

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Relevant Legislation and Guidelines
Air				
S3.8.1	<p><u>Air Pollution Control (Construction Dust) Regulation & Good Site Practices</u></p> <ul style="list-style-type: none"> • Dust Suppression by watering of construction area at least 10 times per day; • Provide covering of 50% of open area with impervious materials or concrete paving; • Limited working period to 180days. • Provision pavement to Construction access road with concrete paving and provide wheel washing facility at entrance and exit. • Skip hoist for material transport should be totally enclosed by impervious sheeting; • Vehicle washing facilities should be provided at every vehicle exit point; • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore; • Where a site boundary adjoining a road, streets or other areas accessible to the public, hoarding of not less than 2.4, high from ground level should be provided along the entire length except for a site entrance or exit; • Every main haul road should be paved with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet; • The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials; • Every stock of more than 20 bags of cements should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides; • All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet; • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites; and • The load of dusty materials carried by vehicles leaving a construction site should be covered entirely by clean impervious sheeting to ensure dusty materials do not leak from the vehicle. • Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading points, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods; • Imposition of speed controls for vehicles on unpaved site roads. Ten kilometres per hour is the recommended limit; • Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs; and • Instigation of an environmental auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise. 	Work site / During the construction period	Contractor	Air Pollution Control (Construction Dust) Regulation
Health				

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S4.5.38 S4.5.40	Implementation of mitigation measures: <ul style="list-style-type: none"> • Dust Suppression by watering of construction area at least 10 times per day; • Provide covering of 50% of open area with impervious materials or concrete paving; • Limited working period to 180days. • Provision pavement to Construction access road with concrete paving and provide wheel washing facility at entrance and exit. • Signage and training shall be provided to inform the Contractor and respective personnel on-site to avoid ingestion of chemical/contaminants through the consumption of PFA soil and leachate water from nearby water streams. • The Contractor shall provide shower facilities to workers to wash away any PFA attached to skin surfaces. • Provision of soil cover on top of ash lagoon • Sufficient ventilation through introduction of forced and natural ventilation to the interior of the site office 	Work Site/ During Construction Period	Contractor	
S4.6.35 – S4.6.38	Monitoring should be conducted to warn any abnormal radon concentration during the decommissioning period. The monitoring schedule are as follow: <ul style="list-style-type: none"> • Baseline measurement - The indoor and outdoor radon concentration shall be measured by professional persons in accordance with EPD ProPECC Note PN 1/99; • Impact measurement - During the decommissioning period, the radon concentration shall be measured monthly by professional persons in accordance with EPD ProPECC Note PN 1/99. 	Work Site/ During Construction Period	Contractor	ProPECC Note PN 1/99
Noise				
S5.4	Implementation of further good site practices: <ul style="list-style-type: none"> • Only well-maintained plant should be operated on-site and plants should be serviced regularly during the construction period; • Mobile plant, if any, should be sited as far from NSRs as possible; • Plant known to emit noise strongly in one direction should, wherever possible, be properly orientated so that the noise is directed away from the nearby NSRs; • Use of site hoarding as a noise barrier to screen noise at low level NSRs; • Machines and plant that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum; and • Any material stockpiles and other structures should be effectively utilised, wherever practicable, to screen the noise from on-site construction activities. 	Work site / During the decommissioning and construction period	Contractor	
Water				

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S6.7	<p><u>Drainage and Construction Site Runoff</u> The site practices outlined in ProPECC PN 1/94 “Construction Site Drainage” should be followed to minimize surface runoff and the chance of erosion. These practices include the following items:</p> <ul style="list-style-type: none"> • At the start of the site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct storm water to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. • Boundaries of earthworks should be surrounded by dykes or embankments for flood protection, as necessary. • Sand/silt removal facilities such as sand/silt traps and sediment basins should be provided to remove sand/silt from runoff to meet the requirements of the TM-DSS. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction. • Slope Stabilization works and construction of surface drainage outfall shall be carried out during dry season to minimize surface and storm water runoff discharge into the water channel Silt fences shall be erected to prevent contaminated surface runoff from entering the water channel • Silt surface runoff and construction site drainage should be discharged into storm drains via silt removal facilities. • During rainstorm, exposed slope/soil surfaces should be covered by tarpaulin or other means, as far as practicable. Other measures that need to be implemented before, during and after rainstorms are summarized in ProPECC PN 1/94. • All exposed PFA/earth areas will be covered immediately after the earthworks have been completed • Earthwork final surfaces should be well compacted and subsequent permanent work or surface protection should be immediately performed. • Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms. • All vehicles should be cleaned before leaving the works area to ensure no earth, mud and debris is deposited on roads. An adequately designed and sited wheel washing bay should be provided at every exit. The wheel washing facility should be designed to minimize the intake of surface water (rainwater). Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. • Regular environmental audit on the construction site shall be provided to ensure an effective control of any malpractices and to achieve continual improvement of environmental performance on site. Thus, no residual water quality impact during construction phase is anticipated. 	Work site / During the decommissioning and construction period	Contractor	EIAO-TM; ProPECC PN 1/94; WPCO

