ Fuels stored on site will be minimised and any hydrocarbons stored on-site will be banded. The bund capacity will be sufficient to contain 110% of the storage tank’s maximum capacity;</li> <li>➤ The substation will be banded appropriately to the volume of oils likely to be stored, and to prevent leakage of any associated chemicals and to groundwater or surface water. The banded area will be fitted with a storm drainage system and an appropriate oil interceptor;</li> <li>➤ Oil in the turbine transformers will be fully banded within the enclosed turbine and as such, there is no potential pathway to the water environment i.e. the pathway has been blocked;</li> <li>➤ Any plant used during the operational phase will be regularly inspected for leaks and fitness for purpose; and,</li> <li>➤ Spill kits will be available to deal with accidental spillages.</li> </ul> <p>Mitigation measures to avoid the release of suspended solids in surface waters will be implemented as per the construction phase mitigation measures outlined in MM2.</p>		
<b>Decommissioning</b>					
MM8	Potential for Indirect Effects on European Sites – Deterioration of Water Quality	6.2.1.3 in the AASR/NIS	<p>The potential impacts associated with decommissioning of the Proposed Project will be similar to those associated with construction but of a reduced magnitude, due to the reduced scale of the proposed decommissioning works in comparison to construction phase works.</p> <p>The same mitigation to prevent significant impacts on water quality during construction will be applicable to the decommissioning phase.</p>		

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## NIS Monitoring Measures

Table 1-2 Schedule of Monitoring

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Frequency	Reporting Period	Responsibility
<b>Pre-Construction Phase</b>						
MX1	Drainage Maintenance	Appendix 6	An inspection and maintenance plan for the drainage system onsite will be prepared in advance of commencement of any works on the Proposed Project. Regular inspections of all installed drainage features will be carried out, especially after heavy rainfall, to check for blockages, and ensure there is no build-up of standing water at parts of the systems where it is not intended. The inspection of the drainage system will be the responsibility of the Environmental Clerk of Works (EnvCoW) or the Project Hydrologist.	On going	Monthly	Project Hydrologist
<b>Construction Phase</b>						
MX2	Reactive Site Drainage Management	Appendix 6	<p>The effectiveness of drainage measures designed to minimise runoff entering works areas and capture and treat potentially silt-laden water from the works areas, will be monitored continuously by the ECoW on-site. The Ecological Clerk of Works (ECoW) or Project Hydrologist will respond to changing weather, ground or drainage conditions on the ground as the project proceeds, to ensure the effectiveness of the drainage design is maintained.</p> <p>The ECoW or Project Hydrologist will respond to changing weather, ground or drainage conditions on the ground as the Proposed Project proceeds, to ensure the effectiveness of the drainage design is maintained in so far as is possible. This may require the installation of additional check dams, interceptor drains or swales as deemed necessary on-site. The drainage design may have to be modified on</p>	As required	As Necessary	ECoW

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Frequency	Reporting Period	Responsibility
			the ground as necessary, and the modifications will draw on the various features outlined above in whatever combinations are deemed to be most appropriate to situation on the ground as a particular time.			
MX3	Surface Water Quality Monitoring	Appendix 6	<p>Daily inspection and recording of surface water management system by on-site ECoW and immediate remedial measures to be carried out as required and works temporarily ceased if a retained stormwater/sediment load is identified to have the potential to migrate from the site. The following periodic inspection regime will be implemented:</p> <ul style="list-style-type: none"> <li>➤ Daily general visual inspections of site operations and inspections of all drainage infrastructure within the site and in the surrounding area by the ECoW or a suitably qualified and competent person as delegated by the ECoW;</li> <li>➤ Inspections to include all elements of drainage infrastructure to ensure the system is operating correctly and to identify and maintenance that is required. Any changes, such as discolouration, odour, oily sheen or litter will be noted and corrective action will be implemented. High risk locations such as settlement ponds will be inspected daily. Daily inspections checks will be completed on plant and equipment, and whether materials such as straw bales or oil absorbent materials need replacement;</li> <li>➤ Event based inspections by the ECoW as follows: <ul style="list-style-type: none"> <li>○ &gt;10 mm/hr (i.e. high intensity localised rainfall event);</li> <li>○ &gt;25 mm in a 24-hour period (heavy frontal rainfall lasting most of the day); or,</li> <li>○ Rainfall depth greater than monthly average in 7 days (prolonged heavy rainfall over a week).</li> </ul> </li> </ul>	Daily	As Necessary	ECoW / Project Hydrologist

