

ISSUE NO. : 1  
ISSUE DATE : MARCH 2012  
PROJECT NO. : 1080

## **EIA PROJECT PROFILE**

**FOR**

### **DECOMMISSIONING OF WEST PORTION OF THE MIDDLE ASH LAGOON AT TSANG TSUI, TUEN MUN**

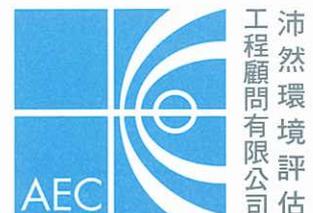
**COMMERCIAL-IN-CONFIDENCE**

Prepared By:

**Allied Environmental Consultants  
Ltd.**

**Allied Environmental Consultants Limited**  
Acousticians & Environmental Engineers

19/F., Kwan Chart Tower, 6 Tonnochy Road, Wan Chai, Hong Kong  
Tel: (852) 2815 7028 Fax: (852) 2815 5399 Email: info@aechk.com



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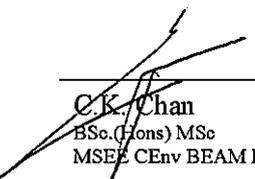
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Author:   
\_\_\_\_\_  
Carol Y.K. Chan  
BSc AMHKIOA LEED GA

Checked   
\_\_\_\_\_  
C.K. Chan  
BSc (Hons) MSc  
MSEE CEnv BEAM Pro LEED GA

Approved:   
\_\_\_\_\_  
Grace M.H. Kwok  
BEng(Hons) MHKIEIA MHKIOA  
MIAIA MRAPA MBSWA LEEDAP

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## **1. PURPOSE OF PROJECT PROFILE**

This project profile sets out the scope of the environmental issues associated with the decommissioning of west portion of the Middle Ash Lagoon occupied by CLP Power Company Limited (CLP) at the Tsang Tsui site for the application of an Environmental Impact Assessment (EIA) study brief.

## **2. BASIC INFORMATION**

### **2.1. PROJECT TITLE**

Decommissioning of west portion of the Middle Ash Lagoon at Tsang Tsui, Tuen Mun (hereinafter named as the Project).

### **2.2. PURPOSE AND NATURE OF THE PROJECT**

As part of the works to support future development at the site, the Project involves the decommissioning of existing Ash Lagoons at Tsang Tsui, Tuen Mun.

### **2.3. NAME OF PROJECT PROPONENT**

Food and Environmental Hygiene Department (FEHD).

### **2.4. LOCATION AND SCALE OF THE PROJECT**

The Project is located at western side and the southern edge of the Middle Ash Lagoon in Tsang Tsui near Nim Wan, Tuen Mun. The subject site is bounded by the existing seawalls to the south, west and north of the site boundary. The Middle Lagoon, along with the East and West Lagoons, were constructed in the 1980s, and being granted to CLP Power Company Limited (CLP) in 1998 under two licenses issued by the Lands Department mainly for the storage of pulverized fuel ash (PFA). The Subject Site occupies an area of about 30,000 m<sup>2</sup> (3 hectares) which has been utilized by CLP as a water collection and conservation system since 1997.

The project requires decommissioning of west portion and southern edge of the Middle Ash Lagoon, followed by site formation works, drainage works and construction of associated road. Site formation works of the Project may involve import of fill for site formation at a volume of about 150,000 m<sup>3</sup>. Temporary preloading may involve an additional 50,000 to 150,000 m<sup>3</sup> imported fill to the Subject Site. Formation level is at +10 mPD. A 2-way

2-lane access road connecting the existing Nim Wan Road to the Subject Site will be constructed as part of the Project for future development. A discrete drainage pipe or channel will be built to connect stormwater to the existing river course to the south of the Subject Site. A site location plan is shown in *Figure 1*.

Development in the vicinity of the Subject Site includes the Black Point Power Station to the southwest, the proposed Sludge Treatment Facilities, which is now under construction, at the East Lagoon and the WENT Landfill and the associated waste reception facilities to the east.

