



# **Decommissioning of West Portion of Middle Ash Lagoon at Tsang Tsui, Tuen Mun**

Final EM&A Review Report

August 2017

20/F AIA Kowloon Tower  
Landmark East  
100 How Ming Street  
Kwun Tong  
Kowloon  
Hong Kong

T +852 2828 5757  
F +852 2827 1823  
mottmac.hk

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**This Final EM&A Review Report has been reviewed and certified by the  
Environmental Team Leader (ETL) and verified by the Independent  
Environmental Checker (IEC) as having complied with the requirements  
as set out in the EM&A Manual.**

**Certified by:**



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Gary Chow  
Environmental Team Leader (ETL)  
Mott MacDonald Hong Kong Limited

**Date:**

13 September 2017

**Verified by:**



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Y.H. Hui  
Independent Environmental Checker (IEC)  
Ramboll Environ Hong Kong Limited

**Date:**

13 Sep 2017

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# Executive Summary

Mott MacDonald Hong Kong Ltd. (“MMHK”) has been commissioned by the Leighton Contractors (Asia) Limited, to undertake the Environmental Team (ET) services to carry out environmental monitoring and audit (EM&A) for decommissioning of West Portion of the Middle Ash Lagoon at Tsang Tsui, Tuen Mun.

This is the Final EM&A Review Report summarising the findings on EM&A during the period from 20 October 2016 to 24 May 2017.

The decommissioning and associated works have been completed on 24 May 2017. There were not any site works associated with the Environmental Permit (EP) in June 2017. Post-construction phase of water quality monitoring has been conducted for a 4-week period after completion of the works, from 29 May to 23 June 2017.

## Result of Water Quality Monitoring and Exceedance of Action and Limit Levels

The summary of water quality monitoring results is presented in **Section 2**. For stream water quality monitoring, a total of one Action Level exceedance and one Limit Level exceedance for suspended solids (SS) were recorded; for marine water quality monitoring, a total of 46 incidents of Limit Level exceedances for cadmium, one incident of Limit Level exceedance for chromium, and three incidents of Limited Level exceedance for aluminium were recorded during the entire construction period.

The summary of measured water quality is presented in **Section 2.1.1**.

## Result of Post-Construction Monitoring and Exceedance of Action and Limit Levels

The summary of post-construction water quality monitoring results is presented in **Section 2**. No exceedance of Action and Limit Levels were recorded for stream water monitoring; for marine water quality monitoring, a total of 8 incidents of Limit Level exceedances for cadmium were recorded during the post-construction monitoring period.

The summary of measured water quality is presented in **Section 2.1.3**.

## Result of Ecological Monitoring

Little Grebes were seen in West Ash Lagoon and breeding activities were observed during the construction period. No other findings on the remaining portion of the Middle Ash Lagoon and man-made channel at the northern edge of the PFA platform. Detail of the result is presented in **Section 2.2**.

## Result of Health Impact Monitoring

The summary of measured radon is presented in **Section 2.3**. There was no incident of any non-compliance of radon concentration during the entire construction period according to ProPECC PN 1/99“Environmental Protection Department Practice Note For Professional Persons-Control of Radon Concentration in New Buildings”.

## Record of Complaints

There was no record of complaints received during the entire construction period.

### **Record of Notification of Summons and Successful Prosecutions**

There was no record of notification of summons and successful prosecution during the entire construction period.

### **Reporting Changes**

There are no reporting changes.



# 1 Introduction

## 1.1 Background

On 25 March 2015, the Environment Impact Assessment (EIA) Report and Environmental Monitoring and Audit (EM&A) Manual (Register No.: AEIAR-186/2015) for the “Decommissioning of West Portion of the Middle Ash Lagoon at Tsang Tsui, Tuen Mun” (the Project) was approved and an Environmental Permit (EP) (Permit No.: EP-497/2015) was issued to the Food and Environmental Hygiene Department for the Project. Leighton Contractors (Asia) Limited was commissioned as the contractor for the Project. On 1 August 2016, a Further EP (Permit No.: FEP-01/497/2015) was issued to Leighton Contractors (Asia) Limited to decommission the West Portion of the Middle Ash Lagoon at Tsang Tsui, Tuen Mun as indicated in **Figure 1**.

Mott MacDonald Hong Kong Ltd. (“MMHK”) has been commissioned by Leighton Contractors (Asia) Limited to undertake the Environmental Team (ET) services to carry out environmental monitoring and audit for the decommissioning of West Portion of the Middle Ash Lagoon at Tsang Tsui, Tuen Mun.

This report briefly summarises the EM&A findings during the entire construction period from 20 October 2016 to 24 May 2017.

The post-construction water monitoring was summarised in this report from 29 May 2017 to 23 June 2017.

## 1.2 Project Organization

The organisation chart and lines of communication with respect to the on-site environmental management structure together with the contact information of the key personnel are shown in **Appendix A**.

## 1.3 Works undertaken in the Construction Period

During the entire construction period, the works were undertaken include:

- Improvement of site hoarding at construction access road
- Decommissioning works
- Removal works of asbestos pipe
- Outfall installation
- Minor site clearance work

The Construction Works Programme of the Project is provided in **Appendix B**. The general layout plan of the Project site is shown in **Figure 1**.

The completion of decommissioning and associated works of the Project has been confirmed on 24 May 2017. The construction of retaining structure or slope stabilization works along the channel at the north site boundary was no longer required from the risk of slope collapse perspective, therefore not carried out as part of the Project.

## 1.4 Summary of EM&A Requirements

The EM&A programme requires environmental monitoring of water quality, health impact and ecology as specified in the approved EM&A Manual.

As the proposed WENT Landfill Extension is not in place during the Project period, landfill gas monitoring was not necessary to be undertaken.

A summary of impact EM&A requirements is presented in **Table 1** below:

**Table 1: Summary of Impact EM&A Requirements**

Parameters	Descriptions	Locations	Frequencies
Water Quality	Dissolved Oxygen (DO), pH, Suspended Solids (SS) and Turbidity	C1A, S1, S2	Three days per week
	Metals (Aluminium, Chromium, and Cadmium)	C2, C3, M1, M2	Three days per week
Ecology	Little Grebe, habitat condition, coverage of water and any observable construction works.	West Ash Lagoon, the remaining portion of the Middle Ash Lagoon and the man-made water channel	Monthly
Health Impact	Indoor radon concentration	SP1, SP2, SP3	Monthly
Regular Site Inspection	To monitor the implementation of proper environmental protection and pollution control measures for the Project	Project site	Weekly

The Environmental Quality Performance Limits and the Event and Action Plan for water quality are shown in **Appendix C**.

## 1.5 Recommended Mitigation Measures

The EM&A programme followed the recommended mitigation measures in the EM&A Manual. The EM&A requirements as well as the summary of implementation status of the environmental mitigation measures are provided in **Appendix D**. In particular, the following mitigation measures were brought to attention during the site inspections:

### Dust Impact

- Sufficient water spraying in the construction site and covering of stockpile were reminded as a good practice for dust suppression.
- Provision of sufficient wheel-washing facilities was recommended

### Air Quality

- Regular maintenance of generator was recommended.

### Ecological Impact

- Improvement for the hoarding along the boundary of site area between the northern edge of the site area and the man-made channel north of the site was recommended to minimize potential disturbance impact on ecology.
- Repair of the bottom of the hoarding was reminded to prevent any leakage.

### Waste Management

- Proper waste recycling and management of general waste were reminded.

- Proper management of chemical containers.

#### **Water Quality**

- Repair and maintenance of fuel injector were reminded to prevent oil leakage.
- Proper collection and treatment of wheel washing water were recommended.
- Provision of preventive measure to avoid any surface runoff.

## 2 Summary of Environmental Monitoring Results

### 2.1 Water Quality Monitoring

#### 2.1.1 Summary of Impact Monitoring Results

In accordance with EM&A Manual, monitoring results for the post-construction phase of water quality monitoring are presented in **Appendix E**. Graphical plots of the water quality monitoring data are also presented in **Appendix E**.

The exceedance cases recorded during the impact monitoring phase are summarised at **Table 2**:

**Table 2: Summary of Water exceedance at Impact Stations in reporting period**

Impact Station	Monitoring Month							
	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017
S1	-	-	-	-	-	-	-	-
S2	-	1	-	-	1	-	-	-
M1	-	3	-	6	1	2	6	8
M2	-	1	1	3	3	1	6	9

The locations of water quality monitoring stations are shown in **Figure 2**.

#### 2.1.2 Summary of Post Construction Monitoring Results

Monitoring of water quality was conducted as scheduled on 29, 31 May 2017 and 2, 5, 7, 9, 12, 14, 16, 19, 21 and 23 June 2017 at the three stream water monitoring stations and four marine water quality monitoring stations. The weather and sea conditions throughout the monitoring period are presented in **Appendix F**.

#### 2.1.3 Summary of Findings for Post-Construction Monitoring Investigation of Exceedance

Totally eight Limit Level exceedances of testing results were recorded during the reporting month. Summary of findings for exceedance investigation have been provided as follows:

##### Exceedance recorded for Marine Water Quality Monitoring

###### 16 June 2017

At mid-ebb tide, Limit Level exceedance of cadmium was recorded at impact station M1 and M2. It was noted that elevated level of Cadmium was also recorded at control station C2 and C3.

At mid-flood tide, Limit Level exceedance of cadmium was recorded at impact station M1 and M2. It was noted that elevated level of Cadmium was also recorded at control station C2 and C3.

#### 21 June 2017

At mid-ebb tide, Limit Level exceedance of cadmium was recorded at impact station M1 and M2. It was noted that elevated level of Cadmium was also recorded at control station C2 and C3.

At mid-flood tide, Limit Level exceedance of cadmium was recorded at impact station M1 and M2. It was noted that elevated level of Cadmium was also recorded at control station C2 and C3.

The exceedance of Limit Level at impact stations was observed on two monitoring days. Elevated level of Cadmium was also recorded at control station at the same tide on that day. Formation of northern surcharge, housekeeping at drainage outfall and loading test were conducted. These works are considered not belonged to the designated project (DP). Based on the above observations, the limit level exceedance of Cadmium was considered not related to the designated project (DP).

## 2.2 Ecological Monitoring

Monitoring was undertaken following the survey methodology in the EM&A Manual by qualified ecologist. A transect was followed for monitoring the target species Little Grebe (*Tachybaptus ruficollis*) within the West Ash Lagoon, the remaining portion of Middle Ash Lagoon, and the man-made channel at the northern edge of the PFA platform in the Middle Ash Lagoon for once per month. Number of Little Grebe in each of these areas was recorded separately. Attention was paid on any signs of breeding activities of Little Grebe. Signs of breeding activities were recorded and location of nests were mapped if any.

Ecological surveys were conducted in monthly basis. In the West Ash Lagoon, the highest count of Little Grebe was recorded in May 2017 with 22 nos. including 4 juveniles. In April 2017, a suspected hatching activity was observed. Summary of the Little Grebe numbers are shown in **Table 3**.

**Table 3: Summary of Little Grebe numbers at West Ash Lagoon in reporting period**

**Oct 2016   Nov 2016   Dec 2016   Jan 2017   Feb 2017   Mar 2017   Apr 2017   May 2017**

	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017
Little Grebe individual	6	5	7	6	7	14	21	22

However, no Little Grebe, juveniles, nests, signs of breeding or any breeding activities were observed at the remaining part of Middle Ash Lagoon and man-made water channel during the entire construction period.

## 2.3 Health Impact Monitoring

In accordance with **Section 3.2** of the EM&A Manual, indoor radon concentration has been measured monthly during the decommissioning phase.

Indoor radon concentration measurement has been performed in accordance with Appendix 2 of “Protocol of Radon Measurement for Non-residential Building” of EPD ProPECC Note PN 1/99 “Control of Radon Concentration in New Buildings”. The average indoor radon

concentration during the measurement period should preferably be lower than the territory-wide mean concentration of 100 Bq/m<sup>3</sup> and in any case, any individual measurement must not exceed 200 Bq/m<sup>3</sup> according to the Protocol.

The 48-hour average and the maximum radon concentrations measured at the three indoor sampling locations are summarised in **Table 4** for the entire construction period. The radon concentration of the sampling locations during the measurement period were all complied with the criteria of average indoor radon concentration being lower than 100 Bq/m<sup>3</sup> and individual measurement not exceeding 200 Bq/m<sup>3</sup> according to the Protocol.

**Table 4: Findings of Impact Measurement of Radon**

Sampling Location ID	SP1		SP2		SP3	
Sampling month	Radon Concentration (Bq/m <sup>3</sup> ) (48-hour average)	Radon Concentration (Bq/m <sup>3</sup> ) (Maximum)	Radon Concentration (Bq/m <sup>3</sup> ) (48-hour average)	Radon Concentration (Bq/m <sup>3</sup> ) (Maximum)	Radon Concentration (Bq/m <sup>3</sup> ) (48-hour average)	Radon Concentration (Bq/m <sup>3</sup> ) (Maximum)
October 2016	11	34	11	34	8	34
November 2016	7	34	7	29	7	34
December 2016	15	40	16	46	19	46
January 2017	33	46	33	44	34	49
February 2017	14	63	20	63	28	86
March 2017	7	29	23	68	21	74
April 2017	3	39	13	37	17	61
May 2017	8	35	19	80	18	40

## 2.4 Solid and Liquid Waste Management

The Contractor has been registered as a chemical waste producer for the Project. Construction and demolition (C&D) material sorting was carried out on site. Sufficient number of receptacles were available for general refuse collection.

The summary of waste generated during the entire construction period is presented in **Appendix G**.

## 3 Summary of Environmental Quality Performance Limits

### 3.1 Record on Non-compliance of Action and Limit Levels

#### 3.1.1 Record of Non-compliance

Exceedances of Action and Limit Levels were recorded for water quality during the entire construction period. Numbers of exceedance cases at the impact monitoring stations were summarised in **Table 2**.

#### 3.1.2 Exceedance Investigations

##### Water Quality

The Contractor was reminded to continue implementation of the water quality mitigation measures and site practices in accordance with the recommendations stated in the implementation Schedule of the EM&A Manual as far as practicable. The contractor has also taken mitigation measures such as sandbags for avoid the contaminated and untreated runoff flowing to the river. As the water discharge licence has been granted and the wastewater treatment facilities are in use, regular checks are conducted at the discharge points and the vicinity areas by the Contractor and the ET during weekly site inspection.

The site activities for the decommissioning project and any possible project-related causes of exceedances have been investigated and reported to the IEC. The exceedance investigations (including post-construction monitoring) have also been included in the monthly EM&A reports and summarised in **Table 5**. All of them were considered not related to the decommissioning project. For details, please refer to the corresponding monthly EM&A reports.

**Table 5: Summary of Exceedances and Compliance Status at Impact Stations**

Description of exceedance	Site Activities	Exceedance related to project?
Exceedance of SS at S2 during November 2016	Hoarding erection and preparation works for asbestos pipe removal along the south access road.	No project-related activity was identified which might have caused the recorded Action Level exceedance of SS. No effluent or any pretreated water was discharged from the site as the Contractor was awaiting the approval and issuance of water discharge licence. The abovementioned exceedance was unlikely due to any project works or site activities and therefore not considered to be related to the project.
Exceedance of Cadmium at M1 and M2 during November and December 2016	Decommissioning works involving soil filling and rolling pass	No project-related activity was identified not having potential of any PFA falling into the nearby seawater causing the Limit Level exceedances of Cadmium. Based on the above observations, the exceedances of Cadmium were found unlikely due to project works or site activities, therefore considered not related to the project.

Description of exceedance	Site Activities	Exceedance related to project?
Exceedance of SS at S2 during February 2017	Decommissioning works at the external access road	No project-related activity which might have caused the recorded Limit Level exceedance of SS was identified. No effluent or any pre-treated water was discharged from the site during site inspection. The abovementioned exceedance was unlikely due to any project works or site activities, and therefore considered not related to the project.
Exceedance of Cadmium at M1 and M2 during January, February, and March 2017	Soil filling at PFA platform and access roads, removal of asbestos pipe, and outfall pipe installation (breaking surface to expose lamp cable)	No project-related activity which might have caused the Limit Level exceedances of Cadmium was identified. No water discharge was observed. Based on the above observations, the exceedances of Cadmium were found unlikely due to project works or site activities, therefore considered not related to the project.
Exceedance of Chromium at M2 during February 2017	Sand Replacement Test (SRT) for external access road	No project-related activity which might have caused the Limit Level exceedance of Chromium was identified. No water discharge was observed. The exceedances were found unlikely due to project works or site activities and therefore considered not related to the project.
Exceedance of Aluminium at M1 and M2 during February and March 2017	Decommissioning works (soil filling at external access road) and outfall pipe installation (breaking surface to expose lamp cable)	No project-related activity which might have caused the Limit Level exceedances of Aluminium was identified. No water discharge was observed. The exceedances were found unlikely due to project works or site activities and therefore considered not related to the project.
Exceedance of Cadmium at M1 and M2 during April and May 2017	Construction of outfall	No project-related activity which might have caused the recorded exceedances. This site activity is considered not having potential of any PFA falling into the nearby seawater or any disturbance to the seawall embankment which might cause a source of leaching Cadmium into the seawater.
Exceedance of Cadmium at M1 and M2 during June 2017 (Post-construction monitoring)	Formation of northern surcharge and loading test	These works are considered not belonged to the designated project (DP). Based on the above observations, the limit level exceedance of Cadmium was considered not related to the designated project (DP).

In summary, no water discharge from the site was observed in the construction and post-construction period. In view of the nature of the project works or site activities, the exceedances were considered not related to Project works.

### 3.2 Summary Record on Environmental Complaints Received

There was no record of complaints received during the entire construction period.

### 3.3 Summary Record on Notifications of Summons and Successful Prosecutions

No notifications of summons or successful prosecution were received during the entire construction period of the Project.



### 3.4 Summary of Follow-up Actions Taken

#### **Non-compliance of Action and Limit Levels**

Although it is considered that the exceedances of Action and Limit Levels for water quality were not related to the Project, the Contractor was reminded to implement the water quality mitigation measures in accordance with the recommendations stated in in the Implementation Schedule of the EM&A Manual as far as practicable.

#### **Complaints, Summons and Prosecutions**

Not applicable for the construction period.

## 4 Review of the Validity of EIA Predictions

### Water Quality

In the EIA stage, it was predicted the sources of water quality impact throughout the decommissioning and construction phase include drainage and construction site-runoff, sewage effluent produced by workforce, wastewater generated from general construction activities, and PFA leachate.

The construction runoff discharged from the Project Site fully complied with the standards stated in EIA Section 6.2. With proper implementation of construction site mitigation measures and good site practices described in ProPECC PN 1/94, adverse water quality impacts on the WSRs during construction phase is not anticipated.

The environmental monitoring results shown the exceedances in the reporting period. As mentioned in Section 2.1, however the investigation found that was unlikely due to the project works or site activities. Therefore, it is not considered to be project related.

### Ecological monitoring

The EIA report has predicted major ecological impacts of the proposed Project include loss of about 2.7 hectare of ash platform in the Middle Ash Lagoon, 0.6 hectare of grassland/shrub land and 0.7 hectare of urbanised/disturbed area.

The potential impact to Little Grebe has been largely avoided by reduction of decommissioning area and leaving the 30m water channel (potential breeding habitat of Little Grebe) largely unaffected. In April 2017, breeding activity was still observed in the West Ash Lagoon.

With proper implementation of good site practices and mitigation measures, no significant adverse ecological impact was observed during the decommissioning work.

### Health Impact

No exceedances of radon were recorded at the monitoring station.

The EIA Report predicted that the potential health risk induced by radon emissions associated with PFA arising from the decommissioning and construction was evaluated through a quantitative assessment, literature review and site measurements. The results indicated that the health impact associated with PFA due to radon emissions would be minimal. Through implementation of mitigation measures, the health effects of radon would be minimal.

The environmental monitoring results indicated that the decommissioning activities in general were in compliance with the relevant environmental requirements and were environmentally acceptable. The weekly site inspections ensured that all the environmental mitigation measures recommended in the EIA Report and EM&A Manual were effectively implemented. Despite the minor deficiencies found during site audits, the Contractor has taken appropriate actions to rectify deficiencies within a reasonable timeframe. Therefore, the effectiveness and efficiency of the mitigation measures were considered high for most of the time.

## 5 Review of EM&A Programme

The environmental monitoring methodology and procedures were regularly reviewed by the ET. Weekly environmental site inspections and monthly joint environmental site inspections have been conducted during the reporting period. Findings of the site inspections confirmed that the environmental mitigation measures recommended in the EIA Report were properly implemented by the Contractor, and the recommended mitigation measures have been working effectively.

There was no non-compliance recorded during the site inspections and environmental performance complied with environmental requirements.

The recommended mitigation measures have been properly implemented and working effectively. The EM&A programme has been reviewed and was considered as adequate and effective.

## 6 Comments and Recommendations

### 6.1 Conclusions

The EM&A programme for construction of the subject works was performed from 20 October 2016 to 24 May 2017. All monitoring and audit results and findings in the construction period were checked and reviewed.

No environmental complaints, notification of summons of successful prosecutions were received or made against the subject works of the Project during the entire construction period.

Monitoring of water quality, ecology and health impacts for the Project were conducted as scheduled in the construction period. Post-construction monitoring on water quality was undertaken as require in EM&A Manual. Water quality parameters (including pH, DO, turbidity, SS and metals) under monitoring have been checked against the established Action and Limit levels.

Investigations of exceedances recorded for water quality monitoring found that the exceedances were unlikely due to any project works or site activities and therefore not considered to be related to the project. During post-construction monitoring period, the works conducted were not related to the designated project (DP).

For ecological monitoring, a maximum count of 22 individuals of Little Grebe and maximum 4 individuals of juvenile was recorded in the West Ash Lagoon with suspected hatching activity observed in April 2017 and no Little Grebe, juveniles, nests, signs of breeding or any breeding activities were observed at the remaining part of Middle Ash Lagoon and man-made water channel .

For health impact monitoring, no non-compliance of indoor radon concentration was recorded in the reporting period.

The completion of decommissioning and associated works of the Project has been confirmed on 24 May 2017.

### 6.2 Recommendations

With considerations on the construction activities and environment, the following reminders and recommendations were provided:

#### Dust Impact

- Sufficient water spraying in the construction site and covering of stockpile were reminded as a good practice for dust suppression.
- Provision of sufficient wheel-washing facilities was recommended

#### Air Quality

- Regular maintenance of generator was recommended.

#### Ecological Impact

- Improvement for the hoarding along the boundary of site area between the northern edge of the site area and the man-made channel north of the site was recommended to minimize potential disturbance impact on ecology.
- Repair of the bottom of the hoarding was reminded to prevent any leakage.

### **Waste Management**

- Proper waste recycling and management of general waste were reminded.
- Proper management of chemical containers.

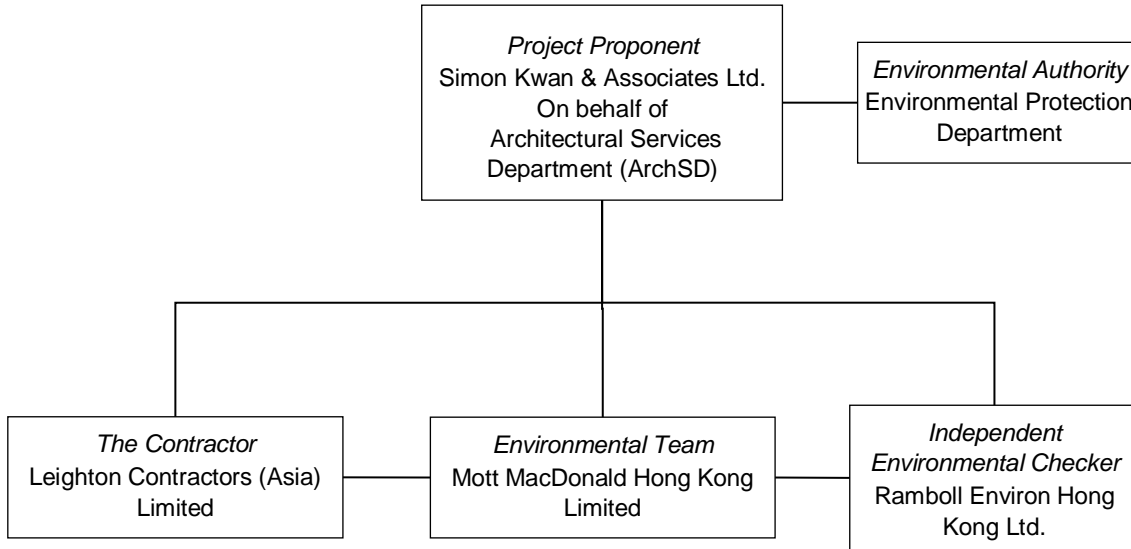
### **Water Quality**

- Repair and maintenance of fuel injector were reminded to prevent oil leakage.
- Proper collection and treatment of wheel washing water were recommended.
- Provision of preventive measure to avoid any surface runoff.

