

Annex 9A

## Implementation Schedule of Recommended Mitigation Measures

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Note: Chapters 1 to 2 of the EIA report present the background information of the Project and Project Description. Chapters 3 to 8 of the EIA report present the EIA findings and mitigation measures, as described below with cross-reference to the EIA report. Chapters 9 & 10 summarize the environmental monitoring and audit requirements and provide a conclusion along with a summary of the environmental outcomes of the EIA.

\* O = Operation; D = Decommissioning of the TLEM; CoP = Completion of Project

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Duration of the measure	Implementation Stage (O, D, CoP*)?	Relevant Legislation & Guidelines
		<i>Ecological Impact (Operation &amp; Completion of Project)</i>					
S3.5		<ul style="list-style-type: none"> <li>Reinstatement planting should be carried out at the site according to the XRL EIA Vegetation Survey Report for Tai Shu Ha Road West and the Tree Planting and Landscape Plan TLP-10: Works in Yuen Long District (Tai Shu Ha) (hereafter TLP).</li> </ul>	<p>To restore the habitat back to borrow area reinstatement plantation, as it was prior to the construction of the TLEM for the MTRC's use.</p> <p>To ensure the proposed mitigation recommended in the approved XRL EIA for loss of green areas affected by the XRL Project, is implemented.</p>	The reinstatement planting will be implemented by DHK. The maintenance agent will be DLO as confirmed in the TLP.	Tai Lam Explosives Magazine (TLEM) site/ During - site restoration prior to mitigation planting, Planting & Establishment period of at least 12 months.	CoP	<p>XRL EIA Vegetation Survey Report for Tai Shu Ha Road West</p> <p>Tree Planting and Landscape Plan TLP-10: Works in Yuen Long District (Tai Shu Ha)</p> <p>DEVB TCW No. 10/2013 – Tree Preservation (supersedes ETWB TC(W) No. 3/2006 )</p>
		<i>Noise Impact (Operation and Decommissioning)</i>					
S4.4.1		<p>No adverse impacts anticipated.</p> <ul style="list-style-type: none"> <li>For good practice, adopt general noise control measures, as listed in <i>Recommended Clauses for Construction Contracts – Section 3 - Noise Control</i> during decommissioning</li> </ul>	To ensure good site practices are adopted and noise generation minimized during decommissioning	Contractor for DHK	Approximately one month during decommissioning of the TLEM	D	<i>Recommended Clauses for Construction Contracts – Section 3 - Noise Control</i>
		<i>Air Quality (Operation and Decommissioning)</i>					
S5		<ul style="list-style-type: none"> <li>Not applicable (n/a) – no adverse impacts anticipated.</li> </ul>	n/a	n/a	n/a	n/a	n/a

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		<i>Waste Management (Operation and Decommissioning)</i>					
S6.5		<ul style="list-style-type: none"> <li>Good site management practice will be adopted by the contractors of the Project and waste on-site will be properly segregated to increase the potential for reuse and recycling.</li> <li>General refuse is removed from the Project Site regularly (i.e. once per day).</li> </ul>	Avoid adverse environmental impacts related to handling and disposal of waste.	DHK	Tai Lam Explosives Magazine (TLEM) site/ During operation of TLEM & approximately one month during decommissioning of the TLEM	O, D	<i>Waste Disposal Ordinance (WDO) (Cap 354); Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap 354N); Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C); Land (Miscellaneous Provisions) Ordinance (Cap 28); and Public Health and Municipal Services Ordinance (Cap 132) - Public Cleansing and Prevention of Nuisances Regulation.</i>
S6.5		<ul style="list-style-type: none"> <li>Chemical refuse will be properly stored and disposed of separately to general waste.</li> </ul>	Avoid contamination by chemical waste.	Licensed Chemical Waste Collector for DHK	Tai Lam Explosives Magazine (TLEM) site/ During operation of TLEM & approximately one month during decommissioning of the TLEM	O, D	<i>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes (1992), EPD, Hong Kong Government</i>