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Frequency	Reporting Period	Responsibility
			<ul style="list-style-type: none"> <li>➤ Monthly site inspections by the Project Hydrologist/ ECoW during construction phase;</li> <li>➤ Quarterly site inspections by the Project Hydrologist/ ECoW after construction for a period of one year following the construction phase; and,</li> <li>➤ A written record will be maintained or available on-site within this Construction Environmental Management Plan (CEMP) which will be maintained on-site during the construction phase.</li> <li>➤ Daily inspection and recording of surface water management system by on-sit ECoW and immediate remedial measures to be carried out as required and works temporarily ceased if a retained stormwater/sediment load is identified to have the potential to migrate from the site.</li> <li>➤ Complete ongoing inspection and monitoring of the development, particularly in areas of drainage control in support of the ECoW in monitoring the effectiveness of the drainage design as it is implemented on-site.</li> </ul>			
MX4	Surface Water Quality Monitoring	Appendix 6	<ul style="list-style-type: none"> <li>➤ During the construction phase field testing (visual, supplemented with pH, electrical conductivity, temperature, dissolved oxygen and turbidity monitoring), sampling and laboratory analysis of a range of parameters<sup>2</sup> with relevant regulatory limits and EQSs will be undertaken for each primary watercourse, and specifically following heavy rainfall events (i.e. weekly, monthly and event-based).</li> <li>➤ The data will be processed and analysed and works will cease if elevated turbidity concentrations are recorded. In this event, all</li> </ul>	As Required	Monthly	ECoW

<sup>2</sup> example suite: pH (field measured), Electrical Conductivity (field measured), temperature (field measured), Dissolved Oxygen (field measured), Turbidity (NTU) (sonde measured), Flow (m/s), Total Suspended Solids (mg/l), Ammonia, Nitrite (NO<sub>2</sub>) (mg/l), Ortho-Phosphate (P) (mg/l), Nitrate (NO<sub>3</sub>) (mg/l), Phosphorus (unfiltered) (mg/l), Chloride (mg/l), and BOD (mg/l).

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Frequency	Reporting Period	Responsibility
			upstream silt traps and drainage routes will be inspected to identify the cause of the elevated turbidity levels. Works will not recommence until any issues have been resolved and the turbidity concentrations have returned to background concentrations.			
<b>Operational Phase</b>						
MX5	Drainage Inspections	Appendix 6	➤ The drainage system will be monitored in the operational phase until such a time that all areas that have been reinstated become re-vegetated and the natural drainage regime has been restored.	Monthly	Monthly	ECoW
MX6	Post Construction Monitoring	Appendix 6	➤ Monthly sampling for laboratory analysis for the range of parameters adopted during pre-commencement and construction phases will continue quarterly after construction is complete. The Project Hydrologist will monitor and advise on the readings received from the testing laboratory and monitoring will only cease once the hydrologist is satisfied that the chemical and biological monitoring results show that there is no adverse impact on the quality of surface water within the natural watercourses draining the Site.	Quarterly	As required	Project Hydrologist
<b>Decommissioning Phase</b>						
MX7	Decommissioning	Appendix 2	➤ The EnvCoW will maintain responsibility for monitoring the decommissioning works and Contractors/Sub-contractors from an environmental perspective. The EnvCoW will act as the regulatory interface on environmental matters. The Site Manager will be responsible for reporting to and liaising with OCC and other statutory bodies as required.	End of Operational Life	As Required	Site Manager/ EnvCoW



Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Frequency	Reporting Period	Responsibility
MX8	Decommissioning	Appendix 2	> The Site Manager in consultation with the EnvCoW will be responsible for employing the services of a suitably qualified ecologist and any other suitably qualified professionals as required throughout the decommissioning works.	End of Operational Life	As Required	Site Manager/ EnvCoW