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來函檔號  
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**Environmental Protection Department**

**Branch Office**

28th Floor, Southorn Centre,  
130 Hennessy Road,  
Wan Chai, Hong Kong.



**環境保護署分處**

香港灣仔  
軒尼詩道  
一百三十號  
修頓中心廿八樓

4 December 2015

Water Supplies Department,

**Environmental Impact Assessment (EIA) Ordinance, Cap. 499  
Application for Environmental Permit**

**Project Title: Desalination Plant at Tseung Kwan O**  
**(Application No. AEP-503/2015)**

I refer to your above application received on 11 November 2015 for an environmental permit under Section 10(1) of the EIA Ordinance.

Pursuant to Section 10(5) of the EIA Ordinance, I now issue the attached Environmental Permit (No. EP-503/2015) for your use.

Under Section 15 of the Ordinance, the Environmental Permit will be placed on the EIA Ordinance Register. It will also be placed on the EIA Ordinance website (<http://www.epd.gov.hk/eia/>).

Please note that if you are aggrieved by any of the conditions imposed in this Permit, you may appeal under Section 17 of the EIA Ordinance within 30 days of receipt of this Permit.

If you have any queries, please contact our Mr. Victor YEUNG at 2835 1102.

Yours faithfully,

(Louis P. L. CHAN)

Principal Environmental Protection Officer  
(Regional Assessment)  
for Director of Environmental Protection

Encl. - Environmental Permit No. EP-503/2015

ENVIRONMENTAL IMPACT ASSESSMENT ORDINANCE  
(CHAPTER 499)  
SECTION 10  
環境影響評估條例  
(第 499 章)  
第 10 條

ENVIRONMENTAL PERMIT TO CONSTRUCT AND OPERATE  
A DESIGNATED PROJECT  
建造及營辦指定工程項目的環境許可證

PART A (MAIN PERMIT)  
A 部 (許可證主要部分)

Pursuant to Section 10 of the Environmental Impact Assessment Ordinance (the Ordinance), the Director of Environmental Protection (the Director) grants this environmental permit to the **Water Supplies Department** (hereinafter referred as the "Permit Holder") to construct and operate the designated project described in Part B subject to the conditions specified in Part C. The issue of this environmental permit is based on the documents, approvals or permissions described below:

根據環境影響評估條例(本條例)第 10 條的規定，環境保護署署長(署長)將本環境許可證批予**水務署**(下稱“許可證持有人”)以建造及營辦 B 部 所說明的指定工程項目，但須遵守 C 部 所列明的條件。本環境許可證依據下列文件、批准或許可而簽發：

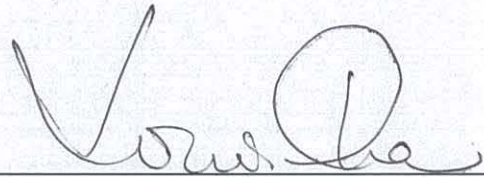
Application No. 申請書編號	AEP-503/2015
Document in the Register: 登記冊上的文件：	1. Desalination Plant at Tseung Kwan O – Feasibility Study (Register No. AEIAR-192/2015) : <ul style="list-style-type: none"><li>- Environmental Impact Assessment (EIA) Report (July 2015) [Hereafter referred to as "EIA Report"]</li><li>- Environmental Monitoring and Audit (EM&amp;A) Manual (July 2015) [Hereafter referred to as "EM&amp;A Manual"]</li><li>- Executive Summary (July 2015)</li></ul> 1. 將軍澳海水化淡廠(登記冊檔號：AEIAR-192/2015): <ul style="list-style-type: none"><li>- 環境影響評估報告(2015年7月)[下稱“環評報告”]</li><li>- 環境監察審核手冊(2015年7月)[下稱“環監手冊”]</li><li>- 行政摘要(2015年7月)</li></ul>



	<p>2. The Director's letter of approval of the EIA Report dated 4 November 2015 (Reference : (31) in EP 2/N8/E/120 Pt.2)</p> <p>2. 署長於 2015 年 11 月 4 日發出批准環評報告的信件 (檔案編號: (31) in EP 2/N8/E/120 Pt.2))</p> <p>3. Application for environmental permit submitted by the Permit Holder on 11 November 2015 (Application No. AEP-503/2015) [Hereinafter referred to as the "Application"]</p> <p>3. 許可證持有人於 2015 年 11 月 11 日 提交的環境許可證申請文件 (申請書編號: AEP-503/2015) [下稱「申請書」]</p>
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4 December 2015

Date  
日期



(Louis P. L. CHAN)

Principal Environmental Protection Officer  
for Director of Environmental Protection  
環境保護署署長  
(首席環境保護主任陳檳林代行)



**PART B (DESCRIPTIONS OF DESIGNATED PROJECT)**

**B 部 (指定工程項目的說明)**

Hereunder is the description of the designated project mentioned in Part A of this environmental permit (hereinafter referred to as the "Permit"):

下列為本環境許可證(下稱"許可證")A部所提及的指定工程項目的說明:

<b>Title of Designated Project</b> 指定工程項目的名稱	Desalination Plant at Tseung Kwan O [This designated project is hereinafter referred to as "the Project".]  將軍澳海水化淡廠 [本指定工程項目下稱"工程項目"]
<b>Nature of Designated Project</b> 指定工程項目的性質	The Project covers the following Designated Project elements under Part I, Schedule 2 of the EIAO :  - Water treatment works with a capacity of more than 100,000 m <sup>3</sup> per day (Item E.2 of Part 1 of Schedule 2 of the EIAO); - A dangerous goods godown with a storage capacity exceeding 500 tonnes (Item K.13 of Part 1 of Schedule 2 of the EIAO); and - Earthworks partly in an existing country park (Item Q.1 of Part 1 of Schedule 2 of the EIAO)  根據環評條例附表 2 第 1 部，本工程項目包含了下列屬於指定工程項目的元素：  - 濾水能力超過每天 100,000 立方米的濾水廠（「環評條例」附表 2 第 1 部 E.2 項）； - 儲存量超過 500 公噸的危險品倉庫（「環評條例」附表 2 第 1 部 K.13 項）；和 - 部份位於現有的郊野公園內的土木工程（「環評條例」附表 2 第 1 部 Q.1 項）
<b>Location of Designated Project</b> 指定工程項目的地點	Tseung Kwan O (TKO) Area 137 將軍澳 137 區  The location and the layout plan of the Project are shown in <u>Figure 1</u> and <u>Figure 2</u> attached to this Permit respectively. 工程項目的位置及平面圖分別載於本許可證夾附的圖 1 及圖 2。
<b>Scale and Scope of Designated Project</b> 指定工程項目的規模和範圍	The scope of the Project includes the following key components/works:-  (i) a desalination plant in TKO Area 137 with a water production capacity of 135Mld expandable to an ultimate water production capacity up to 270Mld;  (ii) a dedicated trunk feed system including about 9km long water mains for the transfer of fresh water output from the desalination plant to the existing Tseung Kwan O Fresh Water Primary Service Reservoir in Po Lam.