## **2.5. NUMBER AND TYPES OF DESIGNATED PROJECT COVERED BY THE PROJECT PROFILE**

The project is a Designated Project under Schedule 2, Part II, Item 8 – “A waste disposal facility for pulverised fuel ash, furnace bottom ash or gypsum” under the EIA Ordinance (EIAO).

## **2.6. NAME AND TELEPHONE NUMBER OF CONTACT PERSON**

Company: Simon Kwan & Associates Ltd

Name: K.K. Chung

Address: 20/F, Leighton Centre, 77 Leighton Road, Causeway Bay, Hong Kong

Telephone: 2882-2500

Fax: 2852-4380

Email: tsangtsui@simonkwan.com.hk

### 3. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

#### 3.1. PROJECT PLANNING AND IMPLEMENTATION

The Project involves decommissioning of a waste disposal facility for pulverized fuel ash (PFA) is a Designated Project. The Project Proponent has employed Environmental Consultant to conduct an Environmental Impact Assessment (EIA) Study for this Project. The Project will be implemented by Contractor(s) to be appointed at a subsequent stage.

#### 3.2. PROJECT PROGRAMME

A Tentative implementation programme is shown in *Table 1*.

*Table 1- Project Implementation Programme*

Activity Description	Anticipated Date
Completion of Environmental Impact Assessment	Early 2013
Approval of Outline Zoning Plan	Early 2014
Funding Application to Legislative Council	Early 2014
Outline proposals and Sketch Plans	Mid 2012
Detail Design	End of 2012
Documentation/ Tendering	Early 2014
Commencement of Work	Mid 2014
Post Hand Over Services	Mid 2017

#### 3.3. INTERFACING WITH OTHER PROJECTS

The Project is located in part of the Ash Lagoon areas which are now occupied by CLP for uses relating to the operation of the Black Point and Castle Peck Power Stations. Various projects have been proposed for the Nim Wan and Tsang Tsui areas, including the planned WENT landfill extension and the Sludge Treatment Facilities (STF), which is now under construction.

The proposed STF is located in the northern part of East Lagoon adjoining this Subject Site. The STF are designed to treat 2,000 wet tonnes/day of the dewatered sludge generated after the sewage treatment process in the Stonecutters Island Sewage Treatment Works (STW) and 10 other regional sewage treatment works, by fluidized bed incineration technology to substantially reduce the volume of sewage sludge for disposal to landfills. It is under construction and is scheduled to be completed in 2013.

The planned WENT Landfill Extension (WLES) is also located in the vicinity of the Subject Site. The WENT Landfill Extension forms an integral part in the strategic plan in maintaining the continuity of landfill capacity in the West New Territories for the disposal of solid wastes in the next decades of years. It occupies the West Lagoon and the southern part of the Middle and East Lagoons as well as the area between the Black Point Power Station and the existing WENT Landfill. The WENT Landfill Extension will be developed under six phases to allow progressive use of the overall landfill area. The site formation of the Phase 1 is tentatively scheduled to commence in 2016/17.

## **4. POSSIBLE IMPACTS ON THE ENVIRONMENT**

### **4.1. AIR QUALITY**

Dust and exhaust emissions could result from construction traffic of the Project. Effects on air quality can vary substantially from day to day depending on the extent of works and the prevailing weather conditions. The nearest existing Air Sensitive Receivers (ASRs) include the WENT Landfill site office, proposed STF site office and an existing temple to the southwest, which are within 500m from the Subject Site. However, in view of the scale of the project and the separation distance between the ASRs and the Subject Site, dust impact on nearby ASRs should be minimal with the implementation of mitigation measures specified in the Air Pollution Control (Construction Dust) Regulation.

### **4.2. NOISE**

There is unlikely to be any significant noise implication associated with this site because there are no Noise Sensitive Receivers (NSRs) within 300m of the site. With appropriate noise mitigation measures, noise arose from the Project should be minimal.