# Appendices

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# A. Project Organization Chart



**Contact information:**

Company / Department	Position	Name	Telephone / Mobile
Simon Kwan & Associates Ltd. on behalf of Architectural Services Department (ArchSD)	Architectural and lead consultant	Mr K.K. Chung	2882 2500
Ramboll Environ Hong Kong Ltd.	Independent Environmental Checker	Mr Y.H. Hui	3465 2850
Mott MacDonald Hong Kong Ltd.	Environmental Team Leader	Mr Gary Chow	2828 5874
Leighton Contractors (Asia) Limited	Project Manager	Mr Wing Chung AU	3973 1391
Leighton Contractors (Asia) Limited	Site Agent	Mr Josh Liu	9336 3997
Leighton Contractors (Asia) Limited	Environmental Officer	Mr Valentine Ho	3973 0357

## **B. Construction Programme**



**EM&A Programme for Decommissioning of West Portion of the Middle Ash Lagoon at Tsang Tsui, Tuen Mun**

**Works Programme**

<b>Month and Week</b>	Oct 2016				Nov 2016				Dec 2016				Jan 2017				Feb 2017				Mar 2017				Apr 2017				May 2017			
<b>Tasks</b>	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Decommissioning work mainly on Columbarium site (e.g. site hoarding works, site clearance)																																
Decommissioning work on Columbarium site and external access road; site hoarding at access road																																
Decommissioning work on external access road and surface outfall construction																																

## C. The Environmental Quality Performance Limits and Event and Action Plan for Water Quality

### Water Quality

**Table C.1: Action and Limit Levels for Water Quality**

Parameters	Action Level	Limit Level
DO in mg/L	≤4.2 mg/L	≤ 4 mg/L
SS in mg/L	≥45 mg/L or 120% of control station's SS on the same day of measurement	≥59 mg/L or 130% of control station's SS on the same day of measurement
Turbidity in NTU	≥31 NTU or 120% of control station's turbidity on the same day of measurement	≥39 NTU or 130% of control station's turbidity on the same day of measurement
pH	≤7.3 or ≥8.2	pH ≤ 6 or pH ≥ 9
Cadmium in µg/L	0.5 µg/L	0.5 µg/L
Chromium in µg/L	1 µg/L	1 µg/L
Aluminium in µg/L	20 µg/L	20 µg/L

**Note:**

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For metals, SS and turbidity, non-compliance of the water quality limit occurs when monitoring result is higher than the limits.

**Table C.2: Event and Action Plan for Water Quality**

Event	Action			
	ET Leader	IEC	ER	Contractor
Action level being exceeded by one sampling day	<ul style="list-style-type: none"> <li>Repeat in-situ measurement to confirm findings;</li> <li>Identify source(s) of impact;</li> <li>Inform IEC and Contractor;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>Discuss mitigation measures with IEC and Contractor; and</li> <li>Repeat measurement on next day of exceedance.</li> </ul>	<ul style="list-style-type: none"> <li>Discuss with ET and Contractor on the mitigation measures;</li> <li>Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; and</li> <li>Assess the effectiveness of the implemented mitigation measures.</li> </ul>	<ul style="list-style-type: none"> <li>Discuss with IEC on the proposed mitigation measures; and</li> <li>Make agreement on the mitigation measures to be implemented</li> </ul>	<ul style="list-style-type: none"> <li>Inform the ER and confirm notification of the non-compliance in writing;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment;</li> <li>Consider changes of working methods;</li> <li>Discuss with ET and IEC and propose mitigation measures to IEC and ER; and</li> <li>Implement the agreed mitigation measures.</li> </ul>

	ET Leader	IEC	ER	Contractor
Action level being exceeded by more than one consecutive sampling days	<ul style="list-style-type: none"> <li>Repeat in-situ measurement to confirm findings;</li> <li>Identify source(s) of impact;</li> <li>Inform IEC and Contractor;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>Discuss mitigation measures with IEC and Contractor;</li> <li>Ensure mitigation measures are implemented;</li> <li>Prepare to increase the monitoring frequency to daily; and</li> <li>Repeat measurement on next day of exceedance.</li> </ul>	<ul style="list-style-type: none"> <li>Discuss with ET and Contractor on the mitigation measures;</li> <li>Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; and</li> <li>Assess the effectiveness of the implemented mitigation measures.</li> </ul>	<ul style="list-style-type: none"> <li>Discuss with IEC on the proposed mitigation measures;</li> <li>Make agreement on the mitigation measures to be implemented; and</li> <li>Assess the effectiveness of the implemented mitigation measures.</li> </ul>	<ul style="list-style-type: none"> <li>Inform the Engineer and confirm notification of the non-compliance in writing;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment;</li> <li>Consider changes of working methods;</li> <li>Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days; and</li> <li>Implement the agreed mitigation measures.</li> </ul>
Limit level being exceeded by one sampling day	<ul style="list-style-type: none"> <li>Repeat in-situ measurement to confirm findings;</li> <li>Identify source(s) of impact;</li> <li>Inform IEC, contractor and EPD;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>Discuss mitigation measures with IEC, ER and Contractor;</li> <li>Ensure mitigation measures are implemented; and</li> <li>Increase the monitoring frequency to daily until no exceedance of Limit Level.</li> </ul>	<ul style="list-style-type: none"> <li>Discuss with ET and Contractor on the mitigation measures</li> <li>Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; and</li> <li>Assess the effectiveness of the implemented mitigation measures.</li> </ul>	<ul style="list-style-type: none"> <li>Discuss with IEC, ET and Contractor on the proposed mitigation measures;</li> <li>Request Contractor to critically review the working methods;</li> <li>Make agreement on the mitigation measures to be implemented; and</li> <li>Assess the effectiveness of the implemented mitigation measures.</li> </ul>	<ul style="list-style-type: none"> <li>Inform the Engineer and confirm notification of the non-compliance in writing;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment;</li> <li>Consider changes of working methods;</li> <li>Discuss with ET and IEC and ER and propose mitigation measures to IEC and ER within 3 working days; and</li> <li>Implement the agreed mitigation measures.</li> </ul>
Limit level being exceeded by more than one consecutive sampling days	<ul style="list-style-type: none"> <li>Repeat in-situ measurement to confirm findings;</li> <li>Identify reasons for non-compliance and source(s) of impact;</li> <li>Inform IEC, contractor and EPD;</li> <li>Check monitoring data, all plant, equipment and</li> </ul>	<ul style="list-style-type: none"> <li>Discuss with ET and Contractor on the mitigation measures</li> <li>Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; and</li> <li>Assess the effectiveness of the</li> </ul>	<ul style="list-style-type: none"> <li>Discuss with IEC, ET and Contractor on the proposed mitigation measures;</li> <li>Request Contractor to critically review the working methods;</li> <li>Make agreement on the mitigation measures to be implemented;</li> </ul>	<ul style="list-style-type: none"> <li>Inform the ER and confirm notification of the non-compliance in writing;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment;</li> </ul>

ET Leader	IEC	ER	Contractor
<p>Contractor's working methods;</p> <ul style="list-style-type: none"> <li>● Discuss mitigation measures with IEC, ER and Contractor;</li> <li>● Ensure mitigation measures are implemented; and</li> <li>● Increase the monitoring frequency to daily until no exceedance of Limit Level.</li> </ul>	<p>implemented mitigation measures.</p>	<ul style="list-style-type: none"> <li>● Assess the effectiveness of the implemented mitigation measures; and</li> <li>● Consider and instruct, if necessary, the Contractor to slow down or stop all or part of the construction (decommissioning) activities until no exceedance of Limit Level.</li> </ul>	<ul style="list-style-type: none"> <li>● Consider changes of working methods;</li> <li>● Discuss with ET and IEC and ER and propose mitigation measures to IEC and ER within 3 working days;</li> <li>● Implement the agreed mitigation measures; and</li> <li>● As directed by the Engineer, to slow down or to stop all or part of the construction (decommissioning) activities</li> </ul>

## D. Environmental Mitigation Measures - Implementation Status

### Air Quality Mitigation Measures during construction

Recommended measures	Implementation Status
Dust Suppression by watering of construction area at least 10 times per day.	✓
The access roads provide covering of 50% of open area with impervious materials or concrete paving.	N/A
Limited working period to 180 days.	✓
Provision pavement to construction access road with concrete paving and provide wheel washing facility at entrance and exit.	✓
Skip hoist for material transport enclosed by impervious sheeting	N/A
Vehicles washing facilities provided at every vehicle exit point.	✓
The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point paved with concrete, bituminous materials or hardcore or similar.	✓
Any hoarding (not less than 2.4, high from ground level) provided along the entire length except for a site entrance or exit where a site boundary adjoining a road, streets or other areas accessible to the public	✓
Every main haul road should be paved with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet	✓
The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit kept clear of dusty materials.	✓
Every stock of more than 20 bags of cement or dry PFA covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.	✓
All dusty materials sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.	✓
Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	✓
The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle?	N/A
Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading points, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods.	N/A
Imposition of speed controls for vehicles on unpaved site roads. Ten kilometres per hour is the recommended limit.	✓
The routing of vehicles and positioning of construction plant at the maximum possible distance from ASRs.	N/A
Instigation of an environmental auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	✓

### Health Impact – Recommended Mitigation Measures

Recommended measures	Implementation Status
Dust Suppression by watering of construction area at least 10 times per day.	N/A
Provide covering of 50% of open area with impervious materials or concrete paving.	N/A
Limited working period to 180 days.	N/A
Provision pavement to construction access road with concrete paving and provide wheel washing facility at entrance and exit.	✓

Recommended measures	Implementation Status
Signage and training provided to inform the Contractor and respective personnel on-site to avoid ingestion of chemical/contaminants through the consumption of PFA soil and leachate water from nearby water streams.	N/A
Shower facilities to workers to wash away any PFA attached to skin surfaces.	✓
Provision of soil covers on top of ash lagoon.	N/A
Sufficient ventilation through introduction of forced and natural ventilation to the interior of the site office.	✓

### Noise Impact – Recommended Mitigation Measures

Recommended measures	Implementation Status
Only well-maintained plant should be operated on-site and plants should be serviced regularly during the construction period.	✓
Mobile plant, if any, should be sited as far from NSRs as possible.	✓
Plant known to emit noise strongly in one direction, where possible, orientated to direct noise away from the NSRs.	✓
Use of site hoarding as a noise barrier to screen noise at low level NSRs.	N/A
Machines and plant in intermittent use shut down between work periods or throttled down to a minimum	✓
Material stockpiles and other structures effectively utilised, where practicable, to screen noise from on-site construction activities.	N/A

### Water Quality– Recommended Mitigation Measures

Recommended measures	Implementation Status
At the start of the site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct storm water to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction.	✓
Boundaries of earthworks should be surrounded by dykes or embankments for flood protection, as necessary.	N/A
Sand/silt removal facilities such as sand/silt traps and sediment basins should be provided to remove sand/silt from runoff to meet the requirements of the TM-DSS. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction	N/A
Slope Stabilization works and construction of surface drainage outfall shall be carried out during dry season to minimize surface and storm water runoff discharge into the water channel Silt fences shall be erected to prevent contaminated surface runoff from entering the water channel.	N/A
Silt surface runoff and construction site drainage should be discharged into storm drains via silt removal facilities.	N/A
During rainstorm, exposed slope/soil surfaces should be covered by tarpaulin or other means, as far as practicable. Other measures that need to be implemented before, during and after rainstorms are summarized in ProPECC PN 1/94.	N/A
All exposed PFA/earth areas covered immediately after the earthworks have been completed.	N/A
Earthwork final surfaces should be well compacted and subsequent permanent work or surface protection is immediately performed.	N/A
Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms.	✓
All vehicles should be cleaned before leaving the works area to ensure no earth, mud and debris is deposited on roads. An adequately designed and sited wheel washing bay should be provided at every exit. The wheel washing facility should be designed to minimize the intake of surface water (rainwater). Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process.	✓

Recommended measures	Implementation Status
Construction solid waste should be collected, handled and disposed of properly to avoid entering into the nearby watercourses and public drainage system. Rubbish and litter from construction sites should also be collected to prevent spreading of rubbish and litter from the site area. It is recommended to clean the construction sites on a regular basis.	✓
The discharge quality must meet the requirements specified in the discharge license. All the run-off and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS.	N/A
Contractor must register as a chemical waste producer of chemical wastes that would be produced from construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	✓
Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas which appropriately equipped to control these discharges.	✓
Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. All fuel tanks and storage areas should be sited on sealed areas in order to prevent spillage of fuels and solvents to the nearby watercourses. All waste oils and fuels should be collected in designated tanks prior to disposal.	✓
Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport.	✓
Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents.	✓
Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.	✓
Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor would be responsible for appropriate disposal and maintenance of these facilities.	✓
Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	N/A

### Waste Management and Land Contamination – Recommended Mitigation

Recommended measures	Implementation Status
Obtain the necessary waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354) and Waste Disposal (Chemical Waste) (General) Regulation.	✓
Nomination of an approved person to be responsible for good site practice, arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site.	N/A
Use of a waste haulier licensed to collect specific category of waste.	N/A
A trip-ticket system should be included as one of the contractual requirements and implemented by the Environmental Team to monitor the disposal of solid wastes at landfills, and to control fly tipping.	N/A
Training of site personnel in proper waste management and chemical waste handling procedures.	N/A
Separation of chemical wastes for special handling and appropriate treatment at a licensed facility.	✓
Routine cleaning and maintenance programme for drainage systems, sumps and oil interceptors.	N/A
Provision of sufficient waste disposal points and regular collection for disposal.	✓
Adoption of appropriate measures to minimize windblown litter and dust during transportation of waste, such as covering trucks or transporting wastes in enclosed containers.	✓
Implementation of a recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).	N/A
Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.	✓
Encourage collection of aluminium cans, plastics bottles and packaging material (e.g. carton boxes) and office paper by individual collectors. Separate labelled bins should be provided to help segregate this waste from other general refuse generated by the work force.	✓
Any unused chemicals or those with remaining functional capacity should be reused as far as practicable.	N/A
Use of reusable non-timber formwork to reduce the amount of C&D materials.	N/A

Recommended measures	Implementation Status
Maximizing the use of reusable steel formwork to reduce the amount of C&D material	N/A
Prior to disposal of construction waste, wood, steel and other metals should be separated for re-use and/or recycling to minimize the quantity of waste to be disposed of to landfill.	Ü
Proper storage and site practices to reduce the potential for damage or contamination of construction materials.	N/A
C&D material and excavated materials should be reused on-site as fill material as far as possible.	N/A
Open stockpiles of construction materials (e.g. aggregates sand and fill material) and excavated material on sites shall be covered with tarpaulin or similar fabric during rainstorms.	Ü
Chemicals and chemical wastes should only be stored in suitable containers in purpose-built areas.	N/A
The storage of chemical wastes should comply with the requirements of the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.	N/A
Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed.	N/A
Have a capacity of less than 450 L unless the specifications have been approved by the EPD.	N/A
Displaying a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations.	N/A
Be clearly labelled and used solely for the storage of chemical waste.	Ü
Be enclosed on at least 3 sides..	Ü
Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area whichever is the greatest.	Ü
Have adequate ventilation.	Ü
Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary).	Ü
Be arranged so that incompatible materials are appropriately separated.	Ü
All recyclable materials (separated from the general waste) should be stored on-site in appropriate containers with cover prior to collection by a local recycler.	Ü
Residual, non-recyclable, general waste should be stored in appropriate containers to avoid odour. Regular collection should be arranged by an approved waste collector in purpose-built vehicles that minimise environmental impacts during transportation.	Ü

### Ecology – Recommended Mitigation Measures

Recommended measures	Implementation Status
Hoarding of not less than 2.4m high should be set up as a precautionary measure along the boundary of the works areas between the Middle and the West Ash Lagoon and between the northern edge of the ash platform and the water channel to shield the Little Grebe, if any, from the disturbance of human activities during decommissioning and construction phase.	Ü
The hoarded area should be inspected weekly for any damage by illegal access and to evaluate the effectiveness of the measures. Damage sighted should be reported to the site manager and damaged hoarding should be repaired by the Contractor as soon as possible.	Ü
Silt fences shall be erected and permanent fencing shall be erected along the top of the embankment as a physical barrier to minimize the human disturbance to the Little Grebes	N/A
Vegetation shall be used as slope stabilization strategy during both design and construction stages. Vegetation such as trees, shrubs and groundcovers shall be planted along the embankment to reduce the slope's susceptibility to surface erosion and slump falls and act as sight and sound barriers to avoid human contact with the ecological activities at the water channel.	N/A
Any construction works at water channel shall only be conducted within the non-breeding season (i.e. November to March of the following year) to minimize any disturbance to nesting activities of Little Grebes. Scheduling of work items should be implemented during design stage.	N/A



Recommended measures	Implementation Status
Regular checking should be undertaken to ensure that the work site boundaries are not exceeded and that no damage occurs to surrounding areas.	✓
Implementation of mitigation measures specified in ProPECC PN 1/94 to control site runoff and drainage at all work sites during construction.	N/A
Implementation of noise control measures at all construction sites to reduce impacts of construction noise to wildlife habitats adjacent works areas.	N/A
Construction debris and spoil should be covered up and/or properly disposed of as soon as possible to avoid being washed into nearby waterbodies by rain.	N/A
Coverage of filled slopes and materials with tarpaulin sheet.	✓
Construction effluent, site run-off and sewage should be properly collected and/or treated. Wastewater from a construction site should be managed with the following approach in descending order	✓
Placement of sand bags at fencing near the watercourse.	N/A
Proper locations for discharge outlets of wastewater treatment facilities well away from the aquatic habitats should be identified.	✓
Supervisory staff should be assigned to station on site to closely supervise and monitor the works.	✓

## Other

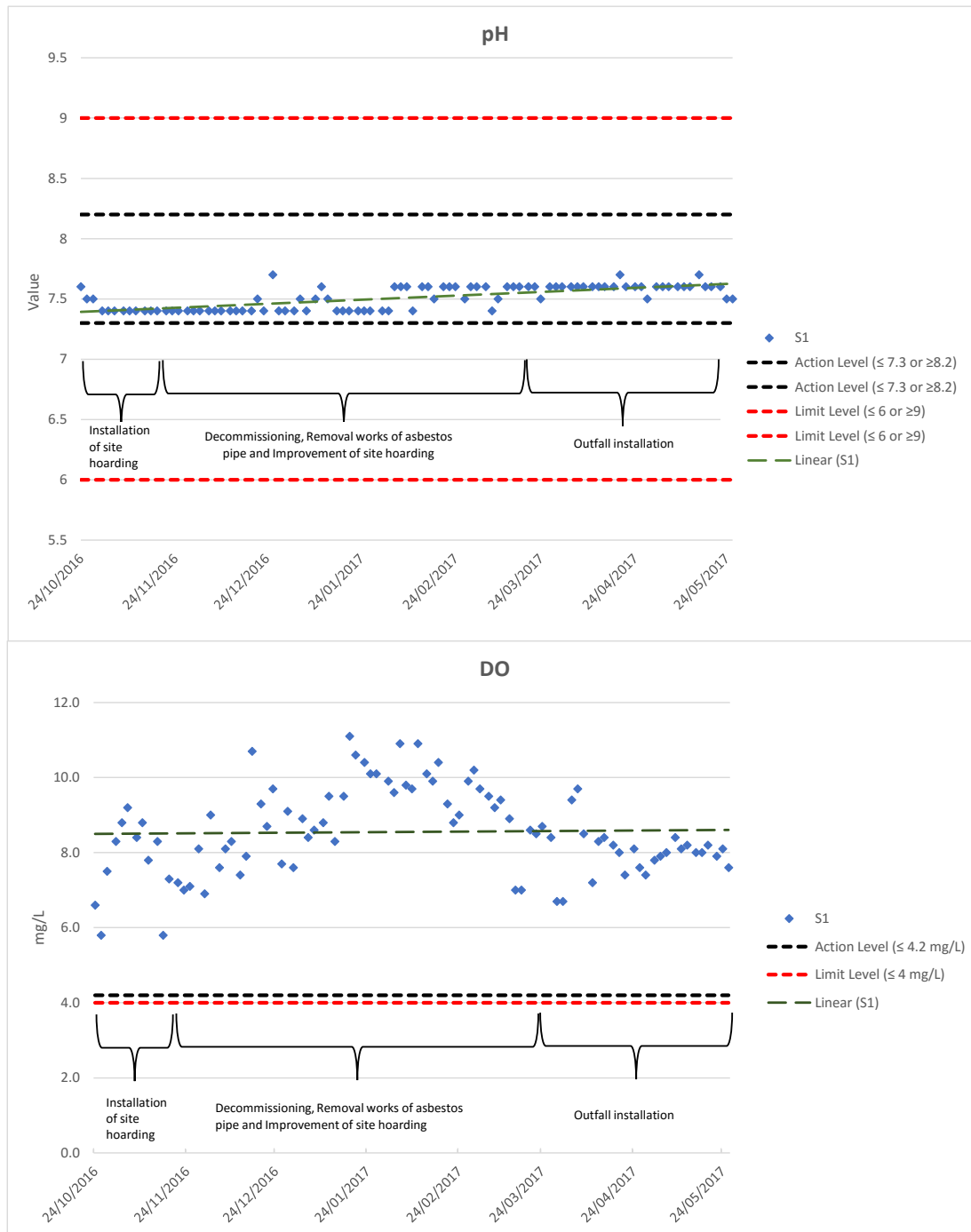
Recommended measures	Implementation Status
A copy of the Environmental Permit displayed conspicuously at all vehicular site entrances/exits for public information at all times.	✓

### Legend:

✓	Implemented
x	Not implemented
P	Partially implemented
N/A	Not applicable

## **E. Summary of Water quality monitoring results and graphical presentations**

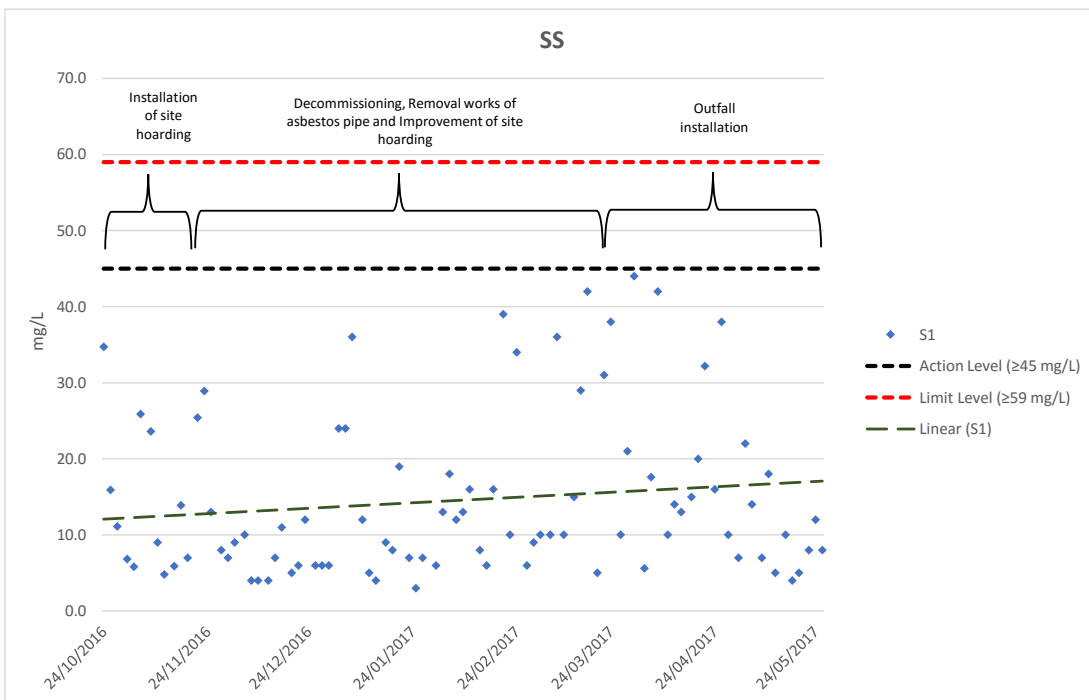
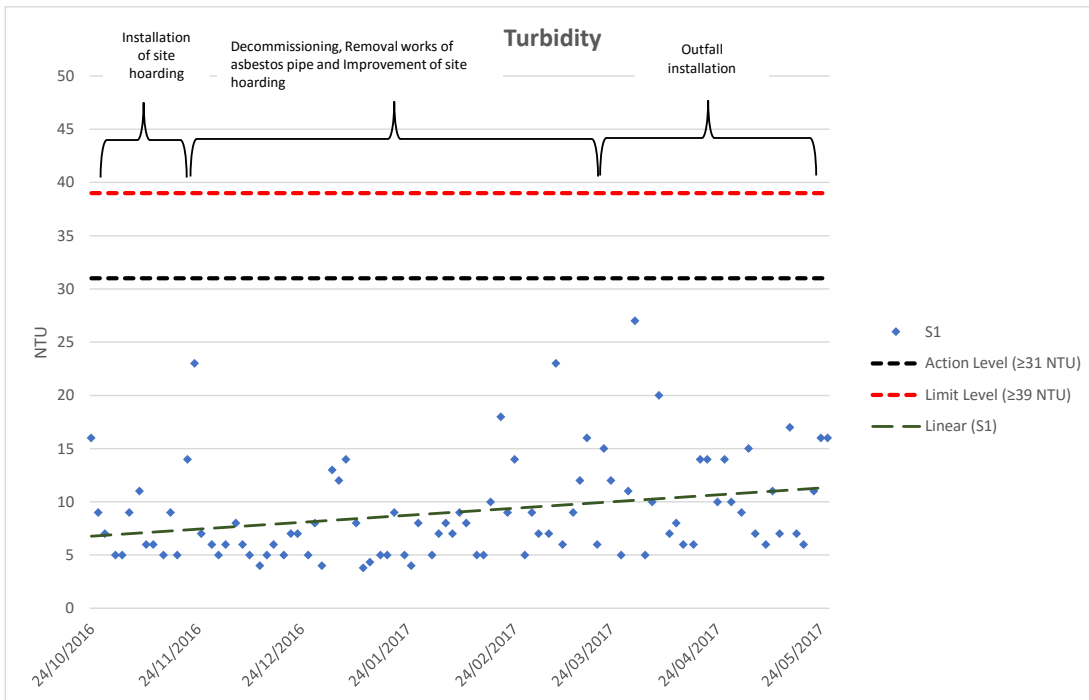
**Station S1**



**Note:**

(1) No adverse weather conditions were recorded during the monitoring dates.