	<p>(iii) natural slope mitigation works within the Clear Water Bay Country Park, which overlooks the northeast boundary of the desalination plant at TKO Area 137; and</p> <p>(iv) all the associated civil, structural, geotechnical, landscaping, electrical and mechanical works.</p> <p>工程項目的範圍包括以下的主要部份/工程：</p> <p>(i) 在將軍澳 137 區的一間每日食水產量達 13.5 萬立方米，並可在未來擴建至每日食水產量達 27 萬立方米的海水化淡廠；</p> <p>(ii) 一條長約 9 公里的專用輸水幹管系統，以便把海水化淡廠所生產的淡水輸送至現有的將軍澳食水主配水庫；</p> <p>(iii) 在接鄰將軍澳 137 區海水化淡廠位置東北面邊界的清水灣郊野公園內進行天然斜坡鞏固工程；及</p> <p>(iv) 所有相關的土木工程、結構工程、土力工程、景觀美化工程和機電工程。</p>
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**PART C (PERMIT CONDITIONS)**

**1. General Conditions**

- 1.1 The Permit Holder and any person working on the Project shall comply with all conditions set out in this Permit. Any non-compliance by any person may constitute a contravention of the Environmental Impact Assessment Ordinance (Cap. 499) and may become the subject of appropriate action being taken under the Ordinance.
- 1.2 The Permit Holder shall ensure full compliance with all legislation from time to time in force including, without limitation to, the Noise Control Ordinance (Cap. 400), Air Pollution Control Ordinance (Cap. 311), Water Pollution Control Ordinance (Cap. 358), Dumping at Sea Ordinance (Cap. 466) and Waste Disposal Ordinance (Cap. 354). This Permit does not of itself constitute any ground of defence against any proceedings instituted under any legislation or imply any approval under any legislation.
- 1.3 The Permit Holder shall make copies of this Permit together with all documents referred to in this Permit and the documents referred to in Part A of the Permit readily available at all times for inspection by the Director or his authorised officers at all sites/offices covered by this Permit. Any reference to the Permit shall include all documents referred to in the Permit and also the relevant documents in the Register.
- 1.4 The Permit Holder shall give a copy of this Permit to the person(s) in charge of the site(s) and ensure that such person(s) fully understands all conditions and all requirements incorporated in the Permit. The site(s) refers to site(s) of construction and operation of the Project and shall mean the same hereafter.
- 1.5 The Permit Holder shall display conspicuously a copy of this Permit on the Project site(s) at all site entrances/exits or at a convenient location for public's information at all times. The Permit Holder shall ensure that the most updated information about the Permit, including any amended permit, is displayed at such locations. If the Permit Holder surrenders a part or the whole of the Permit, the notice he sends to the Director shall also be displayed at the same location as the original Permit. The suspended, varied or cancelled Permit shall be removed from display at the Project site(s).
- 1.6 The Permit Holder shall construct and operate the Project in accordance with the project descriptions in Part B of this Permit.
- 1.7 The Permit Holder shall ensure that the Project is designed, constructed and operated in accordance with the information and all recommendations described in the approved EIA Report (Register No. AEIAR-192/2015); the application documents for Environmental Permit (Application No. AEP-503/2015); other relevant documents in the Register; and the information and mitigation measures described in this Permit, mitigation measures to be recommended in submissions that shall be deposited with or approved by the Director as a result of permit conditions contained in this Permit, and mitigation measures to be recommended under ongoing surveillance and monitoring activities during all stages of the Project. Where recommendations referred to in the documents of the Register are not expressly referred to in this Permit, such recommendations are nevertheless to be implemented unless expressly excluded or amended in this Permit.
- 1.8 All deposited submissions, as required under this Permit, shall be rectified and resubmitted in accordance with the comments, if any, made by the Director within one month of the receipt of the Director's comments or otherwise specified by the Director.
- 1.9 All submissions approved by the Director, all submissions deposited without comments by the Director, and all submissions rectified in accordance with comments by the Director under this Permit shall be construed as part of the permit conditions described in Part C of this Permit. Any



variation of the submissions shall be approved by the Director in writing or as prescribed in the relevant permit conditions. Any non-compliance with the submissions may constitute a contravention of the Environmental Impact Assessment Ordinance (Cap. 499). All submissions or any variation of the submissions shall be certified by the Environmental Team (ET) Leader and verified by the Independent Environmental Checker (IEC) referred to in Conditions 2.1 and 2.2 below before submitting to the Director under the Permit.

- 1.10 The Permit Holder shall release all finalized submissions, as required under this Permit, to the public by depositing copies in the Environmental Impact Assessment Ordinance Register Office, or in any other places, or any internet websites as specified by the Director, or by any other means as specified by the Director for public inspection. For this purpose, the Permit Holder shall provide sufficient copies of the submissions.
- 1.11 All submissions to the Director required under this Permit shall be delivered either in person or by registered mail to the Environmental Impact Assessment Ordinance Register Office (currently at 27/F, Southorn Centre, 130 Hennessy Road, Wanchai, Hong Kong). Electronic copies of all finalized submissions required under this Permit shall be prepared in Hyper Text Markup Language (HTML) (version 4.0 or later) and in Portable Document Format (PDF version 1.3 or later), unless otherwise agreed by the Director and shall be submitted at the same time as the hard copies.
- 1.12 The Director shall be notified in writing the commencement dates of construction and operation of the Project no later than one month prior to the respective commencement of construction and operation of the Project. The Director shall be notified in writing immediately if there is any change of the commencement dates of the construction and operation.
- 1.13 For the purpose of this Permit, "commencement of construction" does not include works related to site investigation, site clearance and preparation, or other works as agreed by the Director.

2. **Specific Conditions**

**Submissions to be Made or Measures to be Implemented before Construction of the Project**

***Employment of Environmental Team***

- 2.1 An Environmental Team (ET) shall be established by the Permit Holder as soon as any works stipulated in this Permit requiring their participation is required and in any case no later than 1 month before the commencement of construction of the Project. The ET shall not be in any way an associated body of the Contractor or the Independent Environmental Checker (IEC) for the Project. The ET shall be headed by an ET Leader. The ET Leader shall be a person who has at least 7 years of experience in environmental monitoring and auditing (EM&A) or environmental management. The ET Leader shall be working full time on-site during construction for the slope mitigation works as shown in Figure 3 and the submarine intake/outfall facilities as shown in Figure 4 of the Project. The ET and the ET Leader shall be responsible for the implementation of the EM&A programme in accordance with the EM&A requirements as contained in the EM&A Manual and its update as approved under Condition 3.1 of this Permit. The ET Leader shall keep a contemporaneous log-book of each and every instance or circumstance or change of circumstances, which may affect the compliance with the recommendations of the approved EIA Report (Register No. AEIAR-192/2015) and this Permit. The ET Leader shall notify the IEC within one working day of the occurrence of any such instance or circumstance or change of circumstances. The ET Leader's log-book shall be kept readily available for inspection by all persons assisting in supervision of the implementation of the recommendations of the approved EIA Report (Register No. AEIAR-192/2015) and this Permit or by the Director or his authorized officers. Failure to maintain records in the log-book, failure to discharge the duties of the ET Leader as defined in the EM&A Manual or failure to comply with this Condition would entitle the Director to require the Permit Holder by notice in writing to replace the ET Leader. Failure



by the Permit Holder to make replacement, or further failure to keep contemporaneous records in the log-book despite the employment of a new ET Leader may render the Permit liable to suspension, cancellation or variation.

***Employment of IEC***

- 2.2 An IEC shall be employed by the Permit Holder as soon as any works stipulated in this Permit requiring their participation and in any case no later than 1 month before commencement of construction of the Project. The IEC shall not be in any way an associated body of the Contractor or the ET for the Project. The IEC shall be a person who has at least 7 years of experience in EM&A or environmental management. The IEC shall be working full time on-site during construction for the slope mitigation works as shown in Figure 3 and the submarine intake/outfall facilities as shown in Figure 4 of the Project. The IEC shall be responsible for duties defined in the EM&A Manual and its update as approved under Condition 3.1 of this Permit, and shall audit the overall EM&A performance, including the implementation of all environmental mitigation measures, submissions required in the EM&A Manual, and any other submissions required under this Permit. In addition, the IEC shall be responsible for verifying the environmental acceptability of permanent and temporary works, relevant design plans and submissions under this Permit. The IEC shall verify the log-book(s) mentioned in Condition 2.1 of this Permit. The IEC shall notify the Director by fax, within one working day of receipt of notification from the ET Leader of each and every change of circumstances or non-compliance with the EIA Report (Register No. AEIAR-192/2015) and this Permit, which might affect the monitoring or control of adverse environmental impacts from the Project. In the case where the IEC fails to so notify the Director of the same, fails to discharge the duties of the IEC as defined in the EM&A Manual or fails to comply with this Condition, the Director may require the Permit Holder by notice in writing to replace the IEC. Failure to replace the IEC as directed or further failure to so notify the Director despite employment of a new IEC may render the Permit liable to suspension, cancellation or variation. Notification by the Permit Holder is the same as notification by the IEC for the purpose of this Condition.