### **4.3. WATER QUALITY**

The potential sources of water quality impact resulted from works associated with the Project comprise site runoff and drainage; debris, refuse and liquid spillages from general construction activities; and sewage effluent from the construction workforce. As this can potentially lead to deterioration of water quality, mitigation measures should be implemented to minimise construction runoff. Proper site management and good housekeeping practices would also be required to ensure that construction wastes and materials would not enter the nearby stream and coastal waters. Sewage effluent arising from the construction workforce would also require appropriate treatment through provision of portable toilets. With proper implementation of these mitigation measures, the works associated with the Project would not be expected to result in unacceptable impacts on water quality.

#### **4.4. WASTE MANAGEMENT**

The types of waste that could be generated during the construction phase of the Project include construction and demolition (C&D) materials from the construction activities, general refuse from the workforce and chemical wastes from the construction plant and equipment. It is intended that the existing PFA would remain in place during decommissioning of the Ash Lagoons. No excavation or relocation of PFA is anticipated. Adverse environmental impact is therefore not expected during the construction phase with the approved methods to handle, transport and dispose the waste and the recommended good site practices being strictly followed.

#### **4.5. ECOLOGY**

Existing habitat types within 500m of the subject site comprise Ash Lagoons, wasteland/developed area, plantation, secondary woodland, grassland/shrubland, streams, mangrove and seawalls. The East and Middle Ash Lagoons provide nesting and breeding ground for Little Grebe, while breeding activities of a few bird species common in Hong Kong were also identified in the surrounding woodland and plantation habitats.

Previous EIAs including the Feasibility Study conducted for the Sludge Treatment Facilities suggest that the Middle Lagoon was of moderate ecological value, and the populations of Little Grebe in the Middle Lagoon are of particular concern as they are susceptible to the disturbance impact from human activities. Little Grebe was found to breed in pool(s) formed within the Ash Lagoon area during wet season. Decommissioning of the existing Ash Lagoons may contribute to the loss of habitat and breeding ground of this species of concern. It is intended that literature review and detailed EIA studies would be carried out, with reference to existing ecological data and updated field surveys, to assess the direct loss of habitat to Little Grebe resulting from the decommissioning of existing man-made Ash Lagoon area.

Increased noise level and disturbance resulted from works associated with Project may also have indirect ecological impacts to the existing habitats and associated fauna. Mitigation measures are required to minimize the potential indirect impacts to existing habitats and associated fauna in vicinity to the Subject Site.

#### **4.6. LAND CONTAMINATION**

Limited amount of chemicals or chemical wastes would be used or produced from the Project as a consequence of machinery operation and traffic. Good practices for land contamination prevention are required. The potential for land contamination as a result of the Project is expected to be minimal with proper implementation of the good practices.

#### **4.7. HEALTH**

As pulverised fuel ash (PFA) is expected to be excavated during decommissioning of the Ash Lagoon, the potential health risk induced by possible radon emissions from excavated PFA needs to be evaluated. A preliminary desktop literature review has been conducted and identified that the radon health risk for the decommissioning of Ash Lagoons is of an insignificant level. No significant radiological hazard is anticipated to workers working in the Ash Lagoon area of the Subject Site.

## **5. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT AND SITE HISTORY**

The Tsang Tsui Ash Lagoons in Tuen Mun was formed on land reclaimed in mid 1980s near Nim Wan, and are divided by seawalls into three roughly equal-sized lagoons for the storage of PFA. The west portion of the Middle lagoon shall be decommissioned for future development. Other industrial facilities in the area include the Black Point Power Station operated by Castle Peak Power Company Limited (CAPCO) to the southwest, the Sludge Treatment Facilities under construction located on the East Lagoon, and the WENT Landfill and its proposed extension to the further east and south side.