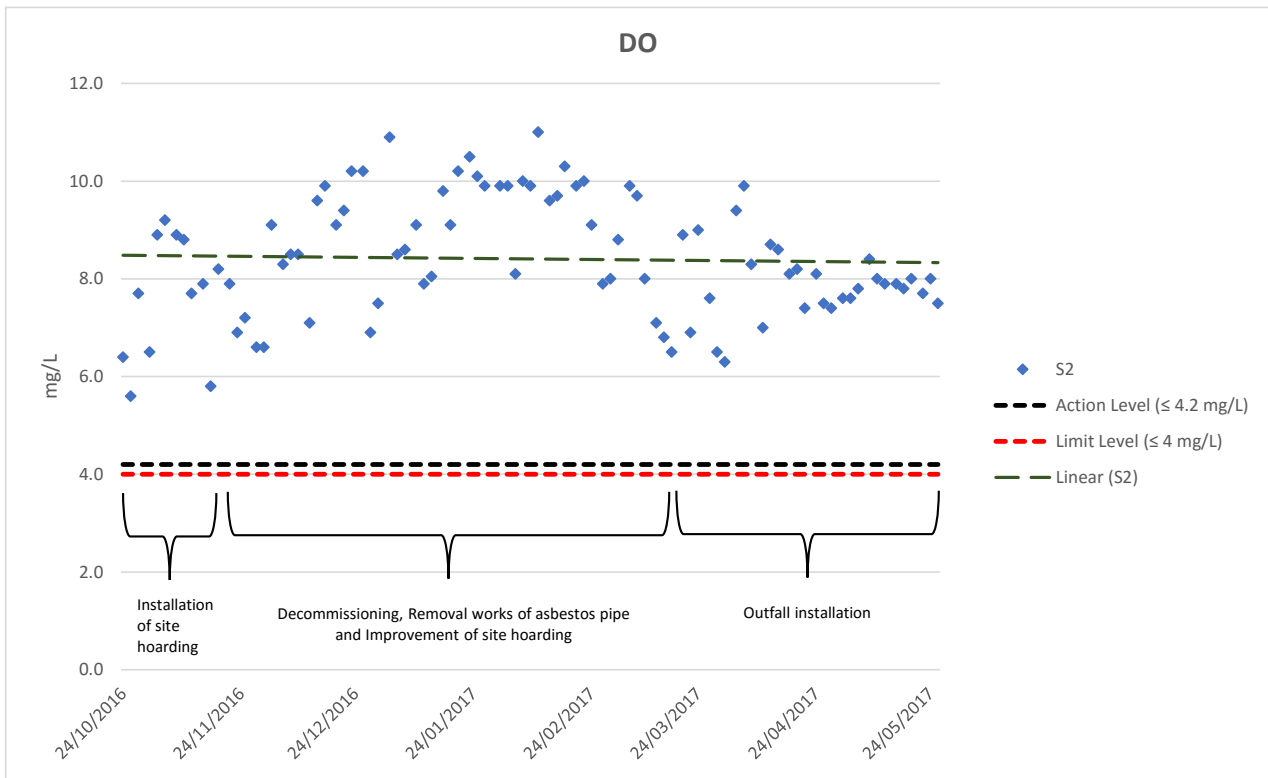
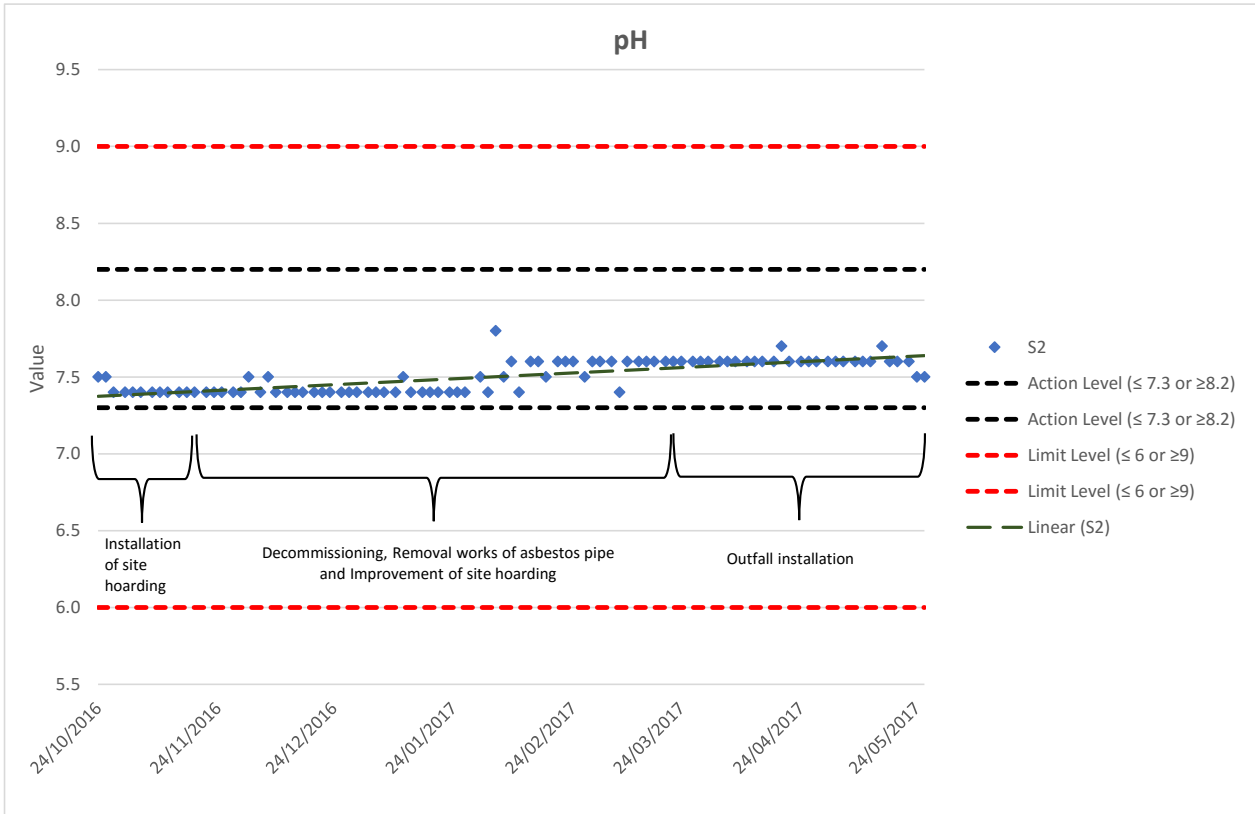
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**Note:**

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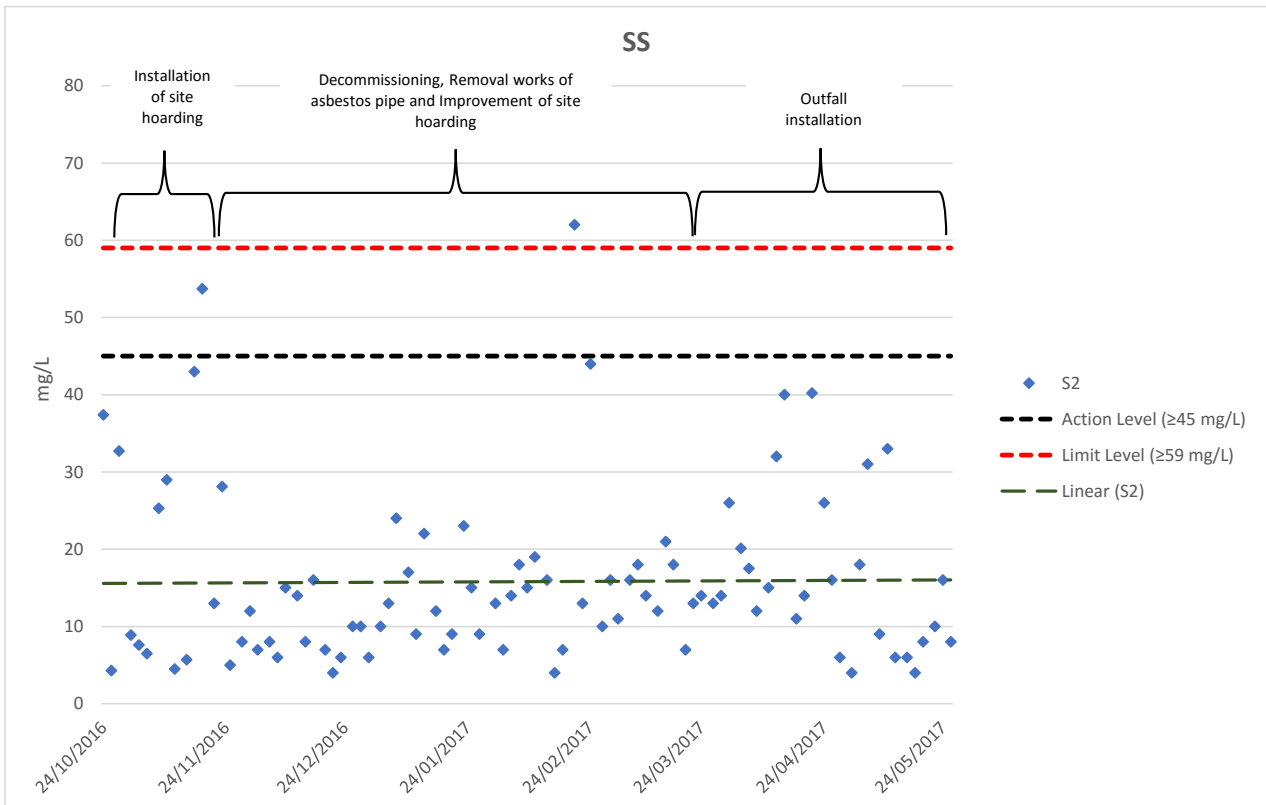
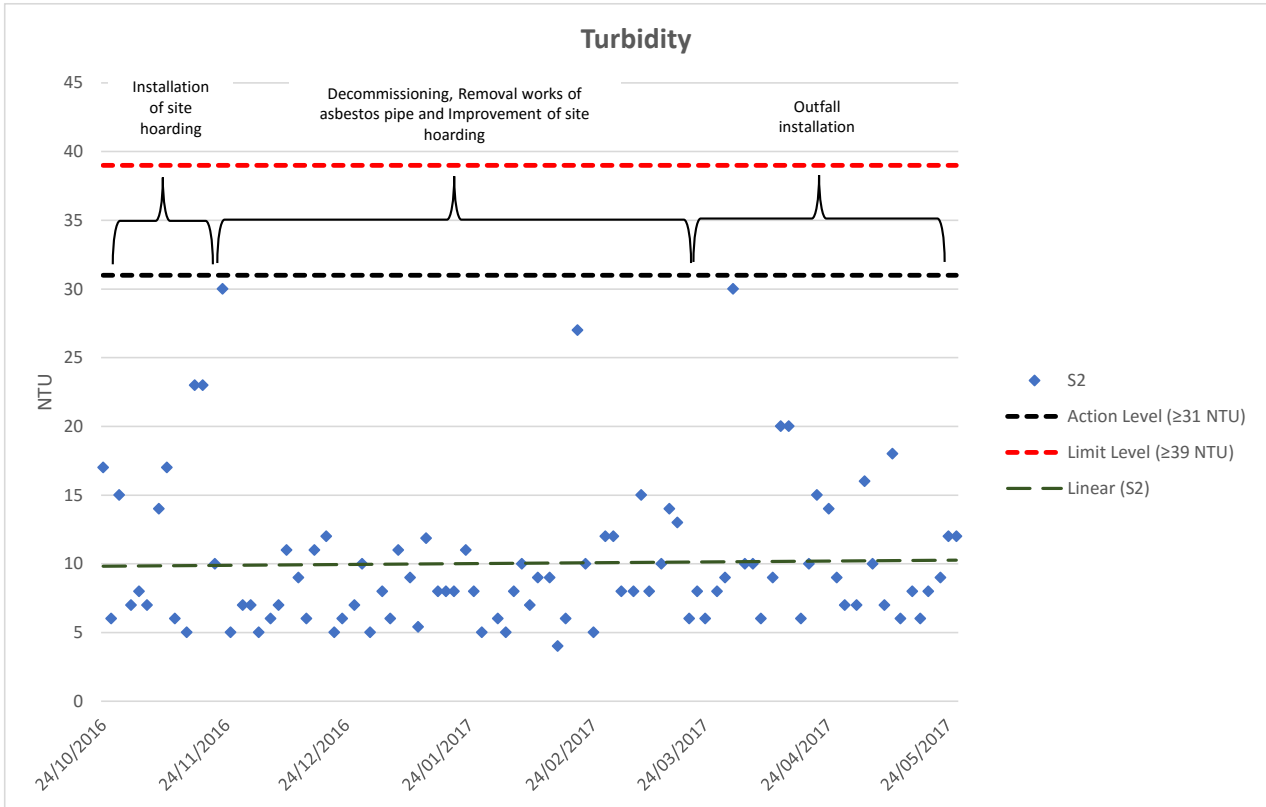
**Station S2**



**Note:**

(1) No adverse weather conditions were recorded during the monitoring dates.

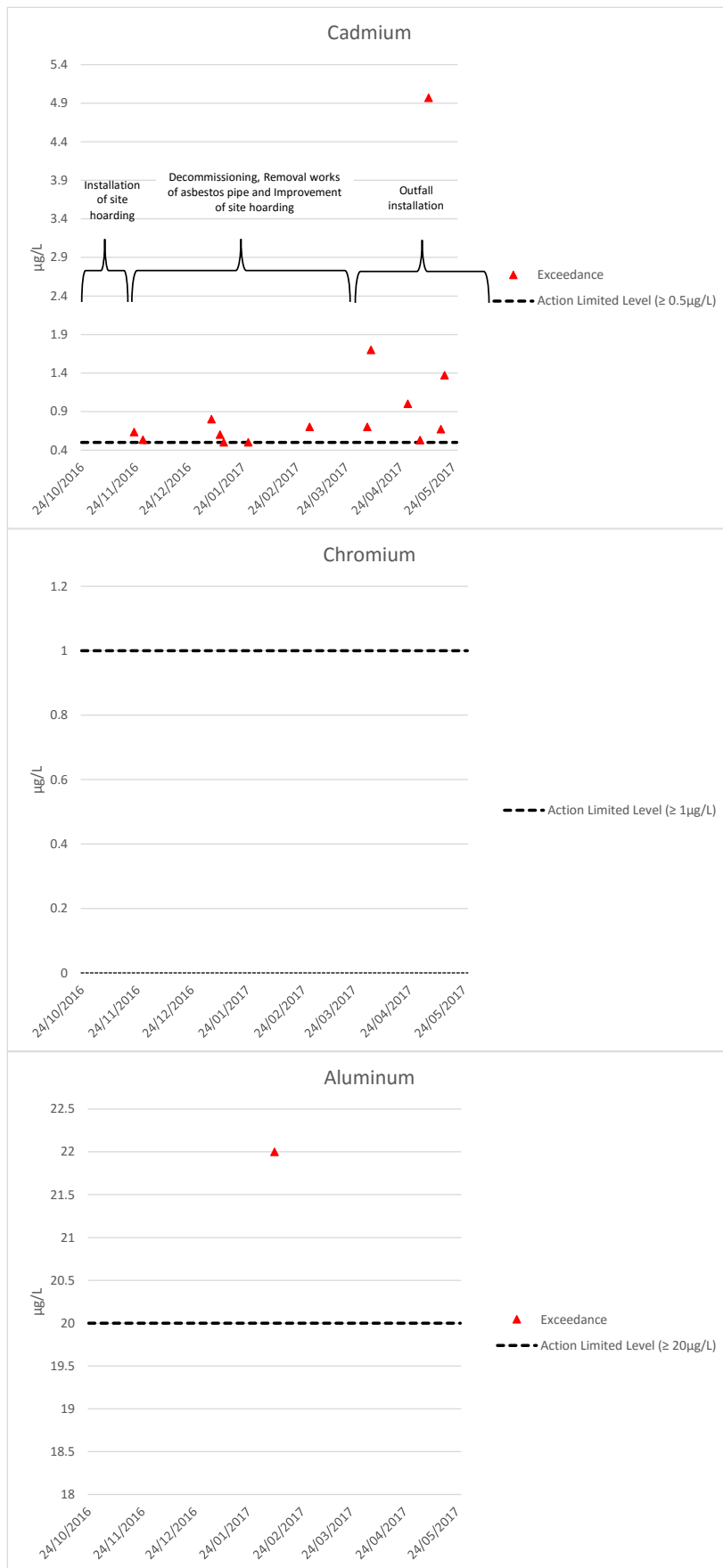
**Station S2**



**Note:**

(1) No adverse weather conditions were recorded during the monitoring dates.

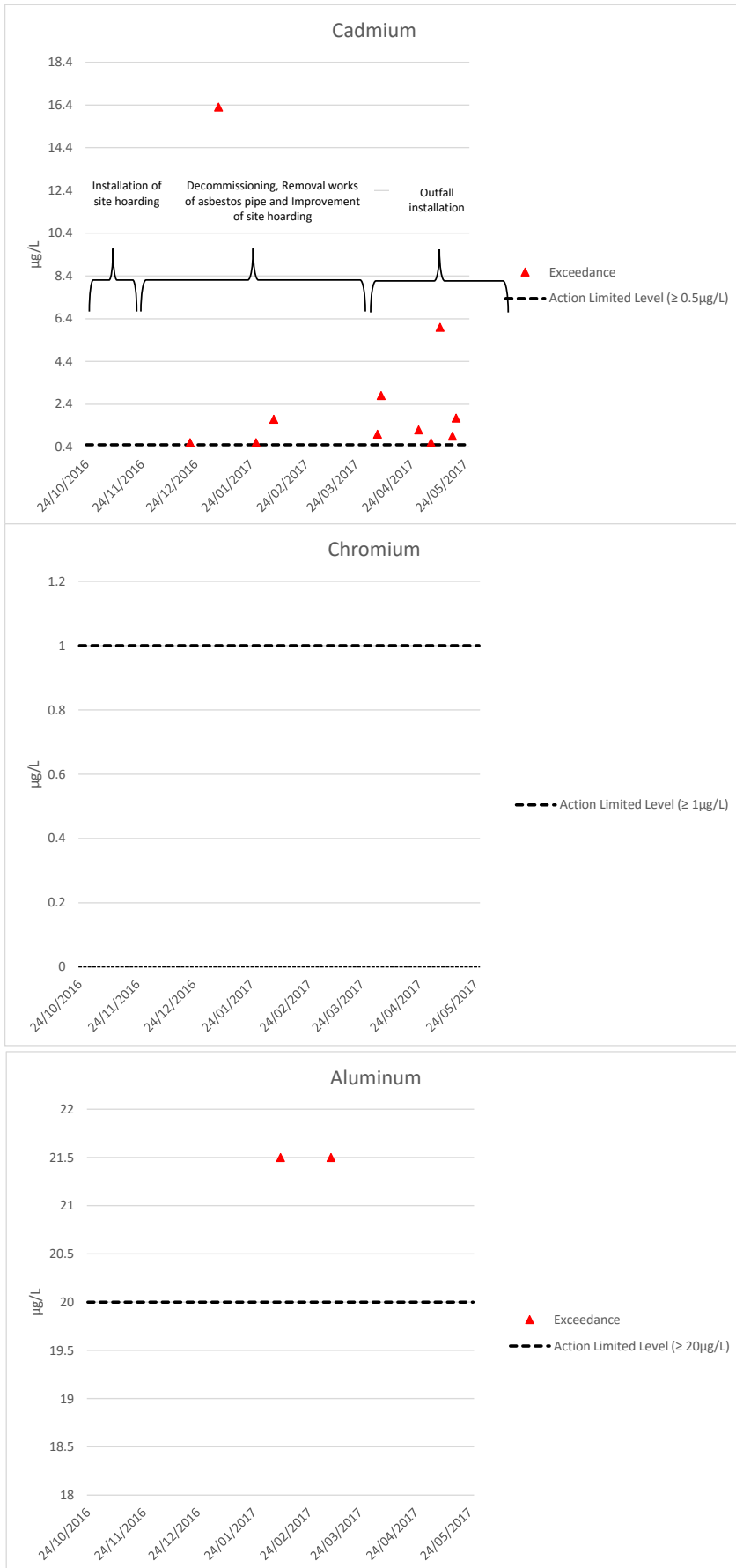
**Station M1 Ebb tide**



**Note:**

- (1) No adverse weather conditions were recorded during the monitoring dates.
- (2) Trend line is not shown in the graph due to the limitation of detection level.

**Station M2 Ebb tide**



**Note:**

- (1) No adverse weather conditions were recorded during the monitoring dates.
- (2) Trend line is not shown in the graph due to the limitation of detection level.



**Station M1 Flood tide**



**Note:**

- (1) No adverse weather conditions were recorded during the monitoring dates.
- (2) Trend line is not shown in the graph due to the limitation of detection level.