***Employment of Qualified Ecologist for Updated Vegetation Survey***

- 2.3 The Permit Holder shall appoint a Qualified Ecologist who has at least 5 years of relevant experience to be responsible for carrying out the updated vegetation survey for slope mitigation works and preparing submission for the Project as required under Condition 2.7.

***Employment of Fisheries Specialist for Updated Fisheries Survey***

- 2.4 The Permit Holder shall appoint a Fisheries Specialist who has at least 5 years of relevant experience to be responsible for carrying out the updated fisheries survey and preparing submission for the Project as required under Condition 2.9.

***Management Organization of Main Construction Companies***

- 2.5 The Permit Holder shall, no later than 1 month before the commencement of construction of the Project, inform the Director in writing the management organization of the main construction companies and/or any form of joint ventures associated with the construction of the Project. The submitted information shall include at least an organization chart, names of responsible persons and their contact details.

***Submission of Construction Programme and Environmental Permit (EP) Submission Schedule***

- 2.6 The Permit Holder shall, no later than 1 month before the commencement of construction of the Project, submit 4 hard copies and one electronic copy of the construction programme showing the commencement and completion dates of major items of construction works to the Director for





record; together with the anticipated schedule of submissions for fulfilling the submission requirements as contained in this Permit. The Permit Holder shall inform the Director accordingly in writing in case of any subsequent changes of items contained in this submitted construction programme and EP Submission Schedule.

***Submission of Updated Vegetation Survey Report for Slope Mitigation Works***

2.7 To reduce ecological impact on plant species of conservation importance, including but not limited to *Marsdenia lachnostoma*, due to the slope mitigation works of the Project as shown in Figure 3, the Permit Holder shall, no later than 3 months before the commencement of site clearance works for the slope mitigation works, submit 4 hardcopies and 1 electronic copy of the Updated Vegetation Survey Report to the Director for approval. The Report shall include :-

- (i) details of updated vegetation survey including the survey methodology, duration and schedule;
- (ii) findings of the updated vegetation survey, particularly on species, numbers and locations of the plant species of conservation importance including but not limited to *Marsdenia lachnostoma*, identified within the works area of slope mitigation works;
- (iii) recommended protection and mitigation measures for the plant species of conservation importance as identified in the updated vegetation survey; and
- (iv) if transplantation is eventually proposed for the plant species of conservation importance, the transplantation proposal shall include the locations of reception sites for transplanted plants, methodology of transplantation and detailed schedule for post-transplantation monitoring and maintenance requirements.

The Updated Vegetation Survey Report shall be prepared by the Qualified Ecologist as appointed under Condition 2.3 and shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the approved EIA report (Register No. AEIAR-192/2015). All recommended mitigation measures as set out in the approved Vegetation Survey Report shall be fully and properly implemented. No site clearance works for the slope mitigation works of the Project shall be allowed prior to the approval of the Vegetation Survey Report, as well as completion of any protection/mitigation works or transplantation as proposed in (iii) and (iv) above.

The Permit Holder shall consult the Director of Agriculture, Fisheries and Conservation in preparing the Updated Vegetation Survey Report prior to the submission to the Director for approval.

***Submission of Detailed Design Plan for Slope Mitigation Works***

2.8 To reduce ecological impact on the Clear Water Bay Country Park due to the slope mitigation works of the Project as shown in Figure 3, the Permit Holder shall, no later than 3 months before the commencement of site clearance works for the slope mitigation works of the Project, submit 4 hardcopies and 1 electronic copy of the detailed Design Plan for Slope Mitigation Works to the Director for approval. The Detailed Design Plan shall be prepared in accordance with the conceptual plan contained in Figure 9.1 of the EIA Report (Register No. AEIAR-192/2015) and with reference to the guidelines and standards adopted by the Civil Engineering and Development Department. The Plan shall include :-

- (i) details on the design of the proposed flexible barriers, soil nailing and rock stabilization for slope mitigation works;
- (ii) landscape and visual mitigation measures for slope mitigation works; and



- (iii) recommended protection and mitigation measures to avoid felling of existing trees, to minimize ecological impact on plant species of conservation importance, including but not limited to *Marsdenia lachnostoma* within the country park.

Before submission to the Director, the Detailed Design Plan shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the EIA Report (Register No. AEIAR-192/2015). All recommended mitigation measures as set out in the approved Detailed Design Plan shall be fully and properly implemented.

The Permit Holder shall consult the Director of Agriculture, Fisheries and Conservation in preparing the Detailed Design Plan prior to the submission to the Director for approval.

#### ***Submission of Updated Fisheries Survey Report***

- 2.9 The Permit Holder shall, no later than 12 months before the commencement of marine works of the Project as shown in Figure 4, submit 4 hardcopies and 1 electronic copy of the Updated Fisheries Survey Report to the Director for approval. The Report shall include
- (i) details of the updated fisheries survey on the survey methodology, duration and timing;
  - (ii) findings of the updated fisheries survey on presence of any fish spawning and nursery ground in the vicinity of the planned locations and alignment of the seawater intake and submarine outfall; and
  - (iii) recommendation on the need of fine-tuning the detailed design of the locations and alignment of the seawater intake and submarine outfall facilities.

The Updated Fisheries Survey Report shall be prepared by the Fisheries Specialist as appointed under Condition 2.4 and shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the approved EIA report (Register No. AEIAR-192/2015). All recommended mitigation measures as set out in the approved Fisheries Survey Report shall be fully and properly implemented. No marine works of the Project shall be allowed prior to the approval of the Report.

The Permit Holder shall consult the Director of Agriculture, Fisheries and Conservation on the details of fisheries survey before commencement of the survey and in preparing the Updated Fisheries Survey Report prior to the submission to the Director for approval.

#### ***Submission of Silt Curtain Deployment Plan***

- 2.10 The Permit Holder shall, no later than 3 months before the commencement of marine works involving deployment of silt curtains of the Project, submit 3 hard copies and 1 electronic copy of the Silt Curtain Deployment Plan to the Director for record. The Plan shall include the construction programme and details on the design, operation and maintenance of silt curtain(s) to be deployed during the construction.

Before submission to the Director, the Silt Curtain Deployment Plan shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the EIA Report (Register No. AEIAR-192/2015). All measures recommended in the Silt Curtain Deployment Plan shall be fully and properly implemented for the Project.

#### ***Submission of Landscape and Visual Mitigation Proposal for Desalination Plant***

- 2.11 The Permit Holder shall, no later than 1 month before the commencement of construction of the desalination plant of the Project, submit 6 hard copies and 1 electronic copy of the landscape and visual mitigation proposal to the Director for approval. The proposal, with drawings in the scale



of 1:1000 or other appropriate scales as agreed by the Director, shall show the landscape and visual mitigation measures of the Project, and shall include at least the following information:

- (i) aesthetic landscape and architectural treatment for above ground structures;
- (ii) tree felling and preservation proposal showing quantity, plant species, location(s) and size of trees to be retained/transplanted/felled/compensated, and location(s) of transplanted trees;
- (iii) Landscape Plan showing location(s) of greening works including green roofs, roadside planting, vertical greening, screen planting, amenity planting, edge treatment along boundary and any other landscape enhancement to mitigate landscape impact of the Project.