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		<i>Other (Operation and Decommissioning)</i>					
S7.1		<p>No adverse impacts anticipated. For good measure adopt the following good practice measures:</p> <ul style="list-style-type: none"> <li>Surface run-off from construction site should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels or earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels at site boundaries should be provided where necessary to intercept storm run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.</li> </ul>	Minimize construction site runoff during decommissioning	Contractor for DHK	TLEM site /Approximately one month during decommissioning of the TLEM	D	<i>Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN1/94)</i>
S7.1		<ul style="list-style-type: none"> <li>Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.</li> </ul>	Minimize construction site runoff during decommissioning	Contractor for DHK	TLEM site /Approximately one month during decommissioning of the TLEM	D	<i>Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN1/94)</i>
S7.1		<ul style="list-style-type: none"> <li>Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.</li> </ul>	Minimize construction site runoff during decommissioning	Contractor for DHK	TLEM site /Approximately one month during Decommissioning of the TLEM	D	<i>Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN1/94)</i>

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S7.1		<ul style="list-style-type: none"> <li>Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.</li> </ul>	Minimize construction site runoff during decommissioning	Contractor for DHK	TLEM site / Approximately one month during decommissioning of the TLEM	D	<i>Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN1/94)</i>
S7.1		<ul style="list-style-type: none"> <li>Precautions and actions, as stipulated in Appendix A2 of <i>ProPECC PN1/94</i>, should be taken at any time of year when rainstorms are likely, when a rainstorm is imminent or forecast, or during and after rainstorms.</li> </ul>	Minimize construction site runoff during decommissioning	Contractor for DHK	TLEM site / Approximately one month during Decommissioning of the TLEM	D	<i>Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN1/94)</i>
S7.1		<ul style="list-style-type: none"> <li>To minimize erosion of exposed soil in between the removal of paved area and the re-vegetation / plantation, exposed soil should be covered with geotextile promptly after the removal works.</li> </ul>	Minimize construction site runoff and soil erosion during decommissioning	Contractor for DHK	TLEM site / Approximately one month during Decommissioning of the TLEM	D	-
		<b>Hazard to Life (Operation - Storage)</b>					
S8.9.1		<ul style="list-style-type: none"> <li>Ensure the security plan addresses different alert security levels. The corresponding security procedure should be implemented with respect to prevailing security alert status announced by the Government.</li> </ul>	Reduce opportunity for arson/ deliberate initiation of explosives.	DHK	TLEM site / Throughout operation of the Project	O	-
S8.9.1 & S8.9.2 & S8.9.3		<ul style="list-style-type: none"> <li>Emergency plan (i.e. magazine operational manual) shall be followed and amended if necessary to address uncontrolled fire in magazine area and transport. The case of fire near an explosive carrying truck in jammed traffic should also be covered. Drill of the emergency plan should be carried out at regular intervals.</li> </ul>	Minimize risk of uncontrolled fire in TLEM and along transport route	DHK	For TLEM site and Transport route / Throughout operation of the Project	O	-