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	<u>General Construction Activities</u> <ul style="list-style-type: none"> Construction solid waste should be collected, handled and disposed of properly to avoid entering to the nearby watercourses and public drainage system. Rubbish and litter from construction sites should also be collected to prevent spreading of rubbish and litter from the site area. It is recommended to clean the construction sites on a regular basis. 	Work site / During the decommissioning construction period	Contractor	EIAO-TM; ProPECC PN 1/94; WPCO
	There is a need to apply to EPD for a discharge license for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge license. All the run-off and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the Technical Memorandum on Standards for Effluent Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS). The beneficial uses of the treated effluent for other on-site activities such as dust suppression and general cleaning etc., can minimize water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO license which is under the ambit of regional office EPD.	Work site / During the decommissioning and construction period	Contractor	EIAO-TM; ProPECC PN 1/94; WPCO
	<u>Accidental Spillage</u> Contractor must register as a chemical waste producer of chemical wastes that would be produced from construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	Work site / During the decommissioning and construction period	Contractor	EIAO-TM; ProPECC PN 1/94; WPCO; WDO
	Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas which appropriately equipped to control these discharges.	Work site / During the decommissioning and construction period	Contractor	EIAO-TM; ProPECC PN 1/94; WPCO; WDO
	Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. All fuel tanks and storage areas should be sited on sealed areas in order to prevent spillage of fuels and solvents to the nearby watercourses. All waste oils and fuels should be collected in designated tanks prior to disposal.	Work site / During the decommissioning and construction period	Contractor	EIAO-TM; ProPECC PN 1/94; WPCO; WDO
	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: <ul style="list-style-type: none"> Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area. 	Work site / During the decommissioning and construction period	Contractor	EIAO-TM; ProPECC PN 1/94; WPCO; WDO

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	<u>Sewage Effluent</u> <ul style="list-style-type: none"> Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor would be responsible for appropriate disposal and maintenance of these facilities. 	Work site / During the decommissioning and construction period	Contractor	EIAO-TM; ProPECC PN 1/94; WPCO
	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	Work site / During the decommissioning and construction period	Contractor	EIAO-TM; ProPECC PN 1/94; WPCO
Waste Management and Land Contamination				
S7.6.2	<p>The requirements as stipulated in the ETWB TC(W) No.19/2005 Environmental Management on Construction Sites and the other relevant guidelines should be included in the Particular Specification for the Contractor as appropriate.</p> <p>The Contractor should be requested to submit a Waste Management Plan (WMP) prior to the commencement of construction work, in accordance with the ETWB TC(W) No.19/2005 so as to provide an overall framework of waste management and reduction. The WMP should include:</p> <ul style="list-style-type: none"> Waste management policy; Record of generated waste; Waste reduction target; Waste reduction programme; Role and responsibility of waste management team; Benefit of waste management; Analysis of waste materials; Reuse, recycling and disposal plans; Transportation process of waste products; and Monitoring and action plan. <p>The waste management hierarchy below should be strictly followed. This hierarchy should be adopted to evaluate the waste management options in order to maximise the extent of waste reduction and cost reduction. The records of quantities of waste generated, recycled and disposed (locations) should be properly documented.</p>	Work site / During the decommissioning and construction period	Contractor	