Before submission to the Director, the Landscape and Visual Mitigation Proposal shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the EIA Report (Register No. AEIAR-192/2015). All measures recommended in the approved Proposal shall be fully and properly implemented and maintained for the Project.

***Submission of Detailed Design Plan for Chlorine and Carbon Dioxide Storage Tanks of Desalination Plant***

- 2.12 The Permit Holder shall, no later than 3 months before the commencement of construction of the desalination plant of the Project, submit 4 hard copies and 1 electronic copy of the Detailed Design Plan for storage tanks of chlorine and carbon dioxide to the Director for approval. The Plan shall show the design requirements/measures as shown in Table 1 of this Permit unless otherwise approved by the Director.

Before submission to the Director, the Detailed Design Plan shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the EIA Report (Register No. AEIAR-192/2015). All design requirements/measures recommended in the approved Detailed Design Plan shall be fully and properly implemented for the Project.

**Submissions to be Made or Measures to be Implemented during Construction of the Project**

***Measures for Mitigating Water Quality Impact from Dredging Works***

- 2.13 To minimize water quality impact due to the construction of submarine facilities of the Project, except for those sections of submarine intake and outfall structures as shown in Figure 4 of this Permit where dredging shall be required, trenchless method by use of micro-tunnelling or horizontal directional drilling method for construction of submarine intake and outfall facilities shall be used.
- 2.14 The dredging works for the submarine intake and outfall structures as shown in Figure 4 of this Permit shall not be carried out concurrently.
- 2.15 Closed grab dredger shall be employed for dredging. The dredging rate of the dredging works for the submarine intake structure as shown in Figure 4 shall not exceed 750 m<sup>3</sup> per day and 62 m<sup>3</sup> per hour. The dredging rate of the dredging works for the submarine outfall structure as shown in Figure 4 shall not exceed 3,500 m<sup>3</sup> per day and 291 m<sup>3</sup> per hour. Other than closed grab dredger, the use of other type(s) of dredger and the dredging rate shall be approved in writing by the Director before use.
- 2.16 Silt curtains surrounding the closed grab dredger and the dredging area shall be deployed during dredging in accordance with the Silt Curtain Deployment Plan submitted under Condition 2.10.



***Submission for Land Contamination Assessment***

- 2.17 Land contamination assessment for the temporary explosive magazine site as shown in Figure 5 of this Permit shall be carried out when the site is available for access. The Permit Holder shall,
- (i) no later than 1 month before the commencement of the land contamination site investigation, submit 3 hard copies and 1 electronic copy of Contamination Assessment Plan (CAP) to the Director for approval. The CAP shall include proposal with details of representative sampling and analysis required to determine the nature and extent of contamination;
  - (ii) no later than 1 month after the completion of the land contamination site investigation works, submit 3 hard copies and 1 electronic copy of Contamination Assessment Report (CAR) to the Director for record which documents the land contamination assessment findings. If land contamination is confirmed, the Permit Holder shall also submit to the Director for approval 3 hard copies and 1 electronic copy of Remedial Action Plan (RAP) to formulate necessary remedial measures.

Before submission to the Director, the CAP, CAR and RAP shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the approved EIA Report (Register No. AEIAR-192/2015).

***Measures for Mitigating Land Contamination and Submission of Remediation Works Report***

- 2.18 If land contamination is confirmed, all remedial measures described in the RAP approved under Condition 2.17 of this Permit shall be fully implemented.
- 2.19 If remediation is required, the Permit Holder shall submit 3 hard copies and 1 electronic copy of the Remediation Report (RR) to the Director for record, no later than 1 month after the completion of the remediation works. The RR shall provide details on the remediation works carried out, types and volume of contaminated soil, standards and levels of treatment, and locations of all on-site and off-site disposal sites (including record of disposal). The RR shall be certified by the ET Leader and verified by the IEC to demonstrate that Condition 2.18 is fulfilled. No construction works at the temporary explosive magazine site shall be carried out prior to the completion of the remediation works.

**Submissions to be Made or Measures to be Implemented before and during Operation of the Project**

***Measures for Mitigating Hazard to Life***

- 2.20 The Permit Holder shall, no later than 3 months before the commencement of operation of the Project, submit 4 hard copies and 1 electronic copy of an audit report to the Director for record to certifying the implementation of design requirements / measures recommended in the Detailed Design Plan approved under Condition 2.12 of this Permit. Before submission to the Director, the audit report shall be certified by the ET Leader and verified by the IEC as conforming to the recommendations contained in the Detailed Design Plan approved under Condition 2.12.
- 2.21 The maximum storage quantity for chlorine of the Project shall be limited to no more than 37 tonnes during operation.
- 2.22 The maximum storage quantity and storage tank capacity for carbon dioxide shall be limited to no more than 16 number of tanks and 100 tonnes per tank respectively during operation.



***Submissions of As-Built Drawings of Measures for Mitigating Landscape and Visual Impacts***

- 2.23 The Permit Holder shall, no later than 1 month before the commencement of operation of the Project, submit 4 hard copies and 1 electronic copy of as-built drawing(s) on landscape and visual mitigation measures to the Director for record. The as-built drawings shall be accompanied with explanatory statement showing the final locations, size, number and species of planting to demonstrate compliance with the approved submissions under Condition 2.11. This as-built submission shall be certified by the ET Leader and verified by the IEC that the landscape and visual mitigation proposal approved under Condition 2.11 has been fully and properly implemented.

**3. Environmental Monitoring and Audit (EM&A) Requirements for the Construction and Operation of the Project**

- 3.1 The Permit Holder shall, no later than 6 months before the commencement of operation of the Project, submit 5 hard copies and 1 electronic copy of an updated EM&A Manual for the operational phase of the Project to the Director for approval. The updated EM&A Manual shall include at least the following information :-
- (i) details of EM&A programme on corals identified in the vicinity of the submarine outfall area to ensure that the health status of the corals is kept in good condition during operation of the Project;
  - (ii) details of EM&A programme on fisheries in the vicinity of the seawater intake and submarine outfall areas to ensure no significant impacts on fisheries resources during operation of the Project;
  - (iii) mechanisms to propose and implement mitigation measure(s), if necessary, to rectify the problems in case of identifying any adverse ecological impacts on corals or fisheries resources.

Before submission to the Director, the updated EM&A Manual shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the EIA Report (Register No. AEIAR-192/2015).

- 3.2 The EM&A programme shall be implemented in accordance with the procedures and requirements in the EM&A Manual and the updated EM&A Manual approved under Condition 3.1 of this Permit. The Permit Holder shall review the EM&A requirements or programme based on the submitted construction programme required under Condition 2.6. Any changes to the EM&A requirements or programme and termination of the EM&A programme shall be supported with justifications by the ET leader and verified by the IEC as conforming to the requirements set out in the EM&A Manual and the updated EM&A Manual approved under Condition 3.1 of this Permit, and prior approval from the Director shall be sought before their implementation.
- 3.3 Samples, measurements and necessary remedial actions shall be taken in accordance with the requirements of the EM&A Manual and updated EM&A Manual by:
- (i) conducting baseline environmental monitoring;
  - (ii) conducting impact monitoring;
  - (iii) carrying out remedial actions described in the Event/Action Plans of the EM&A Manual and updated EM&A Manual in accordance with the time frame set out in the Event/Action Plans, or as agreed by the Director, in case where specified criteria in the EM&A Manual and updated EM&A Manual are exceeded; and
  - (iv) logging and keeping records of the details of (i) to (iii) above for all parameters within 3



working days of the collection of data or completion of remedial action(s), for the purpose of preparing and submitting the monthly EM&A Reports and to make available the information for inspection on site.