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S8.9.1		<ul style="list-style-type: none"> <li>Adverse weather working guideline should be followed and amended if necessary to clearly define procedure for transport explosives during thunderstorm.</li> </ul>	Minimize explosive truck accident frequency.	DHK	TLEM site / Throughout operation of the Project	O	-
S8.9.1		<ul style="list-style-type: none"> <li>The Magazine storage quantities need to be reported on a monthly basis</li> </ul>	Ensure that the two day storage capacity is not exceeded	Contractor for DHK	TLEM site / Throughout operation of the Project	O	Dangerous Goods Ordinance
S8.9.2		<ul style="list-style-type: none"> <li>A suitable work control system should be followed and amended if necessary, such as an operational manual including Permit-to-Work system</li> </ul>	Ensure work activities undertaken during the operation of the Magazine are properly controlled.	DHK	For TLEM site / Throughout operation of the Project	O	-
S8.9.2		<ul style="list-style-type: none"> <li>Good house-keeping within the Magazine</li> </ul>	Ensure combustible materials are not allowed to accumulate.	Contractor for DHK	For TLEM site / Throughout operation of the Project	O	-
S8.9.2		<ul style="list-style-type: none"> <li>Good housekeeping outside the Magazine stores to be followed.</li> </ul>	To ensure combustibles (including vegetation) are removed and reduce risk and severity of any accidental fire onsite.	Contractor for DHK	For TLEM site / Throughout operation of the Project	O	-
S8.9.2		<ul style="list-style-type: none"> <li>The Magazine shall be without open drains, traps, pits or pockets into which any molten ammonium nitrate could flow and be confined in the event of a fire.</li> </ul>	Reduce risk of severity of accidental fire and contamination of site.	DHK	For TLEM site / Throughout operation of the Project	O	-
S8.9.2		<ul style="list-style-type: none"> <li>The Magazine building shall be regularly checked for water seepage through the roof, walls or floor.</li> </ul>	Ensure explosives being stored remain dry.	Contractor for DHK	For TLEM site / Throughout operation of the Project	O	-
S8.9.2		<ul style="list-style-type: none"> <li>Caked explosives shall be disposed of in an appropriate manner.</li> </ul>	Ensure general safe practice	Contractor for DHK	For TLEM site / Throughout operation of the Project	O	-

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S8.9.3		<ul style="list-style-type: none"> <li>If disposal is required for small quantities, it should be made in a controlled and safe manner by a Registered Shotfirer.</li> </ul>	To reduce the risk during explosives transport	Registered Shotfirer for DHK	For TLEM site / Throughout operation of the Project	O	-
S8.9.2		<ul style="list-style-type: none"> <li>Delivery vehicles shall not be permitted to remain within the secured fenced off magazine store area</li> </ul>	Avoid accidents involving vehicles within the site boundary.	Contractor for DHK	For TLEM site / Throughout operation of the Project	O	-
S8.9.2		<ul style="list-style-type: none"> <li>A speed limit within the magazine area should be enforced</li> </ul>	Reduce the risk of a vehicle impact or incident within the Magazine area.	Contractor for DHK	For TLEM site / Throughout operation of the Project	O	-
S8.9.2		<ul style="list-style-type: none"> <li>Traffic Management should be implemented within the Magazine site, to ensure that no more than one (1) vehicle will be loaded at any time.</li> </ul>	Avoid accidents involving multiple vehicles within the site boundary.	Contractor for DHK	For TLEM site / Throughout operation of the Project	O	-
<b><i>Hazard to Life (Operation - Transport)</i></b>							
S8.9.1		<ul style="list-style-type: none"> <li>Truck design should comply with the Requirements for Approval of an Explosives Delivery Vehicle (CEDD 2) and limit the amount of combustibles in the cabin. The fuel carried in the fuel tank should also be minimised to reduce the duration of any fire.</li> </ul>	Ensure delivery vehicle is as safe as possible.	Contractor for DHK	Transport vehicle/ Throughout operation of the Project	O	-
S8.9.1		<ul style="list-style-type: none"> <li>Implement a dedicated training programme for both the driver and his attendants, including regular briefing sessions, implementation of a defensive driving attitude.</li> </ul>	Minimize explosive truck accident frequency.	DHK	Vehicle driver & attendants for Transport route/ Throughout operation of the Project	O	-
S8.9.1		<ul style="list-style-type: none"> <li>As far as practicable combine explosive deliveries for a given work area</li> </ul>	Reduce number of journeys required	Contractor for DHK	Transport route/ Throughout operation of the Project	O	-