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S7.6.6	<p><u>Good Site Practices</u> It is recommended that the following good operational practices should be adopted to minimize waste management impacts:</p> <ul style="list-style-type: none"> • Obtain the necessary waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354) and Waste Disposal (Chemical Waste) (General) Regulation; • Nomination of an approved person to be responsible for good site practice, arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site; • Use of a waste haulier licensed to collect specific category of waste; • A trip-ticket system should be included as one of the contractual requirements and implemented by the Environmental Team to monitor the disposal of solid wastes at landfills, and to control fly tipping. References should be made to DEVB TC(W) No.6/2010 • Training of site personnel in proper waste management and chemical waste handling procedures; • Separation of chemical wastes for special handling and appropriate treatment at a licensed facility; • Routine cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • Provision of sufficient waste disposal points and regular collection for disposal; • Adoption of appropriate measures to minimize windblown litter and dust during transportation of waste, such as covering trucks or transporting wastes in enclosed containers; and • Implementation of a recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites). 	Work Site/ During Construction Period	Contractor	Waste Disposal Ordinance (Cap. 354); Waste Disposal (Chemical Waste) (General) Regulation; DEVB TC(W) No.6/2010
S7.6.7	<p><u>Waste Reduction Measures</u> Good management and control can prevent the generation of significant amounts of waste. It is recommended that the following good operational practices should be adopted to ensure waste reduction:</p> <ul style="list-style-type: none"> • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • Encourage collection of aluminum cans, plastics bottles and packaging material (e.g. carton boxes) and office paper by individual collectors. Separate labelled bins should be provided to help segregate this waste from other general refuse generated by the work force; and • Any unused chemicals or those with remaining functional capacity should be reused as far as practicable. • Use of reusable non-timber formwork to reduce the amount of C&D materials; • Prior to disposal of construction waste, wood, steel and other metals will be separated to a practical extent, for re-use and/or recycling to reduce the quantity of waste to be disposed of to landfill; • Proper storage and site practices to reduce the potential for damage or contamination of construction materials; and • Plan and stock construction materials carefully to reduce amount of waste generated and avoid unnecessary generation of waste. • 	Work Site/ During Construction Period	Contractor	

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S7.6.12-7.6.14	<p><u>Chemicals and Chemical Wastes Handling & Storage</u></p> <ul style="list-style-type: none"> • Chemicals and chemical wastes should only be stored in suitable containers in purpose-built areas. • The storage of chemical wastes should comply with the requirements of the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for storage of chemical wastes will: <ul style="list-style-type: none"> ○ Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; ○ Have a capacity of less than 450 L unless the specifications have been approved by the EPD; and • Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations. The storage areas for chemicals and chemical wastes shall have an impermeable floor or surface. The impermeable floor/surface shall possess the following properties: <ul style="list-style-type: none"> ○ Be clearly labelled and used solely for the storage of chemical waste; ○ Be enclosed on at least 3 sides; ○ Have an impermeable floor and bunding of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest; ○ Have adequate ventilation; ○ Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and ○ Be arranged so that incompatible materials are appropriately separated. 	Work Site/ During Construction Period	Contractor	
Ecological (Terrestrial and Aquatic Impact Assessment)				

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S9.10	<p>Implementation of mitigation measures:</p> <ul style="list-style-type: none"> • Hoarding of not less than 2.4m high should be set up as a precautionary measure along the boundary of the works areas between the Middle and the West Ash Lagoon and between the northern edge of the ash platform and the 30m water channel to shield the Little Grebe, if any, from the disturbance of human activities during decommissioning and construction phase. • The hoarded area should be inspected weekly for any damage by illegal access and to evaluate the effectiveness of the measures. Damage sighted should be reported to the site manager and damaged hoarding should be repaired by the Contractor as soon as possible. • Silt fences shall be erected and permanent fencing shall be erected along the top of the embankment as a physical barrier to minimize the human disturbance to the Little Grebes. • Vegetation shall be used as slope stabilization strategy during both design and construction stages. Vegetation such as trees, shrubs and groundcovers shall be planted along the embankment to reduce the slope's susceptibility to surface erosion and slump falls and act as sight and sound barriers to avoid human contact with the ecological activities at the water channel. • Any construction works at water channel shall only be conducted within the non-breeding season (i.e. November to March of the following year) to minimize any disturbance to nesting activities of Little Grebes. Scheduling of work items should be implemented during design stage. • Good site practices and precautionary measures should be implemented to avoid encroachment onto the nearby natural habitats, minimise disturbance to wildlife, and ensure good air and water quality which include but are not limited to the following: <ul style="list-style-type: none"> ○ Regular checking should be undertaken to ensure that the work site boundaries are not exceeded and that no damage occurs to surrounding areas; ○ Implementation of mitigation measures specified in ProPECC PN 1/94 to control site runoff and drainage at all work sites during construction; ○ Implementation of noise control measures at all construction sites to reduce impacts of construction noise to wildlife habitats adjacent works areas; ○ Implementation of dust control measures at all construction sites to minimise dust nuisance to adjacent wildlife habitats during construction activities; ○ Construction debris and spoil should be covered up and/or properly disposed of as soon as possible to avoid being washed into nearby waterbodies by rain; ○ Coverage of filled slopes and materials with tarpaulin sheet; ○ Construction effluent, site run-off and sewage should be properly collected and/or treated. Wastewater from a construction site should be managed with the following approach in descending order; ○ Placement of sand bags at fencing near the watercourse; ○ Proper locations for discharge outlets of wastewater treatment facilities well away from the aquatic habitats should be identified; and ○ Supervisory staff should be assigned to station on site to closely supervise and monitor the works. 	Work Site/ During Construction Period	Contractor	