- 3.4 4 hard copies and 1 electronic copy of the Baseline Monitoring Report shall be submitted to the Director at least 2 weeks before the commencement of construction of the Project for record. The submission shall be certified by the ET Leader and verified by the IEC. Additional copies of the submission shall be provided upon request by the Director.
- 3.5 4 hard copies and 1 electronic copy of monthly EM&A Report shall be submitted to the Director within 2 weeks after the end of the reporting month for record. The EM&A Reports shall include a summary of all non-compliance (exceedances) of the environmental quality performance limits (Action and Limit Levels). The submissions shall be certified by the ET Leader and verified by the IEC as complying with the requirements set out in the EM&A Manual and updated EM&A Manual. Additional copies of the submission shall be provided to the Director upon request by the Director.
- 3.6 All EM&A data submitted under this Permit shall be true, valid and correct.

**4. Electronic Reporting of EM&A Information**

- 4.1 To facilitate public inspection of the Baseline Monitoring Report and monthly EM&A Reports via the EIAO Internet Website and at the EIAO Register Office, electronic copies of these Reports shall be prepared in Hyper Text Markup Language (HTML) and in Portable Document Format, unless otherwise agreed by the Director and shall be submitted at the same time as the hard copies as described in Condition 3.4 and 3.5 above of this Permit. For the HTML version, a content page capable of providing hyperlink to each section and sub-section of these Reports shall be included in the beginning of the document. Hyperlinks to all figures, drawings and tables in these Reports shall be provided in the main text from where the respective references are made. All graphics in these Reports shall be in interlaced GIF format unless otherwise agreed by the Director. The content of the electronic copies of these Reports must be the same as the hard copies.
- 4.2 The Permit Holder shall set up a dedicated website and notify the Director in writing the internet address where the environmental monitoring data and project information is to be placed within 1 month after the commencement of construction of the Project. All environmental monitoring data described in Condition 4.1 of this Permit and all submissions required by this Permit shall be made available to the public via this dedicated website to be set up by the Permit Holder in the shortest time practicable, and in no event later than 2 weeks after the relevant environmental monitoring data are collected or become available, unless otherwise agreed by the Director. The Permit Holder shall maintain the dedicated website for public access of the environmental monitoring data and reports throughout the entire construction period and during the first 3-year period of operation of the Project, or otherwise as agreed by the Director.
- 4.3 The internet website as described in Condition 4.2 of this Permit shall enable user-friendly public access to the environmental monitoring data and project information including the approved EIA Report (Register No. AEIAR-192/2015), the environmental permit(s) and Project Profile of the Project. The internet website shall have features capable of:
- (i) providing access to all environmental monitoring data of this Project collected since the commencement of construction;
  - (ii) providing access to all finalized submissions as required under this Permit;
  - (iii) searching by date;
  - (iv) searching by types of monitoring data (water quality, noise and air quality); and
  - (v) hyperlinking to relevant monitoring data after searching;



or otherwise as agreed by the Director.



**Notes :**

1. This Permit consists of three parts, namely, PART A (Main Permit), PART B (Descriptions of Designated Project) and PART C (Permit Conditions). Any person relying on this Permit should obtain independent legal advice on the legal implications under the EIAO, and the following notes are for general information only.
2. If there is a breach of any condition of this Permit, the Director or his authorized officer may, with the consent of the Secretary for the Environment, order the cessation of associated work until the remedial action is taken in respect of the resultant environmental damage, and in that case the Permit Holder shall not carry out any associated works without the permission of the Director or his authorized officer.
3. The Permit Holder may apply under Section 13 of the EIAO to the Director for a variation of the conditions of this Permit. The Permit Holder shall replace the original permit displayed on the Project site by the amended permit.
4. A person who assumes responsibility for the whole or a part of the Project may, before he assumes responsibility of the Project, apply under Section 12 of the EIAO to the Director for a further environmental permit.
5. Under Section 14 of the EIAO, the Director may with the consent of the Secretary for the Environment, suspend, vary or cancel this Permit. The suspended, varied or cancelled Permit shall be removed from display at the site.
6. If this Permit is cancelled or surrendered during construction of the Project, another environmental permit must be obtained under the EIAO before the Project could be continued. It is an offence under Section 26(1) of the EIAO to construct or operate a designated project listed in Part I of Schedule 2 of the EIAO without a valid environmental permit.
7. Any person who constructs or operates the Project contrary to the conditions in the Permit, and is convicted of an offence under the EIAO, is liable: -
  - (i) on a first conviction on indictment to a fine of \$2 million and to imprisonment for 6 months;
  - (ii) on a second or subsequent conviction on indictment to a fine of \$5 million and to imprisonment for 2 years;
  - (iii) on a first summary conviction to a fine at level 6 and to imprisonment for 6 months;
  - (iv) on a second or subsequent summary conviction to a fine of \$1 million and to imprisonment for 1 year; and
  - (v) in any case where the offence is of a continuing nature, the court or magistrate may impose a fine of \$10,000 for each day on which he is satisfied the offence continued.
8. The Permit Holder may appeal against any condition of this Permit under Section 17 of the EIAO within 30 days of receipt of this Permit.
9. The Notes are for general reference only and that the Permit Holder should refer to the EIAO for details and seek independent legal advice.

**Environmental Permit No. EP-503/2015**  
**環境許可證編號 EP-503/2015**





**Table 1 - List of design requirements / measures for chlorine and carbon dioxide storage (to be read in conjunction with Condition 2.12 of this Permit) (Extracted from Annex 13L of the EIA Report (Register No. AEIAR-192/2015))**

No.	Types of storage	Design requirements/measures
<b>1.</b>	<b>Chlorine store</b>	
1.1	Chlorine storage quantity in the chlorine store	No more than 37 tonnes in 1-tonne drums
1.2	Volume of chlorine store	Larger than 4200 m <sup>3</sup>
1.3	Design and layout of chlorine store	The chlorine store shall be designed in a way such that the average number of drums ruptured in the worst case scenario during earthquake should be no more than 6.
1.4	Separation distance between the chlorine store and explosive trucks / TKO Area 137 Pier	The setback distance between the chlorine building and explosive trucks / TKO Area 137 Pier shall provide sufficient clearance **(see remarks below) so that the overpressure resulting from explosion of explosive trucks or the explosives offloading operation that reaches the chlorine building is less than 2 psi.
1.5	Separation distance between the chlorine store and any one of the site boundary (except for the site boundary adjacent to the Clear Water Bay Country Park)	More than 100m
<b>2</b>	<b>Carbon dioxide store</b>	
2.1	Maximum number of carbon dioxide storage tank	16 units
2.2	Type of storage tank	Vacuum insulated, double containment
2.3	Storage tank capacity	No more than 100 tonnes per tank
2.4	Pressure relief system of carbon dioxide storage tank	<ol style="list-style-type: none"> <li>1. Pressure protection for the inner vessel shall be provided by 2 sets (1 duty and 1 stand-by) of pressure protection devices. Each set of pressure protection device will be composed of 2 independent pressure relief valves. The pressure relief valves system will be designed to avoid the common mode failure such that the risk of common mode failure is negligible.</li> <li>2. The pressure protection device on the outer vessel shall be a plate relief device. The plate relief device will be a standard installation in accordance with industrial standards (EN 13458 Part 2 Annex 1).</li> </ol>
2.5	Pressure relief system of carbon dioxide road tanker	Pressure protection for the inner vessel shall be provided by 2 sets (1 duty and 1 stand-by) of pressure protection devices. Each set of pressure protection device shall be composed of 2 independent pressure relief valves. The pressure relief valves system shall be designed to avoid the common mode failure such that the risk of common mode failure is negligible.
2.6	Separation distance between the carbon dioxide storage area and explosive trucks / TKO Area 137 Pier	The setback distance between the carbon dioxide storage area and explosive trucks / TKO Area 137 Pier shall provide sufficient clearance**(see remarks below) so that the overpressure resulting from explosion of explosive trucks or the explosives offloading operation that reaches the carbon dioxide storage area is less than 2 psi.