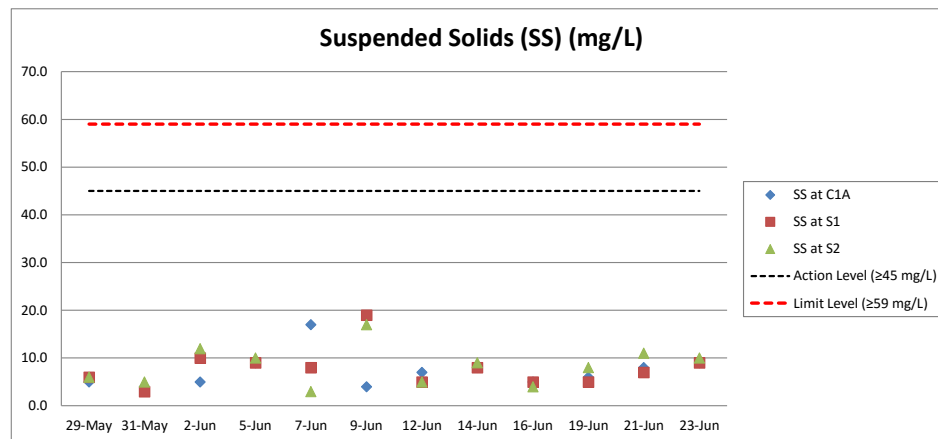
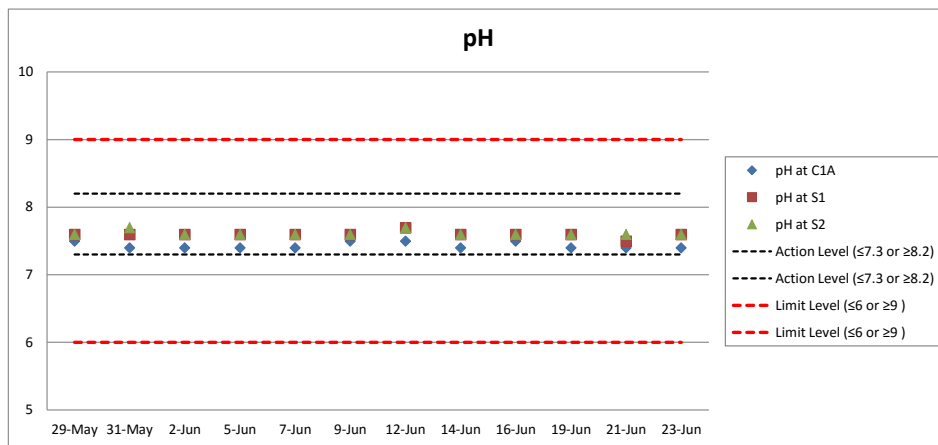
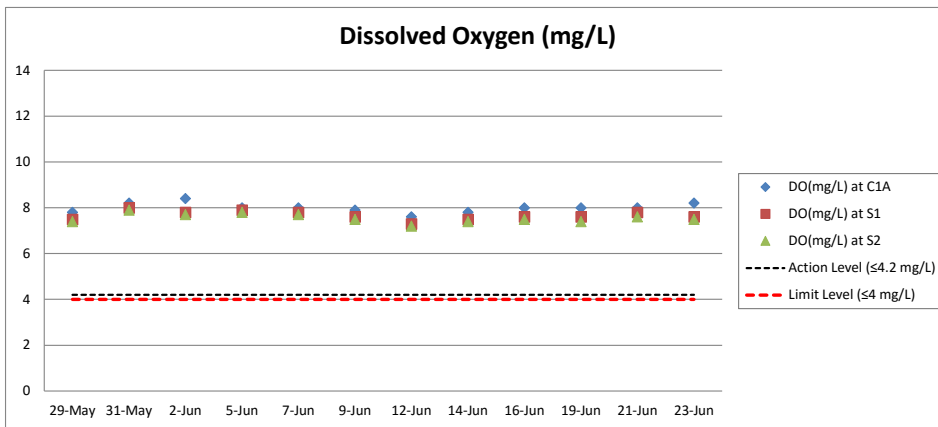
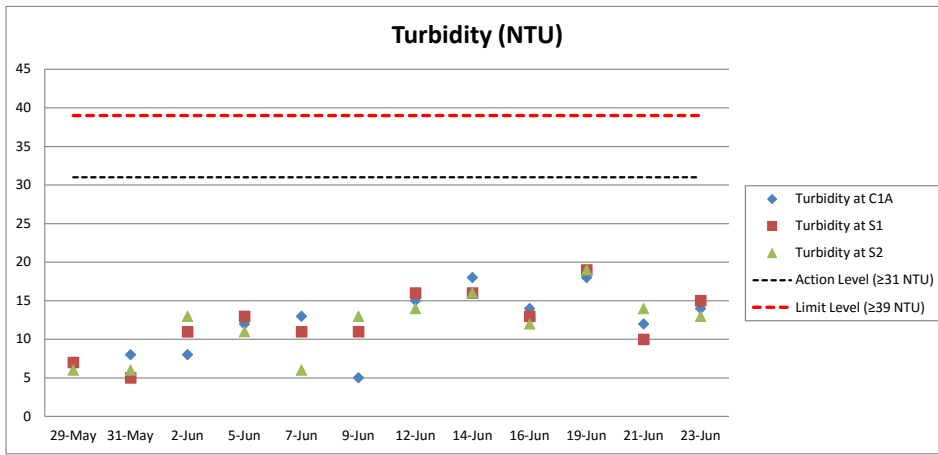
**Station M2 Flood tide**



**Note:**

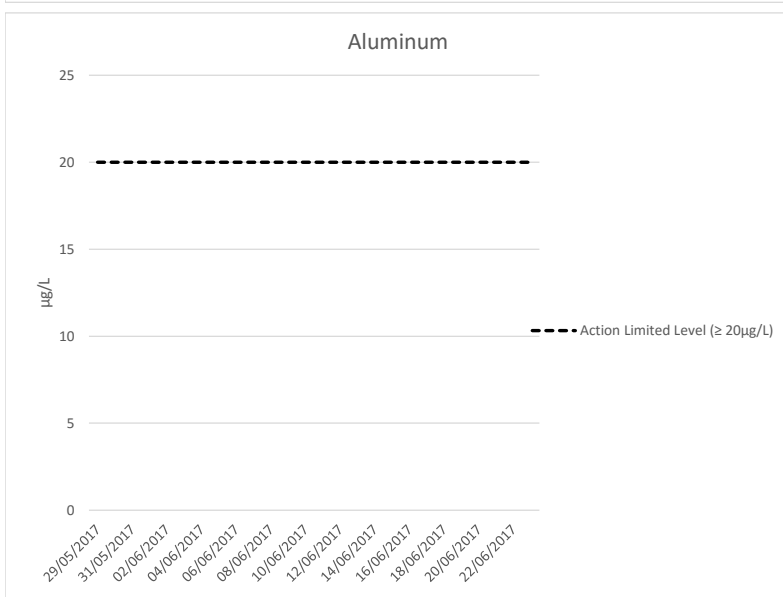
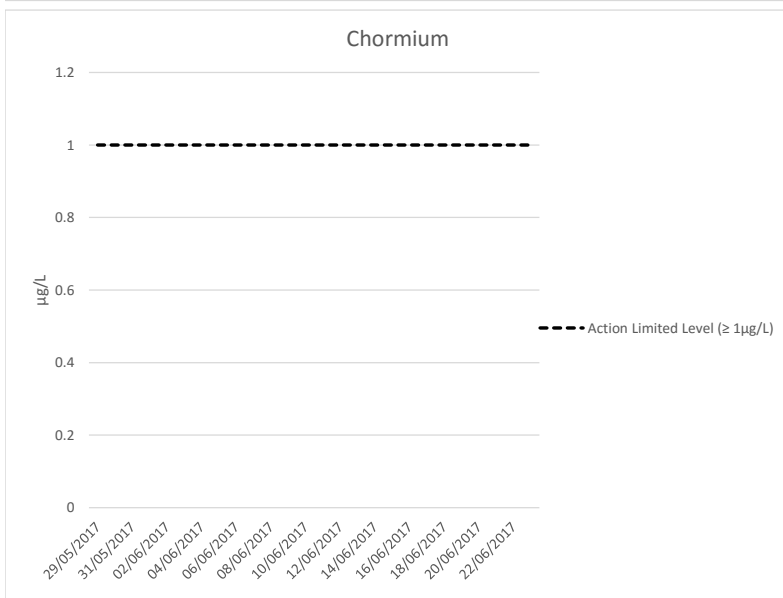
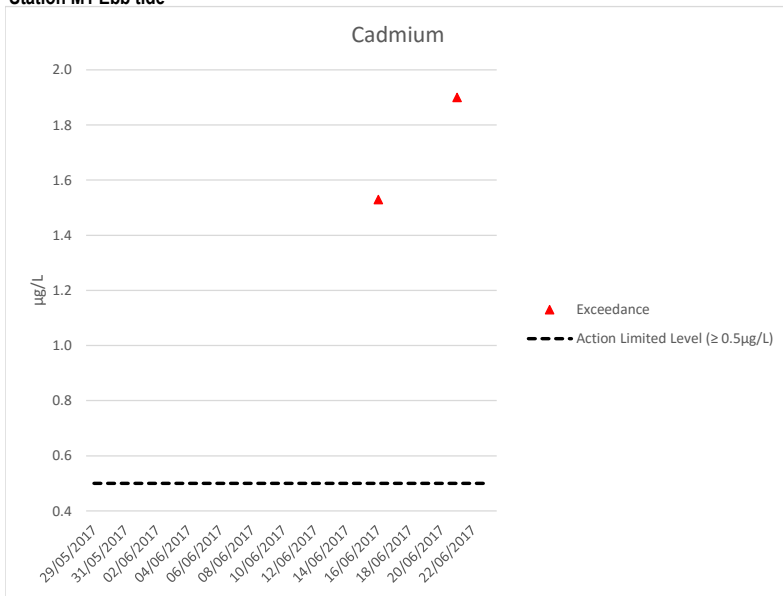
- (1) No adverse weather conditions were recorded during the monitoring dates.
- (2) Trend line is not shown in the graph due to the limitation of detection level.

## **F. Post construction Water quality monitoring results and graphical presentations**



Note:  
 (1) No adverse weather conditions were recorded during the monitoring dates.

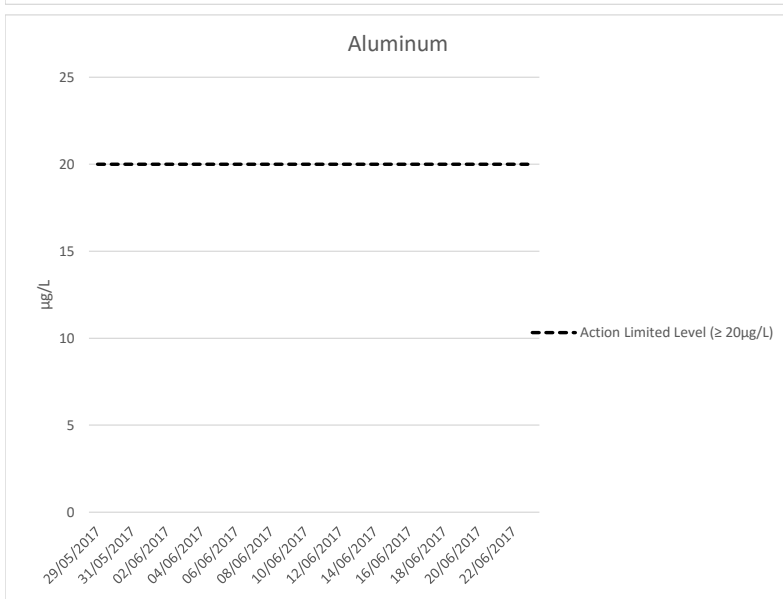
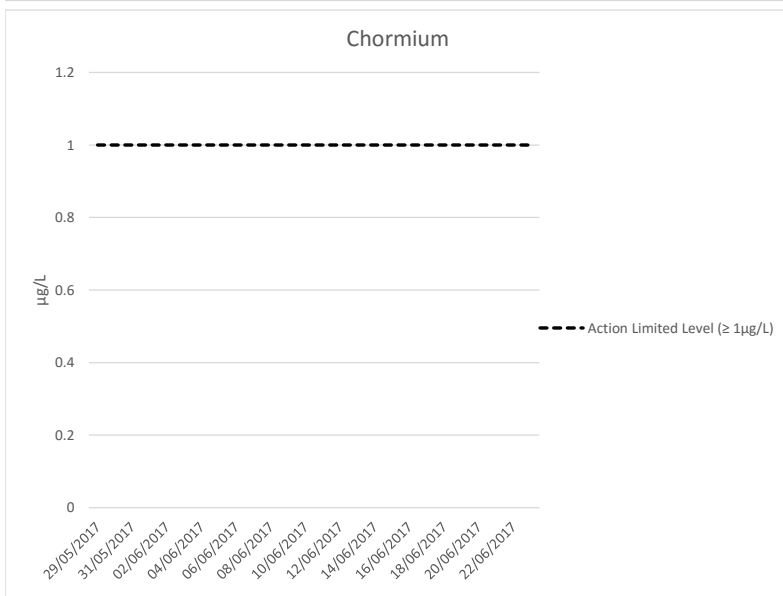
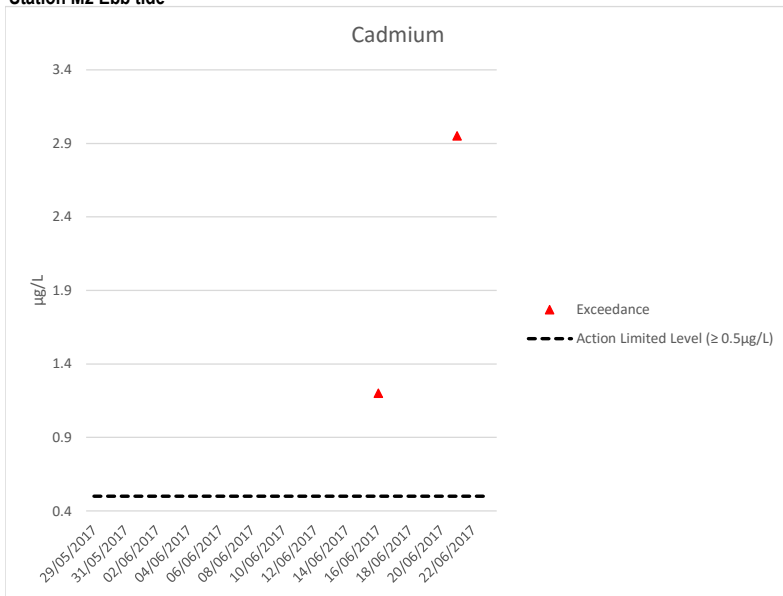
Station M1 Ebb tide



Note:

- (1) No adverse weather conditions were recorded during the monitoring dates.
- (2) Trend line is not shown in the graph due to the limitation of detection level.

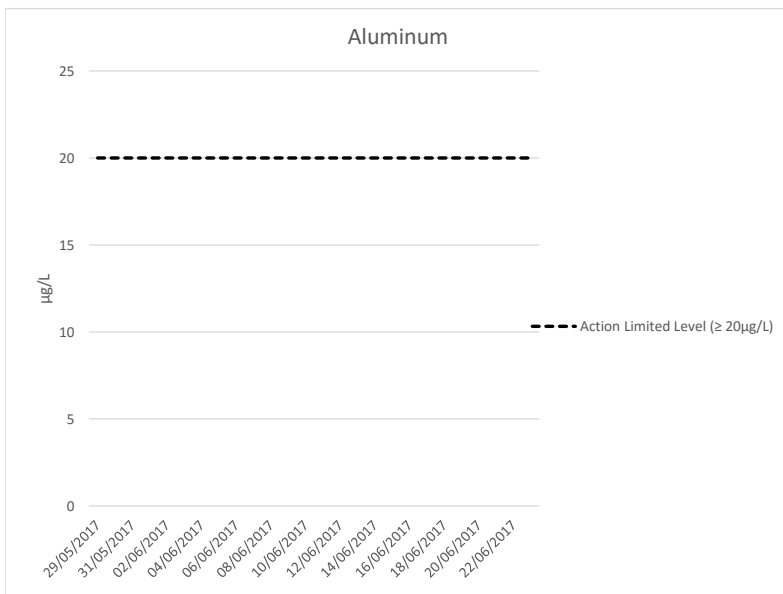
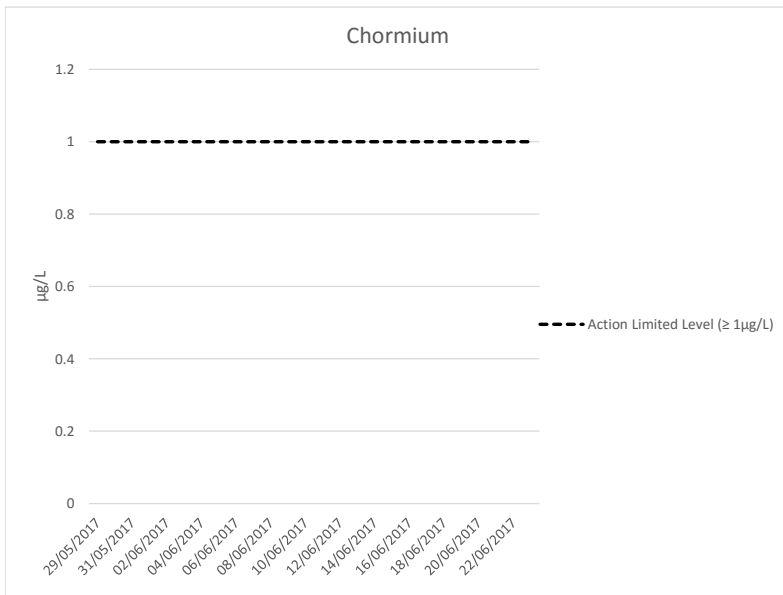
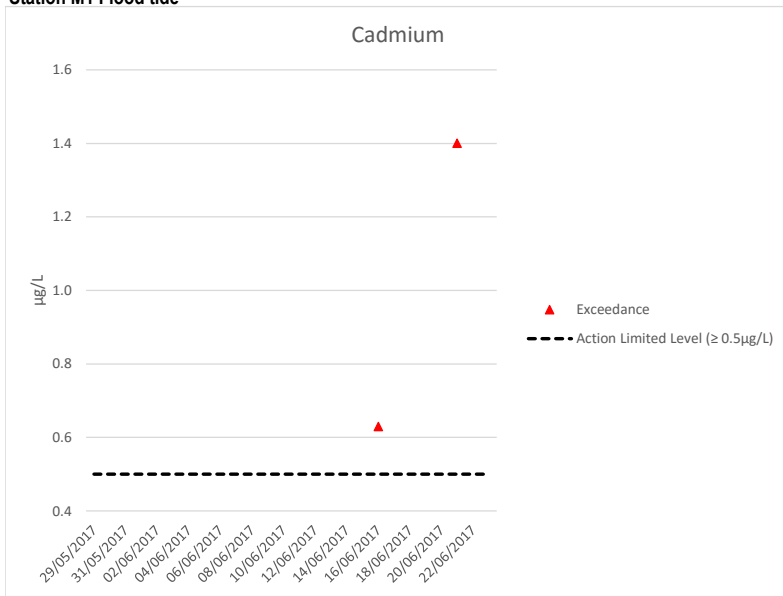
Station M2 Ebb tide



Note:

- (1) No adverse weather conditions were recorded during the monitoring dates.
- (2) Trend line is not shown in the graph due to the limitation of detection level.

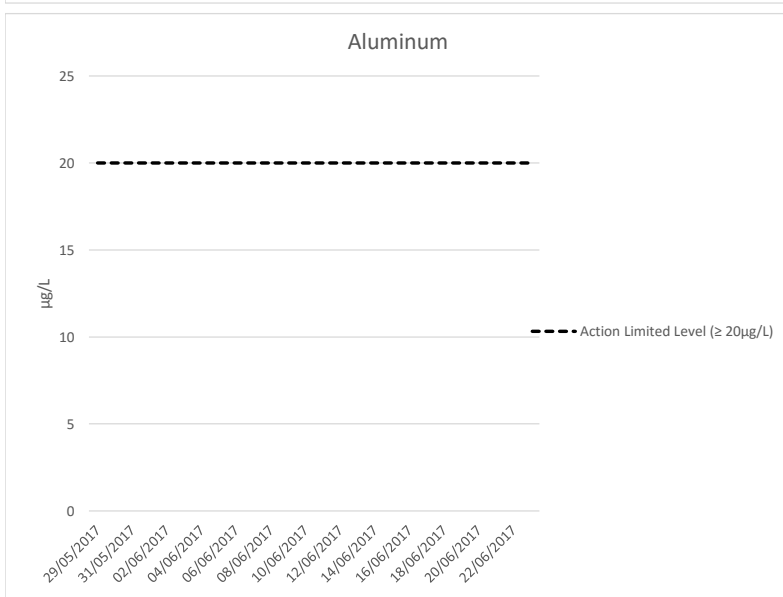
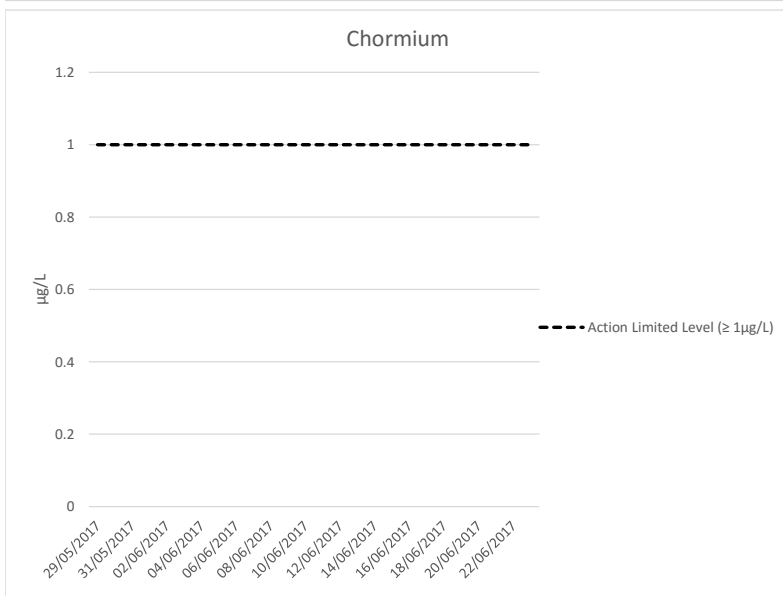
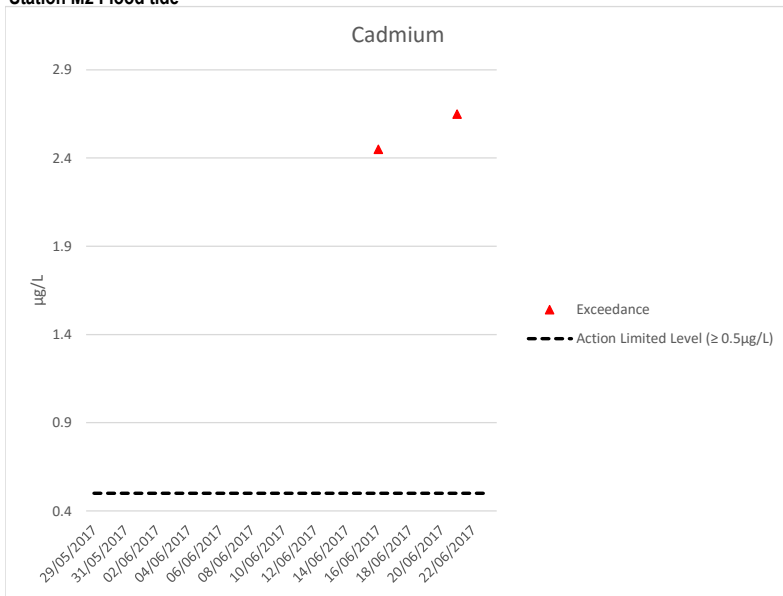
Station M1 Flood tide



Note:

- (1) No adverse weather conditions were recorded during the monitoring dates.
- (2) Trend line is not shown in the graph due to the limitation of detection level.

Station M2 Flood tide



Note:

- (1) No adverse weather conditions were recorded during the monitoring dates.
- (2) Trend line is not shown in the graph due to the limitation of detection level.