The site is situated at the mouth of Deep Bay within the Deep Bay Water Control Zone. A stream runs to the south of the Ash Lagoons and discharges into a tidal channel to the east of the Subject Site. The natural habitats in the vicinity of the site are mainly man-made Ash Lagoons, wasteland, plantation, secondary woodland, grassland, shrub, stream courses and some mangrove, which are of moderate ecological importance. However, given the extensive disturbance already caused by the nearby industrial developments in the vicinity of the Subject Site, further potential impacts on the environment should be slight.

## 6. ENVIRONMENTAL PROTECTION MEASURES

### 6.1. AIR QUALITY

During the construction phase, good site practices, dust control and suppression measures would be implemented. Reference would be made to the dust control requirements under the *Air Pollution Control (Construction Dust) Regulation*. The following measures are proposed to be implemented to minimize dust nuisance:

- Every main haul road shall be sprayed with water or a dust suppression chemical so as to maintain the entire road surface wet;
- The portion of any road leading only to a construction site that is within 30m of a discernible or designated vehicle entrance or exit shall be kept clear of dusty materials;
- Any stockpile of dusty material shall be covered entirely by impervious sheeting or sprayed with water or a dust suppression chemical so as to maintain the entire surface wet;
- Where a vehicle leaving the works site is carrying a load of dusty materials, the load shall be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicles; and
- The working area of any excavation or earth moving operation shall be sprayed with water or dust suppression chemical immediately after the operation so as to maintain the entire surface wet.

### 6.2. WATER QUALITY

During the works associated with the decommissioning of Ash Lagoons, control measures would be planned and implemented to reduce site discharges and surface runoff; and to provide appropriate on-site treatment to the discharges. The Contractor would be required to develop the Environmental Management Plan prior to the commencement of construction works. The effluent arising from the site should be treated to the required standard in accordance with Water Pollution Control Ordinance (WPCO) and discharged under a licensing control of the Director of Environmental Protection. The following measures are proposed to be implemented to minimize water pollution:

- Proper drainage system should be provided to collect surface runoff. The drainage system should incorporate silt traps and oil traps at appropriate locations to remove sand, silt and oil carried by the surface runoff. These traps should be frequently cleaned and maintained.

- Proper site management and good housekeeping practices shall be adopted to ensure that construction wastes and materials would not enter the nearby water bodies.
- Appropriate facilities such as portable toilets must be provided to treat sewage arising from the construction workforce.

### **6.3. WASTE MANAGEMENT**

Mitigation measures and good site practices must be incorporated into the design to avoid or reduce potential adverse environmental impacts associated with handling, collection and disposal of waste arising from the construction works associated with the decommissioning of Ash Lagoons. Waste reduction measures and provisions of reuse/recycle materials should be implemented. A Waste Management Plan must be developed by the Contractor prior to the commencement of construction works. The chemical waste generated from the Project, such as lubricating oil and other chemical wastes, must be properly collected and disposed of in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. Where applicable, disposal permits must be obtained prior to the collection and disposal of chemical wastes.

### **6.4. ECOLOGY**

In order to minimize noise and human disturbance to existing habitat and associated fauna during the extent of the Project, appropriate mitigation measures, such as the erection of hoarding around the Subject Site and the use of quieter mechanical powered equipment (QPME) for construction/demolition works of the Project, shall be implemented. Sufficient buffer area should be provided between the breeding bird and hoarding to allow for their feeding, foraging and roosting activities. Access to the breeding site should be restricted unless written permission has been granted by the Resident Engineers. Provision of interim and permanent pond habitat within the Subject Site to compensate for the loss of breeding ground of Little Grebe should be investigated. Commencement of the site works of the Project should be scheduled in the dry season as far as practicable to prevent possible disturbance to the breeding activities of Little Grebe. Thorough inspection of the Subject Site by experienced ecologist must also be carried out prior to the commencement of any site activities.