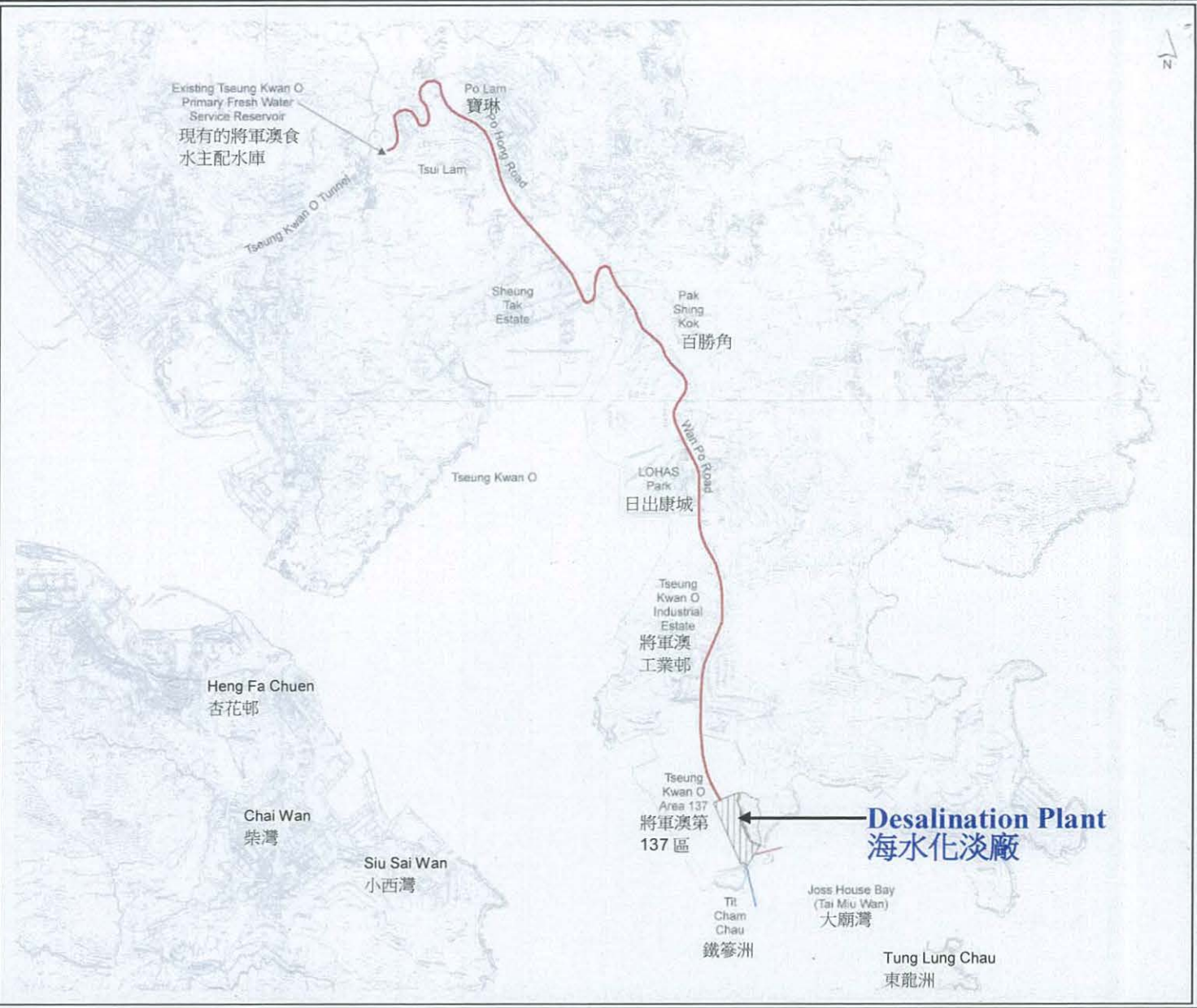


No.	Types of storage	Design requirements/measures
2.7	Separation distance between the carbon dioxide storage area and any one of the site boundary (except for the site boundary adjacent to the Clear Water Bay Country Park)	More than 100m
2.8	Other safety features of carbon dioxide storage tanks and the facilities	<ol style="list-style-type: none"><li>1. Trycock for overfilling alarm and warning shall be provided on carbon dioxide storage tanks.</li><li>2. High level alarm shall be provided to operating staff at control room for liquid level monitoring and warning.</li><li>3. Fencing shall be provided surrounding the carbon dioxide facilities.</li></ol>

**Remarks**

\*\* Calculations and supporting information shall be provided under the submission as required under Condition 2.12 to demonstrate that the overpressure resulting from explosion of explosive trucks or the explosives offloading operation that reaches the chlorine and carbon dioxide storage area is less than 2 psi.