Project Name: Decommissioning of West Portion of the middle ash lagoon at Tsang Tsui, Tuen Mun

Monitoring Station: C2 Tide: Mid-Ebb

Date of Monitoring	Weather Condition	Sea Condition	Time	Water Depth (m)	Sampling Depth (m)	Water Temperature (°C)		Cadmium (µg/L)		Chromium (µg/L)		Aluminium (µg/L)	
						Value	Depth-averaged	Value	Depth-averaged	Value	Depth-averaged	Value	Depth-averaged
29/05/2017	Fine	Calm	03:50	6.6	Surface	1.0	25.3	<0.5	<1	<20	<20	<20	<20
					Middle	3.3	25.2	<0.5	<1	<20	<20		
					Bottom	5.6	25.1	<0.5	<1	<20	<20		
31/05/2017	Cloudy	Calm	05:30	6.4	Surface	1.0	26.2	<0.5	<1	<20	<20	<20	<20
					Middle	3.2	25.9	<0.5	<1	<20	<20		
					Bottom	5.4	25.9	<0.5	<1	<20	<20		
02/06/2017	Cloudy	Rough	08:25	6.2	Surface	1.0	25.4	<0.5	<1	<20	<20	<20	<20
					Middle	3.1	25.3	<0.5	<1	<20	<20		
					Bottom	5.2	25.3	<0.5	<1	<20	<20		
05/06/2017	Cloudy	Calm	11:36	6.6	Surface	1.0	27.7	<0.5	<1	<20	<20	<20	<20
					Middle	3.3	27.7	<0.5	<1	<20	<20		
					Bottom	5.6	28.0	<0.5	<1	<20	<20		
07/06/2017	Cloudy	Calm	12:45	6.5	Surface	1.0	27.2	<0.5	<1	<20	<20	<20	<20
					Middle	3.3	27.1	<0.5	<1	<20	<20		
					Bottom	5.5	27.1	<0.5	<1	<20	<20		
09/06/2017	Cloudy	Calm	13:45	6.5	Surface	1.0	28.1	<0.5	<1	<20	<20	<20	<20
					Middle	3.3	27.9	<0.5	<1	<20	<20		
					Bottom	5.5	27.9	<0.5	<1	<20	<20		
12/06/2017	Cloudy	Calm	03:03	6.6	Surface	1.0	25.1	<0.5	<1	<20	<20	<20	<20
					Middle	3.3	25.0	<0.5	<1	<20	<20		
					Bottom	5.6	25.0	<0.5	<1	<20	<20		
14/06/2017	Cloudy	Moderate	04:20	6.5	Surface	1.0	26.8	<0.5	<1	<20	<20	<20	<20
					Middle	3.3	27.1	<0.5	<1	<20	<20		
					Bottom	5.5	27.1	<0.5	<1	<20	<20		
16/06/2017	Cloudy	Calm	06:15	6.1	Surface	1.0	26.4	<b>0.6</b>	<1	<20	<20	<20	<20
					Middle	3.0	26.6	<b>0.9</b>	<1	<20	<20		
					Bottom	5.1	26.6	<b>3.6</b>	<1	<20	<20		
19/06/2017	Rainy	Moderate	09:30	6.4	Surface	1.0	27.6	<0.5	<1	<20	<20	<20	<20
					Middle	3.2	27.7	<0.5	<1	<20	<20		
					Bottom	5.4	27.6	<0.5	<1	<20	<20		
21/06/2017	Cloudy / Rainy	Moderate	11:28	6.6	Surface	1.0	27.2	<b>3.2</b>	<1	<20	<20	<20	<20
					Middle	3.3	27.1	<b>3.0</b>	<1	<20	<20		
					Bottom	5.6	27.0	<b>0.7</b>	<1	<20	<20		
23/06/2017	Cloudy	Moderate	13:15	6.4	Surface	1.0	27.8	<0.5	<1	<20	<20	<20	<20
					Middle	3.2	27.7	<0.5	<1	<20	<20		
					Bottom	5.4	27.6	<0.5	<1	<20	<20		

Project Name: Decommissioning of West Portion of the middle ash lagoon at Tsang Tsui, Tuen Mun

Monitoring Station: C3 Tide: Mid-Ebb

Date of Monitoring	Weather Condition	Sea Condition	Time	Water Depth (m)	Sampling Depth (m)	Water Temperature (°C)		Cadmium (µg/L)		Chromium (µg/L)		Aluminium (µg/L)	
						Value	Depth-averaged	Value	Depth-averaged	Value	Depth-averaged	Value	Depth-averaged
29/05/2017	Fine	Calm	04:15	4.4	Surface 1.0	25.2	25.2	<0.5	<0.5	<1	<1	<20	<20
					Middle -	-		-		-			
					Bottom 3.4	25.1		<0.5		<1		<20	
31/05/2017	Cloudy	Calm	03:52	4.5	Surface 1.0	26.1	26.0	<0.5	<0.5	<1	<1	<20	<20
					Middle -	-		-		-			
					Bottom 3.5	25.9		<0.5		<1		<20	
02/06/2017	Cloudy	Rough	08:52	4.5	Surface 1.0	25.1	25.1	<0.5	<0.5	<1	<1	<20	<20
					Middle -	-		-		-			
					Bottom 3.5	25.0		<0.5		<1		<20	
05/06/2017	Cloudy	Calm	11:05	4.4	Surface 1.0	28.0	28.2	<0.5	<0.5	<1	<1	<20	<20
					Middle -	-		-		-			
					Bottom 3.4	28.3		<0.5		<1		<20	
07/06/2017	Cloudy	Calm	12:20	4.3	Surface 1.0	27.3	27.2	<0.5	<0.5	<1	<1	<20	<20
					Middle -	-		-		-			
					Bottom 3.3	27.1		<0.5		<1		<20	
09/06/2017	Cloudy	Calm	13:20	4.4	Surface 1.0	28.2	28.2	<0.5	<0.5	<1	<1	<20	<20
					Middle -	-		-		-			
					Bottom 3.4	28.1		<0.5		<1		<20	
12/06/2017	Cloudy	Calm	03:16	4.2	Surface 1.0	24.8	24.8	<0.5	<0.5	<1	<1	<20	<20
					Middle -	-		-		-			
					Bottom 3.2	24.8		<0.5		<1		<20	
14/06/2017	Cloudy	Moderate	04:45	4.5	Surface 1.0	26.9	27.0	<0.5	<0.5	<1	<1	<20	<20
					Middle -	-		-		-			
					Bottom 3.5	27.1		<0.5		<1		<20	
16/06/2017	Cloudy	Calm	06:42	4.1	Surface 1.0	26.6	26.7	<b>2.8</b>	<b>2.85</b>	<1	<1	<20	<20
					Middle -	-		-		-			
					Bottom 3.1	26.7		<b>2.9</b>		<1		<20	
19/06/2017	Rainy	Moderate	09:58	4.5	Surface 1.0	27.5	27.5	<0.5	<0.5	<1	<1	<20	<20
					Middle -	-		-		-			
					Bottom 3.5	27.4		<0.5		<1		<20	
21/06/2017	Cloudy / Rainy	Moderate	11:00	4.3	Surface 1.0	27.3	27.3	<b>3.0</b>	<b>1.75</b>	<1	<1	<20	<20
					Middle -	-		-		-			
					Bottom 3.3	27.2		<0.5		<1		<20	
23/06/2017	Cloudy	Moderate	12:45	4.5	Surface 1.0	27.8	27.7	<0.5	<0.5	<1	<1	<20	<20
					Middle -	-		-		-			
					Bottom 3.5	27.6		<0.5		<1		<20	

Project Name: Decommissioning of West Portion of the middle ash lagoon at Tsang Tsui, Tuen Mun

Monitoring Station: M1 Tide: Mid-Ebb

Date of Monitoring	Weather Condition	Sea Condition	Time	Water Depth (m)	Sampling Depth (m)		Water Temperature (°C)		Cadmium (µg/L)		Chromium (µg/L)		Aluminium (µg/L)	
							Value	Depth-averaged	Value	Depth-averaged	Value	Depth-averaged	Value	Depth-averaged
29/05/2017	Fine	Calm	03:56	6.5	Surface	1.0	25.3	25.2	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	25.2		<0.5		<20			
					Bottom	5.5	25.2		<0.5		<20			
31/05/2017	Cloudy	Calm	05:37	6.5	Surface	1.0	26.0	25.9	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	25.9		<0.5		<20			
					Bottom	5.5	25.8		<0.5		<20			
02/06/2017	Cloudy	Rough	08:32	6.6	Surface	1.0	25.6	25.5	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	25.4		<0.5		<20			
					Bottom	5.6	25.4		<0.5		<20			
05/06/2017	Cloudy	Calm	11:27	6.6	Surface	1.0	28.2	28.2	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	28.2		<0.5		<20			
					Bottom	5.6	28.3		<0.5		<20			
07/06/2017	Cloudy	Calm	12:37	6.4	Surface	1.0	27.3	27.2	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.2	27.2		<0.5		<20			
					Bottom	5.4	27.2		<0.5		<20			
09/06/2017	Cloudy	Calm	13:36	6.4	Surface	1.0	28.0	28.0	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.2	28.0		<0.5		<20			
					Bottom	5.4	27.9		<0.5		<20			
12/06/2017	Cloudy	Calm	03:08	6.7	Surface	1.0	24.6	24.6	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.4	24.6		<0.5		<20			
					Bottom	5.7	24.6		<0.5		<20			
14/06/2017	Cloudy	Moderate	04:27	6.4	Surface	1.0	27.2	27.1	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.2	27.0		<0.5		<20			
					Bottom	5.4	27.0		<0.5		<20			
16/06/2017	Cloudy	Calm	06:23	6.2	Surface	1.0	26.6	26.6	<b>1.0</b>	<b>1.53</b>	<1	<1	<20	<20
					Middle	3.1	26.6		<b>2.1</b>		<1			
					Bottom	5.2	26.5		<b>1.5</b>		<1			
19/06/2017	Rainy	Moderate	09:38	6.5	Surface	1.0	27.3	27.3	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	27.3		<0.5		<20			
					Bottom	5.5	27.2		<0.5		<20			
21/06/2017	Cloudy / Rainy	Moderate	11:15	6.7	Surface	1.0	27.3	27.3	<b>0.5</b>	<b>1.90</b>	<1	<1	<20	<20
					Middle	3.4	27.3		<b>1.8</b>		<1			
					Bottom	5.7	27.2		<b>3.4</b>		<1			
23/06/2017	Cloudy	Moderate	13:08	6.5	Surface	1.0	27.8	27.8	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	27.8		<0.5		<20			
					Bottom	5.5	27.7		<0.5		<20			

Project Name: Decommissioning of West Portion of the middle ash lagoon at Tsang Tsui, Tuen Mun

Monitoring Station: M2 Tide: Mid-Ebb

Date of Monitoring	Weather Condition	Sea Condition	Time	Water Depth (m)	Sampling Depth (m)		Water Temperature (°C)		Cadmium (µg/L)		Chromium (µg/L)		Aluminium (µg/L)	
							Value	Depth-averaged	Value	Depth-averaged	Value	Depth-averaged	Value	Depth-averaged
29/05/2017	Fine	Calm	04:08	4.5	Surface	1.0	25.3	-	<0.5	-	<1	-	<20	-
					Middle	-	-	25.2	-	<0.5	-	<1	-	<20
					Bottom	3.5	25.1	-	<0.5	-	<1	-	<20	
31/05/2017	Cloudy	Calm	03:45	4.5	Surface	1.0	26.1	-	<0.5	-	<1	-	<20	-
					Middle	-	-	26.0	-	<0.5	-	<1	-	<20
					Bottom	3.5	25.9	-	<0.5	-	<1	-	<20	
02/06/2017	Cloudy	Rough	08:43	4.5	Surface	1.0	25.6	-	<0.5	-	<1	-	<20	-
					Middle	-	-	25.6	-	<0.5	-	<1	-	<20
					Bottom	3.5	25.5	-	<0.5	-	<1	-	<20	
05/06/2017	Cloudy	Calm	11:16	4.5	Surface	1.0	28.1	-	<0.5	-	<1	-	<20	-
					Middle	-	-	28.1	-	<0.5	-	<1	-	<20
					Bottom	3.5	28.0	-	<0.5	-	<1	-	<20	
07/06/2017	Cloudy	Calm	12:28	4.3	Surface	1.0	27.2	-	<0.5	-	<1	-	<20	-
					Middle	-	-	27.2	-	<0.5	-	<1	-	<20
					Bottom	3.3	27.1	-	<0.5	-	<1	-	<20	
09/06/2017	Cloudy	Calm	13:29	4.5	Surface	1.0	28.0	-	<0.5	-	<1	-	<20	-
					Middle	-	-	28.0	-	<0.5	-	<1	-	<20
					Bottom	3.5	27.9	-	<0.5	-	<1	-	<20	
12/06/2017	Cloudy	Calm	03:12	4.3	Surface	1.0	24.7	-	<0.5	-	<1	-	<20	-
					Middle	-	-	24.7	-	<0.5	-	<1	-	<20
					Bottom	3.3	24.7	-	<0.5	-	<1	-	<20	
14/06/2017	Cloudy	Moderate	04:38	4.4	Surface	1.0	27.2	-	<0.5	-	<1	-	<20	-
					Middle	-	-	27.2	-	<0.5	-	<1	-	<20
					Bottom	3.4	27.1	-	<0.5	-	<1	-	<20	
16/06/2017	Cloudy	Calm	06:30	4.2	Surface	1.0	26.3	-	<b>1.9</b>	-	<1	-	<20	-
					Middle	-	-	26.4	-	<b>1.20</b>	-	<1	-	<20
					Bottom	3.2	26.5	-	<b>0.5</b>	-	<1	-	<20	
19/06/2017	Rainy	Moderate	09:45	4.4	Surface	1.0	27.4	-	<0.5	-	<1	-	<20	-
					Middle	-	-	27.4	-	<0.5	-	<1	-	<20
					Bottom	3.4	27.3	-	<0.5	-	<1	-	<20	
21/06/2017	Cloudy / Rainy	Moderate	11:09	4.5	Surface	1.0	27.2	-	<b>2.8</b>	-	<1	-	<20	-
					Middle	-	-	27.2	-	<b>2.95</b>	-	<1	-	<20
					Bottom	3.5	27.1	-	<b>3.1</b>	-	<1	-	<20	
23/06/2017	Cloudy	Moderate	12:55	4.4	Surface	1.0	27.7	-	<0.5	-	<1	-	<20	-
					Middle	-	-	27.7	-	<0.5	-	<1	-	<20
					Bottom	3.4	27.6	-	<0.5	-	<1	-	<20	

Project Name: Decommissioning of West Portion of the middle ash lagoon at Tsang Tsui, Tuen Mun

Monitoring Station: C2 Tide: Mid-Flood

Date of Monitoring	Weather Condition	Sea Condition	Time	Water Depth (m)	Sampling Depth (m)		Water Temperature (°C)		Cadmium (µg/L)		Chromium (µg/L)		Aluminium (µg/L)	
							Value	Depth-averaged	Value	Depth-averaged	Value	Depth-averaged	Value	Depth-averaged
29/05/2017	Fine	Calm	09:13	6.5	Surface	1.0	25.8	25.7	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	25.7		<0.5		<20			
					Bottom	5.5	25.6		<0.5		<20			
31/05/2017	Cloudy	Calm	10:55	6.6	Surface	1.0	26.4	26.2	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	26.2		<0.5		<20			
					Bottom	5.6	26.1		<0.5		<20			
02/06/2017	Cloudy	Rough	13:51	6.4	Surface	1.0	25.8	25.7	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.2	25.7		<0.5		<20			
					Bottom	5.4	25.7		<0.5		<20			
05/06/2017	Cloudy	Calm	04:40	6.6	Surface	1.0	26.9	27.0	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	27.1		<0.5		<20			
					Bottom	5.6	27.1		<0.5		<20			
07/06/2017	Cloudy	Calm	05:40	6.5	Surface	1.0	26.8	26.9	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	27.0		<0.5		<20			
					Bottom	5.5	27.0		<0.5		<20			
09/06/2017	Cloudy	Calm	06:32	6.7	Surface	1.0	27.6	27.7	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.4	27.8		<0.5		<20			
					Bottom	5.7	27.8		<0.5		<20			
12/06/2017	Cloudy	Calm	08:25	6.5	Surface	1.0	25.3	25.3	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	25.3		<0.5		<20			
					Bottom	5.5	25.2		<0.5		<20			
14/06/2017	Cloudy	Moderate	09:41	6.5	Surface	1.0	27.2	27.1	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	27.0		<0.5		<20			
					Bottom	5.5	27.0		<0.5		<20			
16/06/2017	Cloudy	Calm	11:25	6.3	Surface	1.0	26.7	26.6	<b>3.2</b>	<b>2.50</b>	<1	<1	<20	<20
					Middle	3.1	26.5		<b>3.5</b>		<1			
					Bottom	5.3	26.5		<b>0.8</b>		<1			
19/06/2017	Rainy	Moderate	15:39	6.6	Surface	1.0	27.5	27.4	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	27.4		<0.5		<20			
					Bottom	5.6	27.4		<0.5		<20			
21/06/2017	Cloudy / Rainy	Moderate	04:30	6.7	Surface	1.0	27.0	26.9	<b>3.0</b>	<b>2.80</b>	<1	<1	<20	<20
					Middle	3.4	26.8		<0.5		<20			
					Bottom	5.7	26.8		<b>4.9</b>		<1			
23/06/2017	Cloudy	Moderate	05:50	6.6	Surface	1.0	27.2	27.1	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	27.1		<0.5		<20			
					Bottom	5.6	27.1		<0.5		<20			

Project Name: Decommissioning of West Portion of the middle ash lagoon at Tsang Tsui, Tuen Mun

Monitoring Station: C3 Tide: Mid-Flood

Date of Monitoring	Weather Condition	Sea Condition	Time	Water Depth (m)	Sampling Depth (m)		Water Temperature (°C)		Cadmium (µg/L)		Chromium (µg/L)		Aluminium (µg/L)	
							Value	Depth-averaged	Value	Depth-averaged	Value	Depth-averaged	Value	Depth-averaged
29/05/2017	Fine	Calm	08:50	4.5	Surface	1.0	25.5	-	<0.5	-	<1	-	<20	-
					Middle	-	-	-	-	-	-	-	-	-
					Bottom	3.5	25.4	-	<0.5	<1	<20	<20		
31/05/2017	Cloudy	Calm	10:30	4.6	Surface	1.0	26.3	-	<0.5	<1	<1	<20	<20	
					Middle	-	-	-	-	-	-	-	-	
					Bottom	3.6	26.2	-	<0.5	<1	<20	<20		
02/06/2017	Cloudy	Rough	13:26	4.4	Surface	1.0	25.7	-	<0.5	<1	<1	<20	<20	
					Middle	-	-	-	-	-	-	-	-	
					Bottom	3.4	25.6	-	<0.5	<1	<20	<20		
05/06/2017	Cloudy	Calm	05:07	4.5	Surface	1.0	27.3	-	<0.5	<1	<1	<20	<20	
					Middle	-	-	-	-	-	-	-	-	
					Bottom	3.5	27.2	-	<0.5	<1	<20	<20		
07/06/2017	Cloudy	Calm	06:02	4.4	Surface	1.0	26.9	-	<0.5	<1	<1	<20	<20	
					Middle	-	-	-	-	-	-	-	-	
					Bottom	3.4	27.1	-	<0.5	<1	<20	<20		
09/06/2017	Cloudy	Calm	06:58	4.6	Surface	1.0	27.5	-	<0.5	<1	<1	<20	<20	
					Middle	-	-	-	-	-	-	-	-	
					Bottom	3.6	27.6	-	<0.5	<1	<20	<20		
12/06/2017	Cloudy	Calm	08:10	4.2	Surface	1.0	25.4	-	<0.5	<1	<1	<20	<20	
					Middle	-	-	-	-	-	-	-	-	
					Bottom	3.2	25.4	-	<0.5	<1	<20	<20		
14/06/2017	Cloudy	Moderate	09:20	4.4	Surface	1.0	27.3	-	<0.5	<1	<1	<20	<20	
					Middle	-	-	-	-	-	-	-	-	
					Bottom	3.4	27.1	-	<0.5	<1	<20	<20		
16/06/2017	Cloudy	Calm	11:04	4.2	Surface	1.0	26.8	-	<b>0.8</b>	<1	<1	<20	<20	
					Middle	-	-	-	-	-	-	-	-	
					Bottom	3.2	26.5	-	<b>0.9</b>	<1	<20	<20		
19/06/2017	Rainy	Moderate	15:15	4.3	Surface	1.0	27.5	-	<0.5	<1	<1	<20	<20	
					Middle	-	-	-	-	-	-	-	-	
					Bottom	3.3	27.4	-	<0.5	<1	<20	<20		
21/06/2017	Cloudy / Rainy	Moderate	04:59	4.5	Surface	1.0	26.9	-	<b>3.8</b>	<1	<1	<20	<20	
					Middle	-	-	-	-	-	-	-	-	
					Bottom	3.5	26.8	-	<0.5	<1	<20	<20		
23/06/2017	Cloudy	Moderate	06:18	4.4	Surface	1.0	27.0	-	<0.5	<1	<1	<20	<20	
					Middle	-	-	-	-	-	-	-	-	
					Bottom	3.4	27.1	-	<0.5	<1	<20	<20		

Project Name: Decommissioning of West Portion of the middle ash lagoon at Tsang Tsui, Tuen Mun

Monitoring Station: M1 Tide: Mid-Flood

Date of Monitoring	Weather Condition	Sea Condition	Time	Water Depth (m)	Sampling Depth (m)		Water Temperature (°C)		Cadmium (µg/L)		Chromium (µg/L)		Aluminium (µg/L)	
							Value	Depth-averaged	Value	Depth-averaged	Value	Depth-averaged	Value	Depth-averaged
29/05/2017	Fine	Calm	09:05	6.4	Surface	1.0	25.7	25.5	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.2	25.5		<0.5		<1		<20	
					Bottom	5.4	25.4		<0.5		<1		<20	
31/05/2017	Cloudy	Calm	10:47	6.5	Surface	1.0	26.4	26.3	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	26.3		<0.5		<1		<20	
					Bottom	5.5	26.3		<0.5		<1		<20	
02/06/2017	Cloudy	Rough	13:42	6.5	Surface	1.0	25.9	25.9	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.2	25.9		<0.5		<1		<20	
					Bottom	5.5	25.8		<0.5		<1		<20	
05/06/2017	Cloudy	Calm	04:47	6.7	Surface	1.0	27.3	27.2	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.4	27.2		<0.5		<1		<20	
					Bottom	5.7	27.2		<0.5		<1		<20	
07/06/2017	Cloudy	Calm	05:48	6.4	Surface	1.0	26.8	26.9	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.2	26.9		<0.5		<1		<20	
					Bottom	5.4	27.0		<0.5		<1		<20	
09/06/2017	Cloudy	Calm	06:41	6.6	Surface	1.0	27.5	27.4	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	27.4		<0.5		<1		<20	
					Bottom	5.6	27.4		<0.5		<1		<20	
12/06/2017	Cloudy	Calm	08:20	6.5	Surface	1.0	25.1	25.1	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	25.1		<0.5		<1		<20	
					Bottom	5.5	25.1		<0.5		<1		<20	
14/06/2017	Cloudy	Moderate	09:35	6.6	Surface	1.0	27.2	27.2	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	27.2		<0.5		<1		<20	
					Bottom	5.6	27.1		<0.5		<1		<20	
16/06/2017	Cloudy	Calm	11:16	6.2	Surface	1.0	26.7	26.6	<b>0.8</b>	<b>0.63</b>	<1	<1	<20	<20
					Middle	3.1	26.5		<0.5		<1		<20	
					Bottom	5.2	26.5		<0.5		<1		<20	
19/06/2017	Rainy	Moderate	15:32	6.5	Surface	1.0	27.6	27.5	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.3	27.5		<0.5		<1		<20	
					Bottom	5.5	27.4		<0.5		<1		<20	
21/06/2017	Cloudy / Rainy	Moderate	04:37	6.6	Surface	1.0	26.9	26.8	<0.5	<b>1.40</b>	<1	<1	<20	<20
					Middle	3.3	26.8		<0.5		<1		<20	
					Bottom	5.6	26.7		<b>3.2</b>		<1		<20	
23/06/2017	Cloudy	Moderate	05:57	6.4	Surface	1.0	27.2	27.2	<0.5	<0.5	<1	<1	<20	<20
					Middle	3.2	27.1		<0.5		<1		<20	
					Bottom	5.4	27.2		<0.5		<1		<20	

Project Name: Decommissioning of West Portion of the middle ash lagoon at Tsang Tsui, Tuen Mun

Monitoring Station: M2 Tide: Mid-Flood

Date of Monitoring	Weather Condition	Sea Condition	Time	Water Depth (m)	Sampling Depth (m)		Water Temperature (°C)		Cadmium (µg/L)		Chromium (µg/L)		Aluminium (µg/L)	
							Value	Depth-averaged	Value	Depth-averaged	Value	Depth-averaged	Value	Depth-averaged
29/05/2017	Fine	Calm	08:57	4.4	Surface	1.0	25.6	-	<0.5	-	<1	-	<20	-
					Middle	-	-	-	-	-	-	-	-	-
					Bottom	3.4	25.4	-	<0.5	-	<1	-	<20	-
31/05/2017	Cloudy	Calm	10:38	4.4	Surface	1.0	26.3	-	<0.5	-	<1	-	<20	-
					Middle	-	-	-	-	-	-	-	-	-
					Bottom	3.4	26.1	-	<0.5	-	<1	-	<20	-
02/06/2017	Cloudy	Rough	13:33	4.5	Surface	1.0	25.7	-	<0.5	-	<1	-	<20	-
					Middle	-	-	-	-	-	-	-	-	-
					Bottom	3.5	25.6	-	<0.5	-	<1	-	<20	-
05/06/2017	Cloudy	Calm	04:54	4.5	Surface	1.0	27.4	-	<0.5	-	<1	-	<20	-
					Middle	-	-	-	-	-	-	-	-	-
					Bottom	3.5	27.2	-	<0.5	-	<1	-	<20	-
07/06/2017	Cloudy	Calm	05:56	4.5	Surface	1.0	26.9	-	<0.5	-	<1	-	<20	-
					Middle	-	-	-	-	-	-	-	-	-
					Bottom	3.5	26.9	-	<0.5	-	<1	-	<20	-
09/06/2017	Cloudy	Calm	06:47	4.5	Surface	1.0	27.5	-	<0.5	-	<1	-	<20	-
					Middle	-	-	-	-	-	-	-	-	-
					Bottom	3.5	27.5	-	<0.5	-	<1	-	<20	-
12/06/2017	Cloudy	Calm	08:15	4.4	Surface	1.0	25.3	-	<0.5	-	<1	-	<20	-
					Middle	-	-	-	-	-	-	-	-	-
					Bottom	3.4	25.3	-	<0.5	-	<1	-	<20	-
14/06/2017	Cloudy	Moderate	09:27	4.5	Surface	1.0	27.3	-	<0.5	-	<1	-	<20	-
					Middle	-	-	-	-	-	-	-	-	-
					Bottom	3.5	27.0	-	<0.5	-	<1	-	<20	-
16/06/2017	Cloudy	Calm	11:10	4.1	Surface	1.0	26.4	-	<b>4.2</b>	-	<1	-	<20	-
					Middle	-	-	-	-	-	-	-	-	-
					Bottom	3.1	26.4	-	<b>0.7</b>	-	<1	-	<20	-
19/06/2017	Rainy	Moderate	15:21	4.4	Surface	1.0	27.6	-	<0.5	-	<1	-	<20	-
					Middle	-	-	-	-	-	-	-	-	-
					Bottom	3.4	27.4	-	<0.5	-	<1	-	<20	-
21/06/2017	Cloudy / Rainy	Moderate	04:48	4.4	Surface	1.0	26.9	-	<b>3.4</b>	-	<1	-	<20	-
					Middle	-	-	-	-	-	-	-	-	-
					Bottom	3.4	26.8	-	<b>1.9</b>	-	<1	-	<20	-
23/06/2017	Cloudy	Moderate	06:08	4.4	Surface	1.0	27.1	-	<0.5	-	<1	-	<20	-
					Middle	-	-	-	-	-	-	-	-	-
					Bottom	3.4	27.0	-	<0.5	-	<1	-	<20	-





### CERTIFICATE OF ANALYSIS

*Client* : MOTT MACDONALD HONG KONG LIMITED  
*Contact* : MS HEIDI YU  
*Address* : 20/F., AIA KOWLOON TOWER, LANDMARK EAST,  
100 HOW MING STREET,  
KWUN TONG,  
KOWLOON HONG KONG  
*E-mail* : heidi.Yu@mottmac.com  
*Telephone* : +852 2828 5933  
*Facsimile* : +852 2828 1823  
*Project* : DECOMMISSIONING OF WEST PORTION OF THE MIDDLE ASH LAGOON AT TSANG TSUI TUEN MUN  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

*Laboratory* : ALS Technichem (HK) Pty Ltd  
*Contact* : Fung Lim Chee, Richard  
*Address* : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong  
*E-mail* : Richard.Fung@alsglobal.com  
*Telephone* : +852 2610 1044  
*Facsimile* : +852 2610 2021  
*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : **HK1721936**  
*Date received* : 29-MAY-2017  
*Date of issue* : 08-JUN-2017  
*No. of samples* - Received : 23  
- Analysed : 23

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This document has been signed by those names that appear on this report and are the authorised signatories.