To reduce the indirect ecological impacts of the Project as a consequence of noise and human disturbance, quieter machinery should be selected to reduce noise emissions to the Ash Lagoon habitats and the associated fauna. Proper drainage arrangement should be adopted to minimize site runoff to prevent any adverse ecological impacts.

## **6.5. LAND CONTAMINATION**

Good site practices would be implemented to prevent land contamination within the Subject Site. Recommended practices should include precautionary measures to prevent fuel oil spillage and improper handling/use/disposal of chemicals and chemical wastes.

## **6.6. HEALTH**

The potential health risk induced by radon emission from PFA during the scope of the Project would be evaluated. Measures to reduce the level of radon influx to members of the public and works staying outdoor at the Subject Site would be considered and implemented as appropriate. A soil cover can be provided on top of the Ash Lagoons to prevent influx of radon.

## **6.7. POTENTIAL SEVERITY, DISTRIBUTION AND DURATION OF ENVIRONMENTAL IMPACTS**

Adverse air, noise, water quality, waste management, land contamination and health impacts should be transient and confined to the immediate vicinity of the Subject Site provided that appropriate mitigation measures are implemented properly. Further assessment is required to confirm the severity of the possible ecological impacts and determine any additional mitigation as necessary.

### *6.7.1. Short Term Effects*

Potential environmental impacts described in *Section 4* are expected to last for the construction period only. Hence, the effects can be viewed as temporary and short term.

### *6.7.2. Beneficial Effects*

Land has been considered as a scarce resource in Hong Kong. The Project can relieve the pressure on land resources by providing approximately 3 hectares of buildable area for future development in Tsang Tsui, Tuen Mun. Other environmental benefits of the Project will be identified and discussed in the EIA study.

## **6.8. FURTHER IMPLICATIONS**

The Project should make reference to the proposed Sludge Treatment Facilities in originating the engineering approach regarding the decommissioning of the Ash Lagoons. Meanwhile, close co-ordination with relevant authorities and other interfacing projects, including the

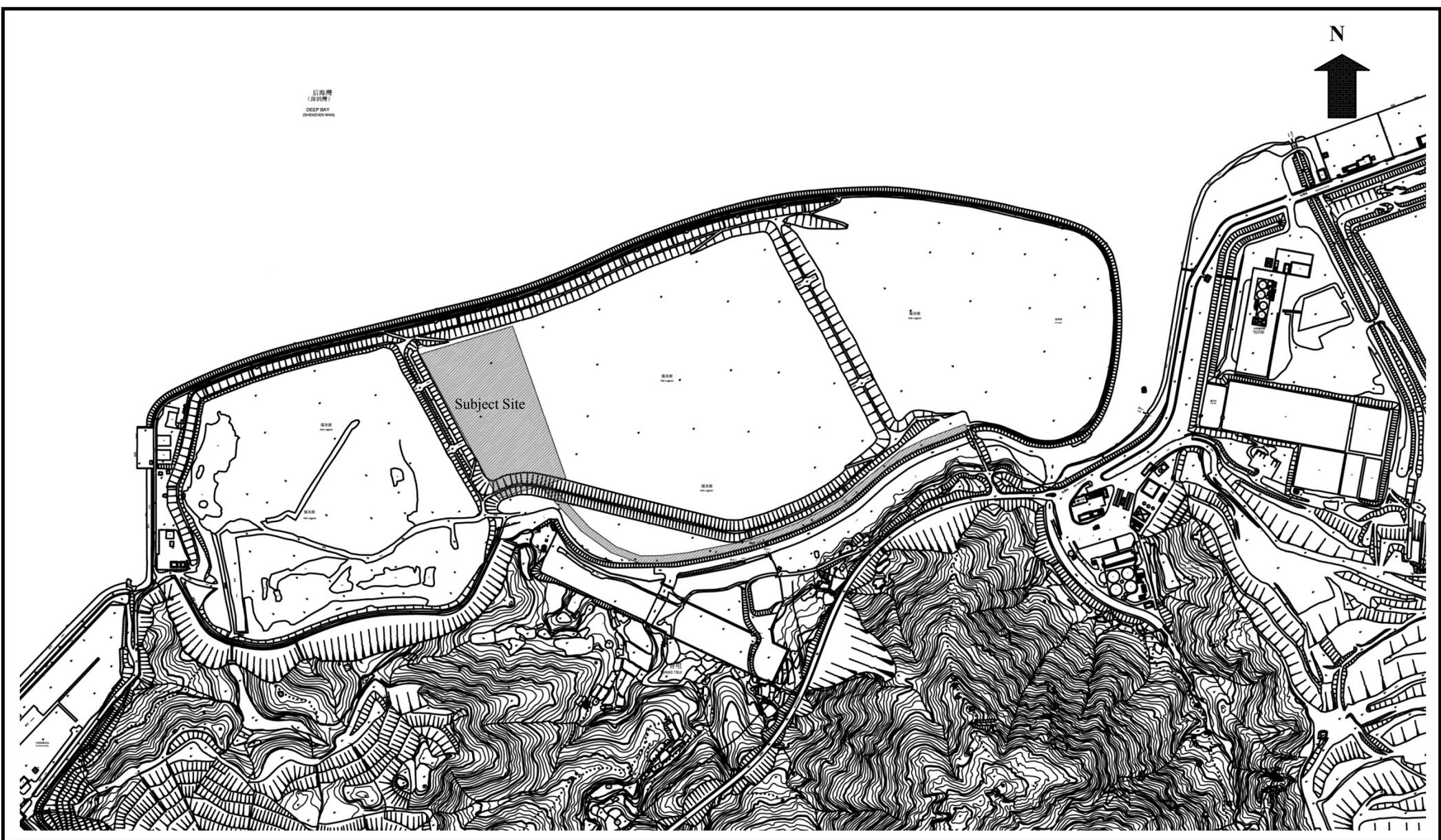
proposed Sludge Treatment Facilities, existing WENT Landfill and the planned WENT Landfill Extension (WLES), will be necessary.