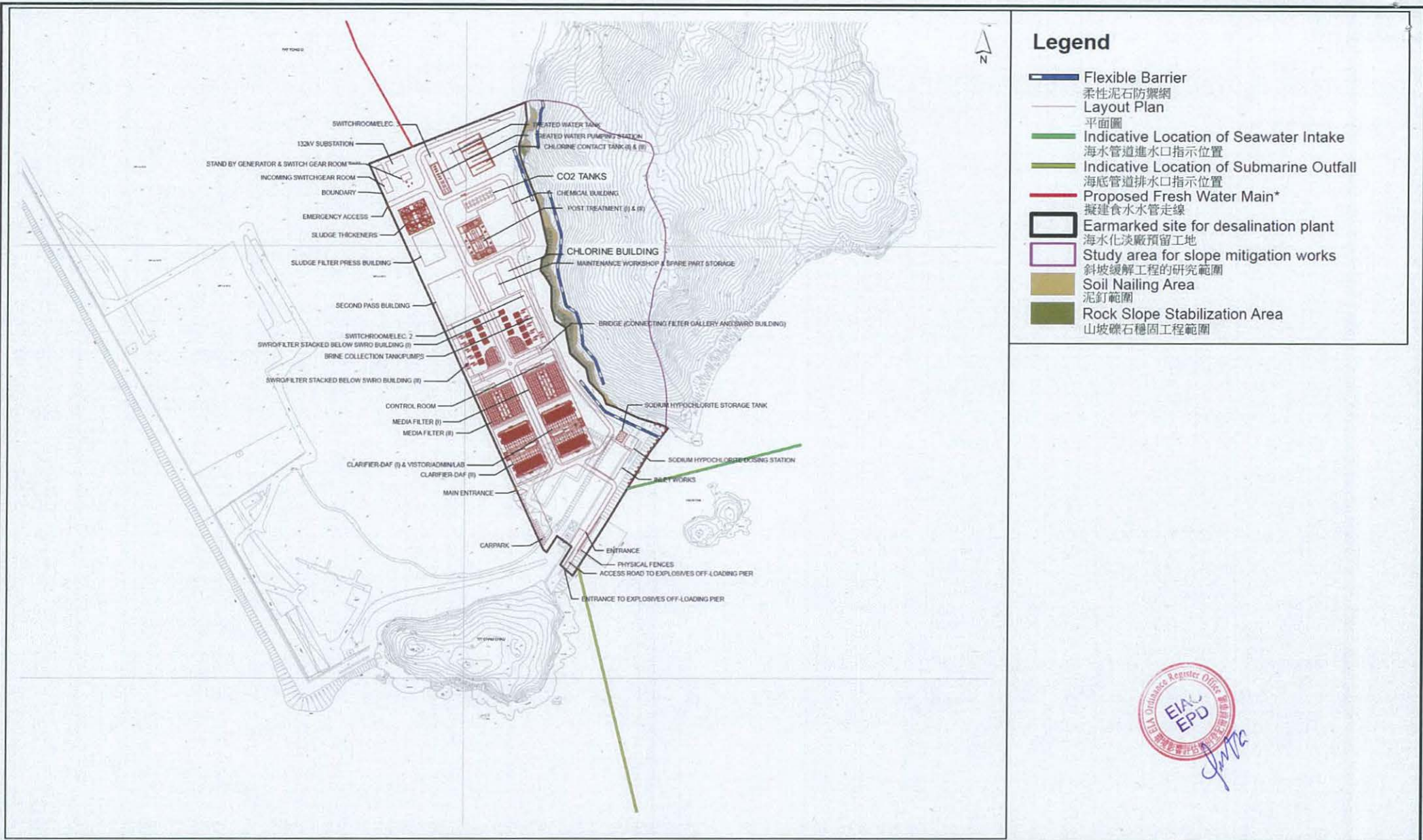
**Legend 圖例:**

- Flexible Barrier  
柔性泥石防禦網
- Indicative location of seawater intake  
海水管道進水口指示位置
- Indicative location of submarine outfall  
海底管道排水口指示位置
- Proposed Fresh Water Main  
擬建食水水管走線
- Earmarked Site for Desalination Plant  
海水化淡廠預留工地
- Study area for slope mitigation works  
斜坡緩解工程的研究範圍
- Soil Nailing Area  
泥釘範圍
- Rock Slope Stabilization Area  
山坡礫石穩固工程範圍

Project Title: Desalination Plant at Tseung Kwan O  
 工程項目名稱: 將軍澳海水化淡廠  
 Project Location Plan  
 工程項目位置圖

Plan originated from the Figure 1.1 of approved EIA Report: AEIAR-192/2015  
 圖則源自已批准環評報告-AEIAR-192/2015 內的圖 1.1





Project Title: Desalination Plant at Tseung Kwan O

工程項目名稱: 將軍澳海水化淡廠

Layout Plan of the Project

工程項目平面圖

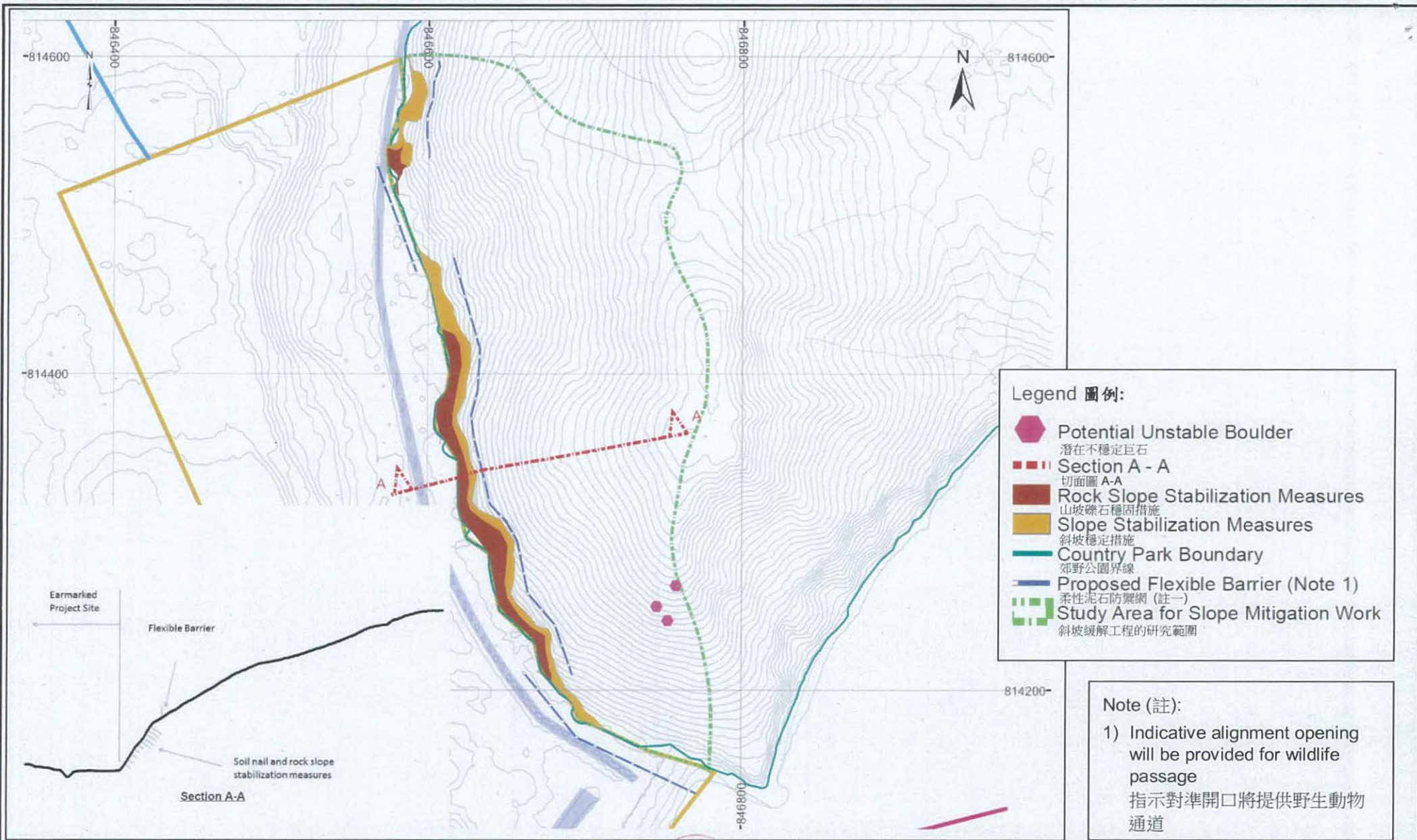
Plan originated from the Figure 3.1 of approved EIA Report: AEIAR-192/2015  
圖則源自已批准環評報告-AEIAR-192/2015 內的圖 3.1

Environmental Protection Department  
環境保護署



Environmental Permit No. EP-503/2015  
環境許可證編號: EP-503/2015

Figure 2  
圖二



Project Title: Desalination Plant at Tseung Kwan O  
 工程項目名稱: 將軍澳海水化淡廠  
 Slope Mitigation Works within the Clear Water Bay Country Park  
 位於清水灣郊野公園範圍內的斜坡緩解工程