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S8.9.1		<ul style="list-style-type: none"> <li>Only the required quantity of explosives for a particular blast should be transported.</li> </ul>	Avoid the return of unused explosives to the Magazine.	Contractor for DHK	Transport route/ Throughout operation of the Project	O	-
S8.9.1		<ul style="list-style-type: none"> <li>Whenever practicable, a minimum headway between two consecutive truck convoys of 10 minutes is recommended and separation of vehicles should be maintained during the whole trip.</li> </ul>	Minimize explosive truck accident severity.	Contractor for DHK	Transport route/ Throughout operation of the Project	O	-
S8.9.1		<ul style="list-style-type: none"> <li>Implement a better emergency response and training to make sure the adequate fire extinguishers are used and attempt is made to evacuate the area of the incident or securing the explosive load if possible.</li> <li>All explosive vehicles should be equipped with the required amount and type of fire extinguishers and shall be agreed with Mines Division.</li> </ul>	Minimize explosive truck fire involvement frequency.	Contractor for DHK	Transport route/ Throughout operation of the Project	O	-
S8.9.3		<ul style="list-style-type: none"> <li>Detonators shall not be transported in the same vehicle with other Class 1 explosives and separation of vehicles should be maintained during the trip.</li> </ul>	Minimize explosive truck accident frequency.	Contractor for DHK	Transport vehicle/ Throughout operation of the Project		-
S8.9.3		<ul style="list-style-type: none"> <li>Location for stopping and unloading from truck to be provided as close as possible to shaft, free from dropped loads, hot work, etc. during time of unloading.</li> </ul>	To ensure that the risks from the proposed explosives storage and transport would not be unacceptable	Contractor for DHK	End of Transport route/ Throughout operation of the Project	O	-
S8.9.3		<ul style="list-style-type: none"> <li>Develop procedure to ensure that parking space on the site is available for the explosive truck. Confirmation of parking space should be communicated to truck drivers before delivery. If parking space on site cannot be secure, delivery should not commence.</li> </ul>	To ensure that the risks from the proposed explosives storage and transport would not be unacceptable	Contractor for DHK	End of Transport route/ Throughout operation of the Project	O	-
S8.9.3		<ul style="list-style-type: none"> <li>Ensure lining is provided within the transportation box on the vehicle and in good condition before transportation.</li> </ul>		Contractor for DHK	Transport vehicle/ Throughout operation of the Project	O	-



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S8.9.3		<ul style="list-style-type: none"> <li>Ensure that packaging of detonators remains intact until handed over at blasting site.</li> </ul>	To meet the ALARP requirement.	Contractor for DHK	End of Transport route/ Throughout operation of the Project	O	-
S8.9.3		<ul style="list-style-type: none"> <li>Emergency plan to include activation of fuel and battery isolation switches on vehicle when fire breaks out.</li> </ul>	Prevent fire spreading and reducing likelihood of prolonged fire leading to explosion.	Contractor for DHK	Transport vehicle/ Throughout operation of the Project	O	-
S8.9.3		<ul style="list-style-type: none"> <li>Ensure that cartridged emulsion packages are damage free before every trip.</li> </ul>	To meet the ALARP requirement.	Contractor for DHK	Transport route/ Throughout operation of the Project	O	-
S8.9.3		<ul style="list-style-type: none"> <li>Ensure that explosives will be offloaded and stored away from the railway protection area according to the MTRCL railway protection area plan.</li> </ul>	To meet the ALARP requirement.	Contractor for DHK	The three worksites (i.e. Mid-Ventilation Adit, North Portal and South Portal)/ Throughout operation of the Project	O	-