<u>Signatory</u>	<u>Position</u>	<u>Authorised results for:</u>
Lin Wai Yu, Iris	Assistant Manager - Inorganics	Inorganics
Wong Wing, Kenneth	Manager - Metals	Inorganics



## Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1721936 supersedes any previous reports with this reference. Testing period is from 29-MAY-2017 to 07-JUN-2017. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

### Specific Comments for Work Order HK1721936 :

Sample(s) were collected by ALS Technichem (HK) staff.

ALS Technichem (HK) Pty Ltd is HOKLAS accredited for the testing provided in this report. The sampling activity involved is not covered by the laboratory HOKLAS accreditation.

Water sample(s) analysed and reported on an as received basis.

Water sample(s) were filtered prior to dissolved metal analysis.



**Analytical Results**

Sub-Matrix: MARINE WATER

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound	EG029: Cadmium	EG029: Chromium	EG029: Aluminium		
			LOR Unit	0.5 µg/L	1 µg/L	20 µg/L		
			EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered			
C2 S EBB	29-MAY-2017 03:50	HK1721936-004	<0.5	<1	<20			
C2 M EBB	29-MAY-2017 03:50	HK1721936-005	<0.5	<1	<20			
C2 B EBB	29-MAY-2017 03:50	HK1721936-006	<0.5	<1	<20			
C3 S EBB	29-MAY-2017 04:15	HK1721936-007	<0.5	<1	<20			
C3 B EBB	29-MAY-2017 04:15	HK1721936-009	<0.5	<1	<20			
M1 S EBB	29-MAY-2017 03:56	HK1721936-010	<0.5	<1	<20			
M1 M EBB	29-MAY-2017 03:56	HK1721936-011	<0.5	<1	<20			
M1 B EBB	29-MAY-2017 03:56	HK1721936-012	<0.5	<1	<20			
M2 S EBB	29-MAY-2017 04:08	HK1721936-013	<0.5	<1	<20			
M2 B EBB	29-MAY-2017 04:08	HK1721936-015	<0.5	<1	<20			
C2 S FLOOD	29-MAY-2017 09:13	HK1721936-016	<0.5	<1	<20			
C2 M FLOOD	29-MAY-2017 09:13	HK1721936-017	<0.5	<1	<20			
C2 B FLOOD	29-MAY-2017 09:13	HK1721936-018	<0.5	<1	<20			
C3 S FLOOD	29-MAY-2017 08:50	HK1721936-019	<0.5	<1	<20			
C3 B FLOOD	29-MAY-2017 08:50	HK1721936-021	<0.5	<1	<20			
M1 S FLOOD	29-MAY-2017 09:05	HK1721936-022	<0.5	<1	<20			
M1 M FLOOD	29-MAY-2017 09:05	HK1721936-023	<0.5	<1	<20			
M1 B FLOOD	29-MAY-2017 09:05	HK1721936-024	<0.5	<1	<20			
M2 S FLOOD	29-MAY-2017 08:57	HK1721936-025	<0.5	<1	<20			
M2 B FLOOD	29-MAY-2017 08:57	HK1721936-027	<0.5	<1	<20			



Sub-Matrix: WATER

Compound

**EA025: Suspended Solids (SS)**

LOR Unit

1 mg/L

Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
<b>C1 (STREAM WATER)</b>	29-MAY-2017 11:13	HK1721936-001	<b>5</b>				
<b>S1 (STREAM WATER)</b>	29-MAY-2017 11:23	HK1721936-002	<b>6</b>				
<b>S2 (STREAM WATER)</b>	29-MAY-2017 11:33	HK1721936-003	<b>6</b>				



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 4490118)</b>								
HK1721936-001	C1 (STREAM WATER)	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	0.0
<b>EG: Metals and Major Cations - Filtered (QC Lot: 4489955)</b>								
HK1721936-005	C2 M EBB	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0
HK1721936-017	C2 M FLOOD	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 4490118)</b>											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20.0 mg/L	103	----	85	115	----	----
<b>EG: Metals and Major Cations - Filtered (QCLot: 4489955)</b>											
EG029: Cadmium	7440-43-9	0.1	µg/L	<0.1	10 µg/L	92.0	----	78	116	----	----
EG029: Chromium	7440-47-3	1	µg/L	<1	10 µg/L	87.0	----	81	115	----	----
EG029: Aluminium	7429-90-5	10	µg/L	<10	10 µg/L	106	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG: Metals and Major Cations - Filtered (QCLot: 4489955)</b>										
HK1721936-004	C2 S EBB	EG029: Cadmium	7440-43-9	10 µg/L	82.0	----	80	120	----	----
		EG029: Chromium	7440-47-3	10 µg/L	88.6	----	80	120	----	----
		EG029: Aluminium	7429-90-5	10 µg/L	97.2	----	80	120	----	----



### CERTIFICATE OF ANALYSIS

*Client* : MOTT MACDONALD HONG KONG LIMITED  
*Contact* : MS HEIDI YU  
*Address* : 20/F., AIA KOWLOON TOWER, LANDMARK EAST,  
100 HOW MING STREET,  
KWUN TONG,  
KOWLOON HONG KONG  
*E-mail* : heidi.Yu@mottmac.com  
*Telephone* : +852 2828 5933  
*Facsimile* : +852 2828 1823  
*Project* : DECOMMISSIONING OF WEST PORTION OF THE MIDDLE ASH LAGOON AT TSANG TSUI TUEN MUN  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

*Laboratory* : ALS Technichem (HK) Pty Ltd  
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*E-mail* : Richard.Fung@alsglobal.com  
*Telephone* : +852 2610 1044  
*Facsimile* : +852 2610 2021  
*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : HK1722367  
*Date received* : 01-JUN-2017  
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*No. of samples* - Received : 23  
- Analysed : 23

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<u>Signatory</u>	<u>Position</u>	<u>Authorised results for:</u>
Lin Wai Yu, Iris	Assistant Manager - Inorganics	Inorganics
Wong Wing, Kenneth	Manager - Metals	Inorganics



## **Report Comments**

This report for ALS Technichem (HK) Pty Ltd work order reference HK1722367 supersedes any previous reports with this reference. Testing period is from 01-JUN-2017 to 13-JUN-2017. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

### **Specific Comments for Work Order HK1722367 :**

Sample(s) were collected by ALS Technichem (HK) staff.

ALS Technichem (HK) Pty Ltd is HOKLAS accredited for the testing provided in this report. The sampling activity involved is not covered by the laboratory HOKLAS accreditation.

Water sample(s) analysed and reported on an as received basis.

Water sample(s) were filtered prior to dissolved metal analysis.

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**Analytical Results**

Sub-Matrix: MARINE WATER

			Compound	EG029: Cadmium	EG029: Chromium	EG029: Aluminium		
			LOR Unit	0.5 µg/L	1 µg/L	20 µg/L		
Client sample ID	Client sampling date / time	Laboratory sample ID		EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered		
C2 S EBB	31-MAY-2017 05:30	HK1722367-004		<0.5	<1	<20		
C2 M EBB	31-MAY-2017 05:30	HK1722367-005		<0.5	<1	<20		
C2 B EBB	31-MAY-2017 05:30	HK1722367-006		<0.5	<1	<20		
C3 S EBB	31-MAY-2017 03:52	HK1722367-007		<0.5	<1	<20		
C3 B EBB	31-MAY-2017 03:52	HK1722367-009		<0.5	<1	<20		
M1 S EBB	31-MAY-2017 05:37	HK1722367-010		<0.5	<1	<20		
M1 M EBB	31-MAY-2017 05:37	HK1722367-011		<0.5	<1	<20		
M1 B EBB	31-MAY-2017 05:37	HK1722367-012		<0.5	<1	<20		
M2 S EBB	31-MAY-2017 03:45	HK1722367-013		<0.5	<1	<20		
M2 B EBB	31-MAY-2017 03:45	HK1722367-015		<0.5	<1	<20		
C2 S FLOOD	31-MAY-2017 10:55	HK1722367-016		<0.5	<1	<20		
C2 M FLOOD	31-MAY-2017 10:55	HK1722367-017		<0.5	<1	<20		
C2 B FLOOD	31-MAY-2017 10:55	HK1722367-018		<0.5	<1	<20		
C3 S FLOOD	31-MAY-2017 10:30	HK1722367-019		<0.5	<1	<20		
C3 B FLOOD	31-MAY-2017 10:30	HK1722367-021		<0.5	<1	<20		
M1 S FLOOD	31-MAY-2017 10:47	HK1722367-022		<0.5	<1	<20		
M1 M FLOOD	31-MAY-2017 10:47	HK1722367-023		<0.5	<1	<20		
M1 B FLOOD	31-MAY-2017 10:47	HK1722367-024		<0.5	<1	<20		
M2 S FLOOD	31-MAY-2017 10:38	HK1722367-025		<0.5	<1	<20		
M2 B FLOOD	31-MAY-2017 10:38	HK1722367-027		<0.5	<1	<20		





Sub-Matrix: WATER

Compound

**EA025: Suspended Solids (SS)**

LOR Unit

1 mg/L

Client sample ID

Client sampling date / time

Laboratory sample ID

EA/ED: Physical and Aggregate Properties

**C1 (STREAM WATER)**

31-MAY-2017 09:36

HK1722367-001

**4**

**S1 (STREAM WATER)**

31-MAY-2017 09:46

HK1722367-002

**3**

**S2 (STREAM WATER)**

31-MAY-2017 09:56

HK1722367-003

**5**



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 4490547)</b>								
HK1722367-001	C1 (STREAM WATER)	EA025: Suspended Solids (SS)	----	1	mg/L	4	5	0.0
<b>EG: Metals and Major Cations - Filtered (QC Lot: 4490318)</b>								
HK1722367-005	C2 M EBB	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0
HK1722367-017	C2 M FLOOD	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 4490547)</b>											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20.0 mg/L	98.5	----	85	115	----	----
<b>EG: Metals and Major Cations - Filtered (QCLot: 4490318)</b>											
EG029: Cadmium	7440-43-9	0.1	µg/L	<0.1	10 µg/L	102	----	78	116	----	----
EG029: Chromium	7440-47-3	1	µg/L	<1	10 µg/L	82.0	----	81	115	----	----
EG029: Aluminium	7429-90-5	10	µg/L	<10	10 µg/L	92.9	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG: Metals and Major Cations - Filtered (QCLot: 4490318)</b>										
HK1722367-004	C2 S EBB	EG029: Cadmium	7440-43-9	10 µg/L	83.0	----	80	120	----	----
		EG029: Chromium	7440-47-3	10 µg/L	90.0	----	80	120	----	----
		EG029: Aluminium	7429-90-5	10 µg/L	93.2	----	80	120	----	----



### CERTIFICATE OF ANALYSIS

*Client* : MOTT MACDONALD HONG KONG LIMITED  
*Contact* : MS HEIDI YU  
*Address* : 20/F., AIA KOWLOON TOWER, LANDMARK EAST,  
100 HOW MING STREET,  
KWUN TONG,  
KOWLOON HONG KONG  
*E-mail* : heidi.Yu@mottmac.com  
*Telephone* : +852 2828 5933  
*Facsimile* : +852 2828 1823  
*Project* : DECOMMISSIONING OF WEST PORTION OF THE MIDDLE ASH LAGOON AT TSANG TSUI TUEN MUN  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

*Laboratory* : ALS Technichem (HK) Pty Ltd  
*Contact* : Fung Lim Chee, Richard  
*Address* : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong  
*E-mail* : Richard.Fung@alsglobal.com  
*Telephone* : +852 2610 1044  
*Facsimile* : +852 2610 2021  
*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : **HK1722633**  
*Date received* : 05-JUN-2017  
*Date of issue* : 14-JUN-2017  
*No. of samples* - Received : 23  
- Analysed : 23

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This document has been signed by those names that appear on this report and are the authorised signatories.

<u>Signatory</u>	<u>Position</u>	<u>Authorised results for:</u>
Lin Wai Yu, Iris	Assistant Manager - Inorganics	Inorganics
Wong Wing, Kenneth	Manager - Metals	Inorganics



## **Report Comments**

This report for ALS Technichem (HK) Pty Ltd work order reference HK1722633 supersedes any previous reports with this reference. Testing period is from 05-JUN-2017 to 14-JUN-2017. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

### **Specific Comments for Work Order HK1722633 :**

Sample(s) were collected by ALS Technichem (HK) staff.

ALS Technichem (HK) Pty Ltd is HOKLAS accredited for the testing provided in this report. The sampling activity involved is not covered by the laboratory HOKLAS accreditation.

Water sample(s) analysed and reported on an as received basis.

Water sample(s) were filtered prior to dissolved metal analysis.



**Analytical Results**

Sub-Matrix: MARINE WATER

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound	EG029: Cadmium	EG029: Chromium	EG029: Aluminium		
			LOR Unit	0.5 µg/L	1 µg/L	20 µg/L		
			EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered			
C2 S EBB	05-JUN-2017 11:36	HK1722633-004	<0.5	<1	<20			
C2 M EBB	05-JUN-2017 11:36	HK1722633-005	<0.5	<1	<20			
C2 B EBB	05-JUN-2017 11:36	HK1722633-006	<0.5	<1	<20			
C3 S EBB	05-JUN-2017 11:05	HK1722633-007	<0.5	<1	<20			
C3 B EBB	05-JUN-2017 11:05	HK1722633-009	<0.5	<1	<20			
M1 S EBB	05-JUN-2017 11:27	HK1722633-010	<0.5	<1	<20			
M1 M EBB	05-JUN-2017 11:27	HK1722633-011	<0.5	<1	<20			
M1 B EBB	05-JUN-2017 11:27	HK1722633-012	<0.5	<1	<20			
M2 S EBB	05-JUN-2017 11:16	HK1722633-013	<0.5	<1	<20			
M2 B EBB	05-JUN-2017 11:16	HK1722633-015	<0.5	<1	<20			
C2 S FLOOD	05-JUN-2017 04:40	HK1722633-016	<0.5	<1	<20			
C2 M FLOOD	05-JUN-2017 04:40	HK1722633-017	<0.5	<1	<20			
C2 B FLOOD	05-JUN-2017 04:40	HK1722633-018	<0.5	<1	<20			
C3 S FLOOD	05-JUN-2017 05:07	HK1722633-019	<0.5	<1	<20			
C3 B FLOOD	05-JUN-2017 05:07	HK1722633-021	<0.5	<1	<20			
M1 S FLOOD	05-JUN-2017 04:47	HK1722633-022	<0.5	<1	<20			
M1 M FLOOD	05-JUN-2017 04:47	HK1722633-023	<0.5	<1	<20			
M1 B FLOOD	05-JUN-2017 04:47	HK1722633-024	<0.5	<1	<20			
M2 S FLOOD	05-JUN-2017 04:54	HK1722633-025	<0.5	<1	<20			
M2 B FLOOD	05-JUN-2017 04:54	HK1722633-027	<0.5	<1	<20			



Sub-Matrix: WATER

			Compound				
			LOR Unit				
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
			<b>EA025: Suspended Solids (SS)</b>				
			1 mg/L				
<b>C1 (STREAM WATER)</b>	05-JUN-2017 10:11	HK1722633-001	<b>9</b>				
<b>S1 (STREAM WATER)</b>	05-JUN-2017 10:21	HK1722633-002	<b>9</b>				
<b>S2 (STREAM WATER)</b>	05-JUN-2017 10:32	HK1722633-003	<b>10</b>				



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 4492434)</b>								
HK1722633-001	C1 (STREAM WATER)	EA025: Suspended Solids (SS)	----	1	mg/L	9	9	0.0
<b>EG: Metals and Major Cations - Filtered (QC Lot: 4491935)</b>								
HK1722633-005	C2 M EBB	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0
HK1722633-017	C2 M FLOOD	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 4492434)</b>											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20.0 mg/L	106	----	85	115	----	----
<b>EG: Metals and Major Cations - Filtered (QCLot: 4491935)</b>											
EG029: Cadmium	7440-43-9	0.1	µg/L	<0.1	10 µg/L	108	----	78	116	----	----
EG029: Chromium	7440-47-3	1	µg/L	<1	10 µg/L	114	----	81	115	----	----
EG029: Aluminium	7429-90-5	10	µg/L	<10	10 µg/L	104	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG: Metals and Major Cations - Filtered (QCLot: 4491935)</b>										
HK1722633-004	C2 S EBB	EG029: Cadmium	7440-43-9	10 µg/L	97.2	----	80	120	----	----
		EG029: Chromium	7440-47-3	10 µg/L	94.5	----	80	120	----	----
		EG029: Aluminium	7429-90-5	10 µg/L	89.6	----	80	120	----	----



### CERTIFICATE OF ANALYSIS

*Client* : MOTT MACDONALD HONG KONG LIMITED  
*Contact* : MS HEIDI YU  
*Address* : 20/F., AIA KOWLOON TOWER, LANDMARK EAST,  
100 HOW MING STREET,  
KWUN TONG,  
KOWLOON HONG KONG  
*E-mail* : heidi.Yu@mottmac.com  
*Telephone* : +852 2828 5933  
*Facsimile* : +852 2828 1823  
*Project* : DECOMMISSIONING OF WEST PORTION OF THE MIDDLE ASH LAGOON AT TSANG TSUI TUEN MUN  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

*Laboratory* : ALS Technichem (HK) Pty Ltd  
*Contact* : Fung Lim Chee, Richard  
*Address* : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong  
*E-mail* : Richard.Fung@alsglobal.com  
*Telephone* : +852 2610 1044  
*Facsimile* : +852 2610 2021  
*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : HK1723912  
*Date received* : 08-JUN-2017  
*Date of issue* : 19-JUN-2017  
*No. of samples* - Received : 23  
- Analysed : 23

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This document has been signed by those names that appear on this report and are the authorised signatories.

<u>Signatory</u>	<u>Position</u>	<u>Authorised results for:</u>
Chan Siu Ming, Vico	Manager - Inorganics	Inorganics
Wong Wing, Kenneth	Manager - Metals	Inorganics





## **Report Comments**

This report for ALS Technichem (HK) Pty Ltd work order reference HK1723912 supersedes any previous reports with this reference. Testing period is from 08-JUN-2017 to 19-JUN-2017. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

### **Specific Comments for Work Order HK1723912 :**

Sample(s) were collected by ALS Technichem (HK) staff.

ALS Technichem (HK) Pty Ltd is HOKLAS accredited for the testing provided in this report. The sampling activity involved is not covered by the laboratory HOKLAS accreditation.

Water sample(s) analysed and reported on an as received basis.

Water sample(s) were filtered prior to dissolved metal analysis.



**Analytical Results**

Sub-Matrix: MARINE WATER

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound	EG029: Cadmium	EG029: Chromium	EG029: Aluminium		
			LOR Unit	0.5 µg/L	1 µg/L	20 µg/L		
			EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered			
C2 S EBB	07-JUN-2017 12:45	HK1723912-004	<0.5	<1	<20			
C2 M EBB	07-JUN-2017 12:45	HK1723912-005	<0.5	<1	<20			
C2 B EBB	07-JUN-2017 12:45	HK1723912-006	<0.5	<1	<20			
C3 S EBB	07-JUN-2017 12:20	HK1723912-007	<0.5	<1	<20			
C3 B EBB	07-JUN-2017 12:20	HK1723912-009	<0.5	<1	<20			
M1 S EBB	07-JUN-2017 12:37	HK1723912-010	<0.5	<1	<20			
M1 M EBB	07-JUN-2017 12:37	HK1723912-011	<0.5	<1	<20			
M1 B EBB	07-JUN-2017 12:37	HK1723912-012	<0.5	<1	<20			
M2 S EBB	07-JUN-2017 12:28	HK1723912-013	<0.5	<1	<20			
M2 B EBB	07-JUN-2017 12:28	HK1723912-015	<0.5	<1	<20			
C2 S FLOOD	07-JUN-2017 05:40	HK1723912-016	<0.5	<1	<20			
C2 M FLOOD	07-JUN-2017 05:40	HK1723912-017	<0.5	<1	<20			
C2 B FLOOD	07-JUN-2017 05:40	HK1723912-018	<0.5	<1	<20			
C3 S FLOOD	07-JUN-2017 06:02	HK1723912-019	<0.5	<1	<20			
C3 B FLOOD	07-JUN-2017 06:02	HK1723912-021	<0.5	<1	<20			
M1 S FLOOD	07-JUN-2017 05:48	HK1723912-022	<0.5	<1	<20			
M1 M FLOOD	07-JUN-2017 05:48	HK1723912-023	<0.5	<1	<20			
M1 B FLOOD	07-JUN-2017 05:48	HK1723912-024	<0.5	<1	<20			
M2 S FLOOD	07-JUN-2017 05:56	HK1723912-025	<0.5	<1	<20			
M2 B FLOOD	07-JUN-2017 05:56	HK1723912-027	<0.5	<1	<20			



Sub-Matrix: WATER

			Compound				
			LOR Unit				
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
			<b>EA025: Suspended Solids (SS)</b>				
			1 mg/L				
<b>C1 (STREAM WATER)</b>	07-JUN-2017 10:01	HK1723912-001	17				
<b>S1 (STREAM WATER)</b>	07-JUN-2017 10:11	HK1723912-002	8				
<b>S2 (STREAM WATER)</b>	07-JUN-2017 10:21	HK1723912-003	3				



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 4492843)</b>								
HK1723912-001	C1 (STREAM WATER)	EA025: Suspended Solids (SS)	----	1	mg/L	17	17	0.0
<b>EG: Metals and Major Cations - Filtered (QC Lot: 4492702)</b>								
HK1723912-005	C2 M EBB	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0
HK1723912-017	C2 M FLOOD	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 4492843)</b>											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20.0 mg/L	110	----	85	115	----	----
<b>EG: Metals and Major Cations - Filtered (QCLot: 4492702)</b>											
EG029: Cadmium	7440-43-9	0.1	µg/L	<0.1	10 µg/L	112	----	78	116	----	----
EG029: Chromium	7440-47-3	1	µg/L	<1	10 µg/L	90.2	----	81	115	----	----
EG029: Aluminium	7429-90-5	10	µg/L	<10	10 µg/L	108	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG: Metals and Major Cations - Filtered (QCLot: 4492702)</b>										
HK1723912-004	C2 S EBB	EG029: Cadmium	7440-43-9	10 µg/L	104	----	80	120	----	----
		EG029: Chromium	7440-47-3	10 µg/L	89.0	----	80	120	----	----
		EG029: Aluminium	7429-90-5	10 µg/L	102	----	80	120	----	----



### CERTIFICATE OF ANALYSIS

*Client* : MOTT MACDONALD HONG KONG LIMITED  
*Contact* : MS HEIDI YU  
*Address* : 20/F., AIA KOWLOON TOWER, LANDMARK EAST,  
100 HOW MING STREET,  
KWUN TONG,  
KOWLOON HONG KONG  
*E-mail* : heidi.Yu@mottmac.com  
*Telephone* : +852 2828 5933  
*Facsimile* : +852 2828 1823  
*Project* : DECOMMISSIONING OF WEST PORTION OF THE MIDDLE ASH LAGOON AT TSANG TSUI TUEN MUN  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

*Laboratory* : ALS Technichem (HK) Pty Ltd  
*Contact* : Fung Lim Chee, Richard  
*Address* : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong  
*E-mail* : Richard.Fung@alsglobal.com  
*Telephone* : +852 2610 1044  
*Facsimile* : +852 2610 2021  
*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : **HK1723661**  
*Date received* : 10-JUN-2017  
*Date of issue* : 21-JUN-2017  
*No. of samples* - Received : 23  
- Analysed : 23

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This document has been signed by those names that appear on this report and are the authorised signatories.

<u>Signatory</u>	<u>Position</u>	<u>Authorised results for:</u>
Lin Wai Yu, Iris	Assistant Manager - Inorganics	Inorganics
Wong Wing, Kenneth	Manager - Metals	Inorganics



## Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1723661 supersedes any previous reports with this reference. Testing period is from 10-JUN-2017 to 21-JUN-2017. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

### Specific Comments for Work Order HK1723661 :

Sample(s) were collected by ALS Technichem (HK) staff.