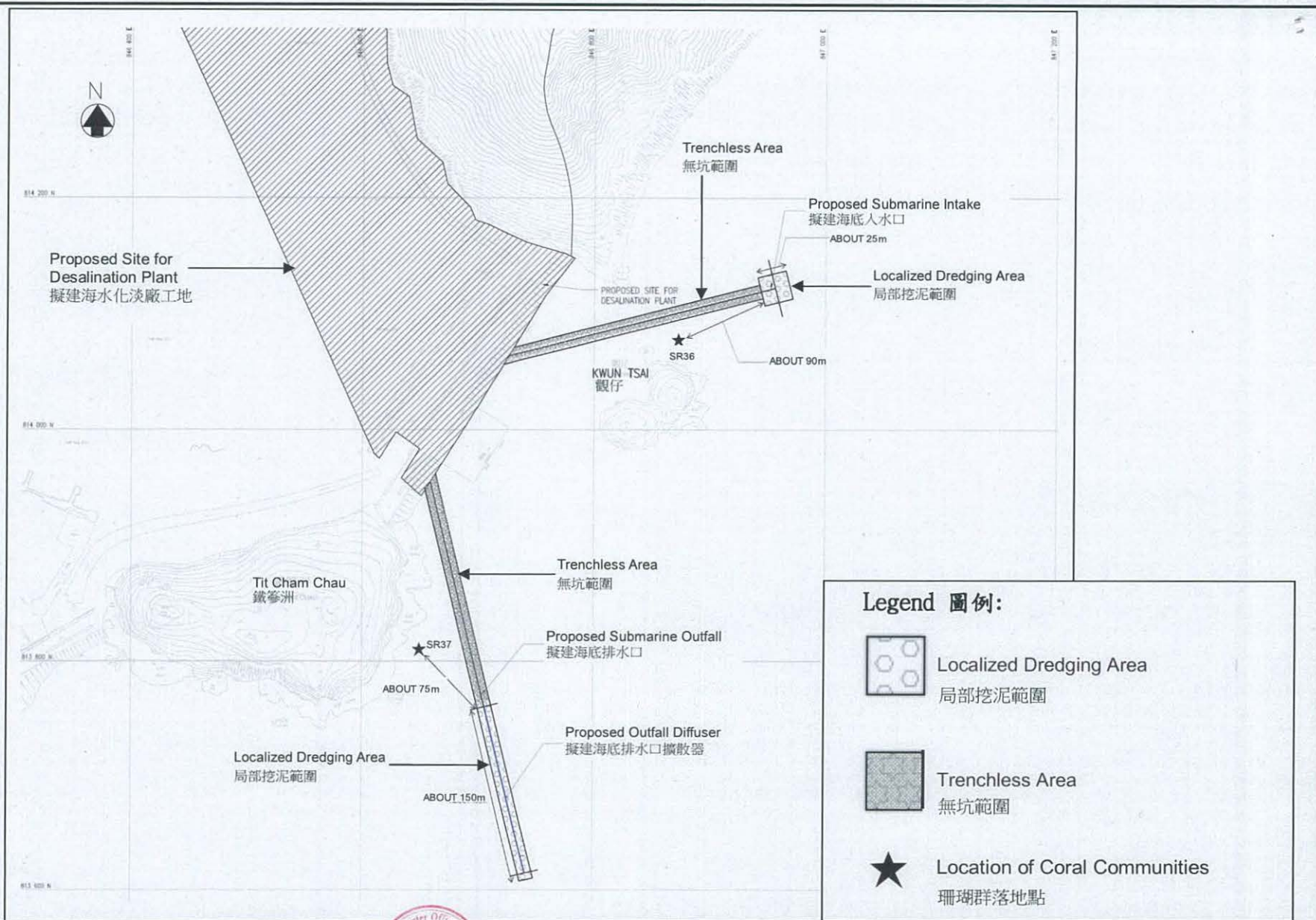
Plan originated from the Figure 2.3d of approved EIA Report: AEIAR-192/2015  
 圖則源自已批准環評報告-AEIAR-192/2015 內的圖 2.3d

Environmental Protection Department  
 環境保護署



Environmental Permit No. EP-503/2015  
 環境許可證編號: EP-503/2015

Figure 3  
 圖三



Project Title: Desalination Plant at Tseung Kwan O  
 工程項目名稱: 將軍澳海水化淡廠  
 Dredging Area for the Intake and Outfall Pipe  
 海底排水及進水口管道的海床挖掘範圍



Plan originated from the Figure 2.9 of approved EIA Report: AEIAR-192/2015  
 圖則源自已批准環評報告-AEIAR-192/2015 內的圖 2.9

Environmental Protection Department  
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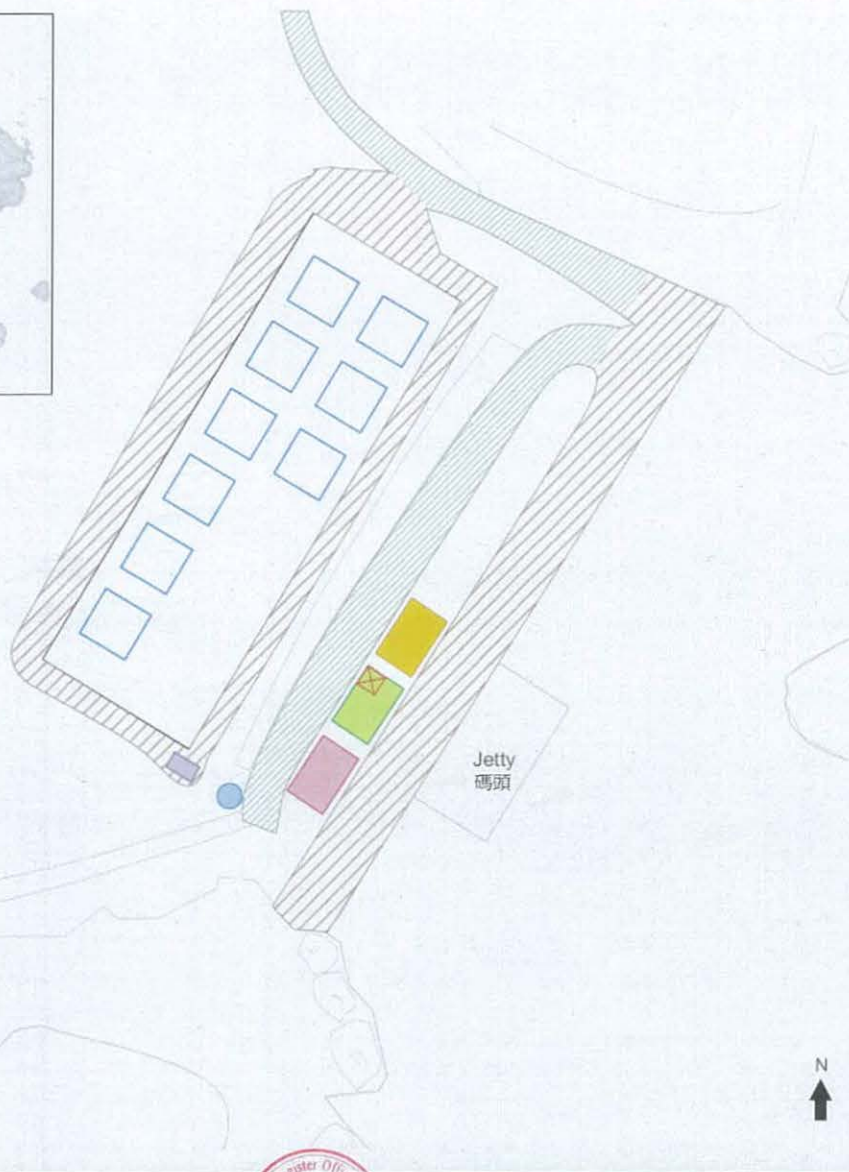


Environmental Permit No. EP-503/2015  
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Figure 4  
 圖四



Key	
	Observed Diesel Oil Spillage 柴油漏油位置
	Magazine Storages 炸藥貯存庫
	Pump Room 泵房
	Generator Room 發電機房
	Fire Hydrant Tank 消防栓水缸
	Site Contractor Office 工地承建商辦公室
	Waste Chemical Drums Storage 廢舊化工桶貯存
	Paved Vehicle Access Road 已鋪路面的車輛通道
	Unpaved Vehicle Access Road 未鋪路面的車輛通道



Project Title: Desalination Plant at Tseung Kwan O  
 工程項目名稱: 將軍澳海水化淡廠  
 Location of Temporary Explosive Magazine Site at TKO Area 137  
 位於將軍澳第137區臨時爆炸品倉庫地點



Plan originated from the Figure 8A.1 of approved EIA Report: AEIAR-192/2015  
 圖則源自已批准環評報告-AEIAR-192/2015 內的圖 8A.1