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S8.9.3		<p>Vehicles should meet Licenced Vehicle Safety Requirements including:</p> <ul style="list-style-type: none"> <li>• Mobile telephone equipment;</li> <li>• Battery isolation switch;</li> <li>• Front mounted exhaust with spark arrestor;</li> <li>• Fuel level should be kept as far as possible to the minimum level required for the transport of explosives;</li> <li>• Minimum 1 × 9 kg water based AFFF fire extinguisher to be provided;</li> <li>• Minimum 1 × 9 kg dry chemical powder fire extinguisher to be provided;</li> <li>• Horizontal fire screen on cargo deck and vertical fire screen mounted at least 150mm behind the drivers cab and 100mm from the steel cargo compartment, the vertical screen shall protrude 150mm in excess of all three (3) sides of the steel cargo compartment;</li> <li>• Cigarette lighter removed;</li> <li>• Two (2) battery powered torches for night deliveries.</li> </ul>	Prevent fire spreading and reducing likelihood of prolonged fire leading to explosion.	Contractor for DHK	Transport vehicle/ Throughout operation of the Project	O	CEDD's <i>Guidance Note on Requirements for Approval of an Explosive Delivery Vehicle</i>
S8.9.3		<p>Vehicles shall be dedicated explosive transport vehicles and should be maintained in good operating condition;</p> <ul style="list-style-type: none"> <li>• Daily checks on tyres and vehicle integrity.</li> <li>• Regular monthly vehicle inspections for fuel system, exhaust system, brakes, electrics, battery, cooling system and engine oil leaks.</li> <li>• Vehicle log book in which monthly inspections and maintenance requirements are recorded</li> </ul>	Ensure vehicle remains as safe as possible	Contractor for DHK	Transport vehicle/ Throughout operation of the Project	O	-

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S8.9.3		<ul style="list-style-type: none"> <li>• Drivers should be selected based on good safety record, and medical checks. Use only experienced driver(s) with good safety record.</li> <li>• It is recommended that drivers be registered by the Commissioner of Mines; over the age of 25 years with proven accident free record; have more than seven (7) year driving experience without suspension; .hold a Driving License for the class of vehicle for at least one (1) year; adopt a safe driving practice including having attended a defensive driving course; pass a medical check and are assessed as fit to drive explosives vehicles; and are not dependent on banned substances.</li> <li>• Drivers should attend relevant training courses recognized by the Commissioner of Mines, including but not limited to: the laws and Regulations relating to the transport of explosives: and Security and safe handling during the transport of explosives.</li> <li>• Drivers should attend training courses provided by the explosives manufacturer or distributor, covering:               <ul style="list-style-type: none"> <li>- explosives identification;</li> <li>- explosion hazards; and</li> <li>- explosives sensitivity;</li> <li>- dangers which could be caused by the types of explosives;</li> <li>- packaging, labelling and characteristics of the types of explosives;</li> <li>- the use of fire extinguishers and firefighting procedures; and</li> <li>- emergency response procedures in case of accidents.</li> </ul> </li> </ul>	Minimize explosive truck accident frequency and/ or severity.	Contractor for DHK	Vehicle driver for Transport route / Throughout operation of the Project	O	-

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S8.9.3		<ul style="list-style-type: none"> <li>The Driver will also be responsible for various matters as listed in the EIA, including having a full set of Material Safety Data Sheets (MSDS) for each individual explosive aboard the vehicle and for the particular journey, etc.</li> <li>The MSDS and Removal Permit (where applicable) shall be produced to any officer of the Minds Division of CEDD upon request.</li> </ul>	Minimize explosive truck accident frequency and/ or severity.	Contractor for DHK	Vehicle driver for Transport route/ Throughout operation of the Project	O	-
S8.9.3		<ul style="list-style-type: none"> <li>Explosive Vehicle Attendants shall:                             <ul style="list-style-type: none"> <li>- Be the assistant to the driver in normal working conditions and in case of any emergency</li> <li>- Be conversant with the emergency response procedures</li> <li>- Be competent to use the fire extinguishers and the vehicle emergency cut-off switches</li> <li>- At least one of the vehicle attendant(s) should be equipped with a mobile phone and the relevant MSDS and emergency response plan</li> </ul> </li> </ul>	Reduce number of journeys required	Contractor for DHK	Vehicle driver attendants for Transport route/ Throughout operation of the Project	O	-
S8.9.3		<p>For explosive selection, the following should be considered:</p> <ul style="list-style-type: none"> <li>Cartridged Emulsions with perchlorate formulation should be avoided</li> <li>Cartridged Emulsions with high water content should be preferred.</li> </ul>	To meet the ALARP requirement.	Contractor for DHK	For TLEM site and Transport route / Throughout operation of the Project	O	-

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