## **7. USE OF PREVIOUSLY APPROVED EIA REPORTS**

*Development of the Integrated Waste Management Facilities Phase 1 – EIA Study.* The EIA report was submitted to EPD in October 2011. The EIA Study concluded that the proposed development would be environmentally acceptable provided that the recommended mitigation measures have been applied and the advanced technology has been adopted. The Environmental Permit was granted on 19<sup>th</sup> January 2012 with conditions (EP-429/2012). This EIA study is found to be relevant to this Project as it described the background information of the Subject Site, the Middle Ash Lagoon of the Tsang Tsui site, with detailed investigation on the possible environmental impacts associated with the decommissioning of Ash Lagoons.

*West New Territories (WENT) Landfill Extensions – EIA Study.* The EIA report was submitted to EPD for approval in August 2009. The EIA Study concluded that the proposed development would be environmentally acceptable with the implementation of the proposed mitigation measures for construction, operation, and restoration and aftercare phases. The Environmental Permit was granted on 3<sup>rd</sup> June 2010 with conditions (EP-393/2010). This EIA study is found to be relevant to this Project as it provides updated information of the surrounding areas of the Project.

*Sludge Treatment Facilities – EIA Study.* The EIA report was submitted to EPD in November 2008. The EIA Study concluded that the proposed development would not result in unacceptable environmental outcomes provided that the recommended mitigation measures have been implemented. The Environmental Permit was granted on 26<sup>th</sup> March 2009 with conditions (EP-334/2009). This EIA study is found to be relevant to this Project as it identified the Middle Lagoon as foraging and breeding ground for Little Grebe.



**DECOMMISSIONING OF WEST PORTION OF THE MIDDLE ASH LAGOON AT TSANG TSUI, TUEN MUN**

**EIA PROJECT PROFILE**

**SITE LOCATION MAP**

Figure No.

1

Rev.:

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Scale

NTS

Date

03/12