ALS Technichem (HK) Pty Ltd is HOKLAS accredited for the testing provided in this report. The sampling activity involved is not covered by the laboratory HOKLAS accreditation.

Water sample(s) analysed and reported on an as received basis.

Water sample(s) were filtered prior to dissolved metal analysis.



**Analytical Results**

Sub-Matrix: MARINE WATER

			Compound	EG029: Cadmium	EG029: Chromium	EG029: Aluminium		
			LOR Unit	0.5 µg/L	1 µg/L	20 µg/L		
Client sample ID	Client sampling date / time	Laboratory sample ID		EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered		
C2 S EBB	09-JUN-2017 13:45	HK1723661-004		<0.5	<1	<20		
C2 M EBB	09-JUN-2017 13:45	HK1723661-005		<0.5	<1	<20		
C2 B EBB	09-JUN-2017 13:45	HK1723661-006		<0.5	<1	<20		
C3 S EBB	09-JUN-2017 13:20	HK1723661-007		<0.5	<1	<20		
C3 B EBB	09-JUN-2017 13:20	HK1723661-009		<0.5	<1	<20		
M1 S EBB	09-JUN-2017 13:36	HK1723661-010		<0.5	<1	<20		
M1 M EBB	09-JUN-2017 13:36	HK1723661-011		<0.5	<1	<20		
M1 B EBB	09-JUN-2017 13:36	HK1723661-012		<0.5	<1	<20		
M2 S EBB	09-JUN-2017 13:29	HK1723661-013		<0.5	<1	<20		
M2 B EBB	09-JUN-2017 13:29	HK1723661-015		<0.5	<1	<20		
C2 S FLOOD	09-JUN-2017 06:32	HK1723661-016		<0.5	<1	<20		
C2 M FLOOD	09-JUN-2017 06:32	HK1723661-017		<0.5	<1	<20		
C2 B FLOOD	09-JUN-2017 06:32	HK1723661-018		<0.5	<1	<20		
C3 S FLOOD	09-JUN-2017 06:58	HK1723661-019		<0.5	<1	<20		
C3 B FLOOD	09-JUN-2017 06:58	HK1723661-021		<0.5	<1	<20		
M1 S FLOOD	09-JUN-2017 06:41	HK1723661-022		<0.5	<1	<20		
M1 M FLOOD	09-JUN-2017 06:41	HK1723661-023		<0.5	<1	<20		
M1 B FLOOD	09-JUN-2017 06:41	HK1723661-024		<0.5	<1	<20		
M2 S FLOOD	09-JUN-2017 06:47	HK1723661-025		<0.5	<1	<20		
M2 B FLOOD	09-JUN-2017 06:47	HK1723661-027		<0.5	<1	<20		



Sub-Matrix: WATER

			Compound				
			LOR Unit				
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
			<b>EA025: Suspended Solids (SS)</b>				
			1 mg/L				
<b>C1 (STREAM WATER)</b>	09-JUN-2017 09:44	HK1723661-001	<b>4</b>				
<b>S1 (STREAM WATER)</b>	09-JUN-2017 09:54	HK1723661-002	<b>19</b>				
<b>S2 (STREAM WATER)</b>	09-JUN-2017 10:04	HK1723661-003	<b>17</b>				





### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 4493705)</b>								
HK1723661-001	C1 (STREAM WATER)	EA025: Suspended Solids (SS)	----	1	mg/L	4	4	0.0
<b>EG: Metals and Major Cations - Filtered (QC Lot: 4493318)</b>								
HK1723661-005	C2 M EBB	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0
HK1723661-017	C2 M FLOOD	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 4493705)</b>											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20.0 mg/L	94.0	----	85	115	----	----
<b>EG: Metals and Major Cations - Filtered (QCLot: 4493318)</b>											
EG029: Cadmium	7440-43-9	0.1	µg/L	<0.1	10 µg/L	92.4	----	78	116	----	----
EG029: Chromium	7440-47-3	1	µg/L	<1	10 µg/L	107	----	81	115	----	----
EG029: Aluminium	7429-90-5	10	µg/L	<10	10 µg/L	106	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG: Metals and Major Cations - Filtered (QCLot: 4493318)</b>										
HK1723661-004	C2 S EBB	EG029: Cadmium	7440-43-9	10 µg/L	86.6	----	80	120	----	----
		EG029: Chromium	7440-47-3	10 µg/L	97.7	----	80	120	----	----
		EG029: Aluminium	7429-90-5	10 µg/L	111	----	80	120	----	----



### CERTIFICATE OF ANALYSIS

*Client* : MOTT MACDONALD HONG KONG LIMITED  
*Contact* : MS HEIDI YU  
*Address* : 20/F., AIA KOWLOON TOWER, LANDMARK EAST,  
100 HOW MING STREET,  
KWUN TONG,  
KOWLOON HONG KONG  
*E-mail* : heidi.Yu@mottmac.com  
*Telephone* : +852 2828 5933  
*Facsimile* : +852 2828 1823  
*Project* : DECOMMISSIONING OF WEST PORTION OF THE MIDDLE ASH LAGOON AT TSANG TSUI TUEN MUN  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

*Laboratory* : ALS Technichem (HK) Pty Ltd  
*Contact* : Fung Lim Chee, Richard  
*Address* : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong  
*E-mail* : Richard.Fung@alsglobal.com  
*Telephone* : +852 2610 1044  
*Facsimile* : +852 2610 2021  
*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : **HK1724516**

*Date received* : 12-JUN-2017

*Date of issue* : 21-JUN-2017

*No. of samples* - Received : 23  
- Analysed : 23

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This document has been signed by those names that appear on this report and are the authorised signatories.

<u>Signatory</u>	<u>Position</u>	<u>Authorised results for:</u>
Chan Siu Ming, Vico	Manager - Inorganics	Inorganics
Wong Wing, Kenneth	Manager - Metals	Inorganics



## **Report Comments**

This report for ALS Technichem (HK) Pty Ltd work order reference HK1724516 supersedes any previous reports with this reference. Testing period is from 12-JUN-2017 to 20-JUN-2017. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

### **Specific Comments for Work Order HK1724516 :**

Sample(s) were collected by ALS Technichem (HK) staff.

ALS Technichem (HK) Pty Ltd is HOKLAS accredited for the testing provided in this report. The sampling activity involved is not covered by the laboratory HOKLAS accreditation.

Water sample(s) analysed and reported on an as received basis.

Water sample(s) were filtered prior to dissolved metal analysis.



**Analytical Results**

Sub-Matrix: MARINE WATER

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound	EG029: Cadmium	EG029: Chromium	EG029: Aluminium		
			LOR Unit	0.5 µg/L	1 µg/L	20 µg/L		
			EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered			
C2 S EBB	12-JUN-2017 03:03	HK1724516-004	<0.5	<1	<20			
C2 M EBB	12-JUN-2017 03:03	HK1724516-005	<0.5	<1	<20			
C2 B EBB	12-JUN-2017 03:03	HK1724516-006	<0.5	<1	<20			
C3 S EBB	12-JUN-2017 03:16	HK1724516-007	<0.5	<1	<20			
C3 B EBB	12-JUN-2017 03:16	HK1724516-009	<0.5	<1	<20			
M1 S EBB	12-JUN-2017 03:08	HK1724516-010	<0.5	<1	<20			
M1 M EBB	12-JUN-2017 03:08	HK1724516-011	<0.5	<1	<20			
M1 B EBB	12-JUN-2017 03:08	HK1724516-012	<0.5	<1	<20			
M2 S EBB	12-JUN-2017 03:12	HK1724516-013	<0.5	<1	<20			
M2 B EBB	12-JUN-2017 03:12	HK1724516-015	<0.5	<1	<20			
C2 S FLOOD	12-JUN-2017 08:25	HK1724516-016	<0.5	<1	<20			
C2 M FLOOD	12-JUN-2017 08:25	HK1724516-017	<0.5	<1	<20			
C2 B FLOOD	12-JUN-2017 08:25	HK1724516-018	<0.5	<1	<20			
C3 S FLOOD	12-JUN-2017 08:10	HK1724516-019	<0.5	<1	<20			
C3 B FLOOD	12-JUN-2017 08:10	HK1724516-021	<0.5	<1	<20			
M1 S FLOOD	12-JUN-2017 08:20	HK1724516-022	<0.5	<1	<20			
M1 M FLOOD	12-JUN-2017 08:20	HK1724516-023	<0.5	<1	<20			
M1 B FLOOD	12-JUN-2017 08:20	HK1724516-024	<0.5	<1	<20			
M2 S FLOOD	12-JUN-2017 08:15	HK1724516-025	<0.5	<1	<20			
M2 B FLOOD	12-JUN-2017 08:15	HK1724516-027	<0.5	<1	<20			



Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit	1 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
<b>C1 (STREAM WATER)</b>	12-JUN-2017 09:11	HK1724516-001	7				
<b>S1 (STREAM WATER)</b>	12-JUN-2017 09:21	HK1724516-002	5				
<b>S2 (STREAM WATER)</b>	12-JUN-2017 09:31	HK1724516-003	5				



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 4494255)</b>								
HK1724516-001	C1 (STREAM WATER)	EA025: Suspended Solids (SS)	----	1	mg/L	7	7	0.0
<b>EG: Metals and Major Cations - Filtered (QC Lot: 4493892)</b>								
HK1724516-005	C2 M EBB	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0
HK1724516-017	C2 M FLOOD	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 4494255)</b>											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20.0 mg/L	112	----	85	115	----	----
<b>EG: Metals and Major Cations - Filtered (QCLot: 4493892)</b>											
EG029: Cadmium	7440-43-9	0.1	µg/L	<0.1	10 µg/L	89.2	----	78	116	----	----
EG029: Chromium	7440-47-3	1	µg/L	<1	10 µg/L	92.0	----	81	115	----	----
EG029: Aluminium	7429-90-5	10	µg/L	<10	10 µg/L	109	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG: Metals and Major Cations - Filtered (QCLot: 4493892)</b>										
HK1724516-004	C2 S EBB	EG029: Cadmium	7440-43-9	10 µg/L	92.0	----	80	120	----	----
		EG029: Chromium	7440-47-3	10 µg/L	92.1	----	80	120	----	----
		EG029: Aluminium	7429-90-5	10 µg/L	105	----	80	120	----	----



### CERTIFICATE OF ANALYSIS

*Client* : MOTT MACDONALD HONG KONG LIMITED  
*Contact* : MS HEIDI YU  
*Address* : 20/F., AIA KOWLOON TOWER, LANDMARK EAST,  
100 HOW MING STREET,  
KWUN TONG,  
KOWLOON HONG KONG  
*E-mail* : heidi.Yu@mottmac.com  
*Telephone* : +852 2828 5933  
*Facsimile* : +852 2828 1823  
*Project* : DECOMMISSIONING OF WEST PORTION OF THE MIDDLE ASH LAGOON AT TSANG TSUI TUEN MUN  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

*Laboratory* : ALS Technichem (HK) Pty Ltd  
*Contact* : Fung Lim Chee, Richard  
*Address* : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong  
*E-mail* : Richard.Fung@alsglobal.com  
*Telephone* : +852 2610 1044  
*Facsimile* : +852 2610 2021  
*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : **HK1724753**  
*Date received* : 14-JUN-2017  
*Date of issue* : 23-JUN-2017  
*No. of samples* - Received : 23  
- Analysed : 23

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This document has been signed by those names that appear on this report and are the authorised signatories.

<u>Signatory</u>	<u>Position</u>	<u>Authorised results for:</u>
Leung Chak Cheong, Mike	Senior Chemist	Inorganics
Lin Wai Yu, Iris	Assistant Manager - Inorganics	Inorganics



## **Report Comments**

This report for ALS Technichem (HK) Pty Ltd work order reference HK1724753 supersedes any previous reports with this reference. Testing period is from 14-JUN-2017 to 23-JUN-2017. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

### **Specific Comments for Work Order HK1724753 :**

Sample(s) were collected by ALS Technichem (HK) staff.

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Water sample(s) analysed and reported on an as received basis.

Water sample(s) were filtered prior to dissolved metal analysis.





**Analytical Results**

Sub-Matrix: MARINE WATER

			Compound	EG029: Cadmium	EG029: Chromium	EG029: Aluminium		
			LOR Unit	0.5 µg/L	1 µg/L	20 µg/L		
Client sample ID	Client sampling date / time	Laboratory sample ID		EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered		
C2 S EBB	14-JUN-2017 04:20	HK1724753-004		<0.5	<1	<20		
C2 M EBB	14-JUN-2017 04:20	HK1724753-005		<0.5	<1	<20		
C2 B EBB	14-JUN-2017 04:20	HK1724753-006		<0.5	<1	<20		
C3 S EBB	14-JUN-2017 04:45	HK1724753-007		<0.5	<1	<20		
C3 B EBB	14-JUN-2017 04:45	HK1724753-009		<0.5	<1	<20		
M1 S EBB	14-JUN-2017 04:27	HK1724753-010		<0.5	<1	<20		
M1 M EBB	14-JUN-2017 04:27	HK1724753-011		<0.5	<1	<20		
M1 B EBB	14-JUN-2017 04:27	HK1724753-012		<0.5	<1	<20		
M2 S EBB	14-JUN-2017 04:38	HK1724753-013		<0.5	<1	<20		
M2 B EBB	14-JUN-2017 04:38	HK1724753-015		<0.5	<1	<20		
C2 S FLOOD	14-JUN-2017 09:41	HK1724753-016		<0.5	<1	<20		
C2 M FLOOD	14-JUN-2017 09:41	HK1724753-017		<0.5	<1	<20		
C2 B FLOOD	14-JUN-2017 09:41	HK1724753-018		<0.5	<1	<20		
C3 S FLOOD	14-JUN-2017 09:20	HK1724753-019		<0.5	<1	<20		
C3 B FLOOD	14-JUN-2017 09:20	HK1724753-021		<0.5	<1	<20		
M1 S FLOOD	14-JUN-2017 09:35	HK1724753-022		<0.5	<1	<20		
M1 M FLOOD	14-JUN-2017 09:35	HK1724753-023		<0.5	<1	<20		
M1 B FLOOD	14-JUN-2017 09:35	HK1724753-024		<0.5	<1	<20		
M2 S FLOOD	14-JUN-2017 09:27	HK1724753-025		<0.5	<1	<20		
M2 B FLOOD	14-JUN-2017 09:27	HK1724753-027		<0.5	<1	<20		



Sub-Matrix: WATER

			Compound				
			LOR Unit				
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
			<b>EA025: Suspended Solids (SS)</b>				
			1 mg/L				
<b>C1 (STREAM WATER)</b>	14-JUN-2017 09:23	HK1724753-001	<b>8</b>				
<b>S1 (STREAM WATER)</b>	14-JUN-2017 09:33	HK1724753-002	<b>8</b>				
<b>S2 (STREAM WATER)</b>	14-JUN-2017 09:43	HK1724753-003	<b>9</b>				



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 4495088)</b>								
HK1724753-002	S1 (STREAM WATER)	EA025: Suspended Solids (SS)	----	1	mg/L	8	8	0.0
<b>EG: Metals and Major Cations - Filtered (QC Lot: 4494906)</b>								
HK1724753-005	C2 M EBB	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0
HK1724753-017	C2 M FLOOD	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 4495088)</b>											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20.0 mg/L	114	----	85	115	----	----
<b>EG: Metals and Major Cations - Filtered (QCLot: 4494906)</b>											
EG029: Cadmium	7440-43-9	0.1	µg/L	<0.1	10 µg/L	99.2	----	78	116	----	----
EG029: Chromium	7440-47-3	1	µg/L	<1	10 µg/L	112	----	81	115	----	----
EG029: Aluminium	7429-90-5	10	µg/L	<10	10 µg/L	110	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG: Metals and Major Cations - Filtered (QCLot: 4494906)</b>										
HK1724753-004	C2 S EBB	EG029: Cadmium	7440-43-9	10 µg/L	87.6	----	80	120	----	----
		EG029: Chromium	7440-47-3	10 µg/L	92.4	----	80	120	----	----
		EG029: Aluminium	7429-90-5	10 µg/L	89.3	----	80	120	----	----



### CERTIFICATE OF ANALYSIS

*Client* : MOTT MACDONALD HONG KONG LIMITED  
*Contact* : MS HEIDI YU  
*Address* : 20/F., AIA KOWLOON TOWER, LANDMARK EAST,  
100 HOW MING STREET,  
KWUN TONG,  
KOWLOON HONG KONG  
*E-mail* : heidi.Yu@mottmac.com  
*Telephone* : +852 2828 5933  
*Facsimile* : +852 2828 1823  
*Project* : DECOMMISSIONING OF WEST PORTION OF THE MIDDLE ASH LAGOON AT TSANG TSUI TUEN MUN  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

*Laboratory* : ALS Technichem (HK) Pty Ltd  
*Contact* : Fung Lim Chee, Richard  
*Address* : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong  
*E-mail* : Richard.Fung@alsglobal.com  
*Telephone* : +852 2610 1044  
*Facsimile* : +852 2610 2021  
*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : **HK1725029**

*Date received* : 17-JUN-2017

*Date of issue* : 27-JUN-2017

*No. of samples* - Received : 23  
- Analysed : 23

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This document has been signed by those names that appear on this report and are the authorised signatories.

<u>Signatory</u>	<u>Position</u>	<u>Authorised results for:</u>
Chan Siu Ming, Vico	Manager - Inorganics	Inorganics
Leung Chak Cheong, Mike	Senior Chemist	Inorganics



## Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1725029 supersedes any previous reports with this reference. Testing period is from 17-JUN-2017 to 27-JUN-2017. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

### Specific Comments for Work Order HK1725029 :

Sample(s) were collected by ALS Technichem (HK) staff.

ALS Technichem (HK) Pty Ltd is HOKLAS accredited for the testing provided in this report. The sampling activity involved is not covered by the laboratory HOKLAS accreditation.

Water sample(s) analysed and reported on an as received basis.

Water sample(s) were filtered prior to dissolved metal analysis.



**Analytical Results**

Sub-Matrix: MARINE WATER

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound	EG029: Cadmium	EG029: Chromium	EG029: Aluminium		
			LOR Unit	0.5 µg/L	1 µg/L	20 µg/L		
			EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered			
C2 S EBB	16-JUN-2017 06:15	HK1725029-004	0.6	<1	<20			
C2 M EBB	16-JUN-2017 06:15	HK1725029-005	0.9	<1	<20			
C2 B EBB	16-JUN-2017 06:15	HK1725029-006	3.6	<1	<20			
C3 S EBB	16-JUN-2017 06:42	HK1725029-007	2.8	<1	<20			
C3 B EBB	16-JUN-2017 06:42	HK1725029-009	2.9	<1	<20			
M1 S EBB	16-JUN-2017 06:23	HK1725029-010	1.0	<1	<20			
M1 M EBB	16-JUN-2017 06:23	HK1725029-011	2.1	<1	<20			
M1 B EBB	16-JUN-2017 06:23	HK1725029-012	1.5	<1	<20			
M2 S EBB	16-JUN-2017 06:30	HK1725029-013	1.9	<1	<20			
M2 B EBB	16-JUN-2017 06:30	HK1725029-015	<0.5	<1	<20			
C2 S FLOOD	16-JUN-2017 11:25	HK1725029-016	3.2	<1	<20			
C2 M FLOOD	16-JUN-2017 11:25	HK1725029-017	3.5	<1	<20			
C2 B FLOOD	16-JUN-2017 11:25	HK1725029-018	0.8	<1	<20			
C3 S FLOOD	16-JUN-2017 11:04	HK1725029-019	0.8	<1	<20			
C3 B FLOOD	16-JUN-2017 11:04	HK1725029-021	0.9	<1	<20			
M1 S FLOOD	16-JUN-2017 11:16	HK1725029-022	0.8	<1	<20			
M1 M FLOOD	16-JUN-2017 11:16	HK1725029-023	0.6	<1	<20			
M1 B FLOOD	16-JUN-2017 11:16	HK1725029-024	<0.5	<1	<20			
M2 S FLOOD	16-JUN-2017 11:10	HK1725029-025	4.2	<1	<20			
M2 B FLOOD	16-JUN-2017 11:10	HK1725029-027	0.7	<1	<20			



Sub-Matrix: WATER

			Compound				
			LOR Unit				
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
			<b>EA025: Suspended Solids (SS)</b>				
			1 mg/L				
<b>C1 (STREAM WATER)</b>	16-JUN-2017 10:01	HK1725029-001	<b>5</b>				
<b>S1 (STREAM WATER)</b>	16-JUN-2017 10:11	HK1725029-002	<b>5</b>				
<b>S2 (STREAM WATER)</b>	16-JUN-2017 10:21	HK1725029-003	<b>4</b>				



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 4496460)</b>								
HK1725029-001	C1 (STREAM WATER)	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	0.0
<b>EG: Metals and Major Cations - Filtered (QC Lot: 4495931)</b>								
HK1725029-005	C2 M EBB	EG029: Cadmium	7440-43-9	0.5	µg/L	0.9	0.9	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0
HK1725029-017	C2 M FLOOD	EG029: Cadmium	7440-43-9	0.5	µg/L	3.5	3.4	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 4496460)</b>											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20.0 mg/L	91.5	----	85	115	----	----
<b>EG: Metals and Major Cations - Filtered (QCLot: 4495931)</b>											
EG029: Cadmium	7440-43-9	0.1	µg/L	<0.1	10 µg/L	99.3	----	78	116	----	----
EG029: Chromium	7440-47-3	1	µg/L	<1	10 µg/L	97.6	----	81	115	----	----
EG029: Aluminium	7429-90-5	10	µg/L	<10	10 µg/L	105	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG: Metals and Major Cations - Filtered (QCLot: 4495931)</b>										
HK1725029-004	C2 S EBB	EG029: Cadmium	7440-43-9	10 µg/L	93.0	----	80	120	----	----
		EG029: Chromium	7440-47-3	10 µg/L	95.2	----	80	120	----	----
		EG029: Aluminium	7429-90-5	10 µg/L	92.4	----	80	120	----	----





### CERTIFICATE OF ANALYSIS

*Client* : MOTT MACDONALD HONG KONG LIMITED  
*Contact* : MS HEIDI YU  
*Address* : 20/F., AIA KOWLOON TOWER, LANDMARK EAST,  
100 HOW MING STREET,  
KWUN TONG,  
KOWLOON HONG KONG  
*E-mail* : heidi.Yu@mottmac.com  
*Telephone* : +852 2828 5933  
*Facsimile* : +852 2828 1823  
*Project* : DECOMMISSIONING OF WEST PORTION OF THE MIDDLE ASH LAGOON AT TSANG TSUI TUEN MUN  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

*Laboratory* : ALS Technichem (HK) Pty Ltd  
*Contact* : Fung Lim Chee, Richard  
*Address* : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong  
*E-mail* : Richard.Fung@alsglobal.com  
*Telephone* : +852 2610 1044  
*Facsimile* : +852 2610 2021  
*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : **HK1725628**  
*Date received* : 19-JUN-2017  
*Date of issue* : 28-JUN-2017  
*No. of samples* - Received : 23  
- Analysed : 23

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This document has been signed by those names that appear on this report and are the authorised signatories.

<u>Signatory</u>	<u>Position</u>	<u>Authorised results for:</u>
Leung Chak Cheong, Mike	Senior Chemist	Inorganics
Lin Wai Yu, Iris	Assistant Manager - Inorganics	Inorganics



## **Report Comments**

This report for ALS Technichem (HK) Pty Ltd work order reference HK1725628 supersedes any previous reports with this reference. Testing period is from 19-JUN-2017 to 28-JUN-2017. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

### **Specific Comments for Work Order HK1725628 :**

Sample(s) were collected by ALS Technichem (HK) staff.

ALS Technichem (HK) Pty Ltd is HOKLAS accredited for the testing provided in this report. The sampling activity involved is not covered by the laboratory HOKLAS accreditation.

Water sample(s) analysed and reported on an as received basis.

Water sample(s) were filtered prior to dissolved metal analysis.