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S9.12	Ecological Monitoring <ul style="list-style-type: none"> Baseline monitoring to update the Little Grebe condition before commencement of the decommissioning works. The survey will update the latest activities of the Little Grebe within and surrounding of the site. Subject to the baseline survey findings, the works area will be adjusted to avoid the future Little Grebe location. 	Before commencement of the decommissioning works	Contractor	
S9.12	Ecological Monitoring <ul style="list-style-type: none"> Ecological monitoring in the West Ash Lagoon, the remaining part of Middle Ash Lagoon and the 30m wide water channel would be conducted monthly during construction until completion of construction. If any nestling activities are observed in the 30m wide water channel, no works along the man-made channel should be allowed to avoid potential disturbance. Access to the West Ash Lagoon should be restricted except with permission from the Engineer Representative during this period. 	Work Site/ During Construction Period	Contractor	
Landfill Gas				
S10.6	<u>Keep abreast of the works programme of the WENT Landfill Extensions</u> <ul style="list-style-type: none"> Contractor shall keep abreast of the works programme of the WENT Landfill Extensions project and liaise with the Contractor of WENT Landfill Extension project as necessary to make sure that the landfill gas (LFG) cut-off trench barrier along the boundary will be completed in a timely manner. 	Work Site / During the design, construction and operation phase	Contractor	
S10.6.2	<u>Appointment of Safety Officer</u> <ul style="list-style-type: none"> Appoint a properly trained safety officer and provide with appropriate equipment to measure and monitor LFG hazard. The monitoring frequency and areas to be monitored should be set down prior to commencement of ground-works either by the Safety Officer or an approved and appropriately qualified person. 	Work Site / During the construction phase	Contractor	LFG Hazard Assessment Guidance Note (EPD/TR8/97)
S10.6.2	<u>Safety Measures - Excavation</u> <ul style="list-style-type: none"> Staff should receive appropriate training on working in areas susceptible to landfill gas, fire and explosion hazards. Excavation procedures and code of practice should be implemented. 	Work Site / During the construction phase	Contractor	LFG Hazard Assessment Guidance Note (EPD/TR8/97)
S10.6.3	<u>Safety Measures – Enclosed Spaces</u> <ul style="list-style-type: none"> Site offices should be provided with ventilation system, and be raised clear of the ground by a minimum of 500mm. Safety notices should be posted warning of potential landfill gas hazards within these site offices. 	Enclosed Spaces / During construction phase	Contractor	LFG Hazard Assessment Guidance Note (EPD/TR8/97)
S10.6.4	<u>Safety Measures – Electrical Equipment</u> <ul style="list-style-type: none"> Any electrical equipment, such as motors and extension cords, should be intrinsically safe. 	Work Site / During the construction phase	Contractor	LFG Hazard Assessment Guidance Note (EPD/TR8/97)
S10.6.4	<u>Safety Measures – Fire Safety</u> <ul style="list-style-type: none"> Adequate fire safety equipment should be provided on site. Workers and visitors should be notified of the potential fire hazards. Safety notices should be posted around the site warning the anger and potential hazards. 	Work Site / During the construction phase	Contractor	LFG Hazard Assessment Guidance Note (EPD/TR8/97)

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S10.6.4	<u>Safety Measures – Confined Spaces</u> <ul style="list-style-type: none"> Precautionary measures should include ensuring that staff members are aware of the potential hazards of working in confined spaces, and that appropriate monitoring procedures are in place to prevent hazards in confined spaces. 	Confined Spaces at Work Site / During the construction phase	Contractor	LFG Hazard Assessment Guidance Note (EPD/TR8/97)
S10.6.2	<u>Monitoring</u> <ul style="list-style-type: none"> The works area should be monitored for methane, carbon dioxide and oxygen using appropriately calibrated portable gas detection equipment. The monitoring frequency and areas to be monitored shall be set down prior to commencement of ground-works. Depending on the results of the measurements, actions required will vary. As a minimum these should encompass those actions specified in Table 10.6 of the EIA Report. 	Work Site / During the construction phase	Contractor	LFG Hazard Assessment Guidance Note (EPD/TR8/97)