**Analytical Results**

Sub-Matrix: MARINE WATER

			Compound	EG029: Cadmium	EG029: Chromium	EG029: Aluminium		
			LOR Unit	0.5 µg/L	1 µg/L	20 µg/L		
Client sample ID	Client sampling date / time	Laboratory sample ID		EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered		
C2 S EBB	19-JUN-2017 09:30	HK1725628-004		<0.5	<1	<20		
C2 M EBB	19-JUN-2017 09:30	HK1725628-005		<0.5	<1	<20		
C2 B EBB	19-JUN-2017 09:30	HK1725628-006		<0.5	<1	<20		
C3 S EBB	19-JUN-2017 09:58	HK1725628-007		<0.5	<1	<20		
C3 B EBB	19-JUN-2017 09:58	HK1725628-009		<0.5	<1	<20		
M1 S EBB	19-JUN-2017 09:38	HK1725628-010		<0.5	<1	<20		
M1 M EBB	19-JUN-2017 09:38	HK1725628-011		<0.5	<1	<20		
M1 B EBB	19-JUN-2017 09:38	HK1725628-012		<0.5	<1	<20		
M2 S EBB	19-JUN-2017 09:45	HK1725628-013		<0.5	<1	<20		
M2 B EBB	19-JUN-2017 09:45	HK1725628-015		<0.5	<1	<20		
C2 S FLOOD	19-JUN-2017 15:39	HK1725628-016		<0.5	<1	<20		
C2 M FLOOD	19-JUN-2017 15:39	HK1725628-017		<0.5	<1	<20		
C2 B FLOOD	19-JUN-2017 15:39	HK1725628-018		<0.5	<1	<20		
C3 S FLOOD	19-JUN-2017 15:15	HK1725628-019		<0.5	<1	<20		
C3 B FLOOD	19-JUN-2017 15:15	HK1725628-021		<0.5	<1	<20		
M1 S FLOOD	19-JUN-2017 15:32	HK1725628-022		<0.5	<1	<20		
M1 M FLOOD	19-JUN-2017 15:32	HK1725628-023		<0.5	<1	<20		
M1 B FLOOD	19-JUN-2017 15:32	HK1725628-024		<0.5	<1	<20		
M2 S FLOOD	19-JUN-2017 15:21	HK1725628-025		<0.5	<1	<20		
M2 B FLOOD	19-JUN-2017 15:21	HK1725628-027		<0.5	<1	<20		



Sub-Matrix: WATER

Compound

**EA025: Suspended Solids (SS)**

LOR Unit

1 mg/L

Client sample ID

Client sampling date /  
time

Laboratory sample  
ID

EA/ED: Physical and  
Aggregate Properties

**C1 (STREAM WATER)**

19-JUN-2017 10:16

HK1725628-001

**6**

**S1 (STREAM WATER)**

19-JUN-2017 10:26

HK1725628-002

**5**

**S2 (STREAM WATER)**

19-JUN-2017 10:36

HK1725628-003

**8**



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 4496463)</b>								
HK1725628-001	C1 (STREAM WATER)	EA025: Suspended Solids (SS)	----	1	mg/L	6	8	40.5
<b>EG: Metals and Major Cations - Filtered (QC Lot: 4495943)</b>								
HK1725628-005	C2 M EBB	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0
HK1725628-017	C2 M FLOOD	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 4496463)</b>											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20.0 mg/L	111	----	85	115	----	----
<b>EG: Metals and Major Cations - Filtered (QCLot: 4495943)</b>											
EG029: Cadmium	7440-43-9	0.1	µg/L	<0.1	10 µg/L	107	----	78	116	----	----
EG029: Chromium	7440-47-3	1	µg/L	<1	10 µg/L	113	----	81	115	----	----
EG029: Aluminium	7429-90-5	10	µg/L	<10	10 µg/L	98.6	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG: Metals and Major Cations - Filtered (QCLot: 4495943)</b>										
HK1725628-004	C2 S EBB	EG029: Cadmium	7440-43-9	10 µg/L	106	----	80	120	----	----
		EG029: Chromium	7440-47-3	10 µg/L	95.2	----	80	120	----	----
		EG029: Aluminium	7429-90-5	10 µg/L	102	----	80	120	----	----



### CERTIFICATE OF ANALYSIS

*Client* : MOTT MACDONALD HONG KONG LIMITED  
*Contact* : MS HEIDI YU  
*Address* : 20/F., AIA KOWLOON TOWER, LANDMARK EAST,  
100 HOW MING STREET,  
KWUN TONG,  
KOWLOON HONG KONG  
*E-mail* : heidi.Yu@mottmac.com  
*Telephone* : +852 2828 5933  
*Facsimile* : +852 2828 1823  
*Project* : DECOMMISSIONING OF WEST PORTION OF THE MIDDLE ASH LAGOON AT TSANG TSUI TUEN MUN  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

*Laboratory* : ALS Technichem (HK) Pty Ltd  
*Contact* : Fung Lim Chee, Richard  
*Address* : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong  
*E-mail* : Richard.Fung@alsglobal.com  
*Telephone* : +852 2610 1044  
*Facsimile* : +852 2610 2021  
*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : **HK1725839**

*Date received* : 21-JUN-2017

*Date of issue* : 30-JUN-2017

*No. of samples* - Received : 23  
- Analysed : 23

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This document has been signed by those names that appear on this report and are the authorised signatories.

<u>Signatory</u>	<u>Position</u>	<u>Authorised results for:</u>
Leung Chak Cheong, Mike	Senior Chemist	Inorganics
Lin Wai Yu, Iris	Assistant Manager - Inorganics	Inorganics



## Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1725839 supersedes any previous reports with this reference. Testing period is from 21-JUN-2017 to 30-JUN-2017. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

### Specific Comments for Work Order HK1725839 :

Sample(s) were collected by ALS Technichem (HK) staff.

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Water sample(s) analysed and reported on an as received basis.

Water sample(s) were filtered prior to dissolved metal analysis.

---



**Analytical Results**

Sub-Matrix: MARINE WATER

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound	EG029: Cadmium	EG029: Chromium	EG029: Aluminium		
			LOR Unit	0.5 µg/L	1 µg/L	20 µg/L		
			EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered			
C2 S EBB	21-JUN-2017 11:28	HK1725839-004	3.2	<1	<20			
C2 M EBB	21-JUN-2017 11:28	HK1725839-005	3.0	<1	<20			
C2 B EBB	21-JUN-2017 11:28	HK1725839-006	0.7	<1	<20			
C3 S EBB	21-JUN-2017 11:00	HK1725839-007	3.0	<1	<20			
C3 B EBB	21-JUN-2017 11:00	HK1725839-009	<0.5	<1	<20			
M1 S EBB	21-JUN-2017 11:15	HK1725839-010	0.5	<1	<20			
M1 M EBB	21-JUN-2017 11:15	HK1725839-011	1.8	<1	<20			
M1 B EBB	21-JUN-2017 11:15	HK1725839-012	3.4	<1	<20			
M2 S EBB	21-JUN-2017 11:09	HK1725839-013	2.8	<1	<20			
M2 B EBB	21-JUN-2017 11:09	HK1725839-015	3.1	<1	<20			
C2 S FLOOD	21-JUN-2017 04:30	HK1725839-016	3.0	<1	<20			
C2 M FLOOD	21-JUN-2017 04:30	HK1725839-017	<0.5	<1	<20			
C2 B FLOOD	21-JUN-2017 04:30	HK1725839-018	4.9	<1	<20			
C3 S FLOOD	21-JUN-2017 04:59	HK1725839-019	3.8	<1	<20			
C3 B FLOOD	21-JUN-2017 04:59	HK1725839-021	<0.5	<1	<20			
M1 S FLOOD	21-JUN-2017 04:37	HK1725839-022	<0.5	<1	<20			
M1 M FLOOD	21-JUN-2017 04:37	HK1725839-023	<0.5	<1	<20			
M1 B FLOOD	21-JUN-2017 04:37	HK1725839-024	3.2	<1	<20			
M2 S FLOOD	21-JUN-2017 04:48	HK1725839-025	3.4	<1	<20			
M2 B FLOOD	21-JUN-2017 04:48	HK1725839-027	1.9	<1	<20			





Sub-Matrix: WATER

			Compound				
			LOR Unit				
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
			<b>EA025: Suspended Solids (SS)</b>				
			1 mg/L				
<b>C1 (STREAM WATER)</b>	21-JUN-2017 11:11	HK1725839-001	<b>8</b>				
<b>S1 (STREAM WATER)</b>	21-JUN-2017 11:21	HK1725839-002	<b>7</b>				
<b>S2 (STREAM WATER)</b>	21-JUN-2017 11:31	HK1725839-003	<b>11</b>				



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 4497471)</b>								
HK1725839-001	C1 (STREAM WATER)	EA025: Suspended Solids (SS)	----	1	mg/L	8	9	0.0
<b>EG: Metals and Major Cations - Filtered (QC Lot: 4497509)</b>								
HK1725839-005	C2 M EBB	EG029: Cadmium	7440-43-9	0.5	µg/L	3.0	3.2	6.2
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0
HK1725839-017	C2 M FLOOD	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 4497471)</b>											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20.0 mg/L	104	----	85	115	----	----
<b>EG: Metals and Major Cations - Filtered (QCLot: 4497509)</b>											
EG029: Cadmium	7440-43-9	0.1	µg/L	<0.1	10 µg/L	100	----	78	116	----	----
EG029: Chromium	7440-47-3	1	µg/L	<1	10 µg/L	101	----	81	115	----	----
EG029: Aluminium	7429-90-5	10	µg/L	<10	10 µg/L	114	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG: Metals and Major Cations - Filtered (QCLot: 4497509)</b>										
HK1725839-004	C2 S EBB	EG029: Cadmium	7440-43-9	10 µg/L	110	----	80	120	----	----
		EG029: Chromium	7440-47-3	10 µg/L	97.3	----	80	120	----	----
		EG029: Aluminium	7429-90-5	10 µg/L	111	----	80	120	----	----



### CERTIFICATE OF ANALYSIS

*Client* : MOTT MACDONALD HONG KONG LIMITED  
*Contact* : MS HEIDI YU  
*Address* : 20/F., AIA KOWLOON TOWER, LANDMARK EAST,  
100 HOW MING STREET,  
KWUN TONG,  
KOWLOON HONG KONG  
*E-mail* : heidi.Yu@mottmac.com  
*Telephone* : +852 2828 5933  
*Facsimile* : +852 2828 1823  
*Project* : DECOMMISSIONING OF WEST PORTION OF THE MIDDLE ASH LAGOON AT TSANG TSUI TUEN MUN  
*Order number* : ----  
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*Laboratory* : ALS Technichem (HK) Pty Ltd  
*Contact* : Fung Lim Chee, Richard  
*Address* : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong  
*E-mail* : Richard.Fung@alsglobal.com  
*Telephone* : +852 2610 1044  
*Facsimile* : +852 2610 2021  
*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : **HK1725842**  
*Date received* : 24-JUN-2017  
*Date of issue* : 04-JUL-2017  
*No. of samples* - Received : 23  
- Analysed : 23

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This document has been signed by those names that appear on this report and are the authorised signatories.

<u>Signatory</u>	<u>Position</u>	<u>Authorised results for:</u>
Leung Chak Cheong, Mike	Senior Chemist	Inorganics
Lin Wai Yu, Iris	Assistant Manager - Inorganics	Inorganics



## **Report Comments**

This report for ALS Technichem (HK) Pty Ltd work order reference HK1725842 supersedes any previous reports with this reference. Testing period is from 24-JUN-2017 to 30-JUN-2017. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

### **Specific Comments for Work Order HK1725842 :**

Sample(s) were collected by ALS Technichem (HK) staff.

ALS Technichem (HK) Pty Ltd is HOKLAS accredited for the testing provided in this report. The sampling activity involved is not covered by the laboratory HOKLAS accreditation.

Water sample(s) analysed and reported on an as received basis.

Water sample(s) were filtered prior to dissolved metal analysis.

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**Analytical Results**

Sub-Matrix: MARINE WATER

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound	EG029: Cadmium	EG029: Chromium	EG029: Aluminium		
			LOR Unit	0.5 µg/L	1 µg/L	20 µg/L		
			EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered	EG: Metals and Major Cations - Filtered			
C2 S EBB	23-JUN-2017 13:15	HK1725842-004	<0.5	<1	<20			
C2 M EBB	23-JUN-2017 13:15	HK1725842-005	<0.5	<1	<20			
C2 B EBB	23-JUN-2017 13:15	HK1725842-006	<0.5	<1	<20			
C3 S EBB	23-JUN-2017 12:45	HK1725842-007	<0.5	<1	<20			
C3 B EBB	23-JUN-2017 12:45	HK1725842-009	<0.5	<1	<20			
M1 S EBB	23-JUN-2017 13:08	HK1725842-010	<0.5	<1	<20			
M1 M EBB	23-JUN-2017 13:08	HK1725842-011	<0.5	<1	<20			
M1 B EBB	23-JUN-2017 13:08	HK1725842-012	<0.5	<1	<20			
M2 S EBB	23-JUN-2017 12:55	HK1725842-013	<0.5	<1	<20			
M2 B EBB	23-JUN-2017 12:55	HK1725842-015	<0.5	<1	<20			
C2 S FLOOD	23-JUN-2017 05:50	HK1725842-016	<0.5	<1	<20			
C2 M FLOOD	23-JUN-2017 05:50	HK1725842-017	<0.5	<1	<20			
C2 B FLOOD	23-JUN-2017 05:50	HK1725842-018	<0.5	<1	<20			
C3 S FLOOD	23-JUN-2017 06:18	HK1725842-019	<0.5	<1	<20			
C3 B FLOOD	23-JUN-2017 06:18	HK1725842-021	<0.5	<1	<20			
M1 S FLOOD	23-JUN-2017 05:57	HK1725842-022	<0.5	<1	<20			
M1 M FLOOD	23-JUN-2017 05:57	HK1725842-023	<0.5	<1	<20			
M1 B FLOOD	23-JUN-2017 05:57	HK1725842-024	<0.5	<1	<20			
M2 S FLOOD	23-JUN-2017 06:08	HK1725842-025	<0.5	<1	<20			
M2 B FLOOD	23-JUN-2017 06:08	HK1725842-027	<0.5	<1	<20			



Sub-Matrix: WATER

			Compound				
			LOR Unit				
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
			<b>EA025: Suspended Solids (SS)</b>				
			1 mg/L				
<b>C1 (STREAM WATER)</b>	23-JUN-2017 10:03	HK1725842-001	<b>9</b>				
<b>S1 (STREAM WATER)</b>	23-JUN-2017 10:13	HK1725842-002	<b>9</b>				
<b>S2 (STREAM WATER)</b>	23-JUN-2017 10:23	HK1725842-003	<b>10</b>				



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 4498576)</b>								
HK1725842-001	C1 (STREAM WATER)	EA025: Suspended Solids (SS)	----	1	mg/L	9	8	0.0
<b>EG: Metals and Major Cations - Filtered (QC Lot: 4498614)</b>								
HK1725842-005	C2 M EBB	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0
HK1725842-017	C2 M FLOOD	EG029: Cadmium	7440-43-9	0.5	µg/L	<0.5	<0.5	0.0
		EG029: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG029: Aluminium	7429-90-5	20	µg/L	<20	<20	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 4498576)</b>											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20.0 mg/L	96.0	----	85	115	----	----
<b>EG: Metals and Major Cations - Filtered (QCLot: 4498614)</b>											
EG029: Cadmium	7440-43-9	0.1	µg/L	<0.1	10 µg/L	98.1	----	78	116	----	----
EG029: Chromium	7440-47-3	1	µg/L	<1	10 µg/L	96.3	----	81	115	----	----
EG029: Aluminium	7429-90-5	10	µg/L	<10	10 µg/L	108	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG: Metals and Major Cations - Filtered (QCLot: 4498614)</b>										
HK1725842-004	C2 S EBB	EG029: Cadmium	7440-43-9	10 µg/L	106	----	80	120	----	----
		EG029: Chromium	7440-47-3	10 µg/L	98.4	----	80	120	----	----
		EG029: Aluminium	7429-90-5	10 µg/L	108	----	80	120	----	----

## G. Waste Flow Table



## Appendix G

Month	Actual Quantities of Inert Construction Waste Generated Monthly				
	(a)=(b)+(c)+(d)+(e) Total Quantity Generated	(b) Broken Concrete (see Note 4)	(c) Reused in the Contract	(d) Reused in other Projects	(e) Disposed of as Public Fill
	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)
Oct-16	0	0	0	0	0
Nov-16	0	0	0	0	0
Dec-16	0.002	0	0	0	0.002
Jan-17	0	0	0	0	0
Feb-17	0	0	0	0	0
Mar-17	0	0	0	0	0
Apr-17	0	0	0	0	0
May-17	0	0	0	0	0
Total	0.002	0	0	0	0.002

Month	Actual Quantities of Non-inert Construction Waste Generated Monthly													
	Timber		Metals		Paper/ cardboard		Plastics		Chemical Waste		Other Recyclable		General Refuse	
	(in '000kg)		(in '000kg)		(in '000kg)		(in '000kg)		(in '000kg)		(in '000kg)		(in '000kg)	
	generated	recycled	generated	recycled	generated	recycled	generated	recycled	generated	recycled	generated	recycled	generated	recycled
Oct-16	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov-16	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.011
Dec-16	0.015	0.000	1.200	1.200	0.000	0.000	0.000	0.000	92.740	0.000	0.000	0.000	0.000	0.044
Jan-17	0.018	0.000	1.900	1.900	0.000	0.000	0.000	0.000	9.502	0.000	0.000	0.000	0.000	0.033
Feb-17	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020
Mar-17	0.012	0.000	35.510	35.510	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.026
Apr-17	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020
May-17	0.060	0.000	116.520	116.520	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.033
Total	0.132	0.000	155.130	155.130	0.000	0.000	0.000	0.000	102.242	0.000	0.000	0.000	0.000	0.187

- Notes:
- (1) The performance targets are given in the Particular Specification on Environmental Management Plan.
  - (2) The waste flow table shall also include construction wastes that are specified in the Contract to be imported for use at the site.
  - (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
  - (4) Broken concrete for recycling into aggregates.
  - (5) If necessary, use the conversion factor: 1 full load of dumping truck being equivalent to 6.5 m3 by volume.

**SURFACE DRAINAGE OUTFALL SYSTEM**  
地表徑流排水管道

**EXISTING SEASONAL WATER CHANNEL**  
現有季節性水道

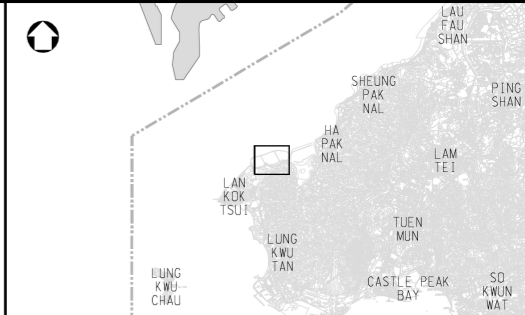
**MIDDLE ASH LAGOON**  
煤灰湖 (中湖)

**SITE**  
煤灰平台






**HIGHER PLATFORM**  
高台

**LOWER PLATFORM**  
低台

**WEST ASH LAGOON**  
煤灰湖 (西湖)



**Legend 圖例**

-  Site boundary 項目邊界
-  PFA platform to be decommissioned 須解除運作的煤灰平台
-  Construction access roads over PFA to be decommissioned 須解除運作的在煤灰上的施工通道
-  Construction access road over existing road to be upgraded 以提升現有道路方式建造的施工通道
-  Non-works area outside of decommissioning area 解除運作地區之外的非施工地方

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P2	NOV 16	MING	GENERAL REVISION	RH	EC
P1	SEP 16	MING	FIRST ISSUE	RH	EC

**MOTT MACDONALD**

20/F AIA Kowloon Tower  
Landmark East  
100 How Ming Street  
Kwun Tong, Kowloon  
Hong Kong  
T +852 2828 5757  
F +852 2827 1823  
W mottmac.com

Client

**LEIGHTON CONTRACTORS (ASIA) LIMITED**

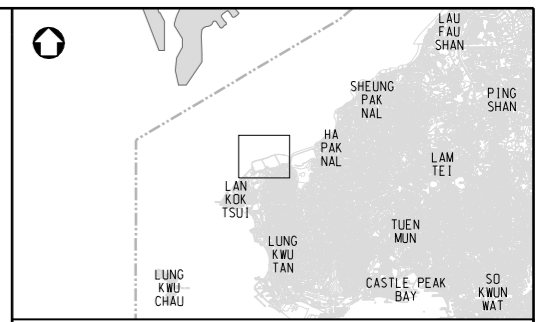
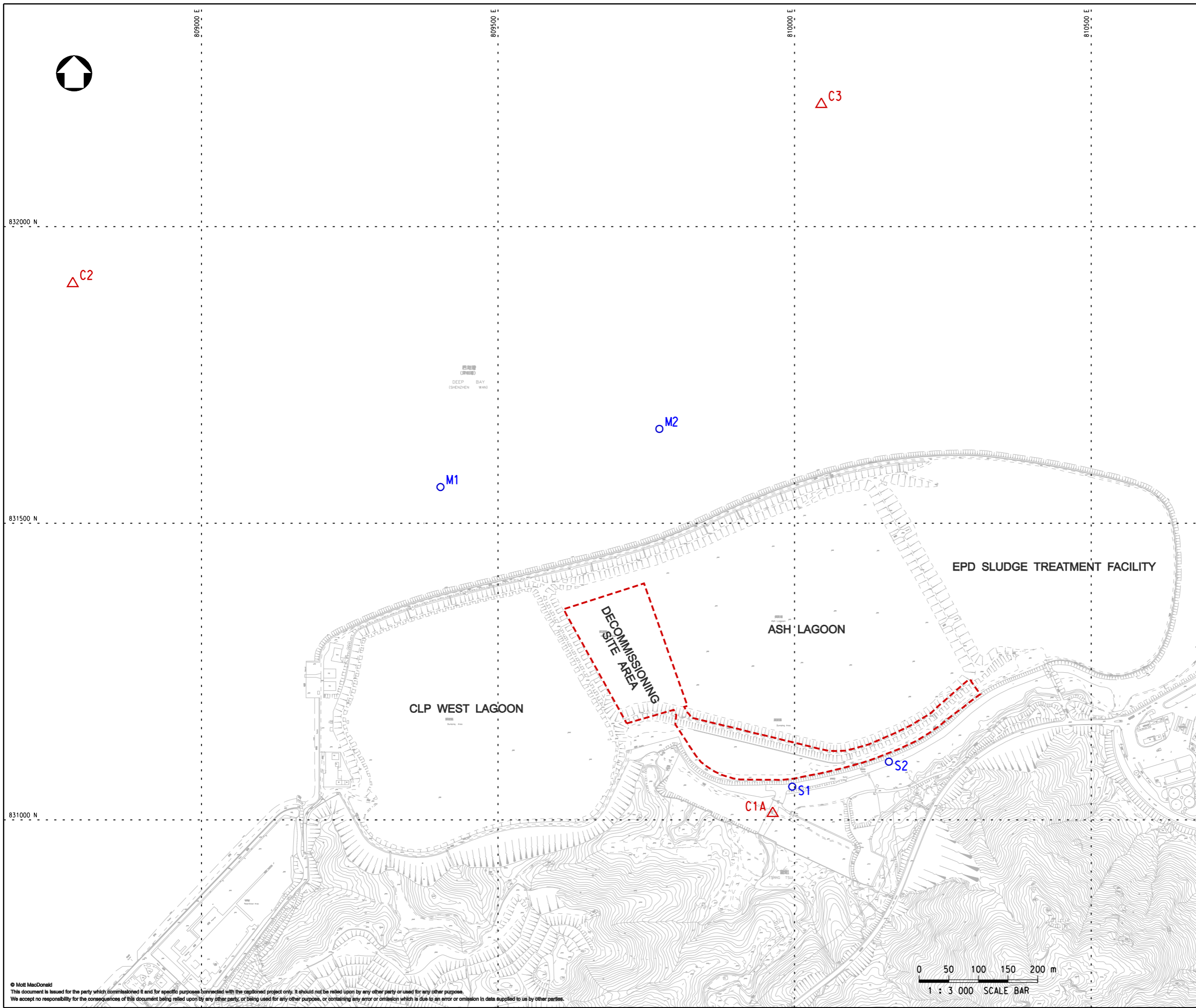
Project

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

Title

**LAYOUT PLAN**

Designed	RH	Eng check	GC
Drawn	MING	Coordination	HY
Dwg check	RH	Approved	EC
Scale at A1	1:2000	Status	PRE
Drawing Number	FIGURE 1		



**KEY PLAN (1:150000)**

**LEGEND:**

- SITE BOUNDARY
- △ CONTROL STATION
- MONITORING STATION

**Reference drawings**

P3	NOV 16	MING	GENERAL REVISION	RH	EC
P2	SEP 16	MING	GENERAL REVISION	HY	EC
P1	SEP 16	MING	FIRST ISSUE	RH	EC

Rev	Date	Drawn	Description	Ch'kd	App'd
P3	NOV 16	MING	GENERAL REVISION	RH	EC
P2	SEP 16	MING	GENERAL REVISION	HY	EC
P1	SEP 16	MING	FIRST ISSUE	RH	EC

**MOTT MACDONALD**

20/F AJA Kowloon Tower  
Landmark East  
100 How Ming Street  
Kwun Tong, Kowloon  
Hong Kong  
T +852 2828 5757  
F +852 2827 1823  
W mottmac.com

**Client**

**LEIGHTON CONTRACTORS (ASIA) LIMITED**

**Project**

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

**Title**

**LOCATIONS OF WATER QUALITY MONITORING STATIONS**

Designed	RH	Eng check	GC
Drawn	MING	Coordination	HY
Dwg check	RH	Approved	EC
Scale at A1	1:3000	Status	PRE
Drawing Number	FIGURE 2		